

BYZANTINA LODZIENSIA

XX

Maciej Kokoszko
Krzysztof Jagusiak
Zofia Rzeźnicka

Cereals of antiquity and early Byzantine times

**Wheat and barley
in medical sources
(second to seventh
centuries AD)**



Maciej Kokoszko, Krzysztof Jagusiak, Zofia Rzeźnicka

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MACIEJ KOKOSZKO, KRZYSZTOF JAGUSIAK
ZOFIA RZEŹNICKA

Cereals of antiquity
and early Byzantine times
Wheat and barley in medical sources
(second to seventh centuries AD)



MACIEJ KOKOSZKO

Research objective of the study



The objective of the present book is an analysis of the evolution of dietetic doctrines and an assessment of the value of medical sources for historians of food; the ultimate result is going to be an examination of the most significant cereals – one of the food groups that were of crucial importance for the nutrition of societies in antiquity and early Byzantine times – namely, four species of wheat and barley. When commencing this work we already had some experience of the issue, since we have been actively exploring various aspects of the history of ancient and early

Byzantine culinary art for a number of years – acting both jointly¹ and individually².

¹ K. Jagusiak, M. Kokoszko, Z. Rzeźnicka, *Delicacies from the sea. A selection of data on the genus Thunnus from medical and other sources*, FAH 24, 2011, p. 33–38; M. Kokoszko, K. Jagusiak, *Zboża Bizancjum, Kilka uwag na temat roli produktów zbożowych na podstawie źródeł greckich (Cereal crops of Byzantium. Some observations on the role of cereals on the basis of Greek sources)*, ZW 17, 2012, p. 19–38; M. Kokoszko, Z. Rzeźnicka, K. Jagusiak, *Health and culinary art in Antiquity and early Byzantium in the light of De re coquinaria*, SCer 2, 2012, p. 145–164; M. Kokoszko, K. Jagusiak, Z. Rzeźnicka, *Ryż jako pokarm i medykament w antycznej i bizantyńskiej literaturze medycznej (Rice as a foodstuff and medication in ancient and Byzantine medical literature)*, PNH 12.1, 2013, p. 5–38; M. Kokoszko, K. Jagusiak, Z. Rzeźnicka, *Kilka słów o zupie zwanej ptisáne (πιτσάνη) (A few words about a soup known called ptisáne (πιτσάνη))*, ZW 18, 2013, p. 282–292; M. Kokoszko, K. Jagusiak, Z. Rzeźnicka, *Rice as a foodstuff in ancient and Byzantine materia medica*, SCer 3, 2013, p. 47–68; M. Kokoszko, K. Jagusiak, Z. Rzeźnicka, *Oats in ancient and Byzantine 'Materia Medica' (5th century BC – 11th century AD (A commentary on the popularity of oats as a foodstuff))*, Pbg 37.4, 2013, p. 21–42 ff.

² A few examples should suffice – M. Kokoszko, *Ryby i ich znaczenie w życiu codziennym ludzi późnego antyku i wczesnego Bizancjum (III–VII w.) (Fish and their significance in the daily life of people in late Antiquity and early Byzantine times (IIIrd–VIIth century))*, Łódź 2005, passim; M. Kokoszko, *Medycyna bizantyńska na temat aiora (αἰώρα), czyli kilka słów o jednej z procedur terapeutycznych zastosowanych w kuracji cesarza Aleksego I Komnena (na podstawie pism medycznych Galena, Orybazjusza, Aecjusza z Amidy i Pawła z Eginy) (Byzantine medicine on the topic of aiora (αἰώρα), or a few words on one of the therapeutic procedures used to treat the Emperor Alexios I Komnenos (on the basis of the medical writings of Galen, Oribasius, Aetius of Amida and Paul of Aegina))*, [in:] *Cesarstwo bizantyńskie. Dzieje, religia, kultura. Studia ofiarowane Profesorowi Waldemarowi Ceranowi przez uczniów na 70-lecie Jego urodzin (The Byzantine Empire. History, religions, culture. Studies offered to Professor Waldemar Ceran by students on his 70th birthday)*, eds. P. Krupczyński, M. J. Leszka, Łask–Łódź 2006, p. 87–111; M. Kokoszko, *Sosy w kuchni greckiej. Garum (γάρος) i pochodne (Sauces in Greek cuisine. Garum (γάρος) and derivatives)*, VP 26, 2006, p. 289–298; M. Kokoszko, *Some technical terms from Greek cuisine in classical and Byzantine literature*, E 95, 2008, p. 269–283; M. Kokoszko, *Fish as a food source in Greek dietetics. An overview of late antique and early Byzantine doctrines*, [in:] *Fishes – culture – environment through archeichthyology, ethnography and history. The 15th meeting of the ICAZ fish remains working group (FRWG). September 3–9, 2009 in Poznań and Toruń, Poland*, eds. D. Makowiecki, S. Hamilton-Dyer, I. Riddler, N. Trzaska-

In order to achieve the set objective, we researched selected Greek sources from the second to the seventh century, or to put it more precisely – from the moment of elaboration of the canons of dietetic knowledge by Galen until the time of composition of a medical encyclopaedia by Paul of Aegina and the creation of the anonymous treatise entitled *De cibis*.

Within this timeframe a number of other works there were authored which, following the assumptions of the Hippocratic school, contain a cohesive discourse devoted to the role of food in maintaining and restoring human health, thus allowing us to trace the development of diets during the period in question. What is more, all of these works jointly constitute a representative sample of the output of Greek dietetics and pharmacology, which in our opinion makes it possible to achieve fairly definite results – at least as far as medicinal diets are concerned. What is more, individual authors in their descriptions of therapeutic procedures usually recommended the application of foodstuffs, occasionally making comments regarding the used gastronomic techniques and enriching the narrative with suggestions addressed to consumers; thus, these data allow us to draw a broad outline of general nutritional trends during the researched period. In addition, medical treatises constitute a comprehensive source material for determining dietetic and culinary terminology, and therefore also for précising the meanings of notions and terms used both in medicine, and the art of preparing foods.

- Nartowski, M. Makohonienko, Poznań 2009, s. 122–125; M. Kokoszko, *What was administered to Christ on the cross. A few words on the alimentary and therapeutic role of vinegar*, [in:] *Biblia Slavorum Apocryphorum. II. Novum Testamentum*, eds. G. Minczew, M. Skowronek, I. Petrov, Łódź 2009, p. 42–54; M. Kokoszko, *Smaki Konstantynopola (The tastes of Constantinople)*, [in:] *Konstantynopol – Nowy Rzym. Miasto i ludzie w okresie wczesnobizantyńskim (Constantinople, the New Rome. The city and people in the early Byzantine period)*, eds. M.J. Leszka, T. Wolńska, Warszawa 2011, p. 471–575; M. Kokoszko, K. Gibel-Buszevska, *The term kandaulos/kandylos in the Lexicon of Photius and the Commentarii ad Homeri Iliadem of Eustathius of Thessalonica*, BZ 104, 2011, p. 125–146; M. Kokoszko, K. Gibel-Buszevska, *Photius and Eustathius of Thessalonica on Greek cuisine intricacies, or a few words on abyrtake (ἀβυρτάκη)*, Bsl 69, 2011, p. 114–123 ff.

The fundamental part of our research was based first and foremost on the exceptionally abundant output of Galen, and also on the – equally well preserved – works of Oribasius, the medical encyclopaedia of Aetius of Amida, the brief yet concise treatise of Anthimus, the output of Alexander of Tralles and Paul of Aegina, and – finally – on the anonymous work entitled *De cibis*. As supplementary material, we utilised selected treatises from the *Corpus Hippocraticum*, the works of Dioscorides and Athenaeus of Naucratis and, when investigating more specific issues, also other culinary, medical and lexicographic sources³.



³ Regarding the chronology of the abovementioned authors, cf. the Introduction and Prosopographic glossary.

MACIEJ KOKOSZKO, KRZYSZTOF JAGUSIAK
ZOFIA RZEŹNICKA

Introduction

Knowledge of foods in medical sources. Dietetics, pharmacology and culinary art



The Greek word *diāta*, the English equivalent of which is the word ‘diet’, is translated as a mode or – better yet – way of life¹. Thus, ancient Greeks gave it a considerably broader meaning than we do today, without limiting its semantic scope solely to the method of nutrition typical of a given person. This follows from the fact that for the ancients it meant not only the appropriate quality and quantity of consumed foods, but also the fasts, vomiting and bowel movement, and further – referred to the various types of activities preferred by a person (thus including

¹ *A Greek-English lexicon*, eds. H.G. Liddell, R. Scott, Oxford 1996, p. 356. Cf. E. Craik, *Hippocratic diāta*, [in:] *Food in antiquity*, eds. J. Wilkins, D. Harvey, M. Dobson, Exeter 1999, p. 343–350; J. Juanna, *Greek medicine from Hippocrates to Galen*, Leiden–Boston 2012, p. 137–141.

physical exercises²), massages, walks, compresses and so on³, in other words encompassing man's entire mode of life, both in health and in sickness. It should, however, be noted that the role of food in this concept was sufficiently prominent to, as it were, justify the simplification that constitutes the basis of the present-day meaning of the noun 'diet'.

According to tradition, the foundations of medical knowledge concerning the impact of food on man, which subsequently formed the basis of the therapeutic practice commonly used in antiquity and Byzantine times, were laid down by the Greek physician Hippocrates of Cos (ca. 460 – ca. 370 BC). As was explained by the author of one of the treatises comprising the so-called *Corpus Hippocraticum*, namely of the work entitled *De alimento*, Hippocrates' school promoted premise that each type of food simultaneously serves a nutritional (*trophé*) and medicinal (*pharmakeía/phármakon*) role⁴. This approach resulted in

² In this way physical activity itself became a therapeutic means. An example of such a concept are the deliberations of dietetics concerning the role of *aíora*. Cf. M. K o k o s z k o, *Medycyna bizantyńska na temat aiora (αἰώρα), czyli kilka słów o jednej z procedur terapeutycznych zastosowanych w kuracji cesarza Aleksego I Komnena (na podstawie pism medycznych Galena, Orybazjusza, Aecjusza z Amidy i Pawła z Eginny (Byzantine medicine on the topic of aiora (αἰώρα), or a few words on one of the therapeutic procedures used to treat the Emperor Alexios I Komnenos (on the basis of the medical writings of Galen, Oribasius, Aetius of Amida and Paul of Aegina)), [in:] Cesarstwo bizantyńskie. Dzieje, religia, kultura. Studia ofiarowane Profesorowi Waldemarowi Ceranowi przez uczniów na 70-lecie Jego urodzin (The Byzantine Empire. History, religions, culture. Studies offered to Professor Waldemar Ceran by his students on his 70th birthday)*, eds. P. K r u p c z y ń s k i, M. J. L e s z k a, Łask–Łódź 2006, p. 87–111.

³ M. W e s o ł y, *Po co nam dziś Hippokrates? (What need do we have of Hippocrates today?)*, [in:] H i p p o c r a t e s, *Wybór pism (Selected writings)*, vol. I, translated by M. W e s o ł y, Warszawa 2008, p. 30.

⁴ *De alimento*, 19, 1–2. The system of doctrines that may be called 'Hippocratic dietetics' can be reconstructed on the basis of numerous treatises comprising the *Corpus Hippocraticum*. However, the most important from this group are *De natura hominis* and *De diaeta*. Concerning the most important concepts of the Hippocratic school, cf. V. N u t t o n, *Galen and the traveller's fare*, [in:] *Food in antiquity...*, p. 359–370; i d e m, *Ancient medicine*, London–New York 2007, p. 72–86, especially 77–85. Concerning the general role of food in *Corpus Hippocraticum* – S. B y l, *L'alimentation dans le Corpus Hippocratique*, [in:] *Voeding en geneeskunde/Alimentation et mé-*

treating the science of food and the science of drugs as one⁵. Furthermore, it made food a constant object of professional digressions⁶, which over time resulted in attaining by food the position of a fundamental point of interest of Greek – and subsequently Roman – medicine⁷. Thus, Hippocrates brought the knowledge and practice of physicians more in line with the interests and activities of specialists of the culinary art⁸, making medicine a *sui generis* scientific foundation for the professional activity of the masters of the culinary arts⁹. Without delving at

decine. Acten van het colloquium/Actes du colloque Brussel–Bruxelles 12.10.1990, eds. R. Jansen-Sieben, F. Daelmans, Brussels 1993, p. 29–39. Regarding pharmacology in the Hippocratic school, cf. J. Scarborough, *Theoretical assumptions in Hippocratic pharmacology*, [in:] *Formes de pensée dans la collection hippocratique. Actes du IV^e Colloque International Hippocratique, Lausanne, September 1981*, eds. F. Lasserre, P. Mudry, Geneva 1983, p. 307–325.

⁵ There were also medicinal substances that did not nourish; these included mineral fossil substances. Galen wrote about them in *De simplicium medicamentorum temperamentis ac facultatibus* (208, 11–244, 16, vol. XII). He did so in accordance with earlier pharmacological tradition, and the actions of identical medications were analysed by his successors.

⁶ Thus, in *Corpus Hippocraticum* we find whole treatises devoted to food and a healthy life-style – C. García Gaul, *Dieta hipocrática y prescripciones alimentarias de los pitagóricas*, [in:] *Dieta Mediterránea, Comidas y hábitos alimenticios en las culturas Mediterráneas*, eds. A. Pérez Jiménez, G. Cruz Andreotti, Madrid 2000, p. 44–50; F. Pucci Donati, *Dieta, salute, calendari. Dal regime stagionale antico ai regimina mensium medievali: origine di un genere nella letteratura medica occidentale*, Spoleto 2007, p. 17–18; J. Joanna, *Le régime dans la médecine hippocratique: définition, grands problèmes, prolongements*, [in:] *Colloque. Pratiques et discours alimentaires en Méditerranée de l'antiquité à la renaissance. Actes*, eds. J. Leclant, A. Vauchez, M. Sartre, Paris 2008, p. 53–72.

⁷ Concerning the history of dietetics before Galen's time – K. Bergoldt, *Well-being. A cultural history of healthy living*, translated by J. Dewhurst, Cambridge–Malden, Mass. 2008, p. 30–37, 41–46, 62–72.

⁸ J. Joanna, *Greek medicine...*, p. 146–148 (a conclusion drawn by the author on the basis of fragments of *De prisca medicina*).

⁹ M. Walther-Ast, *Ärzte und Gastronomie*, CIBA 29, 1936, p. 978–984. It is sometimes noted that Greek medicine evolved from culinary practice – V. Nutt, *Ancient medicine...*, p. 96. The first person to turn his attention to the role of food and physical activity in maintaining good health was Herodicus of Selymbria, who was said to have been one of the mentors of Hippocrates himself – C. García Gaul,

this point into detailed issues, we should state that Hippocrates' doctrine was adapted relatively universally¹⁰, and later on played a key role in the development of medical theory.

A few centuries after Hippocrates, Galen (ca. 130 – ca. 210)¹¹, another eminent ancient physician, adopted the doctrines of his great, and already legendary, predecessor¹² and, following their application in medical practice, developed them into a new, even more cohesive and theoretically advanced system¹³. Amongst the numerous works concerning various types of foods, one authored by Galen, cited most frequently under its Latin title *De alimentorum facultatibus*, is of invaluable

Dieta hippocrática..., p. 43; V. N u t t o n, *Ancient medicine...*, p. 96–97. According to another tradition, the role of food in prophylaxis was first emphasised by Pythagoras – C. G a r c i a G a u l, *Dieta hippocrática...*, p. 43, 51–55 (dietetic prohibitions); L.M.V. T o t e l i n, *Hippocratic recipes. Oral and written transmission of pharmacological knowledge in fifth- and fourth-century Greece*, Leiden–Boston 2009, p. 82. James L o n g r i g g (*Greek medicine from the heroic to the Hellenistic age. A source book*, London 1998, p. 146–148) compiled a selection of texts supporting the first or the second option.

¹⁰ Concerning the history of Hippocrates' theories, cf. L. E d e l s t e i n, *The dietetics of antiquity*, [in:] *Ancient medicine. Selected papers of Ludwig Edelstein*, eds. O. T e m k i n, C.L. T e m k i n, translated by C.L. T e m k i n, Baltimore 1967, p. 303–316, especially 303. Cf. O. T e m k i n, *Geschichte des Hippokratismus in ausgehenden Alerium*, Leipzig 1932, *passim*; i d e m, *Hippocrates in a world of pagans, and Christians*, Baltimore 1991, p. 18–46.

¹¹ Numerous works concerning the life and activities of Galen have been written, cf. for example L. T h o r n d i k e, *Galen. The man and his times*, ScM 14.1, 1922, p. 83–93; G. S a r t o n, *Galen of Pergamon*, Lawrence, KS., 1954, *passim*; V. N u t t o n, *Ancient medicine...*, p. 222–235; R.J. H a n k i n s o n, *The man and his work*, [in:] *The Cambridge companion to Galen*, eds. R.J. H a n k i n s o n, Cambridge 2008, p. 1–33.

¹² Hippocrates' statement, quoted above, was also cited by Galen himself – *De alimentorum facultatibus* 467, 15–16, vol. VI. Concerning the main assumptions of Galenism – V. N u t t o n, *Ancient medicine...*, p. 230–247, especially 240–244.

¹³ Cf. A. B e d n a r c z y k, *Galen. Główne kategorie systemu filozoficzno-lekarskiego (Galen. The main categories of the philosophical-medical system)*, Warszawa 1995, *passim*, especially 49–113. Concerning Galen's dietetic regime – P. V o l p e C a c c i a t o r e, *El régimen según Galeno*, [in:] *Dieta Mediterránea...*, p. 91–101, especially 91–95.

importance for research into the cuisine and therapeutics¹⁴ of the period in question. It was written ca. 180¹⁵. Eminent authorities on the subject, Vivian Nutton¹⁶ and Mark Grant¹⁷, are of the opinion that it was elaborated mainly on the basis of four sources. According to them, the Pergamonian physician gained his knowledge from the treatises included in the *Corpus Hippocraticum*, first and foremost from *De diaeta*, to which he frequently alluded in his output. He also made use of the findings of Diocles of Carystus, as well as of the output of Mnesitheus and Philotimus of Cos. We should add that he supplemented what he read in the works of his predecessors with his own personal observations, gained during extensive travels through the Mediterranean world¹⁸. The final result was a treatise in encyclopaedic form that described the types of foods and methods of their preparation that may be come across in regions located in the Mediterranean Basin¹⁹. In addition, apart from enumerating foods and their properties, Galen's reflections and thoughts were also aimed at making his readers aware of the sicknesses that may be treated by these foods²⁰, or of the ailments

¹⁴ Concerning the therapeutic principles supported by Galen, cf. P.J. van der Eijk, *Therapeutics*, [in:] *The Cambridge companion to Galen...*, p. 283–303, especially 297–300 (the role of the diet in prophylaxis and the treatment of ailments).

¹⁵ W.D. Smith, *The Hippocratic tradition*, Ithaca 1979, p. 116; M. Grant, *Introduction*, [in:] M. Grant, *Galen on food and diet*, London–New York 2000, p. 10.

¹⁶ V. Nutton, *Galen and the traveller's fare...*, p. 360–361.

¹⁷ M. Grant, *Introduction...*, p. 10.

¹⁸ An example of such an experience, which advanced him in his dietetic reflections, may be the description of boiled wheat, i.e. *pyroi hefthoi*, to which we frequently allude in our discussion. Cf. V. Nutton, *Galen and the traveller's fare...*, p. 362–367.

¹⁹ Concerning the geographical horizon, cf. V. Nutton, *Galen and the traveller's fare...*, p. 363; J. Wilkins, *Foreword*, [in:] Galen, *On the properties of food-stuffs* (*De alimentorum facultatibus*), translated by O. Powell, Cambridge 2003, p. XX–XXI.

²⁰ For example, if suitably prepared, lentils were said to help in ailments of the digestive tract and cases of dysentery – Galen, *De alimentorum facultatibus*, 525, 16–526, 1, vol. VI.

that could be caused by their consumption²¹. In this way, he connected his dietetic reflections with his knowledge of drugs – for in his medical theory and practice foods also functioned as *phármaka*²².

Due to the fundamental impact of the treatise *De alimentorum facultatibus* on the science of food, we will take a closer look at its contents; particularly because its scope covers the most important food groups of the times, and the arguments therein became canonical for subsequent dietetics experts. Regarding foods, in his work Galen first put forward general issues concerning the theory of the impact of food on the organism, and then proceeded present his reflections on food, starting with cereals, or – to put it more precisely – with wheat²³, thus prompting an assessment of its importance in the diet of his times. Next, having progressed through various products obtained from wheat (such as baked products and groats), he arrived at yet another of Demeter's gifts (as ancient Greeks sometimes called cereal crops), namely barley²⁴, and subsequently discussed the whole range of foods obtained therefrom. His analysis of the remaining types of cereal plants²⁵ was considerably less detailed, for in all probability in his times they were of secondary importance for the nutrition within the area constituting the subject of his writings. After cereals, Galen mentioned *óspria*²⁶, which term is

²¹ For example, he stated that the consumption of lentils may impair one's eyesight – Galen, *De alimentorum facultatibus*, 526, 11–12, vol. VI.

²² A short definition of the term 'food', *trophé*, according to Galen – *De simplicium medicamentorum temperamentis ac facultatibus*, 380, 4–5, vol. XI–XII. A short definition of the term *fármakon* may be found in the same work (380, 3–4, vol. XI–XII). Generally speaking, *fármaka* are able to modify the state of the organism (in part or in whole). Galen's views concerning the nature of *fármaka*, cf. S. Voigt, *Drugs and pharmacology*, [in:] *The Cambridge companion to Galen...*, p. 306–310. The connection between dietetics and pharmacology – L.M.V. Toelín, *op. cit.*, p. 259–268. Cf. also Celsus' approach to food as a medicine – E. LeV. Crum, *Diet in ancient medical practice as shown by Celsus in his 'De medicina' (concluded)*, CWe 25, 1932, no. 22, p. 169–173.

²³ Galen, *De alimentorum facultatibus*, 480, 13–490, 8, vol. VI.

²⁴ Galen, *De alimentorum facultatibus*, 501, 1–504, 4, vol. VI.

²⁵ Galen, *De alimentorum facultatibus*, 510, 15–524, 10, vol. VI.

²⁶ Galen, *De alimentorum facultatibus*, 524, 11–553, 17, vol. VI.

today usually considered to be a noun describing leguminous plants, and which Galen – somewhat idiosyncratically (but in accordance with culinary practice) – defined as a category grouping plants the seeds of which were not used to make bread²⁷. Essentially, the first part of Galen's reflections covers foodstuffs that were of greatest importance to his readers, and indeed decisive for the good health and strength of contemporary consumers. From cereals the author proceeded to fruits, starting, as always, with general reflections²⁸, and then presenting an enumeration of particular species. The first of the foods mentioned in this category was the colocynth²⁹; this part of *De alimentorum facultatibus* closed with wild-growing fruits³⁰. Having completed this part, he turned his interest to foods obtained from vegetables, commencing his deliberations by referring to the value of wild edible plants³¹ and closing this part of the text with a chapter devoted to the trio of onions, garlic and leeks³². Only then did Galen proceed to analyse foods obtained from animals. Also on this occasion he started with a broad overview, mentioning the animals the meat of which has superior dietetic properties, i.e. pigs, and subsequently discussing changes in the properties of this food depending on the season, the environment inhabited by animals, and also on the ingredients added during cooking³³. For us, the selection of topics in this fragment may be somewhat surprising: the Pergamonian physician started with a presenting snails³⁴, and immediately proceeded to the so-called *akrokólia*³⁵. What may be unexpected and atypical from the perspective of Polish culinary art of the twenty first century is, among others, the discussion concerning the dietetic value

²⁷ At this point we should add that a number of them could have been used as additives to bread, a fact emphasised by Galen.

²⁸ Galen, *De alimentorum facultatibus*, 554, 1 – 560, 15, vol. VI.

²⁹ Galen, *De alimentorum facultatibus*, 561, 1 – 564, 4, vol. VI.

³⁰ Galen, *De alimentorum facultatibus*, 619, 6 – 622, 4, vol. VI.

³¹ Galen, *De alimentorum facultatibus*, 622, 5 – 624, 11, vol. VI.

³² Galen, *De alimentorum facultatibus*, 658, 9 – 659, 13, vol. VI.

³³ Galen, *De alimentorum facultatibus*, 660, 1 – 668, 10, vol. VI.

³⁴ Galen, *De alimentorum facultatibus*, 668, 11 – 669, 13, vol. VI.

³⁵ Galen, *De alimentorum facultatibus*, 668, 11 – 669, 13, vol. VI.

of testicles³⁶. In the context of four-legged animals, he promptly discussed the effect of milk³⁷ and cheese³⁸ on the human organism, ending this part of the text with a few brief reflections on the value of blood obtained from the aforementioned creatures³⁹. From this moment on, he engaged in a general discussion concerning fowl⁴⁰, and – having occupied himself with details concerning the values of primary fowl species and characterisation of eggs⁴¹ – he closed this fragment of his work with reflections on the properties of bird blood⁴². An enumeration of food obtained from water-living creatures followed⁴³, which fragment – apart from fish – also covers molluscs, crustaceans and cephalopods. Galen's discussion of the basic groups of foodstuffs comes to a close with chapters devoted to honey⁴⁴, wine⁴⁵ and meat preserves⁴⁶, while the treatise as a whole ends with a reflection on the general principles of selecting the optimal food⁴⁷.

The treatise *De alimentorum facultatibus* was of considerable significance for the development of medical thought. Not only did it gather the output of bygone generations into a logical whole, thus constituting a summary of dietetic thought from the times of *De diaeta* up to the second century AD, but also, thanks to Galen's great authority, figured as a model for successive generations, which fact is easily attested to by both the structure of lectures written by later medical authors, and the system of theories adopted thereby. An excellent example of such patterning one's work after Galen's is the output of Oribasius, who

³⁶ Galen, *De alimentorum facultatibus*, 675, 17 – 676, 11, vol. VI.

³⁷ Galen, *De alimentorum facultatibus*, 681, 11 – 696, 6, vol. VI.

³⁸ Galen, *De alimentorum facultatibus*, 696, 7 – 699, 9, vol. VI.

³⁹ Galen, *De alimentorum facultatibus*, 699, 10 – 700, 3, vol. VI.

⁴⁰ Galen, *De alimentorum facultatibus*, 700, 4 – 702, 9, vol. VI.

⁴¹ Galen, *De alimentorum facultatibus*, 705, 15 – 707, 16, vol. VI.

⁴² Galen, *De alimentorum facultatibus*, 708, 1 – 708, 6, vol. VI.

⁴³ Galen, *De alimentorum facultatibus*, 708, 7 – 738, 14, vol. VI.

⁴⁴ Galen, *De alimentorum facultatibus*, 738, 15 – 742, 17, vol. VI.

⁴⁵ Galen, *De alimentorum facultatibus*, 743, 1 – 745, 3, vol. VI.

⁴⁶ Galen, *De alimentorum facultatibus*, 745, 4 – 747, 11, vol. VI.

⁴⁷ Galen, *De alimentorum facultatibus*, 747, 12 – 748, 11, vol. VI.

wrote considerable parts of books one and two of his *Collectiones medicae* as an excerpt from *De alimentorum facultatibus*. We should add that numerous borrowings from the output of Galen are visible not only in the works of Oribasius, but also in those of other writers, notably Aetius of Amida and Paul of Aegina.

Returning, however, to the issue of the role of food products in Galen's medical doctrines, we must state that lists thereof – analogous to those present in *De alimentorum facultatibus* – may also be found in other works authored by this physician, such as – for example – *De rebus boni malique suci* or *De victu attenuante*. It should be remembered that Galen also wrote a monographic treatise devoted to *ptisáne*⁴⁸ a dish known in culinary and medical practice for at least several hundreds of years. All of these works are characterised, among others, by the fact that they contain culinary information and enumerate the values of foods in order to give – more or less precise – hints as to the ailments which they should be used to treat.

However, for those researching the history of food, not only those of Galen's works that focus on the values of foods are of importance. We should understand that a considerable number of products that we call foods were also listed as substances considered by contemporary medicine as pharmacologically active, or were present as basic (or auxiliary)

⁴⁸ The topic of the role of *ptisáne* – frequently mentioned in the present work – as a basic food and at the same time medication used in ancient and Byzantine medicine, is worthy of a monograph. To date, it has been the subject of but a few, and brief, articles, cf. E. D a r m s t a e d t e r, *Ptisana: ein Beitrag zur Kenntnis der antiken Diätetik*, *Ar. ASS* 15, 1933, p. 181–201; M. K o k o s z k o, K. J a g u s i a k, Z. R z e ź n i c k a, *Kilka słów o zupie zwanej ptisane (πιτσάνη) (A few words about a soup called ptisáne (πιτσάνη))*, *ZW* 18, 2013, p. 282–292. Usually, it remains peripheral to the interests of experts (M. G r a n t, *Roman cookery. Ancient recipes for modern kitchens*, London 2002, p. 70), or functions as a small encyclopaedic entry (cf. A. D a l b y, *Food in the ancient world from A to Z*, London–New York 2003, p. 46). Cf. also the reference by M. K o k o s z k o, *Smaki Konstantynopola (The tastes of Constantinople)*, [in:] *Konstantynopol – Nowy Rzym. Miasto i ludzie w okresie wczesnobizantyńskim (Constantinople, the New Rome. The city and people in the early Byzantine period)*, eds. M. J. L e s z k a, T. W o l i ń s k a, Warszawa 2011, p. 480.

components in recipes of composite drugs. This truth leads us to yet another conclusion – namely, that we cannot construct a comprehensive image of the role of food substances in Galen's deliberations without an analysis of his works devoted to *phármaka*, and thus without studying *De simplicium medicamentorum temperamentis ac facultatibus*, *De compositione medicamentorum secundum locos*, or *De compositione medicamentorum per genera*.

In order to demonstrate the truth of this statement we will provide but a few examples, further limited to only one of the food groups referred to in *De alimentorum facultatibus*, namely to cereals and the products obtained therefrom. In addition, we shall narrow down our search for evidence only to the first of the abovementioned fragments of Galen's output in the field of pharmacology, that is, to the work *De simplicium medicamentorum temperamentis ac facultatibus*. Wheat, *pyrós*, as we have already indicated, was discussed in detail by the physician in *De alimentorum facultatibus*. The same cereal crop has also been discussed in *De simplicium medicamentorum temperamentis ac facultatibus*⁴⁹. Incidentally, it was not only common wheat that was described in these two treatises. The second work also lists pharmacological characteristics of barley⁵⁰, spelt⁵¹, and even rice⁵². We also find therein products obtained from cereal crops that were most common in diets, such as – for example – *chóndros*⁵³ and *krímnnon*⁵⁴ groats. In order not to protract the discussion, we shall just add that the two remaining works concerning

⁴⁹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 111, 1–11, vol. XII.

⁵⁰ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 44, 10–45, 4, vol. XII.

⁵¹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 88, 16–18, vol. XII.

⁵² Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 92, 5–6, vol. XII.

⁵³ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 157, 1–15, vol. XII.

⁵⁴ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 45, 5–9, vol. XII.

the preparation of medications also cite the abovementioned cereal crops and products, and refer the reader to numerous recipes for pharmaceuticals that we discuss in the present deliberations. Obviously, the lists of foods that could be classified as *phármaka* do not include only Demeter's gifts. These also include vegetables, herbs, fruits, animal products and so forth. All of them – in addition to their nutritive capacity – had properties that were understood to be potentially therapeutic.

It is also worth reiterating that this approach to food products was common in medicine of the second century, having been established over many centuries. Thus it was not Galen who revolutionised this field of knowledge in terms of the said aspect, but rather that traditional ancient medicine from the times of Hippocrates⁵⁵ influenced the thinking of the Pergamonian physician about the relations between food and medications⁵⁶. It was concordant with the doctrines that he considered correct and internalised⁵⁷. This common acceptance of the nutritional and pharmacological function of food substances is excellently proven by, for example, the contents of works authored by his predecessor, namely Dioscurides, which we systematically quote in the present study, and in particular the analyses of individual foods in his treatise *De materia medica*. This truth is also confirmed by Galen's own numerous references⁵⁸, as well as those of his successors, to a whole range of recipes

⁵⁵ J. Stannard, *Hippocratic pharmacology*, [in:] J. Stannard, *Pristina medicamenta. Ancient and medieval medical botany*, eds. K.E. Stannard, R. Kay, Aldershot–Brookfield–Singapore–Sydney 1999, p. 497–518. Cf. L.M.V. Totelin, *op. cit.*, *passim*, especially 259–268.

⁵⁶ Let us add that as a practitioner – and not only a theoretician – of medicine he was familiar with this interconnection from his own experience – P.J. van der Eijk, *Galen's use of concept of 'qualified experience' in his dietetic and pharmacological works*, [in:] *Galen on pharmacology...*, p. 35–57, especially 39–48. Obviously, it sometimes turned out that certain medications were less effective than Galen expected, or were altogether ineffective – H. von Staden, *Inefficacy, error and failure: Galen on δόκιμα φάρμακα ἀπρακτα*, [in:] *Galen on pharmacology...*, p. 59–83, especially 61–71.

⁵⁷ P.T. Keyser, *Science and magic in Galen's recipes (sympathy and efficacy)*, [in:] *Galen on pharmacology...*, p. 175–198, especially p. 181–192.

⁵⁸ Cf. J. Jouanna, V. Boudon, *Remarques sur la place d'Hippocrate dans la pharmacologie de Galien*, [in:] *Galen on pharmacology...*, p. 213–234.

for medications making use of food substances; these recipes were borrowed by physicians from predecessors other than Dioscurides⁵⁹.

Galen's theory, consolidated in his writings, exerted an overwhelming influence both on his contemporaries and followers. It was accepted in medicine, while Galen himself (through his output) became the educator of successive generations of physicians. They did not alter his doctrines, but rather repeated Galen's findings, applying them in therapeutic practice and summarising their master's output in their own writings⁶⁰. One of these 'students' was Oribasius (ca. 325 – ca. 400)⁶¹. Although he was not an independent researcher engaged in the discovery of the mechanisms governing health and sickness, but rather a meticulous compiler, who thanks to his careful selection of sources created works that give an insight into the dietetic and pharmacological theory considered predominant in the fourth and at the beginning of the fifth centuries. This was possible thanks to his ability to conduct a thorough analysis of earlier sources; when the need arose, he proved skilful at simplifying content

⁵⁹ We should add at this point that this fact has found reflection in our deliberations, and we have quoted specific pharmacological formulae and names in those parts of our analysis that concern the medical applications of food products.

⁶⁰ V. Nutton, *Ancient medicine*, p. 292–309, especially 309.

⁶¹ Concerning the life and activities of Oribasius, cf. B. Baldwin, *The career of Oribasius*, *AClas* 18, 1975, p. 85–97; M. Grant, *Oribasios and medical dietetics or the three ps*, [in:] *Food in antiquity...*, p. 368–379; K. Geōrgakopoulos, *Archaioi hellenes iatroi*, Athenai 1998, p. 62–63; R. de Lucia, *Oreibasios v. Pergamon*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 660–661; M. Kokoszko, *Ryby i ich znaczenie w życiu codziennym ludzi późnego antyku i Bizancjum (IV–VII w.) (Fish and their significance in the daily life of people in late antiquity and early Byzantine period (4th–7th century))*, Łódź 2005, p. 14–15; R. de Lucia, *Oribasios di Pergamo*, [in:] A. Garzya, R. de Lucia, A. Guardasole, A.M. Ieraci Bio, M. Lamagna, R. Romano, *Medici byzantini. Oribasios di Pergamon. Aezio d'Amida. Alessandro di Tralle. Paolo d'Egina. Leone medico*, Torino 2006, p. 21–29; V. Nutton, *Ancient medicine...*, p. 295–296; K. Jagusiak, M. Kokoszko, *Życie i kariera Orybazjusza w świetle relacji źródłowych (The life and career of Oribasios in the light of source accounts)*, *PNH* 10.1, 2011, p. 5–21; K. Jagusiak, M. Kokoszko, *Pisma Orybazjusza jako źródło informacji o pożywieniu ludzi w późnym Cesarstwie Rzymskim (The writings of Oribasios as a source of information on the foods consumed by people in the late Roman Empire)*, *VP* 33, 2013, p. 339–357.

through elegant recapitulations. This proved important, for irrespective of how significant Galen's works were for systematising ancient knowledge concerning food and its role in maintaining health, their extensiveness (with often very poor legibility of the narrative⁶²), the scattering of dietetic and pharmacological reflections between numerous treatises, and – finally – the lack in Galen's output of a single, precise enumeration of categories according to which the values of foods should be assessed, rendered a clear presentation of knowledge on the topic of food difficult until the appearance of Oribasius.

This author, acting upon the instructions of Emperor Julian (361–363), for whom he was a physician and collaborator, created a monumental work comprising probably some 70 books⁶³: the *Collectiones medicae*. The fragments of the said *opus magnum* that survived to our times number only 25 volumes. Oribasius' deliberations begin with fragments devoted to food products, a sign of the great importance of food in his medical reflections. The structure of the lecture in the first two books is, in general, borrowed from Galen, or – to put it more precisely – Oribasius used the structure known from the treatise *De alimentorum facultatibus*⁶⁴. The third part of the aforementioned work differs,

⁶² This assessment is connected with our personal experiences of translating the text from the original. Ben Morison, however, has pointed out Galen's high awareness in this regard, and his overall correctness – B. M o r i s o n, *Language*, [in:] *The Cambridge companion to Galen...*, p. 116–156. He also gave high praise to Galen's logic – B. M o r i s o n, *Logic*, [in:] *The Cambridge companion to Galen...*, p. 66–115.

⁶³ Not all have survived to our times, and thus when determining their number we must rely on information given elsewhere by Oribasius himself (O r i b a s i u s, *Foreword*, 1, 1–3, [in:] *Oribasii synopsis ad Eustathium filium et libri ad Eunapium*, eds. I. Raeder, Leipzig 1964), the writings of Paul of Aegina (P a u l o f A e g i n a, *Foreword*, p. 4, [in:] *Paulus Aegineta*, eds. I.L. Heiberg, Leipzig–Berlin 1921) and Photius (*Bibliotheca*, cod. 217, p. 180). All of them mention 70 books, whereas the *Liber Suda* refers to 72 books of the *Collectiones medicae*, cf. *Suda*, 'Οριβασίος, ο, 543, 3–4.

⁶⁴ Regarding the content, cf. K. J a g u s i a k, M. K o k o s z k o, *Pisma Orybazjusza...*, p. 342–349. Oribasius started off with cereal crops, next touched upon the other gifts of Demeter, and then – in accordance with the order introduced by Galen – proceeded to fruits, vegetables and foods obtained from animals. Galen's lecture

however, from the two preceding sections in terms of the method of presenting information, and for this reason should be seen as an important stage in the development of research into food during the period between the second and seventh centuries. Appreciating the significance of Galen's works regarding his research into the role of food, Oribasius based himself solely on the former's reflections, gathering his deliberations, hitherto scattered throughout Galen's output in – among others – *De alimentorum facultatibus*, *De rebus boni malique senci*, and *De victu attenuante*. In the thirty four paragraphs of this part of *Collectiones medicae*, Julian's physician and collaborator departed from the description of properties of individual foodstuffs arranged one after the other (hitherto typical of medical literature) in favour of an analysis, in successive parts, of foods grouped according to their dominant characteristic. According to our knowledge, until the time of writing of book three of the *Collectiones medicae* by Oribasius they had never been all collected into a single work as a cohesive entity, in line with the principles of dietic logic⁶⁵.

was supplemented with excerpts from the output of Athenaeus of Attaleia, Rufus of Ephesus, Xenocrates, Mnesitheus and Philotimus.

⁶⁵ This was due to the fact that they took into consideration the assumptions of humoral theory and the physiology of digestion and nutrition. Concerning the various aspects of humoral theory, cf. T. Brzezinski, *Wiedza o budowie i czynnościach organizmu ludzkiego (Knowledge of the structure and functions of the human organism)*, [in:] *Historia medycyny (The history of medicine)*, eds. T. Brzezinski, Warszawa 1988, p. 100; A. Bednarczyk, *Medycyna i filozofia w starożytności (Medicine and philosophy in Antiquity)*, Warszawa 1999, p. 102–128; O. Powell, *Introduction*, [in:] Galen, *On the properties of foodstuffs (De alimentorum facultatibus)*, translated by O. Powell, foreword J. Wilkins, Cambridge 2003, p. 10–13; M. Kokoszko, *Medycyna bizantyńska o antidotum z trzech rodzajów pieprzu... (Byzantine medicine on an antidotum from three types of pepper...)*, p. 261; R.J. Hankinson, *Philosophy of nature*, [in:] *The Cambridge companion to Galen...*, p. 217–223; M. Kokoszko, *Aromaty kuchni antyku i Bizancjum w teorii medycznej i praktyce kulinarnej (The aromas of ancient cuisine and early Byzantium in the medical theory and culinary practice)*, PH 102, 2011, p. 539–544. Regarding various additional consequences of the theory of the four humours, cf. M. Kokoszko, *Descriptions of personal appearance in John Malalas' Chronicle*, Łódź 1998, p. 22; idem, *Nauka antyczna a opisy portretowe w dziełach Prokopiusza z Cezarei (Ancient science and portrait descriptions in the works*

The ordering of different categories of foods described by Galen turned out to be very helpful in the practical teaching of dietetic principles, as is attested to by the fact that Oribasius repeated this system in all of his subsequent works, namely in the instructions for his son, known as *Synopsis ad Eustathium filium*⁶⁶, and in books dedicated to his friend, Eunapius (commonly known as *Libri ad Eunapium*⁶⁷), and also by the fact that the deliberations of this author became a model that was copied by other physicians during the period in question, while the entire pattern (or elements thereof) elaborated in book three of the *Collectiones medicae* can be subsequently found in the treatises of Aetius of Amida⁶⁸ and *De cibis*⁶⁹. As it turned out, this method of presenting dietetic content became useful for us as well, and we refer to it repeatedly in the present deliberations. Essentially, it helps in ordering the thoughts and reflections of Galen and the earlier luminaries, previously scattered, into a cohesive theory distinguishing the basic constitutive qualities that should be taken into consideration when assessing foods.

The said categories of food, enumerated in book three of the *Collectiones medicae*, do not constitute an exhaustive list of groups into which food products were arranged; the same applies to the criteria taken into consideration when dividing food substances in medicine between the second and seventh centuries. Indeed, other books of this work

of Procopius of Caesarea), E 87, 2000, p. 255–277, especially 261–266, idem, *Skąd brać rekruta do armii i dlaczego? Antyczna nauka wyjaśniająca sugestie Wegecjusza zamieszczone w dziele ‘Epitoma rei militaris’ (Wherefrom to get recruits for the army and why? Ancient science explaining Vegetius’ suggestions put forward in the work ‘Epitoma rei militaris’)*, PZH 3, 2001, p. 11–29, especially 21–24. Regarding the physiology of digestive and assimilative processes in Galen’s concept, cf. M. Grant, *Oribasios and medical dietetics...*, p. 371–379, especially 376–378; O. Powell, *op. cit.*, p. 13–18; O.A. Debru, *Physiology*, [in:] *The Cambridge companion to Galen*, p. 263–282, especially 273–275.

⁶⁶ Oribasius, *Synopsis ad Eustathium filium*, IV, 1, 1, 1–34, 8, 2.

⁶⁷ Oribasius, *Libri ad Eunapium*, I, 18, 1, 1–52, 1, 5.

⁶⁸ Aetius of Amida, II, 197, 1–271, 8. Incidentally, the author himself indicated the source – Aetius of Amida, II, 197, 1.

⁶⁹ *De cibis*, V, 1–26, 5. This treatise is in essence a presentation of the main categories applied by Oribasius, preceded by a brief general introduction.

contain additional groups and criteria. They can be found primarily in book fourteen of the *Collectiones medicae*, or to put it more precisely – amongst the excerpts from Galen’s treatise *De simplicium medicamentorum temperamentis ac facultatibus* and from the output of Zopyrus, Galen’s predecessor. When, however, we take a closer look at these excerpts, we may come to the conclusion that they contain enumerations of groups of food substances divided not on the basis of dietetic, but pharmacological properties⁷⁰.

The analysed treatises also indicate that both categories were subsequently mixed. The way in which this was achieved is superbly exemplified by book two of the *Iatricorum libri* of Aetius of Amida, wherein characteristics of foods are arranged side-by-side with an enumeration of the actions of *phármaka*. It is difficult for us to determine why the author of the *Iatricorum libri* used this approach. We may only speculate that it could have been due to compositional reasons, i.e. an attempt at grouping all lists of substances within a single book of his *opus magnum*. It should be added at this point that Galen and Oribasius maintained a clear division between the dietetic and pharmacological aspects of their deliberations. Consequently, Galen wrote about the characteristic of food primarily in *De alimentorum facultatibus*, while he considered this issue in terms of pharmacology in *De simplicium medicamentorum temperamentis ac facultatibus*. Oribasius, in turn, placed information concerning dietetics in books one to seven, and presented issues regarding *phármaka* in books eleven to fifteen.

Medical sources written after the fourth century did not introduce anything new to the theory and structure of the discourse concerning the knowledge of foods, their properties and pharmacological action, only repeating the content and approach of previous works. This is because works written up until the seventh century clearly draw from

⁷⁰ For example, chilling substances without an assessment of the intensity of their action (Oribasius, *Collectiones medicae*, XIV, 19, 1, 1–22), chilling in the first (Oribasius, *Collectiones medicae*, XIV, 20, 1, 1–3), second (Oribasius, *Collectiones medicae*, XIV, 21, 1, 1–6) and third (Oribasius, *Collectiones medicae*, XIV, 22, 1, 1–2, 1.) degrees.

Galen and Oribasius, without questioning their doctrines and only passing them on to the last detail⁷¹. Such is the case with the *Iatricorum libri* of Aetius of Amida, whose period of activity dates to the sixth century⁷². From our point of view, the first two books of his work are the most important. This is so because in the first he included a list of *haplá phármaka* elaborated on the basis of Galen's output, and thus coinciding with the writings of Oribasius. In book two of the *Iatricorum libri*, in turn, a description of mineral substances and selected foods is followed by an enumeration of dietetic categories elaborated by Oribasius, supplemented with groups of drugs subdivided according to the criterion of their action⁷³. Obviously, as regards the pharmacological usage of food substances, numerous examples of their application may be found

⁷¹ For the purposes of our narrative, this would necessitate a brief statement that no changes occurred in the output of Aetius of Amida, Alexander of Tralles, Anthimus and Paul of Aegina – or in the anonymous treatise entitled *De cibis* – in relation to the state of knowledge in the fourth century. Since, however, such an approach would deprive the reader of any personal insight into the state of affairs, i.e. of the ability to independently assess the scope of the analogy, we have decided to quote the fundamental content of the abovementioned works.

⁷² Concerning the life and activities of Aetius of Amida, cf. H. L e h m a n n, *Au Aëtius Amidéus*, „Sudhoffs Archiv für Geschichte der Medizin”, 23, 1930, p. 205–206; P. D i e p g e n, *Zur Frauenheilkunde im byzantinischen Kulturkreis des Mittelalters. Akademie der Wissenschaften und der Literatur. Abhandlungen der Geistes- und Sozialwissenschaften Klasse*, Wiesbaden 1950, p. 4–5; A. G u i l l o u, *La civilisation byzantine*, Paris 1974, p. 357; H. H u n g e r, *Die hochsprachliche profane Literatur der Byzantiner*, Bd. I, München 1978, p. 294–296; V. N u t t o n, *From Galen to Alexander. Aspects of medicine and medical practice in late Antiquity*, DOP 38, 1984, p. 1–14; J. S c a r b o r o u g h, *Early Byzantine pharmacology*, DOP 38, 1984, p. 224–226; p. 24–26; M. K o k o s z k o, *Ryby i ich znaczenie...*, p. 9–10; A. G a r z y a, *Aetios v. Amida*, [in:] *Antike Medizin...*, col. 19–20; V. N u t t o n, *Ancient medicine...*, p. 295; J. S c a r b o r o u g h, *Theodora, Aetius of Amida, and Procopius: some possible connections*, GRBS 53, 2013, p. 742–762.

⁷³ Although these data do not diverge from those presented previously, they are usually reduced to a minimum. This explains our comments made during the analysis of the *Iatricorum libri* regarding the decreased interest of Aetius of Amida in dietetic issues, accompanied however by the continuously broad presentation of the utilisation of foodstuffs in pharmacology.

– distributed more or less evenly – throughout all of the books of Aetius' medical encyclopaedia.

Similar qualities are typical of the next treatise, namely the work of Paul of Aegina, who was active, generally speaking, in the seventh century. His work, comprising seven books, is known as the *Epitome*. For the purposes of our research, the most significant are those fragments of the first book which contain a description of the most important food groups. Equally valuable are the data contained in book seven, which includes an alphabetically arranged list of *haplá phármaka*. We should admit, however, that the volume of dietetic data is considerably less than in the works of Paul's predecessors, and the descriptions of foods are often cursory. Nevertheless, this work still contains information that is valuable from the point of view of culinary art. For example, it has a very precise and legible recipe for *ptisáne*, a (beneficial for travellers) beverage prepared with the addition of *álphita*, as well as a description of *gýris* flour. As in the work of Aetius of Amida, we find herein a very broad selection of *phármaka* utilising foodstuffs.

The treatise *De cibis*, written in the seventh century⁷⁴, was devoted solely to dietetics. Correctly put, it is a list of dietetic categories, originally arranged by Oribasius, which excellently demonstrates the constancy of doctrines relating to food throughout the entire period in question. The initial parts of the work discuss the sense of taste as a tool for distinguishing the properties of foods, food obtained from seeds and fruits, types of water, and wine, while analogies to the doctrines cited therein may be found in the entire output from the analysed period. As a derivative work, it does not introduce any new information.

The remaining works that we have used in our research are a certain departure from the principle of analysing Greek medical sources concerning dietetics as practised between the second and seventh century. In

⁷⁴ The treatise is dedicated to Emperor Constantine IV Pogonatus, who ruled in the period 668–685. Cf. F.Z. Emerins, *L.S (Introductio)*, [in:] *Anecdota medica Graeca*, Leiden 1963, p. XI–XII; A. Dalby, *Flavours of Byzantium*, Blackawton, Totnes, Devon 2003, p. 18; A. Dalby, *Tastes of Byzantium. The cuisine of a legendary empire*, London–New York 2010, p. 18.

our opinion, quoting the *Corpus Hippocraticum*, and in particular the *De diaeta*, constitutes a reference to the beginnings of dietetic doctrines, which were subsequently included in Galen's body of science⁷⁵. Due to the latter fact, they do not have a significant impact on our narrative.

Dioscurides, who was active in the first century, precedes the researched period⁷⁶. His output is, however, regularly analysed in our book, since his works excellently show how foods with a pharmacological action were described once dietetic knowledge had gained maturity, but not yet attained the peak that was to come following the activity of Galen. Dioscurides' descriptions of foods are in fact the same that were quoted by dieticians from the researched period; in some instances, they were taken from their predecessor verbatim. We have pointed out this fact a number of times in our research, and here we may illustrate this phenomenon – for example – on the basis of the description of *zeiá*. What is more, Dioscurides' output is extremely important for a better understanding of the application of food products in medical procedures, while the material is so abundant that in the present work we were only able to cite examples.

An ostensible departure from the assumptions of our research would also be our interest in *De observatione ciborum*, which was written in Latin. However, the author – Anthimus, active in the first half of the sixth century⁷⁷ – was a Greek who by a twist of fate had found himself in

⁷⁵ V. Nutton, *Ancient medicine...* p. 53–71, especially 60–62; A. Bednarczyk, *Medycyna i filozofia...*, p. 89–102.

⁷⁶ Cf. M. Wellmann, *Dioskurides (Dioscurides)*, [in:] *RE*, Bd. V, Stuttgart 1905, col. 1131–1142; J.M. Riddle, *Dioscurides on pharmacy and medicine*, Austin 1985, *passim*, especially p. 154–164; M. Kokożko, *Ryby i ich znaczenie...*, p. 12; M. Stamatou, *Dioskurides (Dioscorides)*, [in:] *Antike Medizin...*, col. 227–229; V. Nutton, *Ancient medicine...*, p. 174–177; R.A. Gabriel, *Man and wound in the ancient world. A history of military medicine from Sumer to the fall of Constantinople*, Washington, D.C. 2012, p. 174–175.

⁷⁷ G.M. Messing, *Remarks on Anthimus 'De observatione ciborum*, CP 37, 1942, p. 150–158, especially 151; A. Marsili, *Prefazione*, [in:] *Anthimi de observationem ciborum. Prefazione, testo latino, traduzione italiana e commento filologico* A. Marsili, Pisa 1959, p. 7–8; J. Koder, *Gemüse in Byzanz. Die Versorgung Kon-*

the West, where he wrote down comments more or less coincident with the discussions held by Greeks who wrote in their native tongue. The *opusculum* clearly shows how common Galen's version of dietetic doctrines had become both in the Latin-speaking and the Greek-speaking parts of the Mediterranean Basin. The work itself provides a lot of interesting supplementary information regarding the considerable similarities between diets and culinary methods (roasting barley for *álphita*, boiling *ptisáne*) throughout the entire period, and also contains a great deal of helpful data concerning the specificity of the West⁷⁸.

Alexander of Tralles, who was active in the second part of the sixth century, was not interested in dietetics at all⁷⁹. Therefore his output (the works *Therapeutica* and *De febribus*) was useful for us only regarding the issue of application of foodstuffs in pharmaceuticals. On the other hand, as we have demonstrated, in certain instances it is possible to draw some dietetic conclusions from his treatises (or rather to show that he was not unfamiliar with the conclusions of dieticians considering the properties of food substances), and also glean certain data of a gastronomic nature. Such is the case as regards *ptisáne* (which was characterised thereby in terms of its properties and, which is most interesting, presented as being overused by physicians in treatments) or *ámylon* from barley (which was not noted by any other of the authors analysed in the present work).

Yet another source of immeasurable value as regards the shaping of the dietetic doctrine and culinary details is the *Deipnosophistae*, written

stantinopels mit Frischgemüse im Lichte der Geoponika, Wien 1993, p. 35–37; E. K i s l i n g e r, *Anthimus*, [in:] *Antike Medizin...*, col. 56; M. G r a n t, *Introduction...*, p. 9–44, especially 12–21; C. D e r o u x, *Alimentation et médecine dans la diététique d'Anthime*, [in:] *Voeding en geneeskunde...*, p. 49–73.

⁷⁸ Particularly terminological (*póltos* is *polenta* or *fenea*, while *ptisana* is *tisane*).

⁷⁹ Regarding the life and activities of Alexander of Tralles, cf. J. S a n d s E l l i o t t, *Outlines of Greek and Roman medicine*, London 1914, p. 107–108; L. T h o r n d i k e, *Relation between Byzantine and western science and pseudo-science*, Jan 51, 1964, p. 1–47; J. D u f f y, *Byzantine medicine in the sixth and seventh centuries. Aspects of teaching and practice*, DOP 38, 1984, p. 21–27; A. G a r z y a, *Alexander v. Tralles*, [in:] *Antike Medizin...*, p. 27–28; V. N u t t o n, *Ancient medicine...*, p. 296.

in the second half of the second century by Athenaeus of Naucratis. Although elaborated by a person who was more of a librarian⁸⁰ and writer⁸¹ than a physician, and intended not only for those who were interested in living healthily, but first and foremost for readers demanding ‘intellectual nourishment’, it contains a great many references to the art of medicine⁸² and dietetic doctrines⁸³, while as regards information on the topic of nutrition⁸⁴, it is very detailed. No wonder, then, that Athenaeus of Naucratis and his work became a symbol of ancient culinary

⁸⁰ C. Jacob, *Athenaeus the librarian*, [in:] *Athenaeus and his world. Reading Greek culture in the Roman Empire*, eds. D. Braund, J. Wilkins, Exeter 2000, p. 85–110. Concerning his protector, cf. D. Braund, *Learning luxury and Empire: Athenaeus’ Roman patron*, [in:] *Athenaeus and his world...*, p. 3–22.

⁸¹ Suda, Ἀθήναιος, Ναυκρατίτης, α, 731, 1. Cf. B. Baldwin, *Athenaeus and his work*, AClas 19, 1972, p. 24.

⁸² Regarding the interest of Athenaeus of Naucratis for medicine, cf. J.-N. Corvisier, *Athenaeus, medicine and demography*, [in:] *Athenaeus and his world...*, p. 492–502; R. Flemming, *The physicians at the feast. The place of the medical knowledge at Athenaeus’ dinner table*, [in:] *Athenaeus and his world...*, p. 476–482. One of the figures appearing in the *Deipnosophistae* is Galen, cf. V. Nutton, *Galen and the traveller’s fare...*, p. 368–369.

⁸³ R. Stoneman, *You are what you eat: diet and philosophical diaita in Athenaeus’ Deipnosophistae*, [in:] *Athenaeus and his world...*, p. 413–422. Regarding the dissemination of dietetic doctrines outside medical sources, cf. M. Kokoszko, *Aromaty...*, p. 537–539; M. Kokoszko, Z. Rzeźniczka, K. Jagusiak, *Health and culinary art in Antiquity and early Byzantium in the light of De re coquinaria*, SCer 2, 2012, p. 145–164, especially 146–148; M. Kokoszko, Z. Rzeźniczka, *Dietetyka w De re coquinaria (Dietetics in De re coquinaria)*, PNH 10.2, 2011, p. 5–25.

⁸⁴ A few examples will suffice – K. Bartol, *Atenajosa z Naukratis księga win (The book of wines of Athenaeus of Naucratis) (‘Deipnosophistai’, 25f–40f)*, M 50, 1995, p. 215–226; M. Kokoszko, *Ryby i ich znaczenie...*, *passim*; R. Brick, *Athenaeus on Greek wine*, [in:] *Athenaeus and his world. Reading Greek culture in the Roman Empire*, p. 455–465; D. Gourevitch, *Hicesius’ fish and chips. A plea for an edition of the fragments and testimonies of the περὶ ὕλης*, [in:] *Athenaeus and his world...*, p. 483–491; M. Heath, *Do heroes eat fish? Athenaeus on the Homeric lifestyle*, [in:] *Athenaeus and his world...*, p. 342–352; J. Wilkins, *Visions de la comédie grecque sur l’alimentation des élites*, [in:] *Colloque. Pratiques et discours alimentaires...*, p. 157–170; M. Kokoszko, *Smaki Konstantynopola...*, p. 471–575.

art⁸⁵, although it remains quite often unnoticed that the book documents both the luxurious and the mundane aspects thereof. For us, too, this work turned out to be an invaluable source. It gives an insight into the doctrines of pre-Galenic dietetics and allows researchers to supplement the data that in strictly medical works are one-sidedly devoted to the curative function of food. A good example of this are the data provided by Trypho of Alexandria and preserved in the *Deipnosophistae*, concerning *máza*, which give us an idea of the recipe variants associated with this barley product⁸⁶. In addition, *Deipnosophistae* proves that the knowledge of food was being disseminated throughout society, or at least amongst the elites, who could afford to choose their foods⁸⁷.

And one final comment. The said sources provide a veritable wealth of material. We were therefore forced to perform a strict selection, concentrating solely on the most important issues. In the case of medical sources, their dietetic and culinary content turned out to be rather uniform. Although this led to a degree of monotony in our narrative, due to the repetition of threads, we decided to maintain the approach whereby the same doctrines were introduced in chronological order, so as to precisely display the scope of theories considered valid between the second and seventh centuries.



⁸⁵ B. L a r i o u x, *Athénée, Apicius et Platina. Gourmands et gourmets de l'Antiquité sous le regard des humanistes romains du XVe siècle*, [in:] *Colloque. Pratiques et discours alimentaires...*, p. 389–409; H. L i n d s a y, *Food representations*, [in:] *A cultural history of food in antiquity*, eds. P. E r d k a m p, London–New York 2012, p. 163–179, especially 168–169.

⁸⁶ The author mentions numerous kinds instead of the general term, i.e. *máza*, usually quoted in medical sources.

⁸⁷ L.M.V. T o t e l i n, *op. cit.*, p. 133.

CHAPTER

I

MACIEJ KOKOSZKO, KRZYSZTOF JAGUSIAK

Wheats of antiquity and Byzantium



KRZYSZTOF JAGUSIAK

I. Wheats: a brief history

Alongside barley, wheat (*Triticum* L.) is considered one of the oldest and most important – in terms of its economic role – cereal crops from the poaceous family (*Poaceae* Barnh.), formerly known as grasses (*Gramineae* Juss.). Domesticated wheats belong to a large and steadily growing number of varieties. Apart from these, we should mention the still extant wild varieties. Currently, common wheat (*Triticum aestivum* L.) is without doubt of the greatest importance for the economy. The following species were of the greatest significance for man in ancient times – also in the Mediterranean areas constituting the subject of our research: the abovementioned common wheat, which does not require husking; durum wheat (*Triticum durum* Desf.); club wheat (*Triticum compactum* Host); and two species – emmer wheat (*Triticum dicoccum*

Schrank) and einkorn wheat (*Triticum monococcum* L.) – which required husking. Spelt (*Triticum spelta* L.) was also known¹.

The beginnings of the cultivation of wheat stretch back at least ten thousand years, to the Near East in the so-called Fertile Crescent area, from where these cereals spread in all directions. It is not our goal to effect a detailed presentation of theories aimed at pinpointing the oldest centres of wheat cultivation, nor to attempt to explain its role in the transformation of Neolithic societies in the aforementioned area from nomadic, hunter-gatherer ones into settled, agricultural communities².

¹ Cf. e.g. E. Czerwiński, *Pszenica (Wheat)*, Warszawa 1964, p. 7–8; Z. Łubkowski, *Pszenica. Charakterystyka botaniczna, hodowla i agrotechnika (Wheat. A botanical characteristic. Cultivation and agricultural science)*, Warszawa 1968, p. 28–34; D. Zohary, M. Hopf, *Domestication of plants in the Old World. The origin and spread of cultivated plants in West Asia, Europe, and in the Nile Valley*, Oxford 1993, p. 18–31; J. McCorriston, *Wheat*, [in:] *The Cambridge world history of food*, eds. K.F. Kiple, K.C. Ornelas, vol. I, Cambridge 2000, p. 165–168; J. Falkowski, J. Kostrowicki, *Geografia rolnictwa świata (The geography of world agriculture)*, Warszawa 2001, p. 295; *Szczegółowa uprawa roślin (Detailed plant cultivation)*, vol. I, eds. Z. Jasińska, A. Kotwicki, Wrocław 2003, p. 71–72; J. Nawracała, *Genetyczne podstawy hodowli pszenicy (Genetic basis of wheat cultivation) (Triticum aestivum L.)*, [in:] *Zarys genetyki zbóż (Outline of wheat genetics)*, vol. I, *Jęczmień, pszenica i żyto (Barley, wheat and rye)*, eds. A.G. Górny, Poznań 2004, p. 183–200; M. Kokożko, K. Jagusia, *Zboża Bizancjum. Kilka uwag na temat roli produktów zbożowych na podstawie źródeł greckich (Cereal crops of Byzantium. Some observations on the role of cereals on the basis of Greek sources)*, *ZW* 17, 2012, p. 20.

² The literature on this topic is abundant. A classic work, so to speak, is that of Naum Jasny (*The wheats of classical antiquity*, Baltimore 1944, *passim*). In addition, we shall take the liberty of citing only the pertinent fragments of other (selected) fundamental works, wherein any reader interested in the topic will find references to further publications, cf.: D. Zohary, *The progenitors of wheat and barley in relation to domestication and agricultural dispersal in the Old World*, [in:] *The domestication and exploitation of plants and animals*, eds. P.J. Ucko, G.W. Dimbleby, London 1969, p. 47–53, 55–66; T. Ruebenbauer, *Pochodzenie i użytkowanie pszenicy w ujęciu historycznym (The origins and utilisation of wheat from a historical perspective)*, [in:] *Biologia pszenicy (The biology of wheat)*, eds. P. Strebeyko, Warszawa 1976, p. 13–14; J.R. Harlan, *The origins of cereal agriculture in the Old World*, [in:] *Origins of agriculture*, eds. C.A. Reed, the Hague–Paris 1977, p. 357–384; D. Zohary, M. Hopf, *op. cit.*, p. 32–54; J. McCorriston, *op. cit.*, p. 160–165; M. Nesbitt, *When and where did domesticated cereals first occur in southwest Asia*, [in:] *The dawn of farming*

In our deliberations we intend to focus on the history of the knowledge, cultivation and – first and foremost – the medical and gastronomic utilisation of wheats in areas located by the Mediterranean Sea, or subject to the rule of Rome and impacted by Graeco-Roman culture in Western and Central Europe.

Individual wheat species appeared in the Mediterranean Basin in various periods. Club wheat, originating from emmer, appeared in Europe first – or more or less at the same time as the latter – and as early as six thousand years BC had been cultivated on Crete, in Thessaly, and in western Macedonia, where it arrived from the territories of the (present-day) Syria and Turkey³. Einkorn wheat arrived in Europe at more or less the same time, however its importance for the Mediterranean economy was relatively small (following the Neolithic age, it practically disappeared from the hotter regions, e.g. Egypt), while throughout Hellas – although cultivated – it gradually lost its position in favour of other species even before the Classical period. Its position north of Greece, in the Balkans, was different – but although einkorn wheat was definitely more popular in this region, by the end of the Iron Age it had also been supplanted by other cereals⁴. Durum wheat had been present in the Mediterranean Basin since prehistoric times, and from the Classical period onwards was one of the more important cereals. However, it did not crop up in Greece as a popular seed plant at least until the Classical period, and was being imported from the Near

in the Near East, eds. R.T.J. Cappers, S. Bottema, Berlin 2002, p. 113–132. J.F. Hancock, *Plant evolution and the origin of crop species*, Wallingford–Cambridge, Mass., 2004, p. 113–132; p. 143–146, 151–160, 191–194; G. Willcox, *The Beginnings of cereal cultivation and domestication in Southwest Asia*, [in:] *A companion to the archaeology of the ancient Near East*, eds. D.T. Potts, Malden, Mass.–Oxford 2012, p. 163–180.

³ A. Dalby, *Siren feasts. A history of food and gastronomy in Greece*, London–New York 1996, p. 42, 46; *idem*, *Food in the ancient world from A to Z*, London–New York 2003, p. 348. The chronology of the phenomenon cannot be precisely determined, while Andrew Dalby himself has expressed contrary opinions in this regard.

⁴ N. Jasny, *op. cit.*, p. 109–112; D. Zohary, M. Hopf, *op. cit.*, p. 32–38; A. Dalby, *Siren...*, p. 40; *idem*, *Food...*, p. 130.

East instead⁵. The abovementioned emmer, one of the oldest and most important species in the ancient world, was predominant in Mediterranean and North and Central European agriculture during the late Neolithic Age and the Bronze Age (it should be stressed that it was the main species in pharaonic Egypt and right until Roman times⁶); its main competitor was barley. In time, its economic role in the Mediterranean Basin diminished, primarily in favour of common wheat, with which emmer was no longer able to compete in the Classical period, particularly as regards the role of a material for bread⁷. The situation was different in relation to its usage for the preparation of groats (*chóndros* and *krímnnon*) which – similarly to those made from common wheat – have been amply mentioned in medical sources written by the seventh century AD⁸. Spelt reached North and Central Europe from Central Asia around the fifth millennium BC, subsequently spreading to the Mediterranean Basin and Near East, where – however – it remained a relatively unimportant element of the menu of local societies. Nevertheless, it should be clearly stated that throughout the researched period it appeared, if only sporadically, on the tables of both Greeks and Romans⁹,

⁵ D. Zohary, M. Hopf, *op. cit.*, p. 39; A. Dalby, *Siren...*, p. 91; C.K. Kaufman, *Cooking in ancient civilisations*, Westport, CT,–London 2006, p. XLI.

⁶ D. Brothwell, P. Brothwell, *Food in antiquity*, London 1969, p. 96; C.K. Kaufman, *op. cit.*, p. XL. Also Egyptian beer, known under the Greek name *zýthos*, was brewed using emmer wheat in addition to barley, cf. D. Dzinio, *Sabaiarius: Beer, wine and Ammianus Marcellinus*, [in:] *Feast, fast, or famine. Food and drinking in Byzantium*, eds. W. Meyer, S. Trzcionka, Brisbane 2005, p. 60. This does not mean, however, that the Egyptians did not know other species of wheat; to the contrary, they cultivated spelt and common wheat, cf. D.M. Dixon, *A note on cereals in ancient Egypt*, [in:] *The domestication and exploitation...*, p. 131–142.

⁷ G. Barker, *Prehistoric farming in Europe*, Cambridge 1985, p. 64–65; D. Zohary, M. Hopf, *op. cit.*, p. 39–46; A. Dalby, *Food...*, p. 131. The opinion concerning the secondary role of emmer wheat has remained basically unaltered since the nineteen forties – cf. N. Jasný, *Competition among grains in classical antiquity*, *AHR* 47, 1942, p. 758–772.

⁸ N. Jasný, *The wheats of classical antiquity...*, p. 112–133.

⁹ D. Zohary, M. Hopf, *op. cit.*, p. 52–53; C.K. Kaufman, *op. cit.*, p. XL; R. Sallares, *The ecology of the ancient Greek world*, Ithaca–London 1991, *passim*, especially p. 325, 348–350.

while the medical sources we analysed indicate that spelt wheat was used to make highly valued bread, namely *ártos olýrinos*¹⁰. Common wheat was the youngest of the analysed cereal crops, appearing in history a long time after the domestication of the abovementioned species – not before the end of the second millennium BC; in all probability, it originated in North-West Iran¹¹. Due to its numerous valuable properties – above all the high content of gluten, which made it possible to bake excellent bread – that clearly distinguished it from previous varieties¹², it dominated the market and, setting aside individual differences in consumer tastes, became the most desired cereal crop in the Graeco-Roman world¹³. This was despite the problems connected with its cultivation¹⁴; because of these, it was not sown on the majority of acreages in Greece proper and in large part of Italy and, as a result, it was expensive and difficult to obtain¹⁵. Having gained immense popularity, common wheat started to appear in numerous varieties, often named after the locations in which they occurred (e.g. Libyan, Sicilian, Thracian), or on the basis of specific attributes (e.g. *kachrydías* – due to the similarity of its grains to those of roasted barley)¹⁶.

The Greeks were familiar with various species of wheat. The term *pyrós* was used for wheat in general, and more specifically for common wheat or durum. The term *pyrós setánios*, or *sitánios* was applied to club wheat, but more often still – as we emphasise in the present work – to common wheat. The term *semídalís* or *pyrós semídalítēs* referred

¹⁰ Concerning the secondary role of spelt as a food and spelt bread, cf. N. J a s n y, *Competition among grains...*, p. 759–760; i d e m, *The wheats of classical antiquity...*, p. 134–141, especially 134–135.

¹¹ A. D a l b y, *Food...*, p. 348–349.

¹² C.K. K a u f m a n, *op. cit.*, p. XXXVII–XXXVIII.

¹³ Kinds of baked products of this type, cf. N. J a s n y, *The daily bread of the ancient Greeks and Romans*, Osi 9, 1950, p. 227–253, especially 247–253.

¹⁴ Cf. an analysis of the situation on Delos concerning the cultivation of wheat. The author points out that the island was better suited for cultivation of barley.

¹⁵ A. D a l b y, *Siren...*, p. 22.

¹⁶ T h e o p h r a s t u s, *De causis plantarum*, III, 21, 2; Cf. T. R u e b e n b a u e r, *op. cit.*, p. 15–16.

to durum wheat. The term *pyrós silignites* or *silignis* was also popularly used for common wheat, while *pyrós triménios* or *trimeniaios*, in turn, to denote spring wheat. The abovementioned terminology may be determined on the basis of fragments of the output of Athenaeus of Attaleia, preserved in the *Collectiones medicae* of Oribasius, while the details of his doctrines have been introduced by in the discussion on the dietetic values of *pyrós*. Regarding the remaining wheats, the word *zeá* or *zeiá* was used by Greeks for einkorn wheat or emmer, although the former appears more frequently under the term *típhe*. Finally, spelt wheat was called *ólyra*, but sometimes this term could, in all probability, also refer to emmer¹⁷.

As we have already stressed, due to the inadequacy of soil and climatic conditions¹⁸, the Greeks – and thereafter the Romans – could not rely solely on native¹⁹ cultivation of these crops, and thus all the more so on the home-grown crops of the most valuable of them

¹⁷ For example, cf. N. J a s n y, *The wheats of classical antiquity...*, p. 53–70; L.A. M o r i t z, *Husked and ‘naked’ grain*, CQ 5, 1955, p. 129–134; M. D e c k e r, *Tilling the Hateful Earth. Agricultural production and trade in the late antique East*, Oxford 2011, p. 99–103.

¹⁸ Wheat required more humidity and a more fertile soil, cf. C.K. K a u f m a n, *op. cit.*, p. XXXVII; T. B r a u n, *Barley cakes and emmer bread*, [in:] *Food in antiquity*, eds. J. W i l k i n s, D. H a r v e y, M. D o b s o n, Exeter 1999, p. 25–26. Cf. the individual analysis of the situation on Delos concerning the cultivation of wheat, land productivity, the demand for grain, and the organisation of imports (the author of the text to which we refer readers for further information on these issues points out that – among others – due to the limited rainfall during spring, the island was more suited to the cultivation of barley) – G. R e g e r, *The public purchase of grain on independent Delos*, CA 12, 1993, p. 300–334, especially 303, 329–331. Delos was, and continues to be, considered an important grain distribution centre in the Aegean region. Cf. L. C a s s o n, *The grain trade of the Hellenistic world*, TPAPA 89, 1954, p. 168–187, especially 187.

¹⁹ We use the word ‘native’ with respect to the inhabitants of large areas of Greece proper, for the Greeks living on the nearby western coast of Asia Minor were able enjoy bountiful wheat harvests in the vicinity of the Meander Valley, the location of – for example – Miletus, Hermos (over which there towered Sardes), and Scamander, near which ancient Troy was located; these areas, then, were rather vast, cf. T. B r a u n, *op. cit.*, p. 33.

– common wheat²⁰. In consequence, they were imported, for example, from regions lying on the Black Sea (from the beginning of the fifth century BC)²¹, but it was not possible to strike other cereals from the Greek and Roman menu and replace them with common wheat only. Incidentally, this phenomenon is visible in the medical treatises we analysed, with the output of Galen providing the greatest amount of data. Necessity forced Greeks and Romans to rely primarily on barley, which grew splendidly on the Hellenic soil. We find traces of this phenomenon during the Classical period, between the fifth and fourth centuries BC; for example, during the lavish banquets described in sources, barley cakes were served alongside baked wheat products, and there is no doubt that even the richest Greek *póleis* in periods of their prosperity did not constitute an exception in this regard²². We come to similar conclusions on the basis of an analysis of the Hippocratic treatise *De diaeta*.

²⁰ Regarding the problems connected with the cultivation of wheat in Greece proper, it is worth noting the results of research conducted in the twentieth century in Attica, which show that wheat crop failures could occur as frequently as once every 4 years. By way of comparison, barley crop failures were observed on average once every 20 years. Similar wheat deficiencies also occurred in other regions of the Greek world, cf. P. G a r n s e y, *Famine and food supply in the Graeco-Roman world*, Cambridge 1989, p. 10–12. This regular instability of harvests made it necessary to effect purchases in order to cover shortages. What is more, such instability led to price fluctuations, and even social unrest. Cf. the individual case of a Greek island that illustrates this issue – J. D. S o s i n, *Grain for Andros*, H 130, 2002, p. 131–145.

²¹ T. S. N o o n a n, *The grain trade of the northern Black Sea in antiquity*, AJP 94, 1973, p. 231–242, especially 241–242.

²² Although in all probability the former was more readily consumed, cf. A. D a l b y, *Siren...*, p. 53; C. K. K a u f m a n, *op. cit.*, p. XXXVIII. We consider the opinion that Athenians managed to secure sufficient quantities of wheat and thus abandon other cereal crops as, on the whole, erroneous; such a conclusion is sometimes drawn on the basis of the episode from the uprising against Rome in 88 BC, when the besieged complained that they must eat barley – a food good for hens, not people. It would seem that the main cause of the complaint were low food rations, and not the type of product received, although they vented their anger in such a way, cf. T. B r a u n, *op. cit.*, p. 32.

For the Romans, wheat constituted a staple throughout antiquity²³. While they were also familiar with, and consumed, other cereals, mainly barley (which in the most ancient period of their history in all probability outweighed wheat), while in case of famine they also ate common millet, foxtail millet and even oats, they could afford – as opposed the Greeks – to considerably limit the consumption of these species thanks to different soil and climatic conditions²⁴, and also thanks to the incomparable scale of imports (the latter factor played an increasingly greater role as Roman influence grew, cf. hereunder²⁵). In all probability, the variety which first came to the attention of the Romans and which for centuries constituted an unrivalled source of nutrition, was emmer (to which they referred as *far*, *adoreum* or *semen*²⁶), which found its reflection in one of the tales concerning the legendary Roman king Numa Pompilius, written down by Pliny²⁷, and also in the belief held by Romans living in later times that their modest ancestors first and foremost ate *puls*, i.e. a gruel made from emmer²⁸. Amongst the varieties that do not require husking, they knew durum wheat (which they described with a word that is now used for the entire genus – *triticum*) and common wheat (Latin *siligo*). For ancient Romans, a general term used to denote wheat as such was – among others – *frumentum*.

²³ D.L. Thurmond, *A handbook of food processing in classical Rome. For her bounty no winter*, Leiden–Boston 2006, p. 15.

²⁴ K.D. White, *Roman farming*, London 1970, p. 155.

²⁵ Imports were necessitated by the insufficient productivity of land in relation to the number of inhabitants. Cf. J.K. Evans, *Wheat production and its social consequences in the Roman world*, CQ 31, 1981, p. 228–242.

²⁶ Andrew Dalby (*Food...*, p. 131), Robert I. Curtis (*Ancient food technology*, Leiden–Boston–Köln 2001, p. 360), Peter Garnsey (*Food and society in classical antiquity*, Cambridge 2002, p. 18) and David L. Thurmond (*op. cit.*, p. 18, footnote 12), both clearly state that the term *far* referred not to spelt, but emmer. This aspect has been particularly strongly emphasised by Thurmond.

²⁷ Pliny, *Naturalis historia*, XVIII, 2, 7–8; cf. D.L. Thurmond, *op. cit.*, p. 18–20.

²⁸ K.D. White, *Greek and Roman technology*, London 1986, p. 63; *idem*, *Cereals, bread and milling in the Roman world*, [in:] *Food in antiquity...*, p. 38–39; D.L. Thurmond, *op. cit.*, p. 35; T. Braun, *op. cit.*, p. 34–35.

In the present day, a precise determination of the proportions of consumption of individual species of the said cereal crop in Roman society is not easy, and – indeed – is made all the more difficult by issues concerning material stratification, the area and diversity of inhabited regions, and the length of the period requiring analysis. And although the information contained in sources is worth quoting, they do not allow us to draw detailed conclusions. According to the recommendations of Cato, written down in the first half of the second century BC, slaves working in agriculture should be fed durum wheat, while labourers hired to work during the grape harvest ought to eat emmer; nowhere, however, did he mention that the administrator or owner of a farmstead should avoid these species²⁹. Columella (first century AD) stated emphatically that for man the best cereals are durum and emmer wheat, followed by common wheat, while slaves may be fed wheat and barley bread³⁰, but it is difficult to accept that, being an advocate of simplicity and modesty, he was expressing an opinion highly popular amongst his contemporaries. Regarding Italy, which was the first to be taken over by the Romans, we know that wheat of exceptional quality was grown in Etruria and in the particularly fertile Campania³¹, while the vicinity of Ancona in Picenum was famous for its excellent emmer, which also dominated in Umbria³².

As the population of Rome grew and the Roman state acquired new territories, it became on the one hand necessary to supplement the quantity of grain obtained from native or nearby wheat acreages; while on the other regular supplies of grain could to some extent be

²⁹ C a t o, *De agri cultura*, 23, 1; 56. On the contrary, culinary recipes for emmer may indeed suggest that Cato – and thus those readers of his work who were landowners – readily consumed this less precious species of wheat.

³⁰ C o l u m e l l a, *De re rustica*, II, 6, 1–3; II, 9, 16. Columella's customs and his aversion to the superfluity of Rome are attested to by the bitter words which he wrote down in the introduction to his treatise, cf. C o l u m e l l a, *De re rustica*, I, *Preface*, 3–17.

³¹ K. D. W h i t e, *Roman farming...*, p. 69, 72. P l i n y, *Naturalis historia*, XVIII, 20, 85–106; V a r r o, *Rerum rusticarum*, I, 44, 2.

³² S t r a b o, *Geographica*, V, 2, 10; K. D. W h i t e, *Roman farming...*, p. 70–71.

secured from lands falling within the orbit of influence of the Roman Empire³³. The most important source, which year in year out provided Italy with gigantic quantities of wheat, was Egypt – ever since the removal of the Ptolemaic dynasty and the annexation of this country by the Roman Empire, effected by Octavian Augustus (30 BC). Imports from North Africa also grew in magnitude³⁴. During the first two centuries of the Empire, the supply of grain to Rome was managed by private entrepreneurs³⁵. Transports of the said cereal flowed into Rome also from other lands, and these included Gaul, Sicily³⁶, Sardinia and Spain; indeed, wheat was traded between provinces, without the participation of the Empire's capital, while considerable quantities of wheat from the said regions were supplied to legions stationed at various locations³⁷. From 123 BC, a sizeable number of the residents of Rome

³³ Concerning the organisation of this import, cf. G.E. Rickman, *The grain trade under the Roman Empire*, [in:] *The seaborne commerce of ancient Rome. Studies in history and archeology*, eds. J.H. D'Arms, E.C. Kopff, Rome 1980, p. 261–275; D. Kessler, P. Termin, *The organization of the grain trade in the early Roman Empire*, *EcHR* 60, 2007, p. 313–332.

³⁴ E. Tengström, *Bread for the people. Studies of the corn-supply of Rome during the Late Empire*, Stockholm 1974, p. 14; D.L. Thurmond, *op. cit.*, p. 32; P. Erdkamp, *The grain market in the Roman Empire. A social, political and economic study*, Cambridge 2005, p. 207.

³⁵ L. Casson, *The role of the state in Rome's grain trade*, [in:] *The seaborne commerce...*, p. 21–33.

³⁶ Cereal crops were an important export good of Sicily (but not the sole such commodity), the economy of which was based mainly on agriculture, cf. F. de Angelis, *Going against the grain in Sicilian Greek economics*, *GR* 53, 2006, p. 29–47.

³⁷ K.D. White, *Roman farming...*, p. 75–76; E. Tengström, *op. cit.*, p. 26; P. Erdkamp, *op. cit.*, p. 207–208 and subsequent. The importance of individual provinces in supplying Rome with wheat changed over time. Sicily and Sardinia played a key role ever since they were taken over by Rome in the second half of the third century BC, and after 146 BC constituted the safeguard – together with North Africa – of the city's cereal crop supply. After 30 BC, the importance of the aforementioned islands decreased (although imports therefrom did not cease, cf. – for example – R.J. Rowland, *The case of the missing Sardinian grain*, *AWo* 10, 1984, no. 1/2, p. 45–48), and in all probability imports from Egypt came to the fore, maybe even outpacing North Africa (E. Tengström, *op. cit.*, p. 27 provides information attesting that Africa nevertheless maintained pre-eminence). Sicilian and Sardinian cereal crops

enjoyed the distribution of cereals, mainly wheat, at lowered prices, while from the times of Augustus certain quantities of grain were provided for free; this tradition was kept up for a few hundred years. And although Emperor Aurelian (270–275) replaced the free distribution of grain with that of bread, this did not change the essence of the system, which in principle remained functional right up to the fifth century, while following its considerable limitation – even longer³⁸. In any case, this reality – wherein imported wheat (let us add, made into bread) constituted the nutritional staple of urban societies – was presented by Galen in the second century as typical of the lands of Asia Minor. Thus, provisioning systems were not reserved solely for the capital and the armed forces.

Under normal circumstances, the maintenance of the Roman army was also based on wheat. This is excellently illustrated by Polybius, who gave a detailed account of cereal quantities received each month by legionnaires and their allies³⁹. A breakdown of data preserved in the work of this author clearly shows that those serving in the army were usually fed wheat rations, while barley was reserved exclusively as forage for cavalry horses. It is worth adding that the soldiery was firmly convinced – and this conviction found support in the stance taken by Hippocratic medicine – that of the two abovementioned cereals, wheat gives the organism considerably more strength, which further discouraged them from consuming dishes based on barley⁴⁰. In any case, we shall return to

regained their importance towards the end of the Western Roman Empire, when due to the political situation imports from Egypt and North Africa were rendered difficult or altogether impossible.

³⁸ A.J.B. S i r k s, *The size of the grain distributions in Imperial Rome and Constantinople*, Ath 79.1, 1991, p. 216, 224. As early as the year 500, Theoderic the Great gave out bread, but this was received by no more than two thousand people, which constituted no more than a slight percentage of recipients in Roman times (figures determining their number, given on the basis of contemporary calculations, range from several dozen to a few hundred thousand).

³⁹ P o l y b i u s, VI, 39.

⁴⁰ J.M. W i l k i n s, S. H i l l, *Food in the ancient world*, Malden, Mass.–Oxford, 2006, p. 117, 126.

this issue in the part of the present study devoted to barley, and in particular the groats made therefrom (*alphita*). Finally, it is known that one of the punishments provided for Roman units that deserted the field of battle and recruits who failed to perform their duties was the replacement of their daily wheat rations with barley, considered thereby as inferior; this is attested to in numerous sources⁴¹.

It should, however, be clearly stated that in spite of the undoubted advantages (according to authors of Graeco-Roman antiquity) of common wheat in comparison with other cereal crops (which, apart from numerous notes in literary sources, may also be supported by a comparison of the prices imposed in 301 by Diocletian (284–305) on various articles, with wheats being the most expensive of the commonly available cereals⁴²), throughout the period of existence of the Roman state it proved impossible for this species to gain predominance amongst arable crops in the Mediterranean region. During the period of Empire – just as before – the masses, and in particular the peasantry, availed themselves of cereal crops that were easier to cultivate, and occasionally on the more primitive species of wheat, usually rejected by the rich. Again, these conclusions find confirmation in medical sources, and in particular in Galen's notes concerning nutrition in the rural areas of Asia Minor

⁴¹ Polybius, VI, 38. Cf. also Suetonius, who wrote about similar punishments applied to soldiers by Augustus (Suetonius, *De vita caesarum*, II, 24), as well as information provided by Cassius Dio, also referring to the times of Augustus (Cassius Dio, XLIX, 38, 4). Cf. the writings of Plutarch (Plutarch, *Marcellus*), Frontinus (Frontinus, *Strategemata*, IV, 1, 25; IV, 1, 37), and Vegetius (Vegetius, I, 13). Cf. also the part of the present work devoted to *kriþhé*, in which we refer to this information, and – in order to facilitate reading of the text – cite the abovequoted ancient authors.

⁴² *Diocletian's Edict*, I, 1a–8. Common wheat was to cost 100 denars for a camp *modius*, as was 'pure emmer', while for example barley – 60 denars, millet – 50, and oats – 30. A *modius* of already threshed oats was also worth 100 denars. The most expensive cereal crop from amongst all of those mentioned in the Edict was rice, which was to cost 200 denars for a *modius*, however it was not a staple product in the Mediterranean region, but an exotic import from the East. It would appear that the prices of cereal crops – with the exception of rice – were not influenced by availability on the municipal market, for in the fourth century Italy provisioning was more or less problem-free.

in the second century. What is more, even those peasants who successfully cultivated *triticum aestivum* frequently did so not for their own consumption, but in order to sell the yield in nearby towns, themselves eating other cereals⁴³. Towards the end of the fifth century, common wheat was the predominant crop only in Italy, Egypt, North Africa and Sicily. During this time it continued to be of secondary importance in the Greek lands⁴⁴.

At the same time, however, and at least from the rise of the Republic until Byzantine times, it was common for even the best wheat to be used as an excellent feed for fattening both certain livestock (such as hens, ducks, geese, and pheasants), as well as wild birds that had been caught and were kept in aviaries (for example pigeons and turtle-doves); this was served separately or mixed with other types of cereals. We find such data in the *Geoponica*, which treatise – published in the tenth century – contains a selection of materials illustrating agronomic procedures concerning the entirety of the researched period⁴⁵. In all probability, such practices were followed first and foremost by the wealthier landowners, who could afford to not use the entirety their harvested wheat as food for humans or to sell it in nearby towns, treating fowl primarily not as a source of eggs, but rather of meat and giblets⁴⁶. In any case, similar methods of using special, or – should we say – luxury products for fattening animals appear to have been relatively common. According to Pliny, Apicius, a famous ancient gourmet, fed

⁴³ J.M. Wilkins, S. Hill, *op. cit.*, p. 117–121.

⁴⁴ R.J. Forbes, *Studies in ancient technology*, vol. III, Leiden 1965, p. 92.

⁴⁵ Cato, *De agri cultura*, 89; 90; *Geoponica*, XIV, 7, 7; XIV, 19, 2; XIV, 20, 12; XIV, 23, 2; XIV, 24, 2.

⁴⁶ For even an opponent of excessive luxury, who addressed his writings primarily to prudent and thrifty readers, Columella, stated clearly that wheat is inferior to barley as a feed for livestock (*De re rustica*, II, 9, 14), that it is harmful to hens (*De re rustica*, VIII, 4, 1), with the proviso, however, that spelt or wheat could be given to chicken and duck nestlings (*De re rustica*, VIII, 5, 17; VIII, 14, 8), while adult birds could be fed wheat screenings (*De re rustica*, VIII, 4, 1). Elsewhere, he instructs breeders who want to earn large profits that fowl should be given moistened wheat bread in order to be properly fattened (*De re rustica*, VIII, 7, 4).

figs⁴⁷ to both his pigs and geese⁴⁸. The livers thus obtained were called *ficatum*⁴⁹ in Latin, while in Greek – *sykotón*. Another custom, consisting in the enrichment of feed for domestic fowl with whey⁵⁰, has been mentioned among others in the writings of Galen and Oribasius. On the basis of the source we may conclude that there were no rigid norms regulating the type of fodder provided for domestic livestock. As the above example shows, figs were fed to both pigs and geese, nothing stood in the way of adding variety to the food of the former by the introduction of whey – as was mentioned by the aforementioned anonymous author of the treatise *De cibis*⁵¹, written in the second half of the seventh century. Similarly, wealthy landowners could use wheat as a feed for wild four-legged animals (kept exclusively for the purpose of being hunted) for the event of a shortage of their natural foods or simply to develop their fatty tissue⁵² (for the sake of clarity, we feel obliged to add that we are referring to wholesome wheat grain or products obtained therefrom, and not to wastes, straw or bran of various *triticum* species, which without a doubt were fed to cattle or fowl decidedly more frequently⁵³).

The said wheat also played an important role outside of Italy, in other regions under the rule of Rome. Gallic wheat – mentioned previously – constituted the food of legions stationed in the province, and also facilitated the economic consolidation of newly conquered lands with the rest of the Empire, being one of the basic local goods that was readily

⁴⁷ The practice of feeding fowl with figs was also common in Byzantine times, cf. *Geoponica*, XIV, 22, 1–16.

⁴⁸ P l i n y, *Naturalis historia*, VIII, 77, 209. The tradition of feeding fowl with figs has survived in Europe to the present day. The livers of geese and ducks fed in this way are used to prepare the famous *foie gras* pâté, cf. A. D a l b y, *Food...*, p. 162.

⁴⁹ J. A n d r é, *L'alimentation et la cuisine à Rome*, Paris 1961, p. 132–133.

⁵⁰ G a l e n, *De alimentorum facultatibus*, 704, 4–7; O r i b a s i u s, *Collectiones medicae*, II, 44, 2, 2–3.

⁵¹ *De cibis*, 6, 8–9.

⁵² C o l u m e l l a, *De re rustica*, IX, 1, 6. This fragment is concerned with emmer wheat.

⁵³ Cf. for example V a r r o, *Rerum rusticarum*, II, 5, 17; II, 6, 4.

available on the market⁵⁴. We should keep in mind that in the sixth century, in his work dedicated to the ruler of the Franks, who were then occupying southern Gaul, Anthimus wrote about the dietetic and medical significance of products and dishes based on wheat. Furthermore, it is worth noting that the Gauls also used wheat to make beer, known as *zýthos* or *corma* (also *koúrmi*); this beverage was drunk by the masses (high society preferred wine, which was imported from the south), and must therefore have been widely available⁵⁵. In all certainty, the inhabitants of Roman Britain knew and cultivated three species of wheat: emmer, spelt and common wheat, whereas the latter was altogether rare at least until the end of Roman rule⁵⁶. This proportion was not altered by the fact that in the researched period Roman Britons generally preferred breads as a staple food, for they baked them primarily from emmer and spelt, mainly because – as it seems – common wheat did not ensure sufficiently abundant harvests in these latitudes⁵⁷.

Wheat was also the most common cereal crop in the Eastern Roman (Byzantine) Empire⁵⁸. As early as 332, when Constantine I (306–337) was busy establishing and strengthening the position of Constantinople, the future capital of the Empire, he introduced the practice of the free distribution of wheat bread – on the pattern of the custom functioning in the old capital – with the objective of enticing settlers to the Golden Horn. This system remained in effect until 618/619, when Egypt, from whence wheat was imported to Constantinople, temporarily fell to the Persians (these lands were regained for Byzantium by the Emperor

⁵⁴ R. Quick, S.J. Simon, *Wheat production and the romanization of Northern Gaul*, *AWo* 30, 1999, p. 59–62.

⁵⁵ Athenaeus of Naucratis, IV, 152 c–d (36, 34–38); D. Dzinio, *op. cit.*, p. 60.

⁵⁶ H.E.M. Cool, *Eating and drinking Roman Britain*, Cambridge 2006, p. 69.

⁵⁷ *Ibidem*, p. 70–79.

⁵⁸ Together with wine and olives, it comprised the ‘trinity’ of the most important foodstuffs typical of the Mediterranean Basin – cf. F. Braudel, *La Méditerranée et le monde méditerranéen à l’époque de Philippe II*, vol. I–II, Paris 1966, p. 215; P. Garnsey, *Food and society...*, p. 119–121; C. Bourbou, *Health and disease in Byzantine Crete (7th–12th centuries AD)*, Farnham–Burlington, VT 2010, p. 128.

Heraclius in 629), and then were ultimately lost following the Arab conquest of Egypt in 642; thereafter it was necessary to supply the city with wheat from Thrace and Asia Minor. Over time, the responsibility for providing the city with wheat was taken up by private entrepreneurs, who gradually replaced the state in this regard⁵⁹.

During the early Byzantine period, the tendency to prefer wheats in agriculture and gastronomy – previously apparent in the *Imperium Romanum* – was maintained, and it is difficult to point out any significant differences in this regard between the situation existing in the late Roman Empire and early, sixth-century Byzantium⁶⁰. This phenomenon is confirmed by data we obtained on the basis of an analysis of medical sources, which point to the cohesion of theories throughout the period between the second and seventh centuries, concerning both dietetics and the pharmacological applications of common wheat, durum wheat, emmer wheat, einkorn wheat and spelt. We are of the opinion that the contents of treatises reflect the reality of the researched period. The numerous processes taking place in successive centuries could have contributed to a change, but we are unable to make an absolutely certain judgment here.

In the seventh century, the so-called hard wheats became popular in the eastern part of the Mediterranean Basin; these were varieties of durum wheat⁶¹ with higher protein content which could be used to make flour that was better suited for baking bread⁶². Later on, in the period going beyond the timeframe of our study, there occurred other processes

⁵⁹ A.J.B. Sirks, *op. cit.*, p. 225–226; M. Kokoszko, T. Wolińska, *Zaopatrzenie Konstantynopola w żywność (The provision of Constantinople with food)*, [in:] *Konstantynopol – Nowy Rzym. Miasto i ludzie w okresie wczesnobizantyjskim (Constantinople, the New Rome. The city and people in the early Byzantine period)*, eds. M.J. Leszka, T. Wolińska, Warszawa 2011, p. 463–467; M. Kokoszko, K. Jagusiak, *op. cit.*, p. 20–21.

⁶⁰ A.E. Laiou, C. Morisson, *The Byzantine economy*, Cambridge 2007, p. 30.

⁶¹ Regarding them, cf. Z. Łubkowski, *op. cit.*, p. 29.

⁶² J. Haldon, *Feeding the army. Food and transport in Byzantium, ca. 600–1100*, [in:] *Feast, fast, or famine...*, p. 86–87.

that we shall only broadly outline further on in the present paragraph. And so, between the eighth and tenth centuries various cereal crops were intensively cultivated in Thessaly, Thrace, Macedonia, Bithynia and Pontus, however it is not possible to determine the proportion of wheat to barley (it appears certain that the remaining cereal crops continued to be much less popular)⁶³. We may state with a considerable degree of certainty that in subsequent centuries – irrespective of demographic, ethnic and technological change – wheat (above all common wheat, although it is worth noting the more favourable approach to spelt from at least the tenth century) retained its status as the favourite and one of the two cereal crops most commonly sown in regions belonging to Byzantium⁶⁴, while the aforementioned lands: Thessaly, Thrace, Macedonia, and – especially from the thirteenth century – the territory of the Empire of Nicaea were the most important sources of wheat for the Byzantine Empire, which by then was steadily losing territory to its neighbours⁶⁵. In the researched period, the main producers and suppliers of this wheat to municipal marketplaces were the large landowners, for with the contemporary farming methods, variable weather conditions and reoccurring invasions of hostile peoples, who ravaged the fields, only they were in a position to provide cities with sufficient quantities of grain on a continuous basis⁶⁶. In this period the state, with the exception of an episode during the rule of Emperor Michael VII Doukas (1071–1078), which consisted of an attempt at imposing a state framework on the free market and ended in total failure, did not interfere in the principles governing

⁶³ A.E. Laiou, C. Morisson, *op. cit.*, p. 65–66.

⁶⁴ *Ibidem*, p. 98; regarding spelt, cf. J.L. Teall, *The grain supply of the Byzantine Empire*, DOP 13, 1959, s. 100. The popularisation of common wheat in Byzantium may be supported by the more frequent appearance in various sources of information concerning bread made from this plant, known as *silignites*, cf. A. Dalby, *Siren...*, p. 190, who however does not precise the period of Byzantine history in question.

⁶⁵ A.E. Laiou, *The agrarian economy, thirteenth–fifteenth century*, [in:] *The economic history of Byzantium: From the seventh through the fifteenth century*, eds. A.E. Laiou, Washington, D.C., 2002, p. 321, 325, 326.

⁶⁶ G.C. Maniatis, *The wheat market in Byzantium, 900–1200. Organization, marketing and pricing strategies*, Bsl 62, 2004, p. 104–107.

wheat trade and transport⁶⁷. The decline of the Byzantine Empire did not bring any change to the approach of its inhabitants to wheat. Certain selective source information from the thirteenth to fifteenth centuries allows us to state that in certain regions wheats constituted approximately one half of crops, with the second half comprising other cereals, however we cannot use this as a basis for drawing general conclusions concerning the whole of Byzantine period⁶⁸. Finally, we have at our disposal a testimony which confirms that (as one may imagine) high-born Byzantines considered resigning from the consumption of foodstuffs based on wheat as proof of giving in to suffering, a *sui generis* manifestation of one's resignation from a normal way of life, associated with the asceticism of God-fearing monks⁶⁹.



⁶⁷ *Ibidem*, p. 108–109. The interference of the Byzantine authorities, consisting of the top-down determination of wheat prices and the sale of the state monopoly, brought about high prices and shortages of the cereal crop.

⁶⁸ J. L e f o r t, *The rural economy, seventh–twelfth centuries*, [in:] *The economic history...*, p. 250; M.L. R a u t m a n, *The daily life in the Byzantine Empire*, Westport, Connecticut 2006, p. 172.

⁶⁹ Cf. J.L. T e a l l, *op. cit.*, p. 99. Although it is otherwise known that in antiquity and the times of Byzantium even the monks, who observed strict rules (and this also applied to monks living in the eastern part of the Mediterranean Basin), themselves often ate products based on various species of wheat – a gruel or *sui generis* soup, or a ‘purée’, cf. M. D e m b i n s k a, *Diet: A comparison of food consumption between some eastern and western monasteries in the 4th–12th centuries*, B 55, 1985, p. 431–462.

MACIEJ KOKOSZKO, KRZYSZTOF JAGUSIAK

2. Common wheat and hard (durum) wheat (*pyrós*)

MACIEJ KOKOSZKO, KRZYSZTOF JAGUSIAK

The *pyrós* wheat as food and medication in the period between the second and seventh centuries

We shall commence our deliberations with the statement that medical sources clearly show the significance of wheat as an important – if not the most important – foodstuff of antiquity and later times. Its leading role amongst foods available in the period between the second and seventh century is attested to by the fact that none of the medical authors omitted this cereal and the products made therefrom in their deliberations. Thus, *pyrós* wheat was analysed systematically and in detail in the treatises of Galen (second century), Oribasius (fourth century), Aetius of Amida (sixth century), Anthimus (sixth century), Alexander of Tralles (sixth century), Paul of Aegina (seventh century), and in the work *De cibis* (seventh century). All of the authors without exception consider the cereal not only as a food, but also as a commonly used *haplón phármakon* and a constituent of recipes for innumerable *syntheta phármaka*, which only serves to strengthen our belief that wheat played a leading role – both in health, and in sickness. It was no different as regards interest in this wheat even before the second century, as can be demonstrated on selected examples, such as the treatise *De diaeta*, or fragments of medical works, which can be found in the *Deipnosophistae* written by Athenaeus of Naucratis. The latter are yet another source that allows us to understand the position taken by the dietician long before Galen determined that specific doctrines were ‘canonical’. *Nota bene*, the same physician referred to the teachings of his predecessors,

sometimes correcting them, but usually supporting the value of their findings. Although it does not constitute the subject of our study, it is worth noting that the abovementioned deep interest in wheat did not change after the end of the seventh century – this can be easily seen in both medical texts (e.g. *Peri trophón dynámeos*), and non-medical writings, such as the *Geoponica*. These two works testify to the universality and importance of the issue – the first for dieticians, and the second for farmers more or less two centuries after the period of activity of Paul of Aegina and the author of the treatise *De cibis*.

We would like to stress the fact that the dietetic theory represented by the abovementioned authors is cohesive and did not change throughout the period between the second and seventh centuries, which attests to the preservation of a science that, having come into being before the researched period, was cultivated due to the importance of the topic itself and the lack of any necessity of introducing more far-reaching modifications to a continuously topical theory, which fitted in excellently with the reality of the times. Possible differences, for example, the elevation by Galen of *kribanites* bread to the position of the most valuable baked product in the category distinguished in dietetics according to the criterion of baking methods (with respect to the preference of the author of the treatise *De diaeta* and Dieuches for *ipnós/phóurnos* oven bread) are only an exception that confirms the rule and may attest to technological progress as regards the manufacture of *kribanon* ovens (with a lack of progress in this field if we are considering *ipnós/phóurnos*). However, this issue requires research into surviving archaeological materials and does not constitute a problem that we would like to analyse in the present work.

Furthermore, an analysis of medical sources shows that not only did wheat maintain its importance in dietetic texts as we move closer to the boundary date of our analyses, but also that interest in this cereal appeared to grow. This focus on descriptions of wheat was doubtless a reflection of its predominant role in agriculture and the culinary art, and traces of this phenomenon may also be found in the nomenclature used in the seventh century by Paul of Aegina, as well as the author of

the treatise *De cibis*. In the latter work, references to the analysed food are made not only by means of its specific proper name, in other words not only using the term *pyrós*, but also through the application of a general term, previously meaning ‘cereal crop’, i.e. *sítos*. Thus, in the seventh century the general term *sítos* became identical for the authors of the analysed deliberations with the most important of the crops. This trend grew in strength after the seventh century, which fact finds reflection – for example – in the nomenclature used by the author of the *Geoponica*.

Our deliberations show that wheat is a cereal to which medical authors gave on the whole considerably more consideration than any other food, which fact obviously finds reflection in the amount of space devoted thereto in their treatises and the present study. It is characteristic in the context of our work that the discussion concerning wheat typically commenced analyses of foodstuffs obtained from cereals, which in turn were usually the first to be touched upon in disquisitions devoted to individual food groups. Good examples of such a compositional arrangement are Galen’s comments in his treatise entitled *De alimentorum facultatibus*, Oribasius’ in the first book of the *Collectiones medicae*, Anthimus’ in *De observatione ciborum*, and the structure of the work known as *De cibis*. An exception to this rule are the deliberations of the author of the work entitled *De diaeta*, who described the cereal in question having first completed a description of barley, while the fragment that he devoted to *pyrós* was slightly shorter than that concerning *krithé*. This phenomenon may be doubtless explained as a reflection of a very significant fact, i.e. the equal with respect to wheat (or even greater, for Greeks) importance of barley until the end of the fifth century BC. Surely, however, these were times when wheat began to come to the forefront of cereal crops cultivated and consumed in the Mediterranean area, for the entirety of subsequent dietetic works – and indeed therapeutic writings as such – point to the predominance of *pyrós* in the diet of the region. To be sure, from the second century wheat is described as the first and most important cereal crop, which appears to have been the basic element of the diet of readers of individual medical works.

Let us return, however, to the phenomenon of the invariability and durability of doctrines expounded in medical treatises. An analysis of these texts leads us to the conclusion that the knowledge presented in the researched sources is the fruit of experiences gathered by generations. This is clearly visible in the references to historical authors (discussed above), made since the times of Galen and Oribasius, concerning dietetic and culinary data. This is excellently visible in the numerous references to pharmacological tradition, which can be found when analysing recipes for individual drugs that used only wheat and products obtained therefrom. Therefore, in the present text we have tried to maintain these references to the history of medicine in order to emphasise the achievements of science in these fields before the times of Galen. We interpret the abovementioned respect for the output of past generations of physicians as yet another aspect of the history of medicine that supports our argument concerning the strong position of wheat in the diet. This is so, because we are of the opinion that Greek dietetics and pharmacology would not have turned their attention to *pyrós* at so early a date, with such thoroughness, and on such a scale if the product itself had not been considered as important and common on the market. What is more, so much support would not have been given to the knowledge of predecessors if it had not found practical application in the period between the second and seventh centuries. For us, the essence of the role of wheat in medical theory and the reality of the analysed epoch is encapsulated in Galen's opinion, written down in the treatise entitled *De compositione medicamentorum secundum locos*, where the author states that everyone – even the poorest – should in sickness have access to *chóndros*, i.e. wheat groats, white bread (understood to be baked from *pyrós*), and *áleuron*, most probably obtained from the same raw material⁷⁰.

Data from medical treatises concerning the cereal in question point to a deep and systemic knowledge thereof. The term *pyrós* itself did not differentiate semantically between common wheat and hard (*durum*)

⁷⁰ Otherwise, this term would be accompanied by an epithet referring to raw material different than *pyrós*.

wheat. However, medical authors were intimately aware of the actual difference and pointed out the reasons for differentiating these varieties. Both were provided with a precise and individual nomenclature. Common wheat was therefore known as *pyrós setánios/sitánios*, *silignis*, *pyrós silignites*, *pyrós aleurites*, or *triménios/trimeniatós*. The second variety was termed *semídalís* or *pyrós semídalites*. As we have already mentioned previously, of particular importance for précising this division is the information presented in Oribasius' *Collectiones medicae*, which contains fragments of the doctrines of Athenaeus of Attaleia. The existence of systemic knowledge concerning *pyrós* is also supported by the fact that extant data differentiates the two wheats as regards physical features, dietetic properties, culinary applications and therapeutic roles, with individual elements of the theory being logically interconnected. Physical features make it possible to select a raw material of the highest quality, dietetic properties of the food have been emphasised as determining the usage of specific substances in culinary art, while medical properties are decisive for their application as *phármaka*.

The role of wheat in the diet also found reflection in the scrupulousness with which authors enumerated the products obtained therefrom. Our sources are incredibly detailed as regards the specification of the nomenclature used for foods obtained from *pyrós*, describing each product with great precision. This feature of the narratives of medical treatises has also been interpreted by us as an indication of the commonness of *pyroi* on the market and their relative availability. Obviously, we understand that this important cereal spawned numerous derivative products and gained many culinary applications. In addition, since the texts of medical authors remain unwaveringly detailed in this regard despite the passing of centuries, we interpret this fact as implying that wheat was permanently important in the diet and medicine throughout the period constituting the subject of our research. Doubtless no one would have enumerated names that sounded foreign and had no practical importance for readers of the individual studies we have analysed. However, we feel obligated to add that when changes in the nomenclature were necessary, they were indeed introduced. A good example of this

phenomenon are Galen's comments concerning the terms *íttria*⁷¹, *lághana* and *rhyémata*, the replacement of the term *ámylon* with *katastatón*, and the modification of the name of black bread from *ártos rhyparós* to *ártos kybarós*, which occurred in the later treatise *De cibis*. Thus, the nomenclature was subject to evolution, but the designations to which it referred were still in common usage.

Returning, however, to the precision of descriptions of wheat products, we should state that this meticulousness regarding nomenclature can only be compared with that applied in order to present the position of barley and individual barley foods. Thus, medical works are full of *termini technici* which refer to types of flour (*áleuron*, *áleuron adiákriton*, *semídalís* and so forth), groats (*chóndros*, *chóndros plytós*, *krímmion* and so on), types of bread (*ártos katharós*, *ártos rhyparós*, *ártos autópyros* and others), baked products that were not bread, but rather pancakes (*tagenítai*), products that were baked or roasted or neither (*íttria*), dishes made from boiled wheat grains (*pyrói hephthoí*), dishes obtained from groats (*chóndros*, *póltos*, *rophémata*, *hepsémata* and so forth), names of drugs that included wheat in their recipes (*epithémata*, *émplastroi*, *kóllai*, *trochískoi* and others), and also ailments that were treated using the latter (*phthísis*, *pleurítis*, various *dyskrasíai*, *sépsis* and so on).

Let us now introduce a certain reservation. Some surviving sources present even more detailed data pertaining to specific aspects. And thus, as regards products baked from wheat – and in particular bread – our treatises, concentrating as they do solely on categories that were of greatest importance for medicine and omitting a multitude of nomenclatural details, are less detailed than book three of the *Deipnosophistae*. Therefore, a decidedly richer terminology could be introduced to the present deliberations. We refrained from this, however, in order not to excessively broaden the contents of our analyses and deliberations. Nevertheless, we consider the contents of the latter work as further proof of

⁷¹ The term which in the work *De rebus boni malique suci* was stated as being somewhat outmoded. More about this product – S. Hill, A. Beyer, *Byzantine porridge tracta, trachaná and trahana*, [in:] *Food in antiquity...*, p. 44–54.

the importance of wheat products in the diet of antiquity as a whole, and also as an indication that not only physicians, but also intellectuals treated food holistically, that is both as a food and a drug.

When presenting a description of wheat, treatises also include information that allows us to draw conclusions concerning the spread of its cultivation. We are referring here to deliberations concerning the dietetic properties of wheat grain depending on weather conditions and the climatic zones in which the cereal crop was sown. Specific information on the geographic spread of wheat consumption indicates that it was common throughout the entire Mediterranean zone, while the importance of other cereal crops increased as the distance from the main political centres of the Empire grew. It is difficult to state whether *pyrós* wheat was completely eliminated from cultivation in any region. On the contrary, the information in our possession, for example concerning Asia Minor in the second century, indicates that the cereal crop in question was sown nearly everywhere, but also that in certain areas it was cultivated alongside other crops (the scale of such cultivation differed). Wheat was therefore the dominant crop, but barley, emmer, spelt and millet were grown alongside. Let us give but one example confirming the correctness of our reasoning. Galen in his *De alimentorum facultatibus* stated that in his homeland he both ate *pyroí hephthoí* and personally husked barley grains (incidentally, covered in sweat, for this was a hard physical labour). Thus, both cereals were sown and harvested in the vicinity of his home city.

In numerous texts, such as – for example – the output of Galen and later Oribasius, we also find technological observations informing how to proceed with harvests depending on circumstances. These concern the process of drying crops, checking the quality of seeds, and determining their suitability as a raw material for foodstuffs. The data indicates that, since wheat came from many different territories, and therefore differed in terms of quality, it required evaluation in terms of its usefulness for gastronomy and medicine. The information also suggests that grains – and not the intermediate materials made therefrom – constituted

the subject of trade, for individual derivative products and victuals based on *pyrós* were prepared at the home of the buyer⁷².

Furthermore, medical sources allow us to determine certain regularities as regards the consumption of wheat within different social classes. The greatest amount of such information may be found in the works of Galen, who left a cornucopia of comments and observations based on his own life experience. As a result, we best know the situation existing in the second century, but also accept that – since the development of agriculture, the culinary art and medicine in the period under discussion was not rapid – the majority of data obtained from Galen's treatises suitably describes the situation both before and after his period of activity.

Getting to the heart of the matter, however, we should commence this part of our deliberations with the statement that wheat has been presented in medical sources as a food of the more affluent social groups – and primarily of city dwellers. Country dwellers could count first and foremost on cereal crops that they themselves cultivated, perforce selecting those species, which could be successfully grown in the particular geographical regions. Thus, they usually selected plants that were resistant to local climatic conditions, which in the Mediterranean Basin means resistance to high temperatures and insufficient humidity; in other words, they chose crops with a shorter growing season. In locations where rainfall was limited, they sowed barley – the second most popular cereal in antiquity and the Byzantine times – or other crops of the *genus Triticum*, i.e. emmer wheat (*zeiá*), einkorn wheat (*típhe*), or spelt wheat (*ólyra*). Although these gave smaller yields, they were highly reliable due to their lesser susceptibility to unfavourable atmospheric conditions.

Our data indicates that urbanised areas were privileged in terms of wheat provisioning, for they could count on the organised import of this cereal, which fact was emphasised by – for example – Galen, who clearly mentioned *ólyra* as a raw material for baked products. He stated that until the baked product was fresh and warm, it was relatively easy to

⁷² For further conclusions concerning this issue, cf. hereunder, especially fragments discussing the output of Galen and Oribasius.

sell on the municipal market. For the author, this was a *sui generis* exception to the rule of complete domination of such centres by bread made from *pyrós*. Wheat reigned supreme as a raw material for these products, because – as he stressed – it was transported to municipal agglomerations even from afar (as we might imagine).

Let us add one more comment. Wheat had to be the choice of the more affluent members of society, for it appears that those in high society were the addressees of the medical treatises that analysed this cereal in detail⁷³. However, these works lack precise data as to the criteria that were to be applied in order to distinguish the said groups. We may, however, suggest a certain general formula. The medical works were addressed to those who could afford to purchase the appropriate products, namely food, which – in turn – according to their physician would favourably impact the state of their health⁷⁴. Those who failed to follow this course of action (since they could not afford to do so), as for example farmers who based their consumption pattern on baked products of the *ázymos* type, were presented in medical works as examples of the bad effects of failure to maintain a proper diet.

The fact that not everyone could afford the luxury of choice was also brought about by other factors. For example, when assessing the dietetic advantages of individual types of bread, the authors of medical works at the same time pointed out that the most valuable types were those, which required a selected raw material⁷⁵, the devotion of considerable effort to its processing⁷⁶, time-consuming and labour-intensive dough kneading, and the most efficient baking technique⁷⁷. Such a food was

⁷³ They were particularly interested in foods based on wheat.

⁷⁴ An additional advantage facilitating access to wheat foods, and in particular to bread made from this cereal crop, concerned one's location of residence. Those who lived in urbanised territories (even if they were poorer) had greater chances than those who resided outside the reach of organised systems for transporting wheat grain.

⁷⁵ Cf. Galen's comments, and those of Oribasius set forward in the present text. Cf. also N. J a s n y, *The breads of Ephesus and their prices*, *AHis* 21, 1947, p. 190–192.

⁷⁶ The flour had to be purified, and the dough kneaded for a long time.

⁷⁷ *Ártos katharós kribanítēs*.

contrasted with baked products made from leftovers and without special effort or the usage of special raw materials⁷⁸. In addition, the greatest attention was given to the former. The fact that not everyone and not on a daily basis had access to wholesome food has also been pointed out in Galen's postulate – cited previously – in the treatise *De compositione medicamentorum secundum locos*, namely that at least in times of sickness the poor should be provided with the basic wheat products.

Obviously, the cereal known as *pyrós* was also consumed by the poorer classes and country-dwellers. It may also be stated, however, that these people ate inferior types of bread and utilised the method of boiling wheat products more frequently than city-dwellers. According to Galen, farmers were consumers of unleavened bread and *tagenítai*, which they made at their own expense. The former baked product, in particular, provided them with nourishment, but at the same time was so difficult to digest that, as we read in the *De alimentorum facultatibus*, such a diet was a cause of numerous deaths. Generally speaking, on the basis of our information we may conclude that inhabitants of rural areas more frequently consumed insufficiently risen wheat products, i.e. without the addition of yeast. The commonness of this practice is attested to, for example, by the comprehensive discussions concerning the harmfulness of baked products not containing *zýme* for the human organism. These (i.e. *ázymos*, *tagenítai* and *itria* breads) were difficult to digest, and also listed amongst the *emphrattiká*, that is products that blocked the liver, caused enlargement of the spleen, and also brought about the generation of renal calculi⁷⁹. Galen's teachings point out that the social group at risk from such ailments should be identified as

⁷⁸ *Ártos pityrias*.

⁷⁹ Ailments of this type were frequently mentioned in sources. Concerning this sickness, cf. P. Garnsey, *Food and society...*, p. 46; A. Diamandopoulos, *The effect of medicine, in particular the ideas about renal diseases, on the "well-being" of Byzantine citizens*, [in:] *Material culture and well-being in Byzantium (400–1453). Proceedings of the International Conference (Cambridge, 8–10 September 2001)*, eds. M. Grünbart, E. Kislinger, A. Muthesius, D. Stathakopoulos, Wien 2007, p. 93–99.

country-dwellers, namely those *talaiporoúntes* who, for example, during holidays ate unleavened bread with the addition of cheese, which fact was mentioned in the *De alimentorum facultatibus*, in a fragment illustrating the effects of consuming indigestible food from the *ázy-ma* group. The author's observations concerning the shortened lives of these people without a doubt reflect the reality of the second century and present the state of health of the rural population in Asia Minor. It is significant that this doctrine, although devoid of any references to the history of the author of the *De alimentorum facultatibus*, or indeed other medical writers⁸⁰, remained an element of teaching until the seventh century – in other words, the pattern of consumption presented by Galen continued to function despite the passage of years and centuries.

We have already suggested herein that the high consumption of foods prepared without yeast was the result not only of the lower prices for baked products of this type (incidentally, this issue was of lesser importance in rural areas, where baked products were made at home using available raw materials), but first and foremost because its production required both less time and labour. Country-dwellers simply did not have enough free time to systematically devote a considerable part of the day to the production of good *zymites* bread. Among others, this interpretation is supported by a tale from Galen's youth, according to which the Pergamene and his companions were offered a dish based on boiled wheat (*pyroí hephthoí*), and not wheat bread, which had just run out.

This tale also indicates that for the reasons quoted above, it was more usual for country-dwellers to boil semi-processed wheat, and they were thus the prime consumers of gruels and soups based on *pyrós*, *chóndros*, *krímnon* or *áleuron*. These dishes were consumed by people, who for

⁸⁰ Cf. our comments regarding the practice of abbreviating the disquisitions of Galen by Oribasius. For example, when describing *pyroí hephthoí*, the latter omitted the entirety of information illustrating personal experiences contained in the works of his mentor and predecessor.

whatever reason could not afford high-quality white bread or simply did not have the time required for its preparation. We would like to stress, however, that there are no mentions indicating that boiled cereal dishes were not eaten in municipalities. On the contrary, recipes for such dishes contained in the *De re coquinaria* suggest that it was consumed everywhere, but that the recipes were adapted to individual affluence and tastes. In any case, the latter must have exerted a considerable impact on individual preferences, and thus on the prevalence of a specific way of preparing the food – boiling or baking. Furthermore, an argument for the popularity of soups and gruels is that – and this we know, for example, from the tradition of Dieuches as reported by Oribasius – boiled food was recommended for sicknesses, particularly those that manifest themselves by high temperatures and a general difficulty in consuming solid foods. Since the same sources indicate that fevers were common, both in municipal and rural areas, patients received such dishes as a medication irrespective of their place of residence.

KRZYSZTOF JAGUSIAK

Wheat: dietary assessment

Let us now proceed to a brief description of the most significant dietetic doctrines concerning wheat known as *pyrós*. According to medical theories, they were to be decisive for the methods according to which given foodstuffs were utilised in the culinary art. The *Corpus Hippocraticum* contains a wealth of information on the dietetics of wheat, and a discussion of all of its aspects would take up too much space. Let us therefore select one modest sample in order to present characteristic views concerning foods connected with this gift of Demeter. The work *De diaeta* contains a chapter devoted to *pyrós*⁸¹. Wheat was described

⁸¹ *De diaeta*, 42, 1–27.

therein as a food having a stronger effect than barley, and also more nutritious. However, both the cereal itself and the juice obtained therefrom – stated the anonymous author – takes time to proceed through the organism in order to provide it with nourishment⁸². Proceeding to an assessment of the properties of foodstuffs based on *pyrós*, the author stated that *synkomistós* bread made from this species of wheat dries out the body and passes through it relatively quickly⁸³, whereas white *katharós* bread is more nutritious, but requires more time in order to be distributed and excreted⁸⁴. In turn, *zymítes* baked products are light, rapidly excreted, and easily ripen in the stomach⁸⁵. Bread without yeast (*ázymos*) travels through the organism with greater difficulty, but is more nutritious than the aforementioned *zymítes*⁸⁶. Wheat products distinguished according to the method of baking may be presented as follows. First in terms of nutritional value are the *ipnítai*, since they are least burned by fire⁸⁷. Baked products of the *eschára*⁸⁸ variety – and breads made on spits – come second⁸⁹. Loaves of *kribanon*⁹⁰ and those that are baked directly in ashes⁹¹ were considered the worst, for during baking they lose the greatest amount of humidity⁹². Passing on the division of bread according to the criterion of flour granulation, the dietician stated that *semidalítes*⁹³ baked products strongly impact the organism, while *chondrítai*⁹⁴ breads are even more effective in this

⁸² *De diaeta*, 42, 1–2.

⁸³ *De diaeta*, 42, 2–3.

⁸⁴ *De diaeta*, 42, 3–4.

⁸⁵ *De diaeta*, 42, 4–6.

⁸⁶ *De diaeta*, 42, 7.

⁸⁷ *De diaeta*, 42, 13–14.

⁸⁸ *De diaeta*, 42, 13.

⁸⁹ *De diaeta*, 42, 13–14.

⁹⁰ *De diaeta*, 42, 14.

⁹¹ *De diaeta*, 42, 15.

⁹² *De diaeta*, 42, 14–16.

⁹³ *De diaeta*, 42, 16.

⁹⁴ *De diaeta*, 42, 17.

regard. Both types, however, proceed with difficulty through the organism⁹⁵. Only scant attention was given to products other than those subjected to the process of baking. Boiled *semídalís* and *chóndros*⁹⁶ exert a powerful action on the organism and are nutritious, but – similarly to the abovementioned baked products – pass through the body with some difficulty⁹⁷. To summarise these deliberations, we should state that the present group of opinions is repeated with only slight changes throughout the entire period covered by the present study.

The works of Dioscurides are not a good source of knowledge on the dietetics of wheat, and the existing data was written down in the section concerning culinary art. A different situation, in turn, arises in connection with the output of Galen – one of the main sources of our knowledge of *pyrós* dietetics. This author left us with so much information that it requires a strict selection. The most cohesive – albeit brief – characteristic of the dietetic values of *pyrós* was included by Galen in the treatise *De victu attenuante*. He wrote therein that wheat of the highest quality is very nutritious, but results in the generation of thick and viscous juices in the body of the consumer⁹⁸. Obviously, the latter had to be neutralised, and this was achieved by the appropriate processing of *pyrós* into food, with the best results being obtained by using it for baking bread⁹⁹. We find a similar approach to the dietetic properties of this cereal in the description of common wheat in the *De alimentorum facultatibus*¹⁰⁰. Galen described the particularly wholesome grains of this cereal as being hard, with a compact internal structure, and difficult to bite open. These provide greatest nourishment irrespective of the unit

⁹⁵ *De diaeta*, 42, 17–18. White bread, probably among others due to its nutritiousness, was available for the wealthy – P. G a r n s e y, *Food and society...*, p. 122.

⁹⁶ *De diaeta*, 42, 26.

⁹⁷ *De diaeta*, 42, 26–27.

⁹⁸ G a l e n, *De victu attenuante*, 33, 3–4.

⁹⁹ More detailed information concerning the factors that make it possible to obtain a wholesome food from wheat have been discussed together with the dietetic properties of bread.

¹⁰⁰ G a l e n, *De alimentorum facultatibus*, 481, 1–13, vol. VI.

of volume¹⁰¹. The work *De simplicium medicamentorum temperamentis ac facultatibus*, in turn, contains a whole chapter devoted to *pyrós* as a medicine, i.e. *phármakon*¹⁰², while the information set forward therein characterises the general properties of this cereal, supplementing its description as a food. We would like to make the reservation that Galen spoke in general of the external application of common wheat¹⁰³, namely its usage as one of the constituents of compresses¹⁰⁴. He maintained that in this instance the said cereal has a certain warming effect, but does not serve to significantly dry or moisten. However, in the cited commentary Galen also departed from external applications, to add that *pyrós* is characterised by some viscosity and for this reason may block any of the channels in the internal organs¹⁰⁵.

As regards the dietetic properties of boiled wheat, namely *pyrói hephthoí*, the Pergamene started off¹⁰⁶ by citing his recollections concerning the impact of this food on his own organism. He mentions that following the consumption of this dish he first had a feeling of heaviness in the stomach, comparing the wheat thus eaten to clay. On the next day, still not having digested the food, he did not desire to eat anything else. He also had winds, a headache, and scotomas. This was so, because the food failed to move through his intestines (and this, as he stated, is the sole medicine for indigestion). Galen therefore asked the peasants how they felt after eating boiled wheat. They responded that they consumed it frequently, forced indeed by the same necessity – i.e. the need

¹⁰¹ Galen, *De alimentorum facultatibus*, 481, 2–4, vol. VI.

¹⁰² Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 111, 1–11, vol. XII.

¹⁰³ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 111, 3, vol. XII.

¹⁰⁴ This statement, however, was made only in the context of the description of the action of bread cataplasms – Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 111, 7, vol. XII.

¹⁰⁵ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 111, 3–5, vol. XII.

¹⁰⁶ This refers to an experience that was mentioned when discussing the culinary aspects of *pyrói hephthoí*.

to rapidly satisfy their hunger – that befell Galen and his companions, assessing this food as heavy and difficult to digest¹⁰⁷. The author then proceed to note that this same conclusion could be reached not only on the basis of personal experiences, but by means of theoretical reasoning, using analogies to the dietetic properties of *áleuron*. This flour is in fact difficult to digest until it is kneaded with salt and leaven, and subsequently kneaded and baked in a *kribanon*. One cannot therefore expect that wheat – ungrounded and thus exerting a particularly strong effect on the alimentary tract – will be easier to digest than *áleuron*. Galen also added that when such a dish is digested, its nutritional potential is immense, giving considerable strength to the consumer¹⁰⁸. These deliberations should be supplemented by the information which he provided on boiled wheat in the chapter devoted to *ámylon*. In his opinion, *pyroí hephthoí* tend to warm the body and provide good nourishment. They are nutritious – obviously after being initially digested. Naturally, however, they do not easily submit to this process¹⁰⁹. It should also be added that Galen referred to the properties of *pyroí hephthoí* in other treatises as well. For example, in the treatise *De victu attenuante* he generally did not recommend dishes (*skeuasíai*) made from boiled wheat, whether *pyroí hephthoí* or *áleuron* made in water or milk, for he considered them to be indigestible and potentially disruptive to the humoural balance¹¹⁰.

However, Galen's writings lack a separate dietetic characterisation of *áleuron* flour, and for this reason the doctrine concerning its properties must be recreated on the basis of descriptions of other foods. First of all, complete substantive information may be obtained by comparing *pyroí hephthoí* to the flour discussed herein, which may be found in the *De alimentorum facultatibus*; this parallel has already been analysed in the present study. By analogy to boiled wheat, we may therefore not

¹⁰⁷ Galen, *De alimentorum facultatibus*, 499, 4–11, vol. VI.

¹⁰⁸ Galen, *De alimentorum facultatibus*, 499, 13–500, 3, vol. VI.

¹⁰⁹ Galen, *De alimentorum facultatibus*, 500, 13–16, vol. VI.

¹¹⁰ Galen, *De victu attenuante*, 32, 5.

only determine that this cereal and the flour obtained therefrom were classified as difficult to digest, but also nutritious and giving strength. Secondly, the properties of *áleuron* were also referred to in the *De rebus boni malique suci*¹¹¹. Since this product was used to make foods with thick juices (*pachýchyma*)¹¹², the flour obtained from *pyrós* itself had to be responsible for their properties. In this fragment Galen also explained that the consumption of such dishes led to ailments of the liver, caused by the thick juices blocking the channels (*diéxodoi*) in this very organ¹¹³.

The surviving dietetic literature indicates that the qualities attributed to *semídalís* did not substantially differ from those given to *pyrós* wheat and the products obtained therefrom. In consequence, they were identical to the action of *áleuron* flour. Galen characterised *semídalís* in a number of his works. In *De victu attenuante*¹¹⁴ he compared the qualities of *semídalís* and *chóndros*, thereby suggesting that both products were in some way similar, and putting forward the opinion that the former was nutritious¹¹⁵ and leading to the generation of thick and viscous juices¹¹⁶. Our conclusion is confirmed by the fact that he advised those on a reducing diet against its consumption¹¹⁷. In the *De alimentorum facultatibus*, in turn, he maintained that all foodstuffs made from *semídalís* contribute to the creation of thick juices¹¹⁸, pass through the organism slowly¹¹⁹, block channels in the liver¹²⁰, cause irritation and swelling of the spleen¹²¹, and

¹¹¹ Galen, *De rebus boni malique suci*, 768, 6–10, vol. VI.

¹¹² Galen, *De rebus boni malique suci*, 768, 6, vol. VI.

¹¹³ Galen, *De rebus boni malique suci*, 768, 6–7, vol. VI.

¹¹⁴ Galen, *De victu attenuante*, 34, 1–3.

¹¹⁵ Galen, *De victu attenuante*, 34, 1.

¹¹⁶ Galen, *De victu attenuante*, 34, 2.

¹¹⁷ Galen, *De victu attenuante*, 34, 2–3.

¹¹⁸ Galen, *De alimentorum facultatibus*, 492, 6, vol. VI.

¹¹⁹ Galen, *De alimentorum facultatibus*, 492, 6, vol. VI.

¹²⁰ Galen, *De alimentorum facultatibus*, 492, 6–7, vol. VI.

¹²¹ Galen, *De alimentorum facultatibus*, 492, 7, vol. VI.

contribute to the development of renal calculi (*pyroí*)¹²². These qualities could not be eliminated if flour was boiled during its processing into food. This is attested to by any and all comments concerning soup made on the basis thereof¹²³. As regards baked products, health hazards were eliminated by the addition of dough made from *semídalís*, salt and yeast, and also due to the proper (i.e. diligent and prolonged) kneading of the dough for baking and the use of the appropriate baking method¹²⁴. Thus *itria* and *tagenítai/teganítai*, made without yeast, were considered dangerous to health if used in excess, while *semídalís* processed into *semídalítes* bread gave a baked product that was highly valued by dieticians and gourmets.

When commencing our deliberations concerning dietetics of *ártos pýrinos*, it is worth referring to the comprehensive characterisation of bread set forward in the work *De victu attenuante*. Galen therein considered bread as the sole form of preparing *pyrós*¹²⁵ wheat that was worthy of recommendation, contrasting it with the improper form, i.e. utilising boiled wheat products (he made use of the example of *pyroí hephthoí* and *áleuron* in water or milk)¹²⁶. To him, the quality of bread was dependent on the method of baking, and thus he recommended first and foremost the *kribanon*, but also – with certain reservations – the *ipnós*¹²⁷. However, he also added that in order to obtain a good baked product, one had to use the appropriate quantity of yeast (*zýme*)¹²⁸ and salt¹²⁹. When describing the dietetic properties of wheat baked products in the work *De alimentorum facultatibus*, Galen devoted a considerable

¹²² Galen, *De alimentorum facultatibus*, 492, 8, vol. VI.

¹²³ Cf. for example comments concerning the boiling of *áleuron* – Galen, *De rebus boni malique suci*, 767, 11–16, vol. VI. Cf. also the list of foods from the *pachýchyma* group – Galen, *De rebus boni malique suci*, 768, 6–10, vol. VI (especially 767, 10).

¹²⁴ Galen, *De sanitate tuenda*, 342, 2, vol. VI.

¹²⁵ Galen, *De victu attenuante*, 32, 5–6.

¹²⁶ Galen, *De victu attenuante*, 32, 1–5.

¹²⁷ Galen, *De victu attenuante*, 32, 7.

¹²⁸ Galen, *De victu attenuante*, 32, 6.

¹²⁹ Galen, *De victu attenuante*, 32, 6–7.

portion of his reflections to white bread. He determined that *ártos katharós* is free of any impurities that would cause its colour to turn black and – what is significant – lower its nutritional values, as well as being relatively heavy¹³⁰. Raw dough for such products is viscous and stringy¹³¹ (*glischron*)¹³². The physician also stated that ready wheat baked products pass through the alimentary tract very slowly, and one may even say that no other type of bread is so difficult to digest¹³³. However, it also gives the greatest nutrition to the organism. From the point of view of dietetics, the most nutritious is *ártos katharós* of the *silignítes*¹³⁴ type, followed by *semidalítes*¹³⁵. The author continued by stating that in order to obtain a properly digestible white bread, one must use the appropriate quantity of yeast and bake it for the necessary length of time at the right temperature. At one point of the treatise *De alimentorum facultatibus* Galen observed that the most easily digestible are the breads containing the greatest quantity of leaven¹³⁶, made from properly kneaded dough, and baked at a uniform temperature¹³⁷ in a *kribanon*¹³⁸. The Pergamene's text clearly indicates that *ártoi katharói* fulfilled these requirements. In another point he wrote that those who bake bread over an even fire for an extended period of time shall receive a product that is initially digested in the stomach in the best way, while the nourishment that it provides has all of the positive effects expected thereof¹³⁹. Obviously, the worst breads are those that do not possess the favourable qualities enumerated above¹⁴⁰.

¹³⁰ Galen, *De alimentorum facultatibus*, 482, 5–6, vol. VI.

¹³¹ This quality was brought about by the presence of gluten therein.

¹³² Galen, *De alimentorum facultatibus*, 482, 7, vol. VI.

¹³³ Galen, *De alimentorum facultatibus*, 482, 6–7, vol. VI.

¹³⁴ Galen, *De alimentorum facultatibus*, 484, 1, vol. VI. Cf. R. Sallares, *op. cit.*, p. 323–325.

¹³⁵ Galen, *De alimentorum facultatibus*, 484, 2, vol. VI.

¹³⁶ Galen, *De alimentorum facultatibus*, 484, 6, vol. VI.

¹³⁷ Galen, *De alimentorum facultatibus*, 484, 7, vol. VI.

¹³⁸ Galen, *De alimentorum facultatibus*, 484, 8, vol. VI.

¹³⁹ Galen, *De alimentorum facultatibus*, 484, 13–485, 2, vol. VI.

¹⁴⁰ Galen, *De alimentorum facultatibus*, 485, 2–3, vol. VI.

As regards other types of baked products, Galen opined concerning *ártos plytós* that it does not block the functioning of internal organs¹⁴¹. This is so, because such baked products are neither viscous¹⁴², nor glutinous (or stringy)¹⁴³, while their properties change from earthen to – as he put it – aerial. The natural digestibility of *ártos plytós* is confirmed by its light weight and the fact that it does not sink in water, keeping afloat like a cork¹⁴⁴. In another fragment of *De alimentorum facultatibus*, or – to put it more precisely – in the course of describing barley¹⁴⁵, *ártos plytós* was depicted as a victual with intermediate properties, i.e. between warming (*psýchonta*) and cooling (*thermainonta*)¹⁴⁶. In turn, the bread made from finely ground flour, namely *autópyros/synkomistós*, was considered to have properties exactly between those of *katharós* and *pityriás*¹⁴⁷ breads. Its qualities were determined by the fact that it contained wholegrain flour¹⁴⁸, which – as we should imagine – had properties lying between those of *áleuron* and *pityron*. It should be stressed that Galen's narrative contains no details, i.e. he does not enumerate the dietetic properties of the baked product. The physician further instructed his readers that *ártos autópyros* breads may differ in terms of dietetic properties depending on the characteristics of the wheat from which they are made¹⁴⁹. Thus, *ártos autópyros* made from heavy grain and with a compact consistency would be superior¹⁵⁰ to that made from light wheat with a loose internal structure¹⁵¹. An independent characteristic of *rhyparós* bread was not included in the chapter *Perí pyrón*,

¹⁴¹ Galen, *De alimentorum facultatibus*, 494, 11–12, vol. VI. Concerning this type of baked product, cf. N. J a s n y, *The daily bread...*, p. 250.

¹⁴² Galen, *De alimentorum facultatibus*, 494, 12, vol. VI.

¹⁴³ Galen, *De alimentorum facultatibus*, 494, 12–13, vol. VI.

¹⁴⁴ Galen, *De alimentorum facultatibus*, 494, 13–15, vol. VI.

¹⁴⁵ Galen, *De alimentorum facultatibus*, 501, 1–504, 4, vol. VI.

¹⁴⁶ Galen, *De alimentorum facultatibus*, 501, 4–6, vol. VI.

¹⁴⁷ Galen, *De alimentorum facultatibus*, 483, 1, vol. VI.

¹⁴⁸ Galen, *De alimentorum facultatibus*, 483, 3–4, vol. VI.

¹⁴⁹ Galen, *De alimentorum facultatibus*, 483, 8–10, vol. VI.

¹⁵⁰ Galen, *De alimentorum facultatibus*, 483, 10–11, vol. VI.

¹⁵¹ Galen, *De alimentorum facultatibus*, 483, 11–12, vol. VI.

which constitutes a part of the work *De alimentorum facultatibus*. Indirect data are, however, abundant. On the nutritional scale, a baked product of this type occupied one of the final places¹⁵², and only *pityrias* baked products – thus rather made not from *áleuron*, but bran – was considered inferior thereto. Since, however, it contained a considerable quantity of bran, *rhyparós* was viewed as one of the best baked products for stimulating intestinal activity¹⁵³, and thus must have come in a close second behind *ártos pityrias* on the list of breads that pass rapidly through the alimentary tract¹⁵⁴. The final type was baked products from *pityrias* bran. Galen opined that such baked products were not very nutritious¹⁵⁵ and left numerous undigested elements in the alimentary tract (*perittoma*)¹⁵⁶. For this reason they passed through the tract rapidly¹⁵⁷. This was due to the fact that bran, having purging properties (*dýnamis rhyptiké*)¹⁵⁸ and remaining in the intestines for only a short time¹⁵⁹, stimulate the bowels to excrete¹⁶⁰. Galen had hardly anything to say only about *ártos chondrites*, namely baked products made from *chóndros*. In order to touch upon its dietetic properties, the physician cited essentially classic findings. In the *De diaeta* it was written that bread made from these groats¹⁶¹ is the most nutritious, but does not proceed easily through the intestines¹⁶².

¹⁵² Galen, *De alimentorum facultatibus*, 484, 3, vol. VI. For a modern assessment of the quality of this baked product, cf. C. Bourbou, *op. cit.*, p. 137. It was therefore a bread for the poor – P. Garnsey, *Food and society...*, p. 121–122.

¹⁵³ Put more precisely, the intestines were stimulated by the bran present in the flour used to make this bread. Cf. information concerning baked products of the *pityrias* type. For the properties of *pityron*, cf. Galen, *De alimentorum facultatibus*, 482, 2–4, vol. VI.

¹⁵⁴ Cf. Galen, *De alimentorum facultatibus*, 484, 1–5, vol. VI.

¹⁵⁵ Galen, *De alimentorum facultatibus*, 481, 15–482, 1, vol. VI.

¹⁵⁶ Galen, *De alimentorum facultatibus*, 482, 1, vol. VI.

¹⁵⁷ Galen, *De alimentorum facultatibus*, 482, 1–2, vol. VI.

¹⁵⁸ Galen, *De alimentorum facultatibus*, 482, 2–3, vol. VI.

¹⁵⁹ Galen, *De alimentorum facultatibus*, 482, 3, vol. VI.

¹⁶⁰ Galen, *De alimentorum facultatibus*, 482, 3–4, vol. VI.

¹⁶¹ In all probability, this refers to *ártos chondrites*.

¹⁶² Galen, *De alimentorum facultatibus*, 496, 14–16, vol. VI.

Regarding baked products with or without yeast, *zymítes* bread was presented by Galen as clearly superior to *ázymos*. It was mentioned as a food suitable not only for ordinary people in their prime, but also for the elderly. We should conclude that if baked properly, it was rather easy to digest. In another point of the *De alimentorum facultatibus* Galen stated that the easiest to digest are those types of bread that contain the greatest amount of leaven, are well-kneaded, and have been baked at a uniform temperature in a *kribanon*¹⁶³. He made a similar remark in the *De victu attenuante*, where he determined that the presence of *zýme*¹⁶⁴, in addition to salt, was a *conditio sine qua non* for obtaining properly baked *pyrós* wheat bread. Galen did not recommend unleavened breads for a normal diet. On the contrary, he wrote that baked products with an insufficient amount of yeast – or completely devoid of yeast – are not good for anyone¹⁶⁵. Basing, however, on the contents of his deliberations, we should somewhat modify this opinion. Baked products of this type were in fact consumed and digested by people, in particular those engaged in hard physical labour (*talaiporóintes*)¹⁶⁶, amongst whom Galen classed farmers and athletes. He presented the method of nutrition of the former as an example of an atypical diet, i.e. differing from that used by ordinary readers of his medical advice¹⁶⁷, thus suggesting that peasants ate *ázymos* bread more frequently than city-dwellers. He also explained that bread baked without the addition of yeast had one quality that was advantageous for people who worked long and hard. Namely, its initial digestion in the stomach was difficult, and therefore it was considered as a food that tended to remain persistently in the intestines and disintegrate slowly, freeing its consumer from the feeling of hunger for a long time¹⁶⁸. Galen stated, however, that – all

¹⁶³ Galen, *De alimentorum facultatibus*, 484, 6–8, vol. VI.

¹⁶⁴ Galen, *De victu attenuante*, 32, 6.

¹⁶⁵ Galen, *De alimentorum facultatibus*, 486, 2–3, vol. VI.

¹⁶⁶ Galen, *De alimentorum facultatibus*, 486, 13–14, vol. VI.

¹⁶⁷ Galen, *De alimentorum facultatibus*, 486, 1, vol. VI. Such ordinary people should eat white bread, well-risen and baked uniformly in a *kribanon*.

¹⁶⁸ Cf. deliberations concerning the food of athletes.

in all – *ázymos* baked products were unfavourable even for peasants, basing his analyses on the example of baked products¹⁶⁹ with the addition of cheese¹⁷⁰, which farmers ate during one of the holidays¹⁷¹. Such a food, he observed, was harmful even for the strongest harvesters and diggers, whose physical condition is on the whole good¹⁷². Galen continued that the rural lifestyle allows the organisms of peasants to cope with the digestion of the even the most difficult foods¹⁷³. After a hard day's work, one's organism is completely lacking in nutritional elements¹⁷⁴. In order to be able to continue physical exertions, body tissues collect each and every available scrap of food from the stomach, even if it is semi-digested¹⁷⁵ or has not yet been transformed into nutritive juices. Such a method of nutrition, i.e. the irregular consumption of indigestible and – what is more – insufficiently disintegrated food is the reason why farmers usually fall prey to serious ailments and die before attaining old age. Let us add that the Pergamene did not give the names of these 'serious ailments'. Many people who are not aware of the sad effects of this diet acclaim the bodily strength of these harvesters and diggers, admiring the very fact that they are able to transform extremely indigestible dishes into food¹⁷⁶. Galen also suggested that the necessary amount of sleep positively impacts digestion. He wrote, therefore, that following their hard work peasants fall into a deep sleep, which stimulates the processing of foods by the organism. And if for any reason they are forced not to sleep for a longer period of time, they immediately fall ill¹⁷⁷. As regards athletes, although they usually

¹⁶⁹ Galen, *De alimentorum facultatibus*, 486, 5, vol. VI.

¹⁷⁰ Galen, *De alimentorum facultatibus*, 486, 3, vol. VI.

¹⁷¹ Galen, *De alimentorum facultatibus*, 486, 4, vol. VI.

¹⁷² Galen, *De alimentorum facultatibus*, 486, 6–7, vol. VI.

¹⁷³ Galen, *De alimentorum facultatibus*, 486, 11–12, vol. VI.

¹⁷⁴ Galen doubtless meant that long breaks between meals caused complete consumption by the body of digested food.

¹⁷⁵ Galen referred to the moment when all of the juices created from properly digested foods had been used up by the organism.

¹⁷⁶ Galen, *De alimentorum facultatibus*, 486, 11–487, 5, vol. VI.

¹⁷⁷ Galen, *De alimentorum facultatibus*, 487, 5–10, vol. VI.

consumed foods with very good juices (*euchymótata*)¹⁷⁸, during periods of preparation for contests heavy athletes¹⁷⁹ (i.e. wrestlers¹⁸⁰, and also those who took part in pankration events and boxing¹⁸¹) received only food with thick¹⁸² and viscous¹⁸³ humours. This is so because they frequently fought all day long and therefore required a food that would be difficult both to digest by the organism and excrete¹⁸⁴. Such nutrition was provided to the body by products with thick and viscous juices, for example by pork or *ázymos* bread. Galen also maintained that the juice generated by unleavened breads was first and foremost thick and cold. It was normally termed 'raw' (*omós*)¹⁸⁵. If an ordinary person – i.e. not an athlete – were to base his diet on such foods, he would rapidly fall prey to ailments brought about by excess nutrition (*nósema plethorikón*)¹⁸⁶. If, in turn, someone who practises sport were to eat only vegetables and a thin *ptisáne* (*chylós ptisánes*), his body would weaken unduly¹⁸⁷.

Regarding the division of breads according to the used baking technique, the Pergamonian physician maintained that this factor seriously impacted the ease with which food was digested. *Kribanítes* best served, as we have already stressed after Galen, the health of every man – whether in his prime or elderly. The author stated that bread of this type undergoes excellent initial digestion in the stomach, and that following this process the food that it provides has all the expected, requisite effects¹⁸⁸.

¹⁷⁸ Galen, *De alimentorum facultatibus*, 487, 11, vol. VI.

¹⁷⁹ Galen, *De alimentorum facultatibus*, 487, 12, vol. VI.

¹⁸⁰ Galen, *De alimentorum facultatibus*, 487, 13, vol. VI.

¹⁸¹ Galen, *De alimentorum facultatibus*, 487, 13, vol. VI.

¹⁸² Galen, *De alimentorum facultatibus*, 487, 11, vol. VI.

¹⁸³ Galen, *De alimentorum facultatibus*, 487, 12, vol. VI.

¹⁸⁴ Galen, *De alimentorum facultatibus*, 488, 1, vol. VI. These long periods of not eating and considerable physical effort are the common feature of the lifestyles of peasants and athletes. Both, therefore, require a food that will remain in the organism for a long time and shall be slowly transformed into bodily nourishment.

¹⁸⁵ Galen, *De alimentorum facultatibus*, 488, 9–10, vol. VI.

¹⁸⁶ Galen, *De alimentorum facultatibus*, 488, 4–5, vol. VI.

¹⁸⁷ Galen, *De alimentorum facultatibus*, 488, 6–7, vol. VI.

¹⁸⁸ Galen, *De alimentorum facultatibus*, 484, 13 – 485, 2, vol. VI.

The dietetic priority of *kribanon* bread was also clearly emphasised in the work entitled *De victu attenuante*, where – just as in the treatise entitled *De alimentorum facultatibus* – this baked product is considered as the best and superior to products baked in an *ipnós*¹⁸⁹. The second place of the latter is due to the fact that *ipnítai* bread, although fundamentally advantageous for the diet, i.e. being digested with relative ease, had a tendency to remain raw deep inside¹⁹⁰. In turn, breads baked on the *eschára* are not recommended, for they do not bake uniformly, and this phenomenon occurs considerably more often than in the case of the *ártoi ipnítai*. Their external layer is excessively hard, while their inside stays raw¹⁹¹. Therefore – as we may conclude in accordance with Galen's reasoning – they are not as easy to initially digest in the stomach as *kribanítai* breads. Finally, *enkryphías* baked products gain their unfavourable properties due to being sprinkled with ashes. Galen did not, however, give a detailed explanation of the characteristics of the bread that are determined by ashes. Following the logic of Galen's narrative, we may conclude that he was referring to burning and excessive hardening, which made initial digestion in the stomach difficult. Without a doubt, *enkryphíai* were the worst breads in terms of the method of baking¹⁹².

Galen devoted considerable attention to the impact of *ítria* on the health of consumers¹⁹³. His general assessment of this delicacy is positive. In his opinion, it is on the whole nutritious, while following digestion contributes to generation of blood in the body. It can, however, also cause a health risk. Galen wrote that dishes made with the addition of *ítria* and *semídalís* stimulate the creation of thick juices and proceed through the organism slowly and also that they block channels in the liver, thus leading to an enlargement of the spleen which is conducive to the generation of renal calculi. The qualities of *ítria* depend

¹⁸⁹ Galen, *De victu attenuante*, 32, 7.

¹⁹⁰ Galen, *De alimentorum facultatibus*, 489, 10–12, vol. VI.

¹⁹¹ Galen, *De alimentorum facultatibus*, 489, 12–15, vol. VI.

¹⁹² Galen, *De alimentorum facultatibus*, 490, 1–3, vol. VI.

¹⁹³ The entirety of deliberations concerning *ítria* – Galen, *De alimentorum facultatibus*, 492, 3 – 494, 8, vol. VI.

on whether it is served with or without honey. Those consumed with honey are of a twofold nature. Because of its properties, honey dilutes the juices of foods with which it comes into contact¹⁹⁴. Galen also stated that all of the foods that are prepared with honey and undergo extended thermal processing take less time to pass through the intestines and lead to the generation of a juice with mixed properties, i.e. one that is neither thin nor thick. This is more favourable to the liver, kidneys and spleen of healthy persons than a juice, the production of which is stimulated by food prepared without honey. Finally, we should add after Galen that properly prepared *ítria* are not harmful to the organs located in the chest, or to the lungs¹⁹⁵. In the *De rebus boni malique suci*¹⁹⁶ Galen placed an identical description of the delicacy in question. This proves that the author's dietetic views concerning this topic were both précised and fixed. Thus, the physician classified *ítria* amongst foods with thick juices (*pachýchyma*). The danger that they could cause for the organism boils down to their potential for blocking the channels located in the liver¹⁹⁷.

In the work *De alimentorum facultatibus*, Galen also had a few things to say concerning the properties of *tagenítai/teganítai*¹⁹⁸. He maintained that they lead to the creation of thick juices, slow down the functioning of the alimentary tract and contribute to the generation of raw *chymoi*. It is exactly due to these hazards, and in particular because of the thickness of generated substances, that some people add honey and salt to the dough¹⁹⁹. As regards other dietetic characteristics of *tagenítai* baked products, it is worth referring to the *De rebus boni malique suci*. In this work Galen stated that all baked products made from wheat (*ek pyroú pémma*) without the addition of yeast (*ázymon*)

¹⁹⁴ Galen, *De alimentorum facultatibus*, 492, 6–11, vol. VI.

¹⁹⁵ Galen, *De alimentorum facultatibus*, 493, 10–11, vol. VI.

¹⁹⁶ Galen, *De rebus boni malique suci*, 768, 6–10, vol. VI.

¹⁹⁷ Galen, *De rebus boni malique suci*, 768, 6–7, vol. VI.

¹⁹⁸ The entirety of deliberations concerning *tagenítai* – Galen, *De alimentorum facultatibus*, 490, 9 – 492, 2, vol. VI.

¹⁹⁹ Galen, *De alimentorum facultatibus*, 491, 8–10, vol. VI.

belong to the group of *pachýchyma*²⁰⁰ foods. This general comment excellently describes *tagenítai*, which were in fact baked products of the type mentioned above.

A characteristic of another wheat product, *ámylon*, is scattered throughout several of Galen's works. The most important data assessing starch as a food may be found in the treatise *De alimentorum facultatibus*. As regards the description of *ámylon* as a substance suitable for therapeutic applications, the requisite data are available in the works *De simplicium medicamentorum temperamentis ac facultatibus* and *De compositione medicamentorum secundum locos*. In the *De alimentorum facultatibus*, or to put it more precisely – in the fragment *Peri ámylou*²⁰¹, starch has been presented as a substance belonging to the group of the so-called neutral products²⁰². These are described (irrespective of whether they are wet²⁰³ or dry²⁰⁴) as such, for they do not have any prominent quality that could be felt by the senses²⁰⁵. Therefore, they have no stypitic properties (*stýpsis*), no spiciness (*drimýtes*)²⁰⁶, and indeed no other distinguishing feature. All, however, do possess smoothing properties (*homalyntiké dýnamis*)²⁰⁷. In the second part of the said fragment of the *De alimentorum facultatibus*, the physician supplemented the list of qualities of starch by comparing it to *ártos plytós*²⁰⁸. He made a point of adding that just as that type of bread, *ámylon* provides negligible nourishment to the body²⁰⁹ and has insignificant²¹⁰

²⁰⁰ Galen, *De rebus boni malique senci*, 768, 11–13, vol. VI

²⁰¹ Galen, *De alimentorum facultatibus*, 500, 4–16, vol. VI.

²⁰² Galen, *De alimentorum facultatibus*, 500, 8, vol. VI.

²⁰³ Water belonged to the same category, but contained the element of humidity (*hygrón*).

²⁰⁴ Galen, *De alimentorum facultatibus*, 500, 6–7, vol. VI.

²⁰⁵ The Pergamene was referring first and foremost to the sense of taste.

²⁰⁶ Galen, *De alimentorum facultatibus*, 500, 7, vol. VI.

²⁰⁷ Galen, *De alimentorum facultatibus*, 500, 5, vol. VI.

²⁰⁸ Galen, *De alimentorum facultatibus*, 500, 11, vol. VI.

²⁰⁹ Galen, *De alimentorum facultatibus*, 500, 12, vol. VI.

²¹⁰ Cf. hereunder.

warming properties²¹¹. When, in turn, Galen described the dietetics of broad beans in the fragment *Peri kyámon*²¹², he appeared to suggest that starch²¹³ was classed as a product generating thick (*pachýchymos*) and viscous (*glíschros*) juices²¹⁴. Elsewhere, or – to put it more precisely – in connection with an analysis of the dietetic properties of barley²¹⁵, *ámylon* was characterised as a food with properties that were intermediate between warming and cooling²¹⁶. The abovementioned features fit in with descriptions given in pharmacological treatises. In the *De simplicium medicamentorum temperamentis ac facultatibus*²¹⁷, Galen classified starch²¹⁸ amongst agents that alleviate the action of spicy substances by facilitating their excretion from the organism²¹⁹. In turn, in the chapter devoted to *pyrós*²²⁰ wheat, he wrote that starch²²¹ was a substance with stronger cooling²²² and drying properties than wheat, from which *ámylon* was obtained²²³. Galen also discussed the qualities of starch²²⁴

²¹¹ Galen, *De alimentorum facultatibus*, 500, 13, vol. VI.

²¹² Galen, *De alimentorum facultatibus*, 529, 7 – 532, 3, vol. VI.

²¹³ Galen, *De alimentorum facultatibus*, 530, 15, vol. VI.

²¹⁴ Galen, *De alimentorum facultatibus*, 530, 14, vol. VI.

²¹⁵ Galen, *De alimentorum facultatibus*, 501, 1 – 504, 4, vol. VI.

²¹⁶ Galen, *De alimentorum facultatibus*, 501, 4–6, vol. VI.

²¹⁷ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 443, 12–17, vol. XI.

²¹⁸ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 443, 15, vol. XI.

²¹⁹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 443, 15–17, vol. XI.

²²⁰ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 111, 1–11, vol. XII.

²²¹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 111, 6, vol. XI.

²²² Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 111, 6, vol. XI.

²²³ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 111, 7, vol. XI.

²²⁴ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 634, 6, vol. XI.

in the same treatise²²⁵ when characterising *phármaka* from the *emplastiká*²²⁶ group. He explained that he was referring to dry substances with a neutral characteristic²²⁷. Their qualities are, therefore – as he continued – intermediate²²⁸ between warming²²⁹ and cooling²³⁰, with a certain predominance of the cooling effect²³¹. They contain an earth-like element²³² that brings about the absorption of humidity from the dried matter, but without damaging its structure (*xeraínei adéktos*)²³³. All of these substances are by their nature viscous²³⁴. An identical description of *ámylon* was included in the treatise *De compositione medicamentorum secundum locos*²³⁵.

Galen mentioned the dietetic and medical qualities of *chóndros* in a great many of his works. First and foremost, these groats were the subject of the chapter *Peri chóndrou* in the treatise *De alimentorum facultatibus*²³⁶, although this description was limited to no more than two

²²⁵ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 633, 15 – 634, 16, vol. XI.

²²⁶ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 634, 5, vol. XI.

²²⁷ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 633, 15, vol. XI.

²²⁸ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 633, 18 – 634, 1, vol. XI.

²²⁹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 633, 17, vol. XI.

²³⁰ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 633, 18, vol. XI.

²³¹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 634, 1, vol. XI.

²³² Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 634, 3, vol. XI.

²³³ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 634, 4, vol. XI.

²³⁴ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 634, 11–12, vol. XI.

²³⁵ Galen, *De compositione medicamentorum secundum locos*, 704, 15–18, vol. XII.

²³⁶ Galen, *De alimentorum facultatibus*, 496, 3 – 498, 4, vol. VI.

features, i.e. to the statement that *chóndros* is nutritious²³⁷ and contains a viscous (*glíschros*) juice²³⁸. It should be stressed that in none of his other descriptions of the product in question did Galen depart from the findings quoted above – he only repeating them, and sometimes supplemented the contents of this teaching. For example, in *De victu attenuante* he assessed both *semídalís* and *chóndros* as nutritious²³⁹, and conducive to the creation of thick and viscous juices in the organism²⁴⁰. Returning, however, to the work entitled *De alimentorum facultatibus*²⁴¹, we should also add that in this treatise Galen maintained that boiled *chóndros* had a strong effect and was nutritious²⁴². In all probability, the first statement was an indirect reference to the difficulties that the human organism had with digesting wheat products, while the second quality described the most readily anticipated dietetic effect. The above information is supplemented by a characteristic of *chóndros* (now termed *phármakon*), which was included in the *De simplicium medicamentorum temperamentis ac facultatibus* and placed in a new, special chapter devoted to the properties of these groats²⁴³. As a drug, he classified it amongst *emplastiká*²⁴⁴. He further wrote that its qualities were in general similar to those of *pyrós*²⁴⁵. There was, however, a difference – returning to the dietetic properties of *chóndros*, he noted that it contributed more than wheat to the generation of thick juices²⁴⁶ and was

²³⁷ Galen, *De alimentorum facultatibus*, 496, 4, vol. VI.

²³⁸ Galen, *De alimentorum facultatibus*, 496, 5, vol. VI.

²³⁹ Galen, *De victu attenuante*, 34, 1.

²⁴⁰ Galen, *De victu attenuante*, 34, 2.

²⁴¹ In the treatise entitled *De diaeta*, attributed to Hippocrates.

²⁴² Galen, *De alimentorum facultatibus*, 497, 1, vol. VI.

²⁴³ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 157, 1–15, vol. XII.

²⁴⁴ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 157, 3–4, vol. XII.

²⁴⁵ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 157, 4–5, vol. XII.

²⁴⁶ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 157, 5, vol. XII.

more nutritive²⁴⁷. However, it did not – argued the expert in order to refute incorrect views – have strong drying properties²⁴⁸. In turn, as regards the dietetic qualities of *krímnnon*, the author stated that the characterised food was more nutritious than *álphiton* barley groats, but at the same time more difficult to initially digest²⁴⁹. Generally speaking, the advantages and disadvantages connected with the consumption of *krímnnon* were probably similar to those given by Galen in his assessment of *chóndros*. Finally, *póltos* boiled with *krímnnon* was classed as a rather nutritious dish²⁵⁰ and one that was easy to digest²⁵¹. This opinion, as can be easily seen, is a repetition of the findings of Dioscurides.

The characteristic of the dietetic properties of wheat, written down in the fourth century by Oribasius, is relatively detailed; first and foremost, this eminent physician owed his competence in this field to Galen and Athenaeus of Attaleia (first century). Thanks to the latter, we can acquaint ourselves with detailed and thus interesting deliberations concerning the differences between the properties of wheat depending on the species and conditions of cultivation. In addition, this fragment makes it possible to clearly indicate the differences between the two species of *pyrós* that were predominant in the Mediterranean Basin from the second to the seventh century. Let us start with this work, which predates Galen. Namely, Athenaeus of Attaleia maintained that wheat is the most nutritious of all cereals. He suggested, however, that there exists a certain rule that must be taken into consideration by all medical practitioners (and gastronomists). Namely, the grain of this plant differs in terms of its properties, for example as regards warming and the provision

²⁴⁷ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 157, 5–6, vol. XII.

²⁴⁸ It should be added that it follows from the characteristic of *emplastiká* that *chóndros* has drying properties, but not excessively strong, which however are useful in the treatment of delicate tissue of the head, eyes and so forth.

²⁴⁹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 45, 7, vol. XII.

²⁵⁰ Galen, *De alimentorum facultatibus*, 517, 5, vol. VI.

²⁵¹ Galen, *De alimentorum facultatibus*, 517, 5–6, vol. VI.

of humidity, depending on its type and the location in which it grows, the varied characteristics of regions where it is cultivated, and also on the features of the climate in which it grows and matures²⁵². The physician wrote that two types of wheat are known, namely *pyrós sitánios* (or *aleurítes*²⁵³) and *semídalítes*²⁵⁴. Wheat of the *sitánios*²⁵⁵ type is relatively light, not overly compact, and white in colour²⁵⁶. Its pulp is digested as if spontaneously, while its proper matter, in its nature initially earthen, changes dramatically in the course of ripening, which may be dubbed 'self-digestion'²⁵⁷. Thanks to this spontaneous transformation, the cereal provides nourishment that easily undergoes initial digestion²⁵⁸ and is susceptible to further transformations²⁵⁹; what is more, it can be readily excreted through perspiration²⁶⁰ and rapidly assimilated²⁶¹. On the other hand, however, *pyrós sitánios* does not provide as much nourishment

²⁵² O r i b a s i u s, *Collectiones medicae*, I, 2, 1, 1 – 2, 1.

²⁵³ This variety of wheat was used to make *áleuron* flour, which was more highly valued as a raw material for baking bread. The colour of this flour (whiter than *semídalís*) was brought about by the colour of the grains, described hereunder (the grains were lighter in colour than those of *pyrós semídalítes*), and distinguished *áleuron* from *semídalís*. It is interesting that Oribasius hardly mentioned the term *silígnis*. It appears only once in the *Collectiones medicae* (VIII, 46, 16, 6), probably to denote the flour made from this variety. Citing the classifications of bread borrowed from the works of Galen, he perforce uses the term *ártos silígnítes* (for example – O r i b a s i u s, *Collectiones medicae*, III, 13, 5, 1) to designate bread made from *silígnis* wheat flour. These data point to the considerable independence of medical authors as regards the terminology used for wheat and suggest that there existed a few different terms used to describe *Triticum aestivum* L., namely *sitánios*, *aleurítes* and *silígnis/pyrós silígnítes*. *Triticum turgidum* L., in turn, appears to have only one Greek name, i.e. *semídalís/pyrós semídalítes*. Concerning identification, cf. J. A n d r é, *Les noms de plantes dans la Rome antique*, Paris 1985, p. 265.

²⁵⁴ O r i b a s i u s, *Collectiones medicae*, I, 2, 2, 1–3.

²⁵⁵ O r i b a s i u s, *Collectiones medicae*, I, 2, 2, 3

²⁵⁶ O r i b a s i u s, *Collectiones medicae*, I, 2, 2, 4.

²⁵⁷ O r i b a s i u s, *Collectiones medicae*, I, 2, 2, 4–6.

²⁵⁸ O r i b a s i u s, *Collectiones medicae*, I, 2, 2, 6.

²⁵⁹ O r i b a s i u s, *Collectiones medicae*, I, 2, 2, 6–7.

²⁶⁰ O r i b a s i u s, *Collectiones medicae*, I, 2, 2, 7.

²⁶¹ O r i b a s i u s, *Collectiones medicae*, I, 2, 2, 6–7.

as *semidalis*, and also – as the specialist noted – is more conducive to maintaining good health²⁶² than physical strength²⁶³. In turn, wheat of the *semidalis* variety is heavier, its matter is more compact, is yellow in colour and to a certain extent transparent²⁶⁴. As regards its qualities as a food, it is considered as more difficult to digest²⁶⁵, but also providing a great deal of matter that is assimilated by the organism, although – as Athenaeus also noted – it is more difficult to excrete from the body through perspiration²⁶⁶. These properties result in the fact that *semidalis* wheat more effectively gives strength to the body²⁶⁷ than maintains its health²⁶⁸.

Having provided a broad overview, Athenaeus of Attaleia proceeded to state that *pyrós* wheat has different properties depending on whether it is cultivated in dry and less rich soils, or in ones that are of high quality and fertile. When this cereal grows on a substrate that is light and has a smaller quantity of nutrients, it is easier to digest and assimilate²⁶⁹, but does not provide much nourishment²⁷⁰. In fact, it has the same qualities when grown on land made barren by the sun²⁷¹. Where the earth is burnt out due to insufficient richness and overall infertility²⁷², the seeds become white and characterised by a lack of internal cohesion²⁷³; in other words, they have the dietetic properties normally typical of *sitánios*²⁷⁴. When, however, the layer of soil is

²⁶² Oribasius, *Collectiones medicae*, I, 2, 2, 8.

²⁶³ Oribasius, *Collectiones medicae*, I, 2, 3, 1. Cf. the deliberations of Robert Sallares concerning differences in terminology, cf. R. Sallares, *op. cit.*, p. 324–326.

²⁶⁴ Oribasius, *Collectiones medicae*, I, 2, 3, 1–2.

²⁶⁵ Oribasius, *Collectiones medicae*, I, 2, 3, 2.

²⁶⁶ Oribasius, *Collectiones medicae*, I, 2, 3, 2–3.

²⁶⁷ Oribasius, *Collectiones medicae*, I, 2, 3, 3.

²⁶⁸ Oribasius, *Collectiones medicae*, I, 2, 3, 3–4, 1.

²⁶⁹ Oribasius, *Collectiones medicae*, I, 2, 4, 4.

²⁷⁰ Oribasius, *Collectiones medicae*, I, 2, 4, 4–5.

²⁷¹ Oribasius, *Collectiones medicae*, I, 2, 4, 5–6.

²⁷² Oribasius, *Collectiones medicae*, I, 2, 4, 6.

²⁷³ Oribasius, *Collectiones medicae*, I, 2, 4, 7.

²⁷⁴ Oribasius, *Collectiones medicae*, I, 2, 5, 1.

thick²⁷⁵, and the earth is of high quality and rich, *pyrós* is heavy and has a compact pulp, thus being more nutritious²⁷⁶. Continuing his deliberations, Athenaeus of Attaleia stated that lands which are open and full of air and sunlight give cereal crops that are characterised by better nutritional qualities²⁷⁷. Furthermore, he maintained that wheat grown in a warm climate takes up (from the soil, as we may imagine) nutritional elements that are considerably more healthy and less mixed (and thus more thoroughly separated from one another)²⁷⁸. When, in turn, it grows in locations that are boggy²⁷⁹, it is lighter and less nutritive, and also contributes to the generation of bad blood. It also provides less nourishment for the organism²⁸⁰. When growing in locations that are well-watered, this same cereal also gives less nourishment – and of an inferior quality; what is more, due to the excess humidity it has a tendency to transform into corncockles²⁸¹. Wheat also differs depending on the stability of weather conditions. As regards the constancy of seasons, when the characterising elements thereof (such as cold, warmth, rain and dryness) are appropriately proportionate throughout the entire year²⁸², the cereal grows properly²⁸³, and its grains are large²⁸⁴. The situation is completely different²⁸⁵ when individual elements comprising the climate occur non-symmetrically. As Athenaeus of Attaleia explained, this causes *pyrós* wheat to become poor and less nutritive²⁸⁶. The cereal in question also differs depending on the climatic zone in which it matures. If the weather is sunny and the winds

²⁷⁵ Oribasius, *Collectiones medicae*, I, 2, 5, 1–2.

²⁷⁶ Oribasius, *Collectiones medicae*, I, 2, 5, 2.

²⁷⁷ Oribasius, *Collectiones medicae*, I, 2, 5, 3–6, 1.

²⁷⁸ Oribasius, *Collectiones medicae*, I, 2, 8, 1–9, 1.

²⁷⁹ Oribasius, *Collectiones medicae*, I, 2, 9, 1.

²⁸⁰ Oribasius, *Collectiones medicae*, I, 2, 9, 2–10, 1.

²⁸¹ Oribasius, *Collectiones medicae*, I, 2, 10, 1–2.

²⁸² Oribasius, *Collectiones medicae*, I, 2, 12, 2–4.

²⁸³ Oribasius, *Collectiones medicae*, I, 2, 12, 4.

²⁸⁴ Oribasius, *Collectiones medicae*, I, 2, 12, 4–5.

²⁸⁵ Oribasius, *Collectiones medicae*, I, 2, 12, 5–6.

²⁸⁶ Oribasius, *Collectiones medicae*, I, 2, 12, 6.

moderate, it is of superior quality²⁸⁷. When, however, the sky is continuously cloudy and – despite it being warm – the weather is rainy, the grains become infected with wheat rust and dry up²⁸⁸. Finally, if a given region has a severe and hot climate, and when the growing stalks are subject to strong winds, the wheat is burnt and dried, losing its nutritional value²⁸⁹.

Furthermore, Athenaeus was of the opinion that the qualities of the cereal also differ depending on its age, i.e. that it has different properties when it is young, or in other words when freshly harvested, when it is old – meaning stored for a certain period of time – and when its age is between these two extreme values²⁹⁰. Proceeding to specific qualities, Athenaeus stated that fresh wheat is greenish and rich in matter, having a lot of the aerial element, and is nutritious²⁹¹. Old wheat is the exact opposite – it is devoid of matter, dry, and insufficiently nourishes the body²⁹². Athenaeus of Attaleia ended his analyses with the statement that wheat which is neither old nor young represents qualities that fit in between those previously enumerated²⁹³.

The material retained by Oribasius and connected with the scope of information that we may also find in Galen's treatises does not constitute a single cohesive characteristic that would be similar to that provided by Athenaeus of Attaleia. As regards the description of the properties of *pyrós* grains, similar content may be found in book one of the *Collectiones medicae*, in the chapter preceding the deliberations discussed earlier, which is devoted to the features of the so-called gifts of Demeter²⁹⁴. It does not significantly differ from Athenaeus' observations; rather,

²⁸⁷ Oribasius, *Collectiones medicae*, I, 2, 12, 7–8.

²⁸⁸ Oribasius, *Collectiones medicae*, I, 2, 12, 8–13, 1.

²⁸⁹ Oribasius, *Collectiones medicae*, I, 2, 13, 1–14, 1.

²⁹⁰ Oribasius, *Collectiones medicae*, I, 2, 14, 1–3.

²⁹¹ Oribasius, *Collectiones medicae*, I, 2, 14, 3–4.

²⁹² Oribasius, *Collectiones medicae*, I, 2, 14, 4–5.

²⁹³ Oribasius, *Collectiones medicae*, I, 2, 14, 5–6.

²⁹⁴ Here understood as a cereal crop – Oribasius, *Collectiones medicae*, I, 1, 1, 1–15, 8, especially I, 1, 1, 1–10, 1.

it repeats the doctrines emphasised by the Attaleian. In consequence, we shall not quote it, and only comment that this similarity points to the unity of ancient dietetics as regards the scope of criteria taken into consideration in the description of *pyrós* and the contents of findings. Furthermore, we consider the citation of both *in extenso* by Oribasius as their complete acceptance by the author as representative for the dietetics of the fourth century.

As regards the determination of the dietetic and pharmacological properties of wheat, the physician of Emperor Julian cited Galen's doctrines exclusively. Thus, in book fifteen of the *Collectiones medicae* Oribasius, when describing the analysed cereal and products obtained therefrom (namely *ámylon* and bread), wrote that wheat is one of the foods that warms the body in the first degree. In addition, it neither dries nor moistens the organism in any perceptible way. What is more, it contains a viscous element (it is therefore *glíschros*) and contributes to the blocking of internal organs (i.e. it appears to be *emphrattikós*). Finally, it is suitable for the making of cataplasms²⁹⁵. It should be added that this comprehensive characteristic was then repeated by Oribasius in his *Libri ad Eunapium*²⁹⁶.

As regards information concerning *pyroí hephthoi*, a dish made by boiling wheat, Oribasius obtained the requisite data solely from Galen. However, he abbreviated the latter's somewhat lengthy chapter to the minimum. Thus, the *Collectiones medicae* do not contain any information on cooking, nor the occasions on which the dish was served, nor the persons who usually consumed it. Furthermore, there are no personal reflections, as if the information given was in no way connected with the author's experience²⁹⁷. The qualities enumerated in this chapter were then repeated in fragments grouping food products according to their dominant properties in three food categories. First of all, Oribasius noted in the *Collectiones medicae* that *pyroí*

²⁹⁵ Oribasius, *Collectiones medicae*, XV, 52, 1 – 54, 4.

²⁹⁶ Oribasius, *Libri ad Eunapium*, II, 1, π, 36, 1 – 38, 1.

²⁹⁷ Oribasius, *Collectiones medicae*, I, 4, 1, 1–3.

*hephtoi*²⁹⁸ increases the temperature of the body²⁹⁹, and an identical observation may be found in the *Synopsis ad Eustathium filium*³⁰⁰, and subsequently in the *Libri ad Eunapium*³⁰¹. Secondly, this dish³⁰² was considered nutritious, and therefore the physician classed it amongst foods from the *polytropa*³⁰³ group. Finally, in the *Collectiones medicae*³⁰⁴ *pyroi hephtoi*³⁰⁵ were included amongst *dyspepta* substances, and this quality was also attributed to the dish in question³⁰⁶ in the work dedicated to the son³⁰⁷.

The dietetic characteristic of *áleuron* flour is scattered throughout numerous of Oribasius' works and not always presented directly, for it was in way obvious for the authors of the doctrine that the qualities of *áleuron* derive from those of *pyrós* wheat. Thus, we should commence our analysis by stating that in the chapter of the *Collectiones medicae* devoted to *ekpyetiká*³⁰⁸ (written on the basis of Galen's doctrines) Oribasius wrote that pure wheat flour is nutritious, and by nature both moistening and warming³⁰⁹. From amongst these qualities, only the second is an idiosyncrasy of *áleuron*, for the remainder are common with wheat. It should also be added that the same properties of *áleuron* formed the basis

²⁹⁸ Oribasius, *Collectiones medicae*, III, 31, 1, 1.

²⁹⁹ Oribasius, *Collectiones medicae*, III, 31, 1, 1 – 8, 4.

³⁰⁰ Oribasius, *Synopsis ad Eustathium filium*, IV, 31, 1, 1 – 8, 4 (*pyroi hephtoi* – IV, 31, 1, 1).

³⁰¹ Oribasius, *Libri ad Eunapium*, I, 47, 1, 1 – 9 (*pyroi hephtoi* – I, 47, 1, 1).

³⁰² Oribasius, *Collectiones medicae*, III, 13, 6, 1; Oribasius, *Synopsis ad Eustathium filium*, IV, 12, 7, 1; Oribasius, *Libri ad Eunapium*, I, 29, 7, 1.

³⁰³ Oribasius, *Collectiones medicae*, III, 13, 1, 1 – 13, 1; Oribasius, *Synopsis ad Eustathium filium*, IV, 12, 1, 1 – 15, 2; Oribasius, *Libri ad Eunapium*, I, 29, 1, 1 – 5, 2.

³⁰⁴ Oribasius, *Collectiones medicae*, III, 18, 1, 1 – 13, 1.

³⁰⁵ Oribasius, *Collectiones medicae*, III, 18, 10, 1.

³⁰⁶ Oribasius, *Synopsis ad Eustathium filium*, IV, 17, 8, 1.

³⁰⁷ Oribasius, *Synopsis ad Eustathium filium*, IV, 17, 1, 1 – 12, 1.

³⁰⁸ Oribasius, *Collectiones medicae*, XIV, 37, 1, 1 – 17, 6.

³⁰⁹ Oribasius, *Collectiones medicae*, XIV, 37, 11, 3–4.

for classifying the said wheat flour³¹⁰ amongst *ekpyetiká* in both of Oribasius' smaller works³¹¹; the author also considered *áleuron* as a substance causing the creation of thick juices. He borrowed this argument from Galen, while the fragment of the *Collectiones medicae* containing this assessment is identical to the corresponding parts of the *De alimentorum facultatibus*, however considerably more legible. Thus, the flour is assessed as a food that most efficiently generates viscous juices in the organism of the consumer, for it itself contains such juices. However, it does not negatively impact the chest or, specifically, the lungs³¹². The *glíschron* of *áleuron* flour also appears as an important quality thereof in characteristics of *pyrós* present in chapters of *Hósa glíschron chymón genná*, both in the *Collectiones medicae*³¹³ (in this fragment it is also clearly explained that *áleuron* made from grains that are by their nature light, porous and white³¹⁴ is less capable of generating viscosity³¹⁵ than *semídalís*), and in the *Libri ad Eunapium*³¹⁶. Ending this part of our deliberations, it is worth stating that the list of qualities attributed by Oribasius to *áleuron* should be supplemented by one other, which follows from his description of the properties of wheat flour boiled in milk. Namely, we learn from the *Collectiones medicae* that such a dish causes internal blockages in the liver and is conducive to the generation of renal calculi³¹⁷. We should also observe that this action was additionally emphasised by the inclusion of the said food³¹⁸ in the class of *emphrattiká* in *Collectiones medicae*³¹⁹, where it is also stated that the said dish causes

³¹⁰ Oribasius, *Synopsis ad Eustathium filium*, II, 26, 1, 2; Oribasius, *Libri ad Eunapium*, II, 12, 1, 1–11.

³¹¹ Oribasius, *Synopsis ad Eustathium filium*, II, 26, 1, 1–3; Oribasius, *Libri ad Eunapium*, II, 12, 1, 1–16.

³¹² Oribasius, *Collectiones medicae*, I, 7, 5, 9–6, 1.

³¹³ Oribasius, *Collectiones medicae*, III, 5, 1, 1–2, 4.

³¹⁴ Oribasius, *Collectiones medicae*, III, 5, 1, 2.

³¹⁵ Oribasius, *Collectiones medicae*, III, 5, 2, 1.

³¹⁶ Oribasius, *Libri ad Eunapium*, I, 21, 1, 1–3, 3.

³¹⁷ Oribasius, *Collectiones medicae*, I, 7, 7, 3–4.

³¹⁸ Oribasius, *Collectiones medicae*, III, 25, 7, 1.

³¹⁹ Oribasius, *Collectiones medicae*, III, 25, 1, 1–8, 2.

enlargement of the spleen³²⁰. This, somewhat canonical, set of negative effects of flour boiled in milk is then repeated both in the *Synopsis ad Eustathium filium*³²¹, and the *Libri ad Eunapium*³²².

In Oribasius' writings, *semidalis* flour has qualities identical to *áleuron*. One may reach this conclusion first and foremost on the basis of an analysis of food categories introduced to dietetic literature by this physician. First of all, *semidalis* provided the body a great deal of food. We know this because such was the fundamental quality of *pyrós*, mentioned both by Galen and Athenaeus of Attaleia. Secondly, flour of this type was used to thicken *chymoí*. For this reason, *semidalis*³²³ itself and all of the products made therefrom³²⁴ were included in Oribasius' list of foods that lead to the generation of thick juices (*pachýchyma*)³²⁵. This quality was dietetically significant and universally recognised, while in order to emphasis its importance the very same information has been repeated in the *Synopsis ad Eustathium filium*³²⁶ and *Libri ad Eunapium*³²⁷. Thirdly, the *Collectiones medicae* teach us that *semidalis*³²⁸ was considered a food that gives rise to viscous juices (*glíschra*)³²⁹, and an identical evaluation thereof³³⁰ may be found in the advice for the son and the work for Eunapius³³¹. Fourthly, the physician wrote about prod-

³²⁰ Oribasius, *Collectiones medicae*, III, 25, 6, 2.

³²¹ Oribasius, *Synopsis ad Eustathium filium*, IV, 24, 1, 1 – 8, 2 (*áleuron* in milk – IV, 24, 7, 1).

³²² Oribasius, *Libri ad Eunapium*, I, 41, 1, 1 – 7, 2 (*áleuron* in milk – I, 41, 6, 1).

³²³ Oribasius, *Collectiones medicae*, III, 3, 2, 1 – 3, 1.

³²⁴ Oribasius, *Collectiones medicae*, III, 3, 1, 2.

³²⁵ Oribasius, *Collectiones medicae*, III, 3, 1, 1 – 7, 3.

³²⁶ Oribasius, *Synopsis ad Eustathium filium*, IV, 2, 1, 1 – 5, 3 (products from *semidalis* – IV, 2, 1, 2; *semidalis* flour – IV, 2, 2, 1).

³²⁷ Oribasius, *Libri ad Eunapium*, I, 19, 1, 1 – 5, 4 (products from *semidalis* – I, 19, 1, 2; *semidalis* flour – I, 19, 2, 1).

³²⁸ Oribasius, *Collectiones medicae*, III, 5, 2, 1.

³²⁹ Oribasius, *Collectiones medicae*, III, 5, 1, 1 – 2, 4.

³³⁰ Oribasius, *Synopsis ad Eustathium filium*, IV, 4, 3, 1; Oribasius, *Libri ad Eunapium*, I, 21, 2, 1.

³³¹ Oribasius, *Synopsis ad Eustathium filium*, IV, 4, 1, 1 – 3, 4; Oribasius, *Libri ad Eunapium*, I, 21, 1, 1 – 3, 3.

ucts made from *semídalís*³³² in the chapter of the *Collectiones medicae* devoted to foodstuffs that block the functioning of internal organs, and in particular the liver (*emphrattiká*)³³³. Yet again, we find an analogous set of data (concerning *semídalís* and the products made therefrom³³⁴) in the *Synopsis ad Eustathium filium*³³⁵ and *Libri ad Eunapium*³³⁶. Finally, products made from *semídalís*³³⁷ are included in the *Collectiones medicae* in the category of *bradypora*, i.e. foods that pass slowly through the organism³³⁸. Let us add that this product³³⁹ was also categorised in the same way in the treatise for his son³⁴⁰ and in the work dedicated to Eunapius³⁴¹.

The works of Oribasius contain a wealth of information on bread, while the dietetic doctrines pertaining to this baked product are a derivative of the views and opinions of Galen and Dieuches. They clearly show that all of the best qualities of wheat baked products could be found in *katharós* bread, which was baked in a *kribanon* (according to Galen's doctrines) or in an *ipnós* (in line with the views of Dieuches). It is now time to order and present the essential features that were of decisive importance for the qualities of this food. Wheat bread was first and foremost exceptionally nutritious, but it could have different qualities depending on the type of *pyrós* from which it was made. The greatest amount of nutrition was provided by *silignítes*, a white bread baked

³³² Oribasius, *Collectiones medicae*, III, 25, 6, 1.

³³³ Oribasius, *Collectiones medicae*, III, 25, 1, 1 – 8, 2.

³³⁴ Oribasius, *Synopsis ad Eustathium filium*, IV, 24, 6, 1–2.

³³⁵ Oribasius, *Synopsis ad Eustathium filium*, IV, 24, 1, 1 – 8, 2.

³³⁶ Oribasius, *Libri ad Eunapium*, I, 41, 1, 1 – 7, 2 (products from *semídalís* – I, 41, 5, 1–2).

³³⁷ Oribasius, *Collectiones medicae*, III, 26, 1, 1.

³³⁸ Oribasius, *Collectiones medicae*, III, 26, 1, 1 – 4, 1.

³³⁹ Oribasius, *Synopsis ad Eustathium filium*, IV, 25, 1, 1.

³⁴⁰ Oribasius, *Synopsis ad Eustathium filium*, IV, 25, 1, 1 – 2, 1.

³⁴¹ Oribasius, *Libri ad Eunapium*, I, 42, 1, 1 – 2, 1 (products from *semídalís* – I, 42, 1, 1).

using the best available technique and *sitánios*³⁴² flour. Second in terms of nutritive value was *semidalites*, while third – according to Oribasius – *synkomistós* bread; the above classification has been repeated verbatim in the *Collectiones medicae*³⁴³, in Oribasius' advice for his son, Eustathius³⁴⁴, and in books dedicated to Eunapius³⁴⁵. It was therefore, without a doubt, accepted as valid by dieticians in the fourth century. Furthermore, we observe that *kribanites*³⁴⁶ wheat bread was, apart from barley baked products, allowed in the reducing diet, the so-called *leptýnousa diáita*³⁴⁷. This recommendation may be explained by the inclusion of correctly prepared and baked wheat bread³⁴⁸ in the category of foods with properties in between those causing the generation of thick juices and contributing to their dilution, i.e. those that are neutral in this respect. This topic is touched upon in the chapter enumerating food-stuffs having the said qualities in the *opus magnum* of Oribasius³⁴⁹, and

³⁴² Cf. M. D e c k e r, *op. cit.*, p. 97, wherein this type of bread is also considered as being the best.

³⁴³ O r i b a s i u s, *Collectiones medicae*, III, 13, 5, 1 – 6, 1. The chapter concerning products classified as nutritious – O r i b a s i u s, *Collectiones medicae*, III, 13, 1, 1 – 13, 2.

³⁴⁴ O r i b a s i u s, *Synopsis ad Eustathium filium*, IV, 12, 6, 1–2. The chapter concerning products classified as nutritious – O r i b a s i u s, *Synopsis ad Eustathium filium*, IV, 12, 1, 1 – 15, 2.

³⁴⁵ O r i b a s i u s, *Libri ad Eunapium*, I, 29, 6, 1 – 7, 1. The chapter concerning products classified as nutritious – O r i b a s i u s, *Libri ad Eunapium*, I, 29, 1, 1 – 15, 2. Obviously, the logic of the author's reasoning indicates that in the fourth century the same doctrine was in force that was first found in the writings of Galen, namely that increased contamination of the flour (that is *pityra*) decreased the nutritive value of baked products made therewith. In consequence, we may broaden the available list by the remaining main types of bread and place *synkomistós* before *rhyparós* bread, while at the same time giving last place to *pityritai* baked products. There was, however, a certain exception to this rule, namely *ártos plytós*, which – although made from excellently pure flour – had only a limited nutritive value. It should also be added that an increased admix of *pityra* caused the baked product to pass through the alimentary tract with greater rapidity.

³⁴⁶ O r i b a s i u s, *Collectiones medicae*, III, 2, 5, 2–3.

³⁴⁷ O r i b a s i u s, *Collectiones medicae*, III, 2, 1, 1 – 26, 2.

³⁴⁸ O r i b a s i u s, *Collectiones medicae*, III, 4, 1, 1.

³⁴⁹ O r i b a s i u s, *Collectiones medicae*, III, 4, 1, 1–14.

the same opinion on the qualities of *ártos pyrinos*³⁵⁰ has been included in the pertinent chapters of the *Synopsis ad Eustathium filium*³⁵¹ and the *Libri ad Eunapium*³⁵². In addition, carefully prepared *ártos katharós* (obviously made from wheat and suitably baked)³⁵³ was characterised by good juices and also caused the generation thereof in the organism of the consumer. Without a doubt, its smell and taste were both enticing, and for this reason it was mentioned in the chapter *Hósa eúchyma* constituting a part of the *Collectiones medicae*³⁵⁴. The importance and universal acceptance of the presence of this quality in wheat bread is emphasised by the fact that the said baked product³⁵⁵ was listed in an identical category both in the work dedicated to the son³⁵⁶, and that written for Eunapius³⁵⁷. In addition, Oribasius mentioned well-kneaded and properly baked *ártos*³⁵⁸ amongst substances that were easily digestible. We learn of this from the chapter of the *Collectiones medicae* that enumerates products subject to rapid *pépsis* in the stomach³⁵⁹. Let us add that the same evaluation applied to bread³⁶⁰ in both of the treatises written on the basis of the *opus magnum* of Oribasius³⁶¹. Finally, *ártos*³⁶² was

³⁵⁰ Oribasius, *Synopsis ad Eustathium filium*, IV, 3, 1, 1; Oribasius, *Libri ad Eunapium*, I, 20, 1, 1.

³⁵¹ Oribasius, *Synopsis ad Eustathium filium*, IV, 3, 1, 1–15.

³⁵² Oribasius, *Libri ad Eunapium*, I, 20, 1, 1–14.

³⁵³ Oribasius, *Collectiones medicae*, III, 15, 18, 1.

³⁵⁴ Oribasius, *Collectiones medicae*, III, 15, 1, 1–22, 3.

³⁵⁵ Oribasius, *Synopsis ad Eustathium filium*, IV, 14, 17, 1; Oribasius, *Libri ad Eunapium*, I, 32, 11, 1–12, 1.

³⁵⁶ Oribasius, *Synopsis ad Eustathium filium*, IV, 14, 1, 1–21, 3.

³⁵⁷ Oribasius, *Libri ad Eunapium*, I, 32, 1, 1–15, 3.

³⁵⁸ Oribasius, *Collectiones medicae*, III, 17, 1, 1. The logic of the dietetic narrative indicates that this was wheat bread.

³⁵⁹ Oribasius, *Collectiones medicae*, III, 17, 1, 1–11, 1.

³⁶⁰ Oribasius, *Synopsis ad Eustathium filium*, IV, 16, 1, 1; Oribasius, *Libri ad Eunapium*, I, 34, 1, 1.

³⁶¹ Oribasius, *Synopsis ad Eustathium filium*, IV, 16, 1, 1–11, 1; Oribasius, *Libri ad Eunapium*, I, 34, 1, 1–11, 2.

³⁶² Oribasius, *Collectiones medicae*, III, 31, 1, 1; Oribasius, *Synopsis ad Eustathium filium*, IV, 31, 1, 1; Oribasius, *Libri ad Eunapium*, I, 47, 1, 1.

assessed as a warming food, and this is evidenced by the pertinent observation in the third book of the *Collectiones medicae*³⁶³, in the *Synopsis ad Eustathium filium*³⁶⁴, and in the work dedicated to Eunapius³⁶⁵. All of these findings are concordant with Galen's tradition, for in essence they constitute a repetition of his theses.

A *sui generis* category of *katharós* bread was *ártos plytós*. When devoting his attention to the dietetic properties of this light bread, Oribasius made use of the findings of both Galen and Antyllus. As regards the qualities of this baked product interpreted by the former writer³⁶⁶, they have already been cited in the discussion of Galen's doctrines. Therefore, we shall not return to them. As far as Antyllus is concerned, he considered the action of the said baked product in book three of his work *Perí boethemáton*³⁶⁷. Therein we find a discussion on the food appropriate for people who frequently fall ill³⁶⁸. We read in the pertinent fragment of the *Collectiones medicae* that they should consume food that easily ripens in the stomach³⁶⁹ and is rapidly assimilated, but not excessively nutritious³⁷⁰, and in addition readily excreted from the organism through perspiration³⁷¹. Otherwise, if it were to remain in the body for an extended period of time, it would cause a fever³⁷². If, however, the bodily temperature has been morbidly raised, Antyllus recommended *ártos plytós* boiled to a pulp in water³⁷³, for – as we should surmise – it satisfied all of the conditions required to nourish the chronically ill, listed above. The adoption by Oribasius of Galen's views led to the inclusion of

³⁶³ Oribasius, *Collectiones medicae*, III, 31, 1, 1 – 8, 3.

³⁶⁴ Oribasius, *Synopsis ad Eustathium filium*, IV, 31, 1, 1 – 8, 4.

³⁶⁵ Oribasius, *Libri ad Eunapium*, I, 47, 1, 1–9.

³⁶⁶ Oribasius, *Collectiones medicae*, I, 8, 3, 1 – 4, 1.

³⁶⁷ Oribasius, *Collectiones medicae*, IV, 11, 1, 1 – 14, 4.

³⁶⁸ Oribasius, *Collectiones medicae*, IV, 11, 1, 1.

³⁶⁹ Oribasius, *Collectiones medicae*, IV, 11, 1, 1–2.

³⁷⁰ Oribasius, *Collectiones medicae*, IV, 11, 1, 2.

³⁷¹ Oribasius, *Collectiones medicae*, IV, 11, 1, 2–3.

³⁷² Oribasius, *Collectiones medicae*, IV, 11, 1, 3.

³⁷³ Oribasius, *Collectiones medicae*, IV, 11, 1, 3 – 2, 1.

the light bread in some of the lists compiled by the Emperor Julian's physician on the basis of the predominant dietetic qualities of foods. *Ártos plytós*³⁷⁴ was therefore mentioned in the third book of the *Collectiones medicae*³⁷⁵ as one of the foods displaying features that were intermediate between warming and cooling. We should add that an identical characterisation of *ártoi plytoi*³⁷⁶ may be found in both of Oribasius' subsequent treatises³⁷⁷. In addition, the qualities mentioned both by Antyllus and Galen resulted in the permanent inclusion of this light bread in Oribasius' lists of foods that give the body little nourishment. This property was attributed to the baked product in question³⁷⁸ in the *Collectiones medicae*³⁷⁹, and *ártoi plytoi*³⁸⁰ subsequently received the same assessment in the *Synopsis ad Eustathium filium* and the *Libri ad Eunapium*³⁸¹.

In his output, Oribasius also mentioned the influence of other types of bread on the human organism. As regards black baked products, the physician pointed out only one quality. Namely, he observed that *rhyparós* baked products differed considerably *in minus* in terms of nutritive value from *katharós* products. Therefore, he specified the limited nutritional values of black baked products³⁸² first in the *Collectiones medicae*³⁸³, and applied an identical classification of *ártoi rhyparoi*³⁸⁴

³⁷⁴ Oribasius, *Collectiones medicae*, III, 32, 12, 2.

³⁷⁵ Oribasius, *Collectiones medicae*, III, 32, 1, 1 – 12, 3.

³⁷⁶ Oribasius, *Synopsis ad Eustathium filium*, IV, 32, 13, 1–2; Oribasius, *Libri ad Eunapium*, I, 48, 7, 1–2.

³⁷⁷ Oribasius, *Synopsis ad Eustathium filium*, IV, 32, 1, 1 – 13, 2; Oribasius, *Libri ad Eunapium*, I, 48, 1, 1, 7, 3.

³⁷⁸ Oribasius, *Collectiones medicae*, III, 14, 7, 2.

³⁷⁹ Oribasius, *Collectiones medicae*, III, 14, 1, 1 – 13, 3.

³⁸⁰ Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 6, 2; Oribasius, *Libri ad Eunapium*, I, 30, 6, 2.

³⁸¹ Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 1, 1 – 12, 4; Oribasius, *Libri ad Eunapium*, I, 30, 1, 1 – 8, 2.

³⁸² Oribasius, *Collectiones medicae*, III, 14, 7, 2.

³⁸³ Oribasius, *Collectiones medicae*, III, 14, 1, 1 – 13, 3.

³⁸⁴ Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 6, 1–2; Oribasius, *Libri ad Eunapium*, I, 30, 6, 2.

in both the *Synopsis ad Eustathium filium* and the *Libri ad Eunapium*³⁸⁵. The dietetic properties of the bread known as *pityrites* are, however, somewhat better known. The author emphasised three of its most important qualities. The first concerned its limited nutritional value. This problem was first mentioned in relation to bran bread³⁸⁶ in the *Collectiones medicae*³⁸⁷, and subsequently in the treatise for Eustatius and the *Libri ad Eunapium*³⁸⁸. The second was related to purgative strength. This is eminently emphasised in the physician's writings, for baked products of this type³⁸⁹ were classed amongst substances stimulating excretion for the first time in the most detailed of Oribasius' surviving works³⁹⁰, and then in the treatise for his son³⁹¹ and the work addressed to Eunapius³⁹². Finally, it is worth mentioning that bran bread³⁹³ was also included in the list of products causing the generation of black bile, placed in all three of Oribasius' works cited above³⁹⁴. Unfortunately, Oribasius' works lack a proper characterisation of unleavened bread. We may, however, imagine that its qualities were the opposite of those of good *katharós* baked products, which after all were made with yeast, additionally availing ourselves of the properties attributed to bread such as *ítria* and *teganítai*. Finally, *chondrites* bread was made

³⁸⁵ Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 1, 1 – 12, 4; Oribasius, *Libri ad Eunapium*, I, 30, 1, 1 – 8, 2.

³⁸⁶ Oribasius, *Collectiones medicae*, III, 14, 7, 1.

³⁸⁷ Oribasius, *Collectiones medicae*, III, 14, 1, 1 – 13, 3.

³⁸⁸ Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 1, 1 – 12, 4 (*pityrites* – IV, 13, 6, 1); Oribasius, *Libri ad Eunapium*, I, 30, 1, 1 – 8, 2 (*pityrites* – I, 30, 6, 1–2).

³⁸⁹ Oribasius, *Collectiones medicae*, III, 29, 4, 1; Oribasius, *Synopsis ad Eustathium filium*, IV, 28, 5, 1; Oribasius, *Libri ad Eunapium*, I, 45, 5, 1.

³⁹⁰ Oribasius, *Collectiones medicae*, III, 29, 1, 1 – 22, 2.

³⁹¹ Oribasius, *Synopsis ad Eustathium filium*, IV, 28, 1, 1 – 27, 2.

³⁹² Oribasius, *Libri ad Eunapium*, I, 45, 1, 1 – 17, 1.

³⁹³ Oribasius, *Collectiones medicae*, III, 9, 2, 2–3; Oribasius, *Synopsis ad Eustathium filium*, IV, 8, 2, 2–3; Oribasius, *Libri ad Eunapium*, I, 25, 2, 2.

³⁹⁴ Oribasius, *Collectiones medicae*, III, 9, 1, 1 – 2, 5; Oribasius, *Synopsis ad Eustathium filium*, IV, 8, 1, 1 – 2, 5; Oribasius, *Libri ad Eunapium*, I, 25, 1, 1 – 2, 4.

from *chóndros*, and had the same qualities. When discussing this category of baked products, Oribasius did not in fact use the term *chondrites*, speaking as he did of bread made from the aforementioned groats³⁹⁵. It was considered a highly nutritious product, but also one that took some time to pass through the alimentary tract³⁹⁶. Finally, information provided by the physician indicates that the nutritional value of bread was dependent on the baking techniques used in its making, with products made in the *kribanon*³⁹⁷ or *ipnós*³⁹⁸ being viewed as the most wholesome; those subject to thermal processing on the *eschára* were considered inferior. The worst breads were those that were baked directly in the ashes, which made them dry and burnt on the outside, with the interior frequently remaining raw³⁹⁹.

When presenting his reflections on *itria* in the *Collectiones medicae*⁴⁰⁰, Oribasius mainly followed Galen's doctrines. It therefore comes as no surprise that the dietetic characteristic of the baked product in question is the same in both the aforementioned treatises, and in *De alimentorum facultatibus* of his famous predecessor⁴⁰¹. We will therefore not quote it, referring our readers to Galen's doctrines. However, it is worth supplementing the characteristic taken from the treatise *De alimentorum facultatibus* by the findings of Athenaeus of Attaleia⁴⁰² (passed on to us by Oribasius), according to whom *lágana*, i.e. one of the two types of these cakes, and *itria* themselves, belong to the group of baked products with a lesser nutritive value (*achylótera*) than bread. Light by nature, they are perforce less nutritious, and lose their

³⁹⁵ Oribasius, *Collectiones medicae*, I, 5, 2, 1–2.

³⁹⁶ Oribasius, *Collectiones medicae*, I, 5, 2, 2.

³⁹⁷ According to Galen.

³⁹⁸ In accordance with the views of Dieuches.

³⁹⁹ Minor comments individualising the dietetic presentation of bread types according to the criterion of baking method have been included in the part of the present study dealing with the culinary aspect of the image of baked products.

⁴⁰⁰ Oribasius, *Collectiones medicae*, I, 7, 3, 4–7, 4.

⁴⁰¹ Oribasius, *Collectiones medicae*, I, 7, 4, 2.

⁴⁰² Oribasius, *Collectiones medicae*, I, 9, 1, 1–3, 3.

nutritive values during thermal processing⁴⁰³. *Ítria* were also included in the lists of dishes compiled according to their significant dietetic qualities. In the *Collectiones medicae*, the wheat cakes in question⁴⁰⁴ (namely, as the author enumerated, the *lágana* and *rhýmματα*⁴⁰⁵) were classified amongst *pachýchyma*⁴⁰⁶ foods. It is therefore natural that, when one becomes familiar with the schema adopted by Oribasius in his writings, *ítria*⁴⁰⁷ have been included thereby in the catalogue of foods generating thick juices in the *Synopsis ad Eustathium filium*⁴⁰⁸, and that the same group of foodstuffs⁴⁰⁹ has been considered as *pachýchyma* in the *Libri ad Eunapium*⁴¹⁰, too. Furthermore, Oribasius stressed in the *Collectiones medicae* that *ítria*⁴¹¹ block the internal organs⁴¹²; we should add that both the *Synopsis ad Eustathium filium* and the *Libri ad Eunapium* contain reiterations of this stance⁴¹³. Finally, wheat cakes⁴¹⁴ have been included in book three of the *Collectiones medicae* as an example of food that passes slowly through the organism (*bradýpora*)⁴¹⁵, and the same characteristic has been applied to these baked products⁴¹⁶ both in the treatise for Eustathius, and the work dedicated to Eunapius⁴¹⁷.

⁴⁰³ Oribasius, *Collectiones medicae*, I, 9, 1, 1–2, 1.

⁴⁰⁴ Oribasius, *Collectiones medicae*, III, 3, 1, 1–7, 3.

⁴⁰⁵ Oribasius, *Collectiones medicae*, III, 3, 1, 2–3.

⁴⁰⁶ Oribasius, *Collectiones medicae*, III, 3, 1, 3.

⁴⁰⁷ Oribasius, *Synopsis ad Eustathium filium*, IV, 2, 1, 2–3.

⁴⁰⁸ Oribasius, *Synopsis ad Eustathium filium*, IV, 2, 1, 1–5, 3.

⁴⁰⁹ Oribasius, *Libri ad Eunapium*, I, 19, 1, 2.

⁴¹⁰ Oribasius, *Libri ad Eunapium*, I, 19, 1, 1–5, 4.

⁴¹¹ Oribasius, *Collectiones medicae*, III, 25, 6, 1.

⁴¹² Oribasius, *Collectiones medicae*, III, 25, 1, 1–8, 2.

⁴¹³ Oribasius, *Synopsis ad Eustathium filium*, IV, 24, 1, 1–8, 2 (*ítria* – IV, 24, 6, 1–2); Oribasius, *Libri ad Eunapium*, I, 41, 1, 1–7, 2 (*ítria* – I, 41, 5, 1).

⁴¹⁴ Oribasius, *Collectiones medicae*, III, 26, 1, 1.

⁴¹⁵ Oribasius, *Collectiones medicae*, III, 26, 1, 1–4, 1.

⁴¹⁶ Oribasius, *Synopsis ad Eustathium filium*, IV, 25, 1, 1; Oribasius, *Libri ad Eunapium*, I, 42, 1, 1.

⁴¹⁷ Oribasius, *Synopsis ad Eustathium filium*, IV, 25, 1, 1–2, 1; Oribasius, *Libri ad Eunapium*, I, 42, 1, 1–2, 1.

Other wheat products, i.e. *tagenitai*, have been most fully described by Oribasius solely using the dietetic findings of Galen. According to the physician, they were considered as causing the generation of thick *chymoi*, slowing down the functioning of the alimentary tract, and contributing to the creation of raw (and therefore incompletely digested) juices⁴¹⁸. It is interesting to note that only the final property thereof has been reflected in the fragments of Oribasius' output that contain lists of products classified according to their predominant dietetic qualities, namely in the *Collectiones medicae*⁴¹⁹, the *Synopsis ad Eustathium filium*⁴²⁰, and in the *Libri ad Eunapium*⁴²¹.

Oribasius presented the properties of *chóndros* using information which he gleaned first and foremost from the works of Galen. In order to describe the essence and the action of the said wheat product, Emperor Julian's physician referred in book one of the *Collectiones medicae*⁴²² to the findings of his predecessor, outlined in the *De alimentorum facultatibus*. However, he abbreviated them very considerably. As regards the dietetic characteristic of this food, we are informed only that *chóndros* is a nutritious product⁴²³ and generates juices that are viscous⁴²⁴. We would not have learned much about the dietetics of this food if it had not been included in the lists of dietetic categories. And thus, *chóndros*⁴²⁵ was described as a foodstuff that provides considerable nourishment to the body; this classification appears not only in the *Collectiones medicae*⁴²⁶, but also in the *Synopsis ad Eustathium filium*⁴²⁷ and

⁴¹⁸ Oribasius, *Collectiones medicae*, I, 7, 2, 1–2.

⁴¹⁹ Oribasius, *Collectiones medicae*, III, 6, 1, 1–2, 7 (*tagenitai* – III, 6, 2, 7).

⁴²⁰ Oribasius, *Synopsis ad Eustathium filium*, IV, 5, 1, 1–2, 7 (*tagenitai* – IV, 5, 2, 7).

⁴²¹ Oribasius, *Libri ad Eunapium*, I, 22, 1, 1–2, 8 (*tagenitai* – I, 22, 2, 7).

⁴²² Oribasius, *Collectiones medicae*, I, 5, 1, 1–2, 2.

⁴²³ Oribasius, *Collectiones medicae*, I, 5, 1, 1.

⁴²⁴ Oribasius, *Collectiones medicae*, I, 5, 1, 1–2.

⁴²⁵ Oribasius, *Collectiones medicae*, III, 13, 7, 1.

⁴²⁶ Oribasius, *Collectiones medicae*, III, 13, 1, 1–13, 2.

⁴²⁷ Oribasius, *Synopsis ad Eustathium filium*, IV, 12, 1, 1–15, 2 (*chóndros* – IV, 12, 7, 1).

the treatise composed for Eunapius⁴²⁸. Furthermore, we should note that groats of this type⁴²⁹ are present in Oribasius' list of foods of the *pachýchyma* group – yet again both in his *opus magnum*⁴³⁰, and in the two subsequent works⁴³¹. In addition, the author stated that *chóndros*⁴³² was characterised by relatively good juices. For this reason it was mentioned in the chapter *Hósa eúchyma* constituting a part of the *Collectiones medicae*⁴³³, and subsequently in the treatise for the son⁴³⁴ and the work dedicated to Eunapius⁴³⁵. A more detailed analysis of the first of these treatises indicates that *chóndros*⁴³⁶ was considered a food that stimulates the process of generation of viscous juices (*glíschra*)⁴³⁷, and identical classifications of these groats⁴³⁸ may be found in Oribasius' later works⁴³⁹. Finally, he wrote about *chóndros*⁴⁴⁰ in the chapter on foodstuffs that block the functioning of internal organs (*emphrattiká*)⁴⁴¹. Yet again, we encounter an identical set of data in the treatise written for his son⁴⁴²,

⁴²⁸ Oribasius, *Libri ad Eunapium*, I, 29, 1, 1 – 15, 2 (*chóndros* – I, 29, 7, 1).

⁴²⁹ Oribasius, *Collectiones medicae*, III, 3, 3, 1; Oribasius, *Synopsis ad Eustathium filium*, IV, 2, 2, 1; Oribasius, *Libri ad Eunapium*, I, 19, 3, 1.

⁴³⁰ Oribasius, *Collectiones medicae*, III, 3, 1, 1 – 7, 3.

⁴³¹ Oribasius, *Synopsis ad Eustathium filium*, IV, 2, 1, 1 – 5, 3; Oribasius, *Libri ad Eunapium*, I, 19, 1, 1 – 5, 4.

⁴³² Oribasius, *Collectiones medicae*, III, 15, 18, 1.

⁴³³ Oribasius, *Collectiones medicae*, III, 15, 1, 1 – 22, 3.

⁴³⁴ Oribasius, *Synopsis ad Eustathium filium*, IV, 14, 18, 1 (*chóndros*); Oribasius, *Synopsis ad Eustathium filium*, IV, 14, 1, 1 – 21, 3 (*eúchyma*).

⁴³⁵ Oribasius, *Libri ad Eunapium*, I, 32, 12, 1 (*chóndros*); Oribasius, *Libri ad Eunapium*, I, 32, 1, 1 – 15, 3 (*eúchyma*).

⁴³⁶ Oribasius, *Collectiones medicae*, III, 5, 2, 1.

⁴³⁷ Oribasius, *Collectiones medicae*, III, 5, 1, 1 – 2, 4.

⁴³⁸ Oribasius, *Synopsis ad Eustathium filium*, IV, 4, 3, 1; Oribasius, *Libri ad Eunapium*, I, 21, 2, 1.

⁴³⁹ Oribasius, *Synopsis ad Eustathium filium*, IV, 4, 1, 1 – 3, 4; Oribasius, *Libri ad Eunapium*, I, 21, 1, 1 – 3, 3.

⁴⁴⁰ Oribasius, *Collectiones medicae*, III, 25, 7, 1.

⁴⁴¹ Oribasius, *Collectiones medicae*, III, 25, 1, 1 – 8, 2.

⁴⁴² Oribasius, *Synopsis ad Eustathium filium*, IV, 24, 1, 1 – 8, 2 (*chóndros* – IV, 24, 7, 1)

and in the *Libri ad Eunapium*⁴⁴³. Generally speaking, therefore, it was a food worthy of recommendation, although difficult to process by the organism; this assessment was fully concordant with the image created by Galen.

However, Oribasius did not have much to say about another of the products that we have classified amongst groats. Namely, the food known as *krímnnon*⁴⁴⁴ was included thereby in the list of foods that are difficult to initially digest (*dýspepta*)⁴⁴⁵. He considered it more difficult to heat by the stomach than barley *álphita*⁴⁴⁶. The same observation⁴⁴⁷ pertaining to these groats⁴⁴⁸ may be found in the *Synopsis ad Eustathium filium*⁴⁴⁹. This opinion is borrowed from Galen, but in all probability it originates from the theses put forward by Dioscurides.

Finally, we come to the sole *pyrós* beverage mentioned in Oribasius' output. We are referring here to wheat beer, which in the *Collectiones medicae* the author himself called 'wine'⁴⁵⁰. It has been described as a drink that is by no means weaker⁴⁵¹ than that made from grapes⁴⁵², but which passes less rapidly through the organism⁴⁵³ and, in general, has properties inferior to those of the grape beverage⁴⁵⁴. This characteristic reflects the specific aversion of representatives of Graeco-Roman

⁴⁴³ O r i b a s i u s, *Libri ad Eunapium*, I, 41, 1, 1 – 7, 2 (*chóndros* – I, 41, 6, 1–2).

⁴⁴⁴ O r i b a s i u s, *Collectiones medicae*, III, 18, 10, 1.

⁴⁴⁵ O r i b a s i u s, *Collectiones medicae*, III, 18, 1, 1 – 13, 1.

⁴⁴⁶ O r i b a s i u s, *Collectiones medicae*, III, 18, 10, 1 – 11, 1.

⁴⁴⁷ With reference to *álphita* – O r i b a s i u s, *Synopsis ad Eustathium filium*, IV, 17, 1, 1 – 12, 1.

⁴⁴⁸ O r i b a s i u s, *Synopsis ad Eustathium filium*, IV, 17, 8, 1.

⁴⁴⁹ O r i b a s i u s, *Synopsis ad Eustathium filium*, IV, 17, 1, 1 – 12, 1.

⁴⁵⁰ O r i b a s i u s, *Collectiones medicae*, V, 31, 12, 1.

⁴⁵¹ O r i b a s i u s, *Collectiones medicae*, V, 31, 12, 2.

⁴⁵² Obviously, he was referring to wine.

⁴⁵³ O r i b a s i u s, *Collectiones medicae*, V, 31, 12, 2–3. This may have been a reference to the fact that it caused a longer period of alcoholic intoxication than wine.

⁴⁵⁴ O r i b a s i u s, *Collectiones medicae*, V, 31, 12, 3. Unfortunately, there are no details precisising the statement, and therefore we should assume that its properties were the exact opposite of those of wine.

culture – perforce staunch supporters of Dionysus’ gift – to a drink associated with the world of barbarians (we shall return to this issue a number of times in the present book).

Although Aetius of Amida did not give much attention to the properties of *pyrós* wheat itself, he still managed to provide readers of his *Iatricorum libri* with the most important information concerning this cereal. The entirety of this data is concordant with the output of dietetics based on Galen’s doctrines. Let us start with *pyrós* viewed as a *phármakon*. A comprehensive characteristic of this cereal as a pharmacological agent may be found in book one of the *Iatricorum libri*⁴⁵⁵ and is in fact a repetition of the doctrines set forward in the writings of Galen and, later on, Oribasius. In this fragment Aetius of Amida opined that wheat used as a cataplasm is an agent that warms the body only weakly⁴⁵⁶. Furthermore, it is not the nature of this cereal to either dry, or moisten⁴⁵⁷. As regards the warming action, he wrote that wheat had such properties not only when pressed against the body, but also when served as a food. *Pyroí hephthoí* and the cereal⁴⁵⁸ from which this dish was made were listed in the pertinent chapter of book two of the *Iatricorum libri*⁴⁵⁹ – in accordance with dietetic tradition – as warming foods. The considerable nutritive value of wheat is attested to indirectly by Aetius’ opinion concerning the products made therefrom. In the chapter devoted to victuals, the predominant quality of which is their nutritive value, i.e. those from the *polýtropha*⁴⁶⁰ group, we read of the considerable nutritional value of wheat bread⁴⁶¹, which was the basic product made using *pyroí*. Incidentally, this category also includes any other types of food obtained from *pyrós*, such as *pyroí hephthoí*, *semídalís*, and *chóndros*⁴⁶². Finally, wheat is

⁴⁵⁵ Aetius of Amida, I, 338, 1–6.

⁴⁵⁶ Aetius of Amida, I, 338, 1–2.

⁴⁵⁷ Aetius of Amida, I, 338, 2–3.

⁴⁵⁸ Aetius of Amida, II, 267, 1.

⁴⁵⁹ Aetius of Amida, II, 267, 1–9.

⁴⁶⁰ Aetius of Amida, II, 250, 1–21.

⁴⁶¹ Aetius of Amida, II, 250, 10–11.

⁴⁶² Aetius of Amida, II, 250, 11–12.

mentioned in the chapter concerning victuals that require the production of viscous juices in the organism⁴⁶³. The text also informs us that both *pyrós aleurites* and *semidalites* result in the generation of relatively large quantities of *glischroi chymot*⁴⁶⁴ in the body of the consumer.

A few paragraphs previous, we mentioned that boiled wheat, i.e. *pyroi hephthoi*, was considered by the author of the *Iatricorum libri* as a very nutritious food. We may also find it⁴⁶⁵ amongst warming foods. Furthermore, the dietetic logic represented by Aetius of Amida suggests that it was difficult to digest, remained in the organism for a long time, and contributed to the creation of thick and viscous juices.

The Amidene limited his direct information concerning the properties of *áleuron* flour to the findings concerning its tendency to cause internal blockages. For this reason, we find it in the chapter *Hósa emphráttei*. Therein he enumerated all of the foods based on *itria*, as well as those that made use of a combination of *áleuron* and milk⁴⁶⁶. However, the dietetic descriptions of products made from this wheat flour indicate that it was a nutritious food, difficult to digest without the application of the appropriate procedures⁴⁶⁷, that it lingered in the organism of the consumer for a long time, but that its juices – viscous – were relatively favourable.

Aetius of Amida also represented the traditional doctrinal assumptions concerning the dietetic properties of *semidalis*, which means that his writings draw some similarity between *silignis* flour and flour obtained from hard wheat. Without a doubt, the latter provided the body with ample nourishment. We can draw such a conclusion since in the chapter of the *Iatricorum libri* devoted to foods, the predominant quality of which is their nutritional value (the so-called

⁴⁶³ Aetius of Amida, II, 243, 1–6.

⁴⁶⁴ Aetius of Amida, II, 243, 1–3.

⁴⁶⁵ Aetius of Amida, II, 267, 1.

⁴⁶⁶ Aetius of Amida, II, 261, 11.

⁴⁶⁷ The appropriate method of treating *áleuron* flour was to mix it with yeast and salt, knead the dough properly, and then bake it into bread (in accordance with the procedure written down by the author).

polytropa), the author clearly mentioned *semídalís*⁴⁶⁸ flour. In turn, *semídalís*⁴⁶⁹ made with milk is mentioned in book one of Aetius' work, which was written on the basis of Galen's findings⁴⁷⁰. Thanks to this method of preparation, the food has better properties than the milk alone. Nevertheless, excessive consumption of this dish could result in blockages of the liver and the creation of renal calculi⁴⁷¹. Since *semídalís* possessed these properties, it was also included⁴⁷² in the list of products enumerated in the chapter *Hósa emphráttei*⁴⁷³. In addition, Aetius of Amida included in his work a list of foods that contribute to the generation of thick juices (*pachýchyma*)⁴⁷⁴. In this category he placed both products made from *semídalís*⁴⁷⁵, and *semídalís* itself⁴⁷⁶. In the chapter devoted to products that create viscous juices⁴⁷⁷, he presented other very well-known doctrines. Thus, he considered varieties of *pyrós* wheat that have yellow, heavy and compact grains as food of this type. Those, however, that are lighter coloured, weigh somewhat less and are not as compact as the former, generate smaller amounts of such juices. An obvious consequence of the adoption of this assumption was the fact that *semídalís* wheat contributed to a considerably greater degree to the production of thick juices than *pyrós*, known as *sitánios*, *silignítes* or *aleurítes*⁴⁷⁸. In addition, in a chapter of book two of his work⁴⁷⁹, which touches upon foods that pass slowly through the organism, Aetius enumerated all of the dishes

⁴⁶⁸ Aetius of Amida, II, 250, 11.

⁴⁶⁹ Aetius of Amida, II, 97, 9.

⁴⁷⁰ Aetius of Amida, II, 97, 1-11.

⁴⁷¹ Aetius of Amida, II, 97, 7-11.

⁴⁷² Aetius of Amida, II, 261, 9.

⁴⁷³ Aetius of Amida, II, 261, 1-14.

⁴⁷⁴ Aetius of Amida, II, 241, 1-21.

⁴⁷⁵ Aetius of Amida, II, 241, 2.

⁴⁷⁶ Aetius of Amida, II, 241, 4.

⁴⁷⁷ Aetius of Amida, II, 243, 1-6.

⁴⁷⁸ Aetius of Amida, II, 243, 1-3.

⁴⁷⁹ Aetius of Amida, II, 262, 1-7.

made from *itria* and *semídalís*⁴⁸⁰, as well as white wheat bread. We may add that *semídalís* (boiled and served without honey⁴⁸¹ or prepared in fatty broths⁴⁸²) was recommended for persons feeling acute hunger caused by excessive diaphorase⁴⁸³. We are of the opinion that the author of the *Iatricorum libri* considered this food appropriate in such instances, for it was difficult to digest, and therefore lingered in the organism for a long time⁴⁸⁴. Finally, it is worth citing the words of Aetius of Amida concerning *semídalís*⁴⁸⁵, written down in a fragment concerning the treatment of diabetics⁴⁸⁶, where he recommended boiling this product in meat broths⁴⁸⁷. This food was described as having good juices⁴⁸⁸, i.e. non-irritating *chymoi*, which could neutralise pungent substances⁴⁸⁹.

Generally speaking, bread was a food valued by Aetius of Amida due to its dietetic properties, although we should add that just as in the doctrines of the predecessors of the *Iatricorum libri*'s author, the qualities of this baked product emphasised by the physician differed depending on the used type of flour, the baking techniques, and the care taken in its preparation. An analysis of available data allows us to conclude that *katharós* bread was classed by Aetius of Amida as a highly nutritious food⁴⁹⁰. Furthermore, wheat products – and amongst them properly baked white *ártos* from *pyrós*⁴⁹¹ – are included in the list of foods having

⁴⁸⁰ Aetius of Amida, II, 262, 1.

⁴⁸¹ Aetius of Amida, IX, 21, 26.

⁴⁸² Aetius of Amida, IX, 21, 26–27.

⁴⁸³ Aetius of Amida, IX, 21, 1–32.

⁴⁸⁴ Aetius of Amida, IX, 21, 20.

⁴⁸⁵ Aetius of Amida, XI, 1, 48.

⁴⁸⁶ Aetius of Amida, XI, 1, 1–67.

⁴⁸⁷ Aetius of Amida, XI, 1, 46–50.

⁴⁸⁸ Aetius of Amida, XI, 1, 46–47.

⁴⁸⁹ Aetius of Amida, XI, 1, 47.

⁴⁹⁰ We may conclude with a great degree of certainty that *silignítai* and *semídalítai* breads, which Aetius of Amida considered the most nutritious, were made from suitably purified flour – Aetius of Amida, II, 250, 10–11.

⁴⁹¹ Aetius of Amida, II, 252, 16.

good juices, i.e. the *eúchyma*⁴⁹² group. Finally, it is worth remembering that the white baked product in question⁴⁹³ was classified in a chapter of book two of the *Iatricorum libri* amongst foods that passed slowly through the body (*bradýpora*), which in all probability meant that it could satiate hunger for a long time. Information about the properties of white bread may also be found in the discussion concerning types of baked products distinguished on the basis of the flour used in their production. And thus the term *ártos silignítes*, although well-known to Aetius of Amida, is not frequently mentioned in the context of the dietetic characteristic of wheat baked products. However, a very important observation is present in the chapter concerning foods classified as *polýtrophá*. Aetius of Amida placed therein a ranking of the most nutritive baked products. The most valued therein is *ártos silignítes*⁴⁹⁴, with *ártos semidalítes*⁴⁹⁵ coming in second. In turn, *ártos plytós* – a light white bread made from specially purified flour – was mentioned in dietetic contexts only twice. This baked product⁴⁹⁶ is therefore included in the list of foods having limited nutritional value⁴⁹⁷, and also in a fragment of book two entitled *Hósa psýchei*⁴⁹⁸, where Aetius of Amida maintained that *ártos plytós*⁴⁹⁹ should be treated as a product with properties that were intermediate between warming and cooling. *Synkomistós*⁵⁰⁰ bread was also mentioned by him only twice. This occurs in the chapter concerning foods that are predominantly nutritious, i.e. those from the *polýtrophá* group. Such information is a part of the well-known classification of the nutritional values of wheat bread, applied by the predecessors of the author of the *Iatricorum libri*. Descriptions of

⁴⁹² Aetius of Amida, II, 252, 1–24.

⁴⁹³ Aetius of Amida, II, 262, 2.

⁴⁹⁴ Aetius of Amida, II, 250, 10, cf. M. Decker, *op. cit.*, p. 97.

⁴⁹⁵ Aetius of Amida, II, 250, 10–11.

⁴⁹⁶ Aetius of Amida, II, 251, 7.

⁴⁹⁷ Aetius of Amida, II, 251, 1–20.

⁴⁹⁸ Aetius of Amida, II, 268, 1–13.

⁴⁹⁹ Aetius of Amida, II, 268, 12.

⁵⁰⁰ Aetius of Amida, II, 250, 11.

the dietetic properties of *rhyparós* are scarce in Aetius' output. The physician only stressed that it does not provide the organism with much nourishment; this property was cited twice. The first mention of *ártos rhyparós*⁵⁰¹ occurs in the list of victuals of a limited nutritional value. In addition, this black baked product⁵⁰² – precisely because of its low nutritional value⁵⁰³ – was recommended for a condition known as *polysarkía*⁵⁰⁴. Although the lack of data is obvious, we must also understand that this limited characteristic could have been supplemented by readers of Aetius' works with other properties, which the physician chose not to enumerate *expressis verbis*; readers would have assumed that these were the exact opposite of those attributed to *katharós* products baked in a *kribanon*. *Pityrites*-type bread, which – incidentally – Aetius of Amida also called *pityriás*⁵⁰⁵, found its place within the framework of the same dietetic categories in which it was typically cited in the works of Aetius' predecessors. And thus, *pityriái*⁵⁰⁶ baked products may be found in the list of foods with a limited nutritive value. What is more, Aetius of Amida considered the type of baked product in question⁵⁰⁷ as a food that causes the generation of large quantities of black bile in the organism of the consumer, and for this reason it was included in the list of substances contributing to the production of this humour⁵⁰⁸. Finally, bran bread⁵⁰⁹ is touched upon in the chapter concerning food that causes purgation⁵¹⁰.

The division into rising bread and unleavened bread is also reflected in the doctrines written down by Aetius of Amida. *Zymítes* has been described above. Unleavened bread, in turn, belonged to the *emphrattiká*

⁵⁰¹ Aetius of Amida, II, 251, 7.

⁵⁰² Aetius of Amida, IV, 32, 24–25.

⁵⁰³ Aetius of Amida, IV, 32, 23–25.

⁵⁰⁴ Aetius of Amida, IV, 32, 1–34.

⁵⁰⁵ Cf. the following footnote.

⁵⁰⁶ Aetius of Amida, II, 251, 7.

⁵⁰⁷ Aetius of Amida, II, 246, 7.

⁵⁰⁸ Aetius of Amida, II, 246, 1–9.

⁵⁰⁹ Aetius of Amida, II, 265, 12.

⁵¹⁰ Aetius of Amida, II, 265, 1–39.

group. We know this since, when discussing the group in question, the author enumerated unleavened baked products made without salt or yeast⁵¹¹ as ingredients of a *sui generis* soup made from boiled milk. Thanks to this method of preparation, the dish – as he assured his readers – has better properties than boiled milk alone⁵¹² and favourably impacts the alimentary tract and the organs located in the chest. Aetius of Amida warned, however, that excessive consumption of this dish could be harmful to health, for this addition to milk belonged to a group of substances that caused blockages in the liver and led to the generation of renal calculi⁵¹³. In addition, we should keep in mind that Aetius of Amida included all wheat baked products without yeast⁵¹⁴ in the list of victuals that contribute to the thickening of organic juices. Finally, we should add that since yeast, salt and the proper method of baking caused bread to be easily digestible, *ázymos* baked products, which were not prepared in this manner, were difficult to initially digest.

As regards the categories of wheat baked products distinguished due to the method of baking, Aetius of Amida did not leave us much information about the dietetic properties of the bread which he called *kribanites*. However, the entirety of extant data suggest that the usage of a *kribanon* for baking made it possible to obtain bread that dieticians continued to consider as product of the highest quality. In any case, such baked products were thus termed⁵¹⁵, for example in the diet recommended for persons suffering from nephrosclerosis⁵¹⁶. Incidentally, the second place in this classification was awarded by the physician to *ip-nós*⁵¹⁷ breads, which fact we may assume on the basis of the recommendation placed thereby in the diet for *kolikot*⁵¹⁸. Thanks to this fragment

⁵¹¹ Aetius of Amida, II, 97, 10–11.

⁵¹² It was considered that milk thus prepared loses its natural carminative effect.

⁵¹³ Aetius of Amida, II, 97, 7–11.

⁵¹⁴ Aetius of Amida, II, 241, 3.

⁵¹⁵ Aetius of Amida, XI, 16, 64.

⁵¹⁶ Aetius of Amida, XI, 16, 1–70.

⁵¹⁷ Aetius of Amida, IX, 30, 82.

⁵¹⁸ Aetius of Amida, IX, 30, 80–158.

we may conclude that from the sixth century Galen's authority took priority regarding this issue over the findings of Dieuches, written down previously by Oribasius with comparable attention. Without a doubt, this superior assessment of *ártos kribanítes* followed from its excellent smell and taste, but first and foremost from the fact that it was easy to digest⁵¹⁹, highly nutritive⁵²⁰ and did not lead to the generation of dangerous, thick juices in the organism of the consumer. Therefore, this type of bread⁵²¹ was recommended even for the reducing diet promoted by Aetius of Amida after Galen⁵²².

As regards *ártoi ipnítai*, the *Iatricorum libri* do not contain an abundance of information about their dietetic value. Aetius of Amida included *ipnítai*⁵²³ only in his list of *pachýchyma*. On the other hand, however, he was not convinced as to their unfavourable qualities, for at the same time he admitted the usage of *ipnós* bread in diets for persons suffering from colics. In all probability, it was for this reason that such baked products were considered by Aetius as a wholesome food, but somewhat less nutritious and digestible than breads baked in a *kribanon*. Such a dietetic characteristic of the baked product in question would be concordant with the theory advanced by his predecessors. Finally, it is worth noting that Aetius of Amida did not write anything about the properties of bread baked on an *eschára* or in ashes.

Ítria, as we have already shown, were characterised by the author of the *Iatricorum libri* primarily as a food that caused blockages of the internal organs, enlargement of the spleen and calculi in the urinary tract.

⁵¹⁹ *Kribanítes* was distinguished by the fact that it was uniformly baked, and this contributed to its digestibility. Aetius of Amida also took note of this technical issue in his description of the ideal bread of this type – Aetius of Amida, IX, 34, 83–84. Without a doubt, therefore, he interpreted the consequences of applying this technique in a similar way to his predecessors.

⁵²⁰ We may assume that the *silignítai* and *semidalítai* breads that he considered to be the most nutritious were doubtless baked primarily in a *kribanon* – Aetius of Amida, II, 250, 10–11.

⁵²¹ Aetius of Amida, II, 240, 10–12.

⁵²² Aetius of Amida, II, 240, 1–46.

⁵²³ Aetius of Amida, II, 241, 1.

The *lágana*⁵²⁴, being one of the two types of *ítria*, have been mentioned in the second book of Aetius' work, where it is stated that their addition to milk and boiling therein lessened the natural carminative effect of milk, and also positively impacted the alimentary tract and organs located in the chest. However, the excessive consumption of this food could be harmful to health, causing the previously discussed ailments attributed to substances from the *emphrattiká* group. In addition, *ítria*⁵²⁵ obtained from wheat were listed in the chapter *Hósa emphráttei*, which constitutes a reiteration of the abovementioned property. Aetius of Amida also included them⁵²⁶ in his list of foods that cause thickening of organic juices. Thus, amongst the *pachýchyma* the author included *ipnós* breads, namely *ipnítai*, an unleavened baked product with the addition of must, products made from *semídalís*, *ítria*, and all other wheat baked products not containing yeast, *semídalís*, and *chóndros*. Finally, it is worth noting that the product in question⁵²⁷ was enumerated in a chapter discussing foods that pass slowly through the organism, which on the one hand suggests their high nutritional value, while on the other – indigestibility.

Aetius' work is also a testament to the permanence and durability of findings concerning the dietetic and therapeutic properties of *chóndros*. These groats⁵²⁸ were classified amongst foods that provide the organism with considerable nourishment (*polýtropha*). Aetius also included them⁵²⁹ in his list of products that contribute to the generation of thick juices (*pachýchyma*). In addition, in the chapter devoted to food that creates viscous juices (*Hósa glíschra*), the author once again presented the well-known doctrines and listed *chóndros*⁵³⁰ as a food that strongly stimulates the organism in this regard. Since the analysed

⁵²⁴ Aetius of Amida, II, 97, 10.

⁵²⁵ Aetius of Amida, II, 261, 9.

⁵²⁶ Aetius of Amida, II, 241, 2–3.

⁵²⁷ Aetius of Amida, II, 262, 1.

⁵²⁸ Aetius of Amida, II, 250, 11–12.

⁵²⁹ Aetius of Amida, II, 241, 4–5.

⁵³⁰ Aetius of Amida, II, 243, 4.

groats⁵³¹ were boiled in milk, it belonged to the group of substances causing blockages of the liver, enlargement of the spleen, and development of renal calculi. Furthermore, it should be kept in mind that products obtained from wheat were also mentioned in the chapter *Hósa emphráttei*. Aetius of Amida enumerated therein all the foods made with the addition of *itria* and *semídalís*, as well as dishes created through the mixing of *áleuron* with milk. An identical effect was that of *chóndros*⁵³². Finally, wheat products are included in the list of foods with good juices, i.e. foods from the *eúchyma* group. Aetius of Amida maintained that such a categorisation also applies to *chóndros*⁵³³ and properly prepared *ptísáne* (and thus, doubtless, to *ptísáne pyríne*, made from the groats in question)⁵³⁴.

However, *krímnos*, also known as *krímnon*, was given a very brief dietetic characterisation. Aetius of Amida only stated that such food is more nutritious than *álphiton*⁵³⁵, but also more difficult to initially digest⁵³⁶. In the context of deliberations concerning *pyrós*, the lack of any comparison with other wheat products appears strange. The ready liquid dish made from *krímnos* groats is known as *póltos*⁵³⁷, and this passes more rapidly through the organism than a dish made from emmer wheat⁵³⁸. It is therefore clear that Aetius fully retained the dietetic tradition that, through Oribasius and Galen, stretched back to Dioscurides' findings, presented some 500 years earlier.

Data concerning the dietetic and therapeutic properties of *ámylon* are repeated in doctrines written down by the predecessors of Aetius of Amida. When in the first book of this work⁵³⁹ he wrote about boiling

⁵³¹ Aetius of Amida, II, 97, 9.

⁵³² Aetius of Amida, II, 261, 11.

⁵³³ Aetius of Amida, II, 252, 17.

⁵³⁴ Aetius of Amida, II, 252, 16–17.

⁵³⁵ Aetius of Amida, I, 228, 2.

⁵³⁶ Aetius of Amida, I, 228, 2–3.

⁵³⁷ Aetius of Amida, I, 228, 3.

⁵³⁸ Aetius of Amida, I, 228, 3–4.

⁵³⁹ Aetius of Amida, II, 97, 1–11.

*ámylon*⁵⁴⁰ in milk, he considered this dish as belonging to the group of *emphrattiká* foods. Thus, its excessive consumption could constitute a hazard to health. In the physician's output, starch is also included in the list of cooling substances⁵⁴¹. It should be added, however, that while it was indeed classified as an agent of this type, its action was said to be moderate⁵⁴². In turn, in the chapter *Hósa psýchei*⁵⁴³ Aetius added that *ámylon*⁵⁴⁴ should be categorised as a product with properties that were intermediate between warming and cooling. Wheat starch⁵⁴⁵ was included in the list of drying substances⁵⁴⁶. We may add that overall *pyroí ámylon* was considered as having a greater cooling and drying power than wheat itself⁵⁴⁷. In the fragment containing the list of foods contributing to the formation of thick juices the author observed that *ámylon* had no strong properties of this nature⁵⁴⁸. Starch⁵⁴⁹ also appeared amongst foods with limited nutritional value. Finally, *ámylon*⁵⁵⁰ was also classed amongst *emplastiká*⁵⁵¹, and the concomitant properties meant that it could be safely used in the preparation of numerous medications.

In the works of Anthimus, another author whose output we have analysed, strictly dietetic information concerning wheat has been reduced to a minimum and concerns only *áleuron* and bread. Wheat flour is, according to this physician, difficult to digest even for healthy people⁵⁵². This opinion is concordant with the doctrines of his predecessors, but

⁵⁴⁰ Aetius of Amida, II, 97, 9.

⁵⁴¹ Aetius of Amida, II, 203, 1–13.

⁵⁴² Aetius of Amida, II, 203, 9.

⁵⁴³ Aetius of Amida, II, 268, 1–13.

⁵⁴⁴ Aetius of Amida, II, 268, 12.

⁵⁴⁵ Aetius of Amida, II, 209, 13.

⁵⁴⁶ Aetius of Amida, II, 209, 1–19.

⁵⁴⁷ Aetius of Amida, I, 338, 3–4.

⁵⁴⁸ Aetius of Amida, II, 241, 5.

⁵⁴⁹ Aetius of Amida, II, 251, 8.

⁵⁵⁰ Aetius of Amida, VII, 105, 13.

⁵⁵¹ Aetius of Amida, VII, 105, 5–6.

⁵⁵² Anthimus, 82.

contains considerably less detail than the data provided by the generations of dieticians who were active before the author of the treatise *De observatione ciborum*. Regarding bread, Anthimus recommended one that is white, baked with the addition of wheat and – if possible – warm, for such a product is easiest to digest in the stomach. In addition, he stated that when the bread has not properly risen, greatly burdens the stomach⁵⁵³. We should note that this opinion does not deviate from dietetic tradition.

The characteristics of foods were not in the centre of interest of Alexander of Tralles, and for this reason data of this type are no more than scant in his writings. Even this, however, confirms that his approach was in line with the previously identified views and opinions. We shall commence our analysis with the varieties of wheat known to us. Although the physician did not use the term *pyrós sitánios*, in the *Therapeutica* we may find a fragment that appears to suggest at least one quality attributed to this variety of wheat. Namely, this concerns the ability to produce thick juices⁵⁵⁴, which he attributed to the *itria*⁵⁵⁵ that he cited. Since this product was made from *áleuron* flour, which in turn was obtained from *pyrós sitánios*, it would appear logical to attribute the same qualities to the said variety of wheat, too. Only once did Alexander of Tralles refer to the properties of *semídalís*. Namely, when speaking of the avoidance of factors causing pain for renal calculi sufferers, he advised to refrain from eating this product⁵⁵⁶ due to its thick juices⁵⁵⁷. This effect is one of the most significant dietetic qualities of *semídalís* wheat and raw materials obtained therefrom in the works of the predecessors of the author of the *Therapeutica*.

What is more, it was not the physician's habit to make detailed references to the qualities of any of the bread varieties about which he

⁵⁵³ Anthimus, I.

⁵⁵⁴ Alexander of Tralles, *Therapeutica*, 473, 10–11, vol. II.

⁵⁵⁵ Alexander of Tralles, *Therapeutica*, 473, 1, vol. II.

⁵⁵⁶ Alexander of Tralles, *Therapeutica*, 473, 12, vol. II.

⁵⁵⁷ Alexander of Tralles, *Therapeutica*, 473, 10–11, vol. II.

wrote. Thus, we have to base our reconstruction of the characteristic of wheat baked products on only scant data. We have the following information at our disposal: in the *Therapeutica* we may find a dietetic assessment of *kribanítes* bread. This baked product, as the author stated, is easy to digest⁵⁵⁸ and does not leave⁵⁵⁹ any unnecessary elements in the organism following the completion of the process⁵⁶⁰. If, however, it is improperly prepared and baked, it may contain a multitude of thick juices, which block the internal organs⁵⁶¹. Furthermore, it should be added that although *ártos rhyparós* baked products did not receive any direct dietetic characteristic in the *Therapeutica*, Alexander's suggestion that black bread is unsuitable for melancholics⁵⁶² clearly indicates that in his opinion *ártoi rhyparoi* contributed to the production of black bile. Unfortunately, no further information on the topic in question can be found in the author's output.

In the seventh century, Paul of Aegina, and this fact is worth noting, made no mention as to the dietetics of *pyrós* understood as a variety of wheat. Obviously, this does not mean that he did not characterise the properties of foods obtained from this cereal. Usually, however, his descriptions lack sufficient detail. And thus, in the chapter of his work entitled *Perí sitódon*⁵⁶³ we find one, traditionally-worded dietetic characteristic of *pyroi hephthoi*⁵⁶⁴. He wrote therein that this dish is difficult to decompose in the stomach⁵⁶⁵, and also generates gases⁵⁶⁶. Once the digestive process is completed, however, it gives the organism much nourishment⁵⁶⁷.

⁵⁵⁸ Alexander of Tralles, *Therapeutica*, 541, 16–17, vol. I.

⁵⁵⁹ Alexander of Tralles, *Therapeutica*, 541, 17, vol. I.

⁵⁶⁰ Obviously, this is the reason why bread was so frequently included in therapeutic diets.

⁵⁶¹ Alexander of Tralles, *Therapeutica*, 455, 13–17, vol. II.

⁵⁶² Alexander of Tralles, *Therapeutica*, 597, 1–617, 7, vol. I.

⁵⁶³ Paul of Aegina, I, 78, 1, 1–25.

⁵⁶⁴ Paul of Aegina, I, 78, 1, 5.

⁵⁶⁵ Paul of Aegina, I, 78, 1, 5–6.

⁵⁶⁶ Paul of Aegina, I, 78, 1, 6.

⁵⁶⁷ Paul of Aegina, I, 78, 1, 6–7.

Unfortunately, the author of the *Epitome* did not provide a separate dietetic characteristic of *áleuron* flour in his work. In turn, *semídalís* was classed therapeutically amongst substances from the *ekpyetiká*, *peptiká* and *diaphoretiká* groups. Although, as regards the flour in question, these classifications are lacking as terms stated *expressis verbis* in the *Epitome*, the appropriate indirect hints have been given in the description of *kólla* made from related products, namely *semídalís* and *gýris*⁵⁶⁸. Paul of Aegina was, however, an exception amongst medical authors as regards the dietetic description of the latter. This was so, because in his treatise he provided a brief – albeit cohesive – list of its properties. He stated that the flour is a food similar in its action to *ámylon*, but warms the body somewhat more⁵⁶⁹. Without a doubt, this description points to the physical characteristic of the product, i.e. it indicates that it was as fine as *ámylon*. This conclusion is further supported by the observation that in therapeutic practice *ámylon* could be replaced with *gýris*⁵⁷⁰.

As regards bread, Paul of Aegina gave the best – i.e. the most detailed and legible – characteristic of white wheat bread in the chapter *Perí sitódon*. He stated therein that wheat processed into bread loses its carminative effect and becomes easily digestible; this is happening because its matter is altered by the effect of yeast and salt⁵⁷¹. The most nutritious of *ártoi* baked from white flour is the *silignítes*⁵⁷², followed by the *semídalítes*⁵⁷³. Furthermore, Paul of Aegina added that light baked products, namely *ártos peplyménos*, do not provide the organism with much nourishment⁵⁷⁴. Breads other than white received an equally general dietetic description. And thus, *ártos synkomistós*⁵⁷⁵ was mentioned when Paul

⁵⁶⁸ Paul of Aegina, VII, 3, 10, 236–237.

⁵⁶⁹ Paul of Aegina, VII, 3, 3, 97.

⁵⁷⁰ Paul of Aegina, VII, 25, 2, 14.

⁵⁷¹ Paul of Aegina, I, 78, 1, 7–8. Obviously, he was referring to the ingredients of the dough, which impacted the final properties of the baked product.

⁵⁷² Paul of Aegina, I, 78, 1, 8–9; cf. M. Decker, *op. cit.*, p. 97.

⁵⁷³ Paul of Aegina, I, 78, 1, 9.

⁵⁷⁴ Paul of Aegina, I, 78, 1, 11.

⁵⁷⁵ Paul of Aegina, I, 78, 1, 9.

of Aegina stressed only one of its qualities, in accordance with the view traditionally held by dieticians, whereby the said baked product was to be the third most effective in providing the organism with nourishment (ranked, as we know from earlier medical treatises, after *silignites* and *semidalites* breads). Finally, we should observe that Paul's entire output contains only one piece of dietetic information concerning black baked products, namely that *ártos rhyparós* is less nourishing than white breads and *synkomistós*⁵⁷⁶ baked products, but also passes through the alimentary tract more rapidly⁵⁷⁷.

The author of the *Epitome* also provided us with a rather brief characteristic of *pyrós* wheat groats. He described *chóndros* as being similar in terms of its qualities to this species of *triticum*⁵⁷⁸, nutritious⁵⁷⁹, but also contributing to the production of viscous juices⁵⁸⁰. To recapitulate, this set of properties closely corresponds to the doctrines supported by the predecessors of Paul of Aegina. Data preserved by this physician in the chapter *Perí sitódon*, cited a number of times in the present work, allows us to assume that *chóndros plytós*⁵⁸¹ had properties similar to those attributed by Paul to groats made from *chóndros*⁵⁸². It was therefore nutritious, but also resulted in the generation of viscous juices in the organism⁵⁸³. As regards *chóndros plytós*, Paul of Aegina also stated that it is harmful if it remains in the stomach once it swelled, but was not previously fully cooked⁵⁸⁴. Paul was most probably referring to the fact that it was indigestible if eaten when insufficiently soft (boiled for too short a time). Such is, at least, the explanation that we find in dietetic

⁵⁷⁶ Paul of Aegina, I, 78, 1, 10. All in all, therefore, *ártos rhyparós* held fourth place in the classification of bread in terms of nutritive values.

⁵⁷⁷ Paul of Aegina, I, 78, 1, 10. It should be understood that it stimulates the more rapid functioning of the intestines, leading to faster excretion.

⁵⁷⁸ Paul of Aegina, VII, 3, 22, 74.

⁵⁷⁹ Paul of Aegina, I, 78, 1, 1.

⁵⁸⁰ Paul of Aegina, I, 78, 1, 1–2; VII, 3, 22, 74.

⁵⁸¹ Paul of Aegina, I, 78, 1, 2.

⁵⁸² Paul of Aegina, I, 78, 1, 1.

⁵⁸³ Paul of Aegina, I, 78, 1, 1–2.

⁵⁸⁴ Paul of Aegina, I, 78, 1, 2–3.

tradition, for example in the output of Galen. However, the description of the dietetic properties of *krimnon* groats provided in the *Epitome* is very brief. The author noted only two qualities of this product, i.e. its nutritional value and indigestibility. To this end he compared it with typical barley groats, that is, to *álphita*. He concluded his brief characteristic by stating that *krimnon* is more nutritious than *álphiton*, but also more difficult to digest⁵⁸⁵.

Finally, we shall present what Paul of Aegina had to say about *ámylon*. His dietary assessment of wheat starch is typical of the previously analysed medical tradition. Thus, the product was presented as having only a limited nutritional value⁵⁸⁶. From the point of view of therapeutics, it was characterised as having gentle cooling⁵⁸⁷ and drying properties⁵⁸⁸, and also alleviating the action of pungent juices⁵⁸⁹. Furthermore, it was classed amongst the *emphrattiká*⁵⁹⁰.

At roughly the same time, that is, in the seventh century, wheat was characterised in the work *De cibis*. We have to admit that this fragment is very legible, for it focuses only on the most important issues. In the chapter devoted to food obtained from grains and fruits⁵⁹¹, the anonymous author maintained that this food has a somewhat warm characteristic, is considered superior to all other cereal crops, and – as he added – *óspría*⁵⁹². It contributes to the production of good blood⁵⁹³. *De cibis* contains a certain enigmatic term that can be translated as ‘ground wheat with thick grains’⁵⁹⁴. It is difficult to pinpoint what the author had in mind, but in the present work we have assumed that it is probably the equivalent of the well-known term *chóndros*.

⁵⁸⁵ Paul of Aegina, VII, 3, 10, 347.

⁵⁸⁶ Paul of Aegina, I, 78, 1, 11.

⁵⁸⁷ Paul of Aegina, VII, 3, 1, 206.

⁵⁸⁸ Paul of Aegina, VII, 3, 1, 206–207.

⁵⁸⁹ Paul of Aegina, VII, 3, 1, 207.

⁵⁹⁰ Paul of Aegina, VII, 16, 1, 4.

⁵⁹¹ *De cibis*, 2, 1–37.

⁵⁹² *De cibis*, 2, 1–2.

⁵⁹³ *De cibis*, 2, 2–3.

⁵⁹⁴ *De cibis*, 5, 47. Cf. our deliberations in the part devoted to culinary art.

The aforementioned thickly ground cereal was placed by the anonymous author amongst the *eúchyma*⁵⁹⁵. Indeed, this classification supports the hypothesis that the terms are identical, for it has numerous analogies in earlier dietetic tradition.

The author of the *De cibis* attributed three qualities to boiled wheat. *Sítos hepsetós*⁵⁹⁶, as the unnamed author called the food once known as *pyrói hephthoí*, was included thereby in the list of foods with a high nutritional value (*polytrophá*)⁵⁹⁷. Subsequently, this dish⁵⁹⁸ was placed amongst foods that are difficult to initially digest⁵⁹⁹. Finally, *sítos hepsetós*⁶⁰⁰ was recognised as a warming food⁶⁰¹.

Information concerning *áleuron* that may be found in the *De cibis* refers to this flour only indirectly. First of all, since *katharós* bread of the *aleurites*⁶⁰² type was included in the list of highly nutritious foods (*polytrophá*), the flour from which this baked product was made had to possess the same qualities. Secondly, the list of foodstuffs causing blockages in the liver, enlargement of the spleen and conducive to the creation calculi (*emphraktiká*) also contained *áleuron* flour boiled in milk⁶⁰³, which was considered a dish causing the hardening of internal organs⁶⁰⁴. As regards *semídalís*, the author of the treatise *De cibis* placed it in three dietetic categories, thus remaining in concord with the doctrinal tradition of his predecessors. The said flour⁶⁰⁵ was therefore included in the *polytrophá* group, which in any case was the usual practice for the majority of products obtained

⁵⁹⁵ *De cibis*, 5, 1–58.

⁵⁹⁶ *De cibis*, 21, 9.

⁵⁹⁷ *De cibis*, 21, 1–15.

⁵⁹⁸ *De cibis*, 7, 16.

⁵⁹⁹ *De cibis*, 7, 1–23.

⁶⁰⁰ *De cibis*, 25, 2.

⁶⁰¹ *De cibis*, 25, 1–7.

⁶⁰² *De cibis*, 21, 8–9.

⁶⁰³ *De cibis*, 11, 10–11.

⁶⁰⁴ *De cibis*, 11, 10–12.

⁶⁰⁵ *De cibis*, 21, 9.

from wheat⁶⁰⁶. *Semidalis*⁶⁰⁷ was also indirectly assessed as a food of the *emphrattiká*⁶⁰⁸ group. Finally, the food in question⁶⁰⁹ was considered as producing viscous juices⁶¹⁰.

The dietetic description of bread given in the *De cibis* is centred primarily on the properties of the white variety, which was most highly valued. Thus, the author began with the general statement, incidentally referring to the highly traditional assessment of this food, that wheat bread⁶¹¹ is the best food of all⁶¹². Proceeding to a more detailed analysis, he noted that it is the most nutritious, précising that white bread (*katharós*)⁶¹³ made with due care and diligence is clearly superior. The above characteristic explains why white *aleurites*⁶¹⁴ bread was also included by the author in the list of victuals with a high nutritional value (*polýtrophá*). We should add that the same product was further touched upon in two other chapters, devoted to the most important dietetic properties of foodstuffs. Thus, the author included carefully prepared⁶¹⁵ white bread⁶¹⁶ in the list of food characterised by good juices, and also classified leavened⁶¹⁷ wheat bread⁶¹⁸ as a warming food. The anonymous author further provided a separate analysis of *semidalis* baked products. It is not, however, very detailed and covers

⁶⁰⁶ The usual exceptions were *artos plytós* and *ámylon* (i.e. *katastatón*).

⁶⁰⁷ *De cibis*, 11, 8.

⁶⁰⁸ *De cibis*, 11, 1–12.

⁶⁰⁹ *De cibis*, 18, 2.

⁶¹⁰ *De cibis*, 18, 1–16.

⁶¹¹ *De cibis*, 2, 23–24. A fragment devoted to bread – *De cibis*, 2, 23–31.

⁶¹² *De cibis*, 2, 24.

⁶¹³ *De cibis*, 2, 25.

⁶¹⁴ *De cibis*, 21, 8–9.

⁶¹⁵ *De cibis*, 5, 47.

⁶¹⁶ *De cibis*, 5, 46.

⁶¹⁷ *De cibis*, 25, 2. Obviously, this comment also applied to any other type of baked product made with the addition of yeast. The context of the narrative in the *De cibis* would suggest, however, the author was referring primarily to his preferred white wheat bread.

⁶¹⁸ *De cibis*, 25, 2–3.

only two dietetic categories. Bread of the *semidalites*⁶¹⁹ variety was therefore classified amongst highly nutritious foods. Baked products of this type⁶²⁰ were also included amongst substances producing viscus juices. However, the author referred only once to the qualities of rising bread, which he termed *autózymos*⁶²¹, placing it on the list of warming dishes. Nevertheless, the treatise contains a sufficient number of other hints concerning the role of yeast in baked products, which allow us to state that he viewed the qualities of *zymítes/autózymos* baked products as being identical with the characteristic of white wheat baked products. Thus, this type of bread was nutritious and contributed to the generation of good juices, which – if we take into consideration what he wrote about *kribanítai* – could have a tendency to thicken. In turn, black bread⁶²², formerly known as *rhyparós*, which the author of the *De cibis* termed *kybarós*, may be found in two different categories of foods. First of all, as we have already explained, due to its high content of *pítýra*, i.e. bran⁶²³, it was classed amongst food substances having a purgative effect⁶²⁴. Further on in the narrative, *kybarot*⁶²⁵ breads were listed as a food of limited nutritional value (*oligótrophá*)⁶²⁶. This information, although rather sparse, is concordant with the entire tradition represented by previous generations of Greek dieticians. Bran bread was also included by the author of the *De cibis* in its typical dietetic categories. First of all, *ártoi pityriái*⁶²⁷ baked products were included (being second only to lentils) in the list of the most melancholic foods⁶²⁸, i.e. causing the production of black bile. Secondly, *ártos pityródes*⁶²⁹ may

⁶¹⁹ *De cibis*, 21, 8.

⁶²⁰ *De cibis*, 18, 2.

⁶²¹ *De cibis*, 25, 2–3.

⁶²² *De cibis*, 12, 9.

⁶²³ *De cibis*, 12, 9–10.

⁶²⁴ *De cibis*, 12, 1–37.

⁶²⁵ *De cibis*, 22, 7–8.

⁶²⁶ *De cibis*, 22, 1–19.

⁶²⁷ *De cibis*, 16, 7.

⁶²⁸ *De cibis*, 16, 1–9.

⁶²⁹ *De cibis*, 22, 7–8.

be found amongst foods with a limited nutritional value (*oligótrophos*). As regards the final type of baked products mentioned in the analysed treatise, namely *kribanítai*⁶³⁰ breads, the author maintained that they gave rise to thick juices⁶³¹. He did not clarify the basis for such an assessment of the bread in question. Without a doubt, this evaluation was derived from the traditional classification of wheat and *áleuron*, which had received such a characterisation in the earlier dietetic literature⁶³². That the author of *De cibis* applied such a mode of reasoning may be supported by the fact that he included *áleuron*⁶³³ in the *emphrattiká* group, i.e. amongst products blocking the functioning of internal organs (exactly because, as earlier dieticians explained, of the thickness and viscosity of the juices that this flour helped produce).

Other foods did not receive characterisations as exhaustive as *ártos*. As regards *íttria*, the author of the treatise did not introduce any changes to the traditional assessment of this *áleuron pýrinon* product. It was classed⁶³⁴ amongst foods that contribute to blockages of the liver, enlargement of the spleen, and conducive to the formation of renal calculi (*emphraktiká*). It was also entered⁶³⁵ in the list of products generating thick juices, which provides a *sui generis* physiological explanation as to why it was placed in the abovementioned class. The doctrines followed by successive generations are also visible in the description of the proper-

⁶³⁰ *De cibis*, 20, 2.

⁶³¹ *De cibis*, 20, 1–14.

⁶³² Only the addition of yeast or salt, proper kneading of the dough, and – finally – the appropriate baking methods ensured that bread made from *áleuron* was the best food of all. Wheat itself was also nutritious, but indigestible, for it was *pachýchymos*. The text of *De cibis* allows us to assume that its author considered the *kribanon* to be an oven that does not guarantee the proper baking of bread, and thus potentially contributing to the indigestibility of baked products. Elements of such an assessment of *kribanítai* may be found in the classification of wheat baked products known from the works of Oribasius. The baking of bread in an *ipnós* oven was considered by Dieuches, cited by the physician of the Emperor Julian, as more recommendable than in the *kribanon*.

⁶³³ *De cibis*, 11, 10–11. The text mentioned *áleuron* boiled with milk.

⁶³⁴ *De cibis*, 11, 8.

⁶³⁵ *De cibis*, 20, 2.

ties of *chóndros*⁶³⁶, for this term appears in the list of victuals considered as having good juices. The final product in our dietetic review of *De cibis* is starch. The author called it *katastatón*⁶³⁷, describing it as a cooling and drying substance⁶³⁸. Both qualities are classic attributes of this product, mentioned by earlier generations of specialists.

Before we bring our deliberations concerning the dietetics of *pyrós* based on *strictae* medical sources to a close, we would like to analyse one more work, which supplements our data concerning the properties of bread. Information that we have taken from the work of Athenaeus of Naucratis refers to the pre-Galenic tradition and makes the doctrines of Philistion of Locri (fourth century BC)⁶³⁹ and Diphylus of Siphnus (third century BC)⁶⁴⁰ more accessible. Proceeding to the topic, we should state that the former of the authorities cited by Athenaeus in his *Deipnosophistae* had a great deal to say about the qualities of bread, depending on the type of raw wheat material used in its production⁶⁴¹. The expert was of the opinion that *chondrites*⁶⁴² bread is worse than *semidalites*⁶⁴³ as regards augmenting physical strength⁶⁴⁴. *Chondritai*, as Philistion stressed, took second place, and were followed by *aleuritai*⁶⁴⁵ breads. He further stated that baked products made from *gyris* had inferior juices⁶⁴⁶ and were less nutritious (this sentence should doubtless be taken to mean that they were less nutritious than all of the previously mentioned)⁶⁴⁷. The quoted author also explained the dietetic differ-

⁶³⁶ *De cibis*, 5, 1–47.

⁶³⁷ *De cibis*, 2, 31–32.

⁶³⁸ *De cibis*, 2, 32.

⁶³⁹ The author is known from the *De alimentorum facultatibus* (473, 4), but his doctrines were not clearly separated by Galen.

⁶⁴⁰ Diphylus of Siphnos was entirely omitted by Galen.

⁶⁴¹ Athenaeus of Naucratis, III, 115 d (83, 11–15).

⁶⁴² Athenaeus of Naucratis, III, 115 d (83, 11).

⁶⁴³ Athenaeus of Naucratis, III, 115 d (83, 12).

⁶⁴⁴ Athenaeus of Naucratis, III, 115 d (83, 11–12).

⁶⁴⁵ Athenaeus of Naucratis, III, 115 d (83, 13).

⁶⁴⁶ Athenaeus of Naucratis, III, 115 d (83, 14).

⁶⁴⁷ Athenaeus of Naucratis, III, 115 d (83, 15).

ence between types of bread depending on the baking methods used⁶⁴⁸. And thus, a loaf baked in ashes, i.e. of the *enkryphias* variety, is a heavy food⁶⁴⁹ and difficult to digest, for it is not baked uniformly⁶⁵⁰. Breads of the *ipnites* or *kaminites* varieties, which were placed in *káminos* ovens, were indigestible and hard to assimilate⁶⁵¹. Baked products made using an *eschára* or *téganon*⁶⁵² were relatively easy to excrete due to the fact that they were baked with olive oil⁶⁵³, but due to the fatty vapours arising during their preparation they were harmful to the alimentary tract⁶⁵⁴. Loaves made in the *kribanon*, on the other hand, are of the best quality. They have good juices⁶⁵⁵, positively impact the stomach, are easy to initially digest, and are rapidly assimilated. They do not hinder the functioning of the alimentary tract, nor do they cause diarrhoea⁶⁵⁶. Philistion of Locri also analysed the dietetic differences between baked products depending on their freshness. This is an interesting work, for it provides an *expressis verbis* presentation of the doctrines that were less clearly stated in the output of other medical authors. He maintained that warm breads⁶⁵⁷ are less easy to digest, but are more nutritious, and have better juices; what is more, they were purportedly lighter and easier to assimilate. In turn, cold (but still fresh) loaves⁶⁵⁸ are filling, but more difficult to digest. Baked products that were old and cold⁶⁵⁹ were considered as having little nutritional value, slowing down the functioning of the alimentary tract, and characterised by bad juices⁶⁶⁰.

⁶⁴⁸ Athenaeus of Naucratis, III, 115 e (83, 20–28).

⁶⁴⁹ Athenaeus of Naucratis, III, 115 e (83, 20).

⁶⁵⁰ Athenaeus of Naucratis, III, 115 e (83, 21).

⁶⁵¹ Athenaeus of Naucratis, III, 115 e (83, 22).

⁶⁵² Athenaeus of Naucratis, III, 115 e (83, 23).

⁶⁵³ Athenaeus of Naucratis, III, 115 e (83, 23–24).

⁶⁵⁴ Athenaeus of Naucratis, III, 115 e (83, 24–25).

⁶⁵⁵ Athenaeus of Naucratis, III, 115 e (83, 26).

⁶⁵⁶ Athenaeus of Naucratis, III, 115 e (83, 26–28).

⁶⁵⁷ Athenaeus of Naucratis, III, 115 d (83, 15).

⁶⁵⁸ Athenaeus of Naucratis, III, 115 d (83, 17–18).

⁶⁵⁹ Athenaeus of Naucratis, III, 115 d (83, 18–19).

⁶⁶⁰ Athenaeus of Naucratis, III, 115 d (83, 15–20).

In the third book of his work, Athenaeus of Naucratis also cited – as we have already mentioned – fragments of the work of Diphylus of Siphnus concerning foods that are appropriate for the sick and healthy. As regards baked products, they are decidedly less detailed than the reflections of Philistion of Locri, but nonetheless worth citing as the dietetic prototype subsequently used by Galen and his successors. Namely, the physician from Siphnos maintained (just as the other authorities cited in the present deliberations), that wheat bread⁶⁶¹ is more nutritious than barley bread, and also easier to digest. The best (he was most likely referring to nutritional values and ease of digestion) are baked products of the *semidalítai*⁶⁶² variety, followed by *aleurítai*⁶⁶³ and *synkomistoi*, i.e. those made from unsifted flour⁶⁶⁴.

Conclusions. Let us now move on to the conclusions. Summing up the present part of our deliberations, we feel obliged to state that a cohesive dietetic characteristic of wheat over the centuries and the enormous amount of information concerning this topic clearly point to the importance of this cereal in the diet. Furthermore, on the basis of the presented material (eminently repetitive) it is easy to conclude that in the period between the second and seventh centuries dietetic findings were permanent and constant.

The theory valid throughout the discussed period was presented in the form of lists of foodstuffs, arranged according to their type (for example, types of cereals) or predominant features (for example, foods with good juices). The former came earlier and can be found in dietetic writings throughout the researched period. The latter were only introduced by Oribasius.

Dietetic doctrines considered dominant between the second and seventh centuries have the form given to them by Galen in the second

⁶⁶¹ Athenaeus of Naucratis, III, 115 c (83, 6–7).

⁶⁶² Athenaeus of Naucratis, III, 115 c (83, 8).

⁶⁶³ Athenaeus of Naucratis, III, 115 c (83, 9).

⁶⁶⁴ Athenaeus of Naucratis, III, 115 c (83, 9–10). The entire fragment – Athenaeus of Naucratis, III, 115 c (83, 4–11).

century. Subsequently, they were neither supplemented, nor forgotten. Thus, we are unable to speak of the development of dietetic doctrines by successive generations of medical specialists.

As regards the dietetic qualities of analysed cereal plants, ancient and Byzantine physicians were unanimous in their praise for the nutritional value of wheat, calling it the most valuable of foods. In this respect, *pyrroi* were decidedly more effective than barley. All of the products made therefrom were also assessed positively, bread in particular, though at the same time warnings were made that some of these (i.e. the ones that were not processed into foods containing *zýme* in the recipe) could be harmful to health, having a detrimental impact primarily on the liver, spleen and urinary tract. Finally, all of the medical authors noted the dietetic impact of culinary methods; in other words, they thought that one could obtain a food having somewhat (or even completely) varied effects on the organism of the consumer, depending on the techniques applied in processing raw wheat.

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Wheats: culinary data

We will now proceed to information important for readers interested in wheat as a raw material used by cooks, also adding comments that placed *pyrros* on the map of social relations in the period between the second and seventh centuries.

The basic methods of utilising a cereal such as wheat in gastronomy were, of course, traditional and determined long before Galen's time. The work *De diaeta* contains a whole chapter devoted to *pyrros*⁶⁶⁵, which is preceded by one concerning barley⁶⁶⁶. The vastness

⁶⁶⁵ *De diaeta*, 42, 1–27.

⁶⁶⁶ *De diaeta*, 40, 1–30.

of both, in comparison with fragments devoted to other gifts of Demeter, points to the leading role of these two cereals in the diet of the author's contemporaries. Galen's deliberations concerning *pyrós* clearly show that in dietetic theory baked products were the most important produce obtained from this plant, in terms of their health qualities; furthermore, the fragment contains all of the categories that were of significance for the analyses of subsequent dieticians. Thus, the treatise contains a division of baked products according to the purity of flour (from white to dark baked products)⁶⁶⁷, its thickness (*ártos chondrites versus semidalites*)⁶⁶⁸, the presence or absence of yeast (*ártos zymites versus ázymos*)⁶⁶⁹, and the baking techniques used (*ártoi ipnítai, kribanítai* and so forth)⁶⁷⁰. We ought to assume that dieticians would not have ordered their material concerning baked products in such a manner if this did not reflect the reality of their times. In turn, references to the method of cooking wheat products in the chapter are marginal⁶⁷¹, which only serves to stress the leading role of baked products.

In the first century AD, Dioscurides wrote down a treatise entitled *De materia medica*, in which he included the entirety of requisite data concerning *pyrós* that were of importance for persons who analysed it as a raw material for various types of foods. He was familiar with, and wrote about, two varieties of this cereal. Thus, he stated that in order to maintain health, one should preferably use wheat that is fresh and ripe. However, he also noted with considerable precision that it was necessary to select primarily yellow grains⁶⁷². Although he did not define a variety that provided such grains, information written down by subsequent medical authors clearly indicates that he was referring to *pyrós semidalites*. According to his findings, the second variety of wheat in terms of

⁶⁶⁷ *De diaeta*, 42, 2–4.

⁶⁶⁸ *De diaeta*, 42, 16–17.

⁶⁶⁹ *De diaeta*, 42, 4–7.

⁶⁷⁰ *De diaeta*, 42, 11–16.

⁶⁷¹ *De diaeta*, 42, 26–27. This refers to *semidalis* and *chóndros*.

⁶⁷² Dioscurides, *De materia medica*, II, 85, 1, 1–2.

quality was one that he called *setánios*⁶⁷³ or *trimeniaíos*⁶⁷⁴. This food, as the text of the *De materia medica* indicates, was eaten raw, even though this could have unpleasant consequences for one's health, due to the appearance of round insects in the body of the consumer⁶⁷⁵. Primarily, however, *pyrós setánios* was used to produce *áleuron* flour, and also *ámylon* flour. The former served to make bread, as well as *itria*. The latter, in turn, was used as an additive to dishes and a therapeutic agent. Although the author did not make a direct statement to this effect, it is highly probable that the said wheat variety could have been used to produce *krímnnon* groats. Nowhere, however, did he state that the *setánios* type was the basis for the production of *chóndros*. As regards *pyrós semidalítes*, the work *De materia medica* does not contain too much information about this cereal. Since, however, the author did write about the bread baked therefrom, which he distinguished from the baked product obtained from *pyrós setánios*, we should assume that he was informed of the existence of *pyrós semidalítes* and knew the properties of this variety.

The narrative of Dioscurides⁶⁷⁶ indicates that *áleuron*⁶⁷⁷ was a cereal product obtained from ground *pyrós*⁶⁷⁸, the grains of which were smaller than those of the so-called *krímnnon*⁶⁷⁹ groats. Thus, it was flour obtained from wheat of the *setánios*⁶⁸⁰ variety. It was used as a raw material for various types of baked products, but first and foremost it constituted the basis for the production of bread⁶⁸¹. The author of the *De materia medica* also wrote that it was used in therapeutics, and gave examples of its application. He did not leave detailed information

⁶⁷³ Dioscurides, *De materia medica*, II, 85, 1, 2–3. Obviously, this form is tantamount to the term *sitánios*.

⁶⁷⁴ Dioscurides, *De materia medica*, II, 85, 1, 3.

⁶⁷⁵ Dioscordies, *De materia medica*, II, 85, 1, 3–4.

⁶⁷⁶ Concerning *krímnnon*.

⁶⁷⁷ Dioscurides, *De materia medica*, II, 90, 1, 1.

⁶⁷⁸ Dioscurides, *De materia medica*, II, 90, 1, 2.

⁶⁷⁹ Dioscurides, *De materia medica*, II, 90, 1, 1.

⁶⁸⁰ Dioscurides, *De materia medica*, II, 85, 2, 8.

⁶⁸¹ Dioscurides, *De materia medica*, II, 85, 1, 6–7.

concerning the culinary aspects of the term *gýris*, usually identified as fine wheat flour. There is, however, a mention that unquestionably belongs to the most valuable testimony surviving in medical literature. Namely, the physician states that *gýris* was made from wheat of the *setánios*⁶⁸² variety. A similar observation may be found only in one other work – the *Epitome* of Paul of Aegina. However, there are no data concerning the purely culinary applications of this product. Nevertheless, there is some information about *sui generis* glue, known as *kólla*, which, incidentally, was made from *semídalís* or *gýris*⁶⁸³ and used to bind together fragments of papyrus. This *kólla*, once diluted, became a sort of gruel, which was served warm and consumed for therapeutic purposes⁶⁸⁴. *Gýris* was also boiled with honey or *hydrélaion* and administered as an anti-inflammatory drug⁶⁸⁵.

According to Dioscurides, *ámylon*⁶⁸⁶ was a product made without using millstones. Although this expression is not completely clear for a modern-day layman, it would appear that it refers to the awareness of the readers of Dioscurides' treatises, for they would have understood that *ámylon* was a product made in a non-traditional manner, that is, without grinding of cereals (which technique was utilised for the remaining types of flour and groats). In order to clarify what he had in mind, the author described the technique itself in detail. He did not, however, comment on the thickness of *ámylon* grains as compared with *áleuron* and groats (*chóndros* and *krímnon*), which – incidentally – must also have been an obvious issue for readers of his works. Proceeding to the details of production, he wrote that the best *ámylon* is obtained from wheat of the *setánios*⁶⁸⁷ variety, which was imported from Crete or Egypt⁶⁸⁸.

⁶⁸² Dioscurides, *De materia medica*, II, 85, 2, 12.

⁶⁸³ Dioscurides, *De materia medica*, II, 85, 3, 7.

⁶⁸⁴ Dioscurides, *De materia medica*, II, 85, 3, 7–9.

⁶⁸⁵ Dioscurides, *De materia medica*, II, 85, 2, 12 – 3, 1.

⁶⁸⁶ Dioscurides, *De materia medica*, II, 101, 1, 1. Regarding the production techniques, cf. Dioscurides, *De materia medica*, II, 101, 1, 1–12.

⁶⁸⁷ Dioscurides, *De materia medica*, II, 101, 1, 2.

⁶⁸⁸ Dioscurides, *De materia medica*, II, 101, 1, 3.

The production of *ámylon* was based on finely purified grains, washed and soaked in sweet water, which was changed five times a day, and also – whenever feasible – a further five times during the night. When the grains were soft, the water was poured out delicately, so as not to disturb the wheat, and the grains were subsequently ground underfoot. Next, water was added yet again in order to force the remaining contaminants to the surface so that they could be easily removed. *Ámylon* was poured through a filter, and then dried in hot sun, for if left wet, it rapidly soured.

Regarding wheat groats, Dioscurides maintained in his work *De materia medica*⁶⁸⁹ that *chóndros* was made only from emmer wheat, which he called *zeá díkokkos*⁶⁹⁰. If this was the case, then the said product did not fall within the scope of deliberations that should be discussed herein when analysing wheat of the *pyrós* variety. In the same work, the physician wrote rather briefly, but at the same time clearly, about *krímnnon*⁶⁹¹. According to his methodology, this was a product obtained from *pyrós*⁶⁹² wheat. He defined it as groats, that is, a product made by grinding *pyrós*, but with grains that were thicker than those typical of *áleuron*⁶⁹³ flour. He also added that *krímnnon* groats were used to boil the so-called *pólto*⁶⁹⁴, i.e. a sort of very thick soup or gruel, but did not inform of the other ingredients of this dish.

Dioscurides also left us information concerning bread. What is interesting, however, is that he did not go into great detail regarding this food. Let us therefore commence our discussion with examining the three types of baked products that are most readily visible in his writings. He did not use the term *ártos silignítes*. This is, however, irrelevant, for in his treatises we encounter terms that are synonymous with

⁶⁸⁹ Dioscurides, *De materia medica*, II, 96, 1, 1–6.

⁶⁹⁰ Dioscurides, *De materia medica*, II, 96, 1, 1–2.

⁶⁹¹ Dioscurides, *De materia medica*, II, 90, 1, 1–4.

⁶⁹² Dioscurides, *De materia medica*, II, 90, 1, 2. Or from *ólyra* – Dioscurides, *De materia medica*, II, 91, 1, 3.

⁶⁹³ Dioscurides, *De materia medica*, II, 90, 1, 1.

⁶⁹⁴ Dioscurides, *De materia medica*, II, 90, 1, 2.

the abovementioned, such as bread from *setánios*⁶⁹⁵ wheat. Although he did not specify any recipe, information surviving in the *De materia medica* allows us to assume that this bread was a rising baked product, for Dioscurides mentioned yeast leaven mixed with *áleuron*⁶⁹⁶. The reference to salt⁶⁹⁷ in his discussion concerning *zýme* would serve as a suggestion that this additive was usually a part of ingredients used by bakers. The author also maintained that poppy seeds⁶⁹⁸ also frequently enriched the taste of baked products⁶⁹⁹. In addition, when writing about the baking of bread from *áleuron*⁷⁰⁰, he suggested that he was referring to a baked product of the *katharós* variety. A loaf⁷⁰¹ baked from *semídalís*⁷⁰², which according to the nomenclature of other medical specialists was called *ártos semídalítes*, also fell within the interest of Dioscurides. Similarly to *silignítes*, however, it has not been described in detail from the point of view of culinary knowledge. The text indicates that it was baked from flour that was commonly known as *semídalís*. Further details concerning the recipe were omitted, in all probability due to the fact that readers were well aware that the general principles of its production were identical to those used when baking bread from *áleuron* (using *setánios* wheat). There is therefore no doubt that this bread was white and well-risen. A loaf of the *synkomistós*⁷⁰³ is mentioned in Dioscurides' writings only once⁷⁰⁴. The author gave no information as to the nature of this term. Since, however, this baked product was

⁶⁹⁵ For example – Dioscurides, *De materia medica*, II, 85, 1, 7.

⁶⁹⁶ Dioscurides, *De materia medica*, II, 85, 2, 5.

⁶⁹⁷ Dioscurides, *De materia medica*, II, 85, 2, 7.

⁶⁹⁸ Dioscurides, *De materia medica*, IV, 64, 1, 1–8.

⁶⁹⁹ Dioscurides, *De materia medica*, IV, 64, 1, 2. It is not, however, clearly stated whether it was used for a single specific variety, or for all varieties. Nevertheless, logic seems to suggest that additives other than those that were absolutely necessary were included in recipes only for the most highly valued – i.e. white – varieties.

⁷⁰⁰ Dioscurides, *De materia medica*, II, 85, 1, 7.

⁷⁰¹ Dioscurides, *De materia medica*, II, 85, 1, 6.

⁷⁰² Dioscurides, *De materia medica*, II, 85, 1, 5.

⁷⁰³ Dioscurides, *De materia medica*, II, 85, 1, 6.

⁷⁰⁴ It should be noted that the author does not use the term *ártos autópyros*.

classed amongst the least nutritious of the three basic groups of bread varieties⁷⁰⁵, we may conclude that the perceived lack of nutritional value was brought about by substances that were added thereto, causing it to be so deficient⁷⁰⁶. The obvious choice for an element modifying the properties of the said baked product would be *pityra*⁷⁰⁷. However, there is no direct, *expressis verbis*, connection between the properties of *ártos synkomistós* and the effect of admixed bran thereupon. Dioscurides did not mention any breads of the *plytós*, *rhyparós*, or *pityrites* varieties. Neither did he write anything about baked products made from coarser *ártos chondrites* flour. The baked product that he considered belonged solely to the *zymítes* category. In addition, Dioscurides did not include any mention concerning the methods of baking, and for this reason he did not introduce a division into *ártoi kribanítai*, *ipnítai*, *escharítai* and *enkryphíai/spodítai*. We may assume that the reason for this phenomenon were the requirements of Dioscurides' therapeutics and the preferences of the readers of his works. In all probability, he used a white, rising baked product, as this was the most valuable dietetically and pharmacologically. Such bread was baked utilising the best ovens, i.e. a *kribanon* or *ipnós*. The remaining categories, although surely known to him, played only a marginal role and for this reason were not included in the list of those which he used. We may therefore also assume that the readers of his treatise were people who could afford to choose food-stuffs – both those considered as food, and medication.

Finally, we should state that Dioscurides also mentioned *íttria*⁷⁰⁸ in his writings. However, the recipe for these is not provided in his works; he simply stated that he adds pomegranate seeds, which results in the softening of the alimentary tract⁷⁰⁹. Thus, he considered them more as a medication than a food *sensu stricto*.

⁷⁰⁵ Dioscurides, *De materia medica*, II, 85, 1, 5–7.

⁷⁰⁶ We may therefore conclude that it was not made from pure flour, and this affected its colour.

⁷⁰⁷ Dioscurides, *De materia medica*, II, 85, 2, 1.

⁷⁰⁸ Dioscurides, *De materia medica*, IV, 63, 2, 4.

⁷⁰⁹ Dioscurides, *De materia medica*, IV, 63, 2, 1–5.

Galen's works contain a multitude of data concerning common wheat. It should be stressed that the writings of this physician are characterised by extraordinary detail and for this reason greatly facilitate reconstruction of culinary practices pertaining to the issue in question. Furthermore, and this is an exceptional feature of his output, Galen recounted his personal experience of the preparation of dishes, which allows us to gain a most precise view of everyday life in the second century and break away from the standard dietetic deliberations authored by physicians writing between the second and seventh centuries.

The Pergamene stated that wheat grains were a culinary raw material both *sensu stricto* and *sensu largo*. As regards the first application, it constituted the basis of the dish known as *pyrói hephthoí*. In the broader sense the grains were a raw material, the character of which impacted on the quality and taste of wheat products (wheat flour, starch and groats), and subsequently of the dishes made therefrom (baked products, gruels and soups). The author described all of them from the point of view of culinary art, and provided the pertinent dietetic characteristics in the appropriate chapters of *De alimentorum facultatibus*. The introduction to the chapter *Perí pyrón*⁷¹⁰ may be considered a set of basic suggestions and recommendations that should be taken to heart by anyone who uses wheat as a material for culinary activities. We may surmise that this advice had a purely practical function, for individual intermediate products obtained through the processing of cereals were in all probability created in the residence of the consumer. One therefore needed to be well-acquainted with the physical appearance of wheat, for its external characteristics helped determine which product it would be best suited to make. And thus, Galen's narrative informs us that the cook should take into account its colour (yellowish grains were better than white), weight (heavier grains were considered more valuable) and internal structure (grains that were more compact were valued more highly than looser ones). Thus, Galen described particularly nutritious wheat grains as being hard and compact, which made them

⁷¹⁰ Galen, *De alimentorum facultatibus*, 480, 13 – 490, 8, vol. VI.

difficult to bite open. These provide the greatest nourishment, irrespective of the unit of volume. Less nourishment from the same quantity of dry mass is provided by those that can be easily crushed with one's teeth, for they are inherently non-cohesive and porous. Once the two types of grains are compared, one may easily determine that those that are harder are at the same time heavier. They are also more yellowish in colour than those that have a looser structure. The author recommended that his readers should verify the nature of wheat grains not only by observing their outside, but also the inside. He proposed this course of action since numerous *pyrós* that from the outside appear yellowish and compact, turn out to be non-cohesive and white inside. These, too, contain the most bran⁷¹¹. We should add that nearly identical doctrines may be found in the treatise *De victu attenuante*⁷¹². An interesting comment concerning wheat grains may also be found in the *De rebus boni malique suci*. Namely, the value of grains was to be assessed on the basis of the quantity of *áleuron* that could be made therefrom. Galen also mentioned that his father used to assess the quality of grains in this very way. Good grains provided a large quantity of *áleuron*, whereas inferior grains – considerably less⁷¹³.

Pyrós grains were used as a raw material for the so-called boiled wheat, i.e. *pyroi hephthoi*⁷¹⁴. Galen's story presented in the *De alimentorum facultatibus* suggests that this dish had only a limited group of adherents in the eastern part of the Mediterranean Basin. In the introduction to the chapter devoted to this dish, the physician even wrote that until he himself tried it served in this manner, he simply could not imagine how this wheat could be eaten⁷¹⁵. On the other hand, it is also worth taking into consideration that he resumed his reflections concerning boiled wheat in the treatise *De victu attenuante*, describing it therein as a food

⁷¹¹ Galen, *De alimentorum facultatibus*, 481, 2–13, vol. VI.

⁷¹² Galen, *De victu attenuante*, 33, 1–34, 1.

⁷¹³ Galen, *De rebus boni malique suci*, 784, 14–16, vol. VI.

⁷¹⁴ Galen, *De alimentorum facultatibus*, 498, 5 – 500, 3, vol. VI.

⁷¹⁵ Galen, *De alimentorum facultatibus*, 498, 6–7, vol. VI.

typical of rural areas⁷¹⁶ in Asia Minor and relatively common⁷¹⁷. Galen's text clearly indicates why he considered this dish so strange. Its very form, namely that of a boiled cereal gruel, which consistency is heralded by the title of chapter, i.e. *Perí pyrón hepseménon en hýdati*⁷¹⁸, made him think of a food usually prepared in times when bread (and in particular wheat bread) was unavailable⁷¹⁹. Meanwhile, however, a *pyroi hephthoi* was prepared from wheat right before the eyes of Galen and his companions; in other words, a dish was made in the form of a food consumed only when bread was unavailable, even though grains excellently suited for making bread were within arm's reach. The Pergamene was also surprised by the fact that one could consider *pyroi hephthoi* as a proper and primary meal, not only as a snack served in between meals. In the latter instance boiled or dry roasted cicer was usually served, or other grains prepared in the same way⁷²⁰.

The physician recounted how he tasted this dish more or less by accident, when he was wandering with two of his peers⁷²¹ through a rural area located in close proximity to a large municipal centre⁷²². Events developed as follows: the youths, hungry and tired, met a few peasants along the way. The men had just finished a meal, and since they had eaten all of their bread, the women from the village were starting

⁷¹⁶ A comparison of data from the *De alimentorum facultatibus* and the *De victu attenuante* allows us to conclude that Galen was writing from the point of view of a typical city-dweller, who was used to consuming wheat in the form of bread. Only the adventure described in the first of the abovementioned works induced him to conduct a more detailed analysis of the issue of the popularity of dishes based on the technique of boiling this wheat outside of urban areas, with which he happened to be the most familiar. The result of this cognitive process is his statement concerning the relative popularity of *pyroi hephthoi* in the agricultural areas of Asia Minor, which he made in the *De victu attenuante*.

⁷¹⁷ Galen, *De victu attenuante*, 32, 2–3.

⁷¹⁸ Galen, *De alimentorum facultatibus*, 498, 5, vol. VI.

⁷¹⁹ Galen, *De alimentorum facultatibus*, 498, 7–9, vol. VI.

⁷²⁰ Galen, *De alimentorum facultatibus*, 498, 9–12, vol. VI.

⁷²¹ Galen, *De alimentorum facultatibus*, 498, 14–15, vol. VI.

⁷²² Galen, *De alimentorum facultatibus*, 498, 14, vol. VI

to bake some more (but it was still a long time before the first loaves would be ready)⁷²³. Therefore, in order to entertain their visitors, one of the residents of the village commenced preparing a dish that could be served before the bread had been baked. At this point Galen introduced a *sui generis* recipe; it is as simple as the dish itself. And so, one of the peasants put some wheat into a small cauldron, boiled it, add a pinch of salt⁷²⁴, and served the food to the youths, who ate it readily and in a large quantity. The fact that the number of ingredients added to the dish was limited solely to a small quantity of salt is also confirmed in the *De victu attenuante*⁷²⁵. The data presented above leads us to the conclusion that *pyroí hephthoí* were a typical element of the rural diet, easier to prepare during the period of field work, and thus used as a substitute for bread. Galen's surprise at the sight of this dish would also suggest that it was untypical for people who lived in urban areas.

It seems that flour was a cereal product considerably more common than boiled wheat. As used in Galen's treatises, the term *áleuron* refers to flour made from various types of cereals. And thus, there was barley *áleuron* (*áleuron krithinon*)⁷²⁶, as well as that made from common millet⁷²⁷, cicer (*erebinthos*)⁷²⁸ and so on. It is worth adding that the term *áleuron* without any attribute always referred to a product made from *silignis* wheat. Usually, this was understood to mean white, well-purified wheat flour. In order to achieve this effect, ground grains were sifted in order to separate the bran (*pítýra*). Whole grain flour was also produced, and this was known as *áleuron adiákriton*⁷²⁹. Galen's texts also indicate that bread and other baked products were the most highly value product obtained from *áleuron* flour. The most important of these were analysed

⁷²³ Galen, *De alimentorum facultatibus*, 498, 16–17, vol. VI.

⁷²⁴ Galen, *De alimentorum facultatibus*, 499, 1, vol. VI.

⁷²⁵ Galen, *De victu attenuante*, 32, 3.

⁷²⁶ Galen, *De alimentorum facultatibus*, 474, 8–9, vol. VI.

⁷²⁷ Galen, *De alimentorum facultatibus*, 524, 2–3, vol. VI.

⁷²⁸ Galen, *De alimentorum facultatibus*, 532, 19–533, 3, vol. VI.

⁷²⁹ Galen, *De alimentorum facultatibus*, 483, 7, vol. VI. This flour was used for baking *synkomistós* bread, which was also known as *autópyros*.

in the work *De alimentorum facultatibus*, in which he not only wrote about various types of *ártos*, but also about *sui generis* pieces of dough made from *áleuron*, known as *itria*, and *teganítai*, i.e. pancakes. The flour in question was, however, also used for producing boiled dishes. Galen informed his readers that it was prepared in milk, assuming – as we should imagine – that it had the form of a soup or gruel. He wrote about in the *De alimentorum facultatibus* while presenting the properties of the so-called *plytós ártos*⁷³⁰, and described as a rather popular rural delicacy boiled with the addition of milk⁷³¹. In the *De victu attenuante* he reiterated that *áleuron* was made with water or milk, thus resulting in a soup identical – as he put it – to *étnos*⁷³². He provided no further data concerning the recipe for this dish. It may simply be that it was uncomplicated, such as – for example – the previously mentioned *pyrói hephthoí*, the recipe for which was treated by Galen with identical brevity. A variation of the abovementioned dish was one that, as we may surmise, was made according to a slightly different procedure. It was invariably mentioned together with suggestions concerning methods of serving milk, and closely connected with the utilisation of wheat flour as an addition thereto. It was supposed to improve the dietetic properties of the white fluid. This was stated, for example, in the treatise *De rebus boni malique suci*⁷³³. When discussing dishes made by boiling wheat flour, it is worth noting that a soup prepared by boiling *áleuron* in water was known as *lékithos*. Galen noted that usually it was enriched by the addition of fat⁷³⁴. However, he did not specify whether this was a vegetable or an animal product. In all probability, both could have been used, depending on what the cook preparing the *lékithos* had at his disposal, or on his preferences.

Another term known to us – *semídalís* – was used by Galen in a number of meanings. First of all, he employed this noun when

⁷³⁰ Galen, *De alimentorum facultatibus*, 494, 16 – 496, 2, vol. VI.

⁷³¹ Galen, *De alimentorum facultatibus*, 494, 16 – 495, 1, vol. VI.

⁷³² Galen, *De victu attenuante*, 32, 3–4.

⁷³³ Galen, *De rebus boni malique suci*, 767, 11–16, vol. VI.

⁷³⁴ Galen, *De rebus boni malique suci*, 782, 11–12, vol. VI.

referring to one of the commonly known varieties of wheat, namely durum wheat⁷³⁵. Secondly, *semídalís* was used to denote a type of flour, coarse or fine, made from the abovementioned variety of *pyrós*. As regards the first variety of this product, Galen mentioned it in *De victu attenuante*, comparing the properties of *semídalís* and *chóndros*, thereby suggesting that both terms referred to identical products. Since *chóndros* was coarsely ground, we may conclude that the *semídalís* described by this expert of dietetics was also a type of groats⁷³⁶. On the other hand, *semídalís* was also in all certainty a type of relatively fine flour; we can base such an interpretation of this term on numerous references in Galen's writings. Thus, the physician wrote about *semídalís* in the work *De sanitate tuenda*, and the entire fragment in which he presented a characteristic of this product concerned baked products obtained from *pyrós*⁷³⁷ wheat in general. He therefore mentioned both wheat bread (in all probability made traditionally from *áleuron* flour), and baked products (*pémma*) from *semídalís*⁷³⁸. The latter statement seems to suggest with sufficient clarity that the term referred to a product distinguishable from *áleuron*, but only slightly different therefrom. Galen also maintained that this *semídalís* was a widely appreciated article⁷³⁹. As regards baked products made from *semídalís*, *De sanitate tuenda* informs us that the recipe for the aforementioned *pémmata* also included butter and honey. Yeast, however, was not used⁷⁴⁰. Let us add that Galen considered the latter ingredient as having significant dietetic properties. However, the flour in question was used primarily to bake most highly valued bread (obviously with the addition of salt and leaven); this fact is stated among others in the *De alimentorum facultatibus*. It was called *ártos semídalítes* and amongst white breads was considered as second only to

⁷³⁵ Cf. A. Dalby, *Food...*, p. 349.

⁷³⁶ Galen, *De victu attenuante*, 34, 1–3.

⁷³⁷ Galen, *De sanitate tuenda*, 342, 1–10, vol. VI.

⁷³⁸ Galen, *De sanitate tuenda*, 342, 3, vol. VI.

⁷³⁹ Galen, *De sanitate tuenda*, 342, 2–3, vol. VI.

⁷⁴⁰ Galen, *De sanitate tuenda*, 342, 1–10, vol. VI.

*ártos silignítes*⁷⁴¹ in terms of quality, for it was renowned for being highly nutritious.

Unfortunately, Galen did not have much to say about dishes made from *gýris* flour. Not once did he refer to it as a raw material for baked products. However, he frequently mentioned it as an ingredient of composite drugs. The work entitled *De compositione medicamentorum secundum locos* does, however, contain a certain recipe that may be considered 'culinary'. This formula was authored not by Galen, but by Asclepiades⁷⁴². The recipe⁷⁴³ called for boiling the leaves of common horehound (*Marrubium vulgare* L.) in water until they were cooked to bits, thickening the dish by adding *gýris*⁷⁴⁴ flour, and subsequently readying it for serving by the addition of fat and salt. The final product was known as *rhóphema*; in other words, it was a kind of soup intended to be drunk⁷⁴⁵.

Wheat flour was used primarily for making bread. Galen's description of these baked products is imprecise as regards who and when ate them. Despite the lack of precision in data, some conclusions may be drawn. First and foremost, Galen noted that bread is the most frequently consumed food⁷⁴⁶. In addition, it should be noted that according to data taken into consideration by this physician, bread made from a single cereal – namely common wheat – occupied a special place amongst baked products. Thus, the chapter of the *De alimentorum facultatibus* that discusses the latter, entitled *Peri pyrón*, is devoted first and foremost to this basic foodstuff. Bread made from different cereals – as other of Galen's deliberations suggest – was usually eaten in the absence of wheat bread, or for reasons of economy (good common wheat and the loaves made

⁷⁴¹ Galen, *De alimentorum facultatibus*, 483, 13–15, vol. VI.

⁷⁴² Galen, *De compositione medicamentorum secundum locos*, 97, 3–4, vol. XIII.

⁷⁴³ Galen, *De compositione medicamentorum secundum locos*, 97, 11 – 98, 2, vol. XIII.

⁷⁴⁴ Galen, *De compositione medicamentorum secundum locos*, 97, 15, vol. XIII.

⁷⁴⁵ Galen, *De compositione medicamentorum secundum locos*, 97, 16 – 98, 2, vol. XIII.

⁷⁴⁶ Galen, *De alimentorum facultatibus*, 493, 14–16, vol. VI.

therefrom were relatively expensive). The narrative of the Pergamonian physician also indicates that wheat bread was consumed first and foremost in urban areas. His writings contain numerous direct hints proving that in his times the cereal known as *pyrós* was produced primarily for city-dwellers⁷⁴⁷. This testimony clearly shows that the remaining species representing the genus *Triticum* (as well as cereals from different genera) were utilised first and foremost by residents of rural areas. Therefore, breads made from einkorn wheat, emmer wheat and spelt were more frequently consumed in rural areas, although it should be added that baked products from einkorn (but only freshly baked⁷⁴⁸) and spelt (Galen maintained that *ólyra* breads were second only to baked products made from *pyrós*, provided however that the cereal used was of a sufficiently high quality⁷⁴⁹) were universally valued, and thus found consumers also in urban areas. Let us therefore repeat: a well-risen, white wheat bread was in all certainty more typical of the municipal market and the diet of city-dwellers. These were the people whom Galen dubbed its ‘usual’ consumers (*idiótai*⁷⁵⁰). Farmers, as for example the feasting peasant, whom he mentioned in the *De alimentorum facultatibus*, normally ate unleavened bread⁷⁵¹. There were, however, days in the year – as Galen’s tale would seem to suggest – when the residents of rural areas did not eat bread at all, if only because during the period of field work they did not have the free time required to engage in the laborious and relatively time-consuming baking of bread. For this reason, in order to circumvent such inconveniences, they boiled whole wheat grains and made *pyrói hephthoi*, or prepared a kind of soup from *áleuron* flour and milk.

Although Galen did not elaborate culinary tips for bakers, when discussing various types of bread and their properties from the point of view of a physician vitally interested in the properties of the foods that his patients consumed, he perforce preserved a great deal of information

⁷⁴⁷ For example, cf. Galen, *De alimentorum facultatibus*, 518, 3–4, vol. VI.

⁷⁴⁸ Galen, *De alimentorum facultatibus*, 518, 8, vol. VI.

⁷⁴⁹ Galen, *De alimentorum facultatibus*, 518, 4–5, vol. VI.

⁷⁵⁰ Galen, *De alimentorum facultatibus*, 486, 1, vol. VI.

⁷⁵¹ Galen, *De alimentorum facultatibus*, 486, 4–5, vol. VI.

concerning the process of bread making. What is more, he clearly distinguished the critically important stages of bread preparation and provided a number of hints, the application of which ensured the desired properties of the finished product. His deliberations therefore indicate that any person who intends to make bread should take into consideration the properties of the wheat grains at his disposal⁷⁵². It should be explained that information concerning the properties of the best and the worst grains was presented in the text of the *De alimentorum facultatibus* before an analysis of the topic of wheat bread, for the process of bread making – even if conducted at home – commenced with the grinding of grains. Identical data concerning the qualities of grains may be found in the treatise *De victu attenuante*, in the discussion on products made from wheat⁷⁵³.

Although Galen omitted nearly all the significant details pertaining to the methods of production of *áleuron* and *semídalís* flour, he did introduce certain elements of this knowledge, selecting those – as we assume – which were of primary significance for the final characteristic of the baked product. We read, therefore, that once the grains were grinded, the flour thus obtained was sifted in order to separate the *áleuron* from the bran (*pítýra*)⁷⁵⁴. As the Pergamene observed, pure flour formed the basis for producing the most valuable baked products of the *ártos katharós* class, while the bran was used to make bread with completely different properties (the preparation method differed as well), namely of the *pityriás* variety. Alternatively, wheat could be pulverised without separating the flour proper from the bran; the result was a sort of semi-finished product suitable for wholegrain bread, known as *autópyros* or *synkomistós*. It was on these three products that Galen centred his dietetic and culinary narrative.

Although the author of the *De alimentorum facultatibus* did not describe the process of kneading bread dough in the level of detail

⁷⁵² Galen, *De alimentorum facultatibus*, 480, 14 – 482, 4, vol. VI.

⁷⁵³ Galen, *De victu attenuante*, 33, 1 – 34, 1.

⁷⁵⁴ Galen, *De alimentorum facultatibus*, 481, 13–15, vol. VI.

that would have been of interest for modern-day bakers, he nevertheless helped his readers recognise the factors that should be taken into consideration⁷⁵⁵. In consequence, when enumerating the properties of bread dough, he in a sense provided a recipe for the dietetically most valuable semi-finished product for making bread from wheat flour. And thus, he maintained that the best raw bread dough is visibly free of contaminants⁷⁵⁶, which means that it should be made from white flour, and is relatively heavy and at the same time does not have an excessive volume. Furthermore, it is sticky and tough (*glischron*), so that it does not break when stretched. At this point he added that this toughness is a property typical of all bodies that are inherently glutinous. In order to obtain such a dough, one needs a considerable quantity of yeast (or leaven – *zýme*) and a lengthy kneading process. It should be added that he also included similar information concerning bread in the chapter entitled *Peri itríon*⁷⁵⁷. Summing up his deliberations concerning bread presented in the work *De alimentorum facultatibus*⁷⁵⁸, Galen stated that a healthy baked product is one that is made with a large quantity of yeast/leaven and salt. It must also be very well kneaded before being subjected to the high temperatures in an evenly heated *kribanon*. Its taste should inform us whether the appropriate quantities of ingredients were used, while any sensation unpleasant to the senses would be indicative of the food's harmful properties. The quantity of leaven and salt must be sufficient to ensure the acceptable taste of the baked product. Galen also explained that the method for making *pityriás* bread is different. It requires neither a large quantity of yeast, nor time-consuming kneading, nor a long period of baking⁷⁵⁹. Let us add one more comment. The Pergamene's narrative

⁷⁵⁵ Galen, *De alimentorum facultatibus*, 482, 5–16, vol. VI.

⁷⁵⁶ Because it was made from finely purified *áleuron*. Thus, the dough had to be white. In addition, the text indicates that the lighter-coloured the bread, the more highly it was valued.

⁷⁵⁷ Galen, *De alimentorum facultatibus*, 492, 3–494, 8, vol. VI.

⁷⁵⁸ Galen, *De alimentorum facultatibus*, 494, 1–8, vol. VI.

⁷⁵⁹ Galen, *De alimentorum facultatibus*, 482, 11–13, vol. VI.

suggests⁷⁶⁰ that salt was also added to the dough used to make dark breads, and for this reason it determined the aroma of both *katharós*, and *pityriás* breads.

Proceeding therefore to an enumeration of the list of baked products analysed by the physician, we should observe that he did not mention all of the contemporary bread varieties, or at least not as many as Athenaeus of Naucratis in the third book of the work *Deipnosophistae*. Galen presented only the basic types, thus outlining the principles of the dietetic evaluation of baked products. Proceeding, however, directly to the essence, we should start off by stating that the dietetic and culinary systematics adopted by the author of the *De alimentorum facultatibus*⁷⁶¹ subdivide wheat breads into types depending on the flour used for baking, the presence (or absence) of yeast/leaven in the bread dough, and the method of baking.

The first category promoted by Galen has already been outlined, at least in part. The extremes of the system described by Galen were white and black breads. The former were made from finely purified flour. As concerns the latter, the more contaminants they contained – first and foremost bran (*pityron*) – the less valuable they were. Between them, as the expert wrote, there are numerous and varied breads that are ‘intermediate’ as regards appearance and dietetic properties⁷⁶². Galen, however, considered it appropriate to clearly state that *autópyros/synkomistós*⁷⁶³ breads are located at the mid-point of this scale. The full typology that he used is as follows. Amongst the *ártoi katharói*, he considered *silignítes*⁷⁶⁴ to be the best, with *semidalítes* bread coming a close second. He awarded third place to *autópyros/synkomistós* baked products, and fourth to *rhyparós* baked products. The last in his classification

⁷⁶⁰ Galen did not provide any information concerning the elimination of salt from the recipe for *pityriás* bread.

⁷⁶¹ The classification in question takes into consideration recipe and technological criteria.

⁷⁶² Galen, *De alimentorum facultatibus*, 482, 13–15, vol. VI.

⁷⁶³ Galen, *De alimentorum facultatibus*, 483, 1–2, vol. VI.

⁷⁶⁴ Cf. M. Decker, *op. cit.*, 97.

was *pityriás*⁷⁶⁵. Apart from the abovementioned varieties, there were more special types, such as light/washed bread, which in Galen's treatise *De alimentorum facultatibus* forms the subject of an entire chapter, entitled *Peri plýtou ártou*.

Although the Pergamene did not write about this *expressis verbis* in his official classification, he also applied a subdivision of breads based on the thickness of the flour used in their production. All of the abovementioned types of baked products were made from a finely ground flour known as *áleuron* or *semídalís*. Some loaves, however, were made from a cereal product with considerably thicker grains. An example of such a baked product was *chondrites* bread, which – as the name suggests – was made using not *áleuron* (or *semídalís*), but *chóndros*⁷⁶⁶, i.e. groats usually made from *pyrós* wheat. This information raises some questions concerning the characteristic of the said *chóndros*. Without a doubt, these groats had to be relatively fine in order to be used as the basis for making dough that would be sufficiently cohesive to bake bread.

We should also note that Galen subdivided baked products into those that were made with and without the addition of yeast (or leaven), i.e. *zýme*. The former were usually called (but by other dieticians, not Galen himself) *zymítes*, whereas the latter were termed (also by Galen) *ázymos*⁷⁶⁷. The details of the raising process were not given by the author of the *De alimentorum facultatibus*, but he considered risen bread, i.e. one containing a large quantity of *zýme*, as a food superior to unleavened bread⁷⁶⁸. The latter was consumed either out of necessity (for example, as we should probably understand, by the poor rural population), or chosen consciously by sportsmen, who had specific dietetic requirements.

⁷⁶⁵ Classification of breads – Galen, *De alimentorum facultatibus*, 484, 1–4, vol. VI.

⁷⁶⁶ Galen, *De alimentorum facultatibus*, 496, 14–16, vol. VI.

⁷⁶⁷ Galen, *De alimentorum facultatibus*, 486, 5, vol. VI.

⁷⁶⁸ Galen, *De alimentorum facultatibus*, 485, 4–487, 10, vol. VI.

As regards the division of breads according to the baking method, Galen distinguished the following types. The best breads were of the *kribanítai* variety, i.e. made in the *kribanon*; he wrote that these were baked slowly, using a carefully prepared dough⁷⁶⁹. *Ipnítai* breads, made according to the best recipe, came second⁷⁷⁰. Third were varieties baked on the *eschára* (and for this reason referred to generally as *escharítai*), of which Galen knew two varieties⁷⁷¹. The last were *enkryphías* breads, i.e. ones baked directly in the ashes⁷⁷². These were also the worst breads as regards the method of baking⁷⁷³.

This classification provides us with food for thought regarding the difficulties that ancient cuisine had with ensuring the proper quality of baked products. The basic problem in this process concerned maintaining the appropriate temperature guaranteeing the uniformity of baking. Galen devoted quite some attention to this issue. He explained that when the dough is exposed to an excessively high temperature, its surface hardens similarly to ceramic vessels, while the bread becomes bad for two reasons. First of all, its interior remains insufficiently baked. Secondly, the excessively hard skin dries out, resembling hardened clay. When, however, the temperature is too low, it does not act sufficiently on the loaf, and the bread remains raw – particularly on the inside. Thus, only one who bakes the dough over an even fire for an extended period of time obtains an *ártos* that is valuable from the point of view of dietetics⁷⁷⁴.

Another topic to which Galen devoted his deliberations were *itria*. He even made them the subject of one of the chapters of *De alimentorum facultatibus*, entitled *Perí itríon*⁷⁷⁵, which would indicate their

⁷⁶⁹ Galen, *De alimentorum facultatibus*, 489, 8–10, vol. VI.

⁷⁷⁰ Galen, *De alimentorum facultatibus*, 489, 10–12, vol. VI.

⁷⁷¹ Galen, *De alimentorum facultatibus*, 489, 12–15, vol. VI.

⁷⁷² Galen did not explain exactly which qualities of ash are particularly undesirable. It may be that he was referring to the high risk of burning the bread when using this primitive method.

⁷⁷³ Galen, *De alimentorum facultatibus*, 489, 15–490, 1, vol. VI.

⁷⁷⁴ Galen, *De alimentorum facultatibus*, 484, 8–14, vol. VI.

⁷⁷⁵ Galen, *De alimentorum facultatibus*, 492, 3–494, 8, vol. VI.

considerable popularity. However, *stricte* culinary information is sparse. First, the author informs us that there are two types of *ítria*. The superior ones are called *rhyémata*, while the inferior – *lágana*⁷⁷⁶. Unfortunately, he did not provide precise definitions of these terms. It was only in the work entitled *De rebus boni malique suci* that he gave more specific information concerning the division of this group of baked products and the nomenclature used therefor⁷⁷⁷. *Ítria* was a somewhat outdated term in Galen's time; nevertheless we know that it was popular amongst his predecessors. These products were listed amongst *plakoúntes*, i.e. flat cakes. Thus, they had the form of cakes that – as later data indicates – had to be relatively thin. In the times of the author of *De rebus boni malique suci*, they were most often termed *lágana* or *rhyémata*. In *De alimentorum facultatibus* the author maintained that the delicacies in question were made from *áleuron* wheat flour. He did not inform of the liquid with which the flour was mixed. On the basis of his account concerning the so-called *tagenítai* we may surmise that the dough for these delicacies did not contain yeast⁷⁷⁸. The narrative also indicates that ready *ítria* were served with honey⁷⁷⁹, to which Galen devoted considerable attention at this point. One needs to understand (once again thanks to an account devoted to *pémмата*⁷⁸⁰) that this product was not added to the raw dough, but rather the ready *ítria*⁷⁸¹ was thrown into hot honey, with which it became saturated⁷⁸². Galen returned to the issue of the recipe for *ítria* in his deliberations presented in the work *De rebus boni malique suci*, where he clearly stated that yeast was not used for the production of the said delicacies⁷⁸³. A slight supplementation of the recipe for *ítria* may be found in the work *De simplicium medicamentorum temperamentis ac facultatibus*,

⁷⁷⁶ Galen, *De alimentorum facultatibus*, 492, 4–5, vol. VI.

⁷⁷⁷ Galen, *De rebus boni malique suci*, 768, 6–15, vol. VI.

⁷⁷⁸ Galen, *De alimentorum facultatibus*, 491, 14, vol. VI.

⁷⁷⁹ For example – Galen, *De alimentorum facultatibus*, 492, 10, vol. VI.

⁷⁸⁰ Galen, *De alimentorum facultatibus*, 490, 9 – 492, 2, vol. VI.

⁷⁸¹ Galen, *De alimentorum facultatibus*, 492, 1–2, vol. VI.

⁷⁸² Galen, *De alimentorum facultatibus*, 491, 15, vol. VI.

⁷⁸³ Galen, *De rebus boni malique suci*, 768, 12, vol. VI.

or more precisely in the chapter devoted to poppy seeds (*mékón*)⁷⁸⁴. Galen maintained therein that poppy seeds were added to *ítria*⁷⁸⁵ foods. It is likely that this was done to enhance the taste and appearance of these products, for the text here contains no suggestions as to the deliberate utilisation of the pharmacological properties of poppy seeds⁷⁸⁶.

In addition, more or less detailed information concerning the making of *ítria* may be found in the treatise entitled *De semine*. Galen wrote therein that it is made by pouring thin dough (*hygrón stáís*) onto a hot, flat vessel⁷⁸⁷. In another point of the same treatise we find more information concerning *ítria*. Namely, he stated that they were fried until they detached themselves from the surface of the frying pan⁷⁸⁸. Incidentally, the latter had to be properly heated from the very beginning; otherwise the dough would stick to its surface. As for the frying pans, Galen informed that they were made (sometimes, at least) of copper⁷⁸⁹. Finally, it is worth noting that the ready *ítria*⁷⁹⁰ were used as an addition to milk⁷⁹¹. Namely, they were boiled in milk, and the end product – as we should surmise – was a *sui generis* soup. In all probability, the cakes were broken into small pieces prior to their immersion in milk. Nowhere, however, was the latter procedure confirmed *expressis verbis* in the writings of the Pergamonian physician.

In the chapter *Perí pemmáton*⁷⁹², which also constitutes a part of the treatise *De alimentorum facultatibus*, Galen discussed baked

⁷⁸⁴ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 72, 13 – 74, 4, vol. XII.

⁷⁸⁵ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 73, 11, vol. XII.

⁷⁸⁶ Poppy seeds were frequently used in medicine – J. Scarborough, *The opium poppy in Hellenistic and Roman medicine*, [in:] *Drugs and narcotics in history*, eds. R. Porter, M. Teich, Cambridge–New York 1995, p. 4–23.

⁷⁸⁷ Galen, *De semine*, 526, 14 – 527, 1, vol. IV.

⁷⁸⁸ Galen, *De semine*, 527, 11, vol. IV.

⁷⁸⁹ Galen, *De semine*, 527, 12, vol. IV.

⁷⁹⁰ Galen, *De alimentorum facultatibus*, 687, 15, vol. VI.

⁷⁹¹ Galen, *De alimentorum facultatibus*, 687, 7 – 688, 1, vol. VI.

⁷⁹² Galen, *De alimentorum facultatibus*, 490, 9 – 492, 2, vol. VI.

products, which he called *pémata*; in the Attic dialect they were known as *tagenítai*⁷⁹³, while the Greek inhabitants of Asia Minor dubbed them *teganítai*⁷⁹⁴. The author himself did not know how to classify these products. They could be included amongst *plakoúntes*⁷⁹⁵, i.e. flat cakes. However, there was no agreement concerning this issue. The said *pémata*, or *plakoúntes* were made from *áleuron*⁷⁹⁶ wheat flour (but without yeast) dissolved in water⁷⁹⁷, flavoured with sea salt⁷⁹⁸ or honey, and poured⁷⁹⁹ (the mass for this delicacy had to be as fluid as present-day pancake dough) onto a *téganon*⁸⁰⁰ frying pan, previously heated with olive oil⁸⁰¹. They were fried (with wood being used as the fuel, for it gave off little smoke when burned), flipped two or even three times, and were ready when the dough set under the influence of heat (just as – compared Galen – milk coagulates and hardens in a basket, turning into cheese) and the centre was properly cooked. Once ready, such baked products (and also other delicacies prepared without the addition of yeast and baked in a *kribanon*⁸⁰²) were fully submerged in hot honey⁸⁰³. Information concerning the popularity of this delicacy in various social groups is interesting: they were made at home⁸⁰⁴ (i.e. they were not purchased) in rural areas⁸⁰⁵, while in cities they were a meal prepared by the least affluent citizens⁸⁰⁶.

⁷⁹³ Galen, *De alimentorum facultatibus*, 490, 11–12, vol. VI.

⁷⁹⁴ Galen, *De alimentorum facultatibus*, 490, 12–13, vol. VI.

⁷⁹⁵ Galen, *De alimentorum facultatibus*, 491, 12, vol. VI.

⁷⁹⁶ Galen, *De alimentorum facultatibus*, 490, 10–11, vol. VI.

⁷⁹⁷ Galen, *De alimentorum facultatibus*, 490, 15, vol. VI.

⁷⁹⁸ Galen, *De alimentorum facultatibus*, 491, 10, vol. VI.

⁷⁹⁹ Galen, *De alimentorum facultatibus*, 490, 14, vol. VI.

⁸⁰⁰ The name *tagenítai* comes from the term *téganon*, which was used for kitchen vessels used similarly to contemporary frying pans.

⁸⁰¹ Galen, *De alimentorum facultatibus*, 490, 13, vol. VI.

⁸⁰² Galen, *De alimentorum facultatibus*, 491, 14, vol. VI.

⁸⁰³ Galen, *De alimentorum facultatibus*, 491, 15, vol. VI.

⁸⁰⁴ Galen, *De alimentorum facultatibus*, 491, 12, vol. VI.

⁸⁰⁵ Galen, *De alimentorum facultatibus*, 491, 12–13, vol. VI.

⁸⁰⁶ Galen, *De alimentorum facultatibus*, 491, 13, vol. VI.

The treatise *De alimentorum facultatibus* instructs readers that *ámylon*⁸⁰⁷ was made primarily from common wheat⁸⁰⁸. Regarding issues pertaining to the culinary applications of this product, the data presented therein allows us to conclude that *ámylon*⁸⁰⁹ was boiled in milk until a thin soup was thus obtained. This would follow from an analysis of a fragment of Galen's deliberations concerning the dietetic properties of the white beverage⁸¹⁰ in a chapter devoted specifically thereto⁸¹¹. In all probability, this dish was similar to a soup boiled with the addition of *áleuron* flour. The Pergamene mentioned one other culinary application of *ámylon*⁸¹²: this concerns the recipe for *ptisáne*⁸¹³. Namely, the work *De alimentorum facultatibus* informs us that some cooks added starch to this barley soup, highly valued for its therapeutic and dietetic properties. According to the physician, this procedure was incorrect and served to distort the effect of the density of the broth that was normally obtained by the prolonged boiling of the soup, until the barley grains fell apart and the broth naturally thickened. *Ámylon* was in this instance a thickener, which shortened the time required to prepare this curative dish. This technique was condemned by Galen, for it contributed to the creation of a food with properties that were dangerous for the sick people to whom it was served⁸¹⁴.

Regarding the term *chóndros*, the treatise *De alimentorum facultatibus* contains the greatest amount of pertinent culinary data. Additional information is scattered throughout Galen's writings, with the work *De victu attenuante* being the second largest source of culinary data. As concerns the first of these works, the cereal product in question

⁸⁰⁷ Galen, *De alimentorum facultatibus*, 500, 4–16, vol. VI.

⁸⁰⁸ Galen, *De alimentorum facultatibus*, 500, 5, vol. VI.

⁸⁰⁹ Galen, *De alimentorum facultatibus*, 687, 14, vol. VI.

⁸¹⁰ Galen, *De alimentorum facultatibus*, 687, 7–688, 1, vol. VI.

⁸¹¹ Galen, *De alimentorum facultatibus*, 681, 11–689, 7, vol. VI.

⁸¹² Galen, *De alimentorum facultatibus*, 502, 9, vol. VI.

⁸¹³ Galen, *De alimentorum facultatibus*, 502, 7–11, vol. VI.

⁸¹⁴ Galen, *De alimentorum facultatibus*, 502, 7–8, vol. VI. This *ptisáne* had a carminative effect and was difficult to digest in the stomach.

constitutes the primary topic of a separate chapter, entitled *Peri chón-drou*⁸¹⁵, but references thereto, although concentrated in this part of Galen's work, may also be found – with varying regularity – in other sections of the *De alimentorum facultatibus*. Commencing an analysis of the extant data, it is worth observing that *chóndros* was described in the part of Galen's work devoted to *pyrós* wheat. The context would therefore suggest that it was usually made using this very cereal⁸¹⁶. Besides, the author himself explained this issue (in a somewhat imprecise sentence), classifying the product in question amongst foods obtained⁸¹⁷ from common wheat⁸¹⁸. It should be noted that the physician did not provide any details concerning the method of making this product, nor did he give an in-depth description of its appearance – as if he wanted to state that matters which were completely obvious for his readers need not be expounded. In addition, he introduced the concept of light/washed *chóndros* (*plytós chóndros*)⁸¹⁹. Again, however, he did not provide a detailed definition of this term. It may be described only through an analogy to the previously mentioned term *plytós ártos*. Since the latter was used to denote a light bread, in all probability made from thoroughly purified *áleuron* flour, with special dietetic properties, we may surmise that the term *plytós chóndros* referred to the method of purifying *chóndros* of undesirable elements, maybe by washing them out with water⁸²⁰; this method was applied in order to obtain a light (i.e. free of contaminants) *chóndros* that would be suitable for boiling dishes with specific dietetic properties.

Passing directly to the culinary information provided in the *De alimentorum facultatibus*, we would like to note that an analysis of the text

⁸¹⁵ Galen, *De alimentorum facultatibus*, 496, 3 – 498, 4, vol. VI.

⁸¹⁶ *Chóndros* could also be made from other cereal crops of the genus *Triticum*.

⁸¹⁷ Putting it precisely, Galen stated that *chóndros* belongs to the same type/group of products as *pyrós*.

⁸¹⁸ Galen, *De alimentorum facultatibus*, 496, 4, vol. VI.

⁸¹⁹ Galen, *De alimentorum facultatibus*, 497, 5, vol. VI.

⁸²⁰ Analogies are provided by a cereal product known as *trágos*, which was made primarily from spelt.

suggests that groats were usually made thick, probably in the form of gruel or a soup (more or less thick). Regarding the first recipe, Galen maintained that *chóndros* was boiled only in water, and subsequently flavoured with *oinómeli*, sweet wine, or dry wine⁸²¹ (depending on the circumstances). Although thanks to these details the Pergamene specified the taste typical of boiled *chóndros*, his description does not allow us to draw an unequivocal conclusion as to the consistency of the dish. We may therefore guess that the separation of the above data from those introduced in the same chapter and concerning the preparation of *chóndros* à la *ptisáne* would indicate that groats flavoured with wine also differed in terms of thickness from *chóndros* à la *ptisáne*. If, therefore, *ptisáne* was a soup⁸²², *chóndros* with wine could have been a thick gruel, in any case more akin to modern fluffy groats than barley soup. It should be added that similar information concerning the preparation of sweet *chóndros* is present in Galen's other treatises, and thus in all probability constitute a reflection of an established and common culinary practice. In *De victu attenuante*, for example, we read about boiling of *chóndros* in water, and subsequently serving it flavoured with *oinómeli* or sweet wine⁸²³. As regards the latter, Galen was more precise than in *De alimentorum facultatibus*. He recommended white wines with a yellowish hue, resembling – as he added – the famous Falernian wine⁸²⁴. However, in the *De victu attenuante* he did not mention dry wine. In order to supplement information concerning the method of serving these thick groats, we should make use of data from the treatise *De compositione medicamentorum secundum locos*. In this work – or, to put it precisely, in its fragments in which Galen cited the doctrines of Apollonius⁸²⁵ – he noted that warm and soft *chóndros* was also served

⁸²¹ Galen, *De alimentorum facultatibus*, 496, 5–6, vol. VI.

⁸²² In the chapter concerning *chóndros*, *ptisáne* is termed *rhóphema* – Galen, *De alimentorum facultatibus*, 498, 3, vol. VI (*didónai rhopheín*).

⁸²³ Galen, *De victu attenuante*, 34, 5.

⁸²⁴ Galen, *De victu attenuante*, 34, 4–6.

⁸²⁵ Galen, *De compositione medicamentorum secundum locos*, 514, 5 – 520, 6, vol. XII.

with pomegranates⁸²⁶. The treatise does not provide any details, and thus we can only guess that the author was speaking about the mixing of warm and soft *chóndros* with the flesh (perhaps ripe) of this fruit. It should be added that the dish was served first and foremost not for its taste, but due to its therapeutic properties.

According to another method of preparation, *chóndros* could be boiled as a soup with the addition of olive oil and salt. In this case vinegar was sometimes added, and such a dish was dubbed *chóndros ptisanisti*⁸²⁷ by physicians. Galen's deliberations also inform us that some of the old masters of the medical art, as for example Diocles of Carystus and Philotimus, called the *chóndros* thus prepared 'wheat *ptisáne*' (*ptisáne pyríne*)⁸²⁸. In another point Galen supplemented this information by the following culinary details: he maintained that *chóndros* was boiled for a considerable time – until it was very thoroughly cooked – and mixed so that the final form of this *rhóphema* resembled thin *ptisáne* gruel (*chylós ptisánes*); it was subsequently strained and served as a beverage⁸²⁹. This *chóndros* soup was flavoured in the same way as the dish made from boiled *plytós chóndros*, i.e. with salt, olive oil and dill⁸³⁰. In *De victu attenuante*, Galen provided us with yet more information concerning the different variants of *ptisáne* made from wheat groats, enriching our knowledge of the spices used in its preparation. The traditional, i.e. concordant with normal medical practice, usage of this soup did not require the addition of hyssop⁸³¹. This was the case, because it had a purgative effect of itself. If, however, it was desirable to strengthen this property, pepper was added to the soup. Honey was also

⁸²⁶ Galen, *De compositione medicamentorum secundum locos*, 516, 14–18, vol. XII.

⁸²⁷ Galen, *De alimentorum facultatibus*, 496, 7–9, vol. VI.

⁸²⁸ Galen, *De alimentorum facultatibus*, 496, 11, vol. VI.

⁸²⁹ Galen, *De alimentorum facultatibus*, 498, 1–2, vol. VI.

⁸³⁰ Cf. hereunder.

⁸³¹ Galen, *De victu attenuante*, 36, 2. This information may be interpreted as a reference by Galen to the practice of certain physicians (and cooks), who added hyssop to *ptisáne*.

sometimes added, but only when it was the cook's intent for the food to have a purgative action on the organs located in the chest⁸³².

Galen also informs us about the frequent practice of boiling *chón-dros* to make soups other than *ptisáne*. The author maintained that the groats were boiled with beetroot⁸³³. The consistency of this dish remains unknown. Furthermore, the physician stated that *chón-dros* was added to poultry broths. This product was also used to prepare a thick soup similar to *étmos*, or another type of broth known as *rhóphema*, with the addition of dill, leeks, field mint, calamintha or hyssop. Pepper was also added to such dishes⁸³⁴. Finally, in the same treatise, Galen expanded the group of ingredients used for soups, i.e. *rophémata* from *chón-dros* groats, by savory and thyme, which were substances from the so-called *témnonta* group. He also hinted that all of these additives – with the exception of pepper – should be boiled in the broth⁸³⁵. Ground pepper, in turn, should be added to the soup once it was fully prepared⁸³⁶.

The author of the *De alimentorum facultatibus* also devoted some attention to soups (*rophémata*) made from the aforementioned washed *chón-dros* (*plytós chón-dros*). This was the so-called *chylós*, which was made with a large quantity of water and required prolonged boiling. Galen warned that this dish is in fact difficult to prepare in such a way as to ensure that it possesses the appropriate properties desired by physicians. Those who prepare this broth and think that a short period of boiling is sufficient will be easily misled. If, however, it is undercooked, it will be harmful to the patients to whom it is served. Namely, it will set and become thick due to its viscosity. In order to avoid this risk, *plytós chón-dros* must be boiled for an extended period of time, using a large quantity of water and a charcoal fire, and mixed with dill (this

⁸³² Galen, *De victu attenuante*, 36, 1–5.

⁸³³ Galen was referring to a purée made from beetroot leaves – Galen, *De victu attenuante*, 34, 6 – 35, 1.

⁸³⁴ Galen, *De victu attenuante*, 35, 1–5.

⁸³⁵ Galen, *De victu attenuante*, 115, 3–6.

⁸³⁶ Galen, *De victu attenuante*, 116, 1.

is probably a reference to the stem of the plant) until it becomes completely soft. Then one should add salt; a small quantity of olive oil could also be added to the broth (but the author stressed that this should occur at the very beginning of preparation)⁸³⁷. *Chylós* was also made from ordinary *chóndros*. It is mentioned first and foremost as a substance with therapeutic properties. It is presented in this context, for example, in the *De simplicium medicamentorum temperamentis ac facultatibus*, wherein Galen recommended a thin broth from these groats (*chylós chóndrou*) for irrigation or as an enema⁸³⁸. Finally, the data present in the treatise *De alimentorum facultatibus*⁸³⁹ allow us to surmise that *chóndros*⁸⁴⁰ was boiled in milk. The end product of this process was likely a thin soup.

In *De alimentorum facultatibus* Galen also provided a culinary characteristic of yet another wheat product, namely *krímnon*⁸⁴¹; however, the information pertaining thereto was not elaborated by the Pergamene himself, but borrowed from Dioscurides. Galen wrote that *krímnon* is characterised by particles of a size greater than *áleuron* flour. This comment would allow us to classify the product in question amongst groats. It was made either from emmer wheat, or from common wheat, and used in the preparation of *póltos*. A nearly identical description of *krímnon* groats may be found in the *De simplicium medicamentorum temperamentis ac facultatibus*⁸⁴².

As regards the output of another of the analysed authors, namely Orbasius, we must state that as far as culinary data pertaining to *pyrós* wheat is concerned, the physician appears to owe the most to Galen, Dieuches

⁸³⁷ Galen, *De alimentorum facultatibus*, 497, 4–12, vol. VI.

⁸³⁸ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 444, 3–5, vol. XI.

⁸³⁹ Galen, *De alimentorum facultatibus*, 687, 7–688, 1, vol. VI.

⁸⁴⁰ Galen, *De alimentorum facultatibus*, 687, 15, vol. VI.

⁸⁴¹ Galen, *De alimentorum facultatibus*, 517, 3–7, vol. VI. Cf. also Dioscurides, *De materia medica*, II, 90, 1, 1–4.

⁸⁴² Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 45, 5–9, vol. XII.

and Athenaeus of Attaleia. These data, however, supplement the additional information obtained thereby from Zopyrus, Rufus of Ephesus, Diocles of Carystus and Herodotus of Attaleia. Concerning the findings borrowed from the writings of the first of these authors, Oribasius gave a practically verbatim repetition of the contents of his treatise entitled *De alimentorum facultatibus* in the first book of *Collectiones medicae*⁸⁴³. Since, apart from a number of abbreviations, he introduced no changes to Galen's discourse, we shall omit this element from our deliberations, presenting only that culinary information, which supplements the already presented data.

Returning, however, to the primary thread of our discussion, we must state that thanks to the findings taken by Oribasius from Dieuches we learn that wheat underwent roasting⁸⁴⁴, which usually made it easier to remove the husks – devoid of culinary value – from the grains; this procedure was applied to cereals that had husks (i.e. in the case of barley, wheat species other than common and durum wheat and so forth). In turn, books of the *Collectiones medicae* of unestablished provenance (the so-called *Libri incerti*), or – to put it more precisely – the chapter thereof concerning the selection of a wet-nurse⁸⁴⁵, further indicate that *pyrós* of the *sitánios* variety was also known as *kachrydías*⁸⁴⁶, suggesting that it was similar to roasted barley, called *káchrys*⁸⁴⁷. Why exactly the dry cereal in question was subjected to the action of high temperatures remains unclear. Since no explanation can be found in the literature, we would surmise that this procedure had first and foremost a culinary context, namely, it helped bring the taste of the wheat thus prepared in line with that of *álphita*, a type of groats obtained from roasted barley, which were very popular amongst the populace of Graeco-Roman civilisation. The latter cereal had a husk and, due to its low gluten content,

⁸⁴³ Oribasius, *Collectiones medicae*, I, 1, 1, 5 – 15, 8; I, 4, 1, 1 – 8, 6, 3.

⁸⁴⁴ For example – Oribasius, *Collectiones medicae*, IV, 7, 3, 3.

⁸⁴⁵ Oribasius, *Collectiones medicae* (sp.), 3 I, 1, 1 – 34, 2.

⁸⁴⁶ Oribasius, *Collectiones medicae* (sp.), 3 I, 7, 5.

⁸⁴⁷ Oribasius, *Collectiones medicae* (sp.), 3 I, 7, 4 – 8, 1.

was used primarily for the preparation of soups and gruels, and not baked products. The hypothetical tendency presented above was not, however, a strictly binding rule, for nowhere do we find any mention that – for example – the dish known as *pyroí hephthoí* was made from roasted wheat grains.

Galen's output concerning the boiling of *pyrós*, presented previously, is excellently supplemented by those of Dieuches' findings that have been preserved in the writings of Oribasius⁸⁴⁸. And thus, advice concerning this method of preparing common wheat appears in the chapter of the *Collectiones medicae* devoted to preparing food for the sick, i.e. for those patients – as Oribasius' predecessor put it – who were unable to consume heavy and solid products. Incidentally, this comment would support the hypothesis that dishes made from boiled wheat were, in the opinion of Emperor Julian's physician, not as common amongst contemporary readers as baked products, and made only for specific reasons (for example related to health). Returning however to the *Collectiones medicae*, we must state that – in general – in the case of serious sicknesses Dieuches recommended refraining from the boiling of foodstuffs (usually served in a different form) and administering soups (or gruels⁸⁴⁹), or even beverages⁸⁵⁰. Among others, Dieuches advocated (for example) the soaking and boiling⁸⁵¹ of previously roasted⁸⁵², and subsequently pulverised⁸⁵³, wheat, which resulted in a liquid food (*póma*) with a strong action and considerable nutritive value⁸⁵⁴. This advice was repeated in the very same chapter⁸⁵⁵. Thus, Dieuches yet

⁸⁴⁸ In particular – Oribasius, *Collectiones medicae*, IV, 7, 1, 1 – 38, 4; IV, 9, 1, 1 – 5, 2.

⁸⁴⁹ The deliberations indicate that the dish should be rather fluid, in order for it to be easily swallowed by a patient considerably weakened by a serious illness, accompanied by an emaciating fever.

⁸⁵⁰ Oribasius, *Collectiones medicae*, IV, 7, 1, 1–3.

⁸⁵¹ Oribasius, *Collectiones medicae*, IV, 7, 4, 1.

⁸⁵² Oribasius, *Collectiones medicae*, IV, 7, 3, 3.

⁸⁵³ Oribasius, *Collectiones medicae*, IV, 7, 4, 1.

⁸⁵⁴ Oribasius, *Collectiones medicae*, IV, 7, 5, 1.

⁸⁵⁵ Oribasius, *Collectiones medicae*, IV, 7, 10, 1 – 12, 1.

again recommended the boiling of wheat – whether fresh or roasted⁸⁵⁶ – in water⁸⁵⁷, and serving it as a soup. Optionally, one could boil it in a meat broth, for example made from lamb⁸⁵⁸, whereas the author stresses that the boiled food must be pulverised⁸⁵⁹ and mixed into a form suitable for drinking⁸⁶⁰.

Apart from these rather general data, Dieuches also wrote down more detailed recipes and comments concerning the method of preparation of victuals, which in his interpretation achieve the status of culinary recipes. As regards the boiling of wheat⁸⁶¹ (and this method was also applied to other cereal crops and leguminous plants), in the *Perí hepseséos*⁸⁶² Dieuches stated that it should be prepared in a vessel covered with a lid, additionally sealed with dough⁸⁶³. The process of boiling was to be prolonged⁸⁶⁴, with the vessel kept over a small fire⁸⁶⁵. In order not to burn the dish – but only when the wheat was nearly soft – it was necessary to perform circular motions with the vessel⁸⁶⁶. An odourless fat that left no specific taste on palate should necessarily be added to the dish; the author recommended olive oil known as *élaion omphákinon*⁸⁶⁷.

⁸⁵⁶ Oribasius, *Collectiones medicae*, IV, 7, 10, 3. Dieuches recommended using any solid food to which the patient was accustomed as the basis for this soup.

⁸⁵⁷ Oribasius, *Collectiones medicae*, IV, 7, 10, 1.

⁸⁵⁸ Oribasius, *Collectiones medicae*, IV, 7, 10, 5.

⁸⁵⁹ Oribasius, *Collectiones medicae*, IV, 7, 11, 2.

⁸⁶⁰ Oribasius, *Collectiones medicae*, IV, 7, 11, 2 – 12, 1.

⁸⁶¹ Oribasius, *Collectiones medicae*, IV, 9, 1, 1.

⁸⁶² Oribasius, *Collectiones medicae*, IV, 9, 1, 1 – 5, 2.

⁸⁶³ Oribasius, *Collectiones medicae*, IV, 9, 1, 1–2. Although there is no recipe for the dough, we may surmise that its form was exceedingly simple and that it was obtained through the mixing of flour and water. Without a doubt, neither had to be of the highest quality, for there are no indications that the dough was consumed following the completion of boiling.

⁸⁶⁴ Oribasius, *Collectiones medicae*, IV, 9, 1, 2.

⁸⁶⁵ Oribasius, *Collectiones medicae*, IV, 9, 1, 2–3.

⁸⁶⁶ Oribasius, *Collectiones medicae*, IV, 9, 1, 3 – 2, 1.

⁸⁶⁷ Oribasius, *Collectiones medicae*, IV, 9, 1, 2, 1 – 3, 1.

In Oribasius' times, *ptisáne* was also made by boiling common wheat. We may surmise as much, for when the physician analysed foods conducive to lactation, and in this context quoted Zopyrus⁸⁶⁸, he indicated that watered-down *ptisáne pyríne* (and therefore *chylós*)⁸⁶⁹ and a broth from *triménios*⁸⁷⁰ or common wheat⁸⁷¹ are suitable for increasing the production of milk by the female organism. Without a doubt, the recipe for this therapeutic soup was identical to that used in preparing a barley broth. As regards the previously mentioned *chylós*, this thin wheat gruel doubtless found frequent application in diets. It is also significant that it was made for purely medical purposes, too, for example for utilisation in enemas, which Oribasius – following the doctrines established by Rufus of Ephesus, called *klýsmata*⁸⁷². In all probability, the therapeutic version did not contain the spices that served to significantly alter the dish's properties, for these could irritate the delicate organs of the patient (in any case irrespective of whether the *chylós* was used as a food, or for irrigation of the intestines).

Dieuches' output – included in the works of Oribasius – allows us to conclude that soups were also made from wheat flour. The author of the *Collectiones medicae* used fragments of the deliberations of his predecessor concerning the boiling of all types of liquid dishes, which were termed *rhophémata*⁸⁷³, *hepsémata*⁸⁷⁴, or *pómata*⁸⁷⁵. Amongst the many enumerated recipes there is one⁸⁷⁶, altogether precise, which recommends boiling a pound of *semídalís* flour in ten *kotýlai* of water, with the addition of olive oil and dill⁸⁷⁷. The author also added that

⁸⁶⁸ Oribasius, *Collectiones medicae*, XIV, 64, 1, 1 – 3, 3.

⁸⁶⁹ Oribasius, *Collectiones medicae*, XIV, 64, 2, 2 – 3, 1.

⁸⁷⁰ Oribasius, *Collectiones medicae*, XIV, 64, 1, 4.

⁸⁷¹ Oribasius, *Collectiones medicae*, XIV, 64, 2, 2.

⁸⁷² Oribasius, *Collectiones medicae*, VIII, 24, 1, 1 – 39, 3.

⁸⁷³ Oribasius, *Collectiones medicae*, IV, 7, 17, 3.

⁸⁷⁴ Oribasius, *Collectiones medicae*, IV, 7, 10, 1.

⁸⁷⁵ Oribasius, *Collectiones medicae*, IV, 7, 5, 1.

⁸⁷⁶ Oribasius, *Collectiones medicae*, IV, 7, 30, 1–3.

⁸⁷⁷ Oribasius, *Collectiones medicae*, IV, 7, 30, 2–3.

the *semidalis* should first – i.e. before boiling – be mixed with water⁸⁷⁸. The *Collectiones medicae* also provide us with additional information concerning dishes prepared from *áleuron* flour. Obviously, primarily recipes for foods to which a therapeutic action was attributed have survived in Oribasius' treatises. Thanks to fragments of the output of Diocles of Carystus, which may be found in book eight of the *Collectiones medicae*, we learn – for example – that *áleuron* was boiled in water⁸⁷⁹, and that honey was added to the broth⁸⁸⁰. The resulting product was drunk (the liquid was listed amongst emetics⁸⁸¹) either before or after meals⁸⁸². The flour in question⁸⁸³ was also specified by Diocles of Carystus as the ingredient of a *sui generis* soup (belonging to the *lytiká*⁸⁸⁴), which was made from boiled *Mercurialis annua* L. and young grapevine shoots, which were processed wet – with or without beetroot and cabbage – and consumed with cereal products and served as a soup thickened with *áleuron*⁸⁸⁵ flour.

As for bread in Oribasius' writings, it is worth turning attention to the following issues. In order to properly understand the ancient nomenclature, one must recognise that Oribasius, using the findings of Athenaeus of Attaleia, very precisely distinguished the term *ártos silignites*⁸⁸⁶ from *ártos semidalites*⁸⁸⁷. He also borrowed the term *ártos zymites*⁸⁸⁸ – which was lacking in Galen's treatises – from Antyllus. It is interesting to note that Emperor Julian's physician completely omitted the category

⁸⁷⁸ Oribasius, *Collectiones medicae*, IV, 7, 30, 3.

⁸⁷⁹ Oribasius, *Collectiones medicae*, VIII, 22, 1, 6.

⁸⁸⁰ Oribasius, *Collectiones medicae*, VIII, 22, 1, 7.

⁸⁸¹ Oribasius, *Collectiones medicae*, VIII, 22, 1, 1 – 4, 6.

⁸⁸² Oribasius, *Collectiones medicae*, VIII, 22, 1, 7.

⁸⁸³ Oribasius, *Collectiones medicae*, VIII, 41, 2, 1.

⁸⁸⁴ Oribasius, *Collectiones medicae*, VIII, 41, 1, 1 – 6, 5.

⁸⁸⁵ Oribasius, *Collectiones medicae*, VIII, 41, 2, 1.

⁸⁸⁶ For example – Oribasius, *Collectiones medicae*, III, 13, 5, 1. This bread was also known as *aleurites*.

⁸⁸⁷ For example – Oribasius, *Collectiones medicae*, III, 13, 6, 1.

⁸⁸⁸ Oribasius, *Collectiones medicae*, IV, 11, 2, 5.

*ártos ázymos*⁸⁸⁹ from his deliberations. For this reason, Oribasius' output does not contain such a detailed discussion on this topic as the writings of his eminent compatriot, Galen. Obviously, he was well aware of the differentiation between leavened and unleavened bread. However, Oribasius did provide us with some information on *ártos plytós*. Namely, this baked product was mentioned in the *Collectiones medicae* in his analysis of the output of Antyllus, or – to put it more precisely – in the third book thereof, entitled *Peri boethemáton*⁸⁹⁰. He stated in this work that properly prepared *ártos plytós* is made from *trimeniátos* wheat, but very finely purified, and the dough must be kneaded with exceptional thoroughness and precisely baked⁸⁹¹. It is interesting to note that it was eaten not only in solid form, but also – as Antyllus' text indicates – soaked or boiled in water⁸⁹². The latter dish was, however, recommended first and foremost for sick persons⁸⁹³. What is more, Oribasius' output also contains references to *ártos dípyros*, which is interesting because of the specific thermal processing technology to which it was subjected. This term was used to describe twice-baked bread, i.e. hard biscuits (rusks), usually intended for prolonged storage as a food provision. Not much can be said about its features, however, for it was mentioned only once⁸⁹⁴. Let us add that we are indebted for this information to Athenaeus of Attaleia, whose deliberations concerning baked products were cited by Oribasius in the first book of his *opus magnum*⁸⁹⁵.

Julian's physician also preserved some supplementary data concerning recipes for baked products. These are the deliberations of Dieuches,

⁸⁸⁹ There is only the general term *ázymon pémma*, which may – but does not have to – concern unleavened bread – Oribasius, *Collectiones medicae*, I, 7, 3, 1–2; III, 3, 1, 3. In any case, the deliberations that we find in Oribasius' writings provide us with information considerably more limited than those surviving in the works of Galen.

⁸⁹⁰ Oribasius, *Collectiones medicae*, IV, 11, 1, 1–14, 4.

⁸⁹¹ Oribasius, *Collectiones medicae*, IV, 11, 2, 2–3.

⁸⁹² Oribasius, *Collectiones medicae*, IV, 11, 1, 3–2, 1.

⁸⁹³ Oribasius, *Collectiones medicae*, IV, 11, 1, 1.

⁸⁹⁴ Oribasius, *Collectiones medicae*, I, 9, 2, 2–3.

⁸⁹⁵ Oribasius, *Collectiones medicae*, I, 9, 1, 1–3, 3.

which constitute an alternative of a sort to the tradition represented by Galen. However, there are no particularly significant substantive differences between the authors, with the exception of one, namely the issue of the method of baking necessary to obtain the most valuable loaves. The remaining views and opinions of both physicians are more or less concordant. And thus Dieuches advised that wheat bread⁸⁹⁶ should be made from a flour that does not have an excessive tendency to stick⁸⁹⁷, and with a very small quantity of yeast⁸⁹⁸ with a pleasant taste⁸⁹⁹, so that the resultant dough would be more or less thick⁹⁰⁰. It should be kneaded for an extended period of time. The baking of bread in an *ipnós*⁹⁰¹ oven was, according to Dieuches, decidedly more favourable than using a *kribanon*⁹⁰². He also added that generally speaking it is best to utilise an *ámes*⁹⁰³ oven, but without providing any details, immediately passing on in his deliberations to the baked products obtained from bread ovens. He maintained that he preferred this option, for the process of making bread in an *ipnós* takes a rather long time, and proceeds at a temperature that is both appropriate and suitably uniform to ensure that it is difficult to burn the product⁹⁰⁴. *Ártos* obtained from a *kribanon*, as he stated, is in turn a drier product⁹⁰⁵ than that from an *ipnós* and, although tastier⁹⁰⁶, baking it in this device is risky, for the skin of loaves burns quickly, whereas their interior continues to be raw⁹⁰⁷. He also maintained

⁸⁹⁶ O r i b a s i u s, *Collectiones medicae*, IV, 5, 1, 1.

⁸⁹⁷ O r i b a s i u s, *Collectiones medicae*, IV, 5, 1, 1. This would indicate *áleuron*.

⁸⁹⁸ Galen had a tendency to emphasise that the quantity of yeast should be considerable.

⁸⁹⁹ O r i b a s i u s, *Collectiones medicae*, IV, 5, 1, 2. In all probability, this was meant to indicate that the leaven should be of appropriate quality. Otherwise, the taste of the baked product will be spoiled and it will not grow properly.

⁹⁰⁰ O r i b a s i u s, *Collectiones medicae*, IV, 5, 1, 2.

⁹⁰¹ O r i b a s i u s, *Collectiones medicae*, IV, 5, 2, 1.

⁹⁰² O r i b a s i u s, *Collectiones medicae*, IV, 5, 2, 1–2.

⁹⁰³ O r i b a s i u s, *Collectiones medicae*, IV, 5, 2, 3.

⁹⁰⁴ O r i b a s i u s, *Collectiones medicae*, IV, 5, 2, 1–3, 1.

⁹⁰⁵ O r i b a s i u s, *Collectiones medicae*, IV, 5, 3, 1.

⁹⁰⁶ O r i b a s i u s, *Collectiones medicae*, IV, 5, 3, 2.

⁹⁰⁷ O r i b a s i u s, *Collectiones medicae*, IV, 5, 3, 1–4, 1.

that *enkryphias*⁹⁰⁸ bread, i.e. a baked product obtained through thermal processing directly in the hearth (or, to put it exactly, in the ashes in the hearth), is the driest⁹⁰⁹ of all baked products. Its production also required considerable labour. Namely, it was necessary to gather the appropriate quantity of charcoal in order to obtain the requisite amount of ash⁹¹⁰. Regarding the latter type of baked product, he also stated that the dough must be kneaded using *áleuron* flour, and not *semídalís*⁹¹¹. Furthermore, it had to be thinner⁹¹² than that used for baked products that were to be subjected to thermal processing in a *kribanon*. This was so, because *enkryphias* bread is baked by placing it in the ashes, and covering it with a portion of embers. This method causes scorching (mainly on the surface⁹¹³) and probably for this reason the baked product is the driest of all known types of bread⁹¹⁴. Finally, Dieuches presented his dietetic recommendations concerning the last of the enumerated baked products stating that it is best for those whose alimentary tract is excessively humid, who have digestive problems, and whose intestines contain a considerable quantity of phlegm (*phlégma*)⁹¹⁵.

Wheat baked products were recommended by Dieuches not only as a solid food. He devoted considerable attention to information concerning their utilisation in the preparation of liquid dishes, suitable first and foremost for the seriously ill. At the time, it was a standard procedure to use wheat baked products to make a *sui generis* soup, which – it was

⁹⁰⁸ O r i b a s i u s, *Collectiones medicae*, IV, 5, 4, 1.

⁹⁰⁹ O r i b a s i u s, *Collectiones medicae*, IV, 5, 4, 1–2.

⁹¹⁰ O r i b a s i u s, *Collectiones medicae*, IV, 5, 4, 1–5, 1. Thus, Dieuches' deliberations lack any reference to qualities acquired by the baked product from the ashes in which it is placed, which in turn was a point of discussion for Galen.

⁹¹¹ O r i b a s i u s, *Collectiones medicae*, IV, 5, 5, 1–2.

⁹¹² O r i b a s i u s, *Collectiones medicae*, IV, 5, 5, 2–3.

⁹¹³ O r i b a s i u s, *Collectiones medicae*, IV, 5, 5, 3–5. It is highly probable that Dieuches was also referring to the fact that this method of baking contributed to the rapid steaming of dough. Therefore he postulated that it should be thinner, i.e. contain a greater amount of liquids.

⁹¹⁴ O r i b a s i u s, *Collectiones medicae*, IV, 5, 6, 1–2.

⁹¹⁵ O r i b a s i u s, *Collectiones medicae*, IV, 5, 5, 2–3.

considered – was much easier to consume and assimilate by patients. If we were to judge by the number of references to this topic, the method was highly popular in numerous therapies of the period. In any case, in the instances that were of interest to this eminent physician, it was recommended not only to transform bread into a soup, but also all other types of food to which the patient was accustomed. These should be boiled either in water, in a lamb broth, or – as he added – in other types of broth⁹¹⁶. Dieuches maintained that the greatest strength is provided by warm, broken and previously soaked breads⁹¹⁷. This did not mean, however, that only these could be processed into such dishes, for sources frequently mention that stale or even dried bread was used for the very same purpose. As a matter of fact, further on in the text Dieuches recommended – for example – the boiling of (as he termed it) each and every type of bread, whether baked with leaven, dry, or fresh⁹¹⁸.

As regards further recipe details, he wrote⁹¹⁹ that bread (again repeating – dry or not), or *ítria*⁹²⁰, should first be soaked, then broken up, and finally strained through a cloth⁹²¹. To the liquid thus obtained one should add, this in order to change its whitish colour, roasted wild cucumber seeds, almonds, pine nuts, or rowanberries, and each of these ingredients – as Dieuches noted – could be added separately, or all could be thrown into the soup at once⁹²². The physician also informed that dishes such as this⁹²³ were mixed with a type of *ámylon* obtained from lentils⁹²⁴. Sometimes in the text of the *Collectiones medicae* we find details concerning the proportions of individual ingredients. For those with a fever, the author recommended boiling ten drachms of previously

⁹¹⁶ Oribasius, *Collectiones medicae*, IV, 7, 10, 3–5.

⁹¹⁷ Oribasius, *Collectiones medicae*, IV, 7, 3, 2–3.

⁹¹⁸ Oribasius, *Collectiones medicae*, IV, 7, 10, 2.

⁹¹⁹ Oribasius, *Collectiones medicae*, IV, 7, 13, 1–15, 1.

⁹²⁰ Oribasius, *Collectiones medicae*, IV, 7, 13, 1–2.

⁹²¹ Oribasius, *Collectiones medicae*, IV, 7, 13, 2–14, 1.

⁹²² Oribasius, *Collectiones medicae*, IV, 7, 14, 1–4.

⁹²³ Oribasius, *Collectiones medicae*, IV, 8, 5, 3–7, 1.

⁹²⁴ Oribasius, *Collectiones medicae*, IV, 8, 5, 1–3.

pulverised and soaked bread in two *kotylai* of water⁹²⁵. It is worth noting that in such instances it was best to serve the lightest food, and this was obtained using dry bread⁹²⁶. The said *rhóphema* was also mixed with almonds or cucumber seeds⁹²⁷. In the next recipe we read that the bread was pulverised to flour or *chóndros*⁹²⁸, soaked for a short time⁹²⁹, and then, after the water was poured off, ten drachms of these bread groats were boiled in three *hemikotylai* of water⁹³⁰. The final product was a soup, served with honey or other additives suitable for the patient⁹³¹. It could also be modified by the addition of lentils⁹³² or crumbled bread boiled in a poultry broth⁹³³.

When writing about *ítria* in the *Collectiones medicae*, Oribasius made use first and foremost of Galen's findings. He supplemented this information, however, with the doctrines of Antyllus⁹³⁴ and Dieuches⁹³⁵. The first of these authors stated that the food in question was a product of *pyrós*⁹³⁶ wheat. It had the form of very thin cakes⁹³⁷, for if they were thicker – as he stressed – they would not be properly baked inside⁹³⁸. The deliberations of Oribasius' predecessor confirm the fact that *ítria* were considered not so much a baked product, but rather a basis for boiled dishes. Antyllus even provided us with a recipe for a *sui generis* medicinal soup. *Ítria*, then, was broken down into very fine pieces, so

⁹²⁵ Oribasius, *Collectiones medicae*, IV, 7, 36, 2–3.

⁹²⁶ Oribasius, *Collectiones medicae*, IV, 7, 36, 1.

⁹²⁷ Oribasius, *Collectiones medicae*, IV, 7, 36, 4–37, 1.

⁹²⁸ Oribasius, *Collectiones medicae*, IV, 7, 37, 1–2.

⁹²⁹ Oribasius, *Collectiones medicae*, IV, 7, 37, 2.

⁹³⁰ Oribasius, *Collectiones medicae*, IV, 7, 37, 2–3.

⁹³¹ Oribasius, *Collectiones medicae*, IV, 7, 37, 14–38, 1.

⁹³² Oribasius, *Collectiones medicae*, IV, 7, 38, 1–2.

⁹³³ Oribasius, *Collectiones medicae*, IV, 7, 38, 2–4.

⁹³⁴ Oribasius, *Collectiones medicae*, IV, 11, 9, 1–10, 2.

⁹³⁵ This concerns the numerously cited fragment of *Peri trophón skeuastias*.

⁹³⁶ Oribasius, *Collectiones medicae*, IV, 11, 9, 1.

⁹³⁷ Oribasius, *Collectiones medicae*, IV, 11, 9, 2.

⁹³⁸ Oribasius, *Collectiones medicae*, IV, 11, 9, 2–3.

as to obtain a powder similar to *álphita*⁹³⁹. It was then boiled in water, preferably rainwater, and if this was unavailable – in the purest water that could be found⁹⁴⁰. It was subjected to this process until it was cooked into a smooth liquid⁹⁴¹. Antyllus also added that the dish should contain only a little salt and olive oil. The latter should be poured into the water before the addition of *ítria*⁹⁴². The wheat product in question was also mentioned on numerous occasions in the previously cited fragment of the writings of Dieuches. It was also advised to boil additionally pulverised *ítria*⁹⁴³ in water⁹⁴⁴ with milk⁹⁴⁵, which in all probability also resulted in the creation of a similarly nourishing soup.

We are indebted to Antyllus for the new information concerning *chóndros* in the works of Oribasius. The former stated that the groats in question were used to make a soup known as *rhóphema*. Milk was added thereto and it was boiled for a short time, while at the same time being mixed in order to ensure that it did not get burned⁹⁴⁶. Antyllus, in turn, wrote about one other, similar therapeutic dish made from *chóndros*, and his findings have been recorded both in the previously cited fourth book of the *Collectiones medicae*⁹⁴⁷. Antyllus' recipe is, on the whole, detailed and indicates that groats – or rather the starch⁹⁴⁸ obtained therefrom – were used to cook a soup known under a very popular term, i.e. *rhóphema*⁹⁴⁹. The method of procedure was as follows. *Chóndros* was soaked, repeatedly, and water changed every hour. Next, it was ground by hand and left in the water, until the latter became white and thickened. The groats were then strained

⁹³⁹ Or ib a s i u s, *Collectiones medicae*, IV, 11, 9, 3–4.

⁹⁴⁰ Or ib a s i u s, *Collectiones medicae*, IV, 11, 9, 4–5.

⁹⁴¹ Or ib a s i u s, *Collectiones medicae*, IV, 11, 9, 5 – 10, 1.

⁹⁴² Or ib a s i u s, *Collectiones medicae*, IV, 11, 10, 1 – 11, 1.

⁹⁴³ Or ib a s i u s, *Collectiones medicae*, IV, 7, 33, 1.

⁹⁴⁴ Or ib a s i u s, *Collectiones medicae*, IV, 7, 1, 2.

⁹⁴⁵ Or ib a s i u s, *Collectiones medicae*, IV, 7, 33, 1.

⁹⁴⁶ Or ib a s i u s, *Collectiones medicae*, IV, 7, 31, 3 – 32, 1.

⁹⁴⁷ Or ib a s i u s, *Collectiones medicae*, IV, 11, 6, 1 – 8, 1.

⁹⁴⁸ Or ib a s i u s, *Collectiones medicae*, IV, 11, 6, 2–6.

⁹⁴⁹ Or ib a s i u s, *Collectiones medicae*, IV, 11, 6, 1.

and set aside, while the starch obtained through the soaking of *chondros* was flavoured with a pinch of salt⁹⁵⁰. The dish made therefrom was additionally spiced with dill, field mint or thyme, or with Roman caraway⁹⁵¹. This soup was made by boiling starch in water until it attained an appropriate thickness, and served warm⁹⁵².

Yet another method for the production of *ámylon* was described in detail by Dieuches. The author instructed that in order to obtain this product, one had to select *semidalis* of the appropriate quality⁹⁵³; this was first soaked, and then strained through a cloth. The thick substance remaining in the material was then gathered, placed in a ceramic vessel, submerged in a fresh portion of water, and once again strained. This was repeated until the water became transparent. Then, the *ámylon* remaining at the bottom of the vessel was dried in the sun, after being placed in a clay container⁹⁵⁴. The *Collectiones medicae* also contains one more recipe; this may be found in book eleven⁹⁵⁵. However, this is a repetition of the information first passed on by Dioscorides, and has already been analysed in the course of the discussion concerning the culinary art in his treatises. *Ámylon*⁹⁵⁶ thus found its place, for example, in Dieuches' deliberations concerning the preparation of boiled foods. Amongst numerous recipes we also find a suggestion concerning the usage of this product⁹⁵⁷ as an addition to lentil soups. Furthermore, this fragment informs us that *ámylon* could be boiled in milk and water⁹⁵⁸, or that starch itself could have been added to water⁹⁵⁹ to obtain – obviously, once the liquid was boiled – a kind of soup. We can also read therein about a starch gruel, the recipe for

⁹⁵⁰ Oribasius, *Collectiones medicae*, IV, 11, 6, 6.

⁹⁵¹ Oribasius, *Collectiones medicae*, IV, 11, 6, 7–9.

⁹⁵² Oribasius, *Collectiones medicae*, IV, 11, 6, 9 – 7, 1.

⁹⁵³ Oribasius, *Collectiones medicae*, IV, 8, 1, 2.

⁹⁵⁴ Oribasius, *Collectiones medicae*, IV, 8, 1, 1 – 2, 1.

⁹⁵⁵ Oribasius, *Collectiones medicae*, XI, a, 45, 1–9.

⁹⁵⁶ Oribasius, *Collectiones medicae*, IV, 7, 24, 1.

⁹⁵⁷ Oribasius, *Collectiones medicae*, IV, 7, 24, 1 – 25, 1.

⁹⁵⁸ Oribasius, *Collectiones medicae*, IV, 7, 24, 3–4.

⁹⁵⁹ Oribasius, *Collectiones medicae*, IV, 7, 24, 4.

which provided for the boiling of ten drachms of *ámylon* dissolved in four *kotylai* of water⁹⁶⁰.

Furthermore, *pyrós* was also used to make an alcoholic drink, which we may in all probability compare to beer, although Oribasius (following Herodotus) called it ‘wine’⁹⁶¹. His deliberations do not contain a recipe for this beverage, but doubtless the readers of the works of Emperor Julian’s court physician⁹⁶² were not interested in this ‘barbaric’ – as they saw it – drink. In any case, in Oribasius’ circles this beverage would have been purchased – if at all – and not produced at home.

The next author, Aetius of Amida, did not leave us such a broad spectrum of culinary information as the two eminent Pergamenes, whose writings have been analysed above. Our analysis of the content of his works will therefore be conducted not so much in order to supplement culinary information, but rather with the objective of presenting the changes that occurred in the state of affairs determined on the basis of the writings of Galen and Oribasius, and thus to present the evolution of culinary art between the fourth and sixth centuries. Let us start with a general statement to the effect that nothing indicates that his knowledge of the preparation of wheat differed from the findings and doctrines of earlier dieticians. His *Iatricorum libri* indicate that the physician distinguished two types of *pyrós*, namely *silignis* and *semídalis*. This is clearly visible, for instance, in the chapter concerning products that are characterised by thick juices⁹⁶³. He stated therein that varieties of *pyrós* with yellow, heavy and compact grains have considerably more viscous juices than those with light-coloured, lightweight and less cohesive seeds. It was obvious for anyone familiar with the basics of dietetics and culinary art that first of the cereals described thereby was *semídalis*,

⁹⁶⁰ Oribasius, *Collectiones medicae*, IV, 7, 24, 5 – 25, 1.

⁹⁶¹ Oribasius, *Collectiones medicae*, V, 31, 12, 1.

⁹⁶² It is, however, probable that the author of the *Collectiones medicae* himself tasted this drink during his visit to Gaul, or when he was exiled amongst the barbarians on the far bank of the Danube.

⁹⁶³ Aetius of Amida, II, 243, 1–6.

while the second – wheat, in other treatises termed *pyrós sitánios*⁹⁶⁴, *silignites*⁹⁶⁵ or *aleurites*⁹⁶⁶.

Aetius of Amida made no mention of the technology of processing wheat. Only once did he refer to the roasting of wheat grains, although solely in the context of preparing this cereal for usage in warming poultices⁹⁶⁷. The text of his encyclopaedia seems to indicate that *pyrós* was made into flour. Two fundamental types were distinguished, namely *áleuron* and *semídalís*. Amongst the most well-known of these was *gýris*, which was used primarily in medications⁹⁶⁸. The two first mentioned constituted the basis for making various baked products, i.e. different types of leavened bread, unleavened bread, *ítria* and so on. They were also used to make soups. Furthermore, Aetius of Amida informed us that wheat grains were processed into numerous types of groats.

The *Iatricorum libri* do not provide us with any new information concerning *áleuron* flour. Used in Aetius' writings without an attribute, this word referred to wheat flour. The addition of an epithet served to specify other raw material options, which – incidentally – were numerous⁹⁶⁹. We may surmise that the product was first and foremost considered as a material for making the bread known as *silignites*⁹⁷⁰. The *áleuron* flour was differentiated from *semídalís*, which in turn was used to make *semídalítes* bread. Sometimes,

⁹⁶⁴ Aetius of Amida does not use this term at all.

⁹⁶⁵ Aetius of Amida did not once use this term with reference to a wheat variety, but always in order to specify a type of bread.

⁹⁶⁶ Aetius of Amida, II, 243, 1–3. It should, however, be observed that the term *aleurites* is not used in Aetius' work.

⁹⁶⁷ Aetius of Amida, VIII, 30, 39–41.

⁹⁶⁸ The analysed findings of Aetius of Amida contain no mention of the culinary applications of these products.

⁹⁶⁹ For example – *áleuron* from fenugreek (Aetius of Amida, I, 108, 14–15), *áleuron* from lupine (Aetius of Amida, I, 162, 14–15), *áleuron* from barley (Aetius of Amida, I, 172, 9) and so forth.

⁹⁷⁰ For example – Aetius of Amida, II, 250, 10. The author did not use the term *ártos aleurites* at all.

the product in question was also used (in any case in accordance with the practice that we have described earlier) in boiled dishes, and particularly in soups with the addition of milk⁹⁷¹, which were known as *atháre*⁹⁷². However, Aetius of Amida provided no information about the method of its production. As we may surmise from the extant data, Aetius of Amida was an adherent of the established findings concerning the term *semídalís*. The works of this physician indicate unequivocally that the product was made from *pyrós* wheat, and we may so conclude on the basis of a fragment devoted to wheat products, which may be found in the second book of the *Iatricorum libri*, which was, incidentally, written on the basis of Galen's findings⁹⁷³. Namely, it mentions *semídalís*⁹⁷⁴ and other foods (*ámylon*, *chóndros*, *lágana*, and baked products made without salt or yeast) traditionally made from wheat. Although the physician's narrative lacks a definition of the term in question, we may conclude that it was used in two meanings. First of all, it specified *semídalís* wheat as a type of cereal different from *silígnis*, and thus with dissimilar physical (weight, cohesion of matter, colour and so on) and dietetic properties. Aetius of Amida gave a more detailed presentation of these features in the second book of his *Iatricorum libri*⁹⁷⁵. In order to change *semídalís* into a nutritious meal, it was necessary to cook it; in other words, using modern categories, it should be listed amongst groats. We may find this meaning of the term *semídalís* in the fragment of the *Iatricorum libri* written on the basis of the doctrines of Philumenus, which refers to a diet appropriate for people suffering from unsatiated hunger caused by excessive diaphorase⁹⁷⁶. The text also indicates that these

⁹⁷¹ Aetius of Amida, II, 261, 11.

⁹⁷² Aetius of Amida, IX, 42, 83–85.

⁹⁷³ Aetius of Amida, II, 97, 1–11.

⁹⁷⁴ Aetius of Amida, II, 97, 9.

⁹⁷⁵ Aetius of Amida, II, 243, 1–4.

⁹⁷⁶ Aetius of Amida, IX, 21, 1–32.

groats were boiled and served sweet, for example with honey⁹⁷⁷, or boiled in fatty broths⁹⁷⁸. Such *semídalís*⁹⁷⁹, namely prepared in meat broths⁹⁸⁰, was also recommended for the diets of diabetics⁹⁸¹. Aetius' work contains the term *semídalís plyté*⁹⁸², which was used solely by him and may well be a different and idiosyncratic name for *chóndros plytós*. This type of *semídalís* was recommended for persons suffering from kidney ailments⁹⁸³. The physician wrote that *semídalís plyté* was administered boiled with milk⁹⁸⁴. Secondly, the term served to describe the flour used to make *semídalítes* bread or, as Aetius of Amida stated, *boukeláton* bread. This was different from *áleuron*, another basic raw material for bread obtained from *pyrós* of the *silígnis* type. Finally, we should also add that the physician made no comments concerning the technology of processing wheat used in order to create the above-mentioned groats and flour.

In the *Iatricorum libri* we will find no information concerning the production and culinary utilisation of *gyris* flour. This lack is to a certain extent typical for the analysed sources. It leads us to the supposition that although well-known and thus undefined, it was of marginal significance for culinary practice. As regards detailed information, the books written by Aetius of Amida clearly indicate that it was made from both wheat and barley⁹⁸⁵. Recipes for medications allow us to surmise that it was used mainly in boiled dishes, for example as a thickening agent, and less frequently in baked products. It is equally obvious, how-

⁹⁷⁷ Aetius of Amida, IX, 21, 26. When advising against the preparation of *semídalís* with honey, Aetius of Amida not only referred to the dietetic properties of the dish thus created (*semídalís* with honey was easier to digest than without), but also to the typical method of serving *chóndros*, i.e. wheat groats.

⁹⁷⁸ Aetius of Amida, IX, 21, 26–27.

⁹⁷⁹ Aetius of Amida, XI, 1, 48.

⁹⁸⁰ Aetius of Amida, XI, 1, 46–49.

⁹⁸¹ Aetius of Amida, XI, 1, 1–67.

⁹⁸² Aetius of Amida, XI, 18, 51.

⁹⁸³ Aetius of Amida, XI, 18, 1–77.

⁹⁸⁴ Aetius of Amida, XI, 18, 52.

⁹⁸⁵ Aetius of Amida, VII, 98, 19.

ever, that the analysed source constitutes an imperfect base for passing judgment on the role of *gýris* in gastronomy.

Information concerning the arcana of bread-making is limited in the *Iatricorum libri*. Aetius of Amida did not explain the terms that he used. What is more, he did not enumerate all the types of bread that were known to contemporary physicians, nor did he discuss in detail the criteria according to which these baked products were divided. Since the information that he omitted was available in his sources, this is clearly a conscious choice of the author who wanted to write about things of interest to his readers, i.e. daily practice in the sixth century. As regards the categories of bread distinguished depending on the type of flour, the extant doctrines of this physician would seem to indicate that *katharós* bread was made according to recipes and with the use of techniques that had been known for centuries. And thus, Aetius of Amida used this term first and foremost with reference to white bread, i.e. made from finely purified *áleuron* flour, prepared with the appropriate quantity of yeast and salt, subjected to thermal processing in a *kribanon*, and baked with special care⁹⁸⁶. These properties are identical with those enumerated by writers who were authorities for the author of the analysed medical encyclopaedia. It is also worth noting the fact that in the ninth book of the *Iatricorum libri*, amongst dietetic advice for a specific ailment⁹⁸⁷ Aetius of Amida observed that the recommended baked product should be served neither too dry, nor too hot⁹⁸⁸. Being a reflection of social preferences in the sixth century, this note leads us to the supposition that a still warm *ártos katharós* was a delicacy consumed with relish, whereas dry and stale it was consumed

⁹⁸⁶ Aetius of Amida, IX, 34, 83–84. Obviously, the physician was referring to the temperature that was to ensure even baking of the bread – both on the inside and the outside. However, the deliberations of the author of the *Iatricorum libri* lack detailed information on this topic, which was typical of his predecessors, and in particular Galen.

⁹⁸⁷ Aetius of Amida, IX, 30, 80–158. This concerned the method of nourishing people suffering from chronic colic pains.

⁹⁸⁸ Aetius of Amida, IX, 30, 81–82.

of necessity and economy. The said white bread could also be dubbed *ártos silignítes*⁹⁸⁹, for the flour used in its preparation was obtained through the grinding of *pyrós silignítes*. In his work, however, Aetius of Amida did not once use the term *ártos aleurítes*, which was applied by earlier dieticians as equivalent to the former.

The Amidene also made numerous references to *semidalítes*⁹⁹⁰ bread, classifying it as one of the most nutritionally valuable. It also was a baked product of the *katharós* variety, but produced from flour known as *semídalís*⁹⁹¹. This same raw material⁹⁹² was used to make *boukeláton*⁹⁹³ bread, i.e. a type of *ártos dípyros* and therefore suitable for longer-term storage. The author of the *Iatricorum libri* wrote that it was also made with the addition of yeast⁹⁹⁴ and in all certainty with salt⁹⁹⁵, as attested to by other sources. The usual baking method consisted of processing it thermally in a *kribanon*⁹⁹⁶.

The physician also used the term *ártos plytós*⁹⁹⁷. However, he did not define it, and only the information passed on by his predecessors allows us to surmise that this baked product was made from white flour, purified with extraordinary care. Aetius of Amida did not use the term *ártos autópyros* at all. Once, however, he mentioned that *synkomistós*⁹⁹⁸ bread is less nutritious than *silignítes* and *semidalítes*. The doctrines

⁹⁸⁹ For example – Aetius of Amida, II, 250, 10.

⁹⁹⁰ For example – Aetius of Amida, II, 250, 11.

⁹⁹¹ Aetius of Amida, III, 177, 15.

⁹⁹² Aetius of Amida, III, 101, 1.

⁹⁹³ Aetius of Amida, III, 101, 1–8.

⁹⁹⁴ Aetius of Amida, III, 101, 4.

⁹⁹⁵ Baked products that did not contain yeast or salt were considered as a separate category of foodstuffs, with different dietetic properties – Aetius of Amida, II, 97, 10–11. Doubtless therefore that *semidalítes*, which was the object of the physician's interest, was prepared in accordance with traditional principles, i.e. with salt and yeast. If this had not been the case, it would have been classified in a separate category, and its separateness would have been additionally specified using the appropriate epithets.

⁹⁹⁶ Aetius of Amida, III, 101, 6.

⁹⁹⁷ For example – Aetius of Amida, II, 251, 7.

⁹⁹⁸ For example – Aetius of Amida, II, 250, 11.

written down in the *Iatricorum libri* do not, however, contain any information concerning the nature of this term⁹⁹⁹, which would suggest that it did not need to be explained to readers, since it continued to refer to a bread made from non-purified wheat flour, and thus containing not only *áleuron*, but also *pítyra*. Although the author of the *Iatricorum libri* was also familiar with *ártos* of the *rhyparós*¹⁰⁰⁰ variety, he did not provide its recipe, treating the term itself as obvious for his readers. Without a doubt, therefore, he was referring to a dark bread made from highly impure wheat flour. Finally, Aetius of Amida passed over all of the culinary aspects pertaining to the preparation of *pityrites*¹⁰⁰¹ breads. This type of bread was not unknown to him, however, for he noted its dietetic properties.

Regarding the division of baked products depending on the presence or absence of yeast, Aetius of Amida treated this topic as offhandedly as the remaining issues concerning the categorisation of the foodstuffs in question. The physician did not use the term *zymítes*, probably because it was so general that in effect it provided no information to readers of the *Iatricorum libri*. The output of Aetius of Amida clearly indicates that the sixth century was a time when rising breads were of greater significance in the diet than unleavened baked products: the majority of information provided by the physician concerned various types of *zymítai* breads. The term *ártos ázymos*¹⁰⁰² was, in turn, used by Aetius of Amida only once. He mentioned it in connection with the diet for people who suffered from insatiable hunger (*kynódes órexis*) resulting from excessive diaphorase¹⁰⁰³. Although the physician did mention the term in passing, he did not characterise it in the cited fragment, likely implying that it was commonly known of itself.

⁹⁹⁹ His encyclopaedia contains no references to the raw material used for these baked products, no details concerning the methods of preparation, and no in-depth data on the baked product itself.

¹⁰⁰⁰ For example – Aetius of Amida, II, 251, 7.

¹⁰⁰¹ For example – Aetius of Amida, II, 246, 7.

¹⁰⁰² Aetius of Amida, IX, 21, 27.

¹⁰⁰³ Aetius of Amida, IX, 21, 1–32.

The *Iatricorum libri* does, however, contain a reference to a recipe for the said baked products. The chapter concerning products boiled in milk¹⁰⁰⁴ contains information about a baked product made without salt and yeast¹⁰⁰⁵. Although no further details are available, we may risk guessing that the author had in mind first and foremost a baked product that was cheap and undemanding in terms of preparation, which was made from low-quality flour and subjected to thermal processing using a primitive technology; it was usually consumed by those from the bottom of the social ladder.

Concerning the divisions between different bread varieties depending on the baking technology applied, Aetius of Amida wrote of only two types, completely omitting *eschára* baked products and breads baked in ashes. An analysis of the available texts allows us to surmise that bread baked in a *kribanon*, incidentally termed *klibanites* by Aetius of Amida, continued to be prepared in accordance with the principles laid down by earlier generations of experts in the field of dietetic properties of foods. Thus, in the sixth century this term was taken to mean first and foremost high quality wheat baked products, made with great diligence¹⁰⁰⁶. The ideal bread of this type¹⁰⁰⁷ was described in book nine of the *Iatricorum libri*, where the physician outlined methods of treating diarrhoea brought about due to the drying up of the alimentary tract¹⁰⁰⁸. Incidentally, it has already been discussed during the analysis of the term *ártos katharós*.

Aetius of Amida had little to say about the preparation of *árttoi ipnitai*. In all likelihood, he favoured the traditional interpretation of this term, i.e. meaning primarily white breads, however baked not in a portable *kribanon*, but in an *ipnós*. This supposition seems to be supported by the fact that bread baked in this manner¹⁰⁰⁹ figures in the list of

¹⁰⁰⁴ Aetius of Amida, II, 97, 1–11.

¹⁰⁰⁵ Aetius of Amida, II, 97, 10–11.

¹⁰⁰⁶ Aetius of Amida, II, 240, 11–12.

¹⁰⁰⁷ Aetius of Amida, IX, 34, 82–84.

¹⁰⁰⁸ Aetius of Amida, IX, 34, 33–137.

¹⁰⁰⁹ Aetius of Amida, III, 8, 52–53.

foods included in the chapter entitled *Perí aphrodisíon*¹⁰¹⁰. The baked product in question was in all certainty made with yeast, for unleavened baked products¹⁰¹¹ were enumerated by the author of the *Iatricorum libri* separately from *ipnítai*¹⁰¹² in the fragment that contains a list of foods contributing to the creation of thick juices (*pachýchyma*)¹⁰¹³. Aetius of Amida did not specify the type of flour used to prepare this baked product, for it is highly probable that both *semidalítai* and *silignítai* could be baked in the *kribanon* just as well as in the *ipnós*.

Aetius did not have much to say about *ítria*, and nothing about *rhyémata*. The *lágana*¹⁰¹⁴, which belonged to this category of baked products, were listed by him amongst foods obtained from wheat¹⁰¹⁵. A typical application of this product was its addition to milk in order to make a *sui generis* soup. However, this dish – if eaten too frequently – could be dangerous to health¹⁰¹⁶. He also wrote about the addition thereof to poultry broths¹⁰¹⁷, in connection with the discussion concerning the diet suitable for persons suffering from neoplastic eye ulcerations¹⁰¹⁸.

Aetius of Amida did not provide any new information that would broaden our knowledge of the role of *chóndros* in the kitchen. As a matter of fact, he gave no precise data concerning the cereal crop from which it was obtained. Nevertheless, the author hinted that the groats in question could have been made from various cereals. Namely, apart from the term *chóndros* without any specific attribute, he also used

¹⁰¹⁰ Aetius of Amida, III, 8, 1–71.

¹⁰¹¹ Aetius of Amida, II, 241, 3.

¹⁰¹² Aetius of Amida, II, 241, 1.

¹⁰¹³ Aetius of Amida, II, 241, 1–21.

¹⁰¹⁴ Aetius of Amida, II, 97, 10.

¹⁰¹⁵ Aetius of Amida, II, 97, 1–11.

¹⁰¹⁶ Aetius of Amida, II, 97, 7–11.

¹⁰¹⁷ Aetius of Amida, VII, 33, 33.

¹⁰¹⁸ Aetius of Amida, VII, 33, 1–49. Eye ailments are frequently mentioned as a sickness commonly occurring in society of the second to seventh centuries. Concerning these ailments, cf. P. G a r n s e y, *Food and society...*, p. 46–47.

the phrase *chóndros álikos*¹⁰¹⁹, likely to designate groats from another species of wheat, i.e. emmer or spelt. In the *Iatricorum libri* we may also read about *chóndros plytós*¹⁰²⁰, but here again the physician failed to define the term. As for the culinary applications of *chóndros*, Aetius' work includes a block of information known from earlier sources. And thus, we find these groats presented as a simple dish boiled in water¹⁰²¹. The *Iatricorum libri* also mention *chóndros* boiled with *melíkraton*¹⁰²², and this method – as we know – was a very typical culinary solution as regards these groats. It was¹⁰²³ also added to milk and boiled therein¹⁰²⁴, and this dish, if overused, could lead to serious health problems. The soup (*rhóphema*) made from *chóndros*¹⁰²⁵ was recommended by Aetius of Amida as food to be consumed in fevers. Since the author also recommended a thin *ptisáne* (that is, *chylós ptisánes*)¹⁰²⁶, we may suppose that the *chóndros* which he had in mind could have been made in a similar way (thus *ptisanistí*). It may also be that due to the similarity of properties and effects the patients to whom Aetius of Amida referred were also administered (instead of or in addition to barley soup) *ptisáne pyríne*, which – incidentally – we know was boiled with the addition of the groats in question. The latter term does appear, although only twice¹⁰²⁷, in the writings of Aetius of Amida. Finally, the physician also wrote about a thin broth (*chylós*) made from *chóndros*¹⁰²⁸, which – however – was not a food, but a gargle¹⁰²⁹. Nevertheless, such gruels were also used as therapeutic food due to their purgative and humidifying properties.

¹⁰¹⁹ For example – Aetius of Amida, III, 132, 16.

¹⁰²⁰ Aetius of Amida, V, 129, 18.

¹⁰²¹ For example – Aetius of Amida, V, 99, 27.

¹⁰²² Aetius of Amida, V, 133, 36.

¹⁰²³ Aetius of Amida, II, 97, 9.

¹⁰²⁴ Aetius of Amida, II, 97, 1–11.

¹⁰²⁵ Aetius of Amida, V, 92, 55.

¹⁰²⁶ Aetius of Amida, V, 92, 54.

¹⁰²⁷ Aetius of Amida, IX, 42, 134; IX, 42, 204.

¹⁰²⁸ Aetius of Amida, VIII, 50, 117.

¹⁰²⁹ Aetius of Amida, VIII, 50, 47–235.

The Amidene did not retain numerous data concerning *krímnon*. He called it *krímnos*, unusually for medical literature. He did not provide a definition of the product, nor did he specify the type of cereal crop from which it was made. This data has, however, been presented indirectly in his somewhat odd expressions included in the chapter devoted to this product in the first book of his work¹⁰³⁰. Concerning the first of the issues touched upon, his reference to the consistency and thickness of the grains of this food is, doubtless, his description thereof as being characterised by rather thick particles¹⁰³¹. The author was most probably concerned with a product with relatively thicker grains than those of which the *áleuron* flour was made. The type of cereal from which these groats were made is hinted at by the phrase that they are obtained from wheat *áleuron*¹⁰³². This term, however, should rather be taken to mean not the wheat flour, but the common wheat (*pyrós aleurítes*) from which it was made. The author added, however, that *krímnos* groats were also usually made from emmer wheat¹⁰³³. On the basis of the narrative we may surmise that the product in question was used for the preparation of boiled dishes. Such a dish was *póltos*¹⁰³⁴, also called *rhóphema*¹⁰³⁵, i.e. a gruel or thick soup. The physician also observed that the dish had a different dietetic characteristic depending on the type of cereal from which it was prepared¹⁰³⁶. He did not, however, provide any culinary details concerning the technology of preparation of this dish.

The surviving works of Aetius of Amida are devoid of details concerning the culinary aspects of the preparation of *ámylon*. Without a doubt, the product was still obtained from wheat. The physician wrote about this when characterising *pyrós* as an agent with medical applications, and

¹⁰³⁰ Aetius of Amida, I, 228, 1–5.

¹⁰³¹ Aetius of Amida, I, 228, 1.

¹⁰³² Aetius of Amida, I, 228, 1–2.

¹⁰³³ Aetius of Amida, I, 228, 2.

¹⁰³⁴ Aetius of Amida, I, 228, 1.

¹⁰³⁵ Aetius of Amida, I, 228, 3.

¹⁰³⁶ Aetius of Amida, I, 228, 3–5.

enumerated certain properties of starch itself¹⁰³⁷. Information that allows the same identification of the origins of *ámylon* may also be found in a fragment of the second book of the *Iatricorum libri* that concerns products obtained from wheat, written on the basis of the findings of Galen¹⁰³⁸. Namely, starch was enumerated therein as a substance obtained from the said cereal¹⁰³⁹ (incidentally – boiled in milk, and presented as a food that, if eaten too often, could cause kidney and liver problems). The technology used to produce starch has not been described directly, but the basic information may be found in the recipe for a medicine protecting the skin against the effects of the sun and wind¹⁰⁴⁰. It was made using *semídalís*¹⁰⁴¹, which was soaked in water. The dissolved starch was then strained through a cloth¹⁰⁴². If we are to trust the data preserved by Aetius of Amida, the *ámylon* thus obtained was used primarily for boiled dishes. It was added to milk, resulting in a *sui generis* milk soup¹⁰⁴³, and boiled with water in order to obtain an *atháre* soup, i.e. a liquid dish from either *áleuron* flour, or starch¹⁰⁴⁴.

Pyrós wheat, in turn, did not constitute the subject of the culinary writings of the next author, Alexander of Tralles. Neither did he explain the internal divisions existing within this concept, nor did he describe the differences between varieties constituting the subject of deliberations of his predecessors. Therefore, we will not find the terms *pyrós sitánios* or *pyrós semídalítes* in his treatises, nor are there any presentations of the physical features and dietetic properties of grains.

¹⁰³⁷ Aetius of Amida, I, 338, 3–4. These are presented in the dietetic and medical characteristic of the product.

¹⁰³⁸ Aetius of Amida, II, 97, 1–11.

¹⁰³⁹ Aetius of Amida, II, 97, 9.

¹⁰⁴⁰ Aetius of Amida, VIII, 3, 8–12.

¹⁰⁴¹ Aetius of Amida, VIII, 3, 8.

¹⁰⁴² Aetius of Amida, VIII, 3, 8–10.

¹⁰⁴³ Aetius of Amida, IX, 42, 56–58. This is mentioned numerous times in the writings of Aetius of Amida. An example is the advice given by Archigenes – Aetius of Amida, IX, 42, 1–108.

¹⁰⁴⁴ Aetius of Amida, IX, 42, 83–85. The term *atháre* is also cited in the fragment borrowed from the output of Archigenes.

Furthermore, he did not make an *expressis verbis* connection between the origin of products such as *semídalís*, *chóndros*, and so on, and *pyrós*. We should surmise that this precision was eliminated from the narrative of Alexander of Tralles, for the foods in question were not produced from any other raw material than wheat¹⁰⁴⁵. An exception is *áleuron*, which could be described by the adjective *pýrinos*¹⁰⁴⁶, but only because the flour of this type could also be made from other cereal crops and leguminous plants.

It is quite strange that wheat has not been mentioned at all in the work *De observatione ciborum* as a cereal constituting the staple of nourishment. However, neither does the said treatise contain any evidence that the grains of this plant had been eliminated from the diet of the inhabitants of sixth-century Gaul. On the contrary, the narrative provides information which may be interpreted as underscoring the considerable importance of this cereal in the diet of Anthimus' readers.

Indeed, bread is mentioned in the very first substantive chapter of this work¹⁰⁴⁷. It is important to note that it was not characterised by any epithet, and no information was given as to the cereal used for its production; we must conjecture that the author was referring to the most highly viewed baked products made from wheat flour. Such was the approach of other specialists, whose writings preceded those of Anthimus. In any case, loaves of this product were described as being white and well-risen, and baked products of this type were obtained primarily from wheat. We may therefore surmise that such an important position of wheat bread in *De observatione ciborum* reflects the popularity of the raw material required for its production in comparison with other types of food obtained from cereals¹⁰⁴⁸. In addition, the author of the *opusculum* concerned himself with the properties and methods of preparing medicinal dishes from wheat flour, and this fact also points to its relatively

¹⁰⁴⁵ This is a reference to *pyrós* wheat and *zeiá*.

¹⁰⁴⁶ Alexander of Tralles, *Therapeutica*, 85, 12, vol. II.

¹⁰⁴⁷ Anthimus, 1.

¹⁰⁴⁸ Anthimus, 82.

wide distribution in the cuisine and medicine of the period. In general, however, we must state that data on this topic in *De observatione ciborum* is very limited and cannot, as far as detail is concerned, be compared with the copious information presented by authors who were writing in Greek. We have also stated that Anthimus referred to wheat flour in his work. Although he did not connect it with making of baked products, recognition of the fact that it was a raw material used in making them is obvious. Just as his predecessors, the author of *De observatione ciborum* wrote that this flour was boiled over a fire to make a thick soup with the addition of milk, in particular goat's milk. Primarily, however, its role was therapeutic, and thus its popularity as a daily food is difficult to evaluate. As regards wheat bread, Anthimus recommended one that is white, made from purified flour, and baked with the addition of yeast, i.e. risen, and – if possible – warm. It is significant that information on this topic appears at the very beginning of his deliberations concerning all groups of food, which points to the important role of this foodstuff. The logic of the physician's narrative also suggests that bread was made from less finely purified flour. Using the opportunity, the author also made a reference to unleavened bread, thus attesting to the existence of such baked products.

Paul of Aegina did not conduct a particularly detailed analysis of the culinary values of *pyrós* wheat in his work. He did, however, possess a clear understanding that it was distinct from other types of wheat (such as *zeiá* and *ólyra*), and also of the divisions existing within the term *pyrós*. Specifically, he used the term *semídalís*¹⁰⁴⁹ and knew the products made therefrom¹⁰⁵⁰, and although he did not make a direct reference to the term *silígnis*, he was familiar with the bread baked from this type of wheat¹⁰⁵¹. On the other hand, his text is considerably less detailed as regards the discussion concerning differences in the physical and dietetic properties of these two wheat varieties.

¹⁰⁴⁹ Paul of Aegina, VI, 91, 2, 3.

¹⁰⁵⁰ As *semídalítes* bread.

¹⁰⁵¹ As *silígnites* bread.

The usage of *pyroí* in gastronomy is – in the interpretation of Paul of Aegina – traditional, i.e. writing in the seventh century the physician made references to products that were mentioned in earlier dietetic literature. On the basis of the *Epitome* one cannot with complete certainty pass judgment on the prevalence of individual foods made from wheat. When in the chapter *Perí sitódon*¹⁰⁵² Paul of Aegina characterised wheat products, he first mentioned *chóndros*¹⁰⁵³ groats, and then passed on to boiled wheat, i.e. *pyroí hephthoi*¹⁰⁵⁴. It is difficult to state whether this precedence was intended to reflect the popularity of this method of preparing the said dishes in the times of the author of the *Epitome*. Immediately thereafter, he proceeded to baked products made from *pyrós*, stating this wheat is first and foremost a raw material for the production of bread. Although this obviously meant that from the point of view of technology the cereal had to first be processed into flour, Paul of Aegina omitted this fact – probably because of its self-evidence for his readers – and passed on directly to an analysis of types of loaves enumerated according to their nutritional value, taking into consideration an additional criterion – the purity of flour. However, although Paul did not usually make in-depth statements regarding culinary matters, it was in fact he who provided the most detailed information concerning *gyris*. First of all, the compiler precisely indicated the raw material from which the said product was obtained, identifying it as wheat (*sítos*)¹⁰⁵⁵. Secondly, his characterisation of the properties of *gyris* suggests that the flour was similar to *ámylon*¹⁰⁵⁶, while in his next comment he observed that it could be used as its replacement¹⁰⁵⁷. Summing up all of this information, we may put forward the hypothesis that *gyris* was a finely ground flour made from wheat, the appearance and properties of which resembled starch. Paul of Aegina also omitted any definition

¹⁰⁵² Paul of Aegina, I, 78, 1, 1–25.

¹⁰⁵³ Paul of Aegina, I, 78, 1, 1.

¹⁰⁵⁴ Paul of Aegina, I, 78, 1, 5.

¹⁰⁵⁵ Paul of Aegina, III, 22, 5, 14.

¹⁰⁵⁶ Paul of Aegina, VII, 3, 3, 97.

¹⁰⁵⁷ Paul of Aegina, VII, 25, 2, 14.

of the term *semídalís*. Nevertheless, we are able to understand that he interpreted this term in the same way as his predecessors. First of all, the food itself meant *semídalís*¹⁰⁵⁸ wheat. Secondly, the term referred to flour. We can surmise as much, for it was used to bake a bread known as *semídalítes*¹⁰⁵⁹. Thirdly, *semídalís* was used in boiled dishes, such as the therapeutic *póltos* described in book seven of the *Epítome*¹⁰⁶⁰. Finally, we must state that the work is devoid of any data that would allow us to learn more of the method of production of *semídalís*.

In Paul's treatise, bread was described using the same, age-old dietetic categories. The *Epítome* is, however, less detailed than the works of such experts as Galen or Oribasius. Nevertheless, we can still find some basic deliberations concerning baked products known as *ártoi*. As regards the division of baked products according to the flour used in their production, usually applied by his predecessors, Paul of Aegina retained the most important data. Bread from white wheat flour, *ártos katharós* (or simply bread), was not characterised in a separate chapter, but in a fragment of the *Epítome* concerned with all types of wheat products, in the *Perí sitódon*. This part of his work also contains a few pertinent culinary details. Paul wrote that the basic raw material for this baked product continued to be *pyrós* wheat, while the term *ártos* was normally taken to mean a risen baked product with the addition of yeast and salt¹⁰⁶¹. Paul also suggested that bread was traditionally baked in a *kribanon*¹⁰⁶². The physician was also familiar with the phrase *ártos silignítes*¹⁰⁶³. He did not explain it, however, probably because he was referring to a well-known baked product made from *pyrós* wheat of the *silignís*¹⁰⁶⁴ variety. He did not devote considerable

¹⁰⁵⁸ Used to produce a flour of the same name.

¹⁰⁵⁹ Paul of Aegina, VI, 91, 2, 3.

¹⁰⁶⁰ Paul of Aegina, VII, 5, 17, 1–11.

¹⁰⁶¹ Paul of Aegina, I, 78, 1, 7–8.

¹⁰⁶² Paul of Aegina, I, 72, 2, 14–15.

¹⁰⁶³ For example – Paul of Aegina, I, 78, 1, 8–9.

¹⁰⁶⁴ Incidentally, he also referred to it using the term *ártos katharós* and could not even imagine that his readers would be unaware that *ártos katharós* and *ártos silignítes*

attention to the recipe, informing that the loaf is made with the addition of yeast and salt¹⁰⁶⁵. As regards the baking technology, he provided no clues; he did, however, speak of its nutritional value and left some information on its usage in therapeutics. Bread of the *semidalítes* variety is mentioned in the *Epitome* only twice¹⁰⁶⁶; there is no significant data concerning the production and baking technology. Nor are there any suggestions that would make it possible to observe any changes in this regard, and we should thus surmise that the recipe for this baked product was identical to that used until the times of Paul of Aegina¹⁰⁶⁷. *Ártos plytós*, in turn, received a very brief mention. Paul wrote only that it does not provide much nutrition for the body¹⁰⁶⁸. The *Epitome* does not include precise information regarding its preparation and baking technology; it is only noted that it was made from wheat flour. Obviously, this was a risen baked product, and therefore yeast was used in its preparation, as was – traditionally – salt¹⁰⁶⁹. Bread of the *synkomistós*¹⁰⁷⁰ variety was mentioned by Paul of Aegina once. The physician expressed his opinion regarding the nutritive value of this baked product. It is also worth noting that he did not make any reference to the term *ártos autópyros*, which was present in the writings of earlier dietetic authorities and served to describe baked products made from finely-ground flour. Paul of Aegina provided only scant culinary details concerning this type of baked product. His chapter suggests that it was made from wheat. He also appeared to suggest that bread of this type was prepared using yeast and salt. Furthermore, it was viewed by dieticians in a positive light, and therefore there were no medical contraindications to its universal consumption by the seventh-century society. *Ártos rhyparós* appears

were the same product.

¹⁰⁶⁵ Paul of Aegina, I, 78, 1, 7–8.

¹⁰⁶⁶ Paul of Aegina, I, 78, 1, 9; IV, 44, 1, 6.

¹⁰⁶⁷ This was simply a general recipe for white bread.

¹⁰⁶⁸ Paul of Aegina, I, 78, 1, 11.

¹⁰⁶⁹ Paul of Aegina, I, 78, 1, 7–8.

¹⁰⁷⁰ Paul of Aegina, I, 78, 1, 9.

in the *Epitome* only twice¹⁰⁷¹. The most detailed description of this food may be found in the chapter devoted to wheat products. The author understood this term to mean a dark wheat bread, the properties of which were considered different from those of the white loaves¹⁰⁷². The physician did not, however, express any opinions concerning the production technology. Regarding the baked product, he indicated that *rhyparós* bread could also be subjected to thermal processing in a *kribanon*¹⁰⁷³. Finally, we must observe that although he wrote about *pityra*, the author of the *Epitome* did not mention *pityrites* even once. The reasons for this are not known, but a possible explanation is that the writings of Paul of Aegina were not intended for the poorest members of society, who usually ate this least valued type of baked product. And although Paul, as has already been mentioned, did make a few references to bread baked with yeast, he did not use the term *ártos zymites*. What is more, he did not include the term *ártos ázymos* in his work – maybe for the same reason for which he omitted *ártoi pityritai*. The *Epitome* does not contain much information about the technology of baking bread in a *kribanon*, either. The term *ártos kribanites* was known to him, as we have already indicated, and the physician additionally stated that the *kribanon* could be used to bake both white and black breads¹⁰⁷⁴. While we should add that although Paul's work enumerates the majority of different types of baked products, we also ought to stress that his list is not exhaustive. For example, he omitted loaves of the *chondritai*, *escharites* and *enkryphías/spodites* varieties. But even if there are no references, it does not seem probable that the omitted types of bread – baked using commonly available raw materials (such as *chondrites*) or according to the cheapest technologies (such as *eschára* baked products, or breads baked directly in the ashes) – had been eliminated from consumption.

¹⁰⁷¹ Paul of Aegina, I, 78, 1, 10; IV, 25, 2, 7.

¹⁰⁷² Paul of Aegina, I, 78, 1, 10.

¹⁰⁷³ Paul of Aegina, IV, 25, 2, 6–7.

¹⁰⁷⁴ Paul of Aegina, IV, 25, 2, 7.

Paul did, however, know the term *ítria*¹⁰⁷⁵. Nevertheless, he wrote nothing about its nature, thereby suggesting that in his times it still did not require a definition, for either it was very well known to his readers, or they did not include it in their diet. As regards culinary details, his text is rather sparse. Only in one diet¹⁰⁷⁶ did he recommend that they be boiled¹⁰⁷⁷. His words would seem to suggest that they were served in the typical manner, i.e. in milk or broths, as other medical authors have described.

Furthermore, despite the fact that Paul of Aegina did not give a precise definition of the term *chóndros*, he left sufficient information in his work for us to understand that this product was identical to that discussed by his predecessors. The raw material from which it was made is hinted at by a comparison of the properties of this product and wheat¹⁰⁷⁸. The *Epitome* also indicates that apart from ordinary *chóndros*, there was also the so-called *chóndros plytós*¹⁰⁷⁹. This differed somewhat in terms of properties from that first mentioned, but both constituted a basis for preparing similar dishes. Unfortunately, his work contains no information whatsoever concerning baked products made from *chóndros*. However, the extant data allows us to form the opinion that the product continued to be used in boiled dishes. They were more or less thick, and served salted, sweetened or sour. Such a soup or gruel was variously named. For example, a dish of this type recommended in the cases of heavy fevers¹⁰⁸⁰ was called by Paul of Aegina *chóndrou rhóphema*¹⁰⁸¹. In the diet appropriate for a humoural imbalance of the stomach, which manifests itself in the excessive dryness of this organ¹⁰⁸², we read – in

¹⁰⁷⁵ Paul of Aegina, III, 28, 2, 5. It should, however, be stressed that he does not mention the term *lágana*, or *rhyémata*.

¹⁰⁷⁶ Paul of Aegina, III, 28, 2, 1–24.

¹⁰⁷⁷ Paul of Aegina, III, 28, 2, 5.

¹⁰⁷⁸ Paul of Aegina, VII, 3, 22, 74.

¹⁰⁷⁹ Paul of Aegina, I, 78, 1, 2.

¹⁰⁸⁰ Paul of Aegina, II, 32, 1, 1–9.

¹⁰⁸¹ Paul of Aegina, II, 32, 1, 3.

¹⁰⁸² Paul of Aegina, I, 72, 1, 1–6, 13.

turn – about a dish known as *chondroptísane*¹⁰⁸³. The term indicates that this was a soup with properties identical to those of the famous *ptísáne*. In all likelihood, this was a dish that was also called *chóndros ptísanistí*, and cooked using *chóndros* or *chóndros plytós*. The recipe for *ptísanistí* groats, which according to Paul of Aegina was identical to that for *ptísáne*¹⁰⁸⁴, was as follows. Olive oil, and subsequently *chóndros*, were added to water. This was boiled until it swelled. Only then were vinegar, and later on – salt added to the soup. Some cooks enriched the dish with leeks and dill¹⁰⁸⁵. We may at once see that the recipe from the seventh century is identical to that given by Galen in the second century. Paul of Aegina also wrote about these groats being served with *melikraton*¹⁰⁸⁶, which gave the dish a sweet taste. In turn, all types of *chóndros* served with *oxýkraton*¹⁰⁸⁷ must have been sour, and such a recipe is available for the cooking of *chóndros plytós*. Paul of Aegina also knew the term *krimnon*¹⁰⁸⁸. He defined it traditionally, as a product obtained from either *pyrós* wheat, or *zeiá* wheat, that is emmer. It had thicker grains than *áleuron* and was more nutritious than *álphiton*. These data indicate the author was referring to a cereal product that today we would probably call groats. A comparison with *áleuron* also suggests that it was relatively fine, and definitely more delicate than *chóndros*. This definition is a modification of established tradition, first identified in the writings of Dioscurides, and this testimony suggests that not only dietetics, but also culinary art did not undergo considerable changes between the second and seventh centuries.

Paul of Aegina is one of the medical authors whose writings contain a detailed recipe for the preparation of *ámylon*¹⁰⁸⁹. It may well be that this fact should be interpreted as a reflection of the importance in this

¹⁰⁸³ Paul of Aegina, I, 72, 2, 12

¹⁰⁸⁴ Paul of Aegina, I, 78, 1, 24–25.

¹⁰⁸⁵ Paul of Aegina, I, 78, 1, 21–24.

¹⁰⁸⁶ Paul of Aegina, III, 64, 2, 5.

¹⁰⁸⁷ Paul of Aegina, III, 59, 11, 2–3.

¹⁰⁸⁸ Paul of Aegina, VII, 3, 10, 346–347.

¹⁰⁸⁹ Paul of Aegina, VII, 3, 1, 202–207.

product in the dietetic and therapeutic system described by this physician. On the other hand, we should also keep in mind that the same technology was presented earlier, in the first century, by Dioscurides, and subsequently in the fourth century by Oribasius. Thus, either technological progress in this field was slow, or physicians repeated the same tradition. Obviously, Paul of Aegina suggested that *ámylon* continued to function as a foodstuff. Accordingly, its nutritional value was described in the chapter entitled *Perí sitódon*. However, the physician did not devote much attention to dishes made from *ámylon*, and general culinary data can be found only in fragments describing medical diets. This information is rather imprecise. For example, *ámylon*¹⁰⁹⁰ was served as a food to pregnant women¹⁰⁹¹. Starch has also been mentioned as a product added to liquid dishes¹⁰⁹², probably to milk or broths; this is in accordance with the writings of other medical authors.

The anonymous author of the work *De cibis* did not devote much of his attention to common wheat as a separate species of cereals. We may state with conviction, however, that the information which he provided is a continuation of the method of thought represented by his predecessors. It is symptomatic that wheat opens¹⁰⁹³ his deliberations concerning cereals, which in turn starts off his analysis of foods. We may surmise that this place of the said food in *De cibis* was a reflection of the importance of products obtained from cereals, and in particular of the position of those that were made from wheat. An additional argument put forward in the treatise, which underscores the importance of this food, is the fact that this species of wheat is called not by its own specific name, i.e. *pyrós*, but using the general term 'cereal crop', that is *sítos*. We may therefore state that wheat had gained such predominance in dietetic deliberations (as well as amongst the crops that were of interest to the readers of the *De cibis*), that for the author of the work in question

¹⁰⁹⁰ Paul of Aegina, I, 1, 1, 15.

¹⁰⁹¹ Paul of Aegina, I, 1, 1, 1–31.

¹⁰⁹² Paul of Aegina, III, 28, 2, 5.

¹⁰⁹³ This topic appears immediately after the general deliberations concerning the dietetic significance of the tastes of foodstuffs.

this general term, ‘cereal crop’, became synonymous with the most important crop of all.

Although the fragment devoted to the properties of wheat contains no detailed information concerning the varieties of *pyrós/sítos*, the contents of the entire treatise indicate that the author’s knowledge broadly resembled that of his predecessors. We may reach such a conclusion because of the detailed terms he used. And thus, since he knew the terms *áleuron*¹⁰⁹⁴ and *ártos aleurítes*¹⁰⁹⁵, he was aware of the existence of a variety that in other treatises was called *pyrós/sítosos sitánios*, *silignítes*, *trimeniaíos*, *triménios* (used to obtain *áleuron*). Furthermore, since he wrote about *semídalís*¹⁰⁹⁶ and *ártos semídalítes*¹⁰⁹⁷, he must also have been familiar with *pyrós semídalítes* (the raw material for the production of *semídalís* flour and *semídalítes* bread).

Information on the topic of *pyrós/sítos* present in the work *De cibis* is not, however, as detailed as that provided by Galen or Oribasius. Thus, the author did not – contrary to some of his predecessors – describe the physical and dietetic properties of each of the two types. Instead, he gave us a uniform description of the term *sítos*¹⁰⁹⁸, and also a characterisation of the products obtained from each variety. *De cibis* also suggests that such semi-raw baked products and boiled dishes were made from both varieties of the said wheat. Furthermore, we find a term that may be translated as ‘ground wheat with thick grains’ or ‘coarsely ground wheat’ (*sítos hadromerés alelesménos*)¹⁰⁹⁹. Since the author did not provide a definition, we do not know what exactly he had in mind. This term may be interpreted in three different ways. Firstly, it was a type of groats that were boiled to obtain a dish known as *sítos hepsetós*. The weakness of this hypothesis lies in the fact that, in the light of earlier testimony, wheat for this dish did not undergo grinding at all. Secondly, the author

¹⁰⁹⁴ *De cibis*, 11, 10.

¹⁰⁹⁵ *De cibis*, 21, 8–9.

¹⁰⁹⁶ For example – *De cibis*, 21, 9.

¹⁰⁹⁷ For example – *De cibis*, 18, 2.

¹⁰⁹⁸ *De cibis*, 2, 2–4.

¹⁰⁹⁹ *De cibis*, 5, 47.

could have been referring to wheat processed into *chóndros*, which term has been mentioned immediately before the said concept. In any case, this option appears as the most probable, for exactly this interpretation of the term may be found in the *Perí trophón dynámeos*¹¹⁰⁰, a text that cites the narrative of the *De cibis* word for word. Should we accept this hypothesis as correct, the treatise *Perí trophón dynámeos* would also contain a clear indication of the raw material used for *chóndros*, for the author has described it using the attribute ‘wheat’¹¹⁰¹. Finally, and this is the last option, we may risk putting forward the hypothesis that the author of the *De cibis* was referring to *krimnon* groats, not mentioned otherwise in this work. The latter product was, however, characterised by rather small grains, and the phrase ‘thickly ground’ does not seem apt. The analysed work also contains references to boiled wheat. The author did not apply the term *pyroí hephthoí*, which was popular in contemporary dietetic literature, but introduced the concept *sítos hepsétós*¹¹⁰². The inclusion of this delicacy in the dietetic categories known from earlier literature¹¹⁰³ proves that the new term was simply another version of the older concept. Yet again, the author of the *De cibis* did not provide any culinary details, and therefore no recipe for this food is available. We should surmise, however, that the simple recipe for the analysed dish remained unaltered since the times of Galen.

The term *semídalís* is just as enigmatic in the treatise *De cibis* as in other dietetic sources. The text appears to suggest, as we have indicated previously, that this noun referred to hard (durum) wheat as a variety of *pyrós/sítos*. In addition, it has been used to designate a raw material identical to *áleuron* flour, which was used for making the bread known as *semídalítes*¹¹⁰⁴. Once – in the chapter devoted to foods characterised

¹¹⁰⁰ *Perí trophón dynámeos*, I, 44.

¹¹⁰¹ The author of the *Perí trophón dynámeos* inserted an adjective (*sítnos*) at the point where the author of the *De cibis* used a noun (*sítos*).

¹¹⁰² *De cibis*, 7, 16; 21, 9; 25, 1.

¹¹⁰³ *De cibis*, 7, 1–23 (*dýspepta*); 21, 1–15 (*polýtropha*); 25, 1–7 (*thermainonta*).

¹¹⁰⁴ *De cibis*, 18, 2; 21, 8.

by considerable nutritional value – the product in question¹¹⁰⁵ is mentioned alongside boiled wheat, and this would suggest that the food was more coarsely grinded than flour, being similar to groats. Elsewhere, *semidalis* was cited as the basis for preparing unspecified (probably boiled, not roasted) dishes¹¹⁰⁶, which cause blockages of internal organs¹¹⁰⁷. Although, therefore, the cited contexts do not provide us with a clear image, the data would seem to suggest that the culinary applications of the product known as *semidalis* had not changed from the time when Galen wrote his works. In turn, *áleuron* is not a product about which the author of the *De cibis* went into any detail. This does not mean, however, that his knowledge differed from that of his predecessors. He mentioned *áleuron* only once, in the traditional context of using this product (and milk) to make a kind of soup¹¹⁰⁸.

The treatise *De cibis* contains information on the majority of categories discussed by ancient and Byzantine dietetics, and usually applied to bread. *Ártos katharós* is understood by the author of the said treatise to mean a wheat bread that is made first and foremost from *sitánios*¹¹⁰⁹, whereas the baked product obtained from *semidalis*, although also belonging to the class of breads made from purified flour, was called *ártos semidalites*¹¹¹⁰. The recipes present in the *opusculum* refer to exactly such baked products. They are repeated in the narrative several times. We read, therefore, that bread should be made with the appropriate quantity of good yeast¹¹¹¹ and must be properly baked¹¹¹². One should also add the appropriate quantity of dough¹¹¹³, salt and water¹¹¹⁴. Else-

¹¹⁰⁵ *De cibis*, 21, 9.

¹¹⁰⁶ *De cibis*, 11, 8.

¹¹⁰⁷ *De cibis*, 11, 1–12.

¹¹⁰⁸ *De cibis*, 11, 10–11.

¹¹⁰⁹ *De cibis*, 21, 8–9. For this reason it was called *aleurites*.

¹¹¹⁰ *De cibis*, 18, 2; 21, 8.

¹¹¹¹ *De cibis*, 6, 2–3.

¹¹¹² *De cibis*, 6, 3. The author did not specify the circumstances that make the process of baking appropriate.

¹¹¹³ *De cibis*, 6, 3–4.

¹¹¹⁴ *De cibis*, 6, 4.

where, the author of the *De cibis* – when defining the most valuable wheat bread¹¹¹⁵ – described it as a white baked product (*katharós*)¹¹¹⁶, made with the appropriate quantity of yeast¹¹¹⁷ and salt¹¹¹⁸, and kneaded in such a way as to ensure that the dough is neither too dry, nor too soft¹¹¹⁹. The author of the treatise had a lot more to say – considerably more than his predecessors – about additives to bread. The taste and properties of baked products could therefore be enhanced by using a small quantity of aniseed¹¹²⁰, *malabathron* seeds, that is Indian bay leaf (*Cinnamomum tamala* L.)¹¹²¹, or mastic¹¹²². He also maintained that a person who by nature is hot should mix bread with sesame¹¹²³. If a baked product was to be more humid, almond oil should be added to the dough¹¹²⁴. It may be that these comments reflect the new recipes introduced to bakeries at the beginning of the Byzantine era.

*Aleurites*¹¹²⁵ functions in the *De cibis* as an epithet attached to the concept *ártos katharós* and replaces the term *ártos silignítes*. Clearly separate from the bread made from *semídalís*, together therewith it represents two of the most well-known types of white bread that constituted the subject of the writings of numerous dieticians. Bread of the *semídalítes* type, which – as has already been stated – constituted a separate category, was hardly mentioned more than *aleurites*: namely twice. However, there is no recipe information that would refer directly to this class

¹¹¹⁵ *De cibis*, 2, 23–24. A fragment devoted to bread – *De cibis*, 2, 23–31.

¹¹¹⁶ *De cibis*, 2, 25.

¹¹¹⁷ *De cibis*, 2, 25–26.

¹¹¹⁸ *De cibis*, 2, 26.

¹¹¹⁹ *De cibis*, 2, 26–27.

¹¹²⁰ *De cibis*, 2, 27.

¹¹²¹ *De cibis*, 2, 27–28.

¹¹²² *De cibis*, 2, 28.

¹¹²³ *De cibis*, 2, 28–29. The author was referring to the mixing of sesame into a cataplasm. Since, however, the usage of sesame for the making of baked products is common right up to the present day, this reference may be considered as testimony of the usage of this additive to bread.

¹¹²⁴ *De cibis*, 2, 29–31.

¹¹²⁵ *De cibis*, 21, 8–9.

of baked products. Nevertheless, we may surmise that the relevant recipe (and thus both for *aleurites*, and *semidalites*) was included in the fragments defining the features of the best, i.e. white, wheat bread. The level of detail of comments concerning the latter in comparison with data relating to the other types of bread leads to the conclusion that the addressees of the anonymous author's deliberations consumed primarily baked products of this type, and could even afford varieties that differed from others in terms of aromatic ingredients.

We would conclude that when writing about baked products, the author of *De cibis* always understood these to be risen bread, and the appropriate quantity of *zýme* is in his deliberations a significant factor for the quality and appropriate effect of baked products¹¹²⁶. With respect to *ártos* prepared with yeast, he used the term *autózymos*¹¹²⁷. This lack of deliberations concerning *ázymos* bread does not, obviously, mean that unleavened baked products had been totally eliminated from the diet, but rather that neither the author of the treatise, nor the readers of his *opusculum* had any need to consume such products. In the dietetic text in question we also find baked products other than white. The dietician writing *De cibis* termed black bread *ártos kybarós*¹¹²⁸. It appears, however, only in the context of the undesirable properties of this baked product, that is, its limited nutritive value (*oligótrophos*)¹¹²⁹ and its contribution to the generation of black bile (*melancholikós*)¹¹³⁰. There is also bran bread, known as *ártos pityródes*¹¹³¹ or *ártos pityriás*¹¹³², and this appears exactly in the same dietetic groups as black bread.

De cibis does not contain details concerning the methods of baking. The reference to the necessity of ensuring due care during this process

¹¹²⁶ For example – *De cibis*, 2, 26.

¹¹²⁷ *De cibis*, 25, 2–3. It may be that this name includes the suggestion that the bread in question was created through the spontaneous souring of dough.

¹¹²⁸ *De cibis*, 12, 9; 22, 7–8.

¹¹²⁹ *De cibis*, 22, 1–19.

¹¹³⁰ *De cibis*, 16, 1–9.

¹¹³¹ *De cibis*, 22, 7–8.

¹¹³² *De cibis*, 16, 7.

points to the difficulties that were still faced by cooks and bakers in seventh century regarding maintaining – as we should surmise on the basis of earlier comments made by dieticians – the appropriate temperature during the thermal processing of dough. It is worth stressing that the author of the said work mentioned only *kribanítai*¹¹³³ breads, which yet again suggests that the treatise was addressed primarily to those who could afford foodstuffs of the highest quality. An obvious consequence of this approach is the fact that the *De cibis* does not contain terms such as *ártos ipnítēs*, *ártos escharítēs*, *ártos enkryphías* or *ártos spodítēs*.

*Ítria*¹¹³⁴ are present in the treatise, but have not been given a clear description as a foodstuff. The author of the *opusculum* did not make any reference to the raw material from which they were made, nor did he allude to the method of their preparation. Only the context in which the food appears, i.e. its enumeration alongside *semídalís* and *áleuron*, suggests that this was a food made from wheat. As was customary for dietetic text, the narrative of the *De cibis* hints¹¹³⁵ that *ítria* as such constituted an ingredient for other victuals. It is not specified, however, for which.

*Chóndros*¹¹³⁶ appears in the *De cibis* only once. However, there is no definition of this product, unless we should interpret as such the phrase ‘coarsely ground wheat’, which has been placed in the text directly after the term *chóndros*. It is also possible, however, that these pulverised wheat grains were a completely different product. It may be, as we have already written in the present deliberations, that the author was referring to the raw material for the dish *sítos hephthós*, or to *krímnon*, which groats have not been mentioned at all in the said work.

Ámylon, in the *De cibis* dubbed *katastatón*¹¹³⁷, occurs only once, in the chapter devoted to victuals obtained from cereal crops and leguminous plants. The author did not inform us of the nature of this product,

¹¹³³ *De cibis*, 20, 2. The author uses the form *ártos klibanítēs*.

¹¹³⁴ *De cibis*, 11, 8; 20, 2.

¹¹³⁵ This is a reference to the traditional *dí'trion* – *De cibis*, 11, 8.

¹¹³⁶ *De cibis*, 5, 47.

¹¹³⁷ *De cibis*, 2, 31–32.

the raw material from which it was made, the production technology, or of its culinary applications. The very fact of mentioning this food may, however, suggest that it was commonly known, while the lack of a definition – that the meaning of the term was obvious for the contemporaries of the author of the *opusculum*.

Finally, we should mention a supplementation that is important for an understanding of certain aspects of the culinary art; the text in question, however, is not a medical work. The *Deipnosophistae* of Athenaeus of Naucratis are a rich source of knowledge concerning all types of baked products. Particularly bountiful is the third book of this work, which contains a catalogue of breads that gives tens of names and refers the reader to literary fragments in which they occur. In the present deliberations we shall limit ourselves solely to the statement that the said literary work contains all of the most important categories of baked products known from medical sources and orders them according to criteria applied in dietetics, incidentally making concomitant use of fragments taken from the deliberations of famous ancient physicians. Without a doubt, this phenomenon may be interpreted as a reflection of the common acceptance by the intellectual elites, to which Athenaeus of Naucratis addressed his work, of the doctrines elaborated by ancient physicians concerning the role of nutrition in maintaining (and restoring) health, and also of the fact that dietetic doctrines were based on the everyday culinary experiences of the middle and upper classes.

In order to illustrate this phenomenon, it is worth referring to an example concerning the content of fragments of the works of Philisition of Locri (fourth century BC), Diphylus of Siphnus (third century BC) and Trypho of Alexandria (first century BC), cited by Athenaeus of Naucratis. The most detailed testimony of the first of these authors contains terms such as *ártos chondrites*¹¹³⁸, *ártos semidalites*¹¹³⁹, *ártos*

¹¹³⁸ Athenaeus of Naucratis, III, 115 c (83, 11).

¹¹³⁹ Athenaeus of Naucratis, III, 115 c (83, 12).

*aleurites*¹¹⁴⁰, bread baked from *gyris*¹¹⁴¹, *artos enkryphias*¹¹⁴², *artos ipnites* and *artos kaminites*¹¹⁴³, bread from the *eschára* and baked products from the *téganon*¹¹⁴⁴, and *kribanon*¹¹⁴⁵. Diphylus of Siphnus, in turn, listed categories such as wheat bread¹¹⁴⁶, baked barley products¹¹⁴⁷, *artoi semidalítai*¹¹⁴⁸, *aleurítai*¹¹⁴⁹ and, finally, *synokomistoi*¹¹⁵⁰. In the work of Athenaeus of Naucratis, the latter are also known as *autópyroi* and constitute the subject of a fragment of book three¹¹⁵¹. Trypho of Alexandria, too¹¹⁵², mentioned a considerable number of breads that we already know well from medical sources, i.e. of the *zymites*, *ázymos*, *semidalites*, *chondrites* and *synkomistós* varieties. As regards the last of these, Trypho considered that it passed through the alimentary tract the fastest, and thus facilitated excretion¹¹⁵³; thus, although as a grammarian he did not have to do this, he referred to its dietetic properties. Obviously, one may suspect that the data presented above are also a reflection of the preferences of ancient consumers, and thus the names indicate the most readily consumed types of baked products, nearly exclusively wheat products, which fact is symptomatic in the context of our deliberations.

Conclusions. By way of a summary of the material presented herein, we would like to state that medical texts constitute a relatively rich

¹¹⁴⁰ Athenaeus of Naucratis, III, 115 c (83, 13).

¹¹⁴¹ Athenaeus of Naucratis, III, 115 c (83, 14).

¹¹⁴² Athenaeus of Naucratis, III, 115 c (83, 20).

¹¹⁴³ Athenaeus of Naucratis, III, 115 c (83, 22).

¹¹⁴⁴ Athenaeus of Naucratis, III, 115 c (83, 23).

¹¹⁴⁵ Athenaeus of Naucratis, III, 115 c (83, 26).

¹¹⁴⁶ Athenaeus of Naucratis, III, 115 c (83, 6–7).

¹¹⁴⁷ Athenaeus of Naucratis, III, 115 c (83, 7).

¹¹⁴⁸ Athenaeus of Naucratis, III, 115 c (83, 8).

¹¹⁴⁹ Athenaeus of Naucratis, III, 115 c (83, 9).

¹¹⁵⁰ Athenaeus of Naucratis, III, 115 c (83, 9–10).

¹¹⁵¹ Athenaeus of Naucratis, III, 119 e (75, 25–30).

¹¹⁵² Athenaeus of Naucratis, III, 109 b–c (74, 1–8).

¹¹⁵³ Athenaeus of Naucratis, III, 109 b (74, 4–5). These verses enumerate the abovementioned varieties of baked products.

source of information pertaining to the culinary applications of wheat. This data is characterised by a considerable level of detail.

The majority of culinary data has been provided by Galen and Oribasius, with the former basing his deliberations mainly on ancient authorities and personal experience, while the latter incorporated in his work the entirety of the findings of his countryman and supplemented them by the observations of Dieuches, Antyllus and Athenaeus of Attaleia, to name only the most important. In essence, the *Collectiones medicae* appear to be the most representative source of general ancient knowledge concerning the therapeutic applications of food made from *pyrós*. On the other hand, however, Oribasius' lack of interest in cuisine and the culinary traditions of individual areas of the Mediterranean Basin, and therefore his method of abbreviating reflections of Galen on these issues, as well as the total absence of a description of his own experiences (which would have compensated for his alterations) actually make his works poorer in terms of content, especially as regards the preparation of wheat products under different geographical and social conditions. Later sources are even more limited in terms of content and, since they do not supplement earlier data, are more suitable for research into the durability of culinary schema.

The extant information points to the relative invariability of the methods of utilising wheat as a food between the second and seventh centuries. The gastronomy that made use of these materials also appears to have undergone only a limited evolution. We may surmise as much, for culinary terms and the methods used by this branch of practical knowledge remain the same throughout the analysed period, while the slight modifications appearing in the analysed sources seem to be no more than an exception to this rule.

Our analysis shows that the cereal known as *pyrós* was usually used as a raw material for baked products, among others for the most highly valued, well-risen white loaves. Treatises also mention other types of *árttoi* and provide hints as to the production of lower quality baked products. Apart from bread, wheat flour was used to fry *sui generis* pancakes (*tagenítai*) and make *ítria* cakes; the latter were a kind of semi-finished

product obtained from wheat flour and water, which was used to make various boiled dishes. In addition to *áleuron*, other types of semi-finished culinary raw materials included *semídalís* flour and *ámylon*. In turn, *pyrós* was used to obtain groats (*chóndros* and *krímnon*), which were also usually boiled and served in the form of gruels and soups. Although references to recipes are rather general, they do give a certain image of the methods used by bakers and cooks.

Furthermore, we are of the opinion that the quantity and level of detail of the analysed data confirm our general conclusion concerning the dominant role of wheat in the diet of the Mediterranean Basin in the period between the second and seventh centuries. This conclusion has been reached on the basis of the assumption that the interest of dieticians in *pyrós* was a reflection of the ubiquity of this cereal in everyday life.

KRZYSZTOF JAGUSIAK

The role of common and durum wheat in medical procedure

An analysis of medical texts leads us to the conclusion that wheat was widely used not only in the culinary art, but also in the numerous medical procedures carried out between the second and seventh centuries. The material is plentiful and has been utilised only partially herein due to the limitations placed on the text. In order, therefore, to effect more of a presentation than an exhaustive analysis of the problem, we shall provide a number of examples of the applications of wheat proposed in medical treatises.

The works of Dioscurides include numerous descriptions of methods of utilising products obtained from *pyrós* in various therapeutic procedures, primarily in medications that were in use even before the times of Galen's professional activity. We would therefore like to give selected examples, in order to familiarise our readers with the tradition of

medical applications of wheat before the second century, which has been summarised by the author of *De materia medica* and *Euporista vel de simplicibus medicinis*. Proceeding to the substances, we should state that Dioscurides provided us with a legible characterisation of the uses of wheat flour, known as *áleuron*, in medicine *sensu stricto*. The extant data suggests that the product was used first and foremost in cataplasms. And thus, *áleuron*¹¹⁵⁴ mixed with a broth (or with a juice) from black henbane (*Hyoscyamus niger* L.) was used as a compress that was purported to successfully combat rheumatism (i.e. the inflow of undesirable juices) from the tissue known as *neúra* (tendons) and eliminated swellings – or flatulence – in the intestines. Flour combined with *oxýmeli*, wrote the physician, was also used to treat moles appearing on the surface of the skin, known as *phakós*¹¹⁵⁵. *Áleuron* from *sitánios*¹¹⁵⁶ wheat was also said to help those bitten by venomous animals¹¹⁵⁷, if the flour was placed on the wound as a cataplasm with vinegar or wine.

External applications were not the only available method of usage. The product in question also formed part of drugs administered internally. For example, wheat flour boiled to the consistency of a glue, *kól-la* (used to bind fragments of papyrus, but also as a medication), and licked slowly was supposed to be an effective treatment for people who spat blood. If, in turn, it was prepared with mint and butter, it became a medication for coughs and irritations of the vocal system¹¹⁵⁸. Dioscurides also gave some information concerning the basic applications of *gýris* in therapeutics. In order to illustrate this phenomenon, let us make a reference to his characteristic of products obtained from wheat¹¹⁵⁹.

¹¹⁵⁴ Dioscurides, *De materia medica*, II, 85, 1, 7–8.

¹¹⁵⁵ Dioscurides, *De materia medica*, II, 85, 1, 7–2, 1.

¹¹⁵⁶ Dioscurides, *De materia medica*, II, 85, 2, 8.

¹¹⁵⁷ The bites of venomous animals appear as a common threat to life. Cf. J. Scarborough, *Nicander's toxicology I: snakes*, PhH 19, 1977, p. 3–23; *idem*, *Nicander's toxicology I: spiders, scorpions, insects and myriapods*, PhH 21, 1979, p. 3–34, 73–92.

¹¹⁵⁸ Dioscurides, *De materia medica*, II, 85, 2, 9–12.

¹¹⁵⁹ Dioscurides, *De materia medica*, II, 85, 1, 1–3, 9.

The flour was boiled with honey or *hydrélaion*, and thus prepared¹¹⁶⁰ it was classed as an agent with strong diaphoretic properties, thanks to which it acted effectively in all sorts of inflammations (*phlegmoné*)¹¹⁶¹. Furthermore, the physician wrote that the *kólla* made from *semídalís* or *gyris* could be successfully used to treat those who spat blood if it was prepared in a thinner form than ordinary *kólla* and served warm¹¹⁶². *Semídalís*, in turn, is practically absent from the writings of Dioscurides. Obviously, this flour was a raw material for bread and was used in numerous medical procedures, but as an independent drug ingredient *semídalís* was mentioned only once¹¹⁶³, in the context given above, that is, as a component of medication for persons suffering from major bleeding from the oral cavity¹¹⁶⁴. When analysing the issue of wheat and products obtained therefrom, Dioscurides also outlined the basic principles governing the usage of *ámylon* in therapeutics¹¹⁶⁵. The physician anticipated its both external and internal applications. Thus, starch was said to be effective for ailments caused by influx of humours to the eyes, their sinking¹¹⁶⁶, and ulcers¹¹⁶⁷. Drunk, he continued, stops internal haemorrhages¹¹⁶⁸ and alleviates disorders of the vocal system¹¹⁶⁹.

Without a doubt, bread was one of the basic products at Dioscurides' disposal that could be used to treat patients, and this finds reflection

¹¹⁶⁰ The data provided by later authors suggest that this a kind of thin soup that could be drunk. This conclusion has been confirmed by Dioscurides himself when writing about *kólla*.

¹¹⁶¹ Dioscurides, *De materia medica*, II, 85, 2, 12–3, 1.

¹¹⁶² Dioscurides, *De materia medica*, II, 85, 3, 7–9.

¹¹⁶³ Dioscurides, *De materia medica*, II, 85, 3, 7.

¹¹⁶⁴ Concerning ailments of the oral cavity and teeth on the basis of materials from Crete (from the seventh to the twelfth centuries), cf. C. B o u r b o u, *op. cit.*, p. 44–51.

¹¹⁶⁵ Dioscurides, *De materia medica*, II, 101, 2, 1–8.

¹¹⁶⁶ The text is imprecise to such an extent that another interpretation of the term *kóilótes* is also possible.

¹¹⁶⁷ Dioscurides, *De materia medica*, II, 101, 2, 1–2. In all probability, he was referring to ailments of the eyeball.

¹¹⁶⁸ Dioscurides, *De materia medica*, II, 101, 2, 2.

¹¹⁶⁹ Dioscurides, *De materia medica*, II, 101, 2, 2–3.

in its dietetic characterisation and the list of medical uses introduced to the description of wheat, that is, *pyrós*¹¹⁷⁰. He wrote – incidentally without specifying the type of baked product – that bread¹¹⁷¹ from *melikraton*, boiled or raw, alleviates inflammations (*phlegmonai*) when applied as a cataplasm. Such a poultice, prepared with herbs and the extracts obtained therefrom, was said to soften callosities and alleviate pathological states¹¹⁷². Fresh bread soaked in salty water (*hálme*) and applied as a cataplasm was even said to be successful in the treatment of chronic lichens¹¹⁷³. Finally, the physician wrote that stale and dry bread – both of itself and with various additives – slows down voidance in diarrhoea¹¹⁷⁴. The last comment must have concerned the specific, therapeutic form of consumption of such baked products. To a large extent, the medical applications of bread are connected with the properties of *zýme*, i.e. leaven, or yeast. It is worth noting the fact that in subsequent literature this connection was underscored on numerous occasions, particularly in the context of the application of bread poultices. Returning, however, to Dioscurides' doctrines, we should state that according to this physician, yeast was used to soften clavuses and other outgrowths, while with the addition of salt it facilitated the formation and opening of ulcers¹¹⁷⁵. Finally, we arrive at a clue that could make it possible to identify the potential applications of the breads known as *synkomistós*, *rhyparós* and *pityrites/pityriás*, those that contained impurities. Namely, Dioscurides wrote that bran (*pityron*)¹¹⁷⁶ boiled in strong vinegar and used as a cataplasm treats leprosy and all types of inflammations (*phlegmoné*) in their initial phase. If, in turn, the same are boiled with a rue broth,

¹¹⁷⁰ Dioscurides, *De materia medica*, II, 85, 1, 1–3, 9.

¹¹⁷¹ Dioscurides, *De materia medica*, II, 85, 3, 1. The compendium of knowledge concerning the medical applications of bread – Dioscurides, *De materia medica*, II, 85, 3, 1–7.

¹¹⁷² Dioscurides, *De materia medica*, II, 85, 3, 1–4.

¹¹⁷³ Dioscurides, *De materia medica*, II, 85, 3, 5–7.

¹¹⁷⁴ Dioscurides, *De materia medica*, II, 85, 3, 4–5.

¹¹⁷⁵ Dioscurides, *De materia medica*, II, 85, 2, 7–8.

¹¹⁷⁶ Dioscurides, *De materia medica*, II, 85, 2, 1.

they can cure ailments of the breasts caused by the coagulation therein of milk. Finally, the author of *De materia medica* informed us that such compresses were also used to treat viper bites and colic pains¹¹⁷⁷.

The data provided by Galen leave us in no doubt that common wheat was considered by ancient medicine as a pharmaceutical, or to put it more precisely – as a *haplón phármakon*. For this reason, a characteristic of the cereal in question was included in the treatise entitled *De simplicium medicamentorum temperamentis ac facultatibus*, and had an entire chapter of this work devoted to itself¹¹⁷⁸. Galen's output shows that numerous pharmaceutical recipes contain an entire selection of products made from *pyrós*. Deliberations on this topic should commence with the statement that *áleuron*¹¹⁷⁹ was considered by Galen as one of the basic substances with properties combining both nutritive and therapeutic functions. Such an approach to the flour is hinted at, for example, in *De compositione medicamentorum secundum locos*, where the author wrote that everyone, even the poorest, should in sickness have access to *áleuron* suitable for poultices¹¹⁸⁰. Thus, Galen treated flour as a *phármakon sensu stricto*, that is, as one of the basic substances determining the restoration of health. In addition, the above statement contains useful information – *áleuron* wheat flour, just as the raw material from which it was made, had first and foremost external applications.

In order to illustrate the above statements, we should list a few recipes. The author of the *De simplicium medicamentorum temperamentis ac facultatibus* wrote that *áleuron*¹¹⁸¹ flour was used for cataplasms, the purpose of which was to bring about the removal of pus

¹¹⁷⁷ Dioscurides, *De materia medica*, II, 85, 2, 1–5.

¹¹⁷⁸ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 111, 1–11, vol. XII.

¹¹⁷⁹ Galen, *De compositione medicamentorum secundum locos*, 909, 15–16, vol. XII.

¹¹⁸⁰ Galen, *De compositione medicamentorum secundum locos*, 909, 11–16, vol. XII.

¹¹⁸¹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 732, 12, vol. XI.

from the body. The product was then mixed with *hydrélaion*¹¹⁸² and boiled¹¹⁸³. Galen also added that the most effective for this purpose is a poultice made from finely purified *áleuron* made from common wheat¹¹⁸⁴, which obviously suggests that similar therapeutic agents were also made from impure flour. Galen explained this particular effectiveness of finely sifted wheat flour by reference to the properties of its ingredients. Namely, in order to ensure the elimination of pus, as he explained, it is necessary to use agents that are by nature humid and warm. Exactly such features were attributed to purified (*kataharós*) *áleuron*¹¹⁸⁵. Varieties of flour contaminated with bran, namely *pityra*, were in turn classed as cooler and more dry¹¹⁸⁶. *Keroté* from *áleuron*¹¹⁸⁷, that is a type of lotion with the said additive, was recommended for the alleviation of skin irritation¹¹⁸⁸ when using one of the drugs for *alopekias*¹¹⁸⁹. From Galen we learn that this information was taken from the works of Heraclides of Tarentum¹¹⁹⁰, and the author of the recipe was Orestinus¹¹⁹¹. *Áleuron*¹¹⁹² was also listed amongst the ingredients of drugs for ear pains. At this point we should add that the entire group of formulas for similar therapeutic agents was borrowed by

¹¹⁸² Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 732, 12–13, vol. XI.

¹¹⁸³ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 732, 13, vol. XI.

¹¹⁸⁴ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 733, 4–6, vol. XI.

¹¹⁸⁵ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 733, 7–9, vol. XI.

¹¹⁸⁶ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 733, 6–7, vol. XI.

¹¹⁸⁷ Galen, *De compositione medicamentorum secundum locos*, 403, 5–6, vol. XII.

¹¹⁸⁸ Galen, *De compositione medicamentorum secundum locos*, 403, 3–4, vol. XII.

¹¹⁸⁹ Galen, *De compositione medicamentorum secundum locos*, 402, 18 – 403, 6, vol. XII.

¹¹⁹⁰ Galen, *De compositione medicamentorum secundum locos*, 402, 10, vol. XII.

¹¹⁹¹ Galen, *De compositione medicamentorum secundum locos*, 402, 18, vol. XII.

¹¹⁹² Galen, *De compositione medicamentorum secundum locos*, 621, 16, vol. XII.

Galen from the output of Archigenes¹¹⁹³. The recipe in question required pulverisation of a poppy head with *áleuron* and boiling of this mixture in a *melikraton*¹¹⁹⁴, with the end product being used as a cataplasm. In any case, such information may be gleaned from the hints placed in the commentary to the formula that precedes the analysed recipe¹¹⁹⁵. In addition, *áleuron*¹¹⁹⁶ wheat flour was used to make warm poultices (*pyriai*) used to treat ailments described as *otalgia*. We learn this from the part of *De compositione medicamentorum secundum locos* that contained recipes for such medicines taken by the author from the works of Apollonius¹¹⁹⁷. One of these provides for the boiling of barley or wheat *áleuron* in wine together with iris oil. Finally, it is worth noting that Galen included in his output a recipe for bread baked for a person suffering from dysentery¹¹⁹⁸. This comes from the writings of Asclepiades¹¹⁹⁹, who additionally submitted numerous other recipes for drugs suitable for gastric ailments¹²⁰⁰. The bread in question was made from eggs, fresh olive oil, white pepper, tanner's sumach, pulverised gall-nuts and *áleuron*¹²⁰¹ wheat flour. All of these ingredients were carefully mixed and small loaves were made from the dough; these were later baked on a *tégonon*. This baked product was to constitute the basic food for the sick.

¹¹⁹³ Galen, *De compositione medicamentorum secundum locos*, 620, 5 – 614, 14, vol. XII.

¹¹⁹⁴ Galen, *De compositione medicamentorum secundum locos*, 621, 16 – 622, 1, vol. XII.

¹¹⁹⁵ Galen, *De compositione medicamentorum secundum locos*, 621, 16, vol. XII.

¹¹⁹⁶ Galen, *De compositione medicamentorum secundum locos*, 654, 18, vol. XII.

¹¹⁹⁷ Galen, *De compositione medicamentorum secundum locos*, 653, 16 – 655, 9, vol. XII.

¹¹⁹⁸ Galen, *De compositione medicamentorum secundum locos*, 301, 12 – 302, 2, vol. XIII.

¹¹⁹⁹ Galen, *De compositione medicamentorum secundum locos*, 301, 3, vol. XIII.

¹²⁰⁰ Galen, *De compositione medicamentorum secundum locos*, 301, 3 – 302, 14, vol. XIII.

¹²⁰¹ Galen, *De compositione medicamentorum secundum locos*, 301, 17, vol. XIII.

Semidalis has been presented by Galen as the ingredient of medications applied externally – in the same way as *áleuron*. It was therefore used as a cataplasm¹²⁰² for the damaged surfaces of delicate and sensitive parts of the body. It was then mixed with water and placed on the injured part¹²⁰³. This advice was borrowed by Galen from the output of Archigenes, who gave a number of recipes for drugs designed to treat wounds and abrasions of the head¹²⁰⁴. In addition, *semidalis* was also mentioned as the component of a drug known as *parákollon*¹²⁰⁵, which was described in the treatise entitled *De compositione medicamentorum secundum locos*. The medication was supposed to eliminate humoural disharmony, *rheúma*, in the facial part of the head, and we can find this recipe in the chapter devoted to eye ointments¹²⁰⁶. It was made from *semidalis*¹²⁰⁷, incense (i.e. resin from trees of the genus *Boswellia*) and egg white¹²⁰⁸. The ingredients were made into a mass that took the form of *émplastros*¹²⁰⁹, placed on a piece of cloth and set to the forehead¹²¹⁰.

In the pharmaceutical writings left by Galen we find at least a few recipes that utilise *gyris* flour. We learn, therefore, that *semidalis* and *gyris*¹²¹¹ were used to make *kólla*¹²¹², a previously discussed medication. This was a type of adhesive substance that also had a therapeutic

¹²⁰² Galen, *De compositione medicamentorum secundum locos*, 576, 14, vol. XII.

¹²⁰³ Galen, *De compositione medicamentorum secundum locos*, 576, 13–14, vol. XII.

¹²⁰⁴ Galen, *De compositione medicamentorum secundum locos*, 576, 6 – 579, 3, vol. XII.

¹²⁰⁵ Galen, *De compositione medicamentorum secundum locos*, 796, 5, vol. XII.

¹²⁰⁶ Galen, *De compositione medicamentorum secundum locos*, 793, 15 – 796, 12, vol. XII.

¹²⁰⁷ Galen, *De compositione medicamentorum secundum locos*, 796, 5, vol. XII.

¹²⁰⁸ Galen, *De compositione medicamentorum secundum locos*, 796, 5–6, vol. XII.

¹²⁰⁹ Galen, *De compositione medicamentorum secundum locos*, 796, 6, vol. XII.

¹²¹⁰ Galen, *De compositione medicamentorum secundum locos*, 796, 7, vol. XII.

¹²¹¹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 33, 15, vol. XII.

¹²¹² Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 33, 14–16, vol. XII.

effect when used as a cataplasm¹²¹³. The flour in question was recommended in the treatment of ulcerations near the ears, and particularly of parotitis¹²¹⁴. The product was also recommended as a component of compresses, *anakóllema*, which were intended to treat humoral imbalances in the head¹²¹⁵. And thus, *gyris*¹²¹⁶, myrrh, pulverised cedar wood resin and egg white were made into a viscous mass that was placed on a piece of thin material and put to the temple or forehead¹²¹⁷. Flour was also a component of drugs designed to treat other ailments, such as coughs and problems of the alimentary tract (including dysentery and lax bowels)¹²¹⁸, and the formula was borrowed by Galen from the treatises of Asclepiades¹²¹⁹. The recipe for these beverages or therapeutic soups¹²²⁰ provided for the boiling of leaves of common horehound in water until the plant material was fully cooked to bits, whereupon *gyris*¹²²¹ flour, fat and salt were added to the broth. The broth thus obtained, *rhóphema*, was served as a drink¹²²².

In Galen's treatises, bread was recommended in a number of diets and presented as the component of various types of *phármaka*. We should start off by stating that good quality baked products from white flour were considered not only a staple food, but also as one that was

¹²¹³ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 33, 16, vol. XII.

¹²¹⁴ Galen, *De compositione medicamentorum secundum locos*, 664, 10–668, 15, vol. XII.

¹²¹⁵ Galen, *De compositione medicamentorum secundum locos*, 745, 3–14, vol. XII.

¹²¹⁶ Galen, *De compositione medicamentorum secundum locos*, 745, 3, vol. XII.

¹²¹⁷ Galen, *De compositione medicamentorum secundum locos*, 745, 3–6, vol. XII.

¹²¹⁸ Galen, *De compositione medicamentorum secundum locos*, 96, 11–13, vol. XIII.

¹²¹⁹ Galen, *De compositione medicamentorum secundum locos*, 97, 3–4, vol. XIII.

¹²²⁰ Galen, *De compositione medicamentorum secundum locos*, 97, 11–98, 2, vol. XIII.

¹²²¹ Galen, *De compositione medicamentorum secundum locos*, 97, 15, vol. XIII.

¹²²² Galen, *De compositione medicamentorum secundum locos*, 97, 16–98, 2, vol. XIII.

particularly healthy. They were relatively easy to digest and very nutritious, and thus facilitated the rapid rebuilding of bodily strength without causing humoural imbalances. For this reason, baked products were not only a food, but also a complex substance with therapeutic properties. Therefore, when writing his commentary to *Corpus Hippocraticum*, or more specifically to the diet for severe ailments, Galen included bread¹²²³ amongst the most important products administered to critically ill patients¹²²⁴. The same opinion was repeated in *De compositione medicamentorum secundum locos*¹²²⁵.

In addition, the presence of wheat bread in certain diets was intentionally underscored in Galen's writings. Such fragments are too numerous for us to quote each and every one, and for this reason we shall provide but a few examples. And thus, bread¹²²⁶ appears as a food recommended for persons suffering from headaches following the abuse of alcohol¹²²⁷; Galen borrowed numerous suggestions as to the proper course of action in such instances from the writings of Apollonius¹²²⁸. Baked products¹²²⁹ (whether consumed without any additives, or with olives, dates and grapes¹²³⁰) were also viewed as an important part of the menu appropriate for curing headaches, the real cause of which – informed Galen – were disorders of the alimentary tract, and particularly the stomach¹²³¹. Finally, bread was recommended by Galen for the treatment of identical ailments brought about by the action of other

¹²²³ In all probability, Galen was referring to the classic *ptisane* made from barley.

¹²²⁴ Galen, *In Hippocratis de victu acutorum commentaria*, 455, 2–4, vol. XV.

¹²²⁵ Galen, *De compositione medicamentorum secundum locos*, 909, 15, vol. XII.

¹²²⁶ Galen, *De compositione medicamentorum secundum locos*, 516, 9, vol. XII.

¹²²⁷ Galen, *De compositione medicamentorum secundum locos*, 514, 4 – 520, 6, vol. XII.

¹²²⁸ Galen, *De compositione medicamentorum secundum locos*, 514, 4, vol. XII.

¹²²⁹ Galen, *De compositione medicamentorum secundum locos*, 536, 15; 537, 1, vol. XII.

¹²³⁰ Galen, *De compositione medicamentorum secundum locos*, 537, 2–3, vol. XII.

¹²³¹ Galen, *De compositione medicamentorum secundum locos*, 535, 10 – 541, 2, vol. XII.

organs¹²³², for example when the root cause of a sickness was a hot *dyskrasia* of the liver or stomach¹²³³. In such instances, Galen proposed the consumption of bread dipped in wine diluted with water¹²³⁴.

Bread is frequently mentioned as a component of medications applied externally, *boéthema*. The majority of these were classed by Galen as cataplasms, and the physician usually had in mind agents of this type prepared from high quality wheat bread, and therefore strongly risen. These were supposed to act on inflammations resulting from local dyspepsia¹²³⁵. Galen explained that they were effective because breads contain elements facilitating the breakdown of dangerous juices through digestion, namely salt and *zýme*¹²³⁶. The applications of such agents were numerous. And thus, cataplasms from white baked products were considered an extremely effective agent for eliminating pus from the organism¹²³⁷. In turn, in the case of stomach ailments brought about by the appearance therein of excessive quantities of black bile, which manifested themselves in the accumulation of gases in the intestines, one should place a sponge soaked in pungent wine vinegar to the stomach¹²³⁸, and then use a cataplasm¹²³⁹ made from leeks, bread and rose oil¹²⁴⁰. This recipe, as Galen explained, was borrowed from

¹²³² Galen, *De compositione medicamentorum secundum locos*, 559, 9 – 560, 7, vol. XII.

¹²³³ Galen, *De compositione medicamentorum secundum locos*, 559, 14–16, vol. XII.

¹²³⁴ Galen, *De compositione medicamentorum secundum locos*, 559, 16, vol. XII.

¹²³⁵ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 733, 2, vol. XI.

¹²³⁶ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 733, 3, vol. XI.

¹²³⁷ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 733, 4–6, vol. XI.

¹²³⁸ Galen, *De compositione medicamentorum secundum locos*, 172, 10–14, vol. XIII.

¹²³⁹ Galen, *De compositione medicamentorum secundum locos*, 173, 3, vol. XIII.

¹²⁴⁰ Galen, *De compositione medicamentorum secundum locos*, 173, 5, vol. XIII.

the writings of Archigenes¹²⁴¹. In addition, wheat baked products were also applied as a component of *boéthema*, used to treat eye ailments caused by the inflow thereto of excessive quantities of harmful humours¹²⁴². One such simple drug was bread soaked in wine and mixed with rose oil¹²⁴³. This agent was applied externally and concomitantly with the appropriate diet¹²⁴⁴. This recommendation was taken from the work of Archigenes¹²⁴⁵.

Regarding the therapeutic utilisation of *chóndros* groats, the pertinent material extant in Galen's writings is so extensive that it requires strict selection. We should commence by stating that the product played a prominent role as a food recommended for various treatments. For example, when writing *In Hippocratis de victu acutorum commentaria*, Galen cited the then-current views and maintained that *chóndros* (apart from bread and *ptisáne*¹²⁴⁶) was the basic product administered to severely ill patients¹²⁴⁷. This interpretation of the role of *chóndros* is further emphasised by the statement from *De compositione medicamentorum secundum locos*, according to which in times of sickness poor people, too, had to have access to *chóndros* from *melikraton*, white bread, and *áleuron*¹²⁴⁸ for poultices. These three foods were therefore classed as fundamental *phármaka sensu largo*, which determined the recovery of health for all seriously ill persons.

¹²⁴¹ Galen, *De compositione medicamentorum secundum locos*, 167, 3 – 176, 13, vol. XIII.

¹²⁴² Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 790, 10 – 792, 18, vol. XII.

¹²⁴³ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 792, 10, vol. XII.

¹²⁴⁴ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 790, 12–14, vol. XII.

¹²⁴⁵ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 790, 10, vol. XII.

¹²⁴⁶ In all probability, Galen was referring to the typical *ptisáne* made from barley.

¹²⁴⁷ Galen, *In Hippocratis de victu acutorum commentaria*, 455, 2–4, vol. XV.

¹²⁴⁸ Galen, *De compositione medicamentorum secundum locos*, 909, 11–16, vol. XII.

The groats in question were therefore recommended as an element of specific therapeutic diets. For example, from the recommendations of Apollonius cited by Galen in the *De compositione medicamentorum secundum locos*¹²⁴⁹ it appears that a soup made from *chóndros*, that is *rhóphema ek chóndrou* – being a food characterised by properly balanced juices, and also free of any warming effect – was proposed as a food for persons suffering from headaches caused by the abuse of alcohol¹²⁵⁰. *Rhóphema* made from *chóndros*¹²⁵¹ was also recommended as an element of the menu for people with parodontosis, who had unstable and exposed teeth¹²⁵². Galen also devoted considerable attention to the broth made from *chóndros* à la *ptisáne*. In the *De alimentorum facultatibus* he testified to the existence of a commonly held view that *ptisáne* from *chóndros* was universally suitable for the sick¹²⁵³. He did not specify, however, which ailments were referred to, while medical literature suggests that this soup was administered first and foremost in severe complaints of differing aetiologies, which caused a high fever.

Furthermore, Galen also considered *chóndros* to be a *phármakon sensu stricto* and for this reason in *De simplicium medicamentorum temperamentis ac facultatibus* he devoted an entire chapter thereto (*Peri chóndrou*)¹²⁵⁴. In the said fragment, having first noted the properties of these groats as a food, he took a stance first and foremost with regard to the drying properties characterising the substance. He recounted that since these groats absorb other substances, including liquids with a strong drying action, such as vinegar, sea water and brine, some

¹²⁴⁹ Galen, *De compositione medicamentorum secundum locos*, 514, 4 – 520, 6, vol. XII.

¹²⁵⁰ Galen, *De compositione medicamentorum secundum locos*, 516, 5–10, vol. XII.

¹²⁵¹ Galen, *De compositione medicamentorum secundum locos*, 872, 17 – 873, 3, vol. XII.

¹²⁵² Galen, *De compositione medicamentorum secundum locos*, 871, 4 – 873, 3, vol. XII.

¹²⁵³ Galen, *De alimentorum facultatibus*, 496, 9–10, vol. VI.

¹²⁵⁴ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 157, 1–15, vol. XII.

physicians started to maintain that *chóndros* itself has properties that in reality are those of the agents that they have absorbed¹²⁵⁵. However, Galen himself stated authoritatively that these groats do not have such an effect of themselves¹²⁵⁶. In the characterisation in question, however, he did include *chóndros* in the group of *phármaka emplastiká*, that is, substances which block through adherence¹²⁵⁷. He did not, however, explain the concept, for he had analysed it in-depth elsewhere¹²⁵⁸. Without entering into details¹²⁵⁹, his disquisition indicates that substances such as *chóndros* were suitable for all types of poultices (cataplasms, *émplastroi* and so forth).

Galen's output contains numerous recipes for more or less complex drugs in which wheat groats were used as an ingredient. For example, in the treatise *De simplicium medicamentorum temperamentis ac facultatibus* the physician stated that a thin broth from these groats (*chylós chóndrou*)¹²⁶⁰ was introduced as an enema in the treatment of gastric ailments¹²⁶¹. In turn, in the work *De compositione medicamentorum secundum locos* the product in question has also been mentioned as

¹²⁵⁵ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 157, 6–15, vol. XII.

¹²⁵⁶ It should be added that it follows from the characteristic of *emplastiká* that *chóndros* has drying properties, but not excessively strong, which however are useful in the treatment of delicate tissue of the head, eyes, and so forth. In the analysed fragment of the *De simplicium medicamentorum temperamentis ac facultatibus*, Galen did not therefore negate drying power of *chóndros* as such, but only observed that this substance has a very delicate action in this regard.

¹²⁵⁷ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 157, 3–4, vol. XII. Cf. Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 634, 8–9, vol. XI.

¹²⁵⁸ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 634, 13–636, 6, vol. XI.

¹²⁵⁹ The properties mentioned by Galen have been enumerated in the dietetic and medical characteristic of this product.

¹²⁶⁰ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 444, 2–5, vol. XI.

¹²⁶¹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 443, 4–445, 4, vol. XI.

the component of an ointment supposed to counteract hair loss (*alopekías*). The medication was made from *chóndros* soaked in wine vinegar with the addition of juice from the asafoetida (*sílfhion*)¹²⁶², and the recipe is placed amongst others borrowed from the output of Soranus¹²⁶³, a physician from the end of the first century AD. Finally, it is worth noting that Galen wrote down the recipe¹²⁶⁴ for a powder for cleaning teeth (*odontotrimma*)¹²⁶⁵ that utilised *chóndros*¹²⁶⁶; this substance was mentioned in the work written by Damocrates.

Finally, we arrive at the last wheat substance considered an important *phármakon*. Galen characterised *ámylon* in treatises concerning *haplá phármaka*, for example in the work *De simplicium medicamentorum temperamentis ac facultatibus*, attributing to this substance certain individual properties having practical therapeutic value, and also stated that starch had a place in recipes for compound drugs, the so-called *sýntheta phármaka*, which he documented personally in the detailed and lengthy treatise entitled *De compositione medicamentorum secundum locos*. We should add that these works do not specify the cereal from which the said *ámylon* was obtained. Since, however, Galen himself listed common wheat as the primary raw material for the production of starch, in the present deliberations we have assumed that the *ámylon* characterised by Galen in the said works is in fact starch obtained from *pyrós* wheat. Starch was a component that we find in numerous ophthalmological medications. It was therefore¹²⁶⁷ an ingredient (but only one of many) of *trypherón*, which was used to treat excessive lacrimation

¹²⁶² Galen, *De compositione medicamentorum secundum locos*, 419, 16–17, vol. XII.

¹²⁶³ Galen, *De compositione medicamentorum secundum locos*, 414, 17–421, 2, vol. XII.

¹²⁶⁴ Galen, *De compositione medicamentorum secundum locos*, 889, 13–890, 12, vol. XII.

¹²⁶⁵ Galen, *De compositione medicamentorum secundum locos*, 889, 13, vol. XII.

¹²⁶⁶ Galen, *De compositione medicamentorum secundum locos*, 890, 12, vol. XII.

¹²⁶⁷ Galen, *De compositione medicamentorum secundum locos*, 757, 8, vol. XII.

(*epiphorá*)¹²⁶⁸. The agent was applied externally in the form of an ointment. Finally, it constituted¹²⁶⁹ a component of one more formula for another *trypherón*, which was said to cure ulcers in the vicinity of the eyes (*epikaúmata, phlýktainai*)¹²⁷⁰, swellings of the cornea (*chémo-seis*)¹²⁷¹, and so on. There are many more examples of recipes for similar medications in the treatises authored by the Pergamonian physician.

Starch also figures in recipes for complex medications used to treat numerous ailments of the oral cavity. One such stomatological drug containing *ámylon*¹²⁷² had a recipe¹²⁷³ taken from the tradition established by Andromachus, a physician active towards the end of the first century AD¹²⁷⁴. Galen stated that it was effective for all affections of the oral cavity. The medication has been described as having a pleasant smell¹²⁷⁵ and a worked gently on inflammations (*phlegmonai*) and irritations (*eschárai*) inside the mouth¹²⁷⁶. In *De compositione medicamentorum secundum locos*, Galen provided the formula for another drug¹²⁷⁷, the recipe for which had been elaborated by Andromachus¹²⁷⁸, and which – as he wrote – was also effective for treating the ailments mentioned above (*phlegmonai, eschárai*). Its ingredients (rose flowers, crocuses, incense¹²⁷⁹), including *ámylon*, were mixed with honey and in all probability used as a *sui generis* ointment. It may be that this medication

¹²⁶⁸ Galen, *De compositione medicamentorum secundum locos*, 757, 6 – 757, 10, vol. XII.

¹²⁶⁹ Galen, *De compositione medicamentorum secundum locos*, 759, 1, vol. XII.

¹²⁷⁰ Galen, *De compositione medicamentorum secundum locos*, 758, 15–16, vol. XII.

¹²⁷¹ Galen, *De compositione medicamentorum secundum locos*, 758, 16, vol. XII.

¹²⁷² Galen, *De compositione medicamentorum secundum locos*, 946, 6, vol. XII.

¹²⁷³ Galen, *De compositione medicamentorum secundum locos*, 946, 5–8, vol. XII.

¹²⁷⁴ Galen, *De compositione medicamentorum secundum locos*, 945, 5, vol. XII.

¹²⁷⁵ Galen, *De compositione medicamentorum secundum locos*, 946, 5, vol. XII.

¹²⁷⁶ Galen, *De compositione medicamentorum secundum locos*, 946, 6, vol. XII.

¹²⁷⁷ Galen, *De compositione medicamentorum secundum locos*, 953, 9–15, vol. XII.

¹²⁷⁸ Galen, *De compositione medicamentorum secundum locos*, 953, 9, vol. XII.

¹²⁷⁹ Dried resin grains from trees of the genus *Boswellia*.

also took the form of a pill (called *trochískos*), which is mentioned as a form given to a different¹²⁸⁰, but similar drug elaborated by Andromachus. Such a tablet was probably chewed, and its substances – dissolved in the saliva – had a soothing effect on the ailments listed above. *Ámylon* is also present in the group of drugs used to control bleeding that manifested itself in the expectoration of blood¹²⁸¹. Such recipes are numerous¹²⁸², and they have been taken from the writings of the aforementioned Andromachus¹²⁸³. Finally, due to its drying properties (as we may surmise), Galen also mentioned *ámylon*¹²⁸⁴ as a component of a medication used to remove hair, known as *psílothron*¹²⁸⁵. This agent was applied externally to parts of the body from which hair was to be eliminated, and the recipe cited by the Pergamonian physician was made famous by Crito, a pharmacologist active in the first century AD¹²⁸⁶. The overall tone of Galen's discourse would seem to indicate that the said *psílothron* was placed in particular on the skin of the head.

Information concerning the medical applications of *pyrós* was explored by Oribasius, who made excerpts primarily from the writings of Dieuches, Zopyrus, Galen, Lycus and Rufus of Ephesus. These indicate that *pyrós* wheat alone, not to mention the numerous products obtained therefrom, was a substance used by physicians in the fourth century in a whole range of medical procedures. The material clearly shows that it was recommended both as an element of diets, and a component of medications – for which the more or less detailed recipes were written down by Oribasius. As a food, it was particularly recommended¹²⁸⁷

¹²⁸⁰ Galen, *De compositione medicamentorum secundum locos*, 953, 12, vol. XII.

¹²⁸¹ Galen, *De compositione medicamentorum secundum locos*, 75, 17–18, vol. XIII.

¹²⁸² Cf. Galen, *De compositione medicamentorum secundum locos*, 75, 17 – 77, 3, vol. XIII.

¹²⁸³ Galen, *De compositione medicamentorum secundum locos*, 75, 17, vol. XIII.

¹²⁸⁴ Galen, *De compositione medicamentorum secundum locos*, 453, 15, vol. XII.

¹²⁸⁵ Galen, *De compositione medicamentorum secundum locos*, 453, 13 – 454, 2, vol. XII.

¹²⁸⁶ Galen, *De compositione medicamentorum secundum locos*, 453, 13, vol. XII.

¹²⁸⁷ Oribasius, *Collectiones medicae*, IV, 7, 3, 3.

boiled, and advice to this effect may be found in the fragment of Dieuches' doctrines quoted by the author of the *Collectiones medicae*. It concerns the preparation of foods for those who were so seriously ill, that they could consume food solely in liquid form¹²⁸⁸. We may surmise that such a form of nourishment must have been frequently used, for the recommendation was reiterated (with certain changes) in the same chapter of the *Collectiones medicae*¹²⁸⁹. When, in turn, Oribasius analysed substances conducive to the production of milk by women, and doing so quoted Zopyrus¹²⁹⁰, he indicated that watered down *ptisáne* (called *chylós*) from wheat, that is, *ptisáne pyríne*¹²⁹¹, as well as a broth from *trimeniaíos/triménios*¹²⁹² wheat or common wheat¹²⁹³ were all appropriate agents for stimulating lactation. More specific data on recipes for these therapeutic soups has been presented in the part of the present discussion devoted to the culinary aspects of wheat.

The boiling of wheat was recommended not only for nutritive purposes, but also to prepare the basic component of substances used to irrigate the internal organs, that is, in order to make enemas. Lycus, for example, considered that – as we should surmise – an unseasoned broth from boiled wheat¹²⁹⁴ had a place in recipes for enemas, which he called *kllysmoi*¹²⁹⁵, the action of which was not initially described by Oribasius in the *Collectiones medicae*. It therefore comes as no surprise that in another fragment of the deliberations concerning enemas, now specifically described as serving to treat dysentery, there appears one more, albeit more complicated, recipe taken from Lycus¹²⁹⁶ that makes use of wheat¹²⁹⁷. According to the formula, one should boil the cereal in

¹²⁸⁸ Oribasius, *Collectiones medicae*, IV, 7, 1, 1 – 38, 4.

¹²⁸⁹ Oribasius, *Collectiones medicae*, IV, 7, 10, 1 – 12, 1.

¹²⁹⁰ Oribasius, *Collectiones medicae*, XIV, 64, 1, 1 – 3, 3.

¹²⁹¹ Oribasius, *Collectiones medicae*, XIV, 64, 2, 2 – 3, 1.

¹²⁹² Oribasius, *Collectiones medicae*, XIV, 64, 1, 4.

¹²⁹³ Oribasius, *Collectiones medicae*, XIV, 64, 2, 2.

¹²⁹⁴ Oribasius, *Collectiones medicae*, VIII, 25, 3, 1.

¹²⁹⁵ Oribasius, *Collectiones medicae*, VIII, 25, 1, 1 – 14, 2.

¹²⁹⁶ Oribasius, *Collectiones medicae*, VIII, 25, 27, 2–6.

¹²⁹⁷ Oribasius, *Collectiones medicae*, VIII, 25, 27, 2.

question with goat's fat, although the author added that it was also possible to use mutton suet, beef suet, or even pork fat. He stated, however, that he had greatest trust in the first of these. Thus prepared, the cereal released a thick juice, which – as Lycus assured – together with the fat comprised the drug that served to irrigate the intestines¹²⁹⁸. *Pyroi*¹²⁹⁹ were also included in the list of substances recommended as a component of enemas, which Oribasius (following Rufus of Ephesus) termed *klýsmata*¹³⁰⁰. The author wrote that wheat was boiled in such a way as to produce a thin gruel, which he categorised as *chylós*¹³⁰¹. It is most interesting to note that the analysed plant¹³⁰² also appears in the *Collectiones medicae* as an ingredient of enemas that were intended to nourish (*tróphimoi klystéres*)¹³⁰³. These were used when the patient was unable to consume food for an extended period of time, and was therefore physically exhausted. Lycus, presented by Oribasius as the author of this piece of advice, recommended making a thin wheat gruel, which he called *chylós*¹³⁰⁴, and introducing it as an enema with considerable force, so that the liquid advanced as far as possible into the body¹³⁰⁵.

Oribasius preserved a relatively large body of information concerning the usage of *áleuron* in *phármaka* applied both internally and externally. The latter, incidentally, are predominant, and were administered for a great many ailments. A few examples will suffice to illustrate this hypothesis. As regards the first of the abovementioned categories of agents, Oribasius' works prove that *áleuron* flour was included in emetics. Numerous recipes for such drugs have been left, for example, by Diocles of Carystus, and Oribasius preserved them in his *Collectiones medicae*¹³⁰⁶.

¹²⁹⁸ Oribasius, *Collectiones medicae*, VIII, 25, 27, 4–6.

¹²⁹⁹ Oribasius, *Collectiones medicae*, VIII, 24, 1, 3.

¹³⁰⁰ Oribasius, *Collectiones medicae*, VIII, 24, 1, 1–39, 3.

¹³⁰¹ Oribasius, *Collectiones medicae*, VIII, 24, 1, 3.

¹³⁰² Oribasius, *Collectiones medicae*, VIII, 34, 2, 2.

¹³⁰³ Oribasius, *Collectiones medicae*, VIII, 34, 1, 1–3, 4.

¹³⁰⁴ Oribasius, *Collectiones medicae*, VIII, 34, 2, 2.

¹³⁰⁵ Oribasius, *Collectiones medicae*, VIII, 34, 3, 3–4.

¹³⁰⁶ Oribasius, *Collectiones medicae*, VIII, 22, 1, 1–4, 6.

The formula that included *áleuron* was simple. Namely, the flour was boiled (but not for an extended period of time) in water¹³⁰⁷, and honey was added to the broth. This drug was drunk, as the author stated, prior to or following meals¹³⁰⁸. The analysed wheat product¹³⁰⁹ was also mentioned, although only marginally, in the chapter devoted to foods that cause purgation (*lytiká*)¹³¹⁰, which was supplemented with excerpts from the works of Diocles of Carystus. And thus, we read that dog's mercury (*Mercurialis annua* L.) and young grapevine shoots were boiled with or without the addition of beetroot and cabbage, and then served as a liquid food¹³¹¹, probably as a *sui generis* soup (flavoured, as we read, with *áleuron* flour); this dish was considered to stimulate purgation. In addition, the *Libri ad Eunapium* mention a drug for haemorrhages¹³¹² that was made with *áleuron*¹³¹³. This comprised the said flour, incense (resin from the aforementioned tree *Boswellia carterii* Birdw.) and gum resin known as *kómmi*, and was administered orally¹³¹⁴.

When analysing the external application of *áleuron* flour, we come to the conclusion that it was used primarily for making various types of poultices and plasters, which were used to eliminate skin callosities (as for example ulcers or tubers) that were brought about by inflammations or neoplasms. And thus, from the chapter on bread cataplasms¹³¹⁵ (usually boiled with the addition of honey and olive oil), which were described as effective for numerous inflammations (*phlegmonai*) we learn that instead of bread one could also prepare them using *áleuron*¹³¹⁶. It would therefore appear logical that when a patient was faced with liver

¹³⁰⁷ Oribasius, *Collectiones medicae*, VIII, 22, 1, 6.

¹³⁰⁸ Oribasius, *Collectiones medicae*, VIII, 22, 1, 6–7.

¹³⁰⁹ Oribasius, *Collectiones medicae*, VIII, 41, 2, 1.

¹³¹⁰ Oribasius, *Collectiones medicae*, VIII, 41, 1, 1–6, 5.

¹³¹¹ Oribasius, *Collectiones medicae*, VIII, 41, 2, 1.

¹³¹² Oribasius, *Libri ad Eunapium*, III, 36, 1, 1–18, 9.

¹³¹³ Oribasius, *Libri ad Eunapium*, III, 36, 18, 8.

¹³¹⁴ Oribasius, *Libri ad Eunapium*, III, 36, 18, 7–9.

¹³¹⁵ Oribasius, *Collectiones medicae*, IX, 26, 1, 1–10, 3.

¹³¹⁶ Oribasius, *Collectiones medicae*, IX, 26, 10, 2.

ailments¹³¹⁷ (which physicians termed *phlegmoné*¹³¹⁸), Oribasius recommended cataplasms made from flaxseed, fenugreek, and barley flour or wheat flour¹³¹⁹ (using both, or only one), with the addition of wormwood and mastic¹³²⁰. It has also been written in the *Collectiones medicae* that *áleuron*¹³²¹ was used in substances that were intended to stimulate the growth and opening of ulcers, and thus to eliminate pus from the organism (*ekpyetiká*)¹³²². One of the recipes for such a product mentions the boiling of *hydrélaion* flour and the formation of a plaster or poultice from the thus obtained mass¹³²³. In the same chapter of the *Collectiones medicae* Oribasius also explained the reasons for this action of the analysed product. Namely, he wrote that pure wheat flour has a moistening effect¹³²⁴ and by its nature serves to warm the body¹³²⁵. Since, as he stated, the growth and opening of ulcers is facilitated by drugs that have a hot and humid action, *áleuron* was excellently suited for this class of agents (just as pork fat, heifer suet, butter, and so forth)¹³²⁶. We should also add that similar information concerning *áleuron* became the subject matter of the *Synopsis ad Eustathium filium*, in which treatise wheat flour¹³²⁷ is also included amongst *ekpyetiká*¹³²⁸.

The work for Oribasius' son therefore contains a certain fragment devoted to cataplasms made from *áleuron*. The information for the recipes was taken from the works of Lycus¹³²⁹. The physician advised that one

¹³¹⁷ Oribasius, *Eclogae medicamentorum*, 48, 1, 1 – 23, 3.

¹³¹⁸ Oribasius, *Eclogae medicamentorum*, 48, 5, 1.

¹³¹⁹ Oribasius, *Eclogae medicamentorum*, 48, 5, 3.

¹³²⁰ Oribasius, *Eclogae medicamentorum*, 48, 5, 1–4.

¹³²¹ Oribasius, *Collectiones medicae*, XIV, 37, 8, 1.

¹³²² Oribasius, *Collectiones medicae*, XIV, 37, 1, 1 – 17, 6.

¹³²³ Oribasius, *Collectiones medicae*, XIV, 37, 7, 3 – 8, 2.

¹³²⁴ Oribasius, *Collectiones medicae*, XIV, 37, 11, 3.

¹³²⁵ Oribasius, *Collectiones medicae*, XIV, 37, 11, 4.

¹³²⁶ Oribasius, *Collectiones medicae*, XIV, 37, 11, 4 – 13, 1.

¹³²⁷ Oribasius, *Synopsis ad Eustathium filium*, II, 26, 1, 2.

¹³²⁸ Oribasius, *Synopsis ad Eustathium filium*, II, 26, 1, 1–3.

¹³²⁹ Oribasius, *Synopsis ad Eustathium filium*, I, 26, 1, 1 – 8, 3.

should treat tuber-like callosities (*phýmata*)¹³³⁰ by placing upon them a drug made from whole figs, pulverised and boiled in water with wheat flour¹³³¹. The author did not specify the time it took to prepare this medication, but he stated that it should undergo thermal processing until it attains the appropriate consistency¹³³². Furthermore, *áleuron*¹³³³ boiled with figs is also mentioned in the *Libri ad Eunapium*¹³³⁴, during the discussion concerning the treatment of ulcerations known as *apóstema*. According to another recipe, *áleuron*¹³³⁵ flour was used as a poultice for wounds caused by scalding¹³³⁶. Such poultices were dubbed *pyrikausta*. In addition, *áleuron* with honey¹³³⁷ was recommended for healing sprains and abrasions of the extremities¹³³⁸, while the same drug (made from honey and *áleuron*¹³³⁹), used as a cataplasm, may also be found in the *Libri ad Eunapium*¹³⁴⁰. Finally, haemorrhages¹³⁴¹ could be controlled by means of a medication comprising finely grinded *áleuron*¹³⁴² flour, gypsum and egg white¹³⁴³.

Semídalís, similarly to other cereal products, also found a place in the therapeutic procedures described by Oribasius. The data is imprecise and does not allow us to state with certainty whether the term as used in the cited fragments referred to a type of wheat, or to a variety of flour. As regards the utilisation of *semídalís* as an element of the diet in the treatment of various types of sicknesses, Oribasius mentions this

¹³³⁰ Oribasius, *Synopsis ad Eustathium filium*, I, 26, 7, 1.

¹³³¹ Oribasius, *Synopsis ad Eustathium filium*, I, 26, 6, 3.

¹³³² Oribasius, *Synopsis ad Eustathium filium*, I, 26, 6, 1 – 7, 1.

¹³³³ Oribasius, *Libri ad Eunapium*, III, 43, 6, 1.

¹³³⁴ Oribasius, *Libri ad Eunapium*, III, 43, 1, 1 – 10, 2.

¹³³⁵ Oribasius, *Synopsis ad Eustathium filium*, VII, 6, 2, 7.

¹³³⁶ Oribasius, *Synopsis ad Eustathium filium*, VII, 6, 1, 1 – 7, 6.

¹³³⁷ Oribasius, *Synopsis ad Eustathium filium*, VII, 16, 1, 3.

¹³³⁸ Oribasius, *Synopsis ad Eustathium filium*, VII, 16, 1, 1 – 2, 3.

¹³³⁹ Oribasius, *Libri ad Eunapium*, III, 31, 1, 3.

¹³⁴⁰ Oribasius, *Libri ad Eunapium*, III, 31, 1, 1 – 2, 3.

¹³⁴¹ Oribasius, *Synopsis ad Eustathium filium*, VII, 20, 1, 1 – 18, 10.

¹³⁴² Oribasius, *Synopsis ad Eustathium filium*, VII, 20, 8, 2.

¹³⁴³ Oribasius, *Synopsis ad Eustathium filium*, VII, 20, 8, 1–4.

aspect only when citing fragments of the output of Dieuches concerning the cooking of various therapeutic soups¹³⁴⁴. As regards medications *sensu stricto*, Oribasius retained the recipe of Rufus of Ephesus for a purgative drug (*phármakon kathartikón*) known as *koptáron*, and thus a medicine administered in the form of tablets¹³⁴⁵. This provided for the usage of *semídalís*¹³⁴⁶ flour, the addition thereto of a plant known as poison hemlock (*Conium maculatum* L.), pepper, morning-glory and Attic honey. This was administered to persons suffering from jaundice. Let us add that the same tablet for persons with this affliction was described yet again in the *Synopsis ad Eustathium filium*¹³⁴⁷. Obviously, this recipe also refers to *semídalís*¹³⁴⁸.

Another type of flour, *gýris*, found a place in the formulas for numerous therapeutic agents, in particular those applied externally. Poultices predominate amongst the recipes. Thus, in the *Eclogae medicamentorum* we find a recipe for a cataplasm¹³⁴⁹ made from the cereal product in question¹³⁵⁰, flaxseed, honey and oil with rue. The recipe is located amongst a selection of other drugs that were effective in the treatment of pleurisy, a sickness known as *pleuritis*¹³⁵¹. When, in turn, the ailment was identified as the inflammation of the abdominal cavity, Antyllus¹³⁵², and subsequently Oribasius, recommended poultices from *gýris* boiled in water with the addition of flaxseed and olive oil. If the abdominal parts of the body required irrigation, use was made solely of boiled *gýris*¹³⁵³. Incidentally, in the very same fragment Antyllus (and, obviously, Oribasius, who quoted him) stated that cataplasms from this

¹³⁴⁴ Oribasius, *Collectiones medicae*, IV, 7, 1, 1 – 38, 4. The text clearly indicates that all of these were made through the boiling of liquids with solid additives.

¹³⁴⁵ Oribasius, *Collectiones medicae*, VIII, 47, 12, 2–3.

¹³⁴⁶ Oribasius, *Collectiones medicae*, VIII, 47, 12, 2.

¹³⁴⁷ Oribasius, *Synopsis ad Eustathium filium*, III, 202, 1, 1 – 3, 1.

¹³⁴⁸ Oribasius, *Synopsis ad Eustathium filium*, III, 202, 1, 1.

¹³⁴⁹ Oribasius, *Eclogae medicamentorum*, 34, 1, 4–5.

¹³⁵⁰ Oribasius, *Eclogae medicamentorum*, 34, 1, 4.

¹³⁵¹ Oribasius, *Eclogae medicamentorum*, 34, 1, 1 – 9, 3.

¹³⁵² Oribasius, *Collectiones medicae*, IX, 24, 1, 1 – 21, 3.

¹³⁵³ Oribasius, *Collectiones medicae*, IX, 24, 6, 1 – 7, 2.

flower and flaxseed were also effective in the treatment of inflammations of the alimentary tract and other organs located in the abdominal cavity (*éntera*)¹³⁵⁴. *Eclogae medicamentorum*¹³⁵⁵ also contains a reference to various inflammations, i.e. *phlegmonai*. When these ailments of the extremities occurred, it was advised to perform bloodletting, and subsequently use a cataplasm made from *gýris*¹³⁵⁶ (likely boiled) in water or *hydrélaion*¹³⁵⁷. The analysed product¹³⁵⁸ had its place in the treatment of *phthísis*¹³⁵⁹, that is, tuberculosis or tumoural disease of lungs¹³⁶⁰. In the treatment of this sickness, physicians recommended cataplasms¹³⁶¹ from flaxseed, *gýris* flour, a broth from fenugreek (or mallow), olive oil, honey and marshmallow leaves¹³⁶². Finally, it is worth knowing that in another fragment, which Oribasius owed to Antyllus, we find a description of *empásmata*, namely a dusting powder¹³⁶³. Antyllus explained that there are three types of similar medications. *Émpasma* is used in the event of excessive perspiration, itching irritations of the skin and similar ailments. *Katápasma* is a dusting powder used to dry up wounds or ulcerations appearing on the skin. *Diápasma*, in turn, is a scented drying powder that is used for hygienic and cosmetic purposes, for example under the arms or in the groin¹³⁶⁴. The fragment informs us that *gýris*¹³⁶⁵ could be used as a dusting powder of the first type, that is – for example – in the event of excessive perspiration.

Commencing our deliberations concerning the therapeutic applications of bread, it is worth noting that the texts of Oribasius do not

¹³⁵⁴ Oribasius, *Collectiones medicae*, IX, 24, 14, 1–2.

¹³⁵⁵ Oribasius, *Eclogae medicamentorum*, 89, 1, 1–29, 5.

¹³⁵⁶ Oribasius, *Eclogae medicamentorum*, 89, 4, 6.

¹³⁵⁷ Oribasius, *Eclogae medicamentorum*, 89, 4, 7.

¹³⁵⁸ Oribasius, *Synopsis ad Eustathium filium*, IX, 4, 6, 2.

¹³⁵⁹ Oribasius, *Synopsis ad Eustathium filium*, IX, 4, 1, 1–12, 2.

¹³⁶⁰ Oribasius, *Synopsis ad Eustathium filium*, IX, 4, 1, 1.

¹³⁶¹ Oribasius, *Synopsis ad Eustathium filium*, IX, 4, 6, 1.

¹³⁶² Oribasius, *Synopsis ad Eustathium filium*, IX, 4, 4, 1–7, 1.

¹³⁶³ Oribasius, *Collectiones medicae*, X, 31, 1, 1–3, 6.

¹³⁶⁴ Oribasius, *Collectiones medicae*, X, 31, 1, 1–5.

¹³⁶⁵ Oribasius, *Collectiones medicae*, X, 31, 2, 3.

contain a single prohibition on the consumption of bread in any treatment. This follows from the fact that the baked product in question was considered as a food that contributed fundamentally (obviously provided that it was of the requisite quality) to the health of consumers. Thus, it was suitable for the diet of any average person, and was recommended even at an age when the body was less efficient – namely, we are referring to the fact that bread¹³⁶⁶ was also advised for the elderly, as we learn, for example, from the pertinent chapter of the *Libri ad Eunapium*¹³⁶⁷. This baked product, as we should surmise, could be administered in solid form, but also dipped in wine diluted with water¹³⁶⁸.

The recommendation to consume wheat baked products may, however, be found not only in the diets designed for people whose youth has long passed. Suggestions of this type are numerous in the writings of Oribasius, and a few examples will suffice. White wheat bread baked in the *ipnós* (due to the fact that it maintained more humidity than other varieties)¹³⁶⁹, as we learn from the *Collectiones medicae*, was recommended by Rufus of Ephesus in his deliberations concerning dietetic conditions that must be satisfied in order to maintain the ability to lead a proper sexual life¹³⁷⁰. This recommendation is understandable, for the properties of such baked products corresponded to the requirements of nature fit for intensive sexual intercourse, namely persons whose *krásis* is warm and humid¹³⁷¹; incidentally, this was typical of young persons.

The reference to the diet for the elderly has already shown us that baked products could be assimilated more easily if they were moistened first. Bread thus served was also mentioned in the *Collectiones medicae* when Oribasius analysed the output of Antyllus, or – to put it more precisely – the third book of his work devoted to therapeutic agents¹³⁷².

¹³⁶⁶ Oribasius, *Libri ad Eunapium*, I, 11, 4, 2.

¹³⁶⁷ Oribasius, *Libri ad Eunapium*, I, 11, 1, 1 – 19, 3.

¹³⁶⁸ Oribasius, *Libri ad Eunapium*, I, 11, 4, 6.

¹³⁶⁹ Oribasius, *Collectiones medicae*, VI, 38, 15, 5–6.

¹³⁷⁰ Oribasius, *Collectiones medicae*, VI, 38, 1, 1 – 30, 5.

¹³⁷¹ Oribasius, *Collectiones medicae*, VI, 38, 9, 1–2.

¹³⁷² Oribasius, *Collectiones medicae*, IV, 11, 1, 1 – 14, 4.

It contains a relatively detailed discussion concerning foods appropriate for persons who frequently fall ill¹³⁷³. In this, the most sizeable of Oribasius' works, we read that they should consume food that readily ripens in the stomach¹³⁷⁴ and is rapidly assimilated, but not excessively nutritious¹³⁷⁵, and also quickly excreted from the body through perspiration¹³⁷⁶. Otherwise, if it were to remain in the organism for an extended period of time, it could cause a fever¹³⁷⁷. In such instances, the author added, the best type of bread is *plytós* soaked in water¹³⁷⁸. When, in turn – as we should probably understand the extant text – light bread was unavailable, it was necessary to consider different options. Bread of the *semidalites* variety was not particularly recommended for the nutrition of seriously ill patients, for it was viewed as having too strong an effect. It was therefore necessary to select stale bread (logically, *aleurites*) made with leaven¹³⁷⁹. The inside of this baked product had to be thoroughly moistened with warm water. The author suggested that the insides of such baked products were better for this purpose, for the skin, being harder, is more difficult to eat and digest, and thus should not be utilised at all. The bread should be soaked until its volume increases and the yeast is washed out, which will occur once it loses the smell of leaven¹³⁸⁰. Again, we should surmise that the practice of serving bread in this way was common in the *ars medica* of the fourth century, for one can observe the return of Oribasius to the doctrines presented by Antyllus in his later writings, or more precisely in *Synopsis ad Eustathium filium*, in the chapter entitled *Skeustai trophón*¹³⁸¹, where he once again mentioned the wetting of stale bread¹³⁸²

¹³⁷³ Oribasius, *Collectiones medicae*, IV, 11, 1, 1.

¹³⁷⁴ Oribasius, *Collectiones medicae*, IV, 11, 1, 1–2.

¹³⁷⁵ Oribasius, *Collectiones medicae*, IV, 11, 1, 2.

¹³⁷⁶ Oribasius, *Collectiones medicae*, IV, 11, 1, 2–3.

¹³⁷⁷ Oribasius, *Collectiones medicae*, IV, 11, 1, 3.

¹³⁷⁸ Oribasius, *Collectiones medicae*, IV, 11, 1, 3–2, 1.

¹³⁷⁹ Oribasius, *Collectiones medicae*, IV, 11, 2, 5.

¹³⁸⁰ Oribasius, *Collectiones medicae*, IV, 11, 2, 5–3, 1.

¹³⁸¹ Oribasius, *Synopsis ad Eustathium filium*, IV, 37, 1, 1–9, 2.

¹³⁸² Oribasius, *Synopsis ad Eustathium filium*, IV, 37, 2, 1–2.

(preferably its inside) in water until it increases its volume and loses the smell of yeast¹³⁸³.

In medicine, bread was not only a food, but also an ingredient of numerous medications. Such applications are so numerous in the writings of Oribasius that it is best to quote just a few examples illustrating this issue. And thus, wheat bread was the component of enemas. In the chapter concerning clysters¹³⁸⁴, which contains the doctrines of Rufus of Ephesus, Oribasius (obviously following the discourse of the cited expert) included a broth (*aphépsēma*)¹³⁸⁵ from bread¹³⁸⁶ amongst the group of enemas with a mild action (*hapaloí klystéres*)¹³⁸⁷. These enemas, obtained by boiling of baked products, as Rufus wrote, have a certain nutritive element and were used – once the intestines had been purified of excrement – for persons with severe crises brought about by cardiological problems. These patients, the author added, usually have problems with the assimilation of foods, while at the same time their intestines are blocked with the products of metabolism, which cannot be expelled. The enema in question also had purgative properties, particularly if made from wheat products¹³⁸⁸. It should be added that bread was also used to make gargles. When a patient suffered from angina¹³⁸⁹ and the sickness led to the formation of painful eruptions in the throat (ulcers, *anadorá*), it was recommended to wash the throat with a broth made from bread and the water left over from moistening it (*apóbregma*)¹³⁹⁰.

Bread, however, is mentioned first and foremost as the ingredient of cataplasms, and Oribasius' writings contain plentiful information on the composition and applications thereof. The said agent was so significant in his times that bread poultices received a whole separate

¹³⁸³ Oribasius, *Synopsis ad Eustathium filium*, IV, 37, 2, 1 – 4, 1.

¹³⁸⁴ Oribasius, *Collectiones medicae*, VIII, 24, 1, 1 – 39, 3.

¹³⁸⁵ Oribasius, *Collectiones medicae*, VIII, 24, 1, 2.

¹³⁸⁶ Oribasius, *Collectiones medicae*, VIII, 24, 1, 4.

¹³⁸⁷ Oribasius, *Collectiones medicae*, VIII, 24, 1, 1 – 3, 1.

¹³⁸⁸ Oribasius, *Collectiones medicae*, VIII, 24, 13, 1 – 14, 2.

¹³⁸⁹ Oribasius, *Eclogae medicamentorum*, 35, 1, 1 – 4, 6.

¹³⁹⁰ Oribasius, *Eclogae medicamentorum*, 35, 1, 6.

chapter in the *Collectiones medicae*¹³⁹¹, incidentally based on doctrines borrowed from the treatises of Lycus. In this fragment, bread poultices were considered as having nearly universal application, for they were thought to act effectively in practically all types of inflammations¹³⁹². Furthermore, the author instructed his readers that this cataplasm was made in a great many varieties¹³⁹³. He commenced their enumeration by stating that the medication may be prepared by simply dipping and breaking up bread in cold water and adding some rose oil to the mass. Thus prepared, the cataplasm was considered effective in the treatment of erysipelas (*erysipelas*)¹³⁹⁴. Another recipe provided for the dipping of bread in *oxykraton*, and the poultice thus obtained was supposed to be even more effective than the former for the said ailment¹³⁹⁵. A bread cataplasm could also be made by dipping the baked product in hot water and adding olive oil; this was thought to soften inflammations that brought about callosities (swellings). The author added, however, that this concerned only those callosities that occurred without suppuration¹³⁹⁶. Continuing his discourse, the physician stated that instead of olive oil, one may add butter to the cataplasm without diminishing the therapeutic properties of the agent¹³⁹⁷. He further informed that another type of bread poultice was also used, and this was prepared as follows. The baked product was mixed with water into a liquid form, to which olive oil or butter was, and the gruel was boiled until it gained the appropriate thickness¹³⁹⁸. The medication thus prepared was considered a very good drug for the treatment of inflammations brought about by physical damage to the body. In addition, the medication was said to facilitate

¹³⁹¹ Oribasius, *Collectiones medicae*, IX, 26, 1, 1–10, 3.

¹³⁹² Oribasius, *Collectiones medicae*, IX, 26, 1, 1–2.

¹³⁹³ Oribasius, *Collectiones medicae*, IX, 26, 1, 2.

¹³⁹⁴ Oribasius, *Collectiones medicae*, IX, 26, 1, 2–2, 1.

¹³⁹⁵ Oribasius, *Collectiones medicae*, IX, 26, 2, 1–3, 1.

¹³⁹⁶ Oribasius, *Collectiones medicae*, IX, 26, 3, 1–4, 1.

¹³⁹⁷ Oribasius, *Collectiones medicae*, IX, 26, 4, 1–2.

¹³⁹⁸ Oribasius, *Collectiones medicae*, IX, 26, 5, 1–3.

the elimination of pus from the organism¹³⁹⁹. In the event of tendon contusion, some liquid tar was added to the product, which – as Lycus assessed – additionally improved the effectiveness of the medication. Such a cataplasm was also used to treat gout¹⁴⁰⁰. Another method of preparing this medicine consisted of pulverising the inside of bread to the consistency of the *áleuron* flour from which it was baked. The powder thus obtained was mixed with honey and a small quantity of water¹⁴⁰¹, and boiled to the appropriate consistency. Olive oil was then added to the mass¹⁴⁰²; it was considered that this agent was effective in *hypochóndria*¹⁴⁰³ ailments. We must add that the narrative concerning the nature of bread poultices is repeated throughout the writings of Oribasius, and another chapter devoted to these cataplasms, and their different compositions and actions, may be found in *Synopsis ad Eustathium filium*. The words used to present the said issue in this work are practically the same, but there is no information about the doctrinal source of the deliberations¹⁴⁰⁴.

The treatises of Oribasius indicate that *chóndros* was one of the basic agents impacting the behaviour and health of people living in his times. These groats were widely used in medicinal diets, and also became the basis for numerous medications *sensu stricto*. The first role is excellently illustrated by the data preserved by Oribasius, which were taken from the output of Dieuches. These prove without a doubt that the groats in question were considered a dish suitable for patients in a poor general condition, for they were usually administered in liquid form – and thus easier to assimilate by persons weakened by prolonged ailments – and did not constitute an encumbrance for the organism, providing proper and effective nourishment (if the necessary precautions were observed).

¹³⁹⁹ Oribasius, *Collectiones medicae*, IX, 26, 5, 3 – 6, 1.

¹⁴⁰⁰ Oribasius, *Collectiones medicae*, IX, 26, 6, 1 – 8, 1.

¹⁴⁰¹ Oribasius, *Collectiones medicae*, IX, 26, 9, 1 – 10, 1.

¹⁴⁰² Oribasius, *Collectiones medicae*, IX, 26, 8, 1–5.

¹⁴⁰³ Oribasius, *Collectiones medicae*, IX, 26, 8, 5 – 9, 1.

¹⁴⁰⁴ Oribasius, *Synopsis ad Eustathium filium*, III, 78, 1, 1 – 7, 3.

And thus, *chóndros* groats were used in numerous *klýsmata*, i.e. washes and enemas applied internally. In book eight of *Collectiones medicae*¹⁴⁰⁵, for example, we find a piece of advice originating from Rufus of Ephesus stating that a broth (*aphépsēma*) made from *chóndros*¹⁴⁰⁶ should be used in this manner. Although the author did not specify the application, he added that in his classification a liquid of this type belonged to the group of mild enemas (as opposed to *klýsmata* with a strong action)¹⁴⁰⁷. According to Rufus, such clysters from a *chóndros*¹⁴⁰⁸ broth were also capable of strengthening a weakened organism, and were applied once the intestines had been cleansed of excrement. This method of nourishment was applied to persons who had experienced severe health crises, for example in the wake of serious cardiological ailments. Such patients, as we should probably understand the author, were unable to effectively assimilate foods. The enemas listed earlier were also attributed with having a purgative and loosening action on the bowels, in particular if – as Rufus added – they were made from wheat products. Furthermore, they facilitated the healing of ulcers in the alimentary tract¹⁴⁰⁹. This application has presented in other texts besides *Collectiones medicae*. In *Synopsis ad Eustathium filium*, for example, Oribasius wrote that the broth known as *chylós* from *chóndros*¹⁴¹⁰ was used, following the removal of excrement, as a nutritive agent. In all likelihood the author was referring to an enema, for he subsequently recommended the said agent as effective for superficial ulcerations or damage to the intestines¹⁴¹¹.

Chóndros was also used in cataplasms. When discussing this issue, we should start off by stating the groats in question¹⁴¹² were listed in

¹⁴⁰⁵ Oribasius, *Collectiones medicae*, VIII, 24, 1, 1 – 39, 3.

¹⁴⁰⁶ Oribasius, *Collectiones medicae*, VIII, 24, 1, 2.

¹⁴⁰⁷ Oribasius, *Collectiones medicae*, VIII, 24, 1, 1–2.

¹⁴⁰⁸ Oribasius, *Collectiones medicae*, VIII, 24, 13, 2.

¹⁴⁰⁹ Oribasius, *Collectiones medicae*, VIII, 24, 13, 1 – 14, 2.

¹⁴¹⁰ Oribasius, *Synopsis ad Eustathium filium*, I, 19, 3, 1.

¹⁴¹¹ Oribasius, *Synopsis ad Eustathium filium*, I, 19, 3, 1–3.

¹⁴¹² Oribasius, *Collectiones medicae*, XIV, 40, 3, 3.

book fourteen of *Collectiones medicae* as an agent that by its nature was suitable for poultices, i.e. belonging to the *emplastiká*¹⁴¹³. A more detailed description of its properties may be found in the fourteenth book of Oribasius' *opus magnum*. *Chóndros* is characterised therein as a substance suitable for poultices and stimulating digestive processes (*pépsis*), and, since its properties are similar to wheat, it may be used as a carrier for strongly acting drugs¹⁴¹⁴. The consequence of such an evaluation is the classification in the *Collectiones medicae* of the analysed groats¹⁴¹⁵ amongst *sympeptiká*¹⁴¹⁶, that is, substances facilitating digestive processes in the organism. The products in question have been similarly pigeon-holed¹⁴¹⁷ in *Synopsis ad Eustathium filium*¹⁴¹⁸. It is also of significance that *chóndros* helped eliminate pus from the organism. For this reason, wheat groats were regularly mentioned amongst drugs from the *ekpyetiká* group, which is the case¹⁴¹⁹, for example, in *Collectiones medicae*¹⁴²⁰. *Chóndros* was assessed therein as having a stronger drying action than *áleuron*. For this reason it was not considered as the optimal drug for relatively dry inflammations, being better suited to ailments caused by excess humidity¹⁴²¹. Let us add that the same classification was applied to *chóndros*¹⁴²² in the treatise for Oribasius' son, Eustathius¹⁴²³. Finally, we should give an example of a medication of this type. Lycus, mentioned on numerous occasions, left us a recipe for cataplasms, the basic ingredient of which was wheat groats. First, they were boiled and pounded. Next, gum resin – *kómmiti* – and incense were added. Such a poultice was

¹⁴¹³ Oribasius, *Collectiones medicae*, XIV, 40, 1, 1 – 10, 3.

¹⁴¹⁴ Oribasius, *Collectiones medicae*, XV, 1:22, 18, 1 – 19, 1.

¹⁴¹⁵ Oribasius, *Collectiones medicae*, XIV, 14, 36, 1, 4.

¹⁴¹⁶ Oribasius, *Collectiones medicae*, XIV, 14, 36, 1, 1–5.

¹⁴¹⁷ Oribasius, *Synopsis ad Eustathium filium*, I, 25, 1, 3.

¹⁴¹⁸ Oribasius, *Synopsis ad Eustathium filium*, II, 25, 1, 1–3.

¹⁴¹⁹ Oribasius, *Collectiones medicae*, XIV, 37, 10, 1.

¹⁴²⁰ Oribasius, *Collectiones medicae*, XIV, 37, 1, 1 – 17, 6.

¹⁴²¹ Oribasius, *Collectiones medicae*, XIV, 37, 10, 1–3.

¹⁴²² Oribasius, *Synopsis ad Eustathium filium*, II, 26, 1, 2.

¹⁴²³ Oribasius, *Synopsis ad Eustathium filium*, II, 26, 1, 1–3.

considered good for abrasions of the auricles, and also lichens (*leichén*) and scabies¹⁴²⁴.

Ámylon is mentioned on numerous occasions in the context of therapeutic methods and agents analysed by Oribasius. And thus, starch¹⁴²⁵ appears in the succinct and topically varied recommendations of Dieuches, cited thereby, concerning the nourishment of the seriously ill, who are unable to consume solid foods¹⁴²⁶. Amongst a plethora of information relating to recipes, we find a few suggestions concerning the applications of starch¹⁴²⁷, and one of these is addressed to sick persons suffering from a fever accompanied by diarrhoea¹⁴²⁸. The physician advised that in such instances *ámylon* should be mixed with lentils, for this dish had a positive effect¹⁴²⁹ on the alimentary tract¹⁴³⁰. We may surmise that the author was referring to the addition of starch to lentil soup, i.e. to *phaké*. Dieuches also recommended dissolving *ámylon* in milk, pouring the starch thus obtained into water, and boiling the liquid¹⁴³¹, as well as the preparation of *ámylon* in water with no additives¹⁴³². Furthermore, he wrote that patients suffering from dysentery and a nasal catarrh that was accompanied by a cough¹⁴³³ ought to consume a gruel comprising ten drachms of *ámylon* dissolved in four *kotýlai* of water¹⁴³⁴.

In the majority of treatments described in sources, however, starch was considered not as a foodstuff, but rather as a component of numerous pharmaceuticals. Due to the vast amount of available information, we shall refer only to certain selected data. In Oribasius' writings we

¹⁴²⁴ Oribasius, *Collectiones medicae*, IX, 32, 1, 1 – 2, 2.

¹⁴²⁵ Oribasius, *Collectiones medicae*, IV, 7, 24, 1.

¹⁴²⁶ Oribasius, *Collectiones medicae*, IV, 7, 1, 1 – 38, 4

¹⁴²⁷ Oribasius, *Collectiones medicae*, IV, 7, 24, 1 – 25, 1.

¹⁴²⁸ Oribasius, *Collectiones medicae*, IV, 7, 24, 2.

¹⁴²⁹ Deliberations concerning *phaké* suggest that the objective was to dry out excess juices in the patient's stomach.

¹⁴³⁰ Oribasius, *Collectiones medicae*, IV, 7, 24, 2–3.

¹⁴³¹ Oribasius, *Collectiones medicae*, IV, 7, 24, 3–4.

¹⁴³² Oribasius, *Collectiones medicae*, IV, 7, 24, 4.

¹⁴³³ Oribasius, *Collectiones medicae*, IV, 7, 24, 5.

¹⁴³⁴ Oribasius, *Collectiones medicae*, IV, 7, 24, 5 – 25, 1.

find hints concerning the application of the substance in question in enemas. For example, in the lengthy chapter of the *Collectiones medicae* that presents various recipes for enemas borrowed by Oribasius from the works of Rufus of Ephesus¹⁴³⁵ there is a formula containing *ámylon*¹⁴³⁶. The medication elaborated in accordance therewith was used for ulcerations of the alimentary tract that were caused by factors other than the inflow of harmful juices. As a matter of fact, the author was writing about two enemas. The first was made of goat's or cow's milk with buckthorn (*Rhamnus petiolaris* Boiss.), earth from Samos or *ámylon*¹⁴³⁷ itself, while the second (however not containing starch) comprised *ptisáne pyríne* with burnt tassel hyacinth (*Muscari comosum* L.) or wormwood (*Artemisia absinthium* L.)¹⁴³⁸.

The analysed treatises indicate that starch¹⁴³⁹ was also included in the formula for a drug that was intended to treat ulcers in the kidneys or urinary bladder. A certain number of recipes for this medication were collected by Oribasius in the ninth book of the *Collectiones medicae*¹⁴⁴⁰. Apart from *ámylon*, the drug contained flaxseed, cucumber seeds (*Cucumis sativus* L.), white poppy and tragacanth (*Astragalus parnassi* L.). The ingredients were mixed to form *trochískos*¹⁴⁴¹. It is worth noting that an identical pharmaceutical formula, including *ámylon*¹⁴⁴², may be found in the *Libri ad Eunapium*¹⁴⁴³. In the *Eclogae medicamentorum*, in turn, Oribasius wrote down a recipe for a medication for persons suffering from oral haemorrhages (*haimoptyikoí*). This is one of a whole group of pharmacological formulas used to treat this ailment enumerated by the author of the treatise¹⁴⁴⁴. The said medication was a tablet with

¹⁴³⁵ Oribasius, *Collectiones medicae*, VIII, 24, 1, 1 – 67, 11.

¹⁴³⁶ Oribasius, *Collectiones medicae*, VIII, 24, 54, 2.

¹⁴³⁷ Oribasius, *Collectiones medicae*, VIII, 24, 54, 1–2.

¹⁴³⁸ Oribasius, *Collectiones medicae*, VIII, 24, 54, 2 – 55, 1.

¹⁴³⁹ Oribasius, *Synopsis ad Eustathium filium*, IX, 24, 22, 1

¹⁴⁴⁰ Oribasius, *Synopsis ad Eustathium filium*, IX, 24, 1, 1 – 25, 2.

¹⁴⁴¹ Oribasius, *Synopsis ad Eustathium filium*, IX, 24, 20, 1 – 22, 1.

¹⁴⁴² Oribasius, *Libri ad Eunapium*, IV, 100, 20, 3.

¹⁴⁴³ Oribasius, *Libri ad Eunapium*, IV, 100, 20, 1 – 22, 1.

¹⁴⁴⁴ Oribasius, *Eclogae medicamentorum*, 30, 1, 1 – 5, 4.

a complex composition – as the others also termed *trochiskos* – which was made from corals, resin of the tree *Boswellia carterii* L., earth from Samos, wild pomegranate flower, *ámylon*¹⁴⁴⁵ and numerous other ingredients. Oribasius also recorded Antyllus' recipe (in the second chapter of the *Collectiones medicae*¹⁴⁴⁶) for so-called *kollyrion*, that is, an ointment intended for ophthalmological treatments. According to this recommendation, when one's sight started to weaken, and this was accompanied by lacrimation and suppuration of the eyes (this ailment was known as *ophthalmía*), in particular when the sickness intensified during the harvest season and if it was coupled with considerable pain¹⁴⁴⁷, it was necessary to put the recommended agent, namely *kollyrion* from *ámylon*¹⁴⁴⁸, on the eyelids. However neither Antyllus, nor Oribasius gave a detailed recipe, thus suggesting that the medication was commonly known. Without a doubt, therefore, the ailment itself was also common, mainly seasonally. It may be that this medication was identical to agents proposed by Galen, discussed in connection with the analysis of his recipes for drugs containing starch.

As regards works from the sixth century, we must state that the term *pyrós* does not appear as frequently in the output of the next author, Aetius of Amida, in the context of descriptions of medical procedures. We should keep in mind, however, that wheat products were mentioned thereby in this context a great many times. Proceeding to data directly referring to the term *pyrós*, it is worth noting that when discussing the properties of common wheat, its external usage as a cataplasm has already been mentioned. An illustration of this is Aetius' advice that in the event of toothache caused by chilling¹⁴⁴⁹ one should use a hot poultice from roasted wheat¹⁴⁵⁰ with bay tree berries and salt¹⁴⁵¹.

¹⁴⁴⁵ Oribasius, *Eclogae medicamentorum*, 30, 2, 3.

¹⁴⁴⁶ Oribasius, *Collectiones medicae*, X, 23, 20, 1 – 30, 1.

¹⁴⁴⁷ Oribasius, *Collectiones medicae*, X, 23, 20, 2–5.

¹⁴⁴⁸ Oribasius, *Collectiones medicae*, X, 23, 20, 5.

¹⁴⁴⁹ Aetius of Amida, VIII, 30, 1–48.

¹⁴⁵⁰ Aetius of Amida, VIII, 30, 40.

¹⁴⁵¹ Aetius of Amida, VIII, 30, 39–41.

Aleuron is a product that in *Iatricorum libri* is very often listed as an ingredient of agents with therapeutic functions. The action of such medications was connected to two properties of the product in question. First of all, it was conducive to the transformation of humours (their ‘ripening’, that is, self-digestion)¹⁴⁵², and thus belonged to the *sympeptiká*, while in addition it facilitates the elimination of pus, and therefore was listed amongst the *ekpyetiká*¹⁴⁵³. Both classifications are known from the findings of other physicians.

Information concerning the application of *semídalís* in individual medical procedures is sufficiently abundant to make a precise enumeration and analysis thereof require a separate study. For this reason, only *exempla* will be cited in the present text. We should start off by stating that *semídalís*, as a result of having specific dietetic and therapeutic properties, was prescribed in specific medical diets. It should be remembered that when discussing data concerning its preparation and analysing its dietetic properties, we have already stated that wheat groats of this type (as Aetius of Amida maintained – prepared without honey¹⁴⁵⁴ and boiled in fatty meat broths¹⁴⁵⁵) were recommended in the diet for persons suffering from an insatiable hunger caused by excessive diaphorase (*kynódes órexís*). The title of the chapter indicates that this suggestion was adopted by the author of *Iatricorum libri* from Philumenus¹⁴⁵⁶. The very same product¹⁴⁵⁷ was also recommended in the diet for diabetics¹⁴⁵⁸ (Aetius of Amida repeated this after Galen). *Semídalís plyté*¹⁴⁵⁹ in turn was considered a food suitable in the diet of persons with kidney ailments that caused the patient to excrete urine with blood and pus. The pertinent treatment described by Aetius of Amida was proposed on

¹⁴⁵² Aetius of Amida, I, 380, 27–28.

¹⁴⁵³ Aetius of Amida, II, 222, 2.

¹⁴⁵⁴ Aetius of Amida, IX, 21, 26.

¹⁴⁵⁵ Aetius of Amida, IX, 21, 26–27.

¹⁴⁵⁶ Aetius of Amida, IX, 21, 1–32.

¹⁴⁵⁷ Aetius of Amida, XI, 1, 48.

¹⁴⁵⁸ Aetius of Amida, XI, 1, 1–67.

¹⁴⁵⁹ Aetius of Amida, XI, 18, 51.

the basis of data borrowed from Rufus of Ephesus¹⁴⁶⁰. Namely, the patient was administered cow's milk, and – as an additional food – among others *ptisáne*, *rhóphema* from *ámylon*, and the *semídalís plyté* in question, boiled with milk¹⁴⁶¹.

The term that we are discussing also occurs frequently in recipes for numerous medications used externally. *Semídalís*¹⁴⁶² (and *gyris*) is a component (likely, in this case) of a plaster called *kólla*¹⁴⁶³. This drug could also be used for therapeutic purposes. This was so, because it was listed amongst the *emplastiká*¹⁴⁶⁴ and *peptiká*¹⁴⁶⁵. *Semídalís*¹⁴⁶⁶ was also mentioned in the discussion concerning compresses; specifically, ones applied to the temples after a pathological influx of humours to the eyes from veins located deep in the head, accompanied by headaches and spasms¹⁴⁶⁷. The text indicates that in such instances use was made of compresses from *semídalís*, eggs and incense¹⁴⁶⁸, but that this medication was not applied in the case of inflammations (*phlegmoné*). If the compress dried, it could cause the expansion of veins, and thus – stated the author – only intensify the influx of juices being the root cause of the ailment. Instead, Aetius of Amida recommended using styptic drugs, which narrowed the veins and thus blocked the inflow of humours. *Semídalís*¹⁴⁶⁹ was also used to make agents that in modern times we would classify as cosmetics, for they protected the skin against excess sunshine and the effects of wind¹⁴⁷⁰. Aetius of Amida maintained that in order to

¹⁴⁶⁰ Aetius of Amida, XI, 18, 1–77.

¹⁴⁶¹ Aetius of Amida, XI, 18, 52.

¹⁴⁶² Aetius of Amida, I, 211, 1.

¹⁴⁶³ Aetius of Amida, I, 211, 1–3.

¹⁴⁶⁴ Such products could be used as compresses.

¹⁴⁶⁵ Aetius of Amida, I, 211, 2. Substances of this type were conducive to digestive processes.

¹⁴⁶⁶ Aetius of Amida, VII, 96, 15.

¹⁴⁶⁷ Aetius of Amida, VII, 96, 14–16.

¹⁴⁶⁸ Aetius of Amida, VII, 96, 1–38.

¹⁴⁶⁹ Aetius of Amida, VIII, 3, 8.

¹⁴⁷⁰ Aetius of Amida, VIII, 3, 1–31.

make such a preparation¹⁴⁷¹, one should submerge *semídalís* in water, leave it be until the grains fell to the bottom, strain the liquid through a cloth, and mix the material deposited on the cloth with egg white until a cream with the consistency of honey was obtained. This agent was rubbed into the skin of the face before stepping out into the sun, and washed off after returning indoors.

Bread was one of the basic medications constituting the subject of theoretical debate and practical utilisation propagated by Aetius of Amida. We may conclude as much, for *ártos* of various types often appears as a component of drugs and the element of diets prescribed by Aetius. This fact may be illustrated by characteristic examples. Bread of the *ka-tharós* category, which incidentally appears in the medical encyclopaedia in question under many names, is very frequently used for maintaining or restoring the health of Aetius' patients. First and foremost, it was a basic food for every patient who could assimilate solid products. It comes as no surprise, therefore, that we find it in numerous diets prescribed in pathological states. For example, the administration of wheat bread¹⁴⁷², *chóndros* and *chylós ptisánes* was recommended by Aetius of Amida in the event of fevers that weakened persons of a dry nature¹⁴⁷³. The baked product of this type¹⁴⁷⁴ was also served as a food to people suffering from weakness caused by the predominance of thin humours in their organisms¹⁴⁷⁵. The objective of therapy was therefore to provide a medication that would thicken them or at least behave neutrally, so as to reduce the excessively rapid excretion of nutritive substances through perspiration¹⁴⁷⁶.

As regards the numerous varieties of white baked products, Aetius of Amida had the most to say about bread which he called *kribanites*.

¹⁴⁷¹ Aetius of Amida, VIII, 3, 8–12.

¹⁴⁷² Aetius of Amida, V, 92, 55–56.

¹⁴⁷³ Aetius of Amida, V, 92, 1–126.

¹⁴⁷⁴ Aetius of Amida, V, 99, 25.

¹⁴⁷⁵ Aetius of Amida, V, 99, 1–33.

¹⁴⁷⁶ Aetius of Amida, V, 99, 1–2.

Loaves of this type¹⁴⁷⁷ were therefore recommended by Posidonius as appropriate food in the event of an excess of blood in the organism, and his recommendation was repeated by Aetius of Amida in book six of his *Iatricorum libri*¹⁴⁷⁸. Baked products from the *kribanon*¹⁴⁷⁹ were also prescribed in the diet for *kolikoi*, i.e. for patients suffering from frequent and painful ailments of the alimentary tract, commonly known as colic pains¹⁴⁸⁰. In any case, in such instances the recommendation was applicable to all other foods appropriate for a reducing diet. We also read that if no *kribanites* bread was available, one could consume *ipnites*¹⁴⁸¹ baked products. The baked product consumed – as Aetius of Amida advised – should be neither too dry, nor warm¹⁴⁸². Furthermore, *kribanites*¹⁴⁸³ found a place in the diet for *koiliakoi*¹⁴⁸⁴, that is, for persons with chronic ailments of the alimentary tract.

The text of the *Iatricorum libri* does not, however, imply that baked products of the *rhyparós* variety were commonly used in therapeutic procedures. This dark bread¹⁴⁸⁵, due to its low nutritive value¹⁴⁸⁶, was nevertheless recommended by Aetius in the event of excessive tissue growth (i.e. obesity), that is, for a condition termed *polysarkía*¹⁴⁸⁷. We may add that such baked products, because of the presence therein of *pityra*, could also be applied in diets aimed at the intense stimulation of the intestines. Bread of the *pityrites* variety has also not been properly mentioned as an agent facilitating therapy. Frequently, however, therapeutic use was made of bran (*pityra*). Returning to *pityra* bread, it is

¹⁴⁷⁷ Aetius of Amida, VI, 10, 99–100.

¹⁴⁷⁸ Aetius of Amida, VI, 10, 1–116.

¹⁴⁷⁹ Aetius of Amida, IX, 30, 82.

¹⁴⁸⁰ Aetius of Amida, IX, 30, 80–158.

¹⁴⁸¹ Aetius of Amida, IX, 30, 82.

¹⁴⁸² Aetius of Amida, IX, 30, 81–82.

¹⁴⁸³ Aetius of Amida, IX, 35, 179.

¹⁴⁸⁴ Aetius of Amida, IX, 35, 158–203.

¹⁴⁸⁵ Aetius of Amida, IV, 32, 24–25.

¹⁴⁸⁶ Aetius of Amida, IV, 32, 23–25.

¹⁴⁸⁷ Aetius of Amida, IV, 32, 1–34.

worth noting that its¹⁴⁸⁸ strong purgative properties¹⁴⁸⁹, stronger even than those of *rhyparós* bread, must have determined the application of this product in ailments that led to constipation or obesity, mentioned previously.

Passing on to medications *sensu stricto*, it should be stated that wheat bread was considered first and foremost as an effective agent leading to the elimination of pus from the organism. For this reason Aetius of Amida classed baked products of this type amongst the *ekpyetiká*¹⁴⁹⁰. In order therefore to remove pus, bread compresses were usually made and applied to points of the body undergoing treatment. It was also thought that cataplasms from wheat bread had diaphoretic properties¹⁴⁹¹, because they contained salt and yeast. The latter, as the author of *Iatricorum libri* explained, had the ability to attract matter and force it to the surface of the organism even from a considerable depth¹⁴⁹². This theory had already been noted by the predecessors of the author of the analysed medical encyclopaedia.

It should be stated that Aetius of Amida wrote in some detail about the application of cataplasms made from the discussed food¹⁴⁹³. He considered this medication as the most effective as regards ailments called *phlegmonai*. What is significant, he stressed that he was aware of numerous recipes therefor, and presented three basic formulas. According to his testimony, the simplest form of compress¹⁴⁹⁴ was bread soaked in cold water, mixed with a small quantity of rose oil and a coriander broth. This was suitable for use as a cataplasm in *erysipelas*¹⁴⁹⁵ inflammations. The physician further added that if the bread was soaked in wine vinegar instead of water, the effectiveness of the medication's

¹⁴⁸⁸ Aetius of Amida, II, 265, 12.

¹⁴⁸⁹ Aetius of Amida, II, 265, 1–39.

¹⁴⁹⁰ Aetius of Amida, II, 222, 1–3.

¹⁴⁹¹ Aetius of Amida, I, 338, 4–5.

¹⁴⁹² Aetius of Amida, I, 338, 5–6.

¹⁴⁹³ Aetius of Amida, III, 177, 1–22.

¹⁴⁹⁴ Aetius of Amida, III, 177, 3–6.

¹⁴⁹⁵ Aetius of Amida, III, 177, 5.

action would increase. The second recipe¹⁴⁹⁶ entailed the use of fat as an important component of the analysed drug. Either butter or olive oil was applied. If the former was added, explained the physician, the medication was more effective in inflammations caused by undigested juices accumulated in a particular part of the body¹⁴⁹⁷. The recipe was as follows. Bread was soaked in water until a thin solution called *chylós* was obtained. Olive oil or butter was added, and the liquid was boiled until the proper thickness was attained. Such a cataplasm was considered the most effective for inflammations caused by injuries. It was also used to channel pus away from locations where it accumulated¹⁴⁹⁸. When, in turn, one suffered tendon damage¹⁴⁹⁹, Aetius recommended adding liquid tar thereto, and this form of the compress was also appropriate for gout¹⁵⁰⁰. The third recipe¹⁵⁰¹ required pulverising of the inside of stale bread. When this was as fine as the flour¹⁵⁰² from which it had been baked, one should add it to boiling honey and keep it on the fire until the desired consistency was attained. Subsequently, olive oil should be poured into the mass and, once it was thoroughly mixed, the cataplasm was ready. It was recommended to add some water to the boiling honey. Such a compress was considered effective for abdominal inflammations (*hypochóndria*)¹⁵⁰³.

Finally, we would like to discuss an interesting drug *sensu stricto*, which at the same time was a food. Aetius of Amida devoted an entire chapter of the third book of his treatise to bread known as *boukeláton*

¹⁴⁹⁶ Aetius of Amida, III, 177, 6–14.

¹⁴⁹⁷ Aetius of Amida, III, 177, 7.

¹⁴⁹⁸ Aetius of Amida, III, 177, 10–11.

¹⁴⁹⁹ Aetius of Amida, III, 177, 11–12.

¹⁵⁰⁰ Aetius of Amida, III, 177, 13–14.

¹⁵⁰¹ Aetius of Amida, III, 177, 14–20.

¹⁵⁰² Aetius of Amida, III, 177, 15. The author is referring to *semidalis*. It may be, however, that he also had in mind a different type, for *semidalis* appears only in one recipe in the general meaning, i.e. as a flour used to bake the raw material for the cataplasm.

¹⁵⁰³ Aetius of Amida, III, 177, 18–19.

*kathartikón*¹⁵⁰⁴. Generally speaking, this was simply twice-baked bread, but – as the author wrote – with both nutritive and purgative properties (he maintained that it served to remove bile)¹⁵⁰⁵. It was baked in a *kribanon* from *semidalis*¹⁵⁰⁶, with the addition of yeast, bindweed seeds, fennel seeds, Roman caraway leaves, pepper, salt and *elaiógaron*. In order to prepare it, the additives were pulverised, mixed with the leaven, formed into loaves and baked. It was consumed until one was satiated, preferably as the first meal of the day.

Due to specific dietetic and therapeutic properties of *chóndros*, its consumption was either recommended or discouraged, depending on the diet. For example, Aetius of Amida suggested that the groats in question should not be eaten¹⁵⁰⁷ in nutritional schema appropriate for the elderly¹⁵⁰⁸. This was so because they ought to avoid foods that create viscous and thick juices in the body¹⁵⁰⁹. Obviously, this piece of advice also meant that such food would be appropriate for those that are young (and, as dietetic logic would suggest, for those that lead a physically active lifestyle). It is also self-evident that for such a diet no other wheat products with similar properties were recommended, such as *pyrói hephthoí*, *semidalis*, *ítria*, *ipnites* bread and so forth. *Chóndros*¹⁵¹⁰, or rather the broth (or the soup herein referred to as *rhóphema*) made therefrom was recommended by Aetius of Amida for fevers plaguing people of a dry nature. He added that this recommendation was appropriate only when a pathological state was not accompanied by inflammation (*phlegmonai*) and the fermentation of organic juices, i.e. sepsis (*sépsis*)¹⁵¹¹ had not yet occurred. Since at the same time the author recommended the consumption of a thin *ptisáne* (i.e. *chylós*

¹⁵⁰⁴ Aetius of Amida, III, 101, 1–8.

¹⁵⁰⁵ Aetius of Amida, III, 101, 8.

¹⁵⁰⁶ Aetius of Amida, III, 101, 1.

¹⁵⁰⁷ Aetius of Amida, IV, 30–48.

¹⁵⁰⁸ Aetius of Amida, IV, 30, 1–89.

¹⁵⁰⁹ Aetius of Amida, IV, 48–48.

¹⁵¹⁰ Aetius of Amida, V, 92, 55.

¹⁵¹¹ Aetius of Amida, V, 92, 1–126.

ptisánes)¹⁵¹², we may surmise that patients with similar conditions also received *ptisáne pyríne*. These dishes ensured proper hydration, just as the cold beverages recommended by the physician¹⁵¹³.

Chóndros was also considered to be a substance the brought about humoral transformation. In consequence of this opinion, these groats¹⁵¹⁴ were classed by Aetius of Amida amongst the *sympeptiká*¹⁵¹⁵, that is, substances facilitating the digestion of organic juices. Usually these were ointments, cataplasms or gargles. For this reason we find *chóndros* mentioned as a component of gargles, which were supposed to be effective in the treatment of tonsillitis (this advice came from the writings of Philumenus¹⁵¹⁶). This refers to the usage of the broth obtained from the groats in question¹⁵¹⁷ as a wash. *Chylós* from *chóndros*¹⁵¹⁸ was also recommended as a very effective gargle¹⁵¹⁹ for sore throats in the fragment borrowed by Aetius from the treatises of Archigenes¹⁵²⁰. The author of the *Iatricorum libri* also gave a recipe for a medication for persons with vocal problems, and in particular for orators¹⁵²¹. This was prepared by boiling leeks in water until one third of the initial volume had evaporated. The vegetables were then discarded and a thin broth (*chylós*) from *chóndros*¹⁵²², honey and yolks were added to the liquid; once all these ingredients had been properly mixed, the concoction was kept on the fire until once again one third of the volume boiled off. Next, it was necessary to strain the liquid and continue boiling, mixing it with a dill stalk. The medication was to be administered in the quantity of one *kochliáron* in the morning and in the evening. Finally, the presence

¹⁵¹² Aetius of Amida, V, 92, 54.

¹⁵¹³ Aetius of Amida, V, 92, 56.

¹⁵¹⁴ Aetius of Amida, II, 221, 3.

¹⁵¹⁵ Aetius of Amida, II, 221, 1–4.

¹⁵¹⁶ Aetius of Amida, VIII, 48, 1–80.

¹⁵¹⁷ Aetius of Amida, VIII, 48, 34.

¹⁵¹⁸ Aetius of Amida, VIII, 50, 117.

¹⁵¹⁹ Aetius of Amida, VIII, 50, 115.

¹⁵²⁰ Aetius of Amida, VIII, 50, 47–235.

¹⁵²¹ Aetius of Amida, VIII, 56, 60–66.

¹⁵²² Aetius of Amida, VIII, 56, 63.

of *chóndros* in Aetius' list of *ekpyetika*¹⁵²³ proves that it was considered an effective means of stimulating the elimination of pus from the body. Thus, the groats were suitable for agents applied externally, which stimulated the growth and eruption of ulcers.

As regards the writings of the next author, Alexander of Tralles, pertaining to matter of interest in this fragment of the present book, we must state that although he mentioned various *áleura* in connection with numerous medical procedures, mainly regarding compresses, *áleuron pyriron* appears only once. The physician stated the flours from wheat¹⁵²⁴ or barley were used in cataplasms applied for surface inflammatory states, in particular when it was necessary to effect the removal of pus from these points¹⁵²⁵. The flour was boiled in *hépsēma*, or in a sweet wine that was completely free of acidity. The therapeutics of Alexander of Tralles contains a lot of information on the applications of *gýris*. It appears as the ingredient of numerous cataplasms, which were applied externally, and especially in conditions known as *phlegmonai* (usually painful). These medications were supposed to stimulate the digestion of juices causing the ailments in question, contribute to diaphorase and, if required, bring about the growth of ulcers, which facilitated the removal of pus from the organism. A few examples will suffice to illustrate these applications of *gýris*. Thus, the physician maintained that *áleuron* from wheat and *gýris*¹⁵²⁶ were used in medications applied in the event of surface inflammatory states, in particular when it was necessary to effect the removal of pus from specific points of the body¹⁵²⁷. *Gýris*¹⁵²⁸ also appears independently and as the main ingredient of a drug, which according to the author was effective in painful inflammatory states that could turn into suppurative inflammations¹⁵²⁹. Its other ingredients

¹⁵²³ Aetius of Amida, II, 222, 1–3.

¹⁵²⁴ Alexander of Tralles, *Therapeutica*, 85, 12, vol. II.

¹⁵²⁵ Alexander of Tralles, *Therapeutica*, 85, 10–18, vol. II.

¹⁵²⁶ Alexander of Tralles, *Therapeutica*, 85, 15, vol. II.

¹⁵²⁷ Alexander of Tralles, *Therapeutica*, 85, 10–18, vol. II.

¹⁵²⁸ Alexander of Tralles, *Therapeutica*, 87, 7, vol. II.

¹⁵²⁹ Alexander of Tralles, *Therapeutica*, 87, 1–15, vol. II.

included colophon resin, incense and a few minor additives. Another agent of this type¹⁵³⁰ was comprised, apart from *gyris*¹⁵³¹, of animal fat, goose's eggs and *hépsema*. Having given a clear instruction for the preparation of the drug, the physician added that such a compress effectively removes pus, causes the digestion of raw juices, and – finally – ensures the near complete elimination of any traces of ulcers.

In the writings of Alexander of Tralles, bread continues to function as one of the basic measures used in the treatment of patients. In order to illustrate this hypothesis, we shall once again refer to examples that concern white baked products (made from *silignis* wheat and baked in a *kribanon*), as well as black. The latter, which fact is worth emphasising, are mentioned considerably less frequently. And thus, in the treatment of internal haemorrhoids¹⁵³² Alexander provided for the utilisation of an agent that was made of white bread¹⁵³³ soaked in *garum*, and subsequently burned in a new vessel, pulverised and, finally, mixed with wine. This medication was also effective in the treatment of external haemorrhoids known as *exochádes*¹⁵³⁴. In addition, when redness appeared around the rectum (termed *erysipelas*)¹⁵³⁵, Alexander recommended a cataplasm of white bread¹⁵³⁶ with additives such as – among others – rose oil and saffron. This agent, as the physician stated, also acted on a certain type of gout¹⁵³⁷. Bread of the *silignites* variety is mentioned on a few occasions as an element of medical procedures described in the writings of Alexander of Tralles. When the physician was analysing methods of preventing hair loss¹⁵³⁸ and arrived at the diet¹⁵³⁹ that should be observed by persons suffering from this affection, he pre-

¹⁵³⁰ Alexander of Tralles, *Therapeutica*, 115, 1–13, vol. II.

¹⁵³¹ Alexander of Tralles, *Therapeutica*, 115, 4, vol. II.

¹⁵³² Alexander of Tralles, *Therapeutica*, 59, 9, 1–11, 8, vol. III.

¹⁵³³ Alexander of Tralles, *Therapeutica*, 59, 9, 1–11, 8, vol. III.

¹⁵³⁴ Alexander of Tralles, *Therapeutica*, 59, 10, 1–3, vol. III.

¹⁵³⁵ Alexander of Tralles, *Therapeutica*, 59, 5, 1–5, vol. III.

¹⁵³⁶ Alexander of Tralles, *Therapeutica*, 59, 5, 2, vol. III.

¹⁵³⁷ This was hot gout.

¹⁵³⁸ Alexander of Tralles, *Therapeutica*, 447, 9–451, 21, vol. I.

¹⁵³⁹ Alexander of Tralles, *Therapeutica*, 447, 21–451, 6, vol. I.

scribed lettuce, mallow, eggs and *silignítes*¹⁵⁴⁰ bread soaked in *eúkraton* or in cold water, as well as melons, cucumbers and numerous other food-stuffs¹⁵⁴¹. Furthermore, when Alexander started to research methods of treatment for persons with colic pains¹⁵⁴², and in his narrative passed on to ailments of this type caused by cold juices¹⁵⁴³, he recommended eating *silignítes*¹⁵⁴⁴ bread boiled in a broth prepared from celery root, dill or caraway with the addition of a drop of wine, the internal structure of which was characterised by small particles, and which could be neither too sweet nor too dry. The author further wrote that he had heard of an instance when bread had been boiled in *kondíton* wine with a large quantity of pepper and turned out to be a most effective therapeutic agent¹⁵⁴⁵. In his treatises, *silignítes*¹⁵⁴⁶ bread is also the component of compresses known as *epiplásmata*¹⁵⁴⁷. It was made from bread boiled in wine with the addition of quince oil¹⁵⁴⁸. Such a compress was used when the patient suffered from cholera caused by a stomach ailment¹⁵⁴⁹. Agents of this type¹⁵⁵⁰ were also applied in inflammations of the large intestine¹⁵⁵¹. As opposed to white bread, black bread was mentioned in the writings of Alexander of Tralles only twice. First, the physician maintained that *rhyparós*¹⁵⁵² baked products were banned from the diet for melancholics¹⁵⁵³. Next, cataplasms – but rather from white¹⁵⁵⁴, not

¹⁵⁴⁰ Alexander of Tralles, *Therapeutica*, 449, 5, vol. I.

¹⁵⁴¹ Alexander of Tralles, *Therapeutica*, 449, 4–8, vol. I.

¹⁵⁴² Alexander of Tralles, *Therapeutica*, 335, 5–345, 12, vol. I.

¹⁵⁴³ Alexander of Tralles, *Therapeutica*, 337, 24–339, 10, vol. II.

¹⁵⁴⁴ Alexander of Tralles, *Therapeutica*, 339, 5, vol. II.

¹⁵⁴⁵ Alexander of Tralles, *Therapeutica*, 339, 4–10, vol. II.

¹⁵⁴⁶ Alexander of Tralles, *Therapeutica*, 327, 7, vol. II.

¹⁵⁴⁷ Alexander of Tralles, *Therapeutica*, 327, 6–16, vol. II.

¹⁵⁴⁸ Alexander of Tralles, *Therapeutica*, 327, 7–8, vol. II.

¹⁵⁴⁹ Alexander of Tralles, *Therapeutica*, 323, 24–329, 11, vol. II.

¹⁵⁵⁰ Alexander of Tralles, *Therapeutica*, 425, 10, vol. II.

¹⁵⁵¹ Alexander of Tralles, *Therapeutica*, 425, 9–17, vol. II.

¹⁵⁵² Alexander of Tralles, *Therapeutica*, 615, 21–22, vol. I.

¹⁵⁵³ Alexander of Tralles, *Therapeutica*, 597, 1–617, 7, vol. I.

¹⁵⁵⁴ Alexander of Tralles, *Therapeutica*, 113, 25, vol. II.

black bread¹⁵⁵⁵ – were recommended as a diaphoretic agent leading to the elimination of pus from the organism¹⁵⁵⁶. Both references suggest that in spite of the supposed regular consumption, the product was not one of particular importance for Alexander's therapeutics.

*Chóndros*¹⁵⁵⁷ is mentioned exceedingly rarely as an element of medical procedures in the writings of this author. In this role, it is referenced only three times – within one and the same medical diet. It is described therein as a food administered to patients who are weakened by high fevers¹⁵⁵⁸. Alexander of Tralles wrote nothing, however, about *krímmion* groats. Starch, in turn, was mentioned amongst ingredients used in various described treatments, whereas Alexander recommended it both as a food, and as a component of drugs. As regards bleeding caused by internal injuries resulting in the breaking of tissues (*rhéxis*)¹⁵⁵⁹, he recommended a special diet¹⁵⁶⁰ that should contain foods which were to an extent astringent and stimulated the growth of skin over wounds. Among these he suggested a broth made from *álix* groats, or barley groats. He also maintained that such food had a stronger effect when one added *ámylon* from wheat¹⁵⁶¹ to these soups. Starch¹⁵⁶² was also recommended as an element of the diet suitable for bleeding caused by injuries (called *diábroxis*) to internal organs, such as the lungs (or other organs in the chest), or larynx¹⁵⁶³. Then, as Alexander of Tralles stated, patients were served¹⁵⁶⁴, among others, substances of the *emplastiká* type, such as *ámylon*, and also milk and selected vegetables (for example mallow).

¹⁵⁵⁵ Alexander of Tralles, *Therapeutica*, 113, 25, vol. II.

¹⁵⁵⁶ Alexander of Tralles, *Therapeutica*, 113, 10–31, vol. II.

¹⁵⁵⁷ Alexander of Tralles, *De febribus*, 345, 4; 345, 5; 345, 11, vol. I.

¹⁵⁵⁸ Alexander of Tralles, *De febribus*, 343, 21–345, 13, vol. II.

¹⁵⁵⁹ Alexander of Tralles, *Therapeutica*, 189, 28–199, 27, vol. II.

¹⁵⁶⁰ Alexander of Tralles, *Therapeutica*, 191, 14–193, 24, vol. II.

¹⁵⁶¹ Alexander of Tralles, *Therapeutica*, 191, 17, vol. II.

¹⁵⁶² Alexander of Tralles, *Therapeutica*, 201, 10, vol. II.

¹⁵⁶³ Alexander of Tralles, *Therapeutica*, 199, 28–201, 27, vol. II.

¹⁵⁶⁴ Alexander of Tralles, *Therapeutica*, 201, 6–201, 27, vol. II.

Anthimus attributed a certain therapeutic role only to wheat flour. Namely, he stated that it was recommended for persons suffering from bleeding brought about by dysentery. The therapeutic food obtained from this wheat product was said to be effective provided that it was boiled over a fire in goat's milk. The soup thus prepared should have the consistency of butter¹⁵⁶⁵.

The *Epitome*, in turn, contains a whole host of recipes utilising wheat products. Paul of Aegina considered *áleuron* flour extremely useful, first and foremost in the preparation of cataplasms. These had a diaphoretic action and removed pus from the organism. Such a role was also performed by *áleuron* obtained from other raw materials – barley, broad beans, flaxseed and numerous others. A few examples will suffice. In parotitis¹⁵⁶⁶, Paul of Aegina recommended covering the painful and swollen points with a cataplasm with pus-removing properties, for example comprising a broth from dried figs, olive oil and *áleuron*¹⁵⁶⁷. The physician also referred to the identical action of *chóndros*, *áleuron*¹⁵⁶⁸ and bread in the fourth book of his work¹⁵⁶⁹. Furthermore, *áleuron*¹⁵⁷⁰ flour also constituted an ingredient of a compress that was applied to the forehead and temples in sudden attacks of high fever, which resulted in irritation of the skin and eyes, and strong headaches¹⁵⁷¹. One of the recipes provided for the preparation of a decoction from thyme (*Thymus sibthorpii* Bentham), which was to be mixed with wheat flour¹⁵⁷². The therapeutic applications of *semidalis* point to its usage in diets and medications *sensu stricto*. Patients with pneumonia (*peripneumonia*)¹⁵⁷³ were

¹⁵⁶⁵ Anthimus, 82.

¹⁵⁶⁶ Paul of Aegina, III, 23, 13, 1–29.

¹⁵⁶⁷ Paul of Aegina, III, 23, 13, 16.

¹⁵⁶⁸ Paul of Aegina, IV, 39, 1, 3.

¹⁵⁶⁹ Paul of Aegina, IV, 39, 1, 1–10.

¹⁵⁷⁰ Paul of Aegina, III, 4, 2, 13.

¹⁵⁷¹ Paul of Aegina, III, 4, 2, 1–15.

¹⁵⁷² Paul of Aegina, III, 4, 2, 12–13.

¹⁵⁷³ Paul of Aegina, III, 30, 1, 1–31.

served soups, for example a thin *ptisáne*, a soup (*rhóphema*) made from *chóndros* with honey and *rhóphema* from bitter almonds with *semídalís*¹⁵⁷⁴. Paul of Aegina also gave a recipe for a purgative *póltos* for patients with ischialgia¹⁵⁷⁵ and elephantiasis, which helped eliminate the thick juices causing these ailments¹⁵⁷⁶. The physician wrote that this therapeutic dish was made in two separate stages. First, its most important component – colocynth – was cleaned. It was then left to soak in olive oil overnight, and subsequently boiled in water with olive oil until it became soft. When the colocynth was completely soft, veratrum¹⁵⁷⁷ and *skammonía* bindweed were added, following which the broth was mixed with a *póltos* from *semídalís*¹⁵⁷⁸ (or dry bread was added to this therapeutic mass), in order for the whole to thicken in such a way that it could be formed into portions the size of hazelnuts. This was administered to patients, who washed it down with warm water. It is worth noting similar recipes may be found in the writings of the predecessors of the author of the *Epítome*. As regards other medications, an agent with diverse external applications, known as *kólla*, made from *semídalís*¹⁵⁷⁹ and *gýris*, was listed as belonging to the *emplastiká* and *peptiká*¹⁵⁸⁰ groups. When, in turn, patients suffered from inflammations in the nose¹⁵⁸¹, use was made of a cataplasm from *semídalís*¹⁵⁸² mixed with semolina. In addition, *semídalís*¹⁵⁸³ has been mentioned in the recipe for one of the washing

¹⁵⁷⁴ Paul of Aegina, III, 30, 1, 21.

¹⁵⁷⁵ Material on the basis of research carried on on Crete, cf. C. B o u r b o u, *op. cit.*, p. 51–56.

¹⁵⁷⁶ Paul of Aegina, VII, 5, 17, 1–11.

¹⁵⁷⁷ Regarding the applications of veratrum (*Veratrum* L.) in ancient medicine, cf. J. S c a r b o r o u g h, *Theophrastus on herbals and herbal remedies*, JHB 11, 1978, p. 361–362.

¹⁵⁷⁸ Paul of Aegina, VII, 5, 17, 8–9.

¹⁵⁷⁹ Paul of Aegina, VII, 3, 10, 236.

¹⁵⁸⁰ Paul of Aegina, VII, 3, 10, 236–237.

¹⁵⁸¹ Paul of Aegina, VI, 91, 1, 1–2, 19.

¹⁵⁸² Paul of Aegina, VI, 91, 2, 3.

¹⁵⁸³ Paul of Aegina, VII, 13, 19, 7.

substances (*smégmata*), which was written down by Crito¹⁵⁸⁴. Alongside, on the list of ingredients, we may find tragacanth (*Astragalus parnassi* L.), incense, mastic, a resin called *ammoniakón*, juices from unripe grapes, and egg white¹⁵⁸⁵. *Semídalís*¹⁵⁸⁶ is also an element of melon *smégma*¹⁵⁸⁷. The ingredients of this medication are similar to those previously enumerated, but additionally include fresh melon seeds, iris rhizomes and white hellebore.

Paul of Aegina also provided us with a few hints concerning the therapeutic application of *gýris* wheat. First of all, this product – as he stated – could replace *ámylon*¹⁵⁸⁸ in all medical procedures. Secondly, *gýris*¹⁵⁸⁹ flour is present in the recipe for a cataplasm used for stomach problems (constipation or diarrhoea) in the event of high fevers¹⁵⁹⁰. Such compresses were placed on the stomach, underbelly or loins when the patient's excreta contained blood clots. Cataplasms recommended for such instances were made solely from incense, or from incense and *gýris*, or – from semolina mixed with wine or *oxýkraton*. Thirdly, *Epítome* informs us that if a patient was suffering from ailments of the eyes that were accompanied by pain, and which were the result of the inflow of excess organic juices¹⁵⁹¹, use was made of an ointment that was rubbed in; its recipe included *gýris*¹⁵⁹² wheat flour, myrrh and incense mixed with egg white¹⁵⁹³. Finally, the author also maintained that when patients spat blood¹⁵⁹⁴, use was made of a compress (in all probability placed on the chest) from *gýris* mixed with vinegar¹⁵⁹⁵.

¹⁵⁸⁴ Paul of Aegina, VII, 13, 19, 1–8.

¹⁵⁸⁵ Paul of Aegina, VII, 13, 19, 6–8.

¹⁵⁸⁶ Paul of Aegina, VII, 13, 18, 3–4.

¹⁵⁸⁷ Paul of Aegina, VII, 13, 18, 1–5.

¹⁵⁸⁸ Paul of Aegina, VII, 25, 2, 14.

¹⁵⁸⁹ Paul of Aegina, II, 57, 1, 23.

¹⁵⁹⁰ Paul of Aegina, II, 57, 1, 1–31.

¹⁵⁹¹ Paul of Aegina, III, 22, 5, 1–35.

¹⁵⁹² Paul of Aegina, III, 22, 5, 14.

¹⁵⁹³ The complete recipe – Paul of Aegina, III, 22, 5, 14–15.

¹⁵⁹⁴ Paul of Aegina, III, 31, 1, 1–5, 9.

¹⁵⁹⁵ Paul of Aegina, III, 31, 2, 27–28.

Wheat baked products are present in a great number of medical procedures, which were included in the *Epitome* of Paul of Aegina. White bread of various types was most frequently mentioned as an element of diets. This would obviously suggest that as a basic food, it continued to function as a *sui generis* medication, which contributed to the recovery of health. And thus, for the treatment of elephantiasis¹⁵⁹⁶ Paul of Aegina advocated administering, among others, bread with honey¹⁵⁹⁷. For the ailment called *phrenitis*¹⁵⁹⁸, i.e. encephalitis or meningitis, the physician recommended among others bread soaked in water¹⁵⁹⁹. A soup from *chóndros*¹⁶⁰⁰, baked products¹⁶⁰¹ and *ptisáne*¹⁶⁰² were considered as an appropriate element of the diet for persons with strong fevers¹⁶⁰³. The physician also wrote about serving *chóndros* from *melikraton*¹⁶⁰⁴ and baked products¹⁶⁰⁵ in the diet designed to combat metritis (*phlegmoné*)¹⁶⁰⁶.

The second group of medications comprises compresses made from bread. Thus, *kribanítes* baked products (neither too white, nor excessively black)¹⁶⁰⁷ were recommended by Paul of Aegina as an ingredient of the cataplasm intended to treat carbuncles¹⁶⁰⁸. The medication included ribwort (*Plantago maior* L.), boiled lentils and bread baked in the *kribanon*¹⁶⁰⁹. Baked products of the *semidalítes* variety appeared in the recipe for the compress used to treat tumoural or

¹⁵⁹⁶ Paul of Aegina, IV, 1, 1, 1–8, 5.

¹⁵⁹⁷ Paul of Aegina, IV, 1, 4, 21.

¹⁵⁹⁸ Paul of Aegina, III, 6, 1, 1–2, 51.

¹⁵⁹⁹ Paul of Aegina, III, 6, 2, 23.

¹⁶⁰⁰ Paul of Aegina, II, 32, 1, 3.

¹⁶⁰¹ Paul of Aegina, II, 32, 1, 4.

¹⁶⁰² Paul of Aegina, II, 32, 1, 3.

¹⁶⁰³ Paul of Aegina, II, 32, 1, 1–9.

¹⁶⁰⁴ Paul of Aegina, III, 64, 2, 5.

¹⁶⁰⁵ Paul of Aegina, III, 64, 2, 5.

¹⁶⁰⁶ Paul of Aegina, II, 64, 21, 1–3, 16.

¹⁶⁰⁷ Paul of Aegina, IV, 25, 2, 7.

¹⁶⁰⁸ Paul of Aegina, IV, 25, 1, 1–5, 12.

¹⁶⁰⁹ Paul of Aegina, IV, 25, 2, 6–7.

suppurating ulcerations (*nomai* and *phagédainai*)¹⁶¹⁰. The author of the *Epítome* recommended the applications of a cataplasm made from the inside of *semidalítes*¹⁶¹¹ bread. He also observed that *silignítes*¹⁶¹² was used to prepare compresses intended to treat haematuria¹⁶¹³. The bread was then boiled with a broth from dates, acacia resin (*Acacia arabica* Wild.), *Citinus hypocistis* L., dry wine, or *oxykraton*¹⁶¹⁴. Finally, *chóndros*¹⁶¹⁵, *áleuron*¹⁶¹⁶ and bread¹⁶¹⁷ were used as a compress, for example, for ulcers, in order to facilitate the removal of pus from the organism¹⁶¹⁸.

Chóndros was recommended by Paul of Aegina first and foremost as an element of therapeutic diets. These are so numerous that only a few examples will be given in the present discussion. When describing a diet appropriate for humoural imbalances of the stomach (which manifest themselves in its excessive dryness)¹⁶¹⁹, Paul mentioned a dish called *chondroptisane*, which was made from the groats in question¹⁶²⁰. A soup from *chóndros*¹⁶²¹ was also recommended for strong fevers¹⁶²². It was served along with bread¹⁶²³ and *ptisáne*¹⁶²⁴. The same dish¹⁶²⁵ with bread¹⁶²⁶ was proposed in the diet for patients who have an excessive

¹⁶¹⁰ Paul of Aegina, IV, 44, 4, 1–23.

¹⁶¹¹ Paul of Aegina, IV, 44, 1, 6.

¹⁶¹² Paul of Aegina, III, 45, 8, 13.

¹⁶¹³ Paul of Aegina, III, 45, 8, 1–27.

¹⁶¹⁴ Paul of Aegina, III, 45, 8, 12–14.

¹⁶¹⁵ Paul of Aegina, IV, 39, 1, 3.

¹⁶¹⁶ Paul of Aegina, IV, 39, 1, 3.

¹⁶¹⁷ Paul of Aegina, IV, 39, 1, 3.

¹⁶¹⁸ Paul of Aegina, IV, 39, 1, 1–10.

¹⁶¹⁹ Paul of Aegina, I, 72, 1, 1–6, 13.

¹⁶²⁰ Paul of Aegina, I, 72, 2, 12.

¹⁶²¹ Paul of Aegina, II, 32, 1, 3.

¹⁶²² Paul of Aegina, II, 32, 1, 1–9.

¹⁶²³ Paul of Aegina, II, 32, 1, 4.

¹⁶²⁴ Paul of Aegina, II, 32, 1, 3.

¹⁶²⁵ Paul of Aegina, II, 37, 1, 10.

¹⁶²⁶ Paul of Aegina, II, 37, 1, 9.

amount of thin juices in the body¹⁶²⁷. Finally, patients suffering from pneumonia¹⁶²⁸ were administered soups such as, for example, *rhóphema* from *chóndros*¹⁶²⁹ with honey, or with the addition of sweet beverages, e.g. *hydrómeli*, *apómeli* or *hydrorosáton*.

The groats in question also formed the basis of medications *sensu stricto*. First of all, they were used in the preparation of enemas. For example, Paul of Aegina stated that a *chóndros* broth was administered as an enema¹⁶³⁰ when a patient was suffering from diarrhoea and was feverish¹⁶³¹. Secondly, the product was used for making cataplasms with a diaphoretic action. An example of such an application is the note that *chóndros*¹⁶³², *áleuron* and bread were also used as a compress, for example for ulcers (in order to facilitate the removal of pus from the organism¹⁶³³). In addition, in his gynaecological recommendations, or – to put it more precisely – when discussing agents appropriate for women suffering from menorrhagia¹⁶³⁴, Paul recommended the inclusion of the same food in the diet, also accompanied by *oxýkraton*¹⁶³⁵.

Wheat starch was also considered by Paul of Aegina as one of the basic substances used in therapeutics, and the enumeration of all of its applications would exceed – as in the case of many of the products described above – the framework of the present deliberations. We shall, therefore, give but a few examples. As regards diets, dry *ámylon*¹⁶³⁶ was served as a food to pregnant women¹⁶³⁷. *Ítria*¹⁶³⁸ and *ámylon*¹⁶³⁹ were

¹⁶²⁷ Paul of Aegina, II, 37, 1, 1–12.

¹⁶²⁸ Paul of Aegina, III, 30, 1, 1–31.

¹⁶²⁹ Paul of Aegina, III, 30, 1, 19–22.

¹⁶³⁰ Paul of Aegina, II, 57, 1, 24–25.

¹⁶³¹ Paul of Aegina, II, 57, 1, 1–31.

¹⁶³² Paul of Aegina, IV, 39, 1, 3.

¹⁶³³ Paul of Aegina, IV, 39, 1, 1–10.

¹⁶³⁴ Paul of Aegina, III, 61, 1, 1–3, 11.

¹⁶³⁵ Paul of Aegina, III, 62, 1, 9.

¹⁶³⁶ Paul of Aegina, I, 1, 1, 15.

¹⁶³⁷ Paul of Aegina, I, 1, 1, 1–31.

¹⁶³⁸ Paul of Aegina, III, 28, 2, 5.

¹⁶³⁹ Paul of Aegina, III, 28, 2, 5.

also recommended by Paul of Aegina as an element of the diet intended to treat nasal catarrhs¹⁶⁴⁰. The author indicates that these were administered in liquid form, boiled¹⁶⁴¹ most probably in milk or broths, as other medical authors have written. The properties of starch were utilised in compound medication applied both externally and internally. Due to its delicate action¹⁶⁴², *ámylon*¹⁶⁴³ (as an ingredient of ointments or compresses) was used in agents intended to treat all sorts of ulcerations occurring on the eyes and in their vicinity¹⁶⁴⁴. In tonsillitis¹⁶⁴⁵, following the passage of the most severe phase of the ailment¹⁶⁴⁶, gargles containing starch were administered¹⁶⁴⁷. It was also added¹⁶⁴⁸ to gargles intended to alleviate inflammations of the lingula¹⁶⁴⁹. However, in the event of chronic tonsillitis¹⁶⁵⁰ the physician recommended excision of the tonsils. He added in his discourse that the wounds caused in connection with their excision should be smeared with a mixture made from roses, crocuses, or *ámylon*¹⁶⁵¹ pulverised with milk, or with water, possibly with the addition of egg white or *hydrorosáton*¹⁶⁵².

The treatise *De cibis* is a work of an exclusively dietetic nature. Thus, even though the author who wrote this *opusculum* intentionally concentrated his interests on the medical applications of foodstuffs, even here we may find a mention constituting a therapeutic recommendation. This concerns *ámylon/katastatón*¹⁶⁵³. It has been stated in the text

¹⁶⁴⁰ Paul of Aegina, III, 28, 2, 1–24.

¹⁶⁴¹ Paul of Aegina, III, 28, 2, 5.

¹⁶⁴² We know this from the therapeutic tradition preceding the period of activity of Paul of Aegina.

¹⁶⁴³ Paul of Aegina, III, 22, 1, 15.

¹⁶⁴⁴ Paul of Aegina, III, 22, 21, 1–26.

¹⁶⁴⁵ Paul of Aegina, III, 6, 14, 1–20.

¹⁶⁴⁶ Paul of Aegina, III, 6, 14, 16–20.

¹⁶⁴⁷ Paul of Aegina, III, 6, 14, 18.

¹⁶⁴⁸ Paul of Aegina, III, 26, 16, 12.

¹⁶⁴⁹ Paul of Aegina, III, 26, 1, 16, 1–20.

¹⁶⁵⁰ Paul of Aegina, VI, 30, 1, 1–2, 17.

¹⁶⁵¹ Paul of Aegina, VI, 30, 2, 15.

¹⁶⁵² Paul of Aegina, VI, 30, 2, 14–16.

¹⁶⁵³ *De cibis*, 2, 31–32.

that due to its cooling and drying¹⁶⁵⁴ properties, this substance serves to smooth the skin of the neck¹⁶⁵⁵. This may be a reference to recipes for medications protecting against the undesirable action of the wind and sun, mentioned by the preceding authors.

Conclusions. The data presented earlier clearly shows how commonly wheat was used as a *phármakon* in medical practice in the period between the second and seventh centuries. In order to illustrate its role, we must emphasise Galen's opinion that the products made therefrom, and in particular the trinity of *ártos*, *chóndros* and *áleuron*, were considered as *boéthema*, which ought to be provided for each and every patient, whereas wheat bread and groats were to serve as a food, while the flour was to be used as an agent for the preparation of poultices. This view is, in a way, the essence of the material that we have presented.

Medical recipes mention all of the products that we have identified as prepared on the basis of *pyrós*. This fact is excellently illustrated by the interconnection between medicine and the culinary art. For pharmacists, creating both *haplá* and *syntheta phármaka*, made full use of the findings of contemporary dietetics concerning the properties of individual foodstuffs utilised thereby.

Generally speaking, wheat and the products made therefrom were specified in numerous therapeutic diets written down by ancient and Byzantine physicians. Furthermore, the cereal constituting the subject of our research, and the foods obtained therefrom, found application in a great many medications applied externally and internally, the formula for which – sometimes complex – have been passed on to us by medical writers. The extensiveness of source texts – let us just reiterate that the presented data constitute no more than a fraction of the material which still requires analysis – clearly indicates that the cereal in question was one of the more commonly used medications (due to the relative ease of its acquisition), which fact is confirmed by our general

¹⁶⁵⁴ *De cibis*, 2, 32.

¹⁶⁵⁵ *De cibis*, 2, 32–33.

conclusions concerning the predominant role of wheat as a substance facilitating the maintenance and restoration of the health of readers of the discussed medical works.



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3. Einkorn wheat (*típhe*)

MACIEJ KOKOSZKO

Einkorn: role in the diet of the second–seventh centuries

In the Greek sources, einkorn wheat was most frequently referred to as *típhe*. Such appellation is commonly found in, for example, the texts of the *Corpus Hippocraticum*, in the works of Alexander of Tralles, Aetius of Amida, or the anonymous treatise *De cibis*. Usually the term is found in singular, although sometimes the name of this wheat was also used in plural (*típhai*). Dioscurides referred to the einkorn wheat not as *típhe*, but *zeá*. He also explained that the term *zeá* denotes in fact two types of grain, namely *zeá haplé*, or single or simple grain; *zeá*, einkorn wheat; and the *zeá dikokkos*, double grain *zeá* – emmer¹⁶⁵⁶. Also in use were names applied to indicate physical characteristics of the discussed wheat; thus Galen called emmer “small wheat”¹⁶⁵⁷, this term being coined due to the comparison of its size with common wheat.

Medical treatises indicate that einkorn wheat was not among the more popular foodstuffs of the second to seventh centuries. Only the aforementioned Galen provided us with a good deal of specific information about its distribution within the Mediterranean area. It is therefore worth summing up the particular kinds of information that were preserved in the works of this expert in antique medicine, who was at the same time a keen observer of the contemporary dietary habits. His remarks turned out to be so crucial that they were quoted by generations of supporters of his views. Firstly, from the reflections of

¹⁶⁵⁶ Dioscurides, *De materia medica*, II, 89, 1, 1.

¹⁶⁵⁷ Galen, *De alimentorum facultatibus*, 522, 12–13, vol. VI.

this physician we can conclude that *típhe* was commonly found wherever the other kinds of wheat would not grow, or where they sometimes failed. We know this because Theophrastus¹⁶⁵⁸, cited by the physician from Pergamum, wrote of *típhe* that by its nature it is a light plant¹⁶⁵⁹, and that light soils, that is, the less fertile ones, are sufficient for it¹⁶⁶⁰. Secondly, Galen's works show that this grain had a limited number of consumers. The elites most likely avoided it, and it was eaten by those who were forced to do so due to lack of other choices. It has never been considered a high quality foodstuff. In dietetics, it was included among the cereals of less desirable properties, or the *mochtherá spérmata*¹⁶⁶¹. We know this thanks to, for example, the preserved classifications of this type of plant¹⁶⁶², which never put it in the first place of any "ranking" of raw foods. To learn more about its position one may refer to the findings present in the treatise *De rebus boni malique suci*, which contains an opinion on the dietary quality of einkorn, compared to barley and spelt (*ólyra*). Of the three listed cereals, barley holds the foremost position, followed by spelt, while the einkorn wheat placed third (and last)¹⁶⁶³. A reflection of the place assigned to the grain in question is also the fact that it served not only as food for people, but since ancient times had also been given as fodder to animals. To give an example of its use as horse feed, Galen referred to Homer¹⁶⁶⁴. He also stated there that *típhe* is beneficial for these animals, unlike *pyrós*¹⁶⁶⁵. Thirdly, the grain in question was not the food of choice for the inhabitants of urban areas – and therefore for those who represented, for the greater part, the Graeco-Roman civilisation. It was consumed mainly by

¹⁶⁵⁸ Galen, *De alimentorum facultatibus*, 516, 2, vol. VI.

¹⁶⁵⁹ Galen, *De alimentorum facultatibus*, 516, 7, vol. VI.

¹⁶⁶⁰ Galen, *De alimentorum facultatibus*, 516, 8, vol. VI.

¹⁶⁶¹ Galen, *De locis affectis*, 184, 7, vol. VIII. Oribasius used also the term *ponerá spérmata* – Oribasius, *Libri ad Eunapium*, I, 25, 2, 3.

¹⁶⁶² More information on this subject will accompany the discussion of dietary properties of the einkorn wheat.

¹⁶⁶³ Galen, *De rebus boni malique suci*, 791, 6, vol. VI.

¹⁶⁶⁴ Galen, *De alimentorum facultatibus*, 522, 7–9, vol. VI.

¹⁶⁶⁵ Galen, *De alimentorum facultatibus*, 522, 10–12, vol. VI.

farmers, usually poorer and uneducated people, who prepared from it a type of soup or porridge¹⁶⁶⁶, which will be discussed after an analysis of the methods in which this grain was otherwise used in the culinary arts. Similarly, bread made of einkorn wheat was eaten mainly by the countryside folk. It was popular in the cities only when it was freshly baked and still warm¹⁶⁶⁷. Fourthly, Galen attested that in the geographic areas with which he was familiar einkorn enjoyed varied degrees of popularity. From the information provided it is clear that *típhe*, much like spelt and oat, were commonly grown in Asia Minor. This cereal was especially eagerly sown in Mysia, as the Pergamene writes in the treatise *De victu attenuante*¹⁶⁶⁸. In *De alimentorum facultatibus* he added that it was grown and harvested in large quantities particularly in the part of Mysia north of Pergamum¹⁶⁶⁹. Furthermore, the information preserved by Galen indicates that it was also to be found in Thrace and Macedonia¹⁶⁷⁰ – areas which he knew personally.

It is also worth adding to this some reflections about the distribution in time. In the analysed sources the einkorn wheat is mentioned between the eighth century BC (Homer¹⁶⁷¹) and the tenth AD (*Geoponica*).

Undoubtedly, much was written about it in the fourth century BC (Diocles of Carystus and Mnesitheus). Considerable attention was devoted to it in the second century AD, as was briefly mentioned above, by Galen in his treatises. Encyclopaedias of Oribasius (fourth century AD) and of Aetius of Amida (sixth century AD) also left some space for it. In the sixth century Alexander of Tralles even left some information about its use in medical procedures. As we will see, however, these were but exceptions to the general silence on this issue. Even while, in the second half of the seventh century, the grain of interest to us was listed in

¹⁶⁶⁶ M. Decker, *op. cit.*, p. 100.

¹⁶⁶⁷ Galen, *De alimentorum facultatibus*, 518, 15 – 519, 2, vol. VI.

¹⁶⁶⁸ Galen, *De victu attenuante*, 40, 3–4.

¹⁶⁶⁹ Galen, *De alimentorum facultatibus*, 522, 16 – 523, 1, vol. VI.

¹⁶⁷⁰ Galen, *De alimentorum facultatibus*, 514, 6, vol. VI.

¹⁶⁷¹ Homer, *Ilias*, VIII, 188.

De cibis, Paul of Aegina, writing during the same time period, did not devote a single word to einkorn. After the seventh century, information on the subject is scarce, and does not significantly alter the earlier findings. In *Geoponica* the information on einkorn wheat is limited to the time of sowing, and was taken, as the author attests, from the works of Varro (first century BC) and of the Quintilii (second century AD)¹⁶⁷². Thus, although the data from medical sources is imprecise, and therefore difficult to interpret, they do collectively indicate the limited role of the grain in question during the antiquity and early Byzantine period. It would also appear that the significance of einkorn wheat diminished with time. It was most likely a plant of secondary importance, grown in those areas of the Mediterranean and during these time periods when other, more highly valued “gifts of Demeter” were lacking. Its low fertility and difficulties with processing seem to indicate, however, that it was being gradually supplanted by more productive, easier to process, tastier, and thus more valued, produce. Despite this, einkorn wheat was not completely eliminated from agriculture – which is, moreover, true to this day.

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Einkorn: dietary assessment

While the dietary characteristics of *típhe* appear in the majority of Greek medical treatises, the scope of interest around them, and therefore the detail in which they are described, is rather limited. The most informative are the works of Galen and those who followed in his footsteps. Galen is also the one who gives us the deepest insight into the doctrines created before his time, thus outlining the development of the ancient dietetical advice concerning the matter discussed here. To begin our

¹⁶⁷² *Geoponica*, III, 3, 12.

deliberations, it would be of worth to first refer to the chronologically earliest data. It needs to be said that *Corpus Hippocraticum* contains only traces of information on the einkorn wheat. Specifically, in *De diaeta* it is mentioned, and compared with the common wheat¹⁶⁷³. The author claimed that *típhe* is lighter than the latter. The phrasing is somewhat enigmatic, but most likely the author meant that the food in question is of relatively limited nutritional value. The ancient expert continued that the food products made of it are analogous to those made of common wheat¹⁶⁷⁴, and that they pass through the digestive tract more quickly than food made of *pyrós*¹⁶⁷⁵.

It is worth reminding that Dioscurides, in his *De materia medica*, used for einkorn wheat the term *zeá haplé*. At the same time, he combined both of the listed *zeái/zeiaí*, that is, einkorn wheat and emmer, into a single group of uniform dietary properties. These grains, he claimed, are more nutritious than barley¹⁶⁷⁶, but when processed into bread¹⁶⁷⁷, they nourish the body worse than foods baked out of common wheat¹⁶⁷⁸.

Galen devoted a relatively greater amount of attention to the subject of einkorn wheat. His reflections, however, do not contain much information regarding the dietary characteristics of this grain, and the majority of the details offered refers to its rank on the list of the best crops and the foodstuffs made of these – in particular, bread. In *De victu attenuante* the author wrote that – much like barley, spelt or oat¹⁶⁷⁹ – *típhe* is characterised by its shell, which always needs to be removed before the grain can be used for consumption. After hulling, the grains of einkorn wheat turn out to be much harder¹⁶⁸⁰ and smaller than those of common

¹⁶⁷³ *De diaeta*, 43, 1–3.

¹⁶⁷⁴ *De diaeta*, 43, 1–2.

¹⁶⁷⁵ *De diaeta*, 43, 2.

¹⁶⁷⁶ Dioscurides, *De materia medica*, II, 89, 1, 2–3.

¹⁶⁷⁷ Dioscurides, *De materia medica*, II, 89, 1, 3–4.

¹⁶⁷⁸ Dioscurides, *De materia medica*, II, 89, 1, 3.

¹⁶⁷⁹ Galen, *De victu attenuante*, 43, 1–2.

¹⁶⁸⁰ Galen, *De victu attenuante*, 43, 3.

wheat, as well as of barley or *ólyra*. It also stands out because of its yellow colour (much like *pyrós*¹⁶⁸¹, and unlike barley¹⁶⁸², with its white hue). In *De alimentorum facultatibus* he repeated the same findings, claiming that the seeds of einkorn wheat are more yellow than those of common wheat¹⁶⁸³, as well as harder¹⁶⁸⁴, and considerably smaller¹⁶⁸⁵.

In his works, Galen included some information that ranked the einkorn wheat on a scale of quality, among the grains available at the time. This gradation was taken from the earlier experts on such matters. One may conclude that he considered it to be not only of antiquarian, but also of practical value, reflecting the situation in his own times. The Pergamene analysed, among others, the work of Diocles of Carystus; and the treatise *De sanitate tuenda* addressed to Pleistarchus¹⁶⁸⁶, in which the physician from the fourth century BC provided a classification of cereals as foodstuffs, according to their quality. From Galen's text we learn that his great predecessor put at the top of his list common wheat and barley, followed by *ólyra*, or spelt, after which he listed einkorn wheat¹⁶⁸⁷, emmer, foxtail millet and finally common millet. Galen also noted that even when some of the plants were omitted from such lists, for instance when emmer was omitted from some of the manuscripts of Diocles' work that Galen had himself observed¹⁶⁸⁸, einkorn wheat was never excluded from any of the copies of the treatise – this in spite, it should be stressed, of its consistent placement not at the top of the list, but after the *ólyra*-type wheat, and before foxtail millet and common millet¹⁶⁸⁹. Galen also referred to the gradation taken from the works of Mnesitheus. This author, Galen assured, placed *típhe* third,

¹⁶⁸¹ Galen, *De victu attenuante*, 43, 4.

¹⁶⁸² Galen, *De victu attenuante*, 44, 1.

¹⁶⁸³ Galen, *De alimentorum facultatibus*, 522, 3, vol. VI.

¹⁶⁸⁴ Galen, *De alimentorum facultatibus*, 522, 4, vol. VI.

¹⁶⁸⁵ Galen, *De alimentorum facultatibus*, 522, 4–6, vol. VI.

¹⁶⁸⁶ Galen, *De alimentorum facultatibus*, 511, 15 – 512, 3, vol. VI.

¹⁶⁸⁷ Galen, *De alimentorum facultatibus*, 512, 3, vol. VI.

¹⁶⁸⁸ Galen, *De alimentorum facultatibus*, 512, 4, vol. VI.

¹⁶⁸⁹ Galen, *De alimentorum facultatibus*, 512, 7, vol. VI.

after common wheat and barley¹⁶⁹⁰. Remarks by Diocles of Carystus and Mnesitheus thus testify to the consistent, though not elevated, position of the wheat examined here on the list of cereal plants in antiquity, from the fourth century BC onwards. The interest of ancient dieticians in the plant is further confirmed by the doctrines preserved by Athenaeus of Naucratis, which will be discussed later in this text.

Galen preserved one other, rather flattering, remark by Mnesitheus on the subject of *típhe* that is worth bringing up here. It is related not so much to the place of this food on the “ranking list” of the available grains, but characterises in part its dietetical value. As Galen related, this authority figure for ancient dieticians wrote that einkorn wheat¹⁶⁹¹ was the best of grains (aside from common wheat and barley, which he mentioned before moving on to *típhe*¹⁶⁹²), because it properly nourishes the body¹⁶⁹³ and is digested without a problem¹⁶⁹⁴. In the end, these considerations may be summed up by stating that even the author of *De alimentorum facultatibus* himself characterised this grain only underlining its resemblance to common wheat, and saw the similarities in the colour, hardness and heating properties of both¹⁶⁹⁵.

Although the analysed works of Galen are not an abundant source of information on the dietary value of einkorn wheat, his treatises do say a lot about the bread baked of it, which leads to conclusion that this product had a significant place also in the diet of the second century AD. Most of the preserved information is to be found in a sizeable chapter of *De alimentorum facultatibus* devoted to *típhe*, the main subject of these considerations, and also to *zeiá* and *ólyra*¹⁶⁹⁶. Galen, describing in his usual and somewhat convoluted style the food examined here, first addressed the relationship between the quality of grain and the bread

¹⁶⁹⁰ Galen, *De alimentorum facultatibus*, 510, 16 – 511, 1, vol. VI.

¹⁶⁹¹ Galen, *De alimentorum facultatibus*, 513, 1–3, vol. VI.

¹⁶⁹² Galen, *De alimentorum facultatibus*, 512, 15 – 513, 1, vol. VI.

¹⁶⁹³ Galen, *De alimentorum facultatibus*, 513, 2, vol. VI.

¹⁶⁹⁴ Galen, *De alimentorum facultatibus*, 513, 2–3, vol. VI.

¹⁶⁹⁵ Galen, *De alimentorum facultatibus*, 522, 13, vol. VI.

¹⁶⁹⁶ Galen, *De alimentorum facultatibus*, 510, 15 – 522, 14, vol. VI.

made of it. He made it by comparing baked goods made of einkorn wheat with similar products made of the *ólyra*-type wheat. Galen claimed that if the latter grain is of not very good quality, the resulting bread will be only a little better than the baked goods made of *típhe*¹⁶⁹⁷. Conversely, if *típhe* is of good quality, then freshly baked, hot bread is going to be of higher quality than *ólyra* bread¹⁶⁹⁸. Freshness and temperature appear to be important factors in Galen's classifications of the quality of *típhe* bread. Freshly baked are recommended, while stale become less desired by customers. When loaves of einkorn wheat bread remain uneaten until the following day, claimed Galen, they become worse than those made of *ólyra*. This happens because they contain an element that gives them an elastic, malleable quality¹⁶⁹⁹, which with time leads to considerable hardening of this product¹⁷⁰⁰. This phenomenon occurs particularly when the bread was prepared with little care¹⁷⁰¹. Concerning the quality of einkorn wheat bread as compared with other types, the physician's opinion is thus: Galen assessed that such product stands just behind bread made of emmer¹⁷⁰² (as long as, of course, the grain used in its preparation was of good quality¹⁷⁰³), and the latter, in turn, should be placed behind baked goods made of common wheat¹⁷⁰⁴. In the aforementioned *De alimentorum facultatibus* he described *típhe* bread multiple times, in the passages in which he was discussing barley bread¹⁷⁰⁵. Both of them are very brittle, as he put it – *psathyroi* – although einkorn wheat bread is less so than that made of barley¹⁷⁰⁶. This happens, the author continued, due to lack of a binding element (which nowadays we call gluten, and which Galen, and later also Oribasius, called

¹⁶⁹⁷ Galen, *De alimentorum facultatibus*, 518, 6, vol. VI.

¹⁶⁹⁸ Galen, *De alimentorum facultatibus*, 518, 7–8, vol. VI.

¹⁶⁹⁹ Galen, *De alimentorum facultatibus*, 518, 8, vol. VI.

¹⁷⁰⁰ Galen, *De alimentorum facultatibus*, 518, 8–9, vol. VI.

¹⁷⁰¹ Galen, *De alimentorum facultatibus*, 518, 9–10, vol. VI.

¹⁷⁰² Galen, *De alimentorum facultatibus*, 518, 5–6, vol. VI.

¹⁷⁰³ Galen, *De alimentorum facultatibus*, 518, 4–5, vol. VI.

¹⁷⁰⁴ Galen, *De alimentorum facultatibus*, 518, 4, vol. VI.

¹⁷⁰⁵ Galen, *De alimentorum facultatibus*, 504, 6–12, vol. VI.

¹⁷⁰⁶ Galen, *De alimentorum facultatibus*, 504, 7–10, vol. VI.

*glischron*¹⁷⁰⁷). The lack of this ingredient also contributed to the fact that neither barley nor *típhe* bread were particularly nutritious¹⁷⁰⁸.

It is worth underlining the fact that the dietary characteristic of baked products made of einkorn wheat is present in *De alimentorum facultatibus* among interesting details related to the outline of the consumption of this bread in the contemporary society. The subject was already discussed along the conclusions related to the distribution of the consumption of said grain in the Mediterranean area. And so the author wrote that after three to four days of its making¹⁷⁰⁹ such bread is not gladly eaten even by the peasants¹⁷¹⁰, as it becomes unpalatable, is difficult to initially digest¹⁷¹¹, passes slowly through the digestive tract¹⁷¹², and causes whoever eats it to feel as if there were clay in their stomach¹⁷¹³; although, as it was stated before, fresh and warm bread made of this wheat are devoid of these bad qualities¹⁷¹⁴. Furthermore in *De victu attenuante* Galen claimed that the discussed baked products made of *típhe* are difficult to digest and contain unwholesome juices¹⁷¹⁵. Although we lack detailed information provided *expressis verbis* by Galen, from the logic of attributing appropriate characteristics to fresh or old bread, one may conclude that the unfavourable remark applied to stale bread. Specifically, Galen stated that einkorn wheat bread¹⁷¹⁶ is a food that leads to the production of black bile¹⁷¹⁷. It should be added that baked *típhe* goods were not the only type of bread contributing to the production of black bile. The same effect is attributed to bread made of other grains, considered by the dieticians

¹⁷⁰⁷ Galen, *De alimentorum facultatibus*, 504, 9–10, vol. VI.

¹⁷⁰⁸ Galen, *De alimentorum facultatibus*, 504, 10–11, vol. VI.

¹⁷⁰⁹ Galen, *De alimentorum facultatibus*, 519, 2, vol. VI.

¹⁷¹⁰ Galen, *De alimentorum facultatibus*, 519, 2–3, vol. VI.

¹⁷¹¹ Galen, *De alimentorum facultatibus*, 519, 3, vol. VI.

¹⁷¹² Galen, *De alimentorum facultatibus*, 519, 3–4, vol. VI.

¹⁷¹³ Galen, *De alimentorum facultatibus*, 518, 10–12, vol. VI.

¹⁷¹⁴ Galen, *De alimentorum facultatibus*, 519, 4–5, vol. VI.

¹⁷¹⁵ Galen, *De victu attenuante*, 41, 1.

¹⁷¹⁶ Galen, *De locis affectis*, 184, 6–7, vol. VIII.

¹⁷¹⁷ Galen, *De locis affectis*, 184, 4–9, vol. VIII.

as less valuable (*mochtherá spérmatá*)¹⁷¹⁸, which were used by some of the peoples inhabiting the Mediterranean area instead of *típhe*. In contrast to its stale form, freshly baked and still warm einkorn wheat bread does not cause quick bowel movement (as barley bread does)¹⁷¹⁹, and furthermore, warm *típhe* bread nourishes the body¹⁷²⁰ in such a way that it is only slightly worse in this regard than *synkomistós*-type bread made of common wheat¹⁷²¹. In contrast to the whole series of remarks that Galen made on the subject of bread, the dietary description of the foods made of boiling einkorn wheat is very brief. They are more difficult to digest and leave considerably more undigested products in the body (*perittomatikotéra*) than *ptisáne* and *chóndros*¹⁷²².

The doctrines on the subject of einkorn wheat presented in the fourth century by the author of *Collectiones medicae* are based mainly on Galen's findings. There is little information regarding the grain itself, but we do find a lot on the bread baked out of it. Occasionally some of the details presented by Galen are missing – apparently deemed of little relevance several centuries after they were written down – or new facts are added – which, in turn, complement Galen's findings or link separate parts of his argument into a logically coherent whole. It is worth noting that in his deliberations Oribasius referred, among others, to the overall findings made by Galen on the subject of cereals: to one of his works on so-called seeds, or rather gifts, of Demeter, *Demetriaká spérmatá*¹⁷²³. We may guess that the discussed kind of wheat was still present in the Mediterranean diet, as it too found its place there. Even though the information that interests us is relatively limited, it should be noted that the analysed grain was called “small wheat”, *mikrós pyrós*¹⁷²⁴ (because of the size of its grains) and described as similar to common

¹⁷¹⁸ Galen, *De locis affectis*, 184, 7, vol. VIII.

¹⁷¹⁹ Galen, *De alimentorum facultatibus*, 519, 5–6, vol. VI.

¹⁷²⁰ Galen, *De alimentorum facultatibus*, 519, 6–7, vol. VI.

¹⁷²¹ Galen, *De alimentorum facultatibus*, 519, 7–8, vol. VI.

¹⁷²² Galen, *De victu attenuante*, 40, 2.

¹⁷²³ Oribasius, *Collectiones medicae*, I, 1, 1–15, 8.

¹⁷²⁴ Oribasius, *Collectiones medicae*, I, 1, 14, 1.

wheat in its colour, consistency and its warming properties¹⁷²⁵. It clearly emerges from the text that, by the fourth century AD, Galen's doctrines had attained the status of canonical findings for all those who dealt with dietary matters.

More details on the nutritional value of einkorn wheat can be found in those parts of Oribasius' works that present particular food products, arranged by their most important properties. In the third book of *Collectiones medicae* he counted einkorn wheat¹⁷²⁶, again, among warming foods¹⁷²⁷. He classified this grain¹⁷²⁸ in an identical manner in *Synopsis ad Eustathium filium*¹⁷²⁹, and an analogous statement relating to it¹⁷³⁰ appears once again in *Libri ad Eunapium*¹⁷³¹. From the works of this personal doctor and collaborator of the Emperor Julian the Apostate we learn also that this food may be characterised by somewhat unpleasant smell and taste, which reveals its sometimes-disturbed humoural harmony. Oribasius therefore counted einkorn¹⁷³² wheat among the *kakóchy-ma*-type foods¹⁷³³ in *Collectiones medicae*, and the same product¹⁷³⁴ was included into the group of foods with bad juices in *Synopsis ad Eustathium filium*¹⁷³⁵. Finally, einkorn wheat¹⁷³⁶ was listed in the chapter on foods characterised by humoural imbalance (*dyskrasia*)¹⁷³⁷ also in *Libri ad Eunapium*. To close this line of discussion it is worth adding that this physician also painted an image of the cereal as causing digestive tract problems. It is therefore not surprising that Oribasius categorised

¹⁷²⁵ Oribasius, *Collectiones medicae*, I, 1, 14, 2.

¹⁷²⁶ Oribasius, *Collectiones medicae*, III, 31, 1, 1.

¹⁷²⁷ Oribasius, *Collectiones medicae*, III, 31, 1, 1 – 8, 4.

¹⁷²⁸ Oribasius, *Synopsis ad Eustathium filium*, IV, 31, 1, 1.

¹⁷²⁹ Oribasius, *Synopsis ad Eustathium filium*, IV, 31, 1, 1 – 8, 4.

¹⁷³⁰ Oribasius, *Libri ad Eunapium*, I, 47, 1, 1.

¹⁷³¹ Oribasius, *Libri ad Eunapium*, I, 47, 1, 1 – 9.

¹⁷³² Oribasius, *Collectiones medicae*, III, 16, 8, 1.

¹⁷³³ Oribasius, *Collectiones medicae*, III, 16, 1, 1 – 18, 3.

¹⁷³⁴ Oribasius, *Synopsis ad Eustathium filium*, IV, 15, 7, 1.

¹⁷³⁵ Oribasius, *Synopsis ad Eustathium filium*, IV, 15, 1, 1 – 18, 4.

¹⁷³⁶ Oribasius, *Libri ad Eunapium*, I, 33, 6, 2.

¹⁷³⁷ Oribasius, *Libri ad Eunapium*, I, 33, 1, 1 – 16, 4.

einkorn wheat¹⁷³⁸ as difficult to digest (*dýspepta*); this was done in both of his later works¹⁷³⁹.

The legacy of Oribasius also suggests a notable role for einkorn wheat bread in feeding of the areas of the Mediterranean known to him in the fourth century, as he included many times in his work information on breads made of this grain, providing with them remarks determining their place on a scale of quality of the baked goods available during his time. While constructing a selection of Galen's doctrines on the subject of breads made of all of the kinds of wheat then known¹⁷⁴⁰, he wrote that the best ones were made of common wheat¹⁷⁴¹. Second place went to the *ólyra*¹⁷⁴² breads, and the ones made of einkorn wheat were listed third¹⁷⁴³. Analogous findings are repeated in Oribasius' works once more – this time combined with a dietary description of this product. Referring to Galen's works (this time on the subject of barley bread¹⁷⁴⁴), the author of *Collectiones medicae* characterised einkorn wheat bread as less cohesive than other wheat products¹⁷⁴⁵, and as a consequence, listed it again in the third place, after common wheat and *ólyra* bread. He also explained the reasons for his placement of the said bread at the end of his "ranking list". This was because of the low content of, as we would call it today, gluten¹⁷⁴⁶, which made it brittle and fragmented (*psatchyrós*)¹⁷⁴⁷. It needs to be added that due to this property, as interpreted according to Oribasius' dietetics, the bread was also characterised by lower

¹⁷³⁸ Oribasius, *Synopsis ad Eustathium filium*, IV, 17, 9, 1; Oribasius, *Libri ad Eunapium*, I, 35, 1, 1–8, 2.

¹⁷³⁹ Oribasius, *Synopsis ad Eustathium filium*, IV, 17, 1, 1–12, 1; Oribasius, *Libri ad Eunapium*, I, 35, 1, 1–8, 2.

¹⁷⁴⁰ Oribasius, *Collectiones medicae* I, 8, 1, 1–6, 3.

¹⁷⁴¹ Oribasius, *Collectiones medicae* I, 8, 6, 1–2.

¹⁷⁴² Oribasius, *Collectiones medicae* I, 8, 6, 2–3.

¹⁷⁴³ Oribasius, *Collectiones medicae* I, 8, 6, 3.

¹⁷⁴⁴ Oribasius, *Collectiones medicae* I, 10, 1, 1–2, 4.

¹⁷⁴⁵ Oribasius, *Collectiones medicae* I, 10, 2, 1–3.

¹⁷⁴⁶ This is most likely what the author meant when he stated that such bread did not have sufficient *glíschron*, viscosity. Oribasius, *Collectiones medicae* I, 10, 2, 3.

¹⁷⁴⁷ Oribasius, *Collectiones medicae* I, 10, 2, 2–3.

nutritional value than the other two listed above¹⁷⁴⁸. To sum this up, Oribasius' words show complete faithfulness to the findings of his older countryman. Oribasius subsequently expressed himself on the products made of einkorn wheat in a relatively large chapter devoted to it, and to *ólyra*¹⁷⁴⁹. As it is an exact quotation from the presented earlier findings of Galen, we will omit it here. It will only be pointed out that Oribasius returned to the characteristics of the bread in book three of *Collectiones medicae*. The physician noted there, *nota bene* quoting Galen verbatim, that einkorn wheat bread¹⁷⁵⁰, much like other foods made of less nutritionally valuable types of grain (*mochtherá spérmata*)¹⁷⁵¹, causes the creation of black bile in the body¹⁷⁵². Such an effect was very characteristic for this product, and was emphasised by specialists, as the physician repeated this opinion about einkorn wheat bread¹⁷⁵³ in *Synopsis ad Eustathium filium* (in the chapter listing other products creating similar effect¹⁷⁵⁴), and an identical classification¹⁷⁵⁵ regarding the same food¹⁷⁵⁶ appears again in *Libri ad Eunapium*.

Although Aetius of Amida, another medical authority, did not labour much on the details of dietary properties of einkorn wheat, in his works one may still find some interesting remarks on the subject of this grain. Their structure indicates that he derived them from the findings of Oribasius. And so he listed *típhe*¹⁷⁵⁷ among the food products that had unwholesome juices¹⁷⁵⁸, only adding that it is still better (that is, tastier and less unpleasant in smell) than oat. In addition, he

¹⁷⁴⁸ Oribasius, *Collectiones medicae*, I, 10, 2, 3–4. This deduction is a logical addition to Galen's findings.

¹⁷⁴⁹ Oribasius, *Collectiones medicae*, I, 13, 1, 1–6, 5.

¹⁷⁵⁰ Oribasius, *Collectiones medicae*, III, 9, 2, 3.

¹⁷⁵¹ Oribasius, *Collectiones medicae*, III, 9, 2, 3–4.

¹⁷⁵² Oribasius, *Collectiones medicae*, III, 9, 1, 1–2, 5.

¹⁷⁵³ Oribasius, *Synopsis ad Eustathium filium*, IV, 8, 2, 3.

¹⁷⁵⁴ Oribasius, *Synopsis ad Eustathium filium*, IV, 8, 1, 1–2, 5.

¹⁷⁵⁵ Oribasius, *Libri ad Eunapium*, I, 25, 1, 1–2, 4.

¹⁷⁵⁶ Oribasius, *Libri ad Eunapium*, I, 25, 2, 2–3.

¹⁷⁵⁷ Aetius of Amida, II, 253, 14.

¹⁷⁵⁸ Aetius of Amida, II, 253, 1–37.

mentioned *típhe*¹⁷⁵⁹ among foods that are difficult to digest¹⁷⁶⁰. Furthermore, from his works we also learn that *típhe*¹⁷⁶¹ is counted among the warming foods¹⁷⁶². Finally, when discussing the dietary properties of the grain in question, it is worth mentioning that Aetius of Amida also wrote about the bread¹⁷⁶³. It was listed among other grain products that have undesirable properties¹⁷⁶⁴ and causing creation of black bile in the body¹⁷⁶⁵.

While Alexander of Tralles did not leave any characterisation of *típhe* in his *Therapeutica*, the doctrines he preserved show that he assimilated and used both in theory and actual medical practice at least some of the main findings related to this grain, and was aware, in particular, of the warming properties of this product and of its long digestion period. This can be evidenced by, for example, Alexander's advice on using *típhe* for those suffering from dysentery caused by liver ailment, resulting from either excessive cooling¹⁷⁶⁶ or overheating¹⁷⁶⁷ of abdominal organs, and by his recommendations for dealing with problems with absorbing food¹⁷⁶⁸. This issue will be discussed along the analysis of the use of einkorn wheat in various medical procedures.

The anonymous treatise from seventh century entitled *De cibis* mentions einkorn wheat only once¹⁷⁶⁹. It includes it in the group of foods characterised by unwholesome juices, or *kakóchyma*¹⁷⁷⁰, and both the form of the doctrine and its content are consistent with what may be found in the writings of Oribasius and Aetius of Amida.

¹⁷⁵⁹ Aetius of Amida, II, 255, 18.

¹⁷⁶⁰ Aetius of Amida, II, 255, 1–25.

¹⁷⁶¹ Aetius of Amida, II, 267, 1.

¹⁷⁶² Aetius of Amida, II, 267, 1–9.

¹⁷⁶³ Aetius of Amida, II, 246, 7–8.

¹⁷⁶⁴ Aetius of Amida, II, 246, 8.

¹⁷⁶⁵ Aetius of Amida, II, 246, 1–9.

¹⁷⁶⁶ Alexander of Tralles, *Therapeutica*, 407, 5 – 409, 16, vol. II.

¹⁷⁶⁷ Alexander of Tralles, *Therapeutica*, 401, 13 – 407, 4, vol. II.

¹⁷⁶⁸ Alexander of Tralles, *Therapeutica*, 249, 6 – 251, 2, vol. II.

¹⁷⁶⁹ *De cibis*, 14, 20.

¹⁷⁷⁰ *De cibis*, 14, 1–40.

In recreating the classic dietary doctrines of antiquity, particularly in the area discussed here, the work of Athenaeus of Naucratis plays an invaluable role. *Deipnosophistae* contains a brief remark, not so much on the value of the einkorn wheat itself, but of the bread made of it. This is because this matter¹⁷⁷¹, as we know from the preserved treatises of Galen, was of interest to the famed expert on dietetics, Mnesitheus¹⁷⁷². Writing down his findings in fourth century BC, he stated that bread made of this grain provides relatively good nourishment for the body¹⁷⁷³. It is, however, digested with considerable difficulty¹⁷⁷⁴. This evaluation is likely to be, at least to some extent, a reflection of the opinions of dieticians on the subject of the grain from which the bread itself was made – and it was still noteworthy for Athenaeus of Naucratis, writing in the second half of the second century AD.

Conclusions. To sum up this part of our deliberations we need to assert that *típhe*, as characterised in the medical treatises, appears to be a beneficial food, but less valuable than common wheat. In particular, attention has been drawn to its lower nutritional value when compared to *pyrós*, difficulties with digesting it, and worse taste (and smell). Furthermore, the bread made of it was inferior in every respect to common wheat bread. Based on this characterisation, it should not be surprising that *típhe* played a secondary role in feeding of the inhabitants of the Mediterranean area during the second–seventh centuries AD.



¹⁷⁷¹ Athenaeus of Naucratis, III, 115 f (83, 31).

¹⁷⁷² Athenaeus of Naucratis, III, 115 f (83, 30–33).

¹⁷⁷³ Athenaeus of Naucratis, III, 115 f (83, 32).

¹⁷⁷⁴ Athenaeus of Naucratis, III, 115 f (83, 32–33).

KRZYSZTOF JAGUSIAK

Einkorn: culinary data

Information on the uses of einkorn wheat in the culinary arts of antiquity and early Byzantium is rather limited, and the data indicates that it was primarily baked into bread, and also formed the basis of a thick, mushy soup, analogous to dishes such as *póltos* or *pyroí hephthoí*. It has already been indicated that the term *típhe* appears very rarely in *Corpus Hippocraticum*. From the treatise *De diaeta* we only learn that it was made into the same types of products as common wheat¹⁷⁷⁵. Further details, however, are lacking.

The works of Dioscurides also provide only very limited information on the culinary uses of einkorn wheat. They only attest to the fact that it was used for baking bread¹⁷⁷⁶, which was generally considered inferior to the one made of common wheat. Other information related to *zeái*, the term used by the author to refer to both einkorn wheat and to emmer, pertain to the latter of the two.

Galen preserved in his works several pertinent and relatively exhaustive remarks on the subject of food products made of processed einkorn wheat. These remarks then became the basis of the doctrines developed by his successors, who usually simplified his reasoning and removed some of the details his narrative contained. In the first place, Galen pointed out the fact that the first condition of using the grain in the kitchen was removal of the hard husk¹⁷⁷⁷. Only afterwards it became suitable for further processing¹⁷⁷⁸. On the other hand, he said nothing about the process of obtaining flour from said grain. Most likely there were general rules for that, and he deemed dwelling on the matter unnecessary. The flour was made into dough, which, after rising, was formed into

¹⁷⁷⁵ *De diaeta*, 43, 1–2.

¹⁷⁷⁶ Dioscurides, *De materia medica*, II, 89, 1, 3–4.

¹⁷⁷⁷ Galen, *De alimentorum facultatibus*, 519, 9, vol. VI.

¹⁷⁷⁸ Galen, *De alimentorum facultatibus*, 519, 10, vol. VI.

appropriate portions, which were baked in *kribanon*¹⁷⁷⁹. This method, as we may guess, allowed for a quick production of individual and still warm loaves in numbers appropriate to demand, and therefore minimalised the chance of creating excessive supply (the loaves, as was discussed earlier, over time lost both their taste and dietary values). If the demand increased, it was easy to bake additional bread, in appropriate numbers. Such loaves most likely did not rise much in baking, as the raw material used for their production did not contain sufficient amount of gluten. Nonetheless, such bread, when hot, was considered tasty. It was usually eaten, as was scrupulously noted by the Pergamene physician, with fresh cheese called *oxygaláktinos*¹⁷⁸⁰. The latter ought to have been still soft, and the bread most likely smelled pleasantly and tasted well, and thus found ready buyers even in urbanised areas. The above account appears to be a description of the author's personal experiences, which he gained during his travels across Asia Minor. If so, then it presents the culinary reality of the second century well.

It has already been said that einkorn wheat was made into cooked dishes. These were prepared in a way similar to the dish that was called *hypóthermon*¹⁷⁸¹ by peasants. From Galen's words we have to conclude that such dish was popular in the countryside rather than the city. It most likely had the consistency of a soup or porridge, and its taste varied from sweet (this type being likely the more luxurious¹⁷⁸²) to salty. It was prepared by boiling the grains in water¹⁷⁸³. For the sweet variety, *siraion* was added (which was also called, as the author mentioned in a separate place, *hépsema*¹⁷⁸⁴), which was not, however, a good practice as, the physician claimed, it led to creation of thick juices in

¹⁷⁷⁹ Galen, *De alimentorum facultatibus*, 518, 15, vol. VI.

¹⁷⁸⁰ Galen, *De alimentorum facultatibus*, 518, 12–13, vol. VI.

¹⁷⁸¹ Galen, *De alimentorum facultatibus*, 519, 11–12, vol. VI.

¹⁷⁸² Wine must and sweet wines used for preparing such a dish were rather expensive. Moreover, when Galen is discussing proper wines, he refers to the Falernian, one of the prestigious wines.

¹⁷⁸³ Galen, *De alimentorum facultatibus*, 519, 11, vol. VI.

¹⁷⁸⁴ Galen, *De alimentorum facultatibus*, 519, 12–13, vol. VI.

the body¹⁷⁸⁵. Thus, the grain in question ought rather to have been boiled with an addition of *oinómeli*, or with wines, with properties similar to the Falernian¹⁷⁸⁶. Salt was also occasionally added to this dish, in such way as was done when preparing common wheat¹⁷⁸⁷. It may be therefore suggested that such a dish would have resembled boiled common wheat, also known as *pyroí hephthoí* or *chóndros*.

The basic rules on preparing einkorn wheat for consumption were also known to the author of *Collectiones medicae*. Oribasius, citing Galen's findings, explained that einkorn wheat grains were encased in a husk which needed to be removed before they could be processed into flour that would be suitable for baking bread¹⁷⁸⁸. A suggestion that einkorn wheat bread must have been popular both among the country folk as well as the city dwellers during Oribasius' times has already been made, in the section devoted to dietetics. Had it not been so, Julian's physician would likely not have decided to make such detailed excerpts from Galen's works on the subject of *ártos* made of *típhe*¹⁷⁸⁹. Nonetheless, his narrative is identical in content to the one known from the works of the Pergamene, and so we shall omit it in order to avoid repetition. We would only like to emphasise that from the available information it is clear that although *ártos típhinos* was typical rural product, it found its way to market even in cities¹⁷⁹⁰. The methods of its production were also not improved by the fourth century (which, for example, could have been accomplished by adding high gluten wheat flour into the dough), as the physician frequently pointed out that once the bread went stale it lost its taste and became clay-like¹⁷⁹¹. From *Collectiones medicae* we again learn that cleaned (and probably also ground) grain was suitable not only for baking bread, but also for boiling, and the narrative on this subject

¹⁷⁸⁵ Galen, *De victu attenuante*, 39, 4–5.

¹⁷⁸⁶ Galen, *De victu attenuante*, 39, 6.

¹⁷⁸⁷ Galen, *De alimentorum facultatibus*, 519, 13–14, vol. VI.

¹⁷⁸⁸ Oribasius, *Collectiones medicae*, IV, I, I, 1–2, 2.

¹⁷⁸⁹ Oribasius, *Collectiones medicae*, I, 13, I, 1–5, 1.

¹⁷⁹⁰ Oribasius, *Collectiones medicae*, I, 13, 2, 5–6; I, 13, 3, 1–4, 1.

¹⁷⁹¹ Oribasius, *Collectiones medicae*, I, 13, 2, 3–5.

again consistent with Galen's¹⁷⁹². Oribasius supplemented the information on boiling einkorn wheat by adding that it was prepared with sweet wine or *hépsema* or with *oinómeli*¹⁷⁹³. Thus we know that in the fourth century the sweet taste of this dish was still particularly valued.

The author of *Iatricorum libri* included in his work some very limited suggestions regarding preparing of einkorn wheat. We were not, however, able to conclude whether this was done intentionally, and therefore indicative of only a minimal significance of this grain in the diet of the sixth century AD, or if it was done to reflect the author's preferences in selecting material. In either case, Aetius of Amida attested only that einkorn wheat was made into bread¹⁷⁹⁴.

Therapeutica created by Alexander of Tralles also includes only trace information about preparing einkorn wheat. We know that a delicate, watery soup (or perhaps a gruel or broth), referred to as *chylós*¹⁷⁹⁵. In addition, *típhe* was sometimes washed down with one of the types of wine, specifically a flavoured drink called *konditon*, which was not, as Alexander of Tralles insisted, a good practice, and was particularly harmful in cases of dysentery caused by chilling of the liver¹⁷⁹⁶. How this grain was prepared, we do not know. The text most likely referred to the harmful combination of the wine's effect with some form of a boiled *típhe* dish, as in the relevant passage there are no remarks about bread.

Information about the culinary methods of using einkorn wheat is further provided in the *Deipnosophistae* of Athenaeus of Naucratis, which further confirms the interest in this grain at the turn of the second–third centuries. This invaluable collection of wisdom, including medical and culinary, contains (among others) references to Mnesitheus and Trypho of Alexandria¹⁷⁹⁷. It also gives us a view into the history

¹⁷⁹² Oribasius, *Collectiones medicae*, I, 13, 5, 3–4.

¹⁷⁹³ Oribasius, *Collectiones medicae*, I, 14, 1, 3 – 2, 1.

¹⁷⁹⁴ Aetius of Amida, II, 246, 7–8.

¹⁷⁹⁵ Alexander of Tralles, *Therapeutica*, 213, 8–9, vol. II.

¹⁷⁹⁶ Alexander of Tralles, *Therapeutica*, 407, 13–15, vol. II.

¹⁷⁹⁷ It is possible that this fragment was originally from the works of Diocles of Carystus, from which it was taken by Trypho. Cf. P.J. van der Eijk, *Diocles of*

of the use of einkorn wheat in the culinary arts, up to several centuries before the author's times. The first of these authorities not only left a remark about the bread made of this grain¹⁷⁹⁸, but also provided its dietetical characterisation¹⁷⁹⁹, which is likely to signify its role during the fourth century BC. The latter¹⁸⁰⁰, by including it¹⁸⁰¹ in the list of noteworthy breads, attested in this way that einkorn wheat bread was a known product during his times (first century BC¹⁸⁰²).

Conclusions. From the presented information it becomes clear that *típhe* was primarily a raw material for baking bread that, however, quickly became stale and lost its palatability. It was eaten mainly in the countryside, although when fresh, it was also sold in the cities. The said grain was also used in cooking. This resulted usually in thick gruels, which were served either in sweet or salty varieties. It is worth emphasising the fact that there are no remarks that would allow us to conclude that the gastronomical technology used in preparing *típhe* changed during the second–seventh century period. The amount of space devoted to culinary products made of *típhe* is the greatest during the second–fourth centuries. Available information after this period is scarce. In general, the authors' attitude to the entirety of einkorn wheat products cannot be compared to their evaluation of *pyrós*, which finds its reflection in the relatively limited culinary details regarding the former.



Carystus. A collection of the fragments with a commentary, vol. II, *Commentary*, Leiden–Boston–Köln 2001, p. 377.

¹⁷⁹⁸ Athenaeus of Naucratis, III, 115 f (83, 31).

¹⁷⁹⁹ Athenaeus of Naucratis, III, 115 f (83, 31–33).

¹⁸⁰⁰ Athenaeus of Naucratis, III, 110 b–c (74, 1–9).

¹⁸⁰¹ Athenaeus of Naucratis, III, 110 c (74, 6).

¹⁸⁰² If the authorship of Diocles of Carystus is accepted, this testimony should be moved to the fourth century BC.

MACIEJ KOKOSZKO, KRZYSZTOF JAGUSIAK

The role of einkorn wheat in medical procedures

While Demeter's gifts found a wide range of uses in the ancient and Byzantine medicine, the wheat under analysis here does not have many shown uses in the medical procedures – or, at least, these are not attested in the surviving sources. Only in the works of Alexander of Tralles do we find references to the medicinal uses of *típhe* that are possible to identify as such. Thus analysing these limited statements it is worth noting that the physician mentioned *típhe* in the chapter devoted to the lifestyle advice for those patients who were spitting out purulent mucus¹⁸⁰³. He wrote that when this becomes similar to bile¹⁸⁰⁴, patients should be given a thin broth of the grain, known as *chylós*¹⁸⁰⁵. It was not so much food but, as with many *hepsémata* of this type, a remedy considered to be effective in cleansing the thorax. The same wheat¹⁸⁰⁶ was recommended as a food appropriate for those suffering from the disturbances of the assimilating force, *kathektiké dýnamis*, caused by chilling of the body¹⁸⁰⁷. Perhaps the physician meant to prolong the time during which the food could be absorbed, due to the natural extension of this process in time after eating einkorn wheat foods¹⁸⁰⁸, and because of its warming properties, always emphasised by the physicians. In turn, when the physician was discussing the treatment of cases of hot *dyskrasia* of the liver, leading to dysentery¹⁸⁰⁹, he warned against including einkorn wheat into patients' diet¹⁸¹⁰ (again, likely due to its warming properties). When,

¹⁸⁰³ Alexander of Tralles, *Therapeutica*, 213, 1–30, vol. II.

¹⁸⁰⁴ Alexander of Tralles, *Therapeutica*, 213, 6–7, vol. II.

¹⁸⁰⁵ Alexander of Tralles, *Therapeutica*, 213, 8–9, vol. II.

¹⁸⁰⁶ Alexander of Tralles, *Therapeutica*, 249, 12, vol. II.

¹⁸⁰⁷ Alexander of Tralles, *Therapeutica*, 249, 6–251, 2, vol. II.

¹⁸⁰⁸ This refers to *típhe*'s place among the foods slow and difficult to digest, the *dýspepta*.

¹⁸⁰⁹ Alexander of Tralles, *Therapeutica*, 401, 13–407, 4, vol. II.

¹⁸¹⁰ Alexander of Tralles, *Therapeutica*, 403, 5–7, vol. II.

however, patients suffered from the ailment described as liver dysentery caused by cold *dyskrasia*¹⁸¹¹, Alexander of Tralles wrote that in cases of excessive chilling of the organs of this type the patients should be given the *kondíton*-type wine with either bread or *típhe*¹⁸¹². This was done, as the physician explained, because of the need to provide them with warming foods, of appropriate warming strength, and the type of prescribed food depended on the degree to which the body was chilled¹⁸¹³.

Conclusions. To sum up these deliberations, it ought to be stated that the recommended practice reflects in an excellent manner the ties between dietetics and pharmacology, and at the same time indicates the marginal role of *típhe* in the medical procedures used during the second–seventh century period. In our opinion it was supplanted in this field by the *pyrós* wheat, considered to be a far more effective *phármakon*.



¹⁸¹¹ Alexander of Tralles, *Therapeutica*, 407, 5 – 409, 16, vol. II.

¹⁸¹² Alexander of Tralles, *Therapeutica*, 407, 15, vol. II.

¹⁸¹³ Alexander of Tralles, *Therapeutica*, 407, 13–16, vol. II.

MACIEJ KOKOSZKO, KRZYSZTOF JAGUSIAK

4. Emmer wheat (*zeiá*)

MACIEJ KOKOSZKO

Emmer: role in the diet of the second–seventh centuries

The term used by the medical authors for emmer wheat was *zeá* or *zeiá*. These terms appear with varying frequency in the known literary works, both medical and non-medical. Let us then review their uses. In the *Corpus Hippocraticum* we only find the term *zeiá*. It appears, for example, in the treatise *De mulierum affectibus*¹⁸¹⁴. Dioscurides, whose findings were the basis for the shaping of the dietary doctrine in the matter of interest to us, occasionally referred to emmer wheat as *zeiá*¹⁸¹⁵, but much more commonly as *zeá*¹⁸¹⁶. He also wrote that these are, in fact, two types of grain that he knew under the latter appellation, namely *zeá haplé* (single-grain *zeá*, and therefore *Triticum monococcum* L., einkorn wheat)¹⁸¹⁷ and *zeá dikokkos* (two-grained *zeá*, and therefore *Triticum dicoccum* L., or emmer wheat)¹⁸¹⁸. Both of these terms (that is, both *zeá*¹⁸¹⁹ and *zeiá*¹⁸²⁰) were known to and used by Galen, and their selection was mainly determined by the variants present in the works of the medical authors from which the Pergamene was drawing his

¹⁸¹⁴ *De mulierum affectibus*, 114, 6.

¹⁸¹⁵ For example – Dioscurides, *Euporista vel de simplicibus medicinis*, II, 51, 3, 4.

¹⁸¹⁶ For example – Dioscurides, *De materia medica*, II, 89, 1, 1.

¹⁸¹⁷ Dioscurides, *De materia medica*, II, 89, 1, 1.

¹⁸¹⁸ Dioscurides, *De materia medica*, II, 89, 1, 1.

¹⁸¹⁹ For example – Galen, *De alimentorum facultatibus*, 514, 2, vol. VI.

¹⁸²⁰ For example – Galen, *De alimentorum facultatibus*, 514, 2, vol. VI.

information. Oribasius also used both the *zeá*¹⁸²¹ and *zeiá*¹⁸²² forms. In this case, too, the usage depended primarily on the form found in the source from which the extracts were made. The variant *zeiá*, however, is prevalent in his works, and occasionally even appears in places where the original author used the term *zeá*¹⁸²³; the variant *zeiá*¹⁸²⁴ was likely the more prevalent one in Oribasius' times. Aetius of Amida called emmer wheat *zeiá*¹⁸²⁵, while Alexander of Tralles used the form *zeá*¹⁸²⁶. Paul of Aegina, in turn, knew it as *zeiá*¹⁸²⁷, and the same variant was also preserved by Simeon Seth¹⁸²⁸. Non-medical sources reflect similar naming patterns. In *Deipnosophistae* we find *zeiá*¹⁸²⁹. The lexicon of Hesychius of Alexandria preserved the forms *zeá* and *zeiá*¹⁸³⁰, while the later *Suda* recorded only the term *zeiá*¹⁸³¹. Finally, in *Geponica*, we find the form *zeiá*¹⁸³².

While the modern scholarly literature occasionally insists on treating the terms *zeiá* and *ólyra*¹⁸³³ as the same, there are only a few

¹⁸²¹ For example – Oribasius, *Collectiones medicae*, XI, ζ, 1, 1–3.

¹⁸²² For example – Oribasius, *Collectiones medicae*, XII, τ, 15, 1–2.

¹⁸²³ Like in Dioscurides.

¹⁸²⁴ For example – Oribasius, *Collectiones medicae*, XII, τ, 15, 1–3.

¹⁸²⁵ Aetius of Amida, I, 228, 2.

¹⁸²⁶ For example – Alexander of Tralles, *Therapeutica*, 213, 8–9, vol. II.

¹⁸²⁷ Paul of Aegina, VII, 3, 19, 65.

¹⁸²⁸ Simeon Seth, *Syntagma de alimentorum facultatibus*, Περὶ τῆς ζειᾶς, ζ, p. 40.

¹⁸²⁹ Athenaeus of Naucratis, III, 109c (74, 7–8).

¹⁸³⁰ Hesychius of Alexandria, *όλυρα*, ο, 660, 3.

¹⁸³¹ *Liber Suda*, "όλυρα, ο, 224, 1.

¹⁸³² For example – *Geponica*, III, 3, 12.

¹⁸³³ R. Sallares, *op. cit.*, passim, especially p. 371. The author supports translating the term *zeá/zeiá* and *ólyra* as identical. They were, as he puts it, "types/land-races" of the same grain (namely, the einkorn wheat – p. 371). Sallares' view became accepted and influenced source translations made after his own study was published: the newest translation of Galen's treatise *De alimentorum facultatibus* (M. Grant, *Galen on food and diet*, London–New York 2000, passim, and Galen, *On the properties of foodstuffs [De alimentorum facultatibus]*, intr., transl., com. O. Powell, foreword J. Wilkins, Cambridge 2003) and *Collectiones medicae* of Oribasius (M. Grant, *DiETING for an Emperor. A translation of books 1 and 4 of Oribasius' Medical compilations with an intro-*

literary testimonies supporting this, and their significance can be easily brought to question. For example, Herodotus of Attaleia, quoted by Galen¹⁸³⁴, noted this to be an idiosyncrasy of the diet of the inhabitants of the Nile's Delta. The passage from Herodotus' works, however, suggests that only some (*metexéteroi*) of his informants conflated both of the words together, which quite obviously would lead to the supposition that the majority did not share this view. It should also be added that the knowledge presented by Herodotus of Attaleia on the subject of *zeiá* and *ólyra* was not valued highly by Galen¹⁸³⁵, and therefore leads to a suggestion that the former may not have distinguished between these two different crops, both of which were popular in Egypt. The information regarding the identity of *zeá/zeiá* and *ólyra* is also found in Hesychius' lexicon, the author of which wrote that *zeiá* is a type of grain that is also called *ólyra*¹⁸³⁶; and in the *Suda* lexicon, where the term *ólyra* is explained with the use of the word *zeiá*, followed by an explanation that they both refer to seeds (of the cereals)¹⁸³⁷. The entries composed by Hesychius and the author of the *Suda* lexicon are, however, too brief to be precise, and neither author was an expert in the field of crops.

Meanwhile, it should be noted that in all of the other analysed texts (both medical and non-medical, including the doctrines of Dioscorides that are the basis for establishing the situation in antiquity and the Byzantine period, and Galen's¹⁸³⁸ own works) *ólyra* is treated separately from *zeiá* in such a way as if they were easily distinguishable varieties, or simply different species of grain. This is the case in, for example, the fragments of the treatise of Diocles of Carystus *De sanitate*

duction and commentary, Leiden 1997). Cf. also M. D e c k e r, *op. cit.*, p. 100. See also the fragment of our work devoted to spelt.

¹⁸³⁴ G a l e n, *De alimentorum facultatibus*, 516, 15, vol. VI.

¹⁸³⁵ Cf. the questioning of the information provided by Herodotus on the styptic properties of *zeá/zeiá*. Cf. G a l e n, *De simplicium medicamentorum temperamentis ac facultatibus*, 441, 18 – 442, 1, vol. XI.

¹⁸³⁶ H e s y c h i u s o f A l e x a n d r i a, ζεία, ζ, 91, 1.

¹⁸³⁷ *Liber Suda*, "Όλυρα, ο, 224, 1.

¹⁸³⁸ He likely cited Herodotus' separate opinion, as may be interpreted, as a *sui generis* curiosity.

*tuenda*¹⁸³⁹, which Galen cited in *De alimentorum facultatibus*. We find there a kind of a “ranking list” of the most valuable grains of antiquity. The first place in this gradation of quality of grain products is held (*ex aequo*) by rye and wheat, followed by *ólyra*¹⁸⁴⁰, then einkorn wheat, followed by *zeiá*¹⁸⁴¹, foxtail millet and common millet. Likewise Mnesitheus (also cited as evidence by Galen) distinguished *zeiá* from *ólyra*. He also claimed that the term *ólyra* is identical with *típhe*, the word which was usually used for einkorn wheat¹⁸⁴². The latter example does, of course, show some confusion, as it regards the naming or identification of plants belonging to *genus Triticum*, but it does not depreciate our interpretation of the sources. Finally, the third example: the cited in the same *De alimentorum facultatibus* fragment of the book seven of Theophrastus’ treatise (the *Historia plantarum*¹⁸⁴³), on the basis of which one may suppose that the differentiation between *zeiá* and *ólyra* means these grains were treated as separate species¹⁸⁴⁴. It should be added that while neither Herodotus nor Hesychius, nor even the author of the *Suda* lexicon were botany experts, Theophrastus represented in this area a degree of competence that was recognised by later generations. It needs to be emphasised that the separateness of the description of *zeiá* and *ólyra* is common to such an extent, that we believe it undermines the findings promoted by Robert Sallares¹⁸⁴⁵.

In this argument the clear distinctions given by Dioscurides were therefore accepted as credible and valid, and it was accepted that the term *zeiá* was used to denote emmer wheat or einkorn wheat. For the latter use, however, the noun *zeiá* had to be accompanied by an appropriate epithet. The same word, without additional restriction of meaning, was in turn commonly used to indicate emmer wheat. The term *ólyra*,

¹⁸³⁹ Galen, *De alimentorum facultatibus*, 511, 15 – 512, 3, vol. VI.

¹⁸⁴⁰ Galen, *De alimentorum facultatibus*, 512, 3, vol. VI.

¹⁸⁴¹ Galen, *De alimentorum facultatibus*, 512, 3, vol. VI.

¹⁸⁴² Galen, *De alimentorum facultatibus*, 512, 9–13, vol. VI.

¹⁸⁴³ Galen, *De alimentorum facultatibus*, 516, 2–11, vol. VI.

¹⁸⁴⁴ Galen, *De alimentorum facultatibus*, 516, 2–11, vol. VI.

¹⁸⁴⁵ R. Sallares, *op. cit.*, *passim*.

highlighted by the author as a separate one, but denoting grain related to emmer (of the same kind as *zeá*¹⁸⁴⁶, as the author put it), was in turn used by him (and after him by other medical authorities) to refer to spelt.

On the basis of the analysis of information from medical sources it is possible to draw only an imprecise outline of the popularity of emmer across geographic, social and temporal lines. When it comes to the geographic distribution of the analysed grain, from Greek sources we learn that it grew well only in places with sufficiently good soil. In *De alimentorum facultatibus* Galen cited passages of *Historia plantarum* written by Theophrastus, in which *zeiá*¹⁸⁴⁷, among others, is being discussed. The aforementioned ancient botanist claimed, that among the plants similar to common wheat and barley, such as *zeiá*¹⁸⁴⁸, *típhe*, *ólyra*¹⁸⁴⁹, oat and *aigilops*, *zeiá* is endowed with the greatest power of growth, and barren the soil to the greatest extent¹⁸⁵⁰. This is because this plant has long and numerous roots, and many thick stalks¹⁸⁵¹. For this reason it requires rich and good soil¹⁸⁵². Its grain is light and willingly eaten by all animals¹⁸⁵³. The sources also suggest that *zeiá* grew well not only around the Mediterranean itself, but also in places where the influence of the Graeco-Roman civilisation was weaker, and this view can be supported with the preserved passages of Mnesitheus present in Galen's works. Thus from the information taken from *De alimentorum facultatibus* it is clear that *zeiá* is more resistant to cold than other basic crops¹⁸⁵⁴.

Its popularity in diet is difficult to quantify. It is worth however drawing attention to several other facts, which allow making at least a general

¹⁸⁴⁶ Dioscurides, *De materia medica*, II, 91, 1, 1.

¹⁸⁴⁷ Galen, *De alimentorum facultatibus*, 516, 2–11, vol. VI.

¹⁸⁴⁸ Galen, *De alimentorum facultatibus*, 516, 3, vol. VI.

¹⁸⁴⁹ *Ólyra* did not require as fertile a soil. Cf. the fragment of this work devoted to spelt.

¹⁸⁵⁰ Galen, *De alimentorum facultatibus*, 516, 4, vol. VI.

¹⁸⁵¹ Galen, *De alimentorum facultatibus*, 516, 5–6, vol. VI.

¹⁸⁵² Galen, *De alimentorum facultatibus*, 516, 9, vol. VI.

¹⁸⁵³ Galen, *De alimentorum facultatibus*, 516, 6, vol. VI.

¹⁸⁵⁴ Galen, *De alimentorum facultatibus*, 513, 5–10, vol. VI.

evaluation of this matter. Firstly, since early antiquity this grain was included among the canonical basic food products, which is attested by remarks about it in the constituent works of the *Corpus Hippocraticum*, by information from the works of Theophrastus, in the works of Diocles of Carystus, in the works of the already mentioned Mnesitheus, and finally, as can be clearly seen from the argument presented here, in the works of Galen himself. The latter also noted that the only important dieticians who did not write about emmer were Philotimus¹⁸⁵⁵ and his teacher, Praxagoras¹⁸⁵⁶. Thus they were the only exceptions to the generally accepted rule. During later period, as will be discussed in the following text, the situation did not change much. In general, then, one may stand by the statement that this grain was never considered to be of little value, or dietetically unimportant. On the contrary, from the available information it is clear that, as one of the major types of wheat, it was appreciated, and was only valued less than common wheat as a material for baking bread, and that it was less popular for other culinary uses than barley.

Secondly, had emmer not played a significant role in the diet, it would not have been mentioned on the lists of the most important edible grains. This is supported by the surviving quality classifications that were already discussed in this text. From the presented lists we may therefore conclude that emmer, while not the most popular, and perhaps even less common during the fourth–third century BC than spelt, was nonetheless included into the canon of the basic grain foodstuffs. Furthermore, we may also deduce that Galen would not have made excerpts from the aforementioned passage from the works of Diocles of Carystus if it had purely antiquarian value – and therefore emmer had a prominent place in feeding the Pergamene’s contemporaries. Mnesitheus, also cited in Galen’s treatise *De alimentorum facultatibus*¹⁸⁵⁷, wrote that the ranking of grains best for consumption¹⁸⁵⁸ included in

¹⁸⁵⁵ Galen, *De alimentorum facultatibus*, 511, 6–7, vol. VI.

¹⁸⁵⁶ Galen, *De alimentorum facultatibus*, 511, 8, vol. VI.

¹⁸⁵⁷ Galen, *De alimentorum facultatibus*, 512, 9–13, vol. VI.

¹⁸⁵⁸ Galen, *De alimentorum facultatibus*, 512, 10, vol. VI.

the first place (common) wheat and barley, followed by grain that was referred to as *típhe* or *ólyra*¹⁸⁵⁹. Following those was *zeiá*¹⁸⁶⁰, and after that, common millet and foxtail millet. The testimony from the end of the fourth century BC described here summarily confirms the information left by Diocles of Carystus (including the one about lower reverence of dieticians towards *zeá/zeiá* than to *ólyra*), and may additionally be interpreted as further evidence of the interest in emmer cultivation in Galen's times. Regarding the frequency with which statements about this type of wheat appear, it is worth suggesting that the constant (although, as may be concluded, not prominent) presence of the term *zeiá* in medical sources written down before Galen's treatises were composed, as well as afterwards, may be a reflection of an established, though only secondary, presence of this grain in the diet.

Since what can be said about Galen's predecessors has already been discussed, it is also worth mentioning that emmer was commonly discussed by the medical authorities who used the Pergamonian physician's work, that is by Oribasius, Aetius of Amida, Alexander of Tralles and Paul of Aegina, although, admittedly, the information that they convey is usually only a part of what Galen had to say on the subject of *zeiá*. When it comes to more detailed reflections, the evidence given by Oribasius, who approached to the information preserved in his sources rather selectively, suggests a commonly widespread use of *zeiá* in the fourth century. A very similar scope of information is preserved from the sixth century by Aetius of Amida, and subsequently in the seventh century in Paul of Aegina's *Epitome*. From that time onwards, it needs to be said, the degree of the preserved information's detail diminishes.

Non-medical sources add a little more to the image of the observed tendencies. *Deipnosophistae* include the term *zeiá* itself, but the evidence preserved there is rather limited, and refers primarily to the situation prior to the latter half of the second century, the time of this source's creation. Athenaeus of Naucratis preserved fragments of Mnesitheus'

¹⁸⁵⁹ Galen, *De alimentorum facultatibus*, 5 12, 12, vol. VI.

¹⁸⁶⁰ Galen, *De alimentorum facultatibus*, 5 12, 13, vol. VI.

doctrines, as well as several other remarks, such as, for example, the passage taken from Polemo's work. The latter author wrote about *zeiá* as one of the gifts of Demeter that found their place in *kotyliskoi* forming the so-called *kérnos*¹⁸⁶¹. This remark attests to the consideration of this grain as one of the primary gifts of the earth. It does not, however, say much about its geographic distribution during the time of writing of *Deipnosophistae*. To sum up, it is the writings of the second century AD, and in particular Galen's works, that are the ones that offer us the most information on the subject of the grain in question.

Geoponica, in turn, attests to the presence of *zeiá* among the grains that were known and discussed in the agronomical literature written between the first century BC¹⁸⁶² and tenth century AD¹⁸⁶³. There are, however, few mentions of the emmer wheat¹⁸⁶⁴, although at least one of these appears to be in the chapter that expands our information on the subject of technology used in the production of important grain products, namely *chóndros*¹⁸⁶⁵. It indicates that it was at least cultivated to provide the raw material for creation of this traditional product. Of course, the compilatory character of the treatise itself prevents the possibility of making an authoritative statement on this matter.

To sum up, *zeiá* appears to be a grain that was constantly present in the diet of the period in question, although at the same time it is possible that the closer to the tenth century, the more marginal its consumption became. It was also less important than barley or common wheat, and even less popular than einkorn wheat and spelt – but more widespread than common millet and foxtail millet, not to mention oat or rice. It was eaten by those who lived at the edge of the Graeco-Roman civilisation

¹⁸⁶¹ Athenaeus of Naucratis, XI, 478 d (56, 23).

¹⁸⁶² Information on the subject of *zeiá* come from the sources written from the first century BC (Varro), through the second century AD (the Quintilii) until the fifth century AD (Didymus).

¹⁸⁶³ It was re-published at that time.

¹⁸⁶⁴ The term *zeiá* is appears three times in total (*Geoponica*, III, 3, 12; III, 7, 1; XIV, 24, 8).

¹⁸⁶⁵ *Geoponica*, III, 7, 1–2.

(in particular in places with a climate harsher than the Mediterranean, but at the same time only in places where the soil was sufficiently fertile), and among those predominantly by countryside dwellers rather than those living in cities.

KRZYSZTOF JAGUSIAK

Emmer: dietary assessment

Much like in the case of other grains, the dietetics of antiquity and Byzantine times developed a coherent set of doctrines on the subject of the term *zeiá*. In the *Corpus Hippocraticum* the dietary and pharmacological characterisation of emmer was reduced to a minimum. The author of the *De diaeta*¹⁸⁶⁶ treatise claimed that einkorn wheat and *zeiá* are foods lighter than *pyrós*¹⁸⁶⁷. He also added that it was used in making products similar to those of the latter¹⁸⁶⁸. From the available information it is also clear that all of these were considered to be more powerful than common wheat foods when it came to stimulating excretion¹⁸⁶⁹.

Dioscurides did not include in his works much exact information regarding to the dietary properties of the grain in question, either. One should begin by stating that he did point out that it is more nourishing than barley, and tasty, but when made into bread is less nourishing than wheat baked goods¹⁸⁷⁰. Emmer or *pyrós* were used to make *krímnnon*, or groats, that were considered to be rather nutritious and easy to absorb¹⁸⁷¹. It delays excretion, especially if it was made of *zeiá*, that was

¹⁸⁶⁶ *De diaeta*, 43, 1–3.

¹⁸⁶⁷ *De diaeta*, 43, 1.

¹⁸⁶⁸ *De diaeta*, 43, 1–2.

¹⁸⁶⁹ *De diaeta*, 43, 2.

¹⁸⁷⁰ Dioscurides, *De materia medica*, II, 89, 1, 2–4.

¹⁸⁷¹ I. Anagnostakis (*Byzantine aphrodisiacs*, [in:] *Flavours and delights. Tastes and pleasures of ancient and Byzantine cuisine*, eds. I. Anagnostakis, Athens

pre-roasted¹⁸⁷². The same author also mentioned in the *De materia medica* treatise another type of product made by milling emmer seed, namely *chóndros*¹⁸⁷³. He claimed that *zeá*¹⁸⁷⁴ was the basic grain out of which this food product was made, but he did not even mention that *chóndros* was also (if not primarily) made of common wheat. Admittedly, he analysed it in this passage in detail, but made comparison to rice, writing that it was more nutritious than the latter. He also added that it was more effective in slowing down the work of the digestive tract¹⁸⁷⁵ than *óryza*, and also better for the digestive system¹⁸⁷⁶.

Although Galen wrote relatively much about emmer, the majority of information he left in his works is the related opinion of other authors on the subject of the terms *zeá* and *zeiá*. His authorities on the matter in question were of course chiefly physicians (particularly Dioscurides, but also in part Mnesitheus, and others), but one may also find there a semi-dietary reflection by Theophrastus. A typical example of this imitative method is the longest passage in his works devoted also to emmer, namely the fragment on wheats other than common wheat and durum, located in the treatise *De alimentorum facultatibus*¹⁸⁷⁷. A similar method of work is clear also in the other works of the Pergamonian physician.

Since the information on the subject of *zeiá* taken from Mnesitheus and Theophrastus has already been discussed, let us now move on to the third of the Galen's primary sources. In the aforementioned work, the physician stated his predecessor's words verbatim, which indicates in an obvious way the importance he accorded Dioscurides' findings¹⁸⁷⁸. One should add to this that – because the text of *De alimentorum facultatibus* does not include any critical remarks addressed to this authority

2013, p. 79) states, that emmer wheat groat was also considered to be an aphrodisiac.

¹⁸⁷² Dioscurides, *De materia medica*, II, 90, 1, 3.

¹⁸⁷³ Dioscurides, *De materia medica*, II, 96, 1, 1–6.

¹⁸⁷⁴ Dioscurides, *De materia medica*, II, 96, 1, 1–2.

¹⁸⁷⁵ Dioscurides, *De materia medica*, II, 96, 1, 2.

¹⁸⁷⁶ Dioscurides, *De materia medica*, II, 96, 1, 2–3.

¹⁸⁷⁷ Galen, *De alimentorum facultatibus*, 510, 15 – 522, 14, vol. VI.

¹⁸⁷⁸ Galen, *De alimentorum facultatibus*, 516, 16 – 517, 3, vol. VI.

– it also suggests that Galen accepted Dioscurides' doctrines in their entirety. We shall therefore not cite them, as they do not make any alteration to our current findings. We shall only add that the reverence for this particular author is all the more conspicuous because the Pergamonian physician did not always refer to the doctrines of his predecessors with the respect due to the traditional findings of dietetics. For example, in the treatise *De simplicium medicamentorum temperamentis ac facultatibus* he boldly made ironic remarks on the subject of Herodotus of Attaleia's findings on the matter of the properties of *zeiá*¹⁸⁷⁹. Specifically, he claimed that this physician attributed to emmer astringent properties. However, Galen wrote, perhaps it did indeed act in this way – but only on Herodotus. Furthermore, one should note that the Pergamene included a casual characteristic of emmer wheat in *De simplicium medicamentorum temperamentis ac facultatibus*¹⁸⁸⁰. He described it by comparing its properties to other grains' qualities, claiming that its potency was between that of common wheat and barley¹⁸⁸¹.

Galen also characterised products made of processed *zeiá*. To achieve this, he brought up not his own findings, but again referred to the doctrines of Dioscurides and Mnesitheus. In the words of the former, he described the term *krímnōn*, and he did it both in the *De simplicium medicamentorum temperamentis ac facultatibus*¹⁸⁸² and in the treatise *De alimentorum facultatibus*¹⁸⁸³. The fragments do not differ from one another and do not bring any changes to the aforementioned doctrines. Because *krímnōn* was also made of common wheat, it was discussed

¹⁸⁷⁹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 441, 18–442, 1, vol. XI.

¹⁸⁸⁰ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 880, 6–8, vol. XI.

¹⁸⁸¹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 880, 7, vol. XI. The tradition preserved by Paul of Aegina is likely to be a specific instance of this claim. Cf. Paul of Aegina, VII, 3, 6, 2–4.

¹⁸⁸² Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 45, 5–9, vol. XII.

¹⁸⁸³ Galen, *De alimentorum facultatibus*, 517, 3–7, vol. VI.

in the section devoted to it. Let us add that Galen wrote about *chón-dros*¹⁸⁸⁴ separately, but its characterisation does not follow Dioscurides' tradition, and this physician's words were brought up in the discussion of this food in the section on *pyrós*.

In *De alimentorum facultatibus* Galen referred also to the authority of Mnesitheus himself, to list in detail his findings on the subject of baked goods made of emmer wheat. The latter claimed that in his day *zeiá* was used in baking bread. It was, however, not tasty and did not contribute to the good health of its consumers, particularly those who were not used to eating it, for it was a heavy food, and difficult to pre-digest. There are however regions in which this grain is dominant, as the local terrain is not suited for cultivating better species than *zeiá*. Thus people living in these parts of the Ecumene must rely on emmer wheat. Once they get used to it, the habit makes the product easier to assimilate. However, even for those inured to eating *zeiá* this food, full of fibrous elements, is difficult to digest¹⁸⁸⁵.

Another of the authors, Oribasius, while writing about emmer wheat used primarily Galen's works, and as a result referred also to the findings of the predecessors of the old master. Hence Oribasius used *De alimentorum facultatibus*, and thus also referred to Dioscurides' treatise *De materia medica*, as in book nine of *Collectiones medicae* he included the definition of the *zeiá*-type wheat¹⁸⁸⁶. From this, we again learn about the two types of this grain, namely *zeiá haplé*, or the einkorn wheat, and *zeiá dikokkos*, that is, emmer. The structure of the narrative, wording and contents of the description are borrowed so exactly that there is no point in returning to them. *Nota bene*, the same can be said about one of the descriptions of *chón-dros*¹⁸⁸⁷. Let us also add that Oribasius devoted to the *krímnnon*-type groat only cursory attention and

¹⁸⁸⁴ Galen, *De alimentorum facultatibus*, 496, 3 – 498, 4, vol. VI.

¹⁸⁸⁵ Galen, *De alimentorum facultatibus*, 512, 15 – 513, 12, vol. VI.

¹⁸⁸⁶ Oribasius, *Collectiones medicae*, XI, ζ, 1, 1–3.

¹⁸⁸⁷ Oribasius, *Collectiones medicae*, XI, χ, 15, 1–2. The latter pertains to *chón-dros* made with common wheat and was taken from Galen's works – Galen, *De alimentorum facultatibus*, 496, 3 – 498, 4, vol. VI.

the details on this matter were listed by us along with the characterisation of *pyrós*.

Another medical authority, namely Aetius of Amida, was rather frugal with words when writing about the dietary characteristics of emmer wheat. This physician referred only to the very general definition of dietary properties of *zeiá*, which was known already from Galen's findings¹⁸⁸⁸. Aetius claimed that its properties lie between those of common wheat and barley¹⁸⁸⁹. The author of *Iatricorum libri* (again, following the same doctrinal tradition that can be detected in Dioscurides, Galen and Oribasius) characterised also the products that could be obtained from emmer wheat or common wheat, the *krímnnon* and *chóndros*. We have described both of these in the section of this work devoted to *pyrós*.

Finally, Paul of Aegina included in his work a brief dietary characterisation of *zeiá*¹⁸⁹⁰, writing that emmer had a similar effect to *pyrós*¹⁸⁹¹. That is, its properties are graded as intermediate between warming and cooling¹⁸⁹². It is also slightly drying¹⁸⁹³, and appropriate for use in cataplasms¹⁸⁹⁴.

Conclusions. From the information listed above it is clear that the dietary doctrine relating to emmer was already well established during the pre-Galenic antiquity. The basic canon of findings was introduced into medicine by Dioscurides, and his teachings were cited until the end of the discussed period without any alterations. The materials that we have presented prove that emmer was not disallowed by the ancient and Byzantine dieticians. While worse than common wheat, it was classed as a valuable food, especially in the form of groats, suited for making soups and porridges.

¹⁸⁸⁸ Aetius of Amida, I, 152, 1–2.

¹⁸⁸⁹ Aetius of Amida, I, 152, 1.

¹⁸⁹⁰ Paul of Aegina, VII, 3, 6, 2–4.

¹⁸⁹¹ Paul of Aegina, VII, 3, 6, 2.

¹⁸⁹² Paul of Aegina, VII, 3, 6, 2–3.

¹⁸⁹³ Paul of Aegina, VII, 3, 6, 3.

¹⁸⁹⁴ Paul of Aegina, VII, 3, 6, 3–4.

MACIEJ KOKOSZKO, KRZYSZTOF JAGUSIAK

Emmer: culinary data

Corpus Hippocraticum adds little to our knowledge of the ways of preparing emmer wheat. The author of *De diaeta* claimed only that it is processed into products similar to those made of common wheat¹⁸⁹⁵. He likely meant flours (and therefore also bread) and groats, the names of which we find in the works of other authors. In *De mulierum affectibus*, in turn, we find a cursory remark about boiling liquid food, *rhóphema*¹⁸⁹⁶, likely *sui generis* soup, from the grain referred to as *zeiá*, as the treatise's author put it – *zeiá káthephtos*¹⁸⁹⁷. We read again about *rhóphema*¹⁸⁹⁸ made of emmer, albeit roasted this time¹⁸⁹⁹, in the same work, in a section devoted to curing a particular gynaecological ailment. In the aforementioned treatises we lack, however, *stricte* culinary information – even more so, specific recipes.

Although neither the work *De materia medica* nor *Euporista vel de simplicibus medicinis* was composed with the thought of presenting contemporary culinary practices, Dioscurides did preserve in his works basic advice related to the ways of preparing emmer in antiquity. From the information it is clear that since its grains were enclosed in husks, efforts were made to remove the latter. The process was facilitated by prior roasting of the grains, and the *zeiá*¹⁹⁰⁰ thus prepared was recommended by Dioscurides for use, for example, in a diet for those suffering from digestive tract problems. The existence and widespread use of the thermal processing of the grain (of course, prior to further preparation for

¹⁸⁹⁵ *De diaeta*, 43, 1–2.

¹⁸⁹⁶ *De mulierum affectibus*, 110, 27.

¹⁸⁹⁷ *De mulierum affectibus*, 110, 29.

¹⁸⁹⁸ *De mulierum affectibus*, 117, 10.

¹⁸⁹⁹ *De mulierum affectibus*, 117, 8.

¹⁹⁰⁰ Dioscurides, *Euporista vel de simplicibus medicinis*, II, 51, 2, 4.

culinary purposes) is also evidenced by the information about *póltos* made of roasted emmer.

The grain was made into *áleuron*¹⁹⁰¹ flour, which was baked into *áleuron* bread¹⁹⁰². *Zeia* was also processed into groats, and in the part devoted to dietetics we have already named two of those, namely *krímnnon* and *chóndros*. The former was relatively fine, which may be deduced from the comment that its grains are larger than *áleuron*. The physician also added here that this groat was cooked into *póltos*¹⁹⁰³, the recipe for which he did not, however, include. Emmer was also processed into *chóndros*. Dioscurides did not refer in particular to either the thickness of this product, nor to the methods used in preparing it as food, but focused in his arguments on the role of this groat as a medicinal remedy. Nonetheless, we do learn that *chóndros* was sometimes boiled with wine vinegar¹⁹⁰⁴, and the decoction thus made, described as *aphépsema*¹⁹⁰⁵, was used for rinses and enemas rather than dietary purposes. Dioscurides also claimed that emmer was used in creation of a food called *athéra*. It was a kind of soup, which the author listed among the aforementioned *rophémata* – the foods that were possible to drink. It was rather thin, which may be deduced from the fact that the term used by the author to describe it is *poltáron hygrón*, that is, watery *póltos*¹⁹⁰⁶. Finally, the physician wrote about preparing gruel from emmer, to which he referred as *kólla*. The name suggests that it had to be rather thick. It was slowly licked by the patients. It was aromatised, as Dioscurides suggests, not to improve its taste, but first and foremost to achieve a proper therapeutic effect. From the works of this physician one may learn that the discussed medicinal food was enriched with, for example, mint¹⁹⁰⁷. Finally,

¹⁹⁰¹ Dioscurides, *Euporista vel de simplicibus medicinis*, II, 90, 1, 1.

¹⁹⁰² Dioscurides, *Euporista vel de simplicibus medicinis*, II, 89, 1, 3–4.

¹⁹⁰³ Dioscurides, *De materia medica*, II, 90, 1, 2.

¹⁹⁰⁴ Dioscurides, *De materia medica*, II, 96, 1, 3.

¹⁹⁰⁵ Dioscurides, *De materia medica*, II, 96, 1, 5.

¹⁹⁰⁶ Dioscurides, *De materia medica*, II, 92, 1, 1–3.

¹⁹⁰⁷ Dioscurides, *Euporista vel de simplicibus medicinis*, II, 30, 1, 6.

Dioscurides also left the information¹⁹⁰⁸ that *zeiá* was a raw material for preparing one of the types of *ámylon*¹⁹⁰⁹. Interestingly enough, he provided us with details of the technology used in preparing this product. First, starch was made of well-cleaned *zeiá*¹⁹¹⁰ that was soaked for one or two days¹⁹¹¹, and then *ámylon* was pressed by hand (in the same way as animal fat, the expert remarked, referring to the method of its production¹⁹¹²), and the product was finally dried fully exposed to sunlight¹⁹¹³. Such *ámylon*, as the author of *De materia medica* stated, was sufficiently good for all uses, with the exception of medicinal¹⁹¹⁴.

Another expert on the medicinal uses of foodstuffs, Galen, left us theories that are in nearly all aspects tied to Dioscurides' works. One should suppose that the reason for repeating his predecessor's doctrines was their applicability to the realities of the second century. In sum, then, we may state that since Galen cited Dioscurides so exactly, it means that in the second century emmer¹⁹¹⁵ was still being roasted before being ground into *áleuron*¹⁹¹⁶, from which then bread was baked. The bread was rather brittle, especially when eaten stale. In the second century, *krímnnon* groats were still being made out of *zeiá*, roasted or

¹⁹⁰⁸ Dioscurides, *De materia medica*, II, 101, 2, 4–8.

¹⁹⁰⁹ Dioscurides, *De materia medica*, II, 101, 1, 1–2, 8.

¹⁹¹⁰ Dioscurides, *De materia medica*, II, 101, 2, 4. This remark suggests that the raw material for *ámylon* must have been very clean (which was likely difficult to achieve using ancient techniques).

¹⁹¹¹ Dioscurides, *De materia medica*, II, 101, 2, 4–5.

¹⁹¹² This comparison indicates that the animal fats used for culinary (and other) purposes were obtained in a cold process rather than by fat rendering. Modern technology is based on heat processing, cf. A. Olszewski, *Technologia przetwórstwa mięsa (Technology of meat processing)*, Warszawa 2012, p. 261–269.

¹⁹¹³ Dioscurides, *De materia medica*, II, 101, 2, 5–6.

¹⁹¹⁴ Dioscurides, *De materia medica*, II, 101, 2, 8.

¹⁹¹⁵ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 45, 9, vol. XII

¹⁹¹⁶ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 45, 5–6, vol. XII. In this text it is accepted that *áleuron* was a product made of grains of the plants belonging to the genus *Triticum*, although the name was primarily attributed to the *pyrós* flour.

not¹⁹¹⁷, and then used in making *póltos*¹⁹¹⁸. It had to be, then, a rather popular foodstuff at that time, as it is mentioned both in *De simplicium medicamentorum temperamentis ac facultatibus*¹⁹¹⁹ and in *De alimentorum facultatibus*¹⁹²⁰. When it comes to *chóndros*, in Galen's times it was one of the basic foods made from grains, but it was made primarily from *pyrós* rather than *zeiá*. This, at least, we can conclude from the information listed in the treatise *De alimentorum facultatibus*. Aside from *póltos*, another type of dish made of emmer in the second century was *athéra*, which was also defined with the use of a quote from Dioscurides' works¹⁹²¹. Those interested in details on the matter we would like to direct to the previously cited words of Galen's predecessor on this subject.

The works of Oribasius, even though they relied in large part on Galen's treatises, do not constitute a very rich source of information on preparing emmer, as the author of *Collectiones medicae* in large part omitted the detailed information preserved by his predecessor. Perhaps this is a testimony to the change in this grain's popularity during the second–fourth centuries in the Mediterranean area, in particular its eastern part. Admittedly, Oribasius listed in his works practically all of the products that were identified up to date as being made of emmer. He did not, however, frequently indicate *expressis verbis* that in his time they were made of *zeiá*. It should be added that one of the characterisations of *chóndros* in Oribasius' works was borrowed from Dioscurides¹⁹²², and this fact indicates that *zeiá* was also an option in making this groat.

The tendency to reduce the attention devoted to discussing the culinary value of *zeiá* is also visible in the examined medical works

¹⁹¹⁷ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 45, 9, vol. XII

¹⁹¹⁸ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 45, 7–8, vol. XII

¹⁹¹⁹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 45, 5–9, vol. XII

¹⁹²⁰ Galen, *De alimentorum facultatibus*, 517, 3–7, vol. VI.

¹⁹²¹ Galen, *De alimentorum facultatibus*, 517, 9–11, vol. VI.

¹⁹²² Oribasius, *Collectiones medicae*, XI, γ, 15, 1–2. Dioscurides claimed that *zeiá* was the only raw material for *chóndros*.

from the sixth century. Thus Aetius of Amida wrote very little about the products made of this wheat. From the text, analogous to the earlier deliberations of Dioscurides (and later also Galen and Oribasius), it appears that after cleaning it of husks, and also frequently after roasting¹⁹²³, the grains were ground into groat, which the physician called idiosyncratically *krímnos*¹⁹²⁴. Let us add that the author *expressis verbis* stated that the groat was made of *zeiá*¹⁹²⁵. *Krímnos* was also used in the sixth century in making *póltos*¹⁹²⁶. When it comes to *chóndros*, there is nothing to indicate that it was made of emmer. The reason for this may have been a reduced use of *zeiá* in the kitchen, where it was replaced by the more popular *pyrós* wheat.

The works of Alexander of Tralles do not appear to be a mine of knowledge for a food historian. He did not provide any recipes for emmer wheat dishes, and *expressis verbis* spoke only of a cooked meal made of *zeiá*¹⁹²⁷, which he called *chylós*¹⁹²⁸. It was most likely a thin broth or a water-based gruel.

At the beginning of the seventh century Paul of Aegina listed traditional culinary uses for *zeiá*. He knew *athéra* and described it as a thin soup, a *poltáron rophematódes*, suitable for small children¹⁹²⁹. It is worth noting that although the wording used in *Epitome* differs somewhat from what we have found in the works of Dioscurides, Galen and other authors, the contents remain in agreement with the already well-known tradition. The physician also listed *krímnon*¹⁹³⁰ and *chóndros*¹⁹³¹, but his work does not expand our knowledge of the nature of this food product and the culinary methods used in preparing it. Since

¹⁹²³ Aetius of Amida, I, 228, 4–5.

¹⁹²⁴ Aetius of Amida, I, 228, 1.

¹⁹²⁵ Aetius of Amida, I, 228, 4.

¹⁹²⁶ Aetius of Amida, I, 228, 3.

¹⁹²⁷ Alexander of Tralles, *Therapeutica*, 213, 9, vol. II.

¹⁹²⁸ Alexander of Tralles, *Therapeutica*, 213, 8, vol. II.

¹⁹²⁹ Paul of Aegina, VII, 3, 1, 48–49.

¹⁹³⁰ Paul of Aegina, VII, 3, 10, 346–347.

¹⁹³¹ Paul of Aegina, VII, 3, 22, 74.

Paul did not indicate that it was made of *zeiá*, we have relied on the information he provided while discussing *pyrós*.

The agronomical tradition representing the doctrines current for the tenth century, the *Geoponica*, is a highly significant source for re-creating the technique of making of one of the important products made of emmer wheat, frequently mentioned above. Thus, the seventh chapter of book three is devoted to the *chóndros* made of *zeiá*. *Nota bene* one may guess that a similar technique was also used when the groat in question was prepared with common wheat. The author¹⁹³² began his argument by discussing the initial processing of the grain. He stated that emmer wheat needs to be first husked, then sieved and thrown into hot water, and finally squeezed. In turn, he moved on to describing the final stage of cleaning the product. First, one needed to crush white gypsum and carefully sieve it, so that its particles were as small as possible. White and very fine sand was then added to it, in an amount equal to one-fourth of the gypsum, and this mix was then gradually added to the emmer wheat as it was, once more, undergoing the cleaning process – this time to remove the leftover remains of husks. Once all of the *zeiá* was bereft of impurities, it needed to be sifted through a durable sieve¹⁹³³. The first portion of wheat *chóndros* prepared in this way was also the best, the second was slightly worse, and the third one was of lowest quality¹⁹³⁴, likely because of the impurities. The author also added a comment regarding the time during which the groat should be made – namely, the time during which the Dog Star shone in the sky. Choosing this period meant the *chóndros* was not in danger of fermenting. Finally, *Geoponica* mentioned also the fact that *zeiá* was used as animal fodder. It was ground, soaked in water and fed to small birds¹⁹³⁵.

¹⁹³² According to the information from the book's title the information came from Varro and the Quintilii, and so the period from the first century BC to the second century AD.

¹⁹³³ *Geoponica*, III, 7, 1.

¹⁹³⁴ *Geoponica*, III, 7, 2.

¹⁹³⁵ *Geoponica*, XIV, 24, 8.

Conclusions. The information listed above indicates that emmer wheat was used in the kitchen primarily in making groats, which were in turn used for cooking various soups and gruels. It was valued somewhat less as a raw material for making bread flour and baked goods. Despite this, such goods must have been rather widely consumed, particularly in the rural areas located far from the centres of the Graeco-Roman civilisation. From the available data we may conclude that between the second and seventh century emmer was supplanted in the kitchen by the *pyrós* wheat. In this manner the latter completely replaced *zeiá* as the raw material for *chóndros* and likely also became the basic material for making of *krímnnon*.

MACIEJ KOKOSZKO

The role of emmer wheat in medical procedures

When it comes to the use of emmer wheat in specific therapeutic procedures, from the *Corpus Hippocraticum* we may gather that *zeiá* found several applications, at least, in the ancient medicine, particularly in gynaecology. Firstly, it is mentioned in the *Diseases of women*, in the part discussing appropriate diet for women suffering from vaginal discharges. The author stated that, since such complaints were accompanied by fever¹⁹³⁶, those suffering from them would best be given liquid foods, or *rophémata*¹⁹³⁷, and among those we find also cooked *zeiá*¹⁹³⁸. Secondly, we can also read in the aforementioned treatise that when the patient is suffering from white vaginal discharge¹⁹³⁹, usually accompanied by

¹⁹³⁶ *De mulierum affectibus*, 110, 26–27.

¹⁹³⁷ *De mulierum affectibus*, 110, 27.

¹⁹³⁸ *De mulierum affectibus*, 110, 29.

¹⁹³⁹ *De mulierum affectibus*, 117, 1–11.

additional complaints¹⁹⁴⁰ (genital itching, erosions of the uterus¹⁹⁴¹, high fever, thirst¹⁹⁴² and others), then an appropriate medication would be a broth (*rhóphema*)¹⁹⁴³, made of roasted emmer, wild figs picked in the Autumn, olive tree leaves and a number of other ingredients, mixed in equal measure¹⁹⁴⁴. It follows from the passage that such medication was to be drunk. In addition, a woman so suffering was also advised to be moved (the author specifically advised a procedure known as *aióra*)¹⁹⁴⁵ and, generally, avoid stillness¹⁹⁴⁶.

Thirdly, when the anonymous author of this work discussed the medicines appropriate for treating a particular type of vaginal discharge (one containing fresh blood – *rhoós erythros*¹⁹⁴⁷), an ailment, we might add, that was very dangerous and often fatal¹⁹⁴⁸, he provided a recipe for a warming poultice, *pyría*, said to be effective for this disease. This formula recommended grinding emmer wheat (with the husks included)¹⁹⁴⁹, wild (and dried) figs¹⁹⁵⁰ and olive leaves, mixed in equal meas-

¹⁹⁴⁰ *De mulierum affectibus*, 117, 2–4.

¹⁹⁴¹ *De mulierum affectibus*, 117, 2.

¹⁹⁴² *De mulierum affectibus*, 117, 3.

¹⁹⁴³ *De mulierum affectibus*, 117, 10.

¹⁹⁴⁴ *De mulierum affectibus*, 117, 8. It should be noted that a third of the whole mix was to consist of the skin of a gourd called *sikyē*, or *Lagenaria* Ser. – *De mulierum affectibus*, 117, 9.

¹⁹⁴⁵ Cf. M. K o k o s z k o, *Medycyna bizantyńska na temat aióra (αἰώρα), czyli kilka słów o jednej z procedur terapeutycznych zastosowanych w kuracji cesarza Aleksego I Komnena (na podstawie pism medycznych Galena, Orybazjusza, Aecjusza z Amidy i Pawła z Eginy)* (*Byzantine medicine on the topic of aióra (αἰώρα), or a few words on one of the therapeutic procedures used to treat the Emperor Alexios I Komnenos (on the basis of the medical writings of Galen, Oribasius, Aetius of Amida and Paul of Aegina)*, [in:] *Cesarstwo Bizantyńskie. Dzieje, religia, kultura. Studia ofiarowane Profesorowi Waldemarowi Ceranowi przez uczniów na 70-lecie Jego urodzin* (*The Byzantine Empire. History, religions, culture. Studies offered to Professor Waldemar Ceran by students on his 70th birthday*), eds. P. K r u p c z y ń s k i, M. J. L e s z k a, Łask–Łódź 2006, p. 87–111.

¹⁹⁴⁶ *De mulierum affectibus*, 117, 11.

¹⁹⁴⁷ *De mulierum affectibus*, 113, 1–37.

¹⁹⁴⁸ *De mulierum affectibus*, 113, 36–37.

¹⁹⁴⁹ *De mulierum affectibus*, 113, 33.

¹⁹⁵⁰ *De mulierum affectibus*, 113, 33–34.

ures¹⁹⁵¹, which were then to be made into a warm poultice that was to be applied to the woman's genitals¹⁹⁵².

Finally, it is worth remembering about another recipe, devoted to a drug used for fumigation. For gynaecological ailments manifesting themselves by bleeding from the genital tract, caused by, for example, childbirth or an otherwise unspecified medical condition¹⁹⁵³, the author of *De mulierum affectibus* recommended fumigation¹⁹⁵⁴ of the genitals with a special mixture¹⁹⁵⁵ which included ground *zeiá* among its ingredients, as well as wine vinegar¹⁹⁵⁶, sulphur¹⁹⁵⁷ and others¹⁹⁵⁸. This procedure, claimed the ancient gynaecology expert, would effectively put an end to the haemorrhage¹⁹⁵⁹.

Dioscurides' works also include some details about the medicinal uses of emmer wheat. The author wrote primarily of its dietary uses, but occasionally also mentioned that it was the basis for, or an ingredient of, medications. The property ascribed to this cereal of slowing down the activity of the digestive tract resulted in its use in curing ailments that caused diarrhoea. Hence Dioscurides recommended an emmer wheat *póltos*¹⁹⁶⁰ as a food suitable for those suffering from digestive tract problems and dysentery, *koiliakoi* and *dysenterikoi* respectively¹⁹⁶¹. He also added that good results could also be achieved in such cases thanks to a diet based on roasted emmer wheat¹⁹⁶². Furthermore, he found a medicinal use for *zeiá* gruel, described with the term *kóllo*. It was ingested by patients in small amounts, as Dioscurides put it, by lick-

¹⁹⁵¹ *De mulierum affectibus*, I 13, 34.

¹⁹⁵² *De mulierum affectibus*, I 13, 31–32.

¹⁹⁵³ *De mulierum affectibus*, I 14, 1–17.

¹⁹⁵⁴ *De mulierum affectibus*, I 14, 5.

¹⁹⁵⁵ The text specifies the exact proportions of the main ingredients.

¹⁹⁵⁶ *De mulierum affectibus*, I 14, 6.

¹⁹⁵⁷ *De mulierum affectibus*, I 14, 7.

¹⁹⁵⁸ *De mulierum affectibus*, I 14, 7–15.

¹⁹⁵⁹ *De mulierum affectibus*, I 14, 15–16.

¹⁹⁶⁰ Dioscurides, *Euporista vel de simplicibus medicinis*, II, 51, 3, 4.

¹⁹⁶¹ Dioscurides, *Euporista vel de simplicibus medicinis*, II, 51, 1, 1–6, 7.

¹⁹⁶² Dioscurides, *Euporista vel de simplicibus medicinis*, II, 51, 2, 4.

ing¹⁹⁶³. In case of frequent haemorrhaging¹⁹⁶⁴, for which he recommended the *kólla*, the food was cooked with an addition of mint¹⁹⁶⁵. One should also remember that Dioscurides recommended *athéra*¹⁹⁶⁶, cooked on the basis of the aforementioned cereal, as an appropriate diet for small children¹⁹⁶⁷. Such a thin soup was likely to have been easy to feed even to infants. It could have also been used, however, for preparing cataplasms¹⁹⁶⁸. *Chóndros* made from emmer wheat (*dikólikou zeíás*)¹⁹⁶⁹, in turn, was according to the author cooked together with wine vinegar¹⁹⁷⁰ and used for making poultices and a type of ointment¹⁹⁷¹ that were supposed to remove skin lesions caused by leprosy¹⁹⁷². Prepared in the same manner, *chóndros* was also effective in treating nails affected by the same disease¹⁹⁷³. The physician also claimed that a decoction (*aphépsema*)¹⁹⁷⁴ made of this groat was suitable for injecting in the form of an enema (or perhaps a rinse), as Dioscurides called it – *énklyσμα*, for those suffering from painful dysentery¹⁹⁷⁵. Finally, it is worth mentioning that he discouraged the use of *ámylon* made of *zeiá* for medical purposes¹⁹⁷⁶ although, as it may be understood from the passage, it was suitable for all the other uses. The author did not explain which of the properties of the starch obtained from *zeiá* excluded this product from therapeutic applications.

¹⁹⁶³ Dioscurides, *Euporista vel de simplicibus medicinis*, II, 30, 1, 6.

¹⁹⁶⁴ Dioscurides, *Euporista vel de simplicibus medicinis*, II, 30, 1, 1–5, 5.

¹⁹⁶⁵ Dioscurides, *Euporista vel de simplicibus medicinis*, II, 30, 1, 6.

¹⁹⁶⁶ Dioscurides, *De materia medica*, II, 92, 1, 1.

¹⁹⁶⁷ Dioscurides, *De materia medica*, II, 92, 1, 2–3.

¹⁹⁶⁸ Dioscurides, *De materia medica*, II, 92, 1, 3.

¹⁹⁶⁹ Dioscurides, *De materia medica*, II, 96, 1, 1–2.

¹⁹⁷⁰ Dioscurides, *De materia medica*, II, 96, 1, 3.

¹⁹⁷¹ Dioscurides, *De materia medica*, II, 96, 1, 4.

¹⁹⁷² Dioscurides, *De materia medica*, II, 96, 1, 3.

¹⁹⁷³ Dioscurides, *De materia medica*, II, 96, 1, 4.

¹⁹⁷⁴ Dioscurides, *De materia medica*, II, 96, 1, 5.

¹⁹⁷⁵ Dioscurides, *De materia medica*, II, 96, 1, 5–6.

¹⁹⁷⁶ Dioscurides, *De materia medica*, II, 101, 2, 7–8.

Galen's works contain only trace information on the medicinal uses of emmer wheat. Nonetheless, it is treated by him as *phármakon*, as he included its characterisation in the treatise *De simplicium medicamentorum temperamentis ac facultatibus*¹⁹⁷⁷. When it comes to products made of the cereal in question, *athéra* was deemed as suitable for cataplasms¹⁹⁷⁸ and as a food suitable for children.¹⁹⁷⁹ Galen did not, however, develop this advice, taken from Dioscurides' *De materia medica*, any further. Regarding diet, Galen also listed emmer wheat in his deliberations on the diet appropriate for the elderly¹⁹⁸⁰, and from his narrative we may only conclude that it was more suitable for them than foxtail millet (*élymos*)¹⁹⁸¹. Finally, one of his recipes¹⁹⁸² for *melínai* mentions an addition of the root of emmer wheat¹⁹⁸³. *Melíne* was a type of *émplastros*, a medicinal patch or a salve¹⁹⁸⁴. *Melínai*, the author explained, were used externally, primarily to treat various types of wounds and ulcers (including pathological changes recognised as caused by tumours)¹⁹⁸⁵. Several of the famous recipes for this medicament were composed by Andromachus, and Galen listed them in *De compositione medicamentorum per genera*.

Alexander of Tralles saw a use for *zeiá* in making a thin *chylós* broth¹⁹⁸⁶. He recommended it in a diet¹⁹⁸⁷ for patients suffering from lung diseases characterised by coughing up of purulent mucus¹⁹⁸⁸. It was

¹⁹⁷⁷ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 880, 6–8, vol. XI.

¹⁹⁷⁸ Galen, *De alimentorum facultatibus*, 517, 11.

¹⁹⁷⁹ Galen, *De alimentorum facultatibus*, 517, 10–11.

¹⁹⁸⁰ Galen, *De sanitate tuenda*, 350, 13–351, 11, vol. VI.

¹⁹⁸¹ Galen, *De sanitate tuenda*, 351, 2–6, vol. VI.

¹⁹⁸² Galen, *De compositione medicamentorum per genera*, 507, 1–5, vol. XIII.

¹⁹⁸³ Galen, *De compositione medicamentorum per genera*, 507, 3, vol. XIII.

¹⁹⁸⁴ Galen, *De compositione medicamentorum per genera*, 503, 8–505, 4, vol. XIII.

¹⁹⁸⁵ Galen, *De compositione medicamentorum per genera*, 504, 1–5, vol. XIII.

¹⁹⁸⁶ Alexander of Tralles, *Therapeutica*, 213, 8–9, vol. II.

¹⁹⁸⁷ Alexander of Tralles, *Therapeutica*, 213, 1–30, vol. II.

¹⁹⁸⁸ Alexander of Tralles, *Therapeutica*, 211, 8–27, vol. II.

likely, as all of the decoctions of this type, intended to clear the chest and ease coughing up. Furthermore he mentioned *zeiá*¹⁹⁸⁹ in a chapter of *Therapeutica* devoted to treating patients suffering from weakened absorbing power (*kathētiké dýnamis*) caused by hypothermia¹⁹⁹⁰. The physician recommended it as an appropriate food in for such an ailment.

Finally, let us mention a single remark from the seventh century, from the work of Paul of Aegina – which, however, does not expand our knowledge on the uses of *zeiá* in medicine. This is because the physician only repeated the already known information on the subject of a *poltería* called *athéra*¹⁹⁹¹. It was borrowed by the author from the doctrines of Dioscurides.

Conclusions. In summing up our deliberations on the role of *zeiá* in medical procedures, it ought to be said that emmer wheat appears in them as a *phármakon* of limited applications. It played a larger role at the beginning of the examined period of the second–seventh centuries. It was increasingly supplanted by other products as the time passed. The sources do not mention which replacements came into play, but we may guess that it was the *pyrós* wheat, which was considered to be more effective, particularly when used in rinses and poultices. If we also add to this the limited availability of *zeiá* for the readers of the medical treatises written by the authors discussed here, then it should not be surprising that the remarks on its therapeutic uses are so infrequent.



¹⁹⁸⁹ Alexander of Tralles, *Therapeutica*, 249, 12, vol. II.

¹⁹⁹⁰ Alexander of Tralles, *Therapeutica*, 249, 6 – 251, 2, vol. II.

¹⁹⁹¹ Paul of Aegina, VII, 3, 1, 49.

 KRZYSZTOF JAGUSIAK, MACIEJ KOKOSZKO

5. Spelt (*ólyra*)

KRZYSZTOF JAGUSIAK

The role of spelt in the diet of second–seventh centuries

Both medical and non-medical treatises frequently bring up the term *ólyra*. This noun, without a doubt, denotes one of the plants belonging to the wheat genus (*genus Triticum*). One might conclude this simply based on the context in which it appears in medical sources, as the term usually occurs among such terms as *pyrós*, *típhe* and *zeiá* – the diverse cereals belonging to the said genus. This may be observed, for example, in Galen's *De alimentorum facultatibus*, in the chapter *Perí típhon kai ólýron kai zeíon*¹⁹⁹². Occasionally, however, the evidence is even clearer. In the treatise *De materia medica* Dioscurides claimed that *ólyra* belongs to the same group as emmer wheat, that is, *zeiá*¹⁹⁹³. Because *zeiá* means either einkorn wheat (then referred to as *zeá haplé*) or emmer wheat (referred to as *zeá díkokkos*), the classification, precisely explaining the relation between both of the cereals, clearly indicates that *ólyra* belongs to the *genus Triticum*.

The term *ólyra* appears rather regularly (although with varied frequency) in the known works, both medical and non-medical, usually less often than terms such as *típhe* or *zeiá*, and certainly less frequently than *pyrós*. Although it does not appear in *Corpus Hippocraticum*, the word is not unknown to Dioscurides, and we need to remember that this author's analyses had a substantial influence on the shaping of

¹⁹⁹² Galen, *De alimentorum facultatibus*, 510, 15 – 522, 14, vol. VI.

¹⁹⁹³ Dioscurides, *De materia medica*, II, 91, 1, 1. Cf. Galen, *De alimentorum facultatibus*, 517, 7, vol. VI.

the doctrines related to *ólyra* in both the antiquity and Byzantine times. In the later period the noun was used many times by Galen, Oribasius and Aetius of Amida. It was also mentioned by Alexander of Tralles, and is found in the tenth century treatise *Perí trophón dynámeos*¹⁹⁹⁴; furthermore, it appears also outside of medical literature, for example in *Deipnosophistae* of Athenaeus of Naucratis¹⁹⁹⁵, Hesychius' lexicon¹⁹⁹⁶, *Liber Suda*¹⁹⁹⁷ and in *Geoponica*¹⁹⁹⁸. It was therefore in constant use long after the end of the period examined in this work.

Modern scholars, such as, for example, Andrew Dalby¹⁹⁹⁹, Mark Grant (translating medical treatises from both antiquity²⁰⁰⁰ and early Byzantium²⁰⁰¹), or Owen Powell²⁰⁰² occasionally insist that the term *ólyra*, like *zeá* and *zeiá*, pertains to emmer wheat; the support for this interpretation is provided by the findings of Robert Sallares²⁰⁰³. This

¹⁹⁹⁴ *Perí trophón dynámeos*, 10, 18–19.

¹⁹⁹⁵ Athenaeus of Naucratis, III 109 c (74, 6).

¹⁹⁹⁶ Hesychius of Alexandria, ζειά, ζ, 91, 1.

¹⁹⁹⁷ *Liber Suda*, "Ολυρα, ο, 224, 1.

¹⁹⁹⁸ For example – *Geoponica*, VII, 34, 1.

¹⁹⁹⁹ A. Dalby, *Food...*, p. 309.

²⁰⁰⁰ M. Grant, *Galen on food... passim*. Admittedly, Grant does mention the term "spelt" (*Galen on food...*, p. 93, 99, 126), but does so only twice (*ibidem*, p. 93; cf. Galen, *De alimentorum facultatibus*, 517, 11, vol. VI and cf. M. Grant, *Galen on food...*, p. 99; cf. Galen, *De alimentorum facultatibus*, 530, 15, vol. VI) to denote with it the term *trágos*. On a different occasion he discusses spelt flour (M. Grant, *Galen on food...*, p. 126; cf. Galen, *De alimentorum facultatibus*, 597, 10, vol. VI) as a raw material for dough used for making apple fritters. We need to add here that our edition of the treatise in question lacks an indication of the type of flour from which the dough was made. The translation is therefore not precise. Grant usually translates *ólyra* using the word "emmer" (cf., for example, p. 93; cf. Galen, *De alimentorum facultatibus*, 516, 14, vol. VI; 517, 7, vol. VI).

²⁰⁰¹ M. Grant, *DiETING for an emperor... passim*. The term "spelt" appears here only in the context of "spelt flour" (*ibidem*, p. 81, 173, 219). In other places *ólyra* is translated as "emmer".

²⁰⁰² O. Powell, *Commentary*, [in:] Galen, *On the properties...*, *passim*, especially p. 162–163.

²⁰⁰³ R. Sallares, *op. cit.*, *passim*, especially p. 349–350. The author concluded that spelt was only of marginal significance and that it is difficult to distinguish in the sources from emmer wheat (p. 349). He generally speaks for translating the term

of Attaleia (active near the end of first century AD)²⁰⁰⁷. While it related to, primarily, the inhabitants of the Nile Delta, it also informs us of the tendencies present in the whole Greek-speaking world known to Herodotus. Specifically, this predecessor of Galen wrote that many of the peoples base their sustenance on common wheat and barley²⁰⁰⁸. This remark highlights in an excellent way the significance of both of these cereals in feeding the inhabitants of the basin of the Mediterranean. Egypt, however, was an exception to the rule, as the diet based on the two aforementioned cereals was unacceptable for those dwelling along the Nile (because, as Herodotus explained, for some reason it was supposed to be shameful²⁰⁰⁹). Despite the lack of an explanation of this dietetic idiosyncrasy, Herodotus informed his readers that Egypt's inhabitants consumed exclusively products made of *ólyra*²⁰¹⁰. It is worth noting that even if this information was overly sweeping, it does attest to the relatively major significance of the cereal in question during the times of Herodotus of Attaleia. It likely still played a major role at the time when Galen was writing his treatises, which would have explained the interest of the author of *De alimentorum facultatibus* in his predecessor's remarks. The link between Egypt and the cultivation of spelt in literature lasted beyond Galen's activity. Hesychius, for example, wrote about a type of bread made in Egypt of spelt which was called *kyllástis*²⁰¹¹. In *Geoponica*, in turn, we find an important in this context recipe for *trágos*. The author wrote that this product is made of Alexandrian wheat, *alexandrinós sítos*, which, as he suggested, was also called *ólyra*²⁰¹². If we accept at face value that the author of *Geoponica* took his information from the works of Varro (second–first century BC) and the Quintilii (second century AD)²⁰¹³, then at least the time in which

²⁰⁰⁷ Galen, *De alimentorum facultatibus*, 516, 12–15, vol. VI.

²⁰⁰⁸ Galen, *De alimentorum facultatibus*, 516, 12–13, vol. VI.

²⁰⁰⁹ Galen, *De alimentorum facultatibus*, 516, 13–14, vol. VI.

²⁰¹⁰ Galen, *De alimentorum facultatibus*, 516, 14, vol. VI.

²⁰¹¹ Hesychius of Alexandria, *κυλλάστις*, κ, 91, 1.

²⁰¹² *Geoponica*, III, 8.

²⁰¹³ *Geoponica*, III, 1–10.

the latter worked would have corresponded to the approximate period of Galen's activity. At any rate, the statements from *Geoponica* suggest that the cultivation and processing of spelt were an important matter from the second century BC (the times of Varro) to the tenth century (the time of the final editing of *Geoponica*). It is then appropriate to sum up that for Herodotus of Attaleia, Galen, Hesychius and the author of *Geoponica* the land along the Nile was the main region in which spelt was grown. One is to understand that it was likely imported from there to the other areas of the Mediterranean basin in quantities sufficient for that to find a reflection also in medical and dietetical literature.

Galen also claimed that in the second century AD spelt was abundant in the areas of the Empire that he knew personally. In the treatise *De victu attenuante* we find a remark that in his times *ólyra* was grown in Asia Minor, and the testimony also indicates that it was relatively common there²⁰¹⁴. On a different occasion Galen pointed to the same region when expressing surprise that Mnesitheus was unable to distinguish *ólyra* from *típhe*²⁰¹⁵. After all both of them, as the author of *De alimentorum facultatibus* claimed, grow in great abundance in Asia Minor²⁰¹⁶, particularly in the vicinity of Pergamum²⁰¹⁷.

The available data allow us to make a suggestion regarding the social distribution of the consumption of spelt. In Galen's times, although not mentioned by Mnesitheus or Herodotus of Attaleia, the consumption of spelt became limited to certain of the ancient social groups, and therefore also reflected their social status. We learn from Galen's remarks that *ólyra* (as we should probably understand it), being a second grade cereal, was eaten primarily by inhabitants of the countryside²⁰¹⁸, in the form of bread²⁰¹⁹. This happened because common wheat was grown (likely by the same farmers who ate *ólyra*) for the inhabitants of

²⁰¹⁴ Galen, *De victu attenuante*, 41, 1–2.

²⁰¹⁵ Galen, *De alimentorum facultatibus*, 517, 15 – 518, 1, vol. VI.

²⁰¹⁶ Galen, *De alimentorum facultatibus*, 518, 1, vol. VI.

²⁰¹⁷ Galen, *De alimentorum facultatibus*, 518, 1–2, vol. VI.

²⁰¹⁸ Galen, *De alimentorum facultatibus*, 518, 2, vol. VI.

²⁰¹⁹ Galen, *De alimentorum facultatibus*, 518, 2–3, vol. VI.

the cities²⁰²⁰. Therefore spelt, in the western territories of Asia Minor of the second century AD, was typically intended for agricultural areas and farmers themselves, since as a raw foodstuff it was difficult to sell in the cities. The situation was likely to have been similar in the other areas surrounding the Mediterranean.

From the information we possess it is clear that products made of spelt generally enjoyed a good reputation, and this positive attitude did not change during the period we are examining. Dietetical classifications placed spelt lower than common wheat, usually close to the place occupied by einkorn wheat and emmer (with a suggestion that it was somewhat better than these two), and ahead of common and foxtail millets. Galen, for example, in the work *De rebus boni malique senci*, placed *ólyra*, in a ranking of cereals according to their importance, below barley and ahead of einkorn wheat²⁰²¹. Other detailed classifications that included *ólyra* will be mentioned alongside the discussion of the dietetical value of this cereal.

Spelt was particularly valued as a material for baking. Galen claimed that, aside from the *pyrós* baked goods, *ólyra*²⁰²² breads were the best ones – provided that the flour was milled from a good quality grain²⁰²³. We read, however, that spelt was also used in making groats of the *krímonon* and *trágos*²⁰²⁴ types; this will be discussed further on. The information on this matter is present not only in medical sources, but also in works of lexicography and *Geoponica*. This persistent presence of the relevant information indicates continued use of the discussed cereal in the diet of the inhabitants of the basin of the Mediterranean.

To approach the matter chronologically, the general popularity of this cereal throughout the entirety of the discussed period is confirmed by the appearance of spelt as a subject of the majority of the analysed

²⁰²⁰ Galen, *De alimentorum facultatibus*, 518, 3–4, vol. VI.

²⁰²¹ Galen, *De rebus boni malique senci*, 791, 6, vol. VI.

²⁰²² Galen, *De alimentorum facultatibus*, 518, 4, vol. VI.

²⁰²³ Galen, *De alimentorum facultatibus*, 518, 4–5, vol. VI.

²⁰²⁴ The latter was made primarily of spelt.

sources. It is worth highlighting that it is not mentioned in the *Corpus Hippocraticum* (fifth–fourth centuries BC). Galen, however, suggested that its presence in these treatises was merely hidden, as spelt was included within the term *zeiá*²⁰²⁵. It is difficult to comment on the truth of this statement, as the Pergamene’s writings lack information that would allow its verification. We also will not find the term *ólyra* in Paul of Aegina’s (seventh century) encyclopaedia. This may indicate a lesser supply of this cereal in the first half of the seventh century due to the difficulties of the Byzantine government in – the conquered by Persians, regained and lost once more, this time to the Arabs – Egypt²⁰²⁶. However, as the term did not disappear and still surfaced in the sources dated to the tenth century, we may accept that the cereal itself also remained in use.

MACIEJ KOKOSZKO

Spelt: dietary assessment

The dietetical science of antiquity and Byzantine times developed a set of doctrines on the subject of *ólyra* that appears repeatedly in medical writings; this indicates the persistence of scientific principles relating to this question. It is likely that the term *ólyra* would not have been a subject of separate studies if it had been synonymous with *zeiá*. Dioscurides mentioned *ólyra* writing that the term indicated a cereal of the same kind as *zeiá*, but less nutritious than the latter²⁰²⁷. He further added that *ólyra* is made into bread, the characteristics of which,

²⁰²⁵ Galen, *Linguarum seu dictionum exoletarum Hippocratis explicatio*, 102, 4, vol. XIX. It is, of course, impossible to say whether this term always denoted spelt, or whether it could mean both einkorn and spelt (and if so, how one could determine which cereal was being referred to specifically).

²⁰²⁶ The reduced supply may be connected to the occupation of this area first by the Persians and subsequently by the Arabs.

²⁰²⁷ Dioscurides, *De materia medica*, II, 91, 1, 1–3.

however, were not described. The author also left a remark that the discussed cereal (like also *zeiá*) was a raw material for making a *krímonnon*-type groat. We do not discuss this matter here, as it was discussed in the part of our work devoted to the *pyrós* wheat. An analogous approach was adopted in the case of the later authors writing about this groat. At the end, the author of *De materia medica* moved on to characterisation of the term *trágos*. He wrote that it is a product similar to *chóndros*, but much less nutritious than *zeiá*, because it lacks a certain element of inner cohesion (*achyródes*)²⁰²⁸ which makes it difficult to absorb, and its consumption leads to softening of the digestive tract²⁰²⁹. The cited doctrines were accepted by the dieticians of antiquity and Byzantine times in full, as they were copied with no change to Dioscurides' discourse.

Writing about *ólyra*, Galen used the opinions of his predecessors. Consequently, he pointed out Mnesitheus' lack of decisiveness on the matter of the difference between einkorn wheat (*típhe*) and spelt (*ólyra*)²⁰³⁰. Specific information is provided, however, only in his reference to Dioscurides' works on the subject of *ólyra*, in which the earlier author is quoted verbatim²⁰³¹. It also needs to be added that Galen included in his work *De simplicium medicamentorum temperamentis ac facultatibus* a brief characterisation of *ólyra* as a food and medicine (which was absent from Dioscurides' works)²⁰³², according to which spelt has properties that fall between those of common wheat and barley²⁰³³. A similar evaluation was provided in the treatise *De victu attenuante*, where it is estimated that *ólyra* is as qualitatively worse than *pyrós* as it is better than *típhe* and *brómos*²⁰³⁴. From the remaining information

²⁰²⁸ It likely contained certain non-digestible elements similar to *áchyra*, bran.

²⁰²⁹ Dioscurides, *De materia medica*, 93, 1, 1–3.

²⁰³⁰ Galen, *De victu attenuante*, 42, 7–8.

²⁰³¹ Galen, *De alimentorum facultatibus*, 517, 7–9, vol. VI.

²⁰³² Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 88, 16–18, vol. XII.

²⁰³³ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 88, 16–17, vol. XII.

²⁰³⁴ Galen, *De victu attenuante*, 41, 1–42, 1.

it is worth remembering that in the treatise *De alimentorum facultatibus* the author specified the colour of *ólyra*. He noted there that the cereal of this type is as light-coloured as barley²⁰³⁵. Finally, he also pointed out that *ólyra*, like *krithé*, *típhe* and *brómos*, comes in husks²⁰³⁶.

Regarding spelt bread, Galen claimed that, with the exception of wheat bread, it was the best²⁰³⁷, as long as it was made of good quality grain²⁰³⁸. Einkorn products were rated lower than spelt ones, but Galen also added that if the *ólyra* is of poor quality, then its products will be only slightly better than those made of *típhe*²⁰³⁹. The passage was concluded with a remark that in cases when einkorn wheat was of a very good quality, then hot bread made of it is better than spelt bread²⁰⁴⁰. When he in turn discussed *ártos kríthinos*²⁰⁴¹, Galen again spoke of the high quality of spelt baked goods (once more stating them to be second only to those made of common wheat²⁰⁴², and superior to those made of einkorn), but at the same time inferring that they lacked internal cohesion (in particular when compared with common wheat products), due to the lack of an element he referred to as *glíschron*²⁰⁴³. Finally, he also mentioned the term *trágos*²⁰⁴⁴. These remarks were borrowed from Dioscurides in an unchanged form, and so they will not be quoted here – the reader may find them in an earlier section.

Oribasius, deliberating on the subject of the cereal called *ólyra*, relied on the doctrines obtained from Galen's works; this method (thanks to the syncretism of views that the Pergamene preserved) resulted in relating the views of Galen's predecessors as well. Following in Galen's footsteps, he therefore pointed out that the grain of spelt has husks which

²⁰³⁵ Galen, *De alimentorum facultatibus*, 522, 2–3, vol. VI.

²⁰³⁶ Galen, *De victu attenuante*, 43, 1–4.

²⁰³⁷ Galen, *De alimentorum facultatibus*, 518, 4, vol. VI.

²⁰³⁸ Galen, *De alimentorum facultatibus*, 518, 4–5, vol. VI.

²⁰³⁹ Galen, *De alimentorum facultatibus*, 518, 6, vol. VI.

²⁰⁴⁰ Galen, *De alimentorum facultatibus*, 518, 7–8, vol. VI.

²⁰⁴¹ Galen, *De alimentorum facultatibus*, 504, 5–506, 13, vol. VI.

²⁰⁴² Galen, *De alimentorum facultatibus*, 504, 8, vol. VI.

²⁰⁴³ Galen, *De alimentorum facultatibus*, 504, 9–10, vol. VI.

²⁰⁴⁴ Galen, *De alimentorum facultatibus*, 517, 11–14, vol. VI.

need to be removed before further processing into bread²⁰⁴⁵. The dietetical value of *ólyra* was in turn specified through comparing this grain with other cereals²⁰⁴⁶; this method was taken from Galen's writings and, as in his works, provides imprecise results. Thus Oribasius wrote that spelt is worse than common wheat to the same degree as it is better than *típhe* and *brómos*²⁰⁴⁷, citing Galen without adding more detailed statements. At the same time, independently, he suggested that spelt may be characterised by a disturbed humoural balance, as it was listed among the foods identified as being *kakóchyma*²⁰⁴⁸. *Kakochymia*, characteristic for the product in question²⁰⁴⁹ was later confirmed by an identical remark in the relevant chapter of the *Synopsis ad Eustathium filium*²⁰⁵⁰, and subsequently in *Libri ad Eunapium*²⁰⁵¹. This classification likely reflected a popular opinion on the subject of palatability and aroma of foods made of *ólyra*²⁰⁵². In *Collectiones medicae* Oribasius also left us information that spelt²⁰⁵³ (likely referring to external applications used for purely therapeutic reasons) possessed diaphoretic properties²⁰⁵⁴. The latter comment, however, is not found in other surviving treatises.

Bread made of the discussed type of wheat also follows Galen's characterisation (specifically the one found in *De alimentorum facultatibus*) in the writings of Oribasius. Some of these findings can be found in the chapter of *Collectiones medicae* describing bread made of different types of wheat²⁰⁵⁵. Since its contents are identical to the ones discussed

²⁰⁴⁵ Oribasius, *Collectiones medicae*, I, 13, 5, 1–3.

²⁰⁴⁶ Oribasius, *Collectiones medicae*, III, 16, 8, 2–3.

²⁰⁴⁷ Oribasius, *Collectiones medicae*, III, 16, 8, 3.

²⁰⁴⁸ Oribasius, *Collectiones medicae*, III, 16, 1, 1–18, 1.

²⁰⁴⁹ Oribasius, *Synopsis ad Eustathium filium*, IV, 15, 8, 2–9, 1; Oribasius, *Libri ad Eunapium*, I, 33, 6, 1–2.

²⁰⁵⁰ Oribasius, *Synopsis ad Eustathium filium*, IV, 15, 1, 1–18, 4.

²⁰⁵¹ Oribasius, *Libri ad Eunapium*, I, 33, 1, 1–16, 4.

²⁰⁵² They had to be inferior to common wheat in this regard.

²⁰⁵³ Oribasius, *Collectiones medicae*, XIV, 62, 1, 32.

²⁰⁵⁴ Oribasius, *Collectiones medicae*, XIV, 62, 1, 1–3, 2.

²⁰⁵⁵ Oribasius, *Collectiones medicae*, I, 8, 1, 1–6, 3 (*ártos olyrinós* – I, 8, 6, 1–3).

above, they will be omitted from the present reflections. Oribasius returned to the subject of spelt in the chapter of *Collectiones medicae* devoted to *típhe* and *ólyra*²⁰⁵⁶ and, although he shortened the argument of his predecessor, he carefully preserved the arrangement of information found in *De alimentorum facultatibus*. Since we wish to avoid bringing up the already well-known findings, we would only like to add that Oribasius compared the quality of *pyrós*, *ólyra* and *típhe* bread, awarding *ártos olýrinos* second place, just after wheat bread, and introducing the already familiar remarks on the dependence of the quality of baked goods on how recently they have been made and on the traits of the grain from which they were made²⁰⁵⁷. Oribasius has once again given us food for thought on the matter of the properties of *ólyra* breads when, following Galen's example, he deliberated on the subject of barley bread²⁰⁵⁸. This characterisation is not, however, direct, and reconstructing all of the properties is only possible on the basis of comparing the qualities of spelt bread with those of barley and common wheat bread. It is clear from Oribasius' summary of his predecessor's musings that *ártos olýrinos* was relatively brittle²⁰⁵⁹, a result of the lack of a binding element²⁰⁶⁰. This resulted in the lowered nutritional value of such bread²⁰⁶¹. Finally, we need to add that Oribasius was also familiar with the term *trágos*²⁰⁶². His characterisation of this product shall not be discussed here, as it is a direct repetition of Dioscurides' and Galen's findings.

Another medical authority, namely Aetius of Amida, limited himself to listing spelt among the foods characterised by a disturbed humoral harmony (*kakóchyma*)²⁰⁶³. Writing about it, much like Galen

²⁰⁵⁶ Oribasius, *Collectiones medicae*, I, 13, 1, 1–6, 5.

²⁰⁵⁷ Oribasius, *Collectiones medicae*, I, 13, 1, 1–2, 2.

²⁰⁵⁸ Oribasius, *Collectiones medicae*, I, 10, 2, 1–4.

²⁰⁵⁹ Oribasius, *Collectiones medicae*, I, 10, 2, 2–3.

²⁰⁶⁰ Oribasius, *Collectiones medicae*, I, 10, 2, 3. Cf. Galen, *De alimentorum facultatibus*, 504, 10, vol. VI.

²⁰⁶¹ Oribasius, *Collectiones medicae*, I, 10, 2, 3–4.

²⁰⁶² Oribasius, *Collectiones medicae*, XII, 7, 15, 1–3.

²⁰⁶³ Aetius of Amida, II, 253, 1–37.

and Oribasius before him, he stated that the *ólyra*-type wheat is worse than *pyrós* to the same degree that it is better than einkorn and oat²⁰⁶⁴. He mentioned the *trágos*²⁰⁶⁵ only once, attributing to it the potential to block the liver, enlarge the spleen and create kidney stones; this information was listed in the chapter discussing cereal products cooked with milk²⁰⁶⁶.

Finally, Paul of Aegina included in his work only the term *trágos*²⁰⁶⁷. The formula here is somewhat different from the one found in the tradition of Dioscurides. Paul described it as a cereal food (*sitódes*) similar to *zeiá*, but more difficult to digest and stronger in its softening of the digestive tract²⁰⁶⁸.

In concluding these reflections it is also worth referring to the dietary knowledge preserved in non-medical works, which may indicate the prevalence of the dietary findings in the realm of common knowledge. It is interesting that the lexicon compiled by Hesychius in the sixth century includes a definition of *ólyra*²⁰⁶⁹ worthy of a professional dietician's work. It is, as this author noted, a cereal between wheat and barley, with properties intermediate²⁰⁷⁰. This opinion is based on an earlier evaluation by Galen which can be found in the work *De simplicium medicamentorum temperamentis ac facultatibus*.

Conclusions. The presented opinions attest that spelt was considered a mediocre food when compared to common wheat: it was deemed to be less nutritious and more difficult to digest, as well as having a worse taste (and smell). Particular attention should be drawn to the fact that the dieticians invariably treated the terms *ólyra* and *zeiá* separately, and to each was attributed a separate set of characteristics. Of all spelt

²⁰⁶⁴ Aetius of Amida, II, 253, 13–14.

²⁰⁶⁵ Aetius of Amida, II, 97, 9.

²⁰⁶⁶ Aetius of Amida, II, 97, 1–11.

²⁰⁶⁷ Paul of Aegina, VII, 3, 19, 65–66.

²⁰⁶⁸ Paul of Aegina, VII, 3, 19, 65–66.

²⁰⁶⁹ Hesychius of Alexandria, *όλυρα*, ο, 660, 1–3.

²⁰⁷⁰ Hesychius of Alexandria, *όλυρα*, ο, 660, 1–2.

products, the greatest value was attributed to fresh bread which, however, was prone to losing quality as it went stale. It was similar in quality to *ártos típhinos*, but considerably better than *zeiá* bread. Generally speaking, ancient and Byzantine evaluations suggest that spelt wheat played only a secondary role in the diet of the second–seventh centuries.

KRZYSZTOF JAGUSIAK

Spelt: culinary data

The ways in which spelt could be cooked were not a common topic of considerations among Greek physicians of antiquity and Byzantine times. The relatively small amount of information we possess is, we think, a reflection of the limited role of this cereal as a foodstuff for the population of the more developed, in terms of civilisation, areas of the Mediterranean basin. Of course this marginalisation of the data on spelt, as information preserved by Galen suggests, is most likely reflective of the diet of the population of the urban areas and says nothing, or very little, about the dietary practices in the countryside.

In *Corpus Hippocraticum* we do not find the term *ólyra* at all. The data from the Hellenistic period, however, indicates that this cereal was known and mentioned by such luminaries of medicine as Mnesitheus; we know about this thanks to the citations found in Galen's works. In the first century Dioscurides remarked that *ólyra* was usually made into bread²⁰⁷¹ (one would guess that it was processed into flour first). The physician also stated that spelt (much like *zeiá*) was a raw material for the production of the *krímnnon* groat²⁰⁷², which was then cooked into a *póltos*-type soup²⁰⁷³.

²⁰⁷¹ Dioscurides, *De materia medica*, II, 91, 1, 2.

²⁰⁷² Dioscurides, *De materia medica*, II, 91, 1, 3.

²⁰⁷³ Dioscurides, *De materia medica*, II, 90, 1, 2. The whole passage – Dioscurides, *De materia medica*, II, 90, 1, 1–3.

When it comes to the treatment of this cereal as a raw ingredient, from Galen's works we learn that a major difficulty in processing spelt came from the necessity of removing the outer husk, characteristic for this grain. Galen wrote about this drawback when, for example, discussing *ólyra* in the treatise *De alimentorum facultatibus*²⁰⁷⁴. The physician also noted that the same preliminary activity was necessary in processing barley, einkorn wheat and oats. The grain, ground into flour, provided a valuable food in the form of bread²⁰⁷⁵. Galen emphasised that the quality of *ólyra* baked goods depended on the milled grain²⁰⁷⁶, and his thoughts on this matter were previously presented in the discussion on the dietetics of spelt. We should add here that such foods were enjoyed mainly by the countryside folk, since in urban areas the wheat bread had prevalence²⁰⁷⁷. Aside from flour for baking the valued spelt bread, *ólyra* was also used in making groats. *Krímnnon* certainly needs to be counted among the foods of this category; the information on this matter was provided in the form of words taken from the works of Dioscurides²⁰⁷⁸. Finally, in the treatise *De alimentorum facultatibus* we find an interesting passage on preparing *trágos*²⁰⁷⁹. Galen borrowed it from Mnesitheus, and this account on the nature of this food is the most exhaustive that we found in the medical sources. The physician stated that to properly cook this food, spelt first needed to be husked²⁰⁸⁰. It is clear from his argument that such spelt *trágos* was initially boiled in pure water – as the text does not mention adding anything to it – and after it was poured out, sweet and aromatic substances were added, such as *straion* (boiled wine must), or sweet wine, or *oinómeli*, that is, wine with added honey. The dish was also enriched with water-soaked, and therefore swollen,

²⁰⁷⁴ Galen, *De alimentorum facultatibus*, 519, 9–10, vol. VI.

²⁰⁷⁵ Galen, *De alimentorum facultatibus*, 517, 7–9, vol. VI.

²⁰⁷⁶ Galen, *De alimentorum facultatibus*, 518, 4–8, vol. VI.

²⁰⁷⁷ Galen, *De alimentorum facultatibus*, 518, 1–4, vol. VI.

²⁰⁷⁸ Galen, *De alimentorum facultatibus*, 517, 7–9, vol. VI.

²⁰⁷⁹ Galen, *De alimentorum facultatibus*, 519, 15–520, 5, vol. VI.

²⁰⁸⁰ Galen, *De alimentorum facultatibus*, 519, 15, vol. VI.

pine nuts²⁰⁸¹. Galen (following Mnesitheus) also mentioned, somewhat enigmatically, that some (it is not specified who) claimed that *trágos* is a grain of the same kind as *ólyra*, but has a different appearance²⁰⁸². This remark seems to indicate that *trágos* was a wheat product (likely obtained from different types of wheat) and had granular texture. It is likely, however, that its particles, resulting from the grinding and processing of the husked cereal, differed from the grains of *ólyra* (or other types of wheat) in shape and colour.

When it comes to the works of Oribasius and his culinary reflections on spelt, they are derived chiefly from Galen; in this way they reach back to Dioscurides' findings, and to the even older doctrines of Mnesitheus. Thus also in Oribasius' works we find the typical information on how spelt has husks that need to be removed before it can be turned into flour²⁰⁸³, and that spelt *áleuron* was baked into bread that was inferior only to that made of common wheat²⁰⁸⁴ (and that such spelt bread was tasty and healthy, as long as the grain used for making flour was well-formed²⁰⁸⁵). Although Oribasius wrote a lot about spelt bread, the information was general enough that a recipe for this product cannot be found in his works²⁰⁸⁶. The preparation of *trágos* is described by Oribasius also in Galen's works, taken from *De alimentorum facultatibus*, which the latter, in turn, took from Mnesitheus²⁰⁸⁷, and since these accounts do not differ from one another, we will not repeat them here. Let us also add that in the works of the physician to Emperor Julian we also find the term *krimnon* but, as there is no mention of *ólyra* there, we discussed it in the section devoted to *pyrós* products.

From the fourth century, silence falls in the sources on the ways of cooking *ólyra*. Neither Aetius of Amida, nor Alexander of Tralles, nor

²⁰⁸¹ Galen, *De alimentorum facultatibus*, 520, 1–4, vol. VI.

²⁰⁸² Galen, *De alimentorum facultatibus*, 520, 4–5, vol. VI.

²⁰⁸³ Oribasius, *Collectiones medicae*, I, 13, 5, 1–3.

²⁰⁸⁴ Oribasius, *Collectiones medicae*, I, 8, 6, 2.

²⁰⁸⁵ Oribasius, *Collectiones medicae*, I, 8, 6, 2–3.

²⁰⁸⁶ Oribasius, *Collectiones medicae*, I, 13, 1, 1–2, 2.

²⁰⁸⁷ Oribasius, *Collectiones medicae*, I, 13, 6, 1–5.

Paul of Aegina made a single mention of spelt as a culinary material. This may suggest that, perhaps, during this time said cereal became limited to the diet of peasants, and therefore its role in feeding the city dwellers, to whom the works of physicians were primarily addressed, was minuscule.

The non-medical sources also contain some information on spelt as a food product. Athenaeus of Naucratis cited in *Deipnosophistae* passages of Trypho of Alexandria's work titled *On plants* which discussed different types of bread²⁰⁸⁸, including also *ólyra* bread²⁰⁸⁹. The lexicon of Hesychius, in turn, preserved the term *kyllástis* as the name of a type of *ólyra* baked product made in Egypt²⁰⁹⁰. In *Geoponica* we find a recipe for *trágos*, important because of its great detail. The author²⁰⁹¹ of the small chapter devoted to this matter wrote that this product is made of Alexandrian wheat, *alexandrínos sítos* which, as the writer suggests, is also called *ólyra*. He also pointed out that only good quality wheat could be used here. To make *trágos*, *ólyra* was husked, soaked, and then dried in full sun. The process was repeated until the grain was completely free of any fibrous elements and impurities. At that point, the dried *trágos* was stored²⁰⁹². It is also worth mentioning that a passage from book seven of *Geoponica* contains interesting information on making an *ólyra*-based alcoholic drink, which was likely similar to beer. This chapter however, taken *nota bene* from Leontinus, does not include a recipe, but merely lists the various cereals used in making of alcohols²⁰⁹³.

Conclusions. To sum up, it needs to be said that the information on the uses of spelt wheat as food are relatively scarce. This limited amount of data is yet another argument for the lesser popularity (especially when compared to wheat and barley) of *ólyra* in the diet of second–seventh

²⁰⁸⁸ Athenaeus of Naucratis, III 109 b–c (74, 1–8).

²⁰⁸⁹ Athenaeus of Naucratis, III 109 c (74, 6).

²⁰⁹⁰ Hesychius of Alexandria, *κυλλᾶστις*, κ, 45 10, 1.

²⁰⁹¹ The authorship of this fragment should also be attributed to Varro and the Quintilii.

²⁰⁹² *Geoponica*, III, 8.

²⁰⁹³ *Geoponica*, VII, 34, 1.

centuries. The lack of culinary information after fourth century is striking. From the preserved information we may conclude only that the grain was consumed mainly by countryside folk. The only spelt product that was popular in the cities was fresh bread. We do not know the recipe for it, but it would be difficult to assume that it differed from the one used for baking wheat bread. Aside from bread, *ólyra* was used in making groats and the so-called *trágos*, a product resulting from soaking cleaned grain and similar to groat. Both groats and *trágos* were used for cooking soups and gruels of different thickness. The surviving directions allow a general reconstruction of the methods of preparing such dishes.

KRZYSZTOF JAGUSIAK

The role of spelt in medical procedures

The medical Greek courses analysed in this study contain only minimal information on direct use of spelt in therapeutic procedures. Since, however, Oribasius attributed to it diaphoretic properties²⁰⁹⁴, he at the same time maintained that this cereal was suitable for cataplasms, and that a decoction based on it was used in medicinal rinses²⁰⁹⁵. This author also added that before being used in any of the mentioned above *phármaka*, spelt wheat had to be pre-burned²⁰⁹⁶. Furthermore, we have the information left by Alexander of Tralles, who mentioned *ólyra*²⁰⁹⁷ in the chapter of *Therapeutica* devoted to curing patients suffering from weakening of the assimilating force (*kathektiké dýnamis*) caused by cooling of the body²⁰⁹⁸. In such cases he recommended spelt as a food appropriate for such an ailment.

²⁰⁹⁴ Oribasius, *Collectiones medicae*, XIV, 62, 1, 1 – 3, 2.

²⁰⁹⁵ Oribasius, *Collectiones medicae*, XIV, 62, 1, 1.

²⁰⁹⁶ Oribasius, *Collectiones medicae*, XIV, 62, 1, 32.

²⁰⁹⁷ Alexander of Tralles, *Therapeutica*, 249, 12, vol. II.

²⁰⁹⁸ Alexander of Tralles, *Therapeutica*, 249, 6 – 251, 2, vol. II.

Conclusions. To sum up the brief discussion above, it needs to be said that neither ancient nor Byzantine medicine saw a reason for a wider use of *ólyra*. While the information listed above does not explain this phenomenon *expressis verbis*, they do allow guessing that the *phármaka* made of other types of wheat were simply considered to be more effective – in particular the ones made from *pyrós*.



CHAPTER

II

MACIEJ KOKOSZKO, KRZYSZTOF JAGUSIAK
ZOFIA RZEŹNICKA

Barley



KRZYSZTOF JAGUSIAK

1. Barley: a brief history

Barley (*Hordeum* L.) is one of the cereals from the poaceae family (*Poaceae* Barnh.), formerly referred to as grasses (*Gramineae* Juss.). Nearly thirty species of barley are presently known, but by far the most commonly sown and the most important for human economy is common barley (*Hordeum vulgare* L.), derived from wild barley (*Hordeum spontaneum* Koch.). Common barley nowadays has numerous varieties, and some of these were already identified in antiquity¹.

¹ On the taxonomy of barley see K. Gierat, *Cechy botaniczne i fizjologia rozwoju jęczmienia (Botanical characteristics and physiology of growth of barley)*, [in:] *Jęczmień (Barley)*, Warszawa 1973, p. 21–25; A. Słaboński, *Jęczmień jary i ozimy (Spring and winter barley)*, Warszawa 1976, p. 21–25; J. McCorryston, *Barley*, [in:] *The Cambridge world history of food*, eds. K.F. Kiple, K.C. Ornelas, vol. I, Cambridge 2000, p. 84–85; D.F. Garvin, H. Raman, K.P. Smith, *Barley*, [in:] *Encyclopedia of food and culture...*, vol. I, New York 2003, p. 166; J.F. Hancock, *Plant evolution and the origin of crop species*, Wallingford–Cambridge, Mass., 2004, p. 174–176; H. Jones, P. Civián, J. Cockram, F.J. Leigh, L.M.J. Smith, M.K. Jones, M.P. Charles, J.-L. Molina-Cano, W. Powell, G. Jones, T.A. Brown, *Evolutionary history of barley cultivation in Europe revealed by genetic analysis of extant landraces*, BMC.EB 11, 2011, p. 320. On the subject of identification cf. J. André, *Les noms de plantes dans la Rome antique*, Paris 1985, p. 126.

The cradle of the cultivation and domestication of the cereal in question (initially, in its wild form) lies in the western part of Asia known as the Fertile Crescent, where the oldest traces of these activities, found in multiple places, are dated to about 9000 BC. Wild barley was foraged much earlier, already by around 20,000 BC².

The area on which it grew increased in size, along with the spread of agriculture, in all directions. In the present study we are interested (generally speaking) in the western expansion. Here, the traces of cultivation of barley on the Anatolian Peninsula are dated to the turn of the eighth and seventh millennium BC³, while on the Old Continent we find them already since the end of the sixth or the beginning of the fifth millennium BC (while the evidence of its presence in wild forms can be dated to the turn of the twelfth and eleventh millennia BC); during the subsequent centuries barley expanded into considerable areas of Europe⁴.

² See D. Zohary, M. Hopf, *Domestication of plants in the Old World. The origin and spread of cultivated plants in West Asia, Europe, and in the Nile Valley*, Oxford 1993, p. 62–64; A. Badr, K. Müller, R. Schäfer-Pregl, H. El Rabey, S. Effen, H.H. Ibrahim, C. Pozzi, W. Rohde, F. Salamini, *On the origin and domestication history of barley* (*Hordeum vulgare*), *MBE* 17, 2000, p. 499–510; M. Mazoyer, L. Roudart, *A history of world agriculture. From the Neolithic Age to the current crisis*, transl. J.H. Membréz, London 2006, p. 78–79 (the fragment speaks of “nine thousand years ago” rather than BC); T.A. Brown, M.K. Jones, W. Powell, R.G. Allaby, *The complex origins of domesticated crops in the Fertile Crescent*, *TEE* 24, 2009, p. 103–109; C.E. White, C.A. Makarewicz, *Harvesting practices and early Neolithic barley cultivation at el-Hemmeh, Jordan*, *VHA* 21, 2012, p. 85–94; G. Willcox, *The beginnings of cereal cultivation and domestication in southwest Asia*, [in:] *A Companion to the archaeology of the ancient Near East*, vol. I, eds. D.T. Potts, Chichester 2012, p. 168. For historical reasons it is worth highlighting an earlier, different theory, represented by Nikolai Vavilov and his successors, who traced the origins of barley to the eastern part of Asia, to Tibet and China. Cf. on this subject, e.g., T. Rubebauer, *Wstęp*, [in:] *Jęczmień...*, p. 9.

³ See B.S. Düring, *The prehistory of Asia Minor. From complex hunter-gatherers to early urban societies*, Cambridge 2011, *passim*, especially p. 88–89, 122–129, 136–155, 174–195.

⁴ The literature discussing the role of barley in the early agriculture and its dissemination in Europe is plentiful; see, for example, D. Brothwell, P. Brothwell, *Food in antiquity. A survey of the diet of early peoples*, Norwich 1969, p. 98–

Barley constituted an important element of diet of the inhabitants of Greece long before the Hellenes took control of this territory, and its wild varieties were foraged long before the advent of agriculture on these lands. Later, along with the development of Neolithic methods of cultivation, presumably at the turn of the seventh and sixth millennia BC, barley was already a commonly consumed crop in this area⁵, and its seeds were being selected to ensure the most abundant harvest. For this reason, around 3500 BC, the two-row barley was permanently, although not exclusively, replaced by the so-called six-row variety⁶. We also know that the inhabitants of the pre-Greek, Minoan Crete produced a type of beer out of fermented barley; the oldest findings date to around 2300 BC. The production of this drink lasted on the island throughout the whole period of the Minoan civilisation, perhaps even longer – into the Mycenaean period – despite the fact that the representatives of this culture strongly preferred wine or drinks obtained through fermenting honey⁷.

In the Greek language, barley most commonly appears as *krithé* (*krithai* in plural), but depending on the area in which the particular Hellenic tribe lived, it could be known under other names, such as *krí* or *akosté*⁸. The Greeks themselves depended on it for a long time, as it grew much better on the majority of the Helladic soil, in particular the central and southern part of Greece and on the islands of the Aegean, than the generally

99; A. Dalby, *Food in the ancient world from A to Z*, London–New York 2003, p. 45. Cf. also A. de Candolle, *Origin of cultivated plants*, New York 1959, p. 367–370.

⁵ A. Dalby, *Siren feasts. A history of food and gastronomy in Greece*, London–New York 1996, p. 39, 43–44.

⁶ *Ibidem*, p. 46.

⁷ M. Nelson, *The barbarian's beverage. A history of beer in ancient Europe*, London–New York 2005, p. 13–15. There is no absolute certainty that it was in fact beer, however there is no doubt as to the discovery of the remains of used barley.

⁸ *A Greek-English lexicon*, eds. H.G. Liddell, R. Scott, Oxford 1996, p. 53, 995; K.T. Witczak, *Indoeuropejskie nazwy zbóż (Indoeuropean names of cereals)*, Łódź 2004, p. 55–61. The latter term was used, according to Krzysztof T. Witczak, on Cyprus.

preferred common wheat⁹. The local climate also contributed to this; harvests of wheat were much less abundant, which contributed to the – for the most part imported – cereal's higher price. It would be worth adding here that einkorn wheat cultivation was more manageable and brought more predictable and steady harvest, as it was less susceptible to irregular rainfall¹⁰. This is because barley has a shorter vegetation period than wheat, and is thus more resilient to drought¹¹. For these reasons barley was a basic element of the ancient diet¹², and in some areas, such as the southern Balkan Peninsula, was more common than wheat. This is reflected in, among others, the treatise *De diaeta*, which devotes more attention to barley than to wheat, and discusses it before the latter cereal is even mentioned¹³.

Barley was consumed, at least since the Mycenaean times, most likely in two processed forms, namely, a type of soup or gruel, possibly seasoned to taste, and *máza*, a type of flat and lightly baked loaf made of *álphita* (barley groat) with some additives and water¹⁴. The contents of *De diaeta* suggest that already since the turn of the fifth and fourth

⁹ A. Dalby, *The flavours of classical Greece*, [in:] *Flavours and delights. Tastes and pleasures of ancient and Byzantine cuisine*, eds. I. Anagnostakis, Athens 2013, p. 19. Cf. P. Garnsey, *Food and society in classical antiquity*, Cambridge 2002, p. 18; This would confirm the earlier opinions – N. Jasný, *Competition among grains in classical antiquity*, *AHR* 47, 1942, p. 756–758.

¹⁰ A. Dalby, *Siren...*, p. 45, 53; J.M. Wilkins, S. Hill, *Food in the ancient world*, Malden, Mass.–Oxford 2006, p. 113. Cathy K. Kaufman (*Cooking in Ancient Civilizations*, Westport, CT–London 2006, p. XXXVII) rightly rejected here the occasionally cropping up statements that the Greeks preferred to consume barley than wheat (in which, according to some, they were to differ from Romans, who preferred common wheat). In reality, the preference of Greeks towards the former cereal resulted primarily from the influence of the geographic conditions in which they lived on agriculture.

¹¹ N. Jasný, *op. cit.*, p. 753–755; M.L. Rautean, *The daily life in the Byzantine Empire*, Westport, Connecticut 2006, p. 173.

¹² A. Dalby, *Food...*, p. 45; *idem*, *The flavours of classical Greece...*, p. 19; M. Decker, *Tilling the Hateful Earth. Agricultural production and trade in the late antique East*, Oxford 2011, p. 104–107.

¹³ Cf. below.

¹⁴ P.P. Bøer, *Art, culture, and cuisine. Ancient and Medieval gastronomy*, Chicago–London 1999, p. 93; C.K. Kaufman, *op. cit.*, p. 81–82. More detailed infor-

centuries BC the consumption of the latter food was rather considerable¹⁵, and the popularity of *máza* was perhaps greater than the distribution of baked barley goods¹⁶. The presently investigated cereal was, of course, used also in baking bread¹⁷. Deserving attention is also one of the best known dishes with an addition of *krithé*, a kind of drink called *kykeón* which, in a particular form, was even used during the Eleusini-an mysteries¹⁸. It would be appropriate to note here that barley products were more commonly used in Greek sacrificial rites than other cereals¹⁹. *Kykeón*, however, was not only a ritual drink; it was a constant element of the diet²⁰, and similar nourishing drinks (based on *álphita* and wine or wine must) appear also in the ancient and Byzantine medical treatises that are discussed in this text. The same may be said of the alcoholic drink made with this cereal, which must have resembled

mation on the matter of the food products derived from barley in Greece can be found in a later part of this work.

¹⁵ This conclusion is supported by the remarks of Naum Jasny on Athens – N. J a s n y, *op. cit.*, p. 755.

¹⁶ Cf. below.

¹⁷ On barley products cf. N. J a s n y, *The daily bread of the ancient Greeks and Romans*, Osi 9, 1950, p. 227–253, especially 244, 247. It is difficult to determine the popularity barley bread enjoyed in the past; we know that it was usually, in the opinion of the majority of the consumers, inferior to wheat loaves. Nonetheless, it almost certainly appeared on the Greeks' tables, without necessarily having to cause negative reactions, on the contrary – it may have been an important part of a sitting, cf. P h i l o x e n u s, 836 b, 40; A t h e n a e u s o f N a u c r a t i s, IV, 147 a (28, 14); M. S t u l i g r o s z, *Uczta Filoksenosa na tle tradycji greckiej poezji gastronomicznej (The feast of Philoxenus in the light of the tradition of Greek gastronomic poetry)*, Poznań 2012, p. 50.

¹⁸ G. B a u d y, *Cereal diet and the origins of man. Myths of the Eleusinia in the context of ancient Mediterranean harvest festivals*, [in:] *Food in antiquity*, eds. J. W i l k i n s, D. H a r v e y, M. D o b s o n, Exeter 1999, p. 179–180; K. K e r é n y i, *Eleusis. Archetypowy obraz matki i córki (Eleusis. Archetypal portrayal of mother and daughter)*, transl. I. K a n i a, Kraków 2004, p. 171–174, 221–225. The consumption of this soup, as well as a more widespread use of barley during the mysteries, was related to a belief of the primality of this cereal in human diet.

¹⁹ See J.M. W i l k i n s, S. H i l l, *op. cit.*, p. 32, 108, 127.

²⁰ Cf. *De diaeta*, 41, 1–7.

modern hop-free beer²¹. Finally, *krithai* or *álphita kríthina* were used in making a medicinal soup called *ptisáne*, which was such an important food that it was listed (and its uses analysed) by every medical treatise of antiquity and Byzantine period. The aforementioned soups, baked goods and barley flatbread (*máza*) were, aside from wheat bread, from the earliest times the most important elements of the daily Greek menu²², while beer was, with time, supplanted in the Hellenic culture by wine. It is also highly likely that barley (and the products made of it) much more often frequented the dining tables of the poorer parts of society – which does not mean, however, that the wealthier Greeks avoided eating them. Such an image emerges from the literary passages preserved by Athenaeus of Naucratis in *Deipnosophistae*. On the one hand, barley bread was described by Hipponaxus as a food of slaves, but on the other, *álphita* were used in a recipe for a part-cooked, part-baked piglet (this gourmet dish being described in book nine of *Deipnosophistae*). Barley products found their way to the list of the dishes served even at grand social events, while Plato (427–347 BC) placed them on equal standing with wheat ones in his dialogue on governance²³. There were, of course, better and worse varieties of this cereal, and if we were to believe Arcestratus (fourth century BC), one of

²¹ Cf. the information below on the subject of such terms as *zýthos*, *koúrmi*, or *oínos kríthinos*.

²² Cf. for example *De prisca medicina*, 3, 576–584; 14, 604. The term used in the text is *máza*. Cf. J.M. Wilkins, S. Hill, *op. cit.*, p. 125; M. Kokošzko, K. Jagusiak, *Zboża Bizancjum. Kilka uwag na temat roli produktów zbożowych na podstawie źródeł greckich (Cereals of Byzantium. A few remarks on the role of cereal products, based on Greek sources)*, ZW 17, 2012, p. 29–31; cf. also the Polish translation of this fragment, where, however, a specific expression was used: *placek jęczmienny* – “barley flatbread” – *O dawniejszym lecznictwie (De prisca medicina)*, III, 5; XIV, 6, [in:] Hipocrates, *Wybór pism (Selected writings)*, vol. I, transl. M. Wesoły, Warszawa 2008, and the entry *máza* in *A Greek-English lexicon...*, p. 1072. Cf. A. Dalby, *The flavours of classical Greece...*, p. 19.

²³ Plato, *Republica*, 372, a–b. The idyllic description coming from Socrates does not focus on cereals, but, in passing, shows us the commonly accepted and undisputed equality of barley and wheat as raw materials for preparing food for humans: cakes and bread.

the tastiest and whitest breads was baked from barley grown on the island of Lesbos²⁴. Barley was such a natural part of everyday reality that some elements of the methods of processing *krithé* became somewhat symbolic. For example, since it was common among the Hellenes to roast barley seeds before further processing²⁵, since Solon's times (seventh–sixth centuries BC) a roasting vessel used for this purpose became an attribute of Athenian brides, symbolising in a way her future duties as a housewife²⁶. The dishes based on barley were also the usual provisions eaten by the soldiers of the Greek *póleis*²⁷, and besides this, in the form of flatbreads and groats, one of the most basic (and to an extent archetypically Hellenic) elements of the Spartan menu in the Classical period²⁸.

Barley was also used by the neighbours of the Greeks with whom the latter remained in permanent contact and whose customs they knew. We know, for example, that the Thracians eagerly drank a barley beverage called *brytós/brytón*²⁹ that was a kind of beer, and which was so common among them that in the popular opinion of Greeks the inhabitants of Thrace, alongside Egyptians, Paiones and Phrygians, were a people clearly associated with beer³⁰. Along the Nile, since Neolithic times (specifically from around 5000 BC) and all the way to the period we are examining here, when Egypt entered into the sphere of influence of the Hellenistic, and later Roman, civilisation, barley was – along the other various types of wheat – the most important source of food, although already during pharaonic times it was principally thought of as the basis of the diet of the lower social strata, and this opinion did not

²⁴ J.M. Wilkins, S. Hill, *op. cit.*, p. 52–53.

²⁵ Cf. the information on roasting barley in this discussion.

²⁶ K. Kerényi, *op. cit.*, p. 222; J.M. Wilkins, S. Hill, *op. cit.*, p. 118.

²⁷ On the subject of the attitude of Greeks to barley in their own diet see A. Dalby, *Siren...*, p. 22, 25, 39, 53, 90–91.

²⁸ Athenaeus of Naucratis, IV, 141, a–f (19, 1–49). The summary of the role of barley in antiquity, cf. N. Jasný, *Competition...*, p. 754–755.

²⁹ Athenaeus of Naucratis, X, 447 b (67, 16–18).

³⁰ R.W. Unger, *Beer in the Middle Ages and in the Renaissance*, Philadelphia 2004, p. 20; M. Nelson, *op. cit.*, p. 20–21, 25.

change during the following centuries³¹. Aside from foods based on barley, Egyptians also made a thick drink of the cereal, called by the Greeks *zýthon/zýthion* or *zýthos*³², and referred to as barley wine (a drink, or liquor); this was clearly a local variety of beer, and dietetically valuable for adding variety, and supplementing, the everyday menu³³. *Nota bene*, beer brewed from *krithé* was also popular in Asia Minor during the Classical era. Xenophon wrote about this liquor after he encountered it in Armenia, remarking on its high alcohol content³⁴; the latter remark is confirmed by medical data, such as Dioscurides' works (this drink, called *koúrmi*, was described there as causing headaches) or Oribasius' (who described *oínos krithinos* as having the same strength as grape wine).

The Romans called barley *hordeum*. In both the Roman agriculture and cooking this cereal occupied one of the most important places, second only to wheat³⁵. While the latter was preferred by Romans for being the basis of excellent quality bread, barley dominated thanks to its, already mentioned, resilience to worse soils and to more extreme cli-

³¹ J.T. Stock, M.C. O'Neill, C.B. Ruff, M. Zabecki, L. Shackelford, J.C. Rose, *Body size, skeletal biomechanics, mobility and habitual activity from the Late Palaeolithic to the Mid-Dynastic Nile Valley*, [in:] *Human bioarchaeology of the transition to agriculture*, eds. R. Pinhasi, J.T. Stock, Chichester 2011, p. 348; P.P. Bober, *op. cit.*, p. 39; C.K. Kaufman, *op. cit.*, p. 47; M. Mazoyer, L. Roudart, *op. cit.*, p. 150, 160.

³² Hesychius of Alexandria, ζύθιον, ζ, 201, 1; ζύθος, ζ, 202, 1.

³³ Herodotus, *Historiae*, II, 77; Theophrastus, *Historia plantarum*, IV, 8, 12; P.P. Bober, *op. cit.*, p. 41–42; M. Nelson, *op. cit.*, p. 21–22, C.K. Kaufman, *op. cit.*, p. 71–72; D. Dzinno, *Sabaiarius: Beer, wine and Ammianus Marcellinus*, [in:] *Feast, fast, or famine. Food and drinking in Byzantium*, eds. W. Mayer, S. Trzcionka, Brisbane 2005, p. 60. This drink, according to Theophrastus, could also be made with wheat.

³⁴ Xenophon, *Anabasis*, IV, 5. M. Nelson, *op. cit.*, p. 17. It is worth noting on the margin of our discussion that the overtones of Xenophon's account here were very positive; an isolated opinion against the background of the Hellenic attitude to beer.

³⁵ Naum Jasny wrote that Italy had better conditions for cultivating wheat. Cf. N. Jasny, *Competition...*, p. 756.

mate, as a consequence of its shorter maturation period³⁶. On the other hand, the opinion that it had a negative impact on the soil was promoted through all of antiquity. Such a statement can be found, for example, in the second century BC in Cato's works as well as in the fourth century AD works of Palladius. They wrote that barley desiccated the soil, and is therefore harmful to it³⁷. This assertion might be treated as one of the explanations for the preference of *pyrós* across the entire Mediterranean basin. While Italy was not as reliant on barley harvests as Greece, this cereal remained nonetheless an important element of the diet and contributed to food security in case of wheat shortages³⁸. A known and valued food product that the Romans made of *krithé* was *tisane*, a barley soup, often seasoned with other ingredients³⁹. It was a counterpart to the Hellenic *ptisáne*, about which the Greek physicians analysed in this book had much to say. Anthimus attested that it was still being eaten in the sixth century Gaul by the barbarian Franks, and so its popularity must have been widespread and lasting across the whole of the Mediterranean area. One might note here that this medicinal soup was as widespread as an element of various treatments that Alexander of Tralles, writing at roughly the same time as the author of *De observatione ciborum*, remarked that physicians were so eager to administer it to their patients that the latter eventually began to loathe it⁴⁰. This disgust did not, however, become universal and embedded within the culture, as similar soups cooked to this day still most commonly include barley groat. For the Romans, barley remained the basis of the diet of the poor

³⁶ Cf. Cato, *De agri cultura*, 35, 2; Pliny, *Naturalis historia*, XVIII, 79, 192; Columella, *De re rustica*, II, 9, 3–4; II, 9, 14; Palladius, *Opus agriculturae*, X, 4; XI, 1.

³⁷ Cato, *De agri cultura*, 37, 1; Palladius, *Opus agriculturae*, XI, 1.

³⁸ D.L. Thurmond, *A handbook of food processing in classical Rome. For her bounty no winter*, Leiden–Boston 2006, p. 17–18.

³⁹ C.K. Kaufman, *op. cit.*, p. 137–138. On the subject of this dish, see also the later part of this text, devoted to gastronomy; cf. Columella, *De re rustica*, II, 7, 1. It is interesting that Columella, a great expert on the art of agriculture, included barley here among the leguminous plants for the reason that it could be made into groat.

⁴⁰ Cf. below.

and the lower social strata and was consumed primarily in the form of a thick soup⁴¹. The previously mentioned Anthimus called it *polenta* or *fenea*⁴². Once again one may deduce that it was cooked in Gaul, now occupied by the Franks, until at least sixth century; a similar gruel was, perhaps even more commonly, cooked by the Quirites from einkorn wheat⁴³. The Romans, however, also knew barley bread, or one made of mixed wheat and barley flour, although such product was valued far less than an exclusively wheat bread⁴⁴. This does not differ from the pattern that we have identified for the Greek territories.

The Romans (and also the Greeks⁴⁵) readily used barley as an excellent and fortifying fodder for animals used in the army⁴⁶. It is worth highlighting, however, that the soldiers themselves, at least during the times in which the Roman state flourished, were in ordinary circumstances fed wheat, while barley rations were used only as fodder, which is particularly clear from Polybius' account. This author specified that a Roman cavalryman received monthly 2 *medimnoi* of wheat and 7 *medimnoi* of barley, a foot soldier $2/3$ of a *médimnos* of wheat, while an allied soldier, appropriately, 1 and $1/3$ of a *médimnos* of wheat and 5 *medimnoi* of barley, and $2/3$ of a *médimnos*⁴⁷, from which it is clear that the infantrymen, who did not have to feed animals, did not receive any barley rations at all. The situation would differ in extraordinary circumstances. Should a unit (this normally did not apply to individuals) fail a leader's expectations in battle – abandon position or run away from the enemy – the standard punishment, aside from decimation, would include replacing the usual, daily rations of wheat with barley. Occasion-

⁴¹ P.P. B o b e r, *op. cit.*, p. 206.

⁴² Cf. below.

⁴³ See, for example, J.M. W i l k i n s, S. H i l l, *op. cit.*, p. 117.

⁴⁴ See, for example, C o l u m e l l a, *De re rustica*, II, 9, 16; P l i n y, *Naturalis historia*, XVIII, 74.

⁴⁵ Cf. below.

⁴⁶ J.P. A l c o c k, *Food in Roman Britain*, Briscoombe Port 2001, p. 18. The author did not limit herself to describing the situation in Britain alone, but within all of the Roman state.

⁴⁷ P o l y b i u s, VI, 39.

ally such punishment lasted for many years and was imposed on considerable forces⁴⁸. One may conclude that such use of *krithé/hordeum* as an element of the system of punishments used in the Roman army stemmed from a universal belief (based on experience, and later set in stone by Galen as an authoritative statement of the contemporary science⁴⁹) that barley was inferior to wheat in its nutritional value⁵⁰.

Barley was widely used in the day-to-day activities of every farm. Aside from its major function as an important element of the human diet it was used – as we have mentioned – as an excellent and recommended fodder⁵¹. Barley products, as long as they were not too expensive, were suitable for feeding lambs⁵², pheasants⁵³ and peafowl⁵⁴, while raw grain (sometimes boiled, roasted or soaked in water) was suitable for feeding sheep⁵⁵, pigs (including nursing sows)⁵⁶, chickens⁵⁷, geese⁵⁸,

⁴⁸ Polybius, VI, 38. A similar testimony is provided by Suetonius, when he was writing about the punishments used in Augustus' army, see Suetonius, *De vita caesarum*, II, 24. See also the information from Cassius Dio, also related to the times of Augustus (Cassius Dio, XLIX, 38, 4) and the text of Plutarch (Plutarch, *Marcellus*, 25, 10, 2), Frontinus (Frontinus, *Strategemata*, IV, 1, 25; IV, 1, 37), or Vegetius (Vegetius, I, 13). The source information shows a conservative immutability of this particular Roman punishment. Cf. also the information on this subject in the chapter devoted to wheat.

⁴⁹ Cf. below.

⁵⁰ Cf. J.M. Wilkins, S. Hill, *op. cit.*, p. 62. Cf. Galen's reflections on the subject of the nutritional value of *álphita*, examined in this work.

⁵¹ Columella, *De re rustica*, II, 9, 14.

⁵² Columella, *De re rustica*, VII, 3, 19; Palladius, *Opus agriculturae*, XII, 13.

⁵³ Palladius, *Opus agriculturae*, I, 29.

⁵⁴ Palladius, *Opus agriculturae*, I, 28.

⁵⁵ Columella, *De re rustica*, VII, 4, 2. In this passage he discusses the (demanding a lot of care) Tarentum sheep.

⁵⁶ Varro, *Rerum rusticarum*, II, 4, 6; 4, 15; 4, 20; Columella, *De re rustica*, VII, 9, 13.

⁵⁷ Columella, *De re rustica*, VIII, 4, 1; 5, 2; 11, 15; Palladius, *Opus agriculturae*, I, 27.

⁵⁸ Columella, *De re rustica*, VIII, 14, 8; 14, 10. Cf. below the testimony of the Procopius of Caesarea *Historia arcana*.

ducks⁵⁹, pigeons⁶⁰ (and possibly other contemporary fowl species not specified by the author⁶¹) as well as wild animals bred in menageries (such as deer or hares)⁶². Bran was used for feeding donkeys⁶³, and bran with flour, for foals⁶⁴ (the grain could also be fed to adult horses⁶⁵)⁶⁶.

The ubiquity of barley in the diet is demonstrated by the later history of beer. During the Roman period, despite the continued dominance of wine within the Greek and Roman society and the Hellenised or Romanised elites of the other, conquered, peoples, barley drinks and liquors were still widely consumed in certain territories. Such beverages were associated by the Romans with barbarians; those remaining outside of their civilisation⁶⁷. This is reflected in the dietetic evaluations of the drink in question in the medical literature, such as the ones left by Dioscurides and Oribasius⁶⁸. The people nearest to Rome who brewed barley beverages were the Ligurian highlanders, inhabiting the south-western part of Alps, which was mentioned by Strabo in the first century BC⁶⁹. Some of the best known regions of the Empire in which barley beers (*sabaia* and *camum*) were commonly drunk were Pannonia and Illyria, although the archaeological findings suggest that these were also produced in other Mediterranean areas, such as the Iberian Peninsula⁷⁰. The best known aficionado of *sabaia* was the Emperor Valens (364–378), himself hail-

⁵⁹ Columella, *De re rustica*, VIII, 15, 6.

⁶⁰ Palladius, *Opus agriculturae*, I, 26.

⁶¹ For general information on rearing of various birds in Byzantium see M. L. e - o n t s i n i, *Hens, cockerels and other choice fowl. Everyday food and gastronomic pretensions in Byzantium*, [in:] *Flavours and delights...*, p. 113–131.

⁶² Columella, *De re rustica*, IX, 1, 6; 1, 8.

⁶³ Varro, *Rerum rusticarum*, II, 6, 4. Cf. below the discussion of Alexander of Tralles on the properties milk of donkeys fed with barley.

⁶⁴ Varro, *Rerum rusticarum*, II, 7, 11.

⁶⁵ Varro, *Rerum rusticarum*, II, 7, 1; Palladius, *Opus agriculturae*, XIV, 49.

⁶⁶ The role of barley as fodder in the Classical period. N. J a s n y, *Competition...*, p. 755.

⁶⁷ Cf. J.M. Wilkins, S. Hill, *op. cit.*, p. 131.

⁶⁸ Cf. below.

⁶⁹ Strabo, *Geographica*, IV, 6, 2.

⁷⁰ J.M. Wilkins, S. Hill, *op. cit.*, p. 132.

ing from Illyria, and this fondness for barley beer was used by his political opponents to mock him⁷¹. The low opinion of the value of such drinks, common in the Roman society, is notably illustrated by the edict of Diocletian on prices, from 301, in which *camum* is half the price of the cheapest wine, while the Egyptian barley *zythos* is four times cheaper than the latter. The price comparison appears even worse in case of better wines, such as the famous Falernian wine⁷².

Barley was also known as an element of the provincial economy and cuisine. The Celts of Gaul and Britain, conquered by Rome by the first century AD, used it for feeding both humans and livestock. For their own needs they was baked into bread, despite the widely known poor quality of this product; it was also made into flatbreads. The Celts also mixed barley and wheat flour to get better quality loaves⁷³. Beside this, barley was likely the most popular cereal grown farther to the east, where Roman political influence was weaker; this includes the Polish lands, both during the time when they were still settled by the Celts, as well as later, after they were subjugated by the Germanic peoples⁷⁴. Barley was sometimes included as part of the everyday menu within the army; it would seem that this was practiced primarily by local auxiliary troops whose soldiers were used to such a diet and stationed on these lands after the Roman conquest, or in the garrisons manned by soldiers from other parts of the Empire with similar culinary customs⁷⁵. Barley rations were also given to the cavalry units stationed in these areas, which were likely intended to be used primarily as fodder⁷⁶. The Celts also

⁷¹ Ammianus Marcellinus, XXVI, 8, 2. Cf. D. D z i n o, *op. cit.*, p. 57–58.

⁷² *Edictum Diocletiani*, 2, 1, 11; 2, 1, 12. On the beer of the later Roman Empire and Byzantium cf. F. K o u k o u l e s, *Byzantinon bios kai politismos*, vol. V, *Hai trophai kai ta pota...*, Athènes 1952, p. 130; M.L. R a u t m a n, *op. cit.*, p. 104.

⁷³ J.P. A l c o c k, *op. cit.*, p. 29–30; H.E.M. C o o l, *Eating and drinking in Roman Britain*, Cambridge 2006, p. 71, 77–78.

⁷⁴ J. R o d z i ń s k a - N o w a k, *Gospodarka żywnościowa ludności kultury przeworskiej (Food economy of the Przeworsk culture people)*, Kraków 2012, p. 100–104.

⁷⁵ J.P. A l c o c k, *op. cit.*, p. 155; H.E.M. C o o l, *op. cit.*, p. 78–79.

⁷⁶ H.E.M. C o o l, *op. cit.*, p. 73.

enjoyed a beer, most likely of barley, called *corma* or *curmi*⁷⁷, but it was generally valued less than a similar drink made of wheat; it was also made in considerably smaller amounts (or sometimes in making Celtic beers, a wheat base with a small admixture of barley was used). This drink was frequently encountered by the Greeks who remained in contact with the Celts, both in the Balkans and in Asia Minor, or in the vicinity of their colonies located in the northern shores of the western Mediterranean; and by the Romans, penetrating and conquering Gaul, Spain and Britain, and previously while neighbouring the Celts of Cisalpine Gaul⁷⁸. The latter, during their trade and military expansions, encountered a similar beverage, also made of barley or wheat, found among the Germanic people⁷⁹; while the Germans, as the information preserved by Anthimus shows, made from *krithé* not only beer, but also various foods⁸⁰.

There was no dramatic change in the popularity of barley during the time when Rome started losing its primacy as the capital of the empire and Constantinople was becoming an increasingly more important political centre. The symbolic dates of transition from antiquity to the Byzantine period, such as the year 395, do not correspond to changes taking place in production, patterns of consumption, and dietic doctrines related to the grain being discussed. It needs to be said, however, that in the Roman state, ruled from Constantinople, barley was widely used, and Byzantine agriculture closely resembled that of antiquity⁸¹, and the same is true of the pattern of consumption of *krithé* and the dieticians' opinions of it. The medicines made of barley did not change, either.

⁷⁷ This is, of course, the alcoholic drink which Dioscurides referred to as *koúrmi*.

⁷⁸ M. Nelson, *op. cit.*, p. 45–66, J.P. Alcock, *op. cit.*, p. 93–94; H.E.M. Cool, *op. cit.*, p. 141–143.

⁷⁹ Tacitus, *Germania*, 23.

⁸⁰ Cf. above.

⁸¹ C. Morrison, J.-P. Sordini, *The sixth-century economy*, [in:] *The economic history of Byzantium*, eds. A. Laiou, vol. II, Washington, DC 2002, p. 195–196.

Barley, then, was used in much the same way as during the Roman period, to feed the animals used by the army. The soldiers, however, were also provided with it, likely in the form of rusks (*paximadion*), which kept well in field conditions. This type of “twice-baked bread”, as it was called, was according to the sources known throughout much of the history of Byzantium, and was primarily associated with the army, but was also eaten by the civilian populace, for example during long and difficult journeys, and even by the Church hierarchy⁸². Barley flour, sometimes mixed with date flour, was also used for baking bread by Byzantine monks as a raw material fully accepted by the creators of the monastic rules; such food was suitable also for periods of fasting⁸³.

Byzantine agriculture, despite the increasing role of wheats in the menu of the inhabitants of the Eastern Empire, still relied to a considerable extent on cultivation of barley (occasionally one may even speak of an increased consumption, for both food and brewing, of this cereal, caused by, e.g., the influence exerted by the Avar and Slavic invaders, economic difficulties resulting from the Arab conquests and poor wheat harvests⁸⁴). Such opinion is represented by scholarship, e.g. that

⁸² J. Haldon, *Feeding the army: Food and transport in Byzantium, ca 600–1100*, [in:] *Feast, fast, or famine. Food and drink in Byzantium*, eds. W. Mayer, S. Trzcionka, Brisbane 2005, p. 88, 90; A. Dalby, *Flavours of Byzantium*, Blackawton, Totnes, Devon 2003, p. 17–22, 30–31, 99; idem, *Tastes of Byzantium. The cuisine of a legendary empire*, London–New York 2010, p. 17–22, 30–31, 99. The latter first describes a situation from the second half of the fifth century, where the three young men, among whom was the future emperor Justin I, took with them to Constantinople dry rations of this kind. He subsequently cites the words of Liutprand of Cremona (tenth century) on the bishops eating rusks Cf. M.L. Rutman, *op. cit.*, p. 214; J. Koder, *Everyday food in the middle Byzantine period*, [in:] *Flavours and delights. Tastes and pleasures of ancient and Byzantine cuisine*, eds. I. Anagnostakis, Athens 2013, p. 143.

⁸³ M. Dembińska, *Diet: A comparison of food consumption between some eastern and western monasteries in the 4th–12th centuries*, B 55, 1985, p. 435, 438.

⁸⁴ I. Anagnostakis, *Byzantine diet and cuisine. In between ancient and modern gastronomy*, [in:] *Flavours and delights...*, p. 50.

of Fedon Koukoules⁸⁵, Ewald Kislinger⁸⁶, Marcus Louis Rautman⁸⁷ and Andrew Dalby⁸⁸. Rautman presents information according to which a certain thirteenth-century farm located in northern Greece allocated a third of its acreage for cultivating barley⁸⁹. According to fifteenth-century data from Macedonia, wheat held the first position among the cereals grown there, while barley had a strong second place, as it was grown on a third of the arable land⁹⁰. The same author thus inferred that barley was the second most important cereal of Byzantium. This opinion does not differ from the earlier suggestions of Koukoules, who concluded that, although barley was significant and commonly sown⁹¹, its products were always considered worse than wheat ones, and thus intended for the poor⁹². Furthermore, the data presented by Kislinger concerning the situation in the year 582 also show barley to be a second-grade cereal, one which was used for baking bread only when *pyrós*⁹³ was not available.



⁸⁵ Cf. F. Koukoules, *op. cit.*, p. 22, 130, 259–261, 266.

⁸⁶ E. Kislinger, *Les chrétiens d'Orient: règles et réalités alimentaires dans le monde byzantin*, [in:] *Histoire de l'alimentation*, eds. J.-L. Flandrin, M. Montanari, Paris 1996, p. 325–326.

⁸⁷ M.L. Rautman, *op. cit.*, p. 75, 104, 169, 171–174, 177, 184.

⁸⁸ A. Dalby, *Tastes...*, p. 22, 79, 99 ff.; A. Dalby, *Flavours...*, p. 22, 79, 99 ff.

⁸⁹ M.L. Rautman, *op. cit.*, p. 172.

⁹⁰ *Ibidem*, p. 173.

⁹¹ F. Koukoules, *op. cit.*, p. 259–261.

⁹² Cf. the evaluation of barley bread – F. Koukoules, *op. cit.*, p. 22.

⁹³ E. Kislinger, *op. cit.*, p. 329.

MACIEJ KOKOSZKO, ZOFIA RZEŹNICKA

2. The role of barley in diet between the second and the seventh centuries

An opinion on the role of barley in diet may also be reached thanks to non-medical sources. As the information here is abundant, let us select only a few characteristic examples. Barley was commonly consumed in the fourth and fifth centuries in Syria, as described in the *Historia religiosa* of the Theodoret of Cyrus. It was eaten, the author wrote, by the ascetics who renounced the pleasures of worldly life. Thus Macedonius, also called *Krithóphagos*⁹⁴, ate husked barley soaked in water⁹⁵, earning himself the nickname through his diet of *krithé*. Julian, also called Saba, ate in turn *ártos kachrydías*⁹⁶, barley baked goods made of roasted grain, which was also made into *álphita*. He also ate the type of bread called *pityriás*: he thus consumed the two types of bread that were usually considered the worst. In the sixth century Procopius of Caesarea mentioned that it was barley that geese pecked off the naked body of the future empress Theodora⁹⁷. From our perspective, this remark is significant. Here we see the people of Constantinople throwing onto the future wife of the Emperor Justinian I (527–565) grains of barley – which clearly had to be easy to obtain in the city. It could not have been expensive, as otherwise it would not have been wasted in this manner; it would not have been treated as a *sui generis* fowl fodder. From the story in *Historia arcana* it is also clear that in urbanised areas, such as the city of Constantine, one could find barley grain, rather than bread. The spectators who were throwing grain usually ate wheat bread, its distribution being overseen by the government. For the fifth century Constantinople we

⁹⁴ Theodoret, *Historia religiosa*, XIII, 1, 1–2.

⁹⁵ Theodoret, *Historia religiosa*, XIII, 3, 2.

⁹⁶ Theodoret, *Historia religiosa*, II, 2, 7–11.

⁹⁷ Procopius, *Historia arcana*, IX, 21, 1–22, 1.

have information about at least twenty state bakeries; the bread itself was being distributed in no fewer than 107 places. Of course, aside from the bakeries overseen by the state there were numerous private enterprises that supplied the nearby populace with fresh bread⁹⁸. Returning to *krithé*, it is worth noting that barley was nonetheless still regarded as a cereal typical to Graeco-Roman civilisation. Procopius of Caesarea in his work *De bellis* defined the Roman (or Byzantine) impression of foreignness as a lack of knowledge of cultivating, among others, barley and processing it into *álphita*⁹⁹. Theophylact Simocatta, writing during the same period, although somewhat later than Procopius, described fertile soil as bringing forth wheat and barley¹⁰⁰. *Krithé*, therefore, were for both of the authors as commonplace as wheat, and an important symbol of connection with the culture created by the civilised world.

In *Geoponica* (a treatise written in the sixth century and republished in the tenth, but incorporating information from antiquity), barley is listed alongside wheats, usually just after them, in the parts devoted to matters pivotal for farmers such as the times¹⁰¹ and places for sowing¹⁰², selection of the best seeds¹⁰³, determining their appropriate quantity for sowing a field¹⁰⁴, or the times of other field work, such as harvesting¹⁰⁵ or winnowing¹⁰⁶. The author further advised sowing barley on average soils with low humidity¹⁰⁷, informed about the appropriate ways of storing the grain¹⁰⁸, and also about the weed most frequently damaging

⁹⁸ M. L. Rautman, *op. cit.*, p. 102; J. Durliat, *L'approvisionnement de Constantinople*, [in:] *Constantinople and its hinterland*, eds. G. Dagrón, C. Mango, Cambridge 1995, p. 20–21.

⁹⁹ Procopius, *De bellis*, IV, 6, 13, 1–14, 1.

¹⁰⁰ Theophylact Simocatta, *Epistulae*, XXVII, 4.

¹⁰¹ *Geoponica*, II, 14, 3; 23, 11; XI, 5, 2.

¹⁰² *Geoponica*, III, 3, 12.

¹⁰³ *Geoponica*, II, 16, 2.

¹⁰⁴ *Geoponica*, II, 20, 2.

¹⁰⁵ *Geoponica*, II, 25, 1.

¹⁰⁶ *Geoponica*, II, 25, 3.

¹⁰⁷ *Geoponica*, II, 12, 1; 13, 1.

¹⁰⁸ *Geoponica*, II, 30, 1–4.

its crops – oats¹⁰⁹. He also gives important advice, correlating with the advice of the earlier Roman authors, discussed previously, on feeding farm animals with barley (either raw, groats, soaked in water or wine, roasted, with flour, and also with chaff); these included chickens¹¹⁰, peafowl¹¹¹, pheasants, guinea fowl, partridges, grouse¹¹², geese¹¹³, ducks¹¹⁴, horses¹¹⁵ (a note of interest: barley was to be avoided when the animal was suffering from a fever caused by inflamed throat¹¹⁶), bulls¹¹⁷, oxen¹¹⁸, sheep¹¹⁹ and swine¹²⁰. When describing barley he also mentioned other uses for this grain in activities related to agriculture, horticulture and housekeeping. He thus discusses a barley soup, resembling the traditional Greek *ptisáne*¹²¹ and many other, secondary uses of barley. Thus the cereal was used as an ingredient for preparing vinegar¹²² or increasing the its amount¹²³, preparing a substance for purifying drinking water¹²⁴ or preventing the rotting of apples¹²⁵ and wilting of roses¹²⁶ or, finally, a substance for keeping jackdaws away (as they

¹⁰⁹ *Geoponica*, II, 43.

¹¹⁰ *Geoponica*, XIV, 7, 7.

¹¹¹ *Geoponica*, XIV, 18, 8.

¹¹² *Geoponica*, XIV, 19, 2.

¹¹³ *Geoponica*, XIV, 22, 10; 22, 12. Cf. our reflections on the subject of Procopius' account of the empress Theodora.

¹¹⁴ *Geoponica*, XIV, 23, 2.

¹¹⁵ *Geoponica*, XVI, 3, 1; 3, 4; 4, 1.

¹¹⁶ *Geoponica*, XVI, 4, 4.

¹¹⁷ *Geoponica*, XVII, 3, 1.

¹¹⁸ *Geoponica*, XVII, 12, 1; 15, 3; 21, 1. In the second and third case the information is not about feeding specifically, but about curing the animal suffering from a headache.

¹¹⁹ *Geoponica*, XVIII, 2, 6.

¹²⁰ *Geoponica*, XIX, 6, 2.

¹²¹ *Geoponica*, III, 9. Here we find another recipe for *ptisáne*.

¹²² *Geoponica*, VIII, 34, 1–2. Cf. M.L. R a u t m a n, *op. cit.*, p. 169.

¹²³ *Geoponica*, VIII, 41, 2.

¹²⁴ *Geoponica*, II, 5, 14. Cf. the remarks of Paul of Aegina on the use of *álphita* for the same purpose.

¹²⁵ *Geoponica*, X, 21, 5.

¹²⁶ *Geoponica*, XI, 18, 8.

were pests, damaging the crops)¹²⁷ and soothing the pain of wounded oxen hooves¹²⁸. The amount of detail in this account attests indirectly, in our opinion, to the great significance of barley in Byzantine agriculture up to the tenth century, and indicates the constant importance of *krithé* during the earlier times. There is no data suggesting the cultivation of the cereal in question would have been limited during the earlier Byzantine period, and the medical sources that we analysed point to its constant use.

The hypothesis about the fixed role of barley in the diet is confirmed by the medical treatises. They have a lot to say about *krithé*, and the narratives are relatively detailed throughout the whole period that we are examining, that is, until the end of the seventh century¹²⁹. Let us begin with a general statement that during the period between the second and the seventh centuries this cereal is systematically described in medical works. It was dealt with by all of the authorities most important for this study, namely Galen (second century), Oribasius (fourth century), Aetius of Amida (fourth century), Alexander of Tralles (sixth century), Anthimus (sixth century), Paul of Aegina (seventh century) and the anonymous author of *De cibis* (seventh century). The dietetical doctrines preserved by the first of these authors were formulated long before the second century, which is clearly demonstrated by the information preserved in *De diaeta* (fifth/fourth century BC), the dietetical evaluations written down by Athenaeus of Naucratis in *Deipnosophistae* (reaching back to Mnesitheus' findings from the fourth century BC) and the works of Dioscurides (first century AD). We interpret this consistency of transmission, through the centuries and into the early Byzantine period, of the findings of earlier ancient medicine as an indication of the permanent role of barley; we further understand it to show the ease with which it was available on the market – and for this reason,

¹²⁷ *Geoponica*, XIV, 25, 2.

¹²⁸ *Geoponica*, XVII, 23, 3.

¹²⁹ Rautman called barley “a dietary mainstay” during the Byzantine period – M.L. R a u t m a n, *op. cit.*, p. 104.

from the perspective of the medical art, it was easy to use and valuable not only as a foodstuff, but also as a commonly available medicine. There is little doubt that the value and beneficial uses of *krithé* would not have been extolled through the ages if the cereal itself could not have been used in practice, in the ways promoted by the authors of the medical works, on account of being unavailable to the readers of such works.

Although there are no quantitative data in the medical treatises, from the information we have analysed it is clear that this food was the second-most significant cereal in terms of feeding the addressees of the medical works. One may conclude this on the basis of a series of qualities ascribed to *krithé*. Firstly, the cereal is described just after the *pyrós* wheat, the most highly valued foodstuff among all of the cereals. Furthermore, although the amount of space devoted to barley in dietetical discussion is lesser than the attention given to wheat, the scope of information provided is nonetheless much wider than the one given to other crops.

The medical works also preserve information from the time when barley was more dominant than *pyrós*, or held a position equal to it. The treatise *De diaeta*, for example, suggests that at the turn of the fifth and fourth centuries BC barley still took precedence over *pyrós*. Galen, in turn, indicated that in the second century, while barley was valued as one of the most important comestibles, its lower nutritional value was known, and for that reason the *krithai* products were being eliminated from certain uses¹³⁰. From that time onward the sources analysed systematically indicate its second place in the pattern of the consumption of cereals, all the way to the seventh century. The present study also shows how great was the difference, in favour of *krithé*, when comparing its popularity to other cereals such as *típhe*, *zeiá*, *ólyra*, *kénchros* and so forth. This is clearly visible from the considerable amount of data preserved in our sources (which was then presented in our arguments). In effect, wheat and barley appear in the medical treatises as the two most common crops, having undeniable precedence over any others in

¹³⁰ Specifically the elimination of *álphita* from the military diet. It was not, however, complete, as the information presented in this text shows.

the Graeco-Roman world up to the seventh century. An analysis of later evidence further proves that the situation did not change in the subsequent period.

The meticulousness displayed in listing the products obtained from *krithé* is striking; it is comparable only with the detailed description of *pyrós*. The medical authors characterised not only the general influence of this cereal on the body, but composed detailed descriptions of the characteristics and culinary and therapeutic uses of the *áleuron* flour, *álphita* groat, barley bread, *máza*, the barley soup called *ptisáne* (in its many varieties) and so on. The degree of detail of the description is so great that the reader may develop an opinion on the nature of the particular products and the technology involved in their production, learn what properties were attributed to them and gain a precise knowledge of their therapeutic role. At the same time the physicians introduced important culinary information that gives us an image of the basic methods of preparing barley products. The authors occasionally (though rather infrequently) also suggested who it was that consumed the particular types of food, and in what circumstances. The latter type of statements were, admittedly, scant, and increasingly rare after the second century AD. It should be added that this meticulousness can only be compared with the description of the *pyrós* products. It is thanks to the comparisons with the latter cereal that we are able to gain the most information about the social aspects of the consumption of barley.

Let us also add that barley and foods made from it were the subject of a particularly wide discussion among the medical authorities, as ingredients of medicines used from the second to seventh centuries. It is again very clear when we compare the amount of data on the subject of this grain with what was written about the other cereals. We interpret this fact as evidencing the consistent use of *krithé* for therapeutic purposes. The scope of information on this subject can only be compared with the volume of writing on the pharmacological uses of wheat or certain legumes, such as broad beans or lupine. We believe that the number of the recipes is another indicator of the prevalence

of *krithé* as an easily accessible commercial product that may have been also used in medicine.

The most exhaustive source of our knowledge about this cereal is the works of Galen; here the second place should be given to Oribasius. The contents of their works clearly indicate that during the second to fourth century period barley was known to all physicians and their patients. Works of both of the authors give us an insight into the doctrines of their predecessors; it would appear that the place of barley did not change since dietetic advice first came to be written down. Although the relevant information after fourth century is somewhat limited, it should not be deemed to indicate a reduced role of *krithé* as food, nor as a *phármakon*. The lack of detail in description is a result of a general reduction of the amount of dietetic data in the works of Aetius of Amida and of Paul of Aegina, with a simultaneous and unchanging familiarity with barley products and the constant presence of a large amount of information on the uses of the aforementioned grain in medical procedures. Furthermore, our detailed analysis of dietetical data indicates that the scope of doctrines did not change between the second and seventh centuries. The knowledge about this, one might imagine, still important element of the diet was being preserved and transmitted, and the findings of earlier authors were considered applicable due to their continued validity.

The data gained from the medical authors allow us also to conclude that there was a divide between the popularity of wheat in urban and rural areas. Here, however, one needs to keep some reserve, as the sources do not provide precise information, but only outline the more general trends. Therefore, they usually do not give an insight into the diverse situations encountered in the individual territories constituting the Empire. Nonetheless it is possible to conclude that cities based their alimentation on wheat bread, and that the cereal itself was imported¹³¹. The preference for common wheat remained firmly embedded in the dietetical works that we refer to in the present work. Wheat bread remains

¹³¹ Galen did not indicate a place from which this wheat came.

even nowadays the staple of the diet around the Mediterranean area. It also needs to be said that none of the sources mentioned barley bread as the first choice for the wealthy city dwellers who could afford to choose which foodstuffs to consume.

Barley, then, was a cereal typical for less urbanised areas in which the people did not benefit from the organised supply of wheat. Busy with field work and other duties, they could not purchase ready-baked *pyrós* bread, and ate instead one made of barley. It is characteristic that when Galen was training his physical strength by hulling barley, his exercise took place in the countryside, likely near the physician's native Pergamum; this work, as described in his *De sanitate tuenda*, was very hard¹³². The *krithé* grain had this advantage for Mysian farmers, whose toil Galen described: that it was locally available and did not need to be imported. *Ártos krithinos* did not require as much time to rise properly as a good *ártos pýrinos*, either. This was because barley bread would never expand as much as one made of wheat, due to the lack of sufficient amount of gluten in *áleuron krithinon*. Dieticians noted this fact, and developed an appropriate terminology necessary to describe it¹³³. Obviously, then, the people who baked bread did not wait for what they knew would not happen anyway, and treated the fact that barley bread would rise less than one made of wheat as a matter of course. Because of this quality, baked barley products were valued less than wheat ones, and some of them (such as, for example, *kóllix*-type barley bread) were classed as food for slaves. Admittedly, the poetry of Hipponax, the author who wrote of this, reflected the realities of the sixth century BC, but the slow pace of social and economic changes depicted by physicians in their works leads us to conclude that by the sixth century AD the bread of this kind still remained a lower quality, and cheaper, product. The process of kneading *máza*, another barley food, was less complicated, expensive¹³⁴ and

¹³² Cf. below.

¹³³ Cf. below.

¹³⁴ The basic variety of *máza*, after all, required only *álfhita* and water.

time consuming than preparing flour, kneading bread dough and waiting for it to rise. Neither did this product require arranging fuel, necessary for baking the loaves, which obviously made this food even easier to prepare. The difficulty of cooking *álphita* was comparable with effort involved in preparing *pyroí hephthoí*, and thus took relatively little time, certainly less than making bread. For this reason, the Pergamene suggested, this groat was cooked in the villages which he visited during his stay on Cyprus¹³⁵. The process of preparing the medicinal *ptisáne* was, in turn, lengthy. Galen himself attested¹³⁶, however, that appropriate care in cooking the barley soup was not always taken; particularly, numerous methods of shortening the preparation time of this soup were used¹³⁷.

In sum, preparing barley foods was less costly and time consuming than making it from wheat, which made it altogether cheaper. The raw materials were readily available and likely processed, for the most part, by the same people who later consumed the food. In urban areas, in turn, thanks to the ease of purchase (due to low price of barley), the poor who were not included in the organised system of distribution of imported wheat based their diet on barley products, including the bread baked from *áleuron kríthinon*¹³⁸. Barley was also used in the cities for feeding animals which were kept for transport or intended to be eaten. Sources indicate that this was true not only in antiquity, but also during the early Byzantine period, which may be concluded from the lack of source information suggesting drastic changes in human or animal diet between the second and seventh centuries.

This does not mean that barley served as food only for peasants and paupers. Groats – *álphita*, for example – mixed with *síraion* or wine were

¹³⁵ Cf. below.

¹³⁶ The same remark is then repeated by Oribasius.

¹³⁷ On barley as one of the basic products for preparing cooked dishes, cf. M.L. Rautman, *op. cit.*, p. 169.

¹³⁸ For the same conclusions cf. F. Koukoules, *op. cit.*, p. 22 (the poor as consumers of barley bread); M.L. Rautman, *op. cit.*, p. 105 (bread); 172 (*krithé* as a cereal).

consumed during trips to the baths. One ought to assume that the social context presented by the medical sources is predominantly urban, and applies primarily to the lifestyle of middle and upper classes¹³⁹ rather than the paupers. Let us add that such use of barley products is consistently mentioned throughout the whole period discussed in the present work, as it was still being referred to by Paul of Aegina.

To sum up: the consistent testimony of both medical and non-medical sources evidences a constant presence of barley in the diet between the second and seventh centuries. The grain was second only to wheat, and was used in making of numerous foodstuffs. Furthermore, it was a less prestigious food than *pyrós*. Throughout the whole period examined here it also served an important role as a material for various *phármaka*, and its place in medicine was caused not only by its pharmacological properties, but also availability.



¹³⁹ *Alphita* was mixed with sweet wine, usually valued higher than dry ones.

KRZYSZTOF JAGUSIAK

3. Barley: dietary assessment

Let us begin our description of barley with the usual dietary characterisation. We will progress through the data chronologically, without avoiding repetition, to conclusively demonstrate the lasting character of the ancient findings. Let us therefore begin with the pre-Galenic dietetics.

It is clear from the chapter on *krithé* located in the treatise *De diaeta*¹⁴⁰ that dietetics related to barley and its products was established prior to the second century AD. The data clearly indicates that Galen and his successors preserved rather than changed findings of the Hippocratic School. Barley, then, as the author of *De diaeta* wrote, is cooling and drying by nature. It also has cleansing properties, particularly when still not husked. Such grains are even more cooling, and slow down digestion. When roasted, *krithé* loses not only humidity, but also its cathartic properties¹⁴¹. The *synokomistón*-type *áleuron* flour, one made from whole grains of barley, is less nourishing and passes through the digestive tract more quickly. Pure *áleuron* made of the same cereal is more nourishing, but also more slowly excreted¹⁴². *Álphita*, groat, made of *krithé* is both cooling and drying¹⁴³. *Máza* made of *álphita* is humid, consists of separate grains, is light, quickly passes through the body and cools; it lowers temperature since it is made with cold water. It is quickly excreted, since it easily ripens in the stomach¹⁴⁴. *Máza* may also cause flatulence¹⁴⁵. Freshly made, it is drying, because of *álphita*'s hygroscopic properties¹⁴⁶.

¹⁴⁰ *De diaeta*, 40, 1–30.

¹⁴¹ *De diaeta*, 40, 1–6.

¹⁴² *De diaeta*, 40, 8–9.

¹⁴³ *De diaeta*, 40, 6–8.

¹⁴⁴ *De diaeta*, 40, 10–13.

¹⁴⁵ *De diaeta*, 40, 15–16.

¹⁴⁶ *De diaeta*, 40, 17–18.

The characterisation of barley composed by Dioscurides in the work *De materia medica*, in turn, begins with a remark on its fundamental quality – as a food, barley is less nourishing than *pyrós*¹⁴⁷. Regarding its other properties, Dioscurides wrote that the cereal stimulates production of urine, has cathartic properties, contributes to generation of flatus, has a beneficial effect on the stomach (*kakostómachos*), and – used externally – it also causes absorption of swellings through leading to digestion of the excess of juices that cause them (*sympeptiké oidemáton*)¹⁴⁸.

The dietary depiction of *áleuron kríthinon* does not really exist as an independent part of Dioscurides' study. It ought to be reconstructed, in some measure, as a derivative of the qualities of barley itself. Other properties of barley flour do appear, thanks to its use as an ingredient in medications. For example, when boiled with figs in *melikraton* it is diaphoretic¹⁴⁹, and when it is prepared with tar, resin and pigeon excrement, it hastens digestion of juices dangerous to health¹⁵⁰.

Dietetic properties of groat called *álphita* were not presented by Dioscurides in particular detail. Directly, he only wrote that it slows down digestive tract activity¹⁵¹ and soothes inflammations¹⁵². One must also, of course, account for the use of *álphita* as an ingredient of *ptisáne*; its beneficial effects partially resulted from the properties of the ingredient used in the preparation of the medicinal dish.

Máza's dietetical properties, in turn, were not described at all. Besides, the foodstuff itself was not, generally, treated by Dioscurides as an important part of the diet of his times. The author did, however, devote a few words to the properties of *ptisáne*. He claimed that this soup¹⁵³ was more nourishing than barley¹⁵⁴ itself, and became so

¹⁴⁷ Dioscurides, *De materia medica*, II, 86, 1, 1–2.

¹⁴⁸ Dioscurides, *De materia medica*, II, 86, 1, 7–2, 1.

¹⁴⁹ Dioscurides, *De materia medica*, II, 86, 2, 2–3.

¹⁵⁰ Dioscurides, *De materia medica*, II, 86, 2, 3–4.

¹⁵¹ Dioscurides, *De materia medica*, II, 86, 3, 5–6.

¹⁵² Dioscurides, *De materia medica*, II, 86, 3, 6.

¹⁵³ Dioscurides, *De materia medica*, II, 86, 1, 2.

¹⁵⁴ Dioscurides, *De materia medica*, II, 86, 1, 2–3.

thanks to boiling *álphita*, the main ingredient of this dish¹⁵⁵. It is also dietetically somewhat different from *ptisáne pyríne*: the latter is more nourishing¹⁵⁶ and has more potent diuretic effect¹⁵⁷ than its *krithé* counterpart.

Finally, let us discuss the two types of alcoholic drinks made with *krithé*. The *zýthos* beer was described rather scrupulously: perhaps as a result of its popularity among the soldiers who Dioscurides had in his care. *Zýthos*, then, was described as a diuretic drink¹⁵⁸. It is, however, detrimental to the function of the kidneys and tendons¹⁵⁹, and affects meninges particularly badly¹⁶⁰. It also causes flatulence and leads to humoral imbalance¹⁶¹. Furthermore, it increases the chance of being affected by elephantiasis (*elephantiasis*)¹⁶². Dioscurides had also something to say about the properties of the *koúrmi* beer¹⁶³: the drink causes headaches, disturbs humoral balance (*kakóchymos*) and is harmful to tendons (*neúra*)¹⁶⁴.

From Galen's dietary musings it is clear that at the turn of the first and second century barley was a popular crop, and a valued food. To prove this conclusion one only needs to bring up the classification of the value of cereals, cited by Galen after Diocles of Carystus, in which the Pergamene's predecessor placed *ex aequo* in the first place the *pyrós* wheat and *krithé*¹⁶⁵, or the evaluation of Mnesitheus, who judged barley¹⁶⁶ and wheat¹⁶⁷ as the best among cereals for human

¹⁵⁵ Dioscurides, *De materia medica*, II, 86, 1, 3.

¹⁵⁶ Dioscurides, *De materia medica*, II, 86, 1, 5.

¹⁵⁷ Dioscurides, *De materia medica*, II, 86, 1, 5–6.

¹⁵⁸ Dioscurides, *De materia medica*, II, 87, 1, 1.

¹⁵⁹ Dioscurides, *De materia medica*, II, 87, 1, 2.

¹⁶⁰ Dioscurides, *De materia medica*, II, 87, 1, 2–3.

¹⁶¹ Dioscurides, *De materia medica*, II, 87, 1, 3.

¹⁶² Dioscurides, *De materia medica*, II, 87, 1, 3–4.

¹⁶³ Dioscurides, *De materia medica*, II, 88, 1, 1.

¹⁶⁴ Dioscurides, *De materia medica*, II, 88, 1, 2–3.

¹⁶⁵ Galen, *De alimentorum facultatibus*, 512, 2; 512, 6, vol. VI.

¹⁶⁶ Galen, *De alimentorum facultatibus*, 512, 9–13, vol. VI.

¹⁶⁷ Galen, *De alimentorum facultatibus*, 512, 11, vol. VI.

consumption. In the main part of his discussion on *krithe*¹⁶⁸, Galen stated that it is worthy of being used as food¹⁶⁹. He added, however, that it differs considerably in its properties from wheat: it is clearly cooling¹⁷⁰, and this quality is passed on the foodstuffs made of it, such as breads, *ptisáne* or *álphita*¹⁷¹. The juices resulting from consumption of barley and wheat were dissimilar as well; while the latter caused production of thick and viscous humours (and was therefore nourishing), the former resulted in thin (of low nutritional value) and cleansing¹⁷² (resulting in more ready evacuation) juices. The *krithaí* and food prepared from it do not warm the body¹⁷³ but, depending on the way in which they were prepared, can moisten or dry¹⁷⁴. Thus *álphita*¹⁷⁵, since they are prepared from roasted grain¹⁷⁶, and are therefore devoid of humidity after being processed in high temperatures and in dry environment, become themselves effective at absorbing moisture. *Ptisáne*, in turn, moistens¹⁷⁷, as the water it contains affects the body of whoever eats it. Worth noting is also the opinion we find in *De victu attenuante*: barley, as not particularly nourishing, was suitable in a reducing diet¹⁷⁸. Finally, one should note that barley's qualities were also included in *De simplicium medicamentorum temperamentis ac facultatibus*¹⁷⁹. This meant that *krithaí* and its products may, under specific circumstances, have been used as *phármaka*. We read there that

¹⁶⁸ Galen, *De alimentorum facultatibus*, 501, 1 – 504, 4, vol. VI.

¹⁶⁹ Galen, *De alimentorum facultatibus*, 501, 1, vol. VI.

¹⁷⁰ Galen, *De alimentorum facultatibus*, 501, 2–7, vol. VI.

¹⁷¹ Galen, *De alimentorum facultatibus*, 501, 6–8, vol. VI.

¹⁷² Galen, *De alimentorum facultatibus*, 501, 11, vol. VI.

¹⁷³ Galen, *De alimentorum facultatibus*, 501, 12–13, vol. VI.

¹⁷⁴ Galen, *De alimentorum facultatibus*, 501, 13, vol. VI.

¹⁷⁵ Galen, *De alimentorum facultatibus*, 501, 14, vol. VI.

¹⁷⁶ Galen, *De alimentorum facultatibus*, 501, 14–15, vol. VI.

¹⁷⁷ Galen, *De alimentorum facultatibus*, 501, 15, vol. VI.

¹⁷⁸ Galen, *De victu attenuante*, 54, 3–4.

¹⁷⁹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 44, 10 – 45, 4, vol. XII.

barley is drying¹⁸⁰ and cooling¹⁸¹ in the first degree; it also has some cleansing properties¹⁸². In the following part of the same passage Galen compared it to one of the *óspria*. There, we read that it is more drying than *áleuron* made with broad beans (seeds of the *kýamos* plant which, as the physician noted, were devoid of integuments)¹⁸³; in external uses, all other properties of both were alike¹⁸⁴. When it comes to consumption, barley is superior to broad beans, as it induces flatulence less¹⁸⁵; this is because *kýamos* seeds are composed of a substance denser than *krithe*¹⁸⁶. For the same reason, broad beans are more nutritious than barley. Galen also stated that both are suitable for pharmacological uses¹⁸⁷, but did not specify which ones.

Áleuron kríthinon, according to Galen's doctrines, had some qualities that were derived from those of barley; this product is discussed in many of the Pergamene's treatises. The most valuable here, however, are *De alimentorum facultatibus* and *De victu attenuante*. All of the available information shows that *áleuron kríthinon* was evaluated to be less nourishing than the same type of flour obtained from *pyrós*. This is because *krithai* provided the body with far less nutrition than wheat, as it did not contain the viscosity that determined the nutritive value of all cereal foodstuffs. Therefore the *áleuron* products, first and

¹⁸⁰ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 44, 10–11, vol. XII.

¹⁸¹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 44, 10–11, vol. XII.

¹⁸² Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 44, 11–12, vol. XII.

¹⁸³ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 44, 12–13, vol. XII.

¹⁸⁴ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 44, 13–14, vol. XII.

¹⁸⁵ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 44, 14–15, vol. XII.

¹⁸⁶ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 44, 16–17, vol. XII.

¹⁸⁷ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 44, 18–45, 3, vol. XII.

foremost various types of bread, were brittle and, dietetically speaking, inferior to the similar products made of *pyrós*. This quality of *krithai* was very pointedly emphasised in *De alimentorum facultatibus* in Galen's discussion on obtaining another barley product, *álphita*, in the description of military diet¹⁸⁸. When it comes to *áleuron*'s other qualities, in the same chapter the physician described it as being made of fine grains and white, that is, free of any impurities. He also explained that because of this it is more quickly and easily digested, and subsequently absorbed. Lastly, it more effectively nourishes the body, before becoming a part of it¹⁸⁹. Galen also presented the way in which the elements that contaminated *áleuron* worked; he called these *pítyra*. According to his explanation they are tough and not soluble in water. It is therefore not surprising that they do not decompose in the stomach, and remain there without being broken down. They do not ripen in the stomach, and as a consequence are not absorbed, since they are unable to enter the veins, though which food is being distributed. For this reason they constitute a considerable part of the faeces and are quickly evacuated, due to their weight; because of this, they may be attributed a laxative effect¹⁹⁰. These remarks explained the qualities and effect of different types of wholemeal flour made from barley, and it should also be added that similar deliberations concerned *pítyra pyrína*, wheat bran. These data are supplemented by an evaluation that can be found in *De victu attenuante*¹⁹¹. The author of the work claimed there that barley flour is more moist than bread made of it, as well as than *álphita*¹⁹² groats, but at the same time causing more flatulence, especially when it is cooked with milk¹⁹³.

The groat, *álphita*, was thoroughly characterised in terms of its dietary properties. We have already noted that according to Galen such

¹⁸⁸ Galen, *De alimentorum facultatibus*, 507, 9–14, vol. VI.

¹⁸⁹ Galen, *De alimentorum facultatibus*, 508, 3–508, 10, vol. VI.

¹⁹⁰ Galen, *De alimentorum facultatibus*, 508, 10–509, 3, vol. VI.

¹⁹¹ Galen, *De victu attenuante*, 38, 4–39, 1.

¹⁹² Galen, *De victu attenuante*, 38, 5.

¹⁹³ Galen, *De victu attenuante*, 39, 1.

properties were derived in large part from the qualities inherent in the raw material from which the food was made. For this reason they have all been previously specified in the present text in the part devoted to the properties of barley itself. To avoid repeating Galen's complex arguments, we will now only recapitulate them. *Álphita* are characterised in his opinion by a cooling effect and cause creation of thin juices that additionally cleanse the body. The groat also has a drying effect. In the appropriate chapter of the treatise *De alimentorum facultatibus*, entitled *Perí alphíton*¹⁹⁴, while Galen did not use the term *eúchyma* itself, he did implicitly include the discussed product into this group. He stated that *álphita* have a pleasant smell, this providing, of course, that they have been prepared properly¹⁹⁵. Furthermore, when considering the value of the groat as part of the food supply for the Roman army¹⁹⁶, he indicated that the product was not very nourishing, and so belonged among the *oligótrophá* foods. He also explained *expressis verbis* that consuming it brings weakness, as the nutritional value of *álphita* is sufficient for those who do not exercise, but far too limited for those who constantly work on maintaining their muscles¹⁹⁷. Similar assessments are found also in other works of the Pergamene. In *De victu attenuante* he wrote that *álphita*¹⁹⁸ are not very nutritious¹⁹⁹, much like bread made of barley flour. Furthermore, the groat has drying properties when made of roasted barley²⁰⁰. This drying power, greater than barley's, as the author put it, of *álphita* was included in the description of *kriithai* in *De simplicium medicamentorum temperamentis ac facultatibus*²⁰¹.

¹⁹⁴ Galen, *De alimentorum facultatibus*, 506, 14 – 508, 2, vol. VI.

¹⁹⁵ Galen, *De alimentorum facultatibus*, 507, 1, vol. VI.

¹⁹⁶ The passage on the role of *álphita* as an important food of the Greek and Roman armies – Galen, *De alimentorum facultatibus*, 507, 9–14, vol. VI.

¹⁹⁷ Galen, *De alimentorum facultatibus*, 507, 9–14, vol. VI.

¹⁹⁸ Galen, *De victu attenuante*, 38, 3–4.

¹⁹⁹ Galen, *De victu attenuante*, 38, 3.

²⁰⁰ Galen, *De victu attenuante*, 38, 4.

²⁰¹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 45, 3–4, vol. XII.

In *De alimentorum facultatibus*, in turn, Galen included a whole chapter supposedly devoted to barley breads²⁰². The passage contains so many departures from the subject, however, that as a result the titular matter is given the least attention. At the beginning of the discussion the physician underlines the fact that *ártoi krithinoi*²⁰³ considerably differ from *pyrós* wheat breads (as well as from those made of *ólyra* and *típhe*). This is because they lack viscosity and malleability²⁰⁴ (their lack thereof also determining their low nutritional value), and this property was apparent in physical properties of the bread, making it brittle²⁰⁵. Continuing the dietetical characterisation, and having previously given his readers advice on distinguishing between good and poor quality cereal, the physician pointed out that the wholesomeness of barley bread, while generally low²⁰⁶, depended on the quality of grain used in its production. Of course, the better the raw material, the more nourishment it delivered to the body. Because of this, *ártos* that was made from grains of *krithé* that were light and had loose internal structure was described as similar to *ártoi pityriai*²⁰⁷. Such breads very quickly pass through the digestive system. It also needs to be added that this property was common to *ártoi krithinoi* in general, especially when they are compared with wheat breads²⁰⁸. Furthermore, in *De victu attenuante*²⁰⁹, Galen wrote that they do not promote production of thick juices²¹⁰ and, among barley products, cause the least flatulence²¹¹.

²⁰² Galen, *De alimentorum facultatibus*, 504, 5 – 506, 13, vol. VI.

²⁰³ Galen, *De alimentorum facultatibus*, 504, 7–10, vol. VI.

²⁰⁴ Galen, *De alimentorum facultatibus*, 504, 10, vol. VI.

²⁰⁵ Galen, *De alimentorum facultatibus*, 504, 9, vol. VI.

²⁰⁶ Galen, *De alimentorum facultatibus*, 504, 10, vol. VI.

²⁰⁷ Galen, *De alimentorum facultatibus*, 506, 4–9, vol. VI.

²⁰⁸ Galen, *De alimentorum facultatibus*, 506, 9–11, vol. VI.

²⁰⁹ Galen, *De victu attenuante*, 38, 1–3.

²¹⁰ Galen, *De victu attenuante*, 38, 2. In our opinion Galen wanted to state that barley bread caused relatively, more so than barley alone, thick juices. These were, however, certainly considered less thick than those resulting from eating wheat and wheat bread.

²¹¹ Galen, *De victu attenuante*, 38, 2.

Máza, as an important foodstuff for the people in Galen's times, was dietetically characterised numerous times in his works. The product is given a separate chapter in *De alimentorum facultatibus*²¹²; it is the most complete characterisation of it that we know. From the physician's reflections preserved to our times in the extant works it is clear that the food belonged to the *oligótrophá* group of foods. This conclusion can be drawn from the statement that *máza*²¹³ was worse in terms of nutrition than barley bread as much as the latter was inferior to similar wheat products²¹⁴. This deficiency in the ability to nourish the body was a result of the properties of *krithái* themselves, which were passed on to barley *álphita*. Galen explained to his readers that because this cereal is naturally rich in contaminating elements that are similar to bran or chaff, and referred to as *pityródes*. After roasting (likely already after being processed into *álphita*) barley becomes even more dry and difficult to decompose in the digestive system because of its hardness (which is further increased by exposure to high temperatures). For this reason *máza*, as a food based on *álphita*, ripens in the stomach with greater difficulty than barley breads, and fills it with gas²¹⁵. This increases for as long as *máza* remains in the stomach, which causes disruption in its function²¹⁶. The length of digesting this food, however, can be regulated. *Máza* is evacuated more quickly if it has been properly kneaded; but when it is made with the addition of honey, the evacuation will come about more quickly, because of the properties of honey²¹⁷. The passage on *máza* from *De alimentorum facultatibus*, in which Galen is correcting the erroneous, as he saw it, doctrines of his predecessors, also deserves attention. In this way he gave us an insight into the development of dietetics before it became canon, in the form of Galen's reflections. From

²¹² Galen, *De alimentorum facultatibus*, 508, 2–510, 14, vol. VI.

²¹³ The passage analysing the dietary properties of *máza* – Galen, *De alimentorum facultatibus*, 509, 4–13, vol. VI.

²¹⁴ Galen, *De alimentorum facultatibus*, 509, 4–5, vol. VI.

²¹⁵ Galen, *De alimentorum facultatibus*, 509, 6–9, vol. VI.

²¹⁶ Galen, *De alimentorum facultatibus*, 509, 10–11, vol. VI.

²¹⁷ Galen, *De alimentorum facultatibus*, 509, 12–13, vol. VI.

the text we learn that Philotimus²¹⁸ and his mentor Praxagoras²¹⁹ referred to the juices typical to barley *máza* as glassy (*hyalódeis*)²²⁰. They described them as thick, viscous and cold²²¹. Galen, however, claimed that they were wrong: barley groat was neither viscous nor malleable (*glíschros*), and in this it differed from *chóndros*, which was sufficiently *glíschron*. Because of the lack of viscosity in *álphita*, they also lacked in wholesomeness. Galen judged that Philotimus did not write accurately about *máza* because he was misled by the apparent qualities of the so-called, by Athenians, *trípte*²²², that is *máza* that was kneaded for a long time²²³ with sweet wine²²⁴ or with *straion*²²⁵. He also explained that the food prepared in this way became superficially similar in its qualities to dough made with wheat – malleable and viscous, which resulted from the long kneading of *álphita* with a thick liquid – wine or *straion*²²⁶. After the lengthy preparation, the final product appeared viscous, while in fact it did not possess any of this quality: viscosity results in adhesion and clogging up, while *álphita* was strongly cleansing and astringent²²⁷.

Characterisation of *ptisáne* included in treatises left by Galen in relatively detailed. It is not surprising, as it was a commonly eaten food that was also considered to be one of the prime medications, with a very wide range of applications. Moreover, the physician himself was a leading expert in this field, even among other ancient specialists. In *De alimentorum facultatibus* we read that *ptisáne* derived its dietary properties from

²¹⁸ Galen, *De alimentorum facultatibus*, 509, 14, vol. VI.

²¹⁹ Galen, *De alimentorum facultatibus*, 509, 16, vol. VI.

²²⁰ Galen, *De alimentorum facultatibus*, 509, 16, vol. VI.

²²¹ Galen, *De alimentorum facultatibus*, 509, 14, vol. VI.

²²² Galen, *De alimentorum facultatibus*, 510, 3, vol. VI.

²²³ Galen, *De alimentorum facultatibus*, 510, 5, vol. VI.

²²⁴ Galen, *De alimentorum facultatibus*, 510, 2, vol. VI.

²²⁵ Galen, *De alimentorum facultatibus*, 510, 2–3, vol. VI.

²²⁶ Galen, *De alimentorum facultatibus*, 510, 4–6, vol. VI.

²²⁷ In order to graphically demonstrate this truth refers to the example of the effect of *chylos ptisánes* – Galen, *De alimentorum facultatibus*, 510, 9, vol. VI. The whole of discussion on the properties of *máza* as an interpretation of Philotimus' and Praxagoras' doctrines – Galen, *De alimentorum facultatibus*, 509, 14 – 510, 14, vol. VI.

krithai. It led to creating thin and cleansing juices in the body (the majority of ailments being believed to be caused by thick humours)²²⁸, which promoted ridding the body of unwanted elements²²⁹. Much like other barley foods, *ptisane* had no warming effect, and therefore, as Galen and other physicians emphasised, it was appropriate for patients with excess of heat, in particular one caused by illness²³⁰; it also moistened the body²³¹. It is therefore not surprising that, as the Pergamene put it, it was considered by Hippocrates appropriate for healthy and sick alike. The physician from Cos wrote of it that the food itself is viscous, gentle, slick, wet, quenches thirst and is easily excreted. Furthermore, *ptisane* is not acrid and it does not irritate the bowels by expanding inside them: this is because the groat out of which it is made has already fully increased in volume while being cooked²³².

This information needs to be supplemented with the characterisation included in the *De ptisana*. Let us add here that it repeats practically all of the observations included in *De alimentorum facultatibus*; many other treatises besides included remarks similar to those already presented. Moving on to *De ptisana*, however, it needs to be noted that it was there that Galen presented his general view of this food's beneficial influence on the human body. There are many reasons for this, and the main ones are thus: firstly, when the barley soup is passing through the body, it passes through all of them up to the chest; because of its cleansing properties, it promotes removal of the unnecessary elements and helps in assimilating the ones that are useful for the body²³³. Secondly, the moderately moistening *ptisane* quenches thirst better than water, as combining the main ingredients (moistening water and mildly drying barley) brings about additional health benefits²³⁴. Thirdly, *ptisane* is an appropriate

²²⁸ Galen, *De alimentorum facultatibus*, 501, 11, vol. VI.

²²⁹ Galen, *De alimentorum facultatibus*, 501, 11, vol. VI.

²³⁰ Galen, *De alimentorum facultatibus*, 501, 12–13, vol. VI.

²³¹ Galen, *De alimentorum facultatibus*, 501, 15, vol. VI.

²³² Galen, *De alimentorum facultatibus*, 503, 10–16, vol. VI.

²³³ Galen, *De ptisana*, 824, 8–11, vol. VI.

²³⁴ Galen, *De ptisana*, 824, 11 – 825, 3, vol. VI.

food for patients suffering from sudden fevers, thanks to its moistening and cooling properties; it also cleanses the body of putrescent juices while at the same time providing proper nourishment. Furthermore, it promotes transformation of defective humours into useful ones, since it decomposes unwanted *chymot*²³⁵. Lastly, it needs to be stressed that it is not astringent and does not cause irritation of the digestive tract. Although, as Galen noted in his works, astringent qualities might help in strengthening the digestive system, at the same time they lead to thickening of the body's juices. What is more, the moistening property of *ptisane* facilitates absorption of food – this is because it prevents juices from thickening²³⁶. The soup, then, is free from dangerous qualities and does not disturb the bowel activity, since all of the acrid and flatulent qualities have been removed from it during cooking²³⁷.

Moving on our discussion to what was written about *krithé* nearly two centuries after Galen, we need to remark that when Oribasius examined barley from the perspective of its dietetical-pharmacological properties, he referred primarily to the arguments of his predecessor contained in the work *De alimentorum facultatibus*²³⁸. It is therefore not surprising that the qualities he listed in *Collectiones medicae* are identical with the earlier findings. He noted that *krithai* have cooling²³⁹ and cleansing²⁴⁰ effects. Similar properties were mentioned in all of Oribasius' treatises, although a full characterisation of this cereal, similar to the one presented here, is located only in book two of *Libri ad Eunapium*²⁴¹. Barley is described there as a drying and cooling, and somewhat cleansing, substance²⁴². Both of these recapitulations of the properties of *krithé* did not exhaust the subject, and at least one quality – its low nutritional value – ought to

²³⁵ Galen, *De ptisana*, 825, 3–7, vol. VI.

²³⁶ Galen, *De ptisana*, 825, 7–11, vol. VI.

²³⁷ Galen, *De ptisana*, 825, 11–14, vol. VI.

²³⁸ Oribasius, *Collectiones medicae*, I, 10, 1, 1–2, 4.

²³⁹ Oribasius, *Collectiones medicae*, I, 10, 1, 1.

²⁴⁰ Oribasius, *Collectiones medicae*, I, 10, 2, 1.

²⁴¹ Oribasius, *Libri ad Eunapium*, II, 1, κ, 84, 1–86, 1.

²⁴² Oribasius, *Libri ad Eunapium*, II, 1, κ, 84, 1

be added to these. We know this because in *Synopsis ad Eustathium filium* each of the types of barley bread²⁴³, and subsequently *álphita*²⁴⁴, *máza* and the grain itself²⁴⁵, were counted among foodstuffs that provide little nourishment for the body²⁴⁶. This classification is repeated in *Libri ad Eunapium*²⁴⁷. As a result of accepting the doctrine with regard to its low nutritional value, barley was recommended in the so-called *leptýnousa diáita*. According to the tradition taken from Galen, Oribasius concluded that *krithé* is one of the cereals²⁴⁸ suitable in a reducing diet²⁴⁹, and he made such remarks not only in *Collectiones medicae*, but also in *Synopsis ad Eustathium filium*²⁵⁰ and *Libri ad Eunapium*²⁵¹.

It is worth noting that the aforementioned qualities are regularly repeated in Oribasius' works. The grain and the products made of it, such as *áleuron*, *álphita*, *ártoi*, *máza* and *ptisáne*²⁵², were considered in *Collectiones medicae*²⁵³ to be cooling, and again appeared as such in the work created for Oribasius' son²⁵⁴ and in the treatise for Eunapius²⁵⁵. The strength of this cooling was specified to be relatively minor, of the first degree²⁵⁶. In book fourteen of *Collectiones medicae*²⁵⁷ barley²⁵⁸

²⁴³ Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 5, 2 – 6, 1.

²⁴⁴ Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 6, 1.

²⁴⁵ Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 6, 2.

²⁴⁶ Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 1, 1 – 12, 3.

²⁴⁷ Oribasius, *Libri ad Eunapium*, I, 30, 1, 1 – 8, 2 (*krithé* – I, 30, 6, 3).

²⁴⁸ Oribasius, *Collectiones medicae*, III, 2, 5, 1 – 6, 1.

²⁴⁹ Oribasius, *Collectiones medicae*, III, 2, 1, 1 – 26, 2.

²⁵⁰ Oribasius, *Synopsis ad Eustathium filium*, IV, 1, 1, 1 – 22, 3 (*krithé* – IV, 1, 4, 1 – 2).

²⁵¹ Oribasius, *Libri ad Eunapium*, I, 18, 4, 1 – 3 (*krithé* – I, 18, 4, 2).

²⁵² Oribasius, *Collectiones medicae*, III, 32, 1, 1.

²⁵³ Oribasius, *Collectiones medicae*, III, 32, 1, 1 – 12, 3 (*krithé* – III, 32, 1, 1.).

²⁵⁴ Oribasius, *Synopsis ad Eustathium filium*, IV, 32, 1, 1 – 13, 2 (barley and its derivatives – IV, 32, 1, 1).

²⁵⁵ Oribasius, *Libri ad Eunapium*, I, 48, 1, 1 – 7, 3; II, 4, 1, 1 – 4, 2 (barley and its derivatives – I, 48, 1, 1; II, 4, 1, 8).

²⁵⁶ Oribasius, *Collectiones medicae*, XIV, 20, 1, 1 – 3; Oribasius, *Synopsis ad Eustathium filium*, II, 8, 1, 1 – 2.

²⁵⁷ Oribasius, *Collectiones medicae*, XIV, 25, 1, 1 – 6.

²⁵⁸ Oribasius, *Collectiones medicae*, XIV, 25, 1, 2.

was also included in the list of mildly drying substances, which was subsequently repeated in *Synopsis ad Eustathium filium*²⁵⁹ and *Libri ad Eunapium*²⁶⁰. We also find that barley's cleansing properties were highlighted on many occasions. Thusly *krithai*²⁶¹, in *Collectiones medicae*, were included in the list of cleansing substances (*Hósa rhýptei*)²⁶², while Oribasius deemed that the grain itself possessed this quality to a moderate degree. Further evidence for universal acceptance of this theory is the fact that barley²⁶³ was included into the *rhýptonta* category also in *Synopsis ad Eustathium filium*²⁶⁴ and in *Libri ad Eunapium*²⁶⁵. Lastly, it should be mentioned that the cereal²⁶⁶ was also included among the diaphoretic substances²⁶⁷, which would explain its manifold uses in medicines which are going to be discussed later in this work.

Moving on to properties of barley flour, we would also like to highlight the fact that its dietary and medicinal qualities were somewhat brushed off by Oribasius, who wrote about them less than Galen. His remarks are usually indirect, such as those found in the *Hósa psýchei*²⁶⁸ chapter of *Collectiones medicae*, where it is stated that barley, as well as all of the products made of it (including *áleuron*)²⁶⁹ have a cooling effect. One may only rarely find direct remarks in the works of Emperor Julian's physician, such as the one that ascribes to barley flour²⁷⁰ diaphoretic

²⁵⁹ Oribasius, *Synopsis ad Eustathium filium*, II, 14, 1, 1–3. *Krithai* cf. Oribasius, *Synopsis ad Eustathium filium*, II, 14, 1, 1.

²⁶⁰ Oribasius, *Libri ad Eunapium*, II, 5, 1, 1–4, 6. *Krithai* cf. Oribasius, *Libri ad Eunapium*, II, 5, 1, 5.

²⁶¹ Oribasius, *Collectiones medicae*, XIV, 48, 1, 18–19.

²⁶² Oribasius, *Collectiones medicae*, XIV, 48, 1, 1–42.

²⁶³ Oribasius, *Synopsis ad Eustathium filium*, II, 34, 1, 10; Oribasius, *Libri ad Eunapium*, II, 15, 1, 13.

²⁶⁴ Oribasius, *Synopsis ad Eustathium filium*, II, 34, 1, 1–19.

²⁶⁵ Oribasius, *Libri ad Eunapium*, II, 15, 1, 1–26.

²⁶⁶ Oribasius, *Collectiones medicae*, XIV, 62, 1, 9.

²⁶⁷ Oribasius, *Collectiones medicae*, XIV, 62, 1, 1–3, 2.

²⁶⁸ Oribasius, *Collectiones medicae*, III, 32, 1, 1–12, 3.

²⁶⁹ Oribasius, *Collectiones medicae*, III, 32, 1, 1.

²⁷⁰ Oribasius, *Collectiones medicae*, XIV, 62, 1, 32.

properties²⁷¹. One should remember, however, that fortunately we do possess a fragment of the *Collectiones medicae* that discusses *krithé* and is based on Galen's doctrines from *De alimentorum facultatibus*²⁷². Oribasius wrote there that barley products maintain the properties of the cereal used in their making. This, then, shows that *áleuron krithinon*, similarly to *krithái*, was considered to be not only cooling, but also of low nutritional value, drying and cleansing.

Regarding *álphita*, this groat was directly characterised by Oribasius who was basing his information on Galen's *De alimentorum facultatibus*²⁷³. However, while the latter devoted to it a separate chapter, the author of *Collectiones medicae* combined the characterisation of *álphita* with a description of *máza*, *nota bene* simplifying his predecessor's arguments. From the passage we may only learn that both of the products were ascribed low nutritional value, and for this reason they were sufficiently nourishing only for those who did not engage in physical effort²⁷⁴. The latter quality was also regularly highlighted throughout all of Oribasius' works, in which food groups are arranged according to their dominant qualities; it was done so in *Collectiones medicae*²⁷⁵, in the selection of doctrines made for his son²⁷⁶ and in the treatise for Eunapius²⁷⁷. Emperor Julian's physician also systematically highlighted the drying quality of *álphita*. The groat²⁷⁸ is found in the chapter on substances with this effect from *Collectiones medicae*²⁷⁹, and subsequently in book fourteen of the same work²⁸⁰. Oribasius listed *álphi-*

²⁷¹ Oribasius, *Collectiones medicae*, XIV, 62, 1, 1 – 3, 2.

²⁷² Oribasius, *Collectiones medicae*, I, 10, 1, 1 – 2, 4.

²⁷³ Oribasius, *Collectiones medicae*, I, 12, 1, 1 – 3, 3.

²⁷⁴ Oribasius, *Collectiones medicae*, I, 12, 1, 1 – 2, 1.

²⁷⁵ Oribasius, *Collectiones medicae*, III, 14, 1, 1 – 13, 3 (*álphita* – III, 14, 7, 1).

²⁷⁶ Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 1, 1 – 12, 3 (*álphita* – IV, 13, 6, 1).

²⁷⁷ Oribasius, *Libri ad Eunapium*, I, 30, 1, 1 – 8, 2 (*álphita* – I, 30, 6, 1).

²⁷⁸ Oribasius, *Collectiones medicae*, III, 33, 3, 1 – 4, 1.

²⁷⁹ Oribasius, *Collectiones medicae*, III, 33, 1, 1 – 6, 3.

²⁸⁰ Oribasius, *Collectiones medicae*, XIV, 25, 1, 1 – 6.

ta²⁸¹ among substances drying in the first degree. The same classification appears also in *Synopsis ad Eustathium filium*²⁸² and in the treatise for Eunapius²⁸³. Lastly, Oribasius also stated that all well-made *álphita* are characterised by a pleasant smell, and the best smelling ones are those that were made from young barley, from as yet undried ears²⁸⁴. This information gives an indication to class this food among the *eúchyma*, or food with wholesome juices.

Elements of the dietetical description of barley bread are to be found in *Collectiones medicae* in the passage in which Oribasius refers to barley's value, basing his narrative on what he found in Galen's *De alimentorum facultatibus*²⁸⁵. The findings are also identical, and so as not to repeat them, we will only sum them up: the properties of bread were deemed to be similar to those we listed in the characterisation of *krithé*. Oribasius stressed that *ártoi krithinoi* lacked the viscous element²⁸⁶, which causes the baked goods made of it to be brittle²⁸⁷ and innutritious²⁸⁸. These qualities are later reflected in all of Oribasius' works; the author himself referred primarily to its cooling effect, nutritional value and the matter of flatulence. The latter quality, although not raised in the cited passage based on Galen's doctrines, emerges in the characterisation of one of the most important *krithé* products – *máza*. Let us begin with the lack of warming properties of barley bread. This quality was noted in the *Hósa psýchei*²⁸⁹ chapter of *Collectiones medicae*, in which barley, as well as all its products, including *ártoi krithinoi*²⁹⁰, had cooling properties. Ascribing to barley breads low nu-

²⁸¹ Oribasius, *Collectiones medicae*, XIV, 25, 1, 3.

²⁸² Oribasius, *Synopsis ad Eustathium filium*, II, 14, 1, 1–3 (*álphita* – II, 14, 1, 1).

²⁸³ Oribasius, *Libri ad Eunapium*, II, 5, 1, 1–4, 6 (*álphita* – II, 5, 1, 6–7).

²⁸⁴ Oribasius, *Collectiones medicae*, IV, 1, 8, 1–9, 1.

²⁸⁵ Oribasius, *Collectiones medicae*, I, 10, 1, 1–2, 4.

²⁸⁶ Oribasius, *Collectiones medicae*, I, 10, 2, 3.

²⁸⁷ Oribasius, *Collectiones medicae*, I, 10, 2, 2–3.

²⁸⁸ Oribasius, *Collectiones medicae*, I, 10, 2, 3–4.

²⁸⁹ Oribasius, *Collectiones medicae*, III, 32, 1, 1–12, 3.

²⁹⁰ Oribasius, *Collectiones medicae*, III, 32, 1, 1.

tritional value resulted in listing them among the *oligótrophā* in *Synopsis ad Eustathium filium*²⁹¹ and again in *Libri ad Eunapium*²⁹². Lastly, in the chapter *Hósa áphysa*, included in *Collectiones medicae*²⁹³, such baked products²⁹⁴ were considered to cause relatively little flatulence, but only – the author stressed – when they were properly made²⁹⁵. Let us add that *krithé*²⁹⁶ bread was classed in the same manner in both of Oribasius' smaller works²⁹⁷.

Let us presently move on to Oribasius' discussion on *ptisáne*, firstly pointing out that when he brought forth the findings of his predecessors about the medicinal barley soup, he firmly remained in the sphere of the traditional doctrines. When it comes to the specific qualities of barley soup, stated *expressis verbis* in the works of the physician and companion to the Emperor Julian, it should be first noted that in the *Hósa psýchei*²⁹⁸ chapter of *Collectiones medicae* barley itself, as well as all of the foods made of it (including *ptisáne*) were evaluated as cooling. Correctly cooked *ptisáne*²⁹⁹ was also considered in *Collectiones medicae* to be a food with wholesome juices, and so belonging to the *eúchyma* group³⁰⁰. This quality was also noted in other works of this author³⁰¹. According to Oribasius, *ptisáne* also had the property that allowed it to

²⁹¹ Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 1, 1 – 12, 3 (*ártos krithinos* – IV, 13, 5, 2 – 6, 1).

²⁹² Oribasius, *Libri ad Eunapium*, I, 30, 1, 1 – 8, 2 (*ártos krithinos* – I, 30, 6, 1).

²⁹³ Oribasius, *Collectiones medicae*, III, 22, 1, 1 – 4, 2.

²⁹⁴ Oribasius, *Collectiones medicae*, III, 22, 3, 1.

²⁹⁵ Oribasius, *Collectiones medicae*, III, 22, 3, 1 – 4, 1.

²⁹⁶ Oribasius, *Synopsis ad Eustathium filium*, IV, 21, 5, 1 – 6, 1; Oribasius, *Libri ad Eunapium*, I, 38, 2, 1.

²⁹⁷ Oribasius, *Synopsis ad Eustathium filium*, IV, 21, 1, 1 – 6, 2. Oribasius, *Libri ad Eunapium*, I, 38, 1, 1 – 3, 1.

²⁹⁸ Oribasius, *Collectiones medicae*, III, 32, 1, 1 – 12, 3.

²⁹⁹ Oribasius, *Collectiones medicae*, III, 15, 18, 1 – 19, 1.

³⁰⁰ Oribasius, *Collectiones medicae*, III, 15, 1, 1 – 22, 3.

³⁰¹ Oribasius, *Synopsis ad Eustathium filium*, IV, 14, 1, 1 – 21, 3 (*ptisáne* – IV, 14, 18, 1); Oribasius, *Libri ad Eunapium*, I, 32, 1, 1 – 15, 3 (*ptisáne* – I, 32, 12, 1).

remove superfluous substances from the body, and this quality, basic and very important in medicinal treatments, was mentioned by him more often than the others. Thus, we find it³⁰² first in his *opus magnum*³⁰³. Later on, the same effect was attributed to it³⁰⁴ both in *Synopsis ad Eustathium filium*³⁰⁵, where it appears twice, and in *Libri ad Eunapium*³⁰⁶. Finally, it was also highlighted in *Collectiones medicae* that *ptisáne*³⁰⁷ is good for moistening³⁰⁸; this description of its³⁰⁹ property appears also in both of Oribasius' later works³¹⁰.

Lastly, a characterisation of a drink based on *krithé*. Barley beer³¹¹ was described by the fourth-century physician³¹² as a drink of strength equal to that of grape wine³¹³. However, he also added that this beverage passes slowly through the body and its properties generally compare poorly with those of grape wine³¹⁴. One ought to guess that this dietary characterisation expresses the previously noted – on multiple occasions – disapproval of beer, demonstrated regardless of the cereal used in its production, by those who saw themselves as representatives of the Graeco-Roman culture.

³⁰² O r i b a s i u s, *Collectiones medicae*, III, 24, I, I.

³⁰³ O r i b a s i u s, *Collectiones medicae*, III, 24, I, I – 16, 7.

³⁰⁴ O r i b a s i u s, *Synopsis ad Eustathium filium*, II, 34, I, 14; IV, 23, I, I; O r i b a s i u s, *Libri ad Eunapium*, I, 40, I, I; II, 15, I, 10.

³⁰⁵ The relevant chapters are – O r i b a s i u s, *Synopsis ad Eustathium filium*, II, 34, I, I–19; IV, 23, I, I – 16, 7.

³⁰⁶ The relevant chapters are – O r i b a s i u s, *Libri ad Eunapium*, I, 40, I, I – 14, 7; II, 15, I, I–26.

³⁰⁷ O r i b a s i u s, *Collectiones medicae*, III, 34, I, I – 8, 2.

³⁰⁸ O r i b a s i u s, *Collectiones medicae*, III, 34, I, I.

³⁰⁹ O r i b a s i u s, *Synopsis ad Eustathium filium*, IV, 34, I, I; O r i b a s i u s, *Libri ad Eunapium*, I, 50, I, I.

³¹⁰ O r i b a s i u s, *Synopsis ad Eustathium filium*, IV, 34, I, I – 8, 2; O r i b a s i u s, *Libri ad Eunapium*, I, 50, I, I – 4, 2.

³¹¹ O r i b a s i u s, *Collectiones medicae*, V, 31, 12, I.

³¹² Also stated by Herodotus.

³¹³ O r i b a s i u s, *Collectiones medicae*, V, 31, 12, 2–2.

³¹⁴ O r i b a s i u s, *Collectiones medicae*, V, 31, 12, 3. Unfortunately we lack the details clarifying this opinion, so we presume its properties were opposite to that of the wine.

The sixth century brought about a wealth of medical discussion on the subject of barley. In the *Iatricorum libri* we find a separate chapter devoted to the description of the qualities of *krithé*³¹⁵, and Aetius of Amida, when characterising barley as mildly drying and cooling³¹⁶, did so by clearly following Galen's tradition. We may recognise this thanks to the comparison, borrowed from his predecessor, of barley and broad beans. The strength of *krithai* is rated to be of the first degree, which remains in full agreement with the discussed doctrines. They also possess a mild cleansing effect³¹⁷. When compared with broad beans, the author wrote, it turns out that it is somewhat more drying than flour made of husked *kýamos*³¹⁸. The other properties of both products, when used externally, are similar³¹⁹. As a food, barley is preferable to broad beans, since it loses its flatulence when cooked³²⁰. *Kýamos*, however, is large-grained and for that reason it is more nourishing than barley³²¹. Lastly, the Amidene wrote that the grain leads to production of thin³²² and somewhat cleansing³²³ juices in the body. Let us also add that the specific properties attributed to barley are later repeated in the second book of the *Iatricorum libri*, where foods were grouped according to their dominant qualities. We read there that this cereal, regardless of how it is prepared, is considered a cooling food³²⁴, and counted among the substances cooling in the first degree³²⁵. Furthermore, this food was added by Aetius to the list of substances drying in the first degree³²⁶, and was

³¹⁵ Aetius of Amida, I, 225, 1–14.

³¹⁶ Aetius of Amida, I, 225, 1.

³¹⁷ Aetius of Amida, I, 225, 1–2.

³¹⁸ Aetius of Amida, I, 225, 2–3.

³¹⁹ Aetius of Amida, I, 225, 3–4.

³²⁰ Aetius of Amida, I, 225, 4–5.

³²¹ Aetius of Amida, I, 225, 6–7.

³²² Aetius of Amida, I, 225, 7–8.

³²³ Aetius of Amida, I, 225, 8.

³²⁴ Aetius of Amida, II, 268, 1–13 (*krithé* – II, 268, 1).

³²⁵ Aetius of Amida, II, 204, 1–2 (*krithé* – II, 204, 2).

³²⁶ Aetius of Amida, II, 210, 1–3 (*krithé* – II, 210, 2).

also attributed cleansing effect³²⁷. Finally, the physician from Amida listed barley among reducing substances (*nota bene*, he repeated, after his predecessors, that it was the only gift of Demeter with this effect)³²⁸.

A coherent dietetical-medicinal description of *álphita* is to be found in *Iatricorum libri*. In the passage devoted to *krithaí* the author wrote that this goat tends to dry³²⁹, and this statement was repeated in the chapter devoted exclusively to the product. There, we also read that *álphita* provide little nourishment to the body, regardless of how they were cooked. We are also informed that when they are served with dry wine, the effect is to dry the stomach³³⁰. These qualities appear again, when in the book two of *Iatricorum libri* Aetius of Amida arranged foodstuffs according to their most important qualities. He stated there that *álphita* belonged to the substances drying in the first degree³³¹, and in the *oligótrophá* group of foods³³². In sum, the amount of information is similar to that found in the earlier works devoted to the subject. Despite that Aetius of Amida did not in fact refer to the production techniques of barley bread, his *Iatricorum libri* include all of the most important information about the properties of this product. Thus he wrote that the bread made of *krithaí* is less nourishing than wheat breads and more quickly passes through the digestive tract³³³, and furthermore, following the tradition, included it among the *oligótrophá*³³⁴ and deemed it to be only slightly flatulent³³⁵.

The dietary characteristic of *máza* is to be found in a chapter of *Iatricorum libri* devoted specifically to this food³³⁶. It is written there that it

³²⁷ Aetius of Amida, II, 225, 1–25 (*krithé* – II, 225, 4).

³²⁸ Aetius of Amida, II, 240, 1–46 (*krithé* – II, 240, 11).

³²⁹ Aetius of Amida, I, 225, 10–11.

³³⁰ Aetius of Amida, I, 226, 1–4.

³³¹ Aetius of Amida, II, 210, 1–3 (*álphita* – II, 210, 2).

³³² Aetius of Amida, II, 251, 1–20 (*álphita* – II, 251, 6–7).

³³³ Aetius of Amida, I, 225, 12–14.

³³⁴ Aetius of Amida, II, 251, 1–20 (*ártos krithinos* – II, 251, 6).

³³⁵ Aetius of Amida, II, 258, 1–6 (*ártos krithinos* – II, 258, 4–5).

³³⁶ Aetius of Amida, I, 227, 1–14.

ripens in the stomach much worse than barley bread³³⁷, and promotes flatulence in the body³³⁸, and if it remains too long in the bowels, it disturbs their work³³⁹. This happens, the author explained, following Galen almost word for word, because barley possesses a certain element similar to properties of bran (*pityra*)³⁴⁰. This information should be supplemented with one other, relevant quality that *máza* shares with its raw material. Namely, in book two of his work, Aetius stated that this food was of little nutritional value³⁴¹.

Lastly, it should be said that the dietetical properties of *ptisáne* were very thoroughly listed in the *Iatricorum libri*. In the chapter devoted to barley³⁴² Aetius of Amida stated that it moistened the body³⁴³, and this opinion was repeated in a passage in book two, in which the physician listed various foods that had a moistening effect³⁴⁴. Furthermore, a well-made *ptisáne* was included in *Iatricorum libri* among the *eúchyma*³⁴⁵ foods, and on the list of substances that cleanse the body³⁴⁶.

The works of Alexander of Tralles do not really contain any material that would allow us to draw direct conclusions about the dietetical properties of *krithé* and the products made of it. There is only one exception to this – *ptisáne*. This food, according to the ancient author, was moistening, cleansing and reducing³⁴⁷ and led to cooling of the body³⁴⁸. This approach remains in complete agreement with the theories of his predecessors.

³³⁷ Aetius of Amida, I, 227, 3. It is therefore difficult to digest.

³³⁸ Aetius of Amida, I, 227, 4.

³³⁹ Aetius of Amida, I, 227, 4–5.

³⁴⁰ Aetius of Amida, I, 227, 5–14.

³⁴¹ Aetius of Amida, II, 251, 1–20 (*máza* – II, 251, 8).

³⁴² Aetius of Amida, I, 225, 1–14.

³⁴³ Aetius of Amida, I, 225, 11–12.

³⁴⁴ Aetius of Amida, II, 270, 1–5 (*ptisáne* – II, 270, 1).

³⁴⁵ Aetius of Amida, II, 252, 1–24 (*ptisáne* – II, 252, 17).

³⁴⁶ Aetius of Amida, II, 260, 1–26 (*ptisáne* – II, 260, 1).

³⁴⁷ Alexander of Tralles, *De febris*, 309, 13–14, vol. I.

³⁴⁸ Alexander of Tralles, *De febris*, 325, 21–24, vol. I.

Dietetical characterisation of barley is to be found in the second chapter of the small work of Anthimus³⁴⁹. The physician sketched there a classic depiction of the properties of this cereal. It is described as naturally moistening and cold, while its juices have also a cleansing effect. Later on, however, the author departed slightly from the already known narrative and stated that a quality of barley, which, it seems, has to be understood as succulence, can be easily observed in the process of roasting this cereal – during which a considerable amount of juice can be seen to leak from the grains. It may therefore be concluded that although this text is short, it does certainly list all of the properties noted by the earlier experts of dietetics. Although *ptisáne* (in Anthimus' text *tisana*) was not apparently characterised from the dietetical perspective, the advice concerning its use in therapies for patients suffering from high fever³⁵⁰ is a clear enough indication to conclude that the physician would not have used the food in question as a *phármakon* if it did not have a cooling effect. If we add to this the properties attributed to barley, a cereal that is by nature moistening, cold and cleansing³⁵¹, this set attests to a full compatibility of the assumptions of the theory represented by Anthimus with the principles underlining the doctrines of his predecessors.

In the seventh century, Paul of Aegina discussed the properties of barley and the foods made of it in two sections of his *Epitome*³⁵², and the views presented there strictly follow the traditional ones. Thus we first read that barley³⁵³ has a cooling and cleansing effect³⁵⁴. Cooked into *ptisáne*³⁵⁵ it is moistening³⁵⁶, while roasted into *álphita*, it is drying³⁵⁷. The second fragment supplements this data by adding detail.

³⁴⁹ Anthimus, 2.

³⁵⁰ Anthimus, 64.

³⁵¹ Anthimus, 2.

³⁵² Paul of Aegina, I, 78, 1, 1–25; VII, 3, 10, 341–345.

³⁵³ Paul of Aegina, I, 78, 1, 11–12.

³⁵⁴ Paul of Aegina, I, 78, 1, 12.

³⁵⁵ Paul of Aegina, I, 78, 1, 13.

³⁵⁶ Paul of Aegina, I, 78, 1, 12–13.

³⁵⁷ Paul of Aegina, I, 78, 1, 13.

We read there that barley cools and dries in the first degree³⁵⁸ and has some cleansing properties³⁵⁹. When it comes to the capability to remove moisture, not only do *krithai* possess it, but they are also more effective than broad bean flour³⁶⁰ and do not cause creation of as much gas in the body³⁶¹. Regarding *álphita*, they are considerably more drying than barley itself³⁶². *Ptisáne*, in turn, moistens³⁶³, and has a more potent cleansing effect³⁶⁴. Both the views and the form in which they are presented relate to the findings already known from Galen's works.

Let us also add that the same author listed just one quality when discussing barley baked products. He claimed that such breads are not very nourishing³⁶⁵. The physician left behind only an abbreviated description of the properties of *máza* as food. In it, he pointed out that this food³⁶⁶ is more difficult to digest and causes greater flatulence than barley bread³⁶⁷. When it contains honey, however, it passes through the body more easily³⁶⁸. It is also worth supplementing the above characterisation of *ptisáne*. According to the information from book seven of *Epitome*³⁶⁹, barley soup not only moistens, but also cleanses the body³⁷⁰. Furthermore, the uses of this food can further be extended thanks to a dietetical advice: when patients were suffering from weakening caused

³⁵⁸ Paul of Aegina, VII, 3, 10, 341.

³⁵⁹ Paul of Aegina, VII, 3, 10, 341–342.

³⁶⁰ Paul of Aegina, VII, 3, 10, 342–343.

³⁶¹ Paul of Aegina, VII, 3, 10, 343. Comparing this fragment with the texts of his predecessors (for example Galen's doctrines) indicates that the author meant here to compare *krithai* with broad beans alone, rather than with the flour made of them.

³⁶² Paul of Aegina, VII, 3, 10, 343–344.

³⁶³ Paul of Aegina, VII, 3, 10, 344. *Ptisáne* is compared here with *krithai*.

³⁶⁴ Paul of Aegina, VII, 3, 10, 344–345.

³⁶⁵ Paul of Aegina, I, 78, 1, 15.

³⁶⁶ Paul of Aegina, I, 78, 1, 15–16.

³⁶⁷ Paul of Aegina, I, 78, 1, 16.

³⁶⁸ Paul of Aegina, I, 78, 1, 17.

³⁶⁹ Paul of Aegina, VII, 3, 10, 341–345.

³⁷⁰ Paul of Aegina, VII, 3, 10, 344–345.

by humoral imbalance³⁷¹, the physician recommended eating *ptisáne*, a food that is not warming, but which is reducing and astringent³⁷². In sum, the overall characteristic of the dish and medicine in question remains consistent with the description recorded in Galen's monograph of this panacea.

The author of the treatise *De cibis* did not introduce any changes to the set of views on dietetical properties of *krithái* and products made of it. Barley³⁷³ was discussed in the chapter devoted to cereal products, and the description follows the tradition. We thus read that this cereal is cooling³⁷⁴ and less nourishing than wheat³⁷⁵. This makes it inappropriate for those whose constitution is naturally hot³⁷⁶. *Krithái* is also to be found in the comparative lists of foods, in which they are arranged according to their dominant qualities. It³⁷⁷ belongs to the *eúchyma*³⁷⁸ category, but at the same time is considered inferior to wheat in terms of the value of its juices, even if it is digested well. Barley³⁷⁹ in *De cibis* is also placed among the foodstuffs that cleanse, in the chapter listing substances that are cleansing, cutting thick juices, and unblocking³⁸⁰. Besides that, *krithái*³⁸¹ were listed among reducing products³⁸². Lastly, it was also included³⁸³ into the category of chilling foods³⁸⁴, and the author of

³⁷¹ Paul of Aegina, I, 22, 1, 1–37.

³⁷² Paul of Aegina, I, 22, 1, 17–19.

³⁷³ *De cibis*, 2, 4. For a complete dietary characterisation of this cereal – *De cibis*, 2, 4–6.

³⁷⁴ *De cibis*, 2, 4.

³⁷⁵ *De cibis*, 2, 5.

³⁷⁶ *De cibis*, 2, 6.

³⁷⁷ *De cibis*, 5, 48.

³⁷⁸ *De cibis*, 5, 1–58.

³⁷⁹ *De cibis*, 10, 2.

³⁸⁰ *De cibis*, 10, 1–20.

³⁸¹ *De cibis*, 24, 7.

³⁸² *De cibis*, 24, 1–19.

³⁸³ *De cibis*, 26, 2.

³⁸⁴ *De cibis*, 26, 1–19.

the *opusculum* added that this effect is present regardless of the method of preparation³⁸⁵.

Artos krithinos, barley bread, is one of the two products made of this cereal that were characterised in *De cibis*. The author listed this bread³⁸⁶ in the category of foods that promote creation of viscous juices³⁸⁷. It is also found in³⁸⁸ the group of foods of only minor nutritional value³⁸⁹. It should be added that both of these qualities were traditionally ascribed to the barley-based food by the predecessors of the anonymous seventh century author.

Finally, the last barley product characterised in *De cibis: ptisáne*³⁹⁰. Only its medicinal uses were discussed, which was done in chapter two, the one in which barley was also mentioned. Nonetheless, in the light of the earlier dietetic deliberations on the subject of barley soup, the words of this treatise's author are sufficiently clear to give them dietetical meaning. Since the author considered *ptisáne* to be cooling and thirst-quenching³⁹¹, he likely also wanted, indirectly, to indicate its cooling and moistening properties. Furthermore, because the soup was described by the anonymous author as helpful in treating diseases of the organs located in the chest³⁹², one might risk interpreting this as meaning that this effect would have come about thanks to the cleansing properties of the soup. In this manner the contents of *De cibis* would have been fully compatible with the earlier dietetical findings about this remedy.

Conclusions. Let us make a small summary of our discussion of *krithé*. The amount of presented data is considerable. It can only be compared with the abundance of material transmitted to us by the sources on

³⁸⁵ *De cibis*, 26, 2.

³⁸⁶ *De cibis*, 18, 16.

³⁸⁷ *De cibis*, 18, 1–16.

³⁸⁸ *De cibis*, 22, 7.

³⁸⁹ *De cibis*, 22, 1–19.

³⁹⁰ *De cibis*, 2, 34–35. Characterisation of *ptisáne* – *De cibis*, 2, 34–37.

³⁹¹ *De cibis*, 2, 35–36.

³⁹² *De cibis*, 2, 36–37.

the subject of the *pyrós* wheat. The authors, *nota bene*, analysed not only the qualities of *krithé* as a cereal, but examined in minute detail the properties of all of the barley products. We believe that this proves that barley had a major place in the diet – specifically, that of the second most important foodstuff of late antiquity and the early Byzantine period.

In order to point out the key points of the dietetical doctrines related to *krithé*, one needs to first and foremost highlight the fact that, according to the medical findings, barley was considerably inferior to *pyrós*. There were two reasons for this: firstly, it was deemed less nourishing than wheat, and unlike the warming *pyrós*, it was cooling. Secondly, according to the medical theory, the juices that resulted from digesting this food in the human body were rather thin, and also exhibit cleansing properties. These qualities were inherent in all the products made of *krithé*, which differed only in their ability to moisten or dry. Thus those made of the roasted barley *álphita* absorbed liquids, while *ptisáne* moistened. The latter, we may add, was valued specifically because of its powers to provide the body with moisture, cool it, and cleanse the body – which were needed by the sick (especially those suffering from fevers). Barley bread, as was in turn explained, wasn't particularly nourishing (as it was lacking in viscosity), much like *máza*, which additionally caused flatulence.

Let us also add that the dietetical doctrine was uniform throughout the whole period we are examining. It had already taken shape before the second century AD. Galen gave it a final form, thanks to specifying key concepts – occasionally, like with *máza*, in a polemic with some of his predecessors. Since his time, the findings did not change, and only Oribasius supplemented the form of the exposition by presenting in *Collectiones medicae* in an accessible form of the dietetical categories, arranged by the dominant quality of the foods. This modification influenced the format of dietetical discourse in the works of Aetius of Amida and in the anonymous treatise from the seventh century. Nonetheless, we believe that the present analysis indicates stagnation in the sphere of dietetical doctrines.

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4. Barley: culinary data

Having finished our deliberations on dietetics, we are now going to concentrate on the subject of a vast store of knowledge contained in medical sources, starting with pre-Galenic medicine. Barley was regarded as a very important food by the author of *De diaeta*, since the chapter devoted to it³⁹³ introduces the discussion about Demeter's gifts and even precedes the deliberations on wheat. Altogether, including what the anonymous author wrote about *kykeón*³⁹⁴ (that is, a beverage made with an addition of *álphita*), he devoted more attention to *krithai* than to *pyrós*. It must be also added that the content of *De diaeta* clearly indicates that all the products relevant for this work that were mentioned in other sources from the period were widespread centuries before Galen started his career and that the diet described in our study was constant in terms of its ingredients. When reading the aforementioned Hippocratic text, we can conclude that barley was a main cereal foodstuff. It was used to make *áleuron*, that is, flour: both white and that obtained through grinding whole grains (*áleuron synkomistón*)³⁹⁵. In order to facilitate the process of removing husks, seeds were roasted³⁹⁶. Moreover, *álphita* groats, the basis of *máza*, which was kneaded from *álphita*³⁹⁷ and water³⁹⁸, and a special beverage called *kykeón*, were all made from *krithé*. From the proportion of the text devoted to *máza*, compared to other barley dishes, it can be concluded that it was very common, maybe even more popular

³⁹³ *De diaeta*, 40, 1–30.

³⁹⁴ *De diaeta*, 41, 1–7.

³⁹⁵ *De diaeta*, 40, 8–9.

³⁹⁶ *De diaeta*, 40, 4–6.

³⁹⁷ *De diaeta*, 40, 6.

³⁹⁸ *De diaeta*, 40, 11.

than barley bread (*ártos kríthinos*³⁹⁹). It came in numerous types, such as the so-called *tripté*⁴⁰⁰.

Although Dioscurides composed a whole chapter of his work *De materia medica*⁴⁰¹ on the subject of barley (*krithé*), he described the crop in question rather cursorily, providing no detailed information about it, but depicting it as a material for preparing other foods. From the statements which can be considered culinary matters, however, we have selected some remarks concerning the selection of the food product and its therapeutic uses. Thus, Dioscurides pointed out that the best barley should be white and clean⁴⁰². The first epithet concerned the colour of the grain itself, which is in this aspect contrasted with that of wheat, as yellow colour was usually attributed to the latter⁴⁰³. As far as the cleanliness is concerned, the author probably meant two issues: firstly, the lack (or presence) of any traces that would reveal potential diseases of the grain, secondly, the absence of undesirable admixtures in a given amount of the product. Here, it ought to be stated that these impurities were mainly oat grains, which is now known, for instance, from Pliny⁴⁰⁴ and *Geoponica*⁴⁰⁵. As it has already been mentioned, in Dioscurides' works, barley was primarily depicted as a material for the production of other foodstuffs, while its therapeutic action was only indirect, i.e. after it has been changed into groats and flour. As regards the main barley products, these were *álphita*⁴⁰⁶ and *áleuron*⁴⁰⁷; the former were used to cook *ptisáne*⁴⁰⁸. The physician also listed *máza*⁴⁰⁹ in his writings, although,

³⁹⁹ *De diaeta*, 40, 10–30. The passage about *máza* takes two third of the whole chapter.

⁴⁰⁰ *De diaeta*, 40, 25–30.

⁴⁰¹ Dioscurides, *De materia medica*, II, 86, 1, 1–3, 6.

⁴⁰² Dioscurides, *De materia medica*, II, 86, 1, 1.

⁴⁰³ For example cf. Galen, *De alimentorum facultatibus*, 481, 8–13, vol. VI.

⁴⁰⁴ Pliny, *Naturalis historia*, XVIII, 44, 149–150.

⁴⁰⁵ *Geoponica*, II, 43.

⁴⁰⁶ For example – Dioscurides, *De materia medica*, II, 86, 1, 2.

⁴⁰⁷ For example – Dioscurides, *De materia medica*, II, 86, 2, 2.

⁴⁰⁸ For example – Dioscurides, *De materia medica*, II, 86, 1, 2.

⁴⁰⁹ Dioscurides, *De materia medica*, IV, 75, 7, 6.

surprisingly, not in the chapter about barley, and without devoting much attention to it. Finally, barley was mentioned in the treatise *De materia medica* as a base for the production of beer, particularly two kinds of it, one called *zýthos*, another one referred to as *koúrmi*⁴¹⁰.

Moving to a more detailed description of the barley products mentioned above, we must emphasise that Dioscurides did not elaborate on the physical features of *áleuron*. Thus, he did not specify its characteristics, apart from the epithet denoting the plant from which the discussed flour was made⁴¹¹. Precision in this point was necessary due to the fact that flour was also produced from other crops (mainly wheat⁴¹²) and even leguminous plants, like fenugreek⁴¹³. What is surprising about Dioscurides' narrative is the fact that not once did he even mention *árttoi kríthinos*, about which other sources inform us regularly. We do not know the reasons for this, although a possible cause may be the limited popularity of this type of bread among the author's readers⁴¹⁴. It is also interesting to note that the majority of his medical recipes using *áleuron* made from barley were based on the process of cooking this flour with an addition of appropriate ingredients⁴¹⁵.

When Dioscurides made references to *álphita*, his narrative lacked precision, just as in the case of the description of the plant from which the groats were obtained. Accuracy was probably not expected from the author, since this term was obvious to the readers of his works. Therefore, we can find a detailed characterisation of this cereal product neither in *De materia medica* nor in *Euporista vel de simplicibus medicinis*. It is only clearly stated that *álphita* were obtained from barley⁴¹⁶.

⁴¹⁰ Dioscurides, *De materia medica*, II, 88, 1, 1–5.

⁴¹¹ For example – Dioscurides, *De materia medica*, II, 163, 1, 9 (*áleuron kríthinos*).

⁴¹² For example – Dioscurides, *De materia medica*, II, 85, 2, 8 (*áleuron pýrinon*).

⁴¹³ Dioscurides, *De materia medica*, II, 102, 1, 1.

⁴¹⁴ Probably readers of *De materia medica* and *Euporista vel de simplicibus medicinis* relied on wheat bread in their diets.

⁴¹⁵ For example – Dioscurides, *De materia medica*, II, 86, 2, 2–3.

⁴¹⁶ Dioscurides, *De materia medica*, II, 86, 1, 2.

Furthermore, from the fact that Dioscurides made this product the main ingredient of *ptisáne*, it can be indirectly concluded that *álphita* were similar to grains of barley, often mentioned as a base for this medicinal dish⁴¹⁷. He also added that this soup was prepared through the process of cooking *álphita*⁴¹⁸. From the author's deliberations it appears that *álphita*⁴¹⁹ were served not only in the form of soup: in treating dysentery⁴²⁰ he recommended eating them, after they were cooked in water, probably not in a liquid form but as a pulp, with goat fat and cheese.

Máza, despite having been listed several times in Dioscurides' works, was not regarded as a food related in any way to *krithái*. There is also no point in searching for any information which would concern the methods of its preparation. However, it appears to be a product with which medically active substances (*phármaka*) were mixed in order to obtain a product of a desirable effect on the body. Dioscurides mentioned *máza* as a food⁴²¹ that, with an addition of mandrake, was used to anaesthetise patients before surgeries⁴²². An interesting piece of information, though, is his mention of the fact that *máza* was formed into portions, or rather, a type of loaves⁴²³. He wrote about them when he was describing the way of flavouring medicinal wine, where aromatic substances, formed into such portions, were added to the beverage⁴²⁴.

Dioscurides did not forget to discuss *ptisáne* in his deliberations. He did not, however, provide a specific recipe for this dish, since it

⁴¹⁷ According to contemporary nomenclature we can classify them as groats.

⁴¹⁸ Dioscurides, *De materia medica*, II, 86, 1, 2–3. One should guess they were boiled in water.

⁴¹⁹ Dioscurides, *De materia medica*, II, 76, 17, 6.

⁴²⁰ Dioscurides, *De materia medica*, II, 76, 17, 5–6.

⁴²¹ Dioscurides, *De materia medica*, IV, 75, 7, 6.

⁴²² Dioscurides, *De materia medica*, IV, 75, 7, 1–11. Byzantine surgery – S. Geroulanos, *Surgery in Byzantium*, [in:] *Material culture and well-being in Byzantium* (400–1453), eds. M. Grünbart, E. Kislinger, A. Muthesius, D. Stathakopoulos, Wien 2007, p. 129–134.

⁴²³ Dioscurides, *De materia medica*, V, 54, 1, 3.

⁴²⁴ Dioscurides, *De materia medica*, V, 54, 1, 1–5, 5.

must have been known to every physician and layman of that era. From the text we can infer that barley *álphita* were the main ingredient of this soup⁴²⁵, which was created by cooking groats to smooth consistency⁴²⁶. What is more, Dioscurides used the term *chylós ptisánes*⁴²⁷, which referred to thin barley *álphita*, cooked only in water, but sometimes with an addition of meat, preferably *akrokólia* (ears, snouts and so on) or legs⁴²⁸. Apart from this, we learn that the soup in question could be served or mixed with various *phármaka*, which modified its therapeutic effects.

In *De materia medica* there are also data about alcoholic beverages produced from the discussed crop. Dioscurides informed us that barley was the base of a beer called *zýthos*⁴²⁹ and characterised its features in detail. There is no mention of the method of its production, as it was probably not a drink commonly prepared in the social circles of the author. Indeed, the unfavourable dietetic characterisation of *zýthos* indicates that the cited physician did not approve of its consumption. On the other hand, though, he noted that ivory soaked in it gained in appearance⁴³⁰, and in that way he recognised its usefulness and effectiveness in cleaning items produced from this material. Another alcoholic beverage of this kind, obtained from *krithé*, was called *koúrmi*⁴³¹. It must have contained some amount of alcohol, since Dioscurides claimed that it was served instead of wine and consuming it caused headaches⁴³². The beverages above mentioned, as the author pointed out, were also made from wheat, and produced

⁴²⁵ Dioscurides, *De materia medica*, II, 86, 1, 2.

⁴²⁶ Dioscurides, *De materia medica*, II, 86, 1, 3.

⁴²⁷ For example – Dioscurides, *Euporista vel de simplicibus medicinis*, II, 28, 2, 1–2.

⁴²⁸ Dioscurides, *Euporista vel de simplicibus medicinis*, II, 28, 2, 2.

⁴²⁹ Dioscurides, *De materia medica*, II, 87, 1, 1. Whole chapter – Dioscurides, *De materia medica*, II, 87, 1, 1–5.

⁴³⁰ Dioscurides, *De materia medica*, II, 87, 1, 4–5.

⁴³¹ Dioscurides, *De materia medica*, II, 88, 1, 1. Whole chapter – Dioscurides, *De materia medica*, II, 88, 1, 1–5.

⁴³² Dioscurides, *De materia medica*, II, 88, 1, 2.

on a regular basis in such western parts of the world as Spain⁴³³ and Britain⁴³⁴.

To begin our research into Galen's description of the role of barley in cuisine and medicine it should be stated that this cereal, according to the physician, was one of the basic crops that he came across in his homeland⁴³⁵, which was a likely reason for its accessibility for culinary and therapeutic purposes. This significant role of barley is clearly visible, for instance, in the fact that *krithai* were usually described by the author right after *pyroi*, which were undoubtedly and unanimously the most highly valued crop of antiquity and the following centuries. It was so, for example, in the most important work of Galen devoted to the role of food, i.e. the treatise *De alimentorum facultatibus*, but the same particular order of topical points can be seen throughout all his works. The aforementioned significant role of barley also emerges when Galen introduces evaluations of different cereals, including *krithai*, left by his famous predecessors in the field of dietetics. Consequently, from *De alimentorum facultatibus* we learn that Diocles of Carystus, when describing qualities of foods obtained from cereals, treated *pyros* and *krithai* as the most important crops and only after these edibles did he list *olyra*, *típhe*, *zeiá* and so on⁴³⁶. Mnesitheus, too, assessed barley⁴³⁷ and wheat⁴³⁸ as the best crops for humans, while Galen himself assured his readers that it was a crop worth utilising as food⁴³⁹. He also mentioned that although the proud name of *sítos*⁴⁴⁰ (a general term denoting "a cereal" or "food obtained from a cereal") usually referred to *pyros*, some

⁴³³ Dioscurides, *De materia medica*, II, 88, 1, 4.

⁴³⁴ Dioscurides, *De materia medica*, II, 88, 1, 4–5.

⁴³⁵ Compare with remarks concerning husking barley.

⁴³⁶ Galen, *De alimentorum facultatibus*, 511, 15 – 512, 8, vol. VI.

⁴³⁷ Galen, *De alimentorum facultatibus*, 512, 9–13, vol. VI.

⁴³⁸ Galen, *De alimentorum facultatibus*, 512, 11, vol. VI.

⁴³⁹ Galen, *De alimentorum facultatibus*, 501, 1, vol. VI.

⁴⁴⁰ Galen, *De victu attenuante*, 30, 6–7.

of his antecedents expanded the meaning of this word such that it included *krithé*⁴⁴¹.

In his deliberations, Galen made several basic remarks about physical features of *krithé*. They were targeted at anyone who would wish to choose a proper product for food or medicine, that is, all his readers, including cooks and fellow physicians. Focusing on the abovementioned issue, Galen attested that processing barley grains to obtain intermediate products took place at home, and it was done using carefully picked, and thus prime quality, grains, in accordance with Galen's instructions. The lack of comments concerning the methods of producing particular kinds of barley flours and barley groats is also, in our view, meaningful. It indicates that such activities were within the scope of duties of servants and, although they probably were of some interest to people involved in culinary procedures, physicians themselves did not handle them and used ready-made intermediate products.

Getting back to the description of *krithé*, according to the works by the physician of Pergamum, good barley was white⁴⁴², which obviously distinguished it from wheat, usually yellow. Galen devoted much attention to the quality of grains as well, and information about this issue can be found mainly in *De alimentorum facultatibus*, which contains quite a long excursion based on common-sense assumptions revealing the physician possessed a measure of practical knowledge on this subject⁴⁴³. From Galen's narrative it appears that the quality of grains available on the market varied considerably, therefore one had to be familiar with at least some general rules of choosing the right product, since the wrong one was unsuitable for many purposes. For instance, Hippocrates advised his readers against cooking *ptisáne*⁴⁴⁴ from it, and noted that bread baked from such grains was unusually poor in nutrients when

⁴⁴¹ Galen, *De victu attenuante*, 30, 7.

⁴⁴² Galen, *De alimentorum facultatibus*, 522, 2, vol. VI.

⁴⁴³ Galen, *De alimentorum facultatibus*, 504, 12 – 506, 3, vol. VI. Galen, like in the case of *pyrós*, described his own experiences connected with processing *krithai*. Compare remarks on hulling barley grains later in this text.

⁴⁴⁴ Galen, *De alimentorum facultatibus*, 504, 12–13, vol. VI.

compared with wheat *ártoi pityritai*⁴⁴⁵, i.e. the worst bread from wheat bran. The best grains, according to the physician of Pergamum, as it has already been mentioned, were those cleared of hulls and white⁴⁴⁶, compact in their structure and heavy⁴⁴⁷. Barley grains of regular shape and smooth surface were better than those which were dried up and shrivelled⁴⁴⁸. However, those which were exceptionally large but not internally cohesive should have been treated with caution, since they contained too much unnecessary moisture⁴⁴⁹. Barley, which is excessively watery, has a negative effect on human health, and thus, according to dieticians, should be dried up, which means left to ripen internally and, simultaneously, lose its unnecessary moisture. In fact, this procedure was common not only for *krithai*, but also applied to all other cereals⁴⁵⁰. It was important, though, not to allow *krithé* to dry too much, as grains which lost too much of their water became worse than those that retained appropriate parameters. However, as the author stated, even such over-desiccated grain was still suitable for applications which required drying qualities from the utilised substance⁴⁵¹.

Barley was less convenient in processing than wheat. As it has already been pointed out, *krithé* had to be cleared of husks before being used to bake bread⁴⁵². In order to do this, the cereal was processed in a special way, which is also known to us thanks to the writings of the physician of Pergamum. In *De sanitate tuenda* Galen reminisced about his own youth experiences, writing that, probably during one of the trips around his hometown, he voluntarily took on the hard job as part of his own physical exercise necessary to stay healthy. He was, however, aware of the fact that what was for him a sort of entertainment, constituted

⁴⁴⁵ Galen, *De alimentorum facultatibus*, 506, 9, vol. VI.

⁴⁴⁶ Galen, *De alimentorum facultatibus*, 504, 13, vol. VI.

⁴⁴⁷ Galen, *De alimentorum facultatibus*, 504, 14, vol. VI.

⁴⁴⁸ Galen, *De alimentorum facultatibus*, 504, 15–16, vol. VI.

⁴⁴⁹ Galen, *De alimentorum facultatibus*, 504, 17–505, 2, vol. VI.

⁴⁵⁰ Galen, *De alimentorum facultatibus*, 505, 2–10, vol. VI.

⁴⁵¹ Galen, *De alimentorum facultatibus*, 505, 10–13, vol. VI.

⁴⁵² Galen, *De alimentorum facultatibus*, 519, 9–10, vol. VI.

exhausting daily labour for farmers⁴⁵³. He would put barley grains into a big mortar and pestle them with all his might, using a heavy stick in order to remove undesirable glume⁴⁵⁴.

Galen depicted barley as a plant of numerous applications. This cereal was worth its high regard, as he explained, since it was not only suitable to make *ptisáne*, but also commonly used to bake bread or produce flour called *áleuron kríthinon* and roasted to obtain *álphita* groats, *nota bene*, analogous to wheat *chóndros*⁴⁵⁵. In *De alimentorum facultatibus* there is no separate chapter devoted to barley flour *áleuron*. Nevertheless, it must have been a widespread product, since, first of all, it was made from a common crop, secondly, it was used in the production of popular barley bread and thirdly, it had numerous pharmaceutical applications. Galen did not make even the slightest mention of its methods of preparation or physical features. From the reflections of the physician of Pergamum it can be easily deduced that *áleuron kríthinon* was mainly utilised in the production of bread, which, *nota bene*, Galen described in a separate fragment of *De alimentorum facultatibus*. This flour was not only a base for baking bread, but, just like *áleuron píyrinon*, it was also cooked with milk⁴⁵⁶.

It has already been stated that a whole chapter of *De alimentorum facultatibus*⁴⁵⁷ was devoted to barley bread. What seems to be rather surprising, though, is the fact that this passage is quite long, but there are only a few pieces of information about the bread itself, while the main attention is paid to physical and dietetic qualities of barley itself. At the beginning of the discussed part of his work Galen stated that people produced barley bread analogously to the one made from *pyroi*⁴⁵⁸. The remaining information regarding the method of bread production comprised just three verses, and narrowed down to a statement that

⁴⁵³ Galen, *De sanitate tuenda*, 134, 10–135, 1, vol. VI.

⁴⁵⁴ Galen, *De sanitate tuenda*, 134, 14–15, vol. VI.

⁴⁵⁵ Galen, *De victu attenuante*, 37, 1–38, 1.

⁴⁵⁶ Galen, *De victu attenuante*, 37, 3.

⁴⁵⁷ Galen, *De alimentorum facultatibus*, 504, 5–506, 13, vol. VI.

⁴⁵⁸ Galen, *De alimentorum facultatibus*, 504, 6–7, vol. VI.

various kinds of barley bread were comparable with those made from wheat⁴⁵⁹. If so, then this bread was made both from well-sieved flour and *áleuron*, which was not purified, and subsequently baked in a *kribanon*, in an *ipnós*, on an *eschára* or simply in ash. However, no matter what attempts were made to knead the bread well with yeast and salt, the obtained product was non-cohesive and thus crumbled easily⁴⁶⁰ due to the lack of gluten, which, as was mentioned earlier, was in Galen's vocabulary termed *glíschron*⁴⁶¹.

Álphita frequently appeared on the pages of Galen's treatises both as a food and an ingredient of medicaments. The core part of his knowledge about culinary aspects of the production and applications of this food was presented, above all, in *De alimentorum facultatibus*. *Álphita* were certainly common in the cuisine of the second century AD. It is noticeable, e.g., in the fact that in the key part of his reflections about *krithé*⁴⁶², Galen mentioned these groats as one of the basic products obtained from barley. In the course of his work, the author remarked that this kind of food⁴⁶³ was usually prepared from roasted grains⁴⁶⁴. An analogical statement proving the fact of preparing the discussed cereal product from barley processed in high temperature can be found in *De victu attenuante*⁴⁶⁵. Nevertheless, Galen did not specify the nature of the product in question, avoiding even the slightest references to all its physical features, apart from smell⁴⁶⁶. It can be inferred that they were so obvious that not even worth mentioning, as the described food was well-known to everyone, regardless of their social standing. From the discussions about the colour of barley it appears that *álphita* had to be white, which, *nota bene*, is a typical colour of similar modern products.

⁴⁵⁹ Galen, *De alimentorum facultatibus*, 506, 4–6, vol. VI.

⁴⁶⁰ Galen, *De alimentorum facultatibus*, 504, 9, vol. VI.

⁴⁶¹ Galen, *De alimentorum facultatibus*, 501, 10–12; 504, 9–10, vol. VI.

⁴⁶² Galen, *De alimentorum facultatibus*, 501, 1–504, 4, vol. VI.

⁴⁶³ Galen, *De alimentorum facultatibus*, 501, 14, vol. VI.

⁴⁶⁴ Galen, *De alimentorum facultatibus*, 501, 14–15, vol. VI.

⁴⁶⁵ Galen, *De victu attenuante*, 37, 3–4.

⁴⁶⁶ Cf. below.

On the other hand, the distinction of barley products between *álphita* and *áleuron krithinon* suggests that the former differed from the fine-grained flour in the size of its grains and thus, were closer related to today's groats than flour. Of course, this conclusion is based on modern culinary categories and *álphita*, at least, had to have shared no features with coarse-grained groats, as otherwise they would have been unsuitable for preparing *máza*. In this respect they could be treated as special barley flour, however, consisting of larger particles than *áleuron*. A significant role of *álphita* in the diet of the second century was confirmed by the fact that Galen devoted a whole separate chapter of his *De alimentorum facultatibus* (entitled *Peri álphiton*)⁴⁶⁷ to it. In this passage the author repeated that the best groats were made from appropriately roasted barley grains⁴⁶⁸. When it was unavailable, the final product could be obtained from other plants⁴⁶⁹. *Álphita* had a pleasant smell, provided they were properly prepared⁴⁷⁰, and the most aromatic ones were those made from the finest, young barley obtained from spikes that have not yet dried up completely⁴⁷¹.

As for culinary applications of the discussed products, the expert in dietetics wrote that many people in good health would put *álphita* into *síraion* or into sweet wine or *oinómeli* and then drink this beverage before visiting a bath house, considering it to be thirst-quenching⁴⁷². If *álphita* were added to dry wine, the beverage had a drying effect on the stomach⁴⁷³. Thereby, he alluded to the contemporary form of *kykeón*, a drink already known in Homeric times. He also said that some consumed *álphita* in a manner that made it their main food;

⁴⁶⁷ Galen, *De alimentorum facultatibus*, 506, 14 – 508, 2, vol. VI.

⁴⁶⁸ Galen, *De alimentorum facultatibus*, 506, 15–16, vol. VI.

⁴⁶⁹ Galen, *De alimentorum facultatibus*, 506, 16 – 507, 1, vol. VI. Only the works of Oribasius provide us with an answer to the question of which substitute products could be used in the production of *álphita*. Cf. below.

⁴⁷⁰ Galen, *De alimentorum facultatibus*, 507, 1, vol. VI.

⁴⁷¹ Galen, *De alimentorum facultatibus*, 507, 1–3, vol. VI.

⁴⁷² Galen, *De alimentorum facultatibus*, 507, 3–6, vol. VI.

⁴⁷³ Galen, *De alimentorum facultatibus*, 507, 7, vol. VI.

it played same role as bread⁴⁷⁴. Galen himself witnessed this form of utilising barley in a village on Cyprus⁴⁷⁵. What made the situation even more surprising for a man from a city, who consumed bread on a daily basis, was the fact that farmers from this region cultivated mainly wheat⁴⁷⁶, which was naturally associated with baking bread. This excerpt is an interesting contribution to the depiction of eating habits of the countryside and it indicates that preparing bread was considered to be too time-consuming to rely solely on it at the time of intensive labour. As a result, even despite ample amounts of wheat to produce good and highly valued bread, people resorted to cooked dishes which were quicker in preparation and sufficiently nutritious, such as *álphita* or *py-roí hephthoi* described in the discussion above. *Máza* was probably also consumed in similar circumstances. A hint about the method of preparing *álphita* can be found in *De victu attenuante*. Galen wrote there that roasted barley was used to make groats⁴⁷⁷, which were then cooked in water, just as it is done with *chóndros*⁴⁷⁸ and served with sweet wine⁴⁷⁹ and *siraion*⁴⁸⁰. As for wine and *siraion* traditionally added to *álphita*, Galen probably was not precise in his account, since, as it has already been stated, in *De alimentorum facultatibus* the author wrote about adding groats to the aforementioned beverages during trips to baths. Galen continued his narrative by saying that in the old times *álphita* were prepared as provisions for the army⁴⁸¹. However, the groats were no longer an important element of the diet of the Roman army in the time of Galen, since, as the physician wrote, the qualities of this cereal have by then been studied, and as a result of that it became clear that the groats

⁴⁷⁴ Galen, *De alimentorum facultatibus*, 507, 8, vol. VI.

⁴⁷⁵ Galen, *De alimentorum facultatibus*, 507, 8–9, vol. VI.

⁴⁷⁶ Galen, *De alimentorum facultatibus*, 507, 9, vol. VI.

⁴⁷⁷ Galen, *De victu attenuante*, 37, 3–4.

⁴⁷⁸ Galen, *De victu attenuante*, 37, 4.

⁴⁷⁹ Galen, *De victu attenuante*, 37, 4 – 38, 1.

⁴⁸⁰ Galen, *De victu attenuante*, 38, 1.

⁴⁸¹ The fragment refers to *álphita* as an important type of food for Greek and Roman army – Galen, *De alimentorum facultatibus*, 507, 9–14, vol. VI.

did not contribute to building physical strength of those who ate it. *Álphita* provided only a little nourishment, which was sufficient for civilians, who did not do much physical exercise, but not enough for soldiers continually perfecting their prowess⁴⁸². It is worth concluding therefore that this piece of information indicated the influence of dietary and scientific achievements on the general level of military preparation of the Roman state.

Finally, it must be emphasised that *álphita* were a base for *máza*, another foodstuff in the sphere of interest of the Pergamene. Galen devoted a whole chapter of *De alimentorum facultatibus*⁴⁸³ to *máza* (which was also called *trípte*⁴⁸⁴ in Attic Greek). This passage, despite being relatively long, does not provide much information about the method of preparing this product, not to mention a specific recipe for it, since the author focused mainly on a detailed description of its dietetic values. In fact, this was announced by Galen at the end of the chapter on *álphita*, preceding this work. It was stated there that goats mixed with a liquid⁴⁸⁵ formed *máza*⁴⁸⁶, about which, according to Galen, Philotimus wrote in book one of his treatise entitled *On foodstuffs*⁴⁸⁷. Indeed, in the chapter *Perí mázes* the author of *De alimentorum facultatibus* returned to this issue and conducted a discussion with the views of his recognised predecessors⁴⁸⁸. On the basis of the information that he considered, we can authoritatively state that *máza* was a product obtained mainly from barley. It was precisely because of this crop's qualities that the dish gained such particular dietetic properties as stodginess, flatulent

⁴⁸² Galen, *De alimentorum facultatibus*, 507, 10–14, vol. VI.

⁴⁸³ Galen, *De alimentorum facultatibus*, 508, 2–510, 14, vol. VI.

⁴⁸⁴ Galen, *De alimentorum facultatibus*, 510, 3, vol. VI.

⁴⁸⁵ Oribasius, when interpreting this passage, wrote that *máza* was produced from *álphita* mixed with water.

⁴⁸⁶ Galen, *De alimentorum facultatibus*, 507, 14, vol. VI.

⁴⁸⁷ Galen, *De alimentorum facultatibus*, 507, 15–508, 1, vol. VI.

⁴⁸⁸ The whole discussion on the properties of *máza* as an interpretation of the doctrines of Philotimus and Praxagoras – Galen, *De alimentorum facultatibus*, 509, 14–510, 14, vol. VI.

effect⁴⁸⁹ and a tendency to disrupt the functioning of stomach⁴⁹⁰. However, it was not made directly from *kriḥai*, but rather from *álphita*, usually those produced through roasting barley grains⁴⁹¹. *Máza* was created in a, preferably long, process⁴⁹² of mixing⁴⁹³ these groats with liquids⁴⁹⁴ and, as it should be concluded from Galen's account, was prepared primarily with an addition of fluids that were sweet in flavour. Therefore, the final product must have had a taste similar to these additions; this was modified only by the flavour of barley itself. Among these additives were honey⁴⁹⁵, sweet wine⁴⁹⁶ and reduced must, i.e. *síraion*⁴⁹⁷. These liquids, as the author claimed, were thick, just like the wine used for this dish. Saying this, Galen of course meant thick and sweet wines, which dieticians referred to using a technical term, i.e. the adjective *pachýs*⁴⁹⁸. It is worth mentioning that during the production of *máza*, some particular fluid, called by Praxagoras and Philotimus translucent (*hyalódes*)⁴⁹⁹, was secreted. This long-lasting process of mixing caused a creation of thick, homogeneous dough, about which Galen wrote that it seemed to be similar in its qualities to the one obtained from wheat, that is, thick and glutinous⁵⁰⁰. Galen did not provide any information about the fact that *máza* would be subjected to any kind of thermal processing. It was, then, eaten raw, in the form similar to that of cakes. The physician also used a plural form of the word, that is *mázai*⁵⁰¹, when referring to these;

⁴⁸⁹ Galen, *De alimentorum facultatibus*, 509, 6–9, vol. VI.

⁴⁹⁰ Galen, *De alimentorum facultatibus*, 509, 10–11, vol. VI.

⁴⁹¹ Galen, *De alimentorum facultatibus*, 506, 15–16; 509, 6–7, vol. VI.

⁴⁹² Galen, *De alimentorum facultatibus*, 510, 5, vol. VI.

⁴⁹³ Galen, *De alimentorum facultatibus*, 509, 11–12, vol. VI.

⁴⁹⁴ Other sources indicate that the basic liquid additive was water.

⁴⁹⁵ Galen, *De alimentorum facultatibus*, 509, 12, vol. VI.

⁴⁹⁶ Galen, *De alimentorum facultatibus*, 510, 2, vol. VI.

⁴⁹⁷ Galen, *De alimentorum facultatibus*, 510, 2–3, vol. VI.

⁴⁹⁸ Galen, *De alimentorum facultatibus*, 510, 6, vol. VI.

⁴⁹⁹ Galen, *De alimentorum facultatibus*, 509, 16, vol. VI.

⁵⁰⁰ Galen, *De alimentorum facultatibus*, 510, 4–6, vol. VI.

⁵⁰¹ Galen, *De alimentorum facultatibus*, 507, 14. The same was done e.g. by Dioscurides.

it likely referred to the number of portions made as a result of mixing *álphita* with wine, *síraion* and such, rather than to different variations of the product.

Ptisáne in Galen's works appears to be at the apex of Greek culinary and medical thought, harmoniously combining gustatory and therapeutic qualities⁵⁰². It should be emphasised once again that not only did Galen mention this soup frequently in such treatises as *De alimentorum facultatibus*, *De sanitate tuenda* or *De victu attenuante*, but also wrote a separate monograph on it under the title *De ptisana*. Since Galen's doctrines appearing in his texts were very similar to one another, and the author often repeated identical phrases, our work will only include references to certain treatises, selected by the authors of the present work as the most significant.

Ptisáne was a popular dish. First of all, its ingredients were easy to obtain, because they were common and inexpensive. Secondly, this kind of food was suitable for sick and healthy alike. Therefore, numerous varieties of the recipe for this barley soup were created thanks to the imagination of cookery experts. As it happens, Galen condemned the majority of these modifications. Lastly, for the sick, especially those suffering from serious diseases, accompanied by high fever, dehydration and enfeeblement, it was the main means of treatment and nutrition. All in all, what clearly demonstrates the popularity of *ptisáne* is the large number of references to it; some of these were even quite verbose. It must be added that no other medicinal dish was honoured by the author in that way. Galen left us relatively numerous, strictly culinary, data about this soup. They confirm that the physician did not only have theoretical knowledge of the subject, but also certain practical skills in preparing this medicinal dish. When describing this treat and medicament in *De ptisana* in a systematically and in detail, the author started his deliberations by

⁵⁰² On *ptisáne* cf. E. Darmstaedter, *Ptisana: ein Beitrag zur Kenntnis der antiken Diaetetik*, Ar.ASS 15, 1933, p. 181–201; M. Kokoszko, A. Maciejewska, *De ptisana vel tisana*, VLat 49, 2013, p. 152–156; M. Kokoszko, K. Jagusiak, Z. Rzeźnicka, *Kilka słów o zupie zwanej ptisane (πιτσάνη) (A few words on the soup called ptisane (πιτσάνη))*, ZW 18, 2013, p. 282–292.

listing the conditions that had to be met by water used for preparing the soup. Galen stated that for this dish the liquid had to be of very high quality, thus it was supposed to be, in all meanings of the word, pure. The water could not be excessively sweet, salty, spicy, bitter, or smell unpleasantly. It should be clear of any signs of putrefaction, or any other quality possible to observe with human senses. In other words, it was supposed to be neutral. Moreover, it could have no distinguishable taste or smell, or any features signifying the presence of admixtures in it. It had to be transparent and absolutely free from mud that would contaminate it⁵⁰³.

Having outlined the qualities of water for *ptisáne*, the physician from Pergamum described the qualities of barley that ought to be used for this dish. The latter information is a variant of the data already discussed in our work on the subject of *krithai*, and thus we are going to refrain from discussing it⁵⁰⁴. The best recipe for *ptisáne*, according to Galen, required soaking barley and removing its hulls through rubbing it in hands. After putting the dish on, one first had to cook it over a strong fire, then reduce the fire and keep the pot at low heat until the barley groats were tender⁵⁰⁵. Some people, though, to the horror of the Pergamene, put barley into a mortar, pulverised it and then cooked it quickly, adding some reduced must, while others mixed in some starch (which was probably supposed to facilitate thickening). Yet another practice was seasoning the soup to taste, putting in some cumin and adding honey. This recipe was, however, considered completely unacceptable⁵⁰⁶.

If *ptisáne* was cooked properly, as Hippocrates characterised it, it was devoid of any elements which could cause flatulence, retaining only the qualities that made it worthy of recommendation. Such a dish resembled mucilage, it was very smooth, gently sticking to the surface (also of the internal organs through which it was transported), soothing in

⁵⁰³ Galen, *De ptisana*, 817, 13 – 818, 8, vol. VI.

⁵⁰⁴ Galen, *De ptisana*, 819, 13 – 821, 4, vol. VI.

⁵⁰⁵ Galen, *De ptisana*, 821, 10 – 822, 1, vol. VI.

⁵⁰⁶ Galen, *De ptisana*, 821, 7–10, vol. VI.

its effect, moderately watery, thirst-quenching, cleansing, easy to excrete and free from styptic qualities. It did not interact with other foods or swell in intestines, since its volume was already increased in the process of cooking⁵⁰⁷. Additionally, barley in *ptisáne* made it tasty and delicate, which was important especially for the sick⁵⁰⁸.

It has already been said that such doctrines were distributed throughout many of Galen's the works. A typical example of this phenomenon is his treatise on foodstuffs commonly used in antiquity, which is frequently cited in our book. In *De alimentorum facultatibus* we can find another very detailed recipe for the dish in question, which is worth mentioning due to its precision and clarity. The physician wrote that *ptisáne* was properly prepared when the cook or the doctor was sufficiently careful about making barley swell appropriately during the process of cooking and then making it simmer at low heat to a form of emulsion. It was not until the grains were sufficiently softened that wine vinegar was added. Shortly before serving the dish, fine-grained salt was added, whereas olive oil could be mixed in at the beginning of the whole process. Furthermore, some leek and dill were also put into the soup, which, *nota bene*, was supposed to be done at the very beginning⁵⁰⁹. In *De alimentorum facultatibus*, Galen provided further advice concerning the preparation of the proper base for *ptisáne*, which complement information from *De ptisana*. The recommendation was to soak the grains and then, in a mortar, clear it of hulls through rubbing it with hands, wrapped in a rough material (such as strings used for protecting hooves of draft animals). Such soup prepared from barley without hulls had a strong cleansing effect but no undesirable features⁵¹⁰. The author was indignant over the fact that *ptisáne* was sometimes cooked in a way that made it very harmful, and the passage about this issue was even wordier than in *De ptisana*. Galen wrote that in his time cooks would

⁵⁰⁷ Galen, *De ptisana*, 822, 4–10, vol. VI.

⁵⁰⁸ Galen, *De ptisana*, 824, 1–2, vol. VI.

⁵⁰⁹ The recipe for *ptisáne* – Galen, *De alimentorum facultatibus*, 501, 15 – 502, 6, vol. VI.

⁵¹⁰ Galen, *De alimentorum facultatibus*, 502, 12 – 503, 5, vol. VI.

pestle raw barley grains in mortars to the form of powder, instead cooking it on fire. Some also added *ámylon* to the dish in order to make it seem thick and homogeneous, that is, as if it was prepared by means of proper thermal processing. According to Galen, a dish made in this way caused flatulence and was difficult to digest⁵¹¹. The worst way of preparing *ptisáne*, however, was pounding raw barley in a mortar with water and then cooking it for a short time with an addition of *hépsema*, that is, *síraion*. Some cooks also flavoured the dish with honey and cumin, which, as Galen put it made the dish resemble *kykeón* rather than proper *ptisáne*⁵¹².

Having finished the analysis of culinary data from the second century and beginning to look at the fourth-century medicine, i.e. examining the works of Oribasius, we should begin with a general statement that the variety of information provided by this physician was similar to the one previously found in Galen's writings. What is particularly important for our work, though, is the fact he enriched this information with the legacies of Dieuches and Antyllus – both of which the physician to Emperor Julian used. The precise quotation of the claims promoted by his predecessors makes us deduce that Oribasius considered them to be important and applicable in his own times.

As far as the very grain of *krithé* itself is concerned, Oribasius described it in a chapter on the so-called Demeter's gifts, which is almost word-for-word based on Galen's *De alimentorum facultatibus*⁵¹³, and, therefore, it does not broaden our hitherto acquired knowledge. Accordingly, we shall only draw the readers' attention to the fact that Oribasius acknowledged Galen's remark on the fact that barley was often infested with undesirable cereal plants⁵¹⁴, which decreased its value. This remark provides further explanation why Emperor Julian's physician placed so much emphasis on the competence in identifying the best

⁵¹¹ Galen, *De alimentorum facultatibus*, 502, 7–11, vol. VI.

⁵¹² Galen, *De alimentorum facultatibus*, 503, 6–10, vol. VI.

⁵¹³ Oribasius, *Collectiones medicae*, I, 1, 7, 1–10, 3.

⁵¹⁴ Oribasius, *Collectiones medicae*, I, 1, 10, 2–3.

crops and suggests that unrefined grain, not suitable for the purposes intended by the author, was on offer at markets of his time. Choosing the product of an appropriate quality was, however, not the end of the process of preparing grains for alimentary purposes. Therefore, in one passage of book four, clarifying the rules governing the food preparation, the content of which was borrowed from Galen⁵¹⁵, Oribasius provided us with the information that barley was, as a rule, cleared of hulls⁵¹⁶ and, continuing the references to Galen's texts, listed the main foods based on *krithai*⁵¹⁷.

The information presented above need to be supplemented with data preserved in Oribasius' excerpts from Dieuches' works⁵¹⁸, as they supplement our previous findings with some interesting details. The author wrote that roasted barley was referred to as *káchrys*. It was an intermediate product used for making *álphita*⁵¹⁹. Furthermore, the physician retained the term *ereikís/erikís*⁵²⁰, which is going to be discussed at some length below, as well. As a matter of fact, quotations from Dieuches included in the fourth book of *Collectiones medicae* provide further interesting details, which combine the knowledge from the disciplines of gastronomy and medicine, broadening our knowledge. The aforementioned predecessor of Oribasius, for example, presented a relatively detailed recipe for medicinal barley soup. He wrote, accordingly, that in order to prepare it, one should use at most one mina of *krithé* per ten *kotýlai* of water. The grains were fully covered in water. When the first portion of water started to boil, it was to be replaced with a fresh one; the cooking then continued. This process lasted until the cereal completely softened up. The soup was then strained so that a pure decoction was obtained. Sometimes, honey was added as well, but this procedure was not indispensable.

⁵¹⁵ Oribasius, *Collectiones medicae*, IV, 1, 1, 1 – 45, 2.

⁵¹⁶ Oribasius, *Collectiones medicae*, IV, 1, 2, 2.

⁵¹⁷ Oribasius, *Collectiones medicae*, I, 10, 1, 1 – 2, 4.

⁵¹⁸ Oribasius, *Collectiones medicae*, IV, 7, 1, 1 – 38, 4.

⁵¹⁹ Oribasius, *Collectiones medicae*, IV, 7, 7, 1–2.

⁵²⁰ Oribasius, *Collectiones medicae*, IV, 7, 9, 1.

Such a dish was considered to be cleansing, diuretic and adequately nourishing⁵²¹. When Oribasius, once again, quoted the information on barley⁵²² given by Dieuches (in book four of *Collectiones medicae*, but this time in a fragment entitled *Peri hepséseos*⁵²³), he gave us an insight into the method of preparing barley groats that was used in his times. Since it is identical to the one used for wheat, we are not going to repeat it, and ask our readers instead to refer to the description of culinary applications of *pyrós*⁵²⁴.

As for the particular products made from *krithé*, it must be emphasised that the works of Emperor Julian's physician enable us to add certain details to the previously obtained picture of the types of flour used in the fourth century. Namely, apart from *áleuron*, Oribasius mentioned the existence of *pále*⁵²⁵. This flour could also be obtained from *krithé*, but was ground more finely than ordinary flour; it was therefore easier to mix with water for medical purposes⁵²⁶.

The oeuvre of Oribasius contains the same information on the subject of *álphita* as the works of Galen⁵²⁷, but it was additionally supplemented with detailed excerpts from Dieuches' writings, thanks to which our knowledge of the method of production and culinary applications of the product is more complete. As far as the scope of information obtained from the former author is concerned, it is almost identical to the one depicted above. It does, however, contain some minor, but important, complementary pieces of information. Oribasius explicitly stated that *máza* was made by mixing *álphita* with water⁵²⁸. It is a valuable mention, as it clarifies the recipe for the latter

⁵²¹ Oribasius, *Collectiones medicae*, IV, 7, 5, 1 – 7, 1.

⁵²² Oribasius, *Collectiones medicae*, IV, 9, 1, 1.

⁵²³ Oribasius, *Collectiones medicae*, IV, 9, 1, 1 – 5, 2.

⁵²⁴ Oribasius, *Collectiones medicae*, IV, 9, 1, 1 – 3, 1.

⁵²⁵ Oribasius, *Collectiones medicae*, IX, 28, 2, 1.

⁵²⁶ Oribasius, *Collectiones medicae*, IX, 28, 2, 1 – 3, 1.

⁵²⁷ Oribasius, *Collectiones medicae*, IV, 1, 7, 1 – 11, 1.

⁵²⁸ Oribasius, *Collectiones medicae*, IV, 1, 10, 1 – 11, 1.

dish previously given by Galen⁵²⁹. This information also indicates that it was an easy to prepare and inexpensive food, which clearly accounts for its popularity up until the time of Oribasius. It also explains why *máza* was largely a food for the poor. On the other hand, Dieuches' account⁵³⁰ suggests a possible substitute for the main ingredient of *álphita*. The physician pointed to an option of making it from oat and to indicating that the method of production was similar, the physician described the basic stages of obtaining *álphita* from *krithé* as well as those from *brómos*. He wrote that the grains were roasted before removing hulls, then hulled and ground⁵³¹. However, returning to the passage devoted to the qualities and applications of *álphita*, it is worth noting that Dieuches also wrote about utilising this product for culinary and therapeutic purposes, and especially about preparing beverages and boiled dishes from the cereal⁵³². For instance, the groats were added to chicken broths and left cooking on low heat or steamed without stirring until it became soft and *álphita* were ready⁵³³. Barley groats were also added to mutton stock, broths prepared on the basis of game, particularly of deer meat, and pork stock⁵³⁴. Dieuches pointed out that these dishes were appropriate for people suffering from dysentery⁵³⁵. Moreover, in this passage we come across a detailed recipe for a medicinal dish consisting of *álphita*⁵³⁶, milk, water and a poppy head (or ground fig) singed over fire. All of the ingredients were cooked to the consistency of soup, i.e. *rhóphema*. The qualities of the dish were supposed to be calming, but it could not be consumed more than three

⁵²⁹ In the mentioned passage of *De alimentorum facultatibus* the expert did not specify the kind of liquid with which *álphita* were supposed to be mixed in order to obtain *máza*.

⁵³⁰ Oribasius, *Collectiones medicae*, IV, 6, 1, 1–4, 5.

⁵³¹ Oribasius, *Collectiones medicae*, IV, 6, 4, 1–4.

⁵³² Oribasius, *Collectiones medicae*, IV, 6, 1, 1.

⁵³³ Oribasius, *Collectiones medicae*, IV, 6, 1, 1–4.

⁵³⁴ Oribasius, *Collectiones medicae*, IV, 6, 1, 4–5.

⁵³⁵ Oribasius, *Collectiones medicae*, IV, 6, 1, 5–2, 1.

⁵³⁶ Oribasius, *Collectiones medicae*, IV, 6, 2, 1.

or four times (at short intervals, as it can be deduced), since it would cause the feeling of weakness, and, when overused, reduced the production of urine⁵³⁷.

Thanks to the information provided by Dieuches we are able to figure out what culinary product was referred to as *káchrys*: it was roasted barley, usually treated as a base product for the production of *álphita*⁵³⁸. *Káchrys* groats were also a base for the soup described by Dieuches as cooked in the same manner as a similar dish from raw barley. From the text of *Collectiones medicae* it appears that roasted grains were crushed to remove hulls that became scorched during thermal processing, then rinsed and boiled to softness⁵³⁹.

Dieuches also wrote about groats called *ereikís/erikís*. Although he did not define the term itself, the context suggests a resemblance between *álphita* and *ereikís/erikís*, since they were both subjected to the same kind of processing aimed at transforming them into the final (medicinal) dish. As we can read, the sick should be fed with *álphita*⁵⁴⁰ as well as *ereikís/erikís*⁵⁴¹, which were previously soaked in water. Since the text emphasised the fact that *álphita* were made from roasted barley, while this feature was not ascribed to *ereikís/erikís*, a logical assumption would be that the latter noun denoted large groats made from cereals not processed thermally. It must be highlighted, though, that the rare appearances of this term in sources suggest that it was utilised in gastronomy and medicine on a relatively limited scale. Moreover, it needs to be added that Dieuches recommended cooking *ereikís/erikís* in water, without stirring it during this process, so that the stock was as delicate as possible and it was the liquid itself, not the groats that was served as a medicinal dish or beverage⁵⁴².

⁵³⁷ Oribasius, *Collectiones medicae*, IV, 6, 2, 1 – 4, 1.

⁵³⁸ Oribasius, *Collectiones medicae*, IV, 7, 7, 1–2.

⁵³⁹ Oribasius, *Collectiones medicae*, IV, 7, 7, 2 – 9, 1.

⁵⁴⁰ Oribasius, *Collectiones medicae*, IV, 7, 2, 1.

⁵⁴¹ Oribasius, *Collectiones medicae*, IV, 7, 2, 1 – 3, 1.

⁵⁴² Oribasius, *Collectiones medicae*, IV, 7, 9, 1 – 10, 1.

Barley bread⁵⁴³ was mentioned in the works of Oribasius several times, but its description is rather general. There is no reason to doubt that in the fourth century it was still one of the basic foods available to the readers of his works. Otherwise, he would not have cited the doctrines of Galen, who listed barley bread as one of the main cereal products obtained from *krithai*⁵⁴⁴. On the other hand, *ártoi krithinoi* are mentioned by the physician to Emperor Julian much less frequently than bread made from wheat. We can infer, therefore, that barley bread, although available to the addressees of Oribasius' texts, was less popular with them, since they preferred products made from *pyrós*.

Oribasius wrote quite a lot about *ptisáne* as well. He could hardly have done otherwise, as the tradition of its preparation and utilisation by physicians was so widespread up until his times. Also on this occasion the author precisely quoted the doctrines of his predecessors, without explicitly commenting on their factual value, nor noting his own experiences in this field. However, on account of the fact that he did not use only the doctrines of Galen, his oeuvre is an interesting complement to the previously discussed statements. As for the basic recipe for *ptisáne*, Oribasius described it in his *Collectiones medicae* following his fellow countryman⁵⁴⁵, and since these data are identical to the presented above, we are not going to repeat them. *Nota bene*, the recipe for the barley soup⁵⁴⁶ can also be found in book four of *Synopsis ad Eustathium filium*⁵⁴⁷. This repetition should probably be interpreted as evidence of the importance of the recipe, formulated in Galen's works, for gastronomic and medical practices of the fourth century. Regarding the ratios of the basic ingredients of the soup the physician retained two versions of the recipe. From the information on the subject of preparing oat soup (not *ptisáne* itself, but a similar one) borrowed from Dieuch-

⁵⁴³ For example – Oribasius, *Synopsis ad Eustathium filium*, IV, 13, 5, 2.

⁵⁴⁴ Oribasius, *Collectiones medicae*, I, 10, 1, 2–3.

⁵⁴⁵ Oribasius, *Collectiones medicae*, IV, 1, 16, 1 – 22, 1.

⁵⁴⁶ Oribasius, *Synopsis ad Eustathium filium*, IV, 35, 1, 1 – 4, 1.

⁵⁴⁷ Oribasius, *Synopsis ad Eustathium filium*, IV, 35, 1, 1 – 19, 3.

es⁵⁴⁸ it can be inferred that *ptisáne* was cooked with ten parts of water per one part of purified barley grain⁵⁴⁹. It must also be pointed out that similar information indicating the proportions of groats and water in *ptisáne*⁵⁵⁰ can be found in *Synopsis ad Eustathium filium*. In turn, quoting Antyllus' doctrines⁵⁵¹, in the fourth book of the *Collectiones medicae*, Oribasius presented a recipe for the so-called *chylós ptisánes*, a thinner version of the ordinary barley soup. It appears from the text that one part of purified barley was cooked in fifteen parts of water until one fifth of the original amount of water was thus removed, and that *chylós* was strained before serving⁵⁵². Also in *Synopsis ad Eustathium filium* the author repeated the rules of cooking medicinal soups⁵⁵³. This time, though, the text was slightly modified, as it appears from the narrative that the author meant *ptisáne*, not its *chylós*. The proportions, though, remain the same⁵⁵⁴.

Oribasius' work indicates that barley soup, whether it was called *ptisáne* or *chylós ptisánes*, was supplemented with a great variety of gustatory and medicinal additives. These were so numerous that in the present paper we shall only discuss several of them. Following Galen's advice, Oribasius wrote about adding pork meat to *ptisáne*: he recommended cooking pigs' trotters in it⁵⁵⁵. Whereas, while writing about the preparation of a certain enema used in treating *kardiakoi*⁵⁵⁶, he advised readers to cook *chylós ptisánes*⁵⁵⁷ with the so-called *akrokólia*, i.e. ears, snouts and so on⁵⁵⁸. Although the latter recipe does not, in fact, refer to food, it indicates the potential that could be utilised by

⁵⁴⁸ Oribasius, *Collectiones medicae*, IV, 7, 1, 1 – 38, 4.

⁵⁴⁹ Oribasius, *Collectiones medicae*, IV, 7, 20, 3 – 21, 1.

⁵⁵⁰ Oribasius, *Synopsis ad Eustathium filium*, IV, 35, 19, 1–3.

⁵⁵¹ Oribasius, *Collectiones medicae*, IV, 11, 1, 1 – 14, 4.

⁵⁵² Oribasius, *Collectiones medicae*, IV, 11, 4, 1–4.

⁵⁵³ Oribasius, *Synopsis ad Eustathium filium*, IV, 37, 1, 1 – 9, 2.

⁵⁵⁴ Oribasius, *Synopsis ad Eustathium filium*, IV, 37, 4, 1 – 5, 1.

⁵⁵⁵ Oribasius, *Collectiones medicae*, IV, 1, 25, 1–2.

⁵⁵⁶ Oribasius, *Libri ad Eunapium*, III, 9, 1, 1 – 2, 3.

⁵⁵⁷ Oribasius, *Libri ad Eunapium*, III, 9, 2, 1.

⁵⁵⁸ Oribasius, *Libri ad Eunapium*, III, 9, 2, 1–2.

cooks. Strained *kénchros*, that is, cooked millet (*Panicum miliaceum*)⁵⁵⁹ was also added to *ptisáne*, of which we learn from extensive excerpts from Dieuches' writings. The same predecessor of Oribasius passed on another piece of information, quoted in book four of *Collectiones medicae*⁵⁶⁰, stating that leguminous plants' seeds called *eregmós*⁵⁶¹ were also added to *ptisáne*. Soup prepared in this way was served to patients suffering from dysentery or persistent pain during excretion⁵⁶². Such advice is given in this part of *Collectiones medicae* more frequently, although the lack of precision in the narrative causes interpretative problems. Fortunately, in the treatise for Eustathius, Oribasius got back to the findings of Dieuches, but did not cite him as precisely as in *Collectiones medicae*, summarising just the basic points in such a manner that he managed to construct a passage clearer than the one previously mentioned. As it appears from the text, *ptisáne* (and other medicinal soups) were made with an addition of caigua seeds, pine-nuts, walnuts, hazelnuts and almonds instead of olive oil. People with digestive problems were fed *ptisáne* mixed with white poppy, gently roasted inside the poppy head. In such cases, it was also advisable to put some chestnuts⁵⁶³ into the soup. Finally, Oribasius mentioned that *ptisáne* may also be prepared with a sweet flavour for special medicinal purposes. Namely, such barley soup⁵⁶⁴ with *oinómeli* was recommended in cases when physicians wanted to induce vomiting. This recommendation was borrowed from Archigenes and included in the deliberations of the book eight of *Collectiones medicae*⁵⁶⁵.

Following Herodotus, Oribasius remarked that barley⁵⁶⁶ was used for making a beverage to which the author referred as wine. The drink

⁵⁵⁹ Oribasius, *Collectiones medicae*, IV, 7, 26, 1 – 27, 1.

⁵⁶⁰ Oribasius, *Collectiones medicae*, IV, 8, 1, 1 – 18, 3.

⁵⁶¹ These were usually hulled seeds of ripe broad bean.

⁵⁶² Oribasius, *Collectiones medicae*, IV, 8, 12, 1 – 13, 1.

⁵⁶³ Oribasius, *Synopsis ad Eustathium filium*, IV, 36, 1, 1 – 3, 3.

⁵⁶⁴ Oribasius, *Collectiones medicae*, VIII, 1, 13, 2.

⁵⁶⁵ Oribasius, *Collectiones medicae*, VIII, 1, 3, 1 – 25, 2.

⁵⁶⁶ Oribasius, *Collectiones medicae*, V, 31, 12, 1.

in question would nowadays probably be called beer. The deliberations included in Oribasius' treatise, though, lack a precise recipe indicating the method of brewing it.

The works of Aetius of Amida contain traditional, that is, referring to Galen's findings, views on the subject of barley, which do not provide any new information about this crop as a subject of interest for the culinary art. For the sake of thoroughness, it must be stated that the question of *krithé* was mentioned in book one of *Iatricorum libri*⁵⁶⁷, in the passage where basic foods and other substances that influenced retaining and regaining health were listed, in an alphabetical order. The cereal was described there together with the most important products obtained from it, i.e. *álphita* and *máza*. It is worth noting that Aetius of Amida did that in three separate fragments; therefore, individual descriptions were devoted to *krithé* as well as *álphita* and *máza*. It should probably be interpreted as an emphasis placed on the role of these foods in the diet of the sixth century.

Aetius' chapter concerning barley lacks any detailed information about physical features of this plant and its seeds, or any data about the techniques used in processing this product, since the author limited his outline to some basic information regarding the dietary description of the discussed crop and listed only the most important kinds of food obtained from it. Thus, apart from mentioning that it was made into the aforementioned *álphita*⁵⁶⁸, the passage informs us about cooking the product to the form of *ptisáne*⁵⁶⁹ and making bread out of *krithé*⁵⁷⁰. Although the author did not write there about *áleuron*, the reference to bread indicates that this flour, as the main ingredient of barley bread, must also have been one of the basic products made from this cereal. In fact, it was mentioned by the author several times, especially in the context of utilising it in various medical procedures.

⁵⁶⁷ Aetius of Amida, I, 225, 1–14.

⁵⁶⁸ Aetius of Amida, I, 225, 10–11.

⁵⁶⁹ Aetius of Amida, I, 225, 11–12.

⁵⁷⁰ Aetius of Amida, I, 225, 12–14.

It has already been stated that Aetius of Amida included only a small passage devoted to barley groats called *álphita*⁵⁷¹, in book one of his medical encyclopaedia. There is little of interest there to those who are involved in preparation of food. The author revealed to us only a well-known truth that these groats were produced from roasted barley. This part of its preparation, as the author stated, had a substantial influence on its nutritional and medicinal effects⁵⁷². Although Aetius of Amida wrote that *álphita* were served after being cooked⁵⁷³, he did not reveal any recipe for preparing it; he only left a vague mention of serving *álphita* with dry wine⁵⁷⁴. Only after having compared the information from Aetius of Amida with an appropriate passage from Galen's *De alimentorum facultatibus* and with the quoted doctrines of Oribasius we have the certainty that the sixth-century physician meant using the product in question in a form of beverage before visiting a bath house.

Not only do the works of Aetius of Amida not expand our knowledge on the subject of barley bread, but they can be characterised as very poor in knowledge on this subject. Although *krithai* bread was mentioned⁵⁷⁵, the physician did not provide us with any specific information about its species, not to mention the rules of preparing it.

The physician included in book one of his *Iatricorum libri* a rather elaborate description of *máza*, modelled on the findings of Galen⁵⁷⁶. He opened the narrative with defining the term itself, that is, with a simplified recipe. According to the author, *máza* was *álphita* mixed with a liquid, such as *síraion*, or with honey. It appears from the text that these liquid additions did not exhaust the list of possible options. Moreover, he emphasised that *máza* was consumed without cooking⁵⁷⁷. He also indicated that as far as the method its preparation was concerned, the length

⁵⁷¹ Aetius of Amida, I, 226, 1–4.

⁵⁷² Aetius of Amida, I, 226, 1–2.

⁵⁷³ Aetius of Amida, I, 226, 2–3.

⁵⁷⁴ Aetius of Amida, I, 226, 3–4.

⁵⁷⁵ For example – Aetius of Amida, I, 225, 13–14.

⁵⁷⁶ Aetius of Amida, I, 227, 1–14.

⁵⁷⁷ Aetius of Amida, I, 227, 1–3.

and thoroughness of mixing were important factors. If the *máza* was prepared well, it was easier to assimilate and excrete, which was additionally facilitated by the use of honey as one of the ingredients⁵⁷⁸.

Generally, *Iatricorum libri* do not provide us with detailed information on the subject of a recipe for *ptisáne*, which is rather unusual for Greek medical literature. This barley soup⁵⁷⁹ was listed in the chapter concerning barley⁵⁸⁰ as a typical dish made from *krithé*.

Alexander of Tralles, who wrote approximately in the same time, was apparently not interested in the information that would have broadened our knowledge of culinary applications of barley. On the basis of his works, it can only be deduced that *áleuron*⁵⁸¹ flour and *álphita*⁵⁸² groats were produced from this crop. The physician was fully familiar with *ptisáne*, and even revealed to us that there were many who were not fond of it⁵⁸³, suggesting it may have been overused by physicians as a versatile medication. He did not, however, provide a recipe for this dish. It is also worth noting that neither *máza* nor even barley bread gained enough importance in his medical practice to be listed among products utilised by this physician. It must be strongly emphasised that Alexander of Tralles, as the only author out of all those cited in the present work, mentioned making of *ámylon* from barley⁵⁸⁴. From the curiosities that he recorded, one other stands out: namely, the information that the cereal was used as fodder for dairy animals, such as donkeys⁵⁸⁵. Livestock fed on this product provided milk of high nutritional value that did not turn sour easily, which can be learnt from *De febribus* written by this author⁵⁸⁶.

⁵⁷⁸ Aetius of Amida, I, 227, 5–14.

⁵⁷⁹ Aetius of Amida, I, 225, 11–12.

⁵⁸⁰ Aetius of Amida, I, 225, 1–14.

⁵⁸¹ For example – Alexander of Tralles, *De febribus*, 323, 9–10, vol. I.

⁵⁸² For example – Alexander of Tralles, *Therapeutica*, 249, 12, vol. II.

⁵⁸³ Alexander of Tralles, *Therapeutica*, 523, 13–14, vol. I.

⁵⁸⁴ Alexander of Tralles, *Therapeutica*, 11, 9, vol. II.

⁵⁸⁵ Alexander of Tralles, *De febribus*, 365, 8–10, vol. I.

⁵⁸⁶ Alexander of Tralles, *De febribus*, 365, 1–23, vol. I.

Leaving the deliberations of Alexander of Tralles and moving on to *De observatione ciborum*, it is worth emphasising that barley was described as early as in the second chapter of Anthimus' work, right after bread⁵⁸⁷. Perhaps this position in the text is an indicator of the importance of this food in Gaul in the first half of the sixth century, which was known to the author first-hand. There is little culinary data here. From the pages of the treatise we can learn that barley was roasted, and during this process, the juices contained within evaporated⁵⁸⁸. In any case, the latter remark suggests that this method of processing grains was also known in the West. It is therefore not surprising that the author of the treatise mentioned *álphita*, which were made from grains prepared in this way and not yet completely dry. *Polenta* (*fenea*) is another barley product cooked on the basis of the aforementioned groats that is possible to identify that was utilised in both gastronomy and medicine. *Ptisáne* (*tisana*), too, was utilised for both of these purposes. However, the author mentioned neither barley bread nor flour used in baking it. It would seem that wheat bread completely dominated the diet of the Frankish upper aristocracy, to whom the *opusculum* was addressed. Finally, it can be inferred from the narrative that *máza* was wholly unfamiliar to the sixth century Franks, since it did not appear to be worth mentioning in *De observatione ciborum*.

Going back to *ptisáne*, it must be noted that it was presented by Anthimus as a food suitable for both the healthy and the sick, especially those suffering from high fever⁵⁸⁹. The work lacks any recipe for this dish. Thus it can be assumed that it was commonly known and not even worth describing. At the same time, there is nothing to indicate that it differed in any respect from the one used in the Greek-speaking part of the Mediterranean Basin. There is one interesting similarity between the nature of *ptisana* and *polenta* presented in Anthimus' work.

⁵⁸⁷ Anthimus, 2.

⁵⁸⁸ Usually, barley was processed fresh. It might also be a reference to the information given by Galen that the best *álphita* were produced from grains that were not completely dry – Galen, *De alimentorum facultatibus*, 507, 1–3, vol. VI.

⁵⁸⁹ Anthimus, 64.

Specifically, *polenta* (in Greek *póltos*), *nota bene* prepared on the basis of groats from roasted barley, was, according to Anthimus, utilised in a watered-down form for medical purposes, which was identical to the way of using *chylós ptisánes*. If we consider Dioscurides' remarks⁵⁹⁰ about cooking *ptisáne* from *álphita*, which correspond to Anthimus' claims about preparing *polenta/póltos* from these groats, we can conclude that there was a certain resemblance between the two dishes and that watered-down *póltos* was in fact identical or similar to watery *ptisáne*, in Greek sources called *chylós*. Another conclusion is that, since the terms *polenta* and *ptisáne* were separated, they must have differed in a visible way from one another. What exactly the difference was, we do not know, but as both dishes were made from the same or similar product, and their medical application was similar as well⁵⁹¹, then they must have differed mainly in their consistency. If *polenta* was used as *phármakon* only after being watered down, which is not said about *ptisáne*, then the former one must have been much thicker than the latter, and have a consistency of a mush. In this form, it was surely a very nutritious dish. The same soup from *álphita*, previously watered-down, was served during Lent as the first meal at dawn, because, as the author claimed, it nourished stomach appropriately⁵⁹².

The work of Paul of Aegina is not the kind of source that could broaden our knowledge about barley as a product utilised in Mediterranean cuisine in the sixth and seventh century. The physician did describe this cereal twice, first in a chapter entitled *Perí sitódon* in the first⁵⁹³ book of *Epitome*, and subsequently in the seventh⁵⁹⁴, but these passages, apart from canonically formulated dietetic description of the crop, provide us only with a list of foods produced on the base of *krithé*. There is no

⁵⁹⁰ Dioscurides, *De materia medica*, II, 86, 1, 2.

⁵⁹¹ Both were served in the case of fever.

⁵⁹² Lent was obviously a time of limitations on the consumption (both qualitative and quantitative). Such gruel eaten in the morning provided at least a minimum of needed calories and nutrients.

⁵⁹³ Paul of Aegina, I, 78, 1, 1–25.

⁵⁹⁴ Paul of Aegina, VII, 3, 10, 341–345.

information about the appearance of barley or individualisation of its use depending on physical features, and the mentions about the methods of processing it are exceptionally poor. What we can read is in fact well-known to us already, namely that barley was the main ingredient of *ptisáne*⁵⁹⁵, bread⁵⁹⁶ and *álphita*-type⁵⁹⁷ groats. These chapters lack even a mention of making flour from barley, although this information appears to be inherent to the passage devoted to the production of barley bread.

Culinary data about *álphita* are equally limited to the information about other barley products. From *Epitome*⁵⁹⁸ we can only learn that these groats were made from roasted *krithai*⁵⁹⁹. Works of Paul lack information about cooking the product in question to the form of *póltos* or *rhóphema*, however data about the use of barley groats in beverages are repeated, which broadens our findings. *Álphita*, as the author informed us, was usually served in the summer. When drunk with water before visiting a bath house, it quenched thirst⁶⁰⁰. Paul of Aegina referred to this way of using barley groats in one other passage, where he recommended that people travelling long distances on foot⁶⁰¹ should consume beverage consisting of water and *álphita*⁶⁰² with a small amount of salt added⁶⁰³. Another interesting advice concerns those travelling on ships⁶⁰⁴. In the case of intensive vomiting caused by seasickness he recommended drinking water mixed with flour from *álphita* (called *pále*) or aromatic but watered-down wine with the same admixture⁶⁰⁵. Finally, there is also a passage about using the aforementioned groats in the process of

⁵⁹⁵ Paul of Aegina, I, 78, 1, 13.

⁵⁹⁶ Paul of Aegina, I, 78, 1, 16.

⁵⁹⁷ Paul of Aegina, I, 78, 1, 13.

⁵⁹⁸ Paul of Aegina, I, 78, 1, 1–25.

⁵⁹⁹ Paul of Aegina, I, 78, 1, 13.

⁶⁰⁰ Paul of Aegina, I, 78, 1, 14–15.

⁶⁰¹ Paul of Aegina, III, 55, 1, 1–25.

⁶⁰² Paul of Aegina, III, 55, 1, 11.

⁶⁰³ Paul of Aegina, III, 55, 1, 11–12.

⁶⁰⁴ Paul of Aegina, I, 56, 1, 1–18.

⁶⁰⁵ Paul of Aegina, I, 56, 1, 14.

treating water. In a chapter from book one of the *Epitome*, which deals with qualities of water⁶⁰⁶, Paul of Aegina stated that *álphita*⁶⁰⁷ were used as a means of purifying it. Liquid which was sludgy or salty was filtered through the groats in order to obtain liquid fit for drinking⁶⁰⁸.

Data in the works of Paul of Aegina concerning barley bread are also limited. He did not write about the technology used in baking it, that is, about the types of ovens in which the product underwent thermal processing. As far as the recipe for this kind of bread is concerned, there is only one passage suggesting that it was made with an addition of yeast⁶⁰⁹. Paul of Aegina did not, however, mention any flavour-enhancers similar to those used in making wheat bread. Of course, the dough, about whose physical properties we do not get any information, was produced from *áleuron krithinon*, which does appear in *Epitome* many times. Finally, the physician claimed that barley bread, even despite being baked with an addition of raising agents, was brittle⁶¹⁰.

Paul of Aegina left us only some basic information about *máza*, which does not broaden in any way our knowledge about the methods of its preparation. According to the author from Aegina, it was made from *álphita*⁶¹¹; we also learn that honey was added to it⁶¹².

One of the clearest recipes for barley soup was preserved in *Epitome*. The physician noted that, for medicinal purposes, a special kind of soup was cooked, which was made from one part of groats to fifteen parts of water. At the beginning of the preparation olive oil was added to the dish, and, when the groats were already swollen, wine vinegar was mixed in. Once the dish was nearly ready, an amount fine-grained salt was sprinkled into this medicinal soup, while some people also added

⁶⁰⁶ Paul of Aegina, III, 50, 1, 1–41.

⁶⁰⁷ Paul of Aegina, III, 50, 1, 36.

⁶⁰⁸ Paul of Aegina, III, 50, 1, 35–36.

⁶⁰⁹ Paul of Aegina, VII, 13, 1, 24.

⁶¹⁰ Paul of Aegina, I, 78, 1, 15. Which clearly resulted from the lack of gluten in it.

⁶¹¹ Paul of Aegina, IV, 1, 4, 13.

⁶¹² Paul of Aegina, I, 78, 1, 17.

leek and dill to it. Having presented this recipe, the physician remarked that a dish based on oat and wheat groats called *chóndros*⁶¹³ was prepared in the same way. It is worth emphasising that the data preserved by Paul of Aegina are in accordance with the culinary tradition recorded by the previous sources.

The author of a minor work entitled *De cibis* did not bother with providing any details of the culinary uses of barley. He did not even refer to all the basic products obtained from it. Neither did he write about *álphita*, nor mention *áleuron* or *máza*, devoting just a few sentences to barley bread⁶¹⁴, *ptisáne*⁶¹⁵ (also called *chylós tes krithés*⁶¹⁶) and *krithai*⁶¹⁷. Any attempts to find in this *opusculum* recipes for the dishes already known to us are in vain. Instead of this, we find rather general statements, which are in conformity with the findings of the preceding authors. It is worth pointing out the fact that barley was described in *De cibis* in a chapter dealing with food obtained from cereals⁶¹⁸. It is the first fragment of this treatise, which, after outlining dietetic theories, specifies and analyses particular kinds of food important to diet of the second half of the seventh century. It must be emphasised that *krithai* was described right after wheat⁶¹⁹, which suggests not only following traditional patterns of such narratives, but can also indicate that barley still played a vital role among cereal foods. The latter apparently were still the basic group of food for the addressees of the treatise.

Having finished this discussion, we would now like to present another written source, which perfectly presents the uses of *krithai* in ancient cuisine and often draws on the store of medical knowledge. Athenaeus of Naucratis and his legacy are important to our work, since

⁶¹³ Paul of Aegina, I, 78, 1, 21–25.

⁶¹⁴ For example – *De cibis*, 18, 16.

⁶¹⁵ *De cibis*, 2, 34–35.

⁶¹⁶ *De cibis*, 2, 34.

⁶¹⁷ For example – *De cibis*, 2, 4.

⁶¹⁸ *De cibis*, 2, 1–37.

⁶¹⁹ *De cibis*, 2, 1–4.

they provide us with numerous anecdotes connected with culinary art, while philological interests of the author often enrich our knowledge on the subject of terms which appear in the present text. Furthermore, the general data help us deduce the structure of consumption of particular products. One of the anecdotes, for instance, shows that a seemingly not sophisticated product, such as *álphita* barley groats⁶²⁰, could be used in complex recipes. In book nine of *Deipnosophistae* there is a story describing a sophisticated way of serving pork⁶²¹. The author stated that a slaughtered, eviscerated and stuffed piglet was cooked in aromatic stock. Next, one half of it was covered in *álphita*, previously soaked in wine and olive oil, and then the entire dish was baked in *kribanon*. In this way, the pork, taken out of the oven, after removing the crust of barley groats and roasted whole, was nonetheless partly boiled. It is likely that the use of *álphita* presented above belonged among the luxurious procedures.

Athenaeus of Naucratis also added some information about *máza*. He claimed⁶²² that this term derived from the verb *masso*, that is, from an act of stirring and mixing *álphita* with liquid⁶²³. *Nota bene*, he did not provide further information about the liquid used. The writer also confirmed the information known from Galen about the existence of various types of *máza*. Apart from *tripte*⁶²⁴, mentioned in the writings of the physician from Pergamum, Athenaeus of Naucratis (following Trypho) introduced the term *phýste*⁶²⁵ to denote very carefully mixed *máza*. Moreover, citing his source, he distinguished several types of *máza*: with cress, that is *kardamále*; *bérex*⁶²⁶; one mixed into spherical biscuits, called *tolýpe*⁶²⁷; Achillean *máza* (made from a kind of wheat

⁶²⁰ Athenaeus of Naucratis, IX, 381 c (26, 23).

⁶²¹ Athenaeus of Naucratis, IX, 381 b–c (26, 13–29).

⁶²² Athenaeus of Naucratis, XIV 663 b (83, 16–22).

⁶²³ Athenaeus of Naucratis, XIV 663 b (83, 20).

⁶²⁴ Galen, *De alimentorum facultatibus*, 510, 3, vol. VI.

⁶²⁵ Athenaeus of Naucratis, III 114 f (82, 3–4).

⁶²⁶ Athenaeus of Naucratis, III 114 f (82, 4).

⁶²⁷ Athenaeus of Naucratis, III 114 f (82, 4–5).

known as Achilles)⁶²⁸; lettuce *máza* (*thridakíne*); *máza* with wine⁶²⁹; honey-based one; and lily *máza*⁶³⁰. In addition to this, from the author of *Deipnosophistae* we can learn that a famous expert in dietetics, Mnesitheus⁶³¹, was also interested in the question of the value of *máza* in comparison to bread made from einkorn wheat⁶³². He claimed that bread baked from this cereal was easier to digest than *máza* and this doctrine was reflected in all the medical texts analysed in our work. This information can probably be interpreted as evidence that *máza* belonged to a group of cheap products, thus consumed by those for whom bread was a delicacy.

Furthermore, the data included in *Deipnosophistae* are further indicators of the position of barley bread in the diet of antiquity. Less valued than wheat bread for its nutritional qualities⁶³³, it was presented by Athenaeus of Naucratis in contexts which implied that it was a food of the lower classes. Such a suggestion was included, for example, in a fragment where Hipponax, in one of his iambs⁶³⁴, called bread from *kól-lis*⁶³⁵ barley a slaves' food.

Conclusions. Taking all of the above findings into consideration, one can conclude that barley was a common and recommended product in the period between the second and seventh century. Sources suggest that in terms of popularity in the cuisine of urban areas it was second only to wheat. In culinary art it was utilised predominantly as the main ingredient of *álphita* groats, which were produced from roasted barley (*káchrys*) and cooked to the form of a gruel or soup. The famous *ptisáne* soup was made from the discussed *álphita* as well. On the basis of medical

⁶²⁸ Athenaeus of Naucratis, III 114 f (82, 5).

⁶²⁹ Athenaeus of Naucratis, III 114 f (82, 6).

⁶³⁰ Athenaeus of Naucratis, III 114 f (82, 7).

⁶³¹ Athenaeus of Naucratis, III 115 f (83, 30–33).

⁶³² Athenaeus of Naucratis, III 115 f (83, 31).

⁶³³ Athenaeus of Naucratis, III 115 c–d (83, 4–11).

⁶³⁴ Athenaeus of Naucratis, VII 304 b (67, 39–47).

⁶³⁵ Athenaeus of Naucratis, VII 304 b (67, 47).

sources it is possible to reconstruct a canonical recipe for this medicinal dish, and even find the basic proportions of ingredients. Medical treatises suggest therapeutic application of *ptisáne*, but the same sources also indicate that the dish was also commonly consumed by healthy people. The data about barley bread are slightly fewer, thus it can be assumed to have been less valued than the one made from wheat. This would indicate that it was a food of poorer people.

The sources also provide a static picture of culinary art. Although they do note changes in naming of particular dishes (*chylós tes krithés* instead of *ptisáne* or *chylós ptisánes*), they do not indicate any important variations in the ways it was used by specialists in gastronomy in preparing *krithé*.



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5. The role of barley in medical procedures

Barley and its products were basic ingredients for producing a variety of medicaments, while the preserved data indicate that they played an important role in medical procedures between the second and seventh century. The present part of our work is going to be focused on certain typical applications of barley itself and products obtained from *krithé* that we have found in medical literature.

Barley, in this context, denoting grain, was listed only a few times as an ingredient of substances with therapeutic applications which were recorded by Dioscurides. For treating itching exanthema⁶³⁶ the author recommended applying burnt grains of this cereal to affected parts of the body⁶³⁷. In the case of insufficient lactation⁶³⁸, the physician prescribed a compress made from soaked barley grains, as we can assume, mixed with *Andrachna telephioides* L.⁶³⁹ Moreover, in order to remove scars caused by burns and cauterisation⁶⁴⁰, seeds of *krithé*⁶⁴¹ were burnt and mixed with an ointment called *keroté*, with an addition of myrtle fruits⁶⁴². This substance, as it should be understood, was applied to the places which required treatment.

On the other hand, the works of Dioscurides suggest that barley flour *áleuron* was a product from *krithé*, which was most commonly utilised in medical procedures. The physician cited numerous recipes which anticipated only external use of *áleuron krithinon*. Because of the number of formulas, lack of space (or the need for

⁶³⁶ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 119, 1, 1 – 2, 6.

⁶³⁷ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 119, 2, 5.

⁶³⁸ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 130, 1, 1 – 2, 9.

⁶³⁹ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 130, 2, 7.

⁶⁴⁰ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 170, 1, 1 – 2, 8.

⁶⁴¹ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 170, 1, 7.

⁶⁴² Dioscurides, *Euporista vel de simplicibus medicinis*, I, 170, 1, 7 – 2, 1.

analysing them all), we shall only discuss a few specific examples. *Áleuron* flour cooked with figs in *melikraton*, according to Dioscurides, caused diaphoresis of swollen or inflamed areas⁶⁴³. It also contributed to neutralisation of juices which caused various types of callosities through self-digestion, when, as he added, it was prepared in the same way together with coal tar, resin (*rhetine*) and pigeon excrements⁶⁴⁴. Whereas the flour cooked with melilot (*Melilotus officinalis* L.) and poppy heads was supposed to bring relief to those who suffered from chest pain⁶⁴⁵. We also learn that when it was mixed with myrtle, or wine, wild-growing pears, blackberries or pomegranate peels, which were all precisely listed by the physician, and subjected to thermal processing, it cured gastric rheumatism, that is, a surge of undesirable juices to the abdominal cavity⁶⁴⁶. When the flour in question was mixed with quinces or vinegar, it was supposed to cure inflammations leading to gout⁶⁴⁷. Dioscurides also left us data stating that *áleuron* boiled with strong vinegar (in a way a medicine from ground cereal grains was made) and applied when still hot, was believed to cure leprosy, or rather, skin lesions caused by this disease⁶⁴⁸. Apart from this, Dioscurides wrote that veratrum⁶⁴⁹ together with wine and barley flour *áleuron*⁶⁵⁰ was an effective poultice, beneficial for patients suffering from hydropsy (*hydropikoi*)⁶⁵¹. On the other hand, bindweed called *skammonia*⁶⁵² cooked with wine vinegar, ground and then mixed with barley flour *áleuron*⁶⁵³ was valued as an effective poultice treating sciatica

⁶⁴³ Dioscurides, *De materia medica*, II, 86, 2, 2–3.

⁶⁴⁴ Dioscurides, *De materia medica*, II, 86, 2, 3–4.

⁶⁴⁵ Dioscurides, *De materia medica*, II, 86, 2, 4–5.

⁶⁴⁶ Dioscurides, *De materia medica*, II, 86, 2, 9–10.

⁶⁴⁷ Dioscurides, *De materia medica*, II, 86, 2, 10–11.

⁶⁴⁸ Dioscurides, *De materia medica*, II, 86, 3, 1–2.

⁶⁴⁹ Dioscurides, *De materia medica*, IV, 162, 1, 1–4, 11.

⁶⁵⁰ Dioscurides, *De materia medica*, IV, 162, 3, 10.

⁶⁵¹ Dioscurides, *De materia medica*, IV, 162, 34, 1.

⁶⁵² Dioscurides, *De materia medica*, IV, 170, 1, 1–4, 11.

⁶⁵³ Dioscurides, *De materia medica*, IV, 170, 4, 7.

(*ischiadikós*)⁶⁵⁴. Against white rash called *alphós*⁶⁵⁵, the physician prescribed ground root of *arum* (*Arum* L.) with vinegar and *áleuron* flour made from barley⁶⁵⁶. Finally, when lactation had to be facilitated⁶⁵⁷, Dioscurides recommended a poultice made of barley flour, fennel⁶⁵⁸ and soaked barley grains (as indicated in the text), mixed with the plant *Andrachna telephioides* L.⁶⁵⁹

Álphita were a common ingredient of many diets and medicines applied externally, usually in the form of a compress. As far as medicinal dishes obtained from them are concerned, they⁶⁶⁰ were an ingredient of *ptisáne*⁶⁶¹ – the most popular therapeutic dish, which has been discussed in an appropriate fragment of the present work. Another example is the inclusion of *álphita*⁶⁶² in the diet of patients with dysentery⁶⁶³. They were served with an addition of goat fat and cheese to people suffering from this, often deadly, disease, which we can learn from a chapter devoted to the qualities of animal fat and its application in medicine⁶⁶⁴. *Álphita* can also be found in medicines *sensu stricto*. *De materia medica* and *Euporista vel de simplicibus medicinis* contain more than a hundred recipes which include this barley product. They are indeed numerous and their number almost equals substances prepared from *áleuron*. For example, chronic swelling was treated with poultices⁶⁶⁵ consisting⁶⁶⁶, among others, of oregano (*Origanum heracleoticum* L.) boiled with *álphita* groats⁶⁶⁷.

⁶⁵⁴ Dioscurides, *De materia medica*, IV, 170, 4, 6–7.

⁶⁵⁵ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 112, 1, 1–3, 7.

⁶⁵⁶ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 112, 1, 3.

⁶⁵⁷ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 130, 1, 1–2, 9.

⁶⁵⁸ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 130, 2, 6–7.

⁶⁵⁹ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 130, 2, 7.

⁶⁶⁰ Dioscurides, *De materia medica*, II, 86, 1, 2.

⁶⁶¹ Dioscurides, *De materia medica*, II, 86, 1, 2.

⁶⁶² Dioscurides, *De materia medica*, II, 76, 17, 6.

⁶⁶³ Dioscurides, *De materia medica*, II, 76, 17, 5–6.

⁶⁶⁴ Dioscurides, *De materia medica*, II, 76, 17, 1–19, 7.

⁶⁶⁵ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 138, 1, 1–3, 8.

⁶⁶⁶ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 138, 3, 1–4.

⁶⁶⁷ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 138, 3, 2–3.

A poultice from wine sediment mixed with the same product had an equal effect⁶⁶⁸. The next (and final) last example of medicinal application of the groats is using *álphita*⁶⁶⁹ as a poultice after mixing it with cow blood. With this admixture, they were believed to be an effective diaphoretic, leading to a reduction of local oedema and callosities⁶⁷⁰. We ought to add that this recipe was included in the chapter dealing with therapeutic applications of the blood of various animals⁶⁷¹.

When considering medical procedures connected with the use of barley products and dishes we must also discuss the question of *ptisáne*. Its medical applications were so numerous that listing all of them would occupy too much space. Again, we are going to refer to several examples. Such a dish, according to Dioscurides, had a soothing effect on all kinds of irritations and ulcerations of speech organs⁶⁷². Thin barley stock, or *álphita* stock called *chylós*⁶⁷³ was also added in an equal proportion to *élaion omphákinon*⁶⁷⁴ oil. It was given as a drink and considered to have a purifying effect⁶⁷⁵. In addition to this, *ptisáne*⁶⁷⁶ was used in a variety of enemas. For instance, *ptisáne* mixed with liquid fraction of asphalt⁶⁷⁷ was used in cases of dysentery⁶⁷⁸. Fresh milk⁶⁷⁹, either on its own or mixed with *ptisáne*⁶⁸⁰, used as an enema, was considered to soothe bowel irritations, and was used as an intrauterine rinse⁶⁸¹. It is also worth mentioning that *chylós ptisánes*⁶⁸², which was based on this soup cooked

⁶⁶⁸ Dioscurides, *Euporista vel de simplicibus medicinis*, I, 138, 3, 3.

⁶⁶⁹ Dioscurides, *De materia medica*, II, 79, 2, 5.

⁶⁷⁰ Dioscurides, *De materia medica*, II, 79, 2, 4–5.

⁶⁷¹ Dioscurides, *De materia medica*, II, 79, 1, 1–2, 11.

⁶⁷² Dioscurides, *De materia medica*, II, 86, 1, 3–4.

⁶⁷³ Dioscurides, *De materia medica*, I, 30, 2, 4.

⁶⁷⁴ Dioscurides, *De materia medica*, I, 30, 1, 1–2, 12.

⁶⁷⁵ Dioscurides, *De materia medica*, I, 30, 2, 4–5.

⁶⁷⁶ Dioscurides, *De materia medica*, I, 73, 3, 6.

⁶⁷⁷ Dioscurides, *De materia medica*, I, 73, 2, 6–3, 11.

⁶⁷⁸ Dioscurides, *De materia medica*, I, 73, 3, 5–6.

⁶⁷⁹ Dioscurides, *De materia medica*, II, 70, 5, 1–12.

⁶⁸⁰ Dioscurides, *De materia medica*, II, 70, 5, 10.

⁶⁸¹ Dioscurides, *De materia medica*, II, 70, 5, 9–12.

⁶⁸² Dioscurides, *Euporista vel de simplicibus medicinis*, II, 28, 2, 1–2.

with an addition of the so-called *akrokólia* (ears, snouts and so on) or legs (probably swine)⁶⁸³ was prescribed as the main ingredient of enemas for the so-called *kardiakoí*, those suffering from a heart condition⁶⁸⁴.

Barley *máza* is practically never mentioned as an ingredient of medicines. Dioscurides, however, mentioned it as food⁶⁸⁵ with which a *phármakon*, that is, a species of mandrake, was mixed. It was prescribed by physicians before surgeries, when a patient needed to be anaesthetised for three or four hours⁶⁸⁶. From what the physician wrote, it can be concluded that beer called *zýthos* was not used in medicine. Rather, one should have avoided consuming it, since its aficionados could develop elephantiasis⁶⁸⁷. In fact, alcoholic beverage called *koúrmi* was also considered more harmful than beneficial for health.

At the beginning of our work on *krithaí* it was stated that, according to Galen's doctrines, barley may be regarded as an important element of maintaining and restoration of health available to physicians of the second century. Obviously, as the author indicated in the introductory remarks to *De alimentorum facultatibus*⁶⁸⁸, it was one of the duties of a specialist to decide for whom it would be an effective medicine, which effectively meant that the physician treating a particular patient was supposed to identify the patient's *krásis* and his or her acquired features. At the same time, Galen maintained that, as long as the temperament was specified properly, barley⁶⁸⁹ was a suitable food both in health and in sickness⁶⁹⁰. The therapeutic nature of *krithaí* was emphasised by placing its description in *De simplicium medicamentorum temperamentis ac facultatibus*⁶⁹¹. Despite this, it should be pointed out that

⁶⁸³ Dioscurides, *Euporista vel de simplicibus medicinis*, II, 28, 2, 2.

⁶⁸⁴ Dioscurides, *Euporista vel de simplicibus medicinis*, II, 28, 1, 1 – 2, 4.

⁶⁸⁵ Dioscurides, *De materia medica*, IV, 75, 7, 6.

⁶⁸⁶ Dioscurides, *De materia medica*, IV, 75, 7, 1–11.

⁶⁸⁷ Dioscurides, *De materia medica*, II, 87, 1, 3–4.

⁶⁸⁸ Galen, *De alimentorum facultatibus*, 474, 4–9, vol. VI.

⁶⁸⁹ Galen, *De alimentorum facultatibus*, 474, 4, vol. VI.

⁶⁹⁰ Galen, *De alimentorum facultatibus*, 474, 7–8, vol. VI.

⁶⁹¹ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 44, 10 – 45, 4, vol. XII.

barley itself, specifically as a medicine, did not appear often in specific medicaments recommended by Galen. There are, however, exceptions to this. For example, in excerpts from Soranus on the subject of treating *alopekias*⁶⁹², the physician of Pergamum recommended burnt barley and mouse excrements mixed with strong wine vinegar as a medicine, applied externally on parts of the body affected by the disease⁶⁹³. Furthermore, on the basis of Crito's findings, Galen cited a recipe for a substance which cured dental problems⁶⁹⁴. In this formula we can read that honey and wine were poured over barley⁶⁹⁵ and salt and then placed inside a piece of papyrus. The entire mixture was burnt and the ash created in this way was ground and finally massaged into the body parts affected by the disease⁶⁹⁶.

Áleuron kríthinon appears to be an effective medicine utilised usually in the form of a poultice. Generally, its medicinal qualities, as Galen claimed, were derived from those of barley; going into details, it is worth referring to the statements included in *De simplicium medicamentorum temperamentis ac facultatibus*, where the author classified poultices from barley *áleuron*⁶⁹⁷ as effective means of purifying, with diaphoretic and drying properties⁶⁹⁸. These applications can be illustrated with some of the numerous formulas, preserved in Galen's entire legacy. He mentioned a recipe for a medicine curing *alopekias*, which contained barley flour⁶⁹⁹, borrowing the formula from

⁶⁹² Galen, *De compositione medicamentorum secundum locos*, 414, 17 – 421, 2, vol. XII.

⁶⁹³ Galen, *De compositione medicamentorum secundum locos*, 416, 10–11, vol. XII.

⁶⁹⁴ Galen, *De compositione medicamentorum secundum locos*, 880, 17 – 881, 13, vol. XII.

⁶⁹⁵ Galen, *De compositione medicamentorum secundum locos*, 881, 1, vol. XII.

⁶⁹⁶ Galen, *De compositione medicamentorum secundum locos*, 881, 1–3, vol. XII.

⁶⁹⁷ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 729, 17–18, vol. XI.

⁶⁹⁸ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 729, 14 – 730, 2, vol. XI.

⁶⁹⁹ Galen, *De compositione medicamentorum secundum locos*, 403, 6, vol. XII.

the deliberations of Heraclides on the subject of chronic cases of this disease⁷⁰⁰. On the other hand, following the advice of Soranus, Galen recommended using *krithé*⁷⁰¹ flour mixed with mallow⁷⁰², as a poultice to various types of skin problems, such as pimples, minor injuries or exanthema appearing on the head⁷⁰³. Finally, to conclude the above deliberations, it needs to be added that Galen, after Archigenes⁷⁰⁴, recommended treating earaches with a substance consisting of barley flour⁷⁰⁵ and a ground poppy head boiled in wine⁷⁰⁶.

Álphita were another barley product used on a large scale in Galen's medicine. They were used externally, usually as poultices. Due to the large amount of data, the present discussion is going to be limited to exemplification, while the rest of the material shall be analysed, we hope, in another work. From the work of the Pergamene it appears that *álphita* were used in treating cuts and blunt trauma. While ordinary tendon injuries were treated with *áleuron kyáminon* with vinegar⁷⁰⁷, inflamed wounds were treated with a medicine containing *álphita*, also cooked from *ókos*⁷⁰⁸. On the other hand, in the doctrines left by Apollonius⁷⁰⁹, Galen found a simple recipe for a medicament which removed

⁷⁰⁰ Galen, *De compositione medicamentorum secundum locos*, 402, 10 – 403, 14, vol. XII.

⁷⁰¹ Galen, *De compositione medicamentorum secundum locos*, 496, 13, vol. XII.

⁷⁰² Galen, *De compositione medicamentorum secundum locos*, 496, 13–14, vol. XII.

⁷⁰³ Galen, *De compositione medicamentorum secundum locos*, 496, 6 – 497, 5, vol. XII. He probably also meant skin ailments appearing on the face.

⁷⁰⁴ Galen, *De compositione medicamentorum secundum locos*, 620, 5 – 624, 14, vol. XII.

⁷⁰⁵ Galen, *De compositione medicamentorum secundum locos*, 622, 1, vol. XII.

⁷⁰⁶ Galen, *De compositione medicamentorum secundum locos*, 621, 16 – 622, 1, vol. XII.

⁷⁰⁷ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 49, 18–50, 1, vol. XII.

⁷⁰⁸ Galen, *De simplicium medicamentorum temperamentis ac facultatibus*, 50, 1–2, vol. XII.

⁷⁰⁹ Galen, *De compositione medicamentorum secundum locos*, 502, 4 – 503, 9, vol. XII.

headaches caused by a sunstroke. This formula required crushing leaves of common purslane (*Portulaca oleracea* L.) or andrachne (*Andrachna telephoides* L.) and mixing them with ground *álphita*⁷¹⁰; the poultice was then applied to one's head⁷¹¹.

Since we are now beginning a discussion about *ptisáne*, it is worth stating that this dish was present in such a large number of diets and other medical procedures that listing them all would take a separate monograph. Instead, it is better to state that this barley soup was a universal medicament and had various internal and external applications, and then illustrate this claim with several examples. As far as the dietetic uses are concerned, some clear information on this subject is provided in *De ptisana*. From the text it appears that there were two cases in which this dish was particularly recommended. Firstly, it was prescribed when a patient suffered from chest complaints, which led to spitting out lung discharges. The soup contributed to solving problems caused by thick and unhealthy humours⁷¹² by moisturising the organism, diluting thick juices existing there and nourishing the body (i.e. strengthening it). Secondly, Galen maintained that *ptisáne* was an appropriate food in cases of sudden fevers⁷¹³. From medical literature it can be concluded that such conditions occurred frequently, and that the patients were considerably debilitated, often unable to consume solid foods. We have, in fact, already discussed this matter, especially when analysing medicinal applications of wheat bread carried out by Oribasius, on the basis of Dieuches' doctrines⁷¹⁴. Galen provided us with invaluable directions concerning rules and methods of using this food. He recommended considering the time when the soup could be served to the patient, since it should not have been consumed by people in a critical state, nor by those who were supposed to have their blood let. Moreover, it was

⁷¹⁰ Galen, *De compositione medicamentorum secundum locos*, 502, 12, vol. XII.

⁷¹¹ Galen, *De compositione medicamentorum secundum locos*, 502, 11–12, vol. XII.

⁷¹² Galen, *De ptisana*, 829, 5–16, vol. VI.

⁷¹³ Galen, *De ptisana*, 825, 3–7, vol. VI.

⁷¹⁴ Oribasius, *Collectiones medicae*, IV, 7, 1, 1–38, 4.

not administered in cases of patients whose bodies were going to undertake a strong cleansing treatment or be given an enema. It was also forbidden to serve it to people whose digestive systems were filled with large amounts of unnecessary, undigested matter and those suffering from excruciating pains. Furthermore, it ought to have been excluded from the diet of patients for whom physicians prescribed steam baths. Finally, it was not applied in the cases of diseases which led to drying of the organism⁷¹⁵. *Ptisáne* could be administered when the whole body of the patient had a roughly uniform temperature, that is, when none of the body parts were heated up more than the others, and when the fever was past its peak⁷¹⁶. As for the amount of soup, there was no one recommendation for everyone. It was undesirable, though, to overload the organism with too much of *ptisáne*. If a patient was accustomed to eating once in a day, it should have been served only one time. When, on the other hand, the patient ate twice a day, the number of portions could be doubled as well⁷¹⁷. It was not necessary to increase the doses when a patient suffered from illnesses causing drying, such as pleurisy, pneumonia, liver, digestive system disorders manifested in the cease of excretion and so forth⁷¹⁸. Then, before serving *ptisáne*, a proper amount of liquid had to be given to the patient⁷¹⁹.

Applications of *ptisáne* other than dietetic were also mentioned by Galen, but there are many more of those in the works of his successors. In order to illustrate it, two examples will suffice. Thin *ptisáne* (*chylós ptisánes*) was used as an ingredient of enemas. For instance, we can read about such a specific⁷²⁰ (which obviously included *chylós ptisánes*⁷²¹) in

⁷¹⁵ Galen, *De ptisana*, 826, 15 – 827, 6, vol. VI.

⁷¹⁶ Galen, *De ptisana*, 827, 9–14, vol. VI.

⁷¹⁷ Galen, *De ptisana*, 827, 14 – 828, 4, vol. VI.

⁷¹⁸ Galen, *De ptisana*, 828, 7–13, vol. VI.

⁷¹⁹ Galen, *De ptisana*, 828, 4–7, vol. VI.

⁷²⁰ Galen, *De compositione medicamentorum secundum locos*, 295, 15 – 296, 6, vol. XII.

⁷²¹ Galen, *De compositione medicamentorum secundum locos*, 296,4–6, vol. XIII (this term was used here twice).

excerpts about preparing enemas⁷²² from the works of Flavius quoted by Galen. Finally, barley decoction, or to be more precise, a gruel made from it⁷²³, was an ingredient of one of the *psilothra* (remedies removing superfluous hair)⁷²⁴, which the physician of Pergamum cited from Crito⁷²⁵.

Thanks to its qualities, barley was also an important *phármakon* in the therapeutics of Oribasius. For example, medicinal dishes made from barley were described in book four of *Collectiones medicae*, where Oribasius referred to the advice made by Dieuches⁷²⁶. The latter, on the other hand, recommended that sick people, unable to consume solid foods, should eat, among others, liquid dishes based on *krithai*⁷²⁷. He maintained that such food was suitable for those whose internal organs were blocked and whose excretion did not work properly, since such patients needed light dishes⁷²⁸. Moreover, he claimed that patients who suffered from fever and who were not yet past their critical stage should consume barley that has not been husked, but which was soaked and cooked in water instead. The sick consumed decoction obtained from it; the dish was considered to have purgative properties, to cause urination to recommence and to be suitably nourishing⁷²⁹. It must also be emphasised that the doctrines of Dieuches on the subject of preparing dishes are repeated in *Synopsis ad Eustathium filium*⁷³⁰. Thus, there are also several remarks about *krithai*⁷³¹ which repeat the fundamental findings of *Collectiones*

⁷²² Galen, *De compositione medicamentorum secundum locos*, 295, 15 – 296, 10, vol. XIII.

⁷²³ Galen, *De compositione medicamentorum secundum locos*, 454, 5, vol. XII.

⁷²⁴ Galen, *De compositione medicamentorum secundum locos*, 454, 2 – 454, 7, vol. XII.

⁷²⁵ Galen, *De compositione medicamentorum secundum locos*, 453, 13 – 455, 8, vol. XII.

⁷²⁶ Oribasius, *Collectiones medicae*, IV, 7, 1, 1 – 38, 4.

⁷²⁷ Oribasius, *Collectiones medicae*, IV, 7, 1, 1 – 2, 1.

⁷²⁸ Oribasius, *Collectiones medicae*, IV, 7, 2, 1 – 3, 1.

⁷²⁹ Oribasius, *Collectiones medicae*, IV, 7, 5, 1 – 7, 1.

⁷³⁰ Oribasius, *Synopsis ad Eustathium filium*, IV, 35, 1, 1 – 19, 3.

⁷³¹ Oribasius, *Synopsis ad Eustathium filium*, IV, 35, 9, 2; IV, 35, 9, 5; IV, 35, 11, 2.

*medicae*⁷³². These multiple references to the same issues are probably an indicator of their importance for the fourth-century medicine represented by Oribasius. Moving on from Dieuches' views, we should remark that barley was also mentioned as an ingredient of therapeutic diets by other predecessors of Oribasius. We know, for instance, that the physician regarded this cereal⁷³³ as a food facilitating the production of milk in women's breasts⁷³⁴, which was cited from Zopyrus. The same effect, as he wrote, was ascribed to decoction (*chylisma*) from this crop⁷³⁵.

Krithai were also included in the composition of medicaments *sensu stricto*. Barley infusion⁷³⁶ (*apóbregma*) was considered by Zopyrus to have a cleansing effect on liver, while harmful substances were supposed to be expelled together with urine⁷³⁷. We can learn this thanks to fragment of this physician's findings preserved in the fourteenth book of *Collectiones medicae*⁷³⁸, while it should be pointed out that barley⁷³⁹ was also listed as a product which led to the purification of liver in *Synopsis ad Eustathium filium*⁷⁴⁰. In the oeuvre of Oribasius we can find a recommendation for women during childbirth⁷⁴¹ who suffered from excessive lactation to apply a poultice prepared from burnt barley⁷⁴² mixed with wine vinegar⁷⁴³ to painful areas. Moreover, to treat wounds after a bite of a common shrew (*mygalai*)⁷⁴⁴, Oribasius advised, among other measures, the use of various substances, and washing the injuries

⁷³² Oribasius, *Synopsis ad Eustathium filium*, IV, 35, 6, 1 – 12, 1.

⁷³³ Oribasius, *Collectiones medicae*, XIV, 64, 1, 4.

⁷³⁴ Oribasius, *Collectiones medicae*, XIV, 64, 1, 1 – 3, 3.

⁷³⁵ Oribasius, *Collectiones medicae*, XIV, 64, 3, 2.

⁷³⁶ Oribasius, *Collectiones medicae*, XIV, 50, 3, 1.

⁷³⁷ Oribasius, *Collectiones medicae*, XIV, 50, 2, 1 – 3, 1.

⁷³⁸ Oribasius, *Collectiones medicae*, XIV, 50, 1, 1 – 3, 4.

⁷³⁹ Oribasius, *Synopsis ad Eustathium filium*, II, 37, 1, 3.

⁷⁴⁰ Oribasius, *Synopsis ad Eustathium filium*, II, 37, 1, 1–4.

⁷⁴¹ Oribasius, *Eclogae medicamentorum*, 141, 1, 1 – 2, 6.

⁷⁴² Oribasius, *Eclogae medicamentorum*, 141, 1, 5.

⁷⁴³ Oribasius, *Eclogae medicamentorum*, 141, 1, 5–6.

⁷⁴⁴ Oribasius, *Libri ad Eunapium*, III, 70, 1, 1 – 2, 3.

with *oxálme* and applying a poultice made from burnt barley⁷⁴⁵. Furthermore, from the works of the physician of Emperor Julian we can learn that the discussed cereal was utilised as an excipient in the production of certain medicaments. Thus, barley⁷⁴⁶ was used as one of the ingredients in a complicated process of bleaching lead monoxide (*lithárgyros*), about which Oribasius wrote in the thirteenth book of *Collectiones medicae*. The monoxide itself had many medicinal properties, for example styptic and cooling effects⁷⁴⁷, thus it was used in treating eye ulcerations and unhealthy complexion that was caused by a chronic illness⁷⁴⁸.

Áleuron kríthinon was commonly used in medical procedures of the fourth century which were promoted by Oribasius. Since barley flour⁷⁴⁹ was classed as a product with diaphoretic properties⁷⁵⁰, we can find it in many substances that were applied externally. The number of recipes is considerable, so the present work will include only sample formulas. In the chapter devoted to hot poultices, cataplasms and cupping-glasses, which was based on the reflections of Galen⁷⁵¹, *áleuron kríthinon* or *kyáminon*⁷⁵² were mentioned as an additive to linseed or camomile. It was supposed to be an effective diaphoretic substance against calluses caused by excess juices in the given part of the organism, occurring with hot local *dyskrasia*⁷⁵³. In *Synopsis ad Eustathium filium* we can find a recipe for a remedy curing tumorous growths on skin called *phagédainai*⁷⁵⁴. Its main ingredient was woad (*Isatis tinctoria* L.)⁷⁵⁵, but in the case of a too powerful effect, *áleuron kríthinon*⁷⁵⁶

⁷⁴⁵ Oribasius, *Libri ad Eunapium*, III, 70, 2, 1–2.

⁷⁴⁶ Oribasius, *Collectiones medicae*, XIII, 1, 1, 16.

⁷⁴⁷ Oribasius, *Collectiones medicae*, XIII, 1, 1, 6–8.

⁷⁴⁸ Oribasius, *Collectiones medicae*, XIII, 1, 1, 30–31.

⁷⁴⁹ Oribasius, *Collectiones medicae*, XIV, 62, 1, 9.

⁷⁵⁰ Oribasius, *Collectiones medicae*, XIV, 62, 1, 1–3, 2.

⁷⁵¹ Oribasius, *Collectiones medicae*, IX, 21, 1, 1–29, 4.

⁷⁵² Oribasius, *Collectiones medicae*, IX, 21, 19, 4.

⁷⁵³ Oribasius, *Collectiones medicae*, IX, 21, 18, 5–19, 4.

⁷⁵⁴ Oribasius, *Synopsis ad Eustathium filium*, III, 35, 1, 1–35, 2.

⁷⁵⁵ Oribasius, *Synopsis ad Eustathium filium*, III, 35, 18, 2.

⁷⁵⁶ Oribasius, *Synopsis ad Eustathium filium*, III, 35, 20, 1.

was also added to the cataplasm. Moreover, in *Synopsis ad Eustathium filium* Oribasius listed barley flour⁷⁵⁷ as an appropriate means of treating ulcerations which were called concave⁷⁵⁸, which, as he wrote, were by nature contaminated and thus required a substance that was gently drying (such as, among others, *áleuron krithinon*⁷⁵⁹). Poultices made with *áleuron* flour and based on the fruits of the fig tree⁷⁶⁰ were also effective. We know that the method of preparing this substance was borrowed by Oribasius from Lycus and the description was a part of a longer passage analysing similar remedies obtained from the above-mentioned fruits⁷⁶¹. The author wrote that figs were boiled in water, with an addition of barley⁷⁶² or wheat *áleuron*, or bread. The substance was boiled until it gained the desired thickness. To such a cataplasm butter could also be added, and the ready poultice was helpful in treating persistent nodular calluses, mumps, furuncles, and in general, when it was necessary to remove pus from a certain part of the body. The same recipe for a fig cataplasm with an addition of *áleuron krithinon* can be found in the first book of *Synopsis ad Eustathium filium*, among a variety of other formulas⁷⁶³. Moreover, barley flour⁷⁶⁴ was mentioned once again in the composition of a fig medicament, here called *epíplasma*⁷⁶⁵, whose different variants⁷⁶⁶ can be found in the third book of *Synopsis as Eustathium filium*. As we learn again, it had several applications. It was suitable, for instance, for treating tendon hardenings and arthritic distortion of joints, but that was not all⁷⁶⁷. The variant with *áleuron krithinon* was supposed to cure nodu-

⁷⁵⁷ Oribasius, *Synopsis ad Eustathium filium*, VII, 2, 1, 2.

⁷⁵⁸ Oribasius, *Synopsis ad Eustathium filium*, VII, 2, 1, 1 – 6, 2.

⁷⁵⁹ Oribasius, *Synopsis ad Eustathium filium*, VII, 2, 1, 1 – 2, 1.

⁷⁶⁰ Oribasius, *Collectiones medicae*, IX, 34, 5, 1 – 7, 3.

⁷⁶¹ Oribasius, *Collectiones medicae*, IX, 34, 1, 1 – 7, 3.

⁷⁶² Oribasius, *Collectiones medicae*, IX, 34, 5, 2–3.

⁷⁶³ Oribasius, *Synopsis ad Eustathium filium*, I, 26, 6, 1 – 8, 3.

⁷⁶⁴ Oribasius, *Synopsis ad Eustathium filium*, III, 80, 5, 3–4.

⁷⁶⁵ Oribasius, *Synopsis ad Eustathium filium*, III, 80, 5, 1 – 7, 4.

⁷⁶⁶ Oribasius, *Synopsis ad Eustathium filium*, III, 80, 1, 1 – 7, 4.

⁷⁶⁷ Oribasius, *Synopsis ad Eustathium filium*, III, 80, 2, 1 – 4, 1.

lar calluses, mumps (by removing pus gathered there) and also furuncles and other health problems⁷⁶⁸. Finishing the present deliberations, it is worth mentioning that *áleuron* from *krithai* was utilised in the cases of liver disorders⁷⁶⁹, which were regarded as inflammations (*phlegmoné*), and which were manifested by severe pain⁷⁷⁰. For such cases Oribasius recommended, among others, poultices made from barley flour⁷⁷¹, linseed *áleuron*, or wheat flour, either prepared separately or mixed together.

Thanks to the remarks of Oribasius we can form our opinion about the uses of *álphita* in various methods of treatment that were still recommended in the fourth century AD. The amount of the material is not as considerable as in the case of *áleuron*, but it is sufficient to create an independent work on the basis of its analysis. In the present deliberations we are going to focus merely on examples, in order to provide at least a general image of the variety of uses of the product in question. Passages chosen by the physician of Emperor Julian from the works of Dioscorides⁷⁷² provide us with the information that barley groats were used in numerous boiled dishes, that is, in soups which were served to people suffering from dysentery⁷⁷³. Recipes for these were provided during the analysis of culinary applications of *álphita*. As a side note, regarding the suggestions of his predecessor as significant, Oribasius went back to this subject in the recommendations for his son Eustathius, in the chapter entitled *Peri hepseséos rophemáton*⁷⁷⁴, where *álphita*⁷⁷⁵ were also mentioned; the text there repeated the doctrines already known from *Collectiones medicae*⁷⁷⁶.

⁷⁶⁸ Oribasius, *Synopsis ad Eustathium filium*, III, 80, 6, 1 – 7, 4.

⁷⁶⁹ Oribasius, *Eclogae medicamentorum*, 48, 1, 1 – 23, 3.

⁷⁷⁰ Oribasius, *Eclogae medicamentorum*, 48, 5, 1–2.

⁷⁷¹ Oribasius, *Eclogae medicamentorum*, 48, 5, 2.

⁷⁷² Oribasius, *Collectiones medicae*, IV, 6, 1, 1 – 4, 5.

⁷⁷³ Oribasius, *Collectiones medicae*, IV, 6, 1, 5 – 2, 1.

⁷⁷⁴ Oribasius, *Synopsis ad Eustathium filium*, IV, 35, 1, 1 – 19, 3.

⁷⁷⁵ Oribasius, *Synopsis ad Eustathium filium*, IV, 35, 7, 1.

⁷⁷⁶ Oribasius, *Synopsis ad Eustathium filium*, IV, 35, 6, 1 – 12, 1.

Furthermore, Oribasius pondered the benefits of using *álphita* in medicines *sensu stricto*, and he did it by analysing, among others, Lycus' works on the subject of various types of cataplasms⁷⁷⁷. He noted there that *álphita* ground to the form of fine-grained flour called *pále*⁷⁷⁸, mixed with young, still rolled-up rhizomes of vine, fern or apple tree to the form suitable for a poultice, treated nausea and fever. On the other hand, groats of this type⁷⁷⁹ cooked with honey, with an addition of salt and natron created an appropriate medicine for patients suffering from hydropsy. The author also mentioned that this substance, but without salt and natron, was helpful in cases of testicular inflammation. Obviously, both of the aforementioned variants of the medicament were used externally as a type of poultice. Finally, it must be stated that *álphita* moistened with wine were utilised⁷⁸⁰ as fragrant substances (*ospphantón*)⁷⁸¹, which were supposed to be helpful in faints caused by exhaustion⁷⁸².

Contrary to *áleuron kríthinon* or *álphita* and of course wheat bread, barley bread was not a frequent subject of interest of Oribasius, neither as an ingredient of medicaments, nor as an element of diets recommended for particular health problems. A similar phenomenon can be observed in the works of his predecessors. As for the use of *ártos kríthinon* in dietary patterns of medical importance, it ought to be stated that all barley products were used in a reducing diet, which was discussed while characterising *krithai*. Moreover, citing the findings of Philumenus regarding the treatment of elephantiasis⁷⁸³ in *Collectiones medicae*, Oribasius recommended bread from the cereal in question⁷⁸⁴ as part of evening meals for people suffering from this disease. This knowledge

⁷⁷⁷ Oribasius, *Collectiones medicae*, IX, 30, 1, 1 – 3, 3.

⁷⁷⁸ Oribasius, *Collectiones medicae*, IX, 30, 1, 1. As a result, the product used in the cataplasm was actually flour from roasted barley, not groats.

⁷⁷⁹ Oribasius, *Collectiones medicae*, IX, 30, 2, 1.

⁷⁸⁰ Oribasius, *Collectiones medicae*, X, 20, 4, 2–3.

⁷⁸¹ Oribasius, *Collectiones medicae*, X, 20, 1, 1 – 4, 5.

⁷⁸² Oribasius, *Collectiones medicae*, X, 20, 4, 1–4.

⁷⁸³ Oribasius, *Collectiones medicae*, XIV, 29, 1, 1 – 79, 4.

⁷⁸⁴ Oribasius, *Collectiones medicae*, XIV, 29, 22, 5; XIV, 29, 50, 1.

must have been relatively widespread and accepted in the medicine of the fourth century, since *ártos kríthinos*⁷⁸⁵ was also considered to be a proper food in treating elephantiasis⁷⁸⁶ when Oribasius was analysing this issue in *Eclogae medicamentorum*. The meaning of this element of diet was also emphasised by the fact that the physician repeated the recommendation concerning bread⁷⁸⁷ in the same chapter.

Máza was not a type of food that was often recommended by Oribasius in procedures which can be called therapeutic. Nevertheless, such uses, although only in specific instances, were also confirmed in the works of this physician. Moving on to details, it should be noted that, when Oribasius quoted Philumenus' doctrines concerning the treatment of elephantiasis⁷⁸⁸, he recommended *máza*⁷⁸⁹ as one of the elements of a diet suitable for the patients. Moreover, this dish⁷⁹⁰ was also prescribed when the author was considering the treatment for this disease in *Eclogae medicamentorum*⁷⁹¹.

The legacy of Oribasius abounds in examples of the use of *ptisáne* and *chylós ptisánes* in the medicine of the fourth century. The material is so abundant that in the present study it is possible to describe only certain examples of the use of *óspria* in medical procedures. To begin, we shall present the basic applications. A typical use of barley soup was including *ptisáne* in the diet of patients with fever. It was very clearly justified by the properties ascribed to this dish by dietetics and its therapeutic uses: it was deemed to have cooling, thirst-quenching and cleansing qualities. It is therefore not surprising that Oribasius recommended *chylós ptisánes*⁷⁹² in one-day fevers⁷⁹³. It was administered when the patient

⁷⁸⁵ Oribasius, *Eclogae medicamentorum*, 76, 8, 3.

⁷⁸⁶ Oribasius, *Eclogae medicamentorum*, 76, 1, 1 – 28, 6.

⁷⁸⁷ Oribasius, *Eclogae medicamentorum*, 76, 15, 3.

⁷⁸⁸ Oribasius, *Collectiones medicae*, XIV, 29, 1, 1 – 79, 4.

⁷⁸⁹ Oribasius, *Collectiones medicae*, XIV, 29, 50, 1–2.

⁷⁹⁰ Oribasius, *Eclogae medicamentorum*, 76, 15, 3–4.

⁷⁹¹ Oribasius, *Eclogae medicamentorum*, 76, 1, 1 – 28, 6.

⁷⁹² Oribasius, *Libri ad Eunapium*, III, 2, 11, 3.

⁷⁹³ Oribasius, *Libri ad Eunapium*, III, 2, 1, 1 – 32, 2.

left a bath house. On the other hand, when the patient suffered from a three-day fever⁷⁹⁴, at the beginning of the treatment Oribasius prescribed *chylós ptisánes*⁷⁹⁵, apart from soup from *chóndros*, and then rock fish and fowl. *Chylós ptisánes*⁷⁹⁶ was also recommended for patients suffering from tonsillitis (*synánche*)⁷⁹⁷. Modifications of the recipe for this soup usually caused a change of its properties and thus also its applications in the treatment of health problems other than fever. For example, when Oribasius, in a long fragment of *Collectiones medicae*, quoted Rufus of Ephesus on the subject of various cleansing procedures⁷⁹⁸, he also mentioned advice given by his predecessor about adding a plant called *hellebores*, that is veratrum (*Veratrum nigrum* L.), to *ptisáne*⁷⁹⁹ and in this way intensifying the effect of the soup, which was, by nature, cathartic⁸⁰⁰. In the same chapter, the author also wrote about adding grated roots of common polypody (*Polypodium vulgare* L.) to barley soup⁸⁰¹ and such a dish was also considered to be gently cleansing⁸⁰².

Ptisáne and *chylós ptisánes* were used in a variety of different rinses and enemas of a wide range of effects. Rufus of Ephesus claimed that thin stock of *ptisáne*⁸⁰³ was one of the main substances used as an ingredient of the so-called *klystéres*. This information was included by Oribasius in book eight of *Collectiones medicae*⁸⁰⁴, and the passage contains some specific examples of such medicines. Apparently, these doctrines were highly valued, since the reflections of Rufus on the subject of enemas and rinses⁸⁰⁵, together with the mention of using in them

⁷⁹⁴ Oribasius, *Libri ad Eunapium*, III, 3, 1, 1 – 8, 2.

⁷⁹⁵ Oribasius, *Libri ad Eunapium*, III, 3, 7, 4.

⁷⁹⁶ Oribasius, *Collectiones medicae*, XXXV, 1, 10.

⁷⁹⁷ Oribasius, *Eclogae medicamentorum*, 35, 1, 1 – 4, 6.

⁷⁹⁸ Oribasius, *Collectiones medicae*, VII, 26, 1, 1 – 201, 3.

⁷⁹⁹ Oribasius, *Collectiones medicae*, VII, 26, 46, 2.

⁸⁰⁰ Oribasius, *Collectiones medicae*, VII, 26, 45, 1 – 46, 3.

⁸⁰¹ Oribasius, *Collectiones medicae*, VII, 26, 71, 1.

⁸⁰² Oribasius, *Collectiones medicae*, VII, 26, 69, 1 – 71, 3.

⁸⁰³ Oribasius, *Collectiones medicae*, VIII, 24, 1, 3.

⁸⁰⁴ Oribasius, *Collectiones medicae*, VIII, 24, 1, 1 – 39, 2.

⁸⁰⁵ Oribasius, *Synopsis ad Eustathium filium*, I, 19, 1, 1 – 18, 5.

ptisáne (with pork fat, in order to cure internal ulcerations) and *chylós ptisánes*⁸⁰⁶ (in the same ailments and in large intestine disorders) were also included in *Synopsis ad Eustathium filium*⁸⁰⁷. In the treatment of *kardiakoi*⁸⁰⁸ Oribasius also foreseen a possible use of an enema referred to as *klystér*, which consisted of linseed stock, *ptisáne*⁸⁰⁹, a pinch of salt and a drop of honey, water or *hydrómeli*, or *hydrélaion*. *Eclogae medicamentorum* recorded recipes for enemas which were helpful in curing *dysenterikoi* and those who suffered from a painful and long-lasting inability to defecate⁸¹⁰. Then, *chylós ptisánes*⁸¹¹ with pork and mutton fat were applied⁸¹². The same *chylós ptisánes*⁸¹³ can be found in enemas of nourishing properties. They were served to people who remained without food for a long time, which can be seen from a fragment of Lycus' findings on the subject of enemas and rinses, which were included by Oribasius in the eighth book of *Collectiones medicae*⁸¹⁴. Barley soup was also an ingredient of substances intended for internal use. For instance, *Synopsis ad Eustathium filium* includes a recipe for a medication made from *ptisáne*. Oribasius noted the whole formula together with the proportions of all the ingredients, which were, *nota bene*, numerous (fenu-greek, linseed, melilotus and so forth)⁸¹⁵. Finally, *ptisáne*⁸¹⁶ was also one of the components of substances applied externally, such as a medicine called *psilothron*, which was a cosmetic used to remove undesirable hair. Rice, broad bean flour, quicklime, myrrh and such⁸¹⁷ were boiled in it and, presumably, used to cover places that were supposed to be depilated.

⁸⁰⁶ Oribasius, *Synopsis ad Eustathium filium*, I, 19, 10, 1.

⁸⁰⁷ Oribasius, *Synopsis ad Eustathium filium*, I, 19, 5, 1.

⁸⁰⁸ Oribasius, *Eclogae medicamentorum*, 37, 1, 1 – 9, 3.

⁸⁰⁹ Oribasius, *Eclogae medicamentorum*, 37, 9, 2.

⁸¹⁰ Oribasius, *Eclogae medicamentorum*, 44, 5, 1 – 6, 1.

⁸¹¹ Oribasius, *Eclogae medicamentorum*, 44, 5, 2.

⁸¹² Oribasius, *Eclogae medicamentorum*, 44, 5, 1–3.

⁸¹³ Oribasius, *Collectiones medicae*, VIII, 34, 2, 2.

⁸¹⁴ Oribasius, *Collectiones medicae*, VIII, 34, 1, 1 – 3, 4.

⁸¹⁵ Oribasius, *Synopsis ad Eustathium filium*, III, 59, 1, 1 – 2, 4.

⁸¹⁶ Oribasius, *Synopsis ad Eustathium filium*, III, 167, 1, 1.

⁸¹⁷ Oribasius, *Synopsis ad Eustathium filium*, III, 167, 1, 1–4.

Barley also occupied an important place in medical procedures recommended by Aetius of Amida, in the sixth century. There are not many of them, however, especially if their number is compared with plentiful mentions of *álphita* and *áleuron krithinon*. As for the nutritional models in which it played a special role, the first of these is a reducing diet, which was already mentioned when we characterised the nutritional value of *krithai*. *Iatricorum libri* provide examples of using barley in medicaments as well: barley stock⁸¹⁸ (*chylisma*), rubbed in breasts, was supposed to facilitate the production of milk⁸¹⁹; a decoction (*apóbregma*) of this cereal⁸²⁰ was used for cleansing the liver⁸²¹. Moreover, when bladder ulceration⁸²² was suspected, after the organ was cleansed with internal rinses, Aetius of Amida, following Rufus of Ephesus, recommended sitz-baths and compresses. The former ones had a styptic effect, the latter, as the physician wrote, could be made from eggs or burnt barley⁸²³, or zinc ore mixed with myrtle or rose ointment⁸²⁴.

When reading the medical encyclopaedia by Aetius of Amida, one might conclude that barley flour was quite commonly used in medical procedures, particularly for preparing poultices. We shall now give some examples of that. Aetius of Amida, when writing about applications of glastum (*Isatis tinctoria*), mentioned *áleuron krithinon*⁸²⁵ as an additional ingredient of these compresses, which, as he clarified, were helpful in treating serious injuries of hard tissues and muscles, head wounds, haemorrhages, swelling, ulcerations of the tumorous type, gangrene and erosions⁸²⁶. The physician recommended using barley flour⁸²⁷ in medicaments which were supposed to cure inflammations of abdominal

⁸¹⁸ Aetius of Amida, III, 142, 7.

⁸¹⁹ Aetius of Amida, III, 142, 1–9.

⁸²⁰ Aetius of Amida, III, 147, 1–16.

⁸²¹ Aetius of Amida, III, 147, 13.

⁸²² Aetius of Amida, XI, 29, 1–109.

⁸²³ Aetius of Amida, XI, 29, 71.

⁸²⁴ Aetius of Amida, XI, 29, 69–73.

⁸²⁵ Aetius of Amida, I, 172, 9.

⁸²⁶ Aetius of Amida, I, 172, 1–10.

⁸²⁷ Aetius of Amida, IX, 15, 29.

organs⁸²⁸. Such a cataplasm, applied to the places affected by the disease, had to include several ingredients and consist of barley flour, linseed with honey, nard oil and a bit of wine, mastic and wormwood leaves⁸²⁹. Furthermore, the author informed us that in joint ailments caused by, as he explained, the inflow of thin juices⁸³⁰, fresh cheese mixed with barley flour⁸³¹ was applied externally. Finally, in the deliberations concerning the measures taken in case of fever, the physician recommended a lifestyle which included visits to a bath house⁸³², where barley⁸³³ or broad bean flour was to be used for cleaning the body.

Barley groats of the *álphita* type, just like in the works of the other physicians, were often mentioned by Aetius of Amida as an ingredient of medicaments, mainly cataplasms, that is, for external application. Although there are some examples of its internal use, they appear to be rare. Moving on to examples, it is worth noting that the physician, when describing the effects of the plant called alkanet (*Alkanna tinctoria* Tausch)⁸³⁴, mentioned that this plant, together with *álphita*⁸³⁵, when used in a form of a cataplasm was an effective remedy against *erysipelas*; and while discussing properties of mint⁸³⁶, he stated that a poultice made from this herb with an addition of *álphita* was used in the treatment of ulcerations⁸³⁷. Mint and *álphita*⁸³⁸ were also recommended as a poultice in breast pains caused by lactation⁸³⁹. In this ailment, cumin, either on its own or mixed with the barley groats⁸⁴⁰, was the most helpful. When

⁸²⁸ Aetius of Amida, IX, 15, 28–38.

⁸²⁹ Aetius of Amida, IX, 15, 28–30.

⁸³⁰ Aetius of Amida, XII, 42, 1–54.

⁸³¹ Aetius of Amida, XII, 42, 17.

⁸³² Aetius of Amida, V, 69, 36–41.

⁸³³ Aetius of Amida, V, 69, 40.

⁸³⁴ Aetius of Amida, I, 5, 1–18.

⁸³⁵ Aetius of Amida, I, 5, 6.

⁸³⁶ Aetius of Amida, I, 156, 1–9.

⁸³⁷ Aetius of Amida, I, 156, 4–5.

⁸³⁸ Aetius of Amida, XVI, 36, 13.

⁸³⁹ Aetius of Amida, XVI, 36, 1–18.

⁸⁴⁰ Aetius of Amida, XVI, 36, 15.

listing substances needed for treating patients whose diseases were referred to as cardiological (*kardiakoi*)⁸⁴¹, Aetius of Amida advised other physicians to put on such patients' stomachs or left side of the chest numerous poultices⁸⁴², including the one consisting of dates and *álphita* barley groats⁸⁴³. It was supposed to be best for people considerably weakened by the disease. Medicaments used internally, as was already pointed out, were also prepared on the basis of the groats in question. For instance, children who wet their beds⁸⁴⁴ were given goose's lard mixed with stomach juices of a hare (specifically rennet) and *álphita*⁸⁴⁵. The mixture had to be served right after putting the child to bed.

Aetius of Amida did not write about barley bread in contexts which would let us ascribe to this product any role in medical procedures. Neither did he do it in the case of *máza*. *Iatricorum libri*, in turn, abound with details of medical procedures in which *ptisáne* was used. In order to maintain our readers' attention, we will only mention here a few examples. Served with *chylós ptisánes*⁸⁴⁶ was bindweed (*skammonía*)⁸⁴⁷, a common cathartic medicine. Furthermore, a root of common polypody⁸⁴⁸ cooked with *ptisáne*⁸⁴⁹ removed black bile and phlegm from the body in a way that was not only painless, but also effective. The physician also wrote that seeds of safflower were added to the analysed soup⁸⁵⁰ and boiled; the liquid was subsequently strained and served as a beverage, which was supposed to eliminate phlegm⁸⁵¹. *Ptisáne* was also listed when a recipe for purgative salts, very effective in removing phlegm, was discussed⁸⁵².

⁸⁴¹ Aetius of Amida, IX, 1, 1–98.

⁸⁴² Aetius of Amida, IX, 1, 69–73.

⁸⁴³ Aetius of Amida, IX, 1, 73.

⁸⁴⁴ Aetius of Amida, IX, 25, 10–11.

⁸⁴⁵ Aetius of Amida, IX, 25, 11.

⁸⁴⁶ Aetius of Amida, II, 25, 12–13.

⁸⁴⁷ Aetius of Amida, III, 25, 1–13.

⁸⁴⁸ Aetius of Amida, III, 30, 1–5.

⁸⁴⁹ Aetius of Amida, III, 30, 4.

⁸⁵⁰ Aetius of Amida, III, 41, 2.

⁸⁵¹ Aetius of Amida, III, 41, 1–5.

⁸⁵² Aetius of Amida, III, 110, 10–21.

In their composition there were, among others, parsley, mastic, ginger and pepper. The salts were the strongest in their effect when served on an empty stomach in *chylós ptisánes*⁸⁵³ or in *melíkraton*. Moreover, it should be said that *ptisáne*⁸⁵⁴ with honey was considered to be an emetic, which Aetius of Amida noted after Rufus of Ephesus⁸⁵⁵.

Barley soup was frequently used in preparing internal rinses recommended by Aetius of Amida, which will be demonstrated in the following examples. For instance, *ptisáne*, or actually *chylós ptisánes*⁸⁵⁶ is mentioned in the analysis of treatments utilising a special *oxýmeli*, which was intended for patients suffering from colic⁸⁵⁷. Apart from vinegar and honey, cornflower, *Globularia alypum* L., green rue and many other ingredients were also added to this medicine. Such an *oxýmeli* was dissolved in *chylós ptisáne* and inserted into the bowel, after it was cleansed with an appropriate enema. The specialist added that this treatment was also suitable for curing people suffering from excess of phlegm.

Barley was only included in a few medical procedures recorded by Alexander of Tralles. Namely, the physician recommended warming poultices (*pyriai*) prepared from salt, millet or barley⁸⁵⁸ for people suffering from colic⁸⁵⁹. In addition to this, the application of enemas is also advised in this disease⁸⁶⁰; these could additionally include a decoction made of roasted barley⁸⁶¹. He explained that after the grains were boiled in water, the obtained stock was strained and mixed with other ingredients, such as goose's fat, deer's marrow, mandrake juice and butter, and the mixture was then administered rectally into the body⁸⁶². Furthermore, the author recorded a formula, which was in fact a cosmetic rather than therapeutic procedure,

⁸⁵³ Aetius of Amida, III, 110, 19.

⁸⁵⁴ Aetius of Amida, III, 120, 23.

⁸⁵⁵ Aetius of Amida, III, 120, 1–50.

⁸⁵⁶ Aetius of Amida, III, 79, 9.

⁸⁵⁷ Aetius of Amida, III, 79, 1–10.

⁸⁵⁸ Alexander of Tralles, *Therapeutica*, 343, 10–11, vol. II.

⁸⁵⁹ Alexander of Tralles, *Therapeutica*, 335, 5, vol. II.

⁸⁶⁰ Alexander of Tralles, *Therapeutica*, 347, 18–349, 13, vol. II.

⁸⁶¹ Alexander of Tralles, *Therapeutica*, 349, 3, vol. II.

⁸⁶² Alexander of Tralles, *Therapeutica*, 349, 1–13, vol. II.

of a hair dye that dyed hair blond (*chrysoeidés*)⁸⁶³. Its composition included alum (or iron sulphate), sandarac, that is, red arsenic sulphide, saffron, smoke tree (*Rhus cotinus* L.) and lye (*konía*)⁸⁶⁴. The dye was applied to hair and then washed off with a fenugreek, barley or cumin extract. It is worth noting that the aforementioned rinse obtained from *krithai* was called by the author *hydor krithinon*⁸⁶⁵ (barley water). Finally, there is one more interesting detail directly connected to using barley in medicine. Alexander of Tralles included some advice about milk⁸⁶⁶ in a treatise entitled *De febribus*. He appraised it as a valuable product, especially for weakened patients, stating that human milk was the best, followed by donkey milk. When commenting on the qualities of the latter product, he drew readers' attention to a proper way of feeding animals which gave milk, remarking that they should be fed barley⁸⁶⁷ and leaves of myrtle, mastic tree (*Pistacia lentiscus* L.) and oak tree, thanks to which, as the author explained, milk did not undergo the process of fermentation in the digestive system and thus did not cause fermentation of other foods⁸⁶⁸.

Aleuron krithinon, in turn, was often utilised in therapies described by Alexander of Tralles. Among the substances which included *krithé* flour in their composition that he listed, the most numerous, similarly to works of other authors, were poultices. Here we present several *exempla* of such applications. We shall begin our deliberations with *De febribus*. In fevers similar to *kaúsos*, called *kaúsos nóthos*⁸⁶⁹, which were caused by an inflow of phlegm, Alexander of Tralles recommended cataplasms prepared from linseed or barley flour⁸⁷⁰ boiled in water with an addition of camomile or melilot⁸⁷¹. Moreover, when patients suffered from a four-day fever caused

⁸⁶³ Alexander of Tralles, *Therapeutica*, 455, 17–457, 6, vol. I.

⁸⁶⁴ It is similar to the one that can be found in the works of Paul of Aegina.

⁸⁶⁵ Alexander of Tralles, *Therapeutica*, 457, 5, vol. I.

⁸⁶⁶ Alexander of Tralles, *De febribus*, 365, 1–23, vol. I.

⁸⁶⁷ Alexander of Tralles, *De febribus*, 365, 9, vol. I.

⁸⁶⁸ Alexander of Tralles, *De febribus*, 365, 5–10, vol. I.

⁸⁶⁹ Alexander of Tralles, *De febribus*, 321, 24–323, 22, vol. I.

⁸⁷⁰ Alexander of Tralles, *De febribus*, 323, 9–10, vol. I.

⁸⁷¹ Alexander of Tralles, *De febribus*, 323, 8–10, vol. I.

by overheating of bile⁸⁷², the physician, in addition to an appropriate diet, recommended poultices (*epithémata*) from barley flour⁸⁷³, linseed and camomile extract, which were, *nota bene*, regarded as effective remedies for a three-day fever⁸⁷⁴. Finally, as the physician moved on to the theory of the transformation of nodular calluses into purulent secretions⁸⁷⁵ and then to the recipes for compresses which were supposed to cause expulsion of pus, he mentioned a recipe for a cumin cataplasm⁸⁷⁶, which included *áleuron kríthinon*⁸⁷⁷. The said medicine contained salt, coal tar, wax, natron, a type of resin called *phrykté*, olive oil, marshmallow and a thin *ptisáne* or a linseed extract. The author wrote that he used this medication in treating mumps, but also in similar ailments in other parts of the body.

In the works of Alexander of Tralles we can also find several applications of *álphita*. Dietetic use of these groats was described in his texts only once. We can read that warming the patient's body with appropriate foods and medicaments was recommended when the power of absorption (*kathektiké dýnamis*)⁸⁷⁸ was weakened due to hypothermia. From the text it appears that the diet should contain, among others, cereal products, including *álphita*⁸⁷⁹. The roasted barley groats of interest to us were, on the other hand, relatively common in the therapeutics of Alexander of Tralles, since they were predominantly applied externally as an ingredient of various poultices and plasters. Thus we are now going to cite a few such examples. In *De febribus* the author mentioned cases of gastric atony which led to fainting⁸⁸⁰ and recommended applying a tonic cataplasm, prepared from dates, wine, *álphita*⁸⁸¹,

⁸⁷² Alexander of Tralles, *De febribus*, 411, 7–417, 11, vol. I.

⁸⁷³ Alexander of Tralles, *De febribus*, 413, 3, vol. I.

⁸⁷⁴ Alexander of Tralles, *De febribus*, 413, 1–5, vol. I.

⁸⁷⁵ Alexander of Tralles, *Therapeutica*, 113, 10–31, vol. II.

⁸⁷⁶ Alexander of Tralles, *Therapeutica*, 117, 1–21, vol. II.

⁸⁷⁷ Alexander of Tralles, *Therapeutica*, 117, 4, vol. II.

⁸⁷⁸ Alexander of Tralles, *Therapeutica*, 249, 6–251, 2, vol. II.

⁸⁷⁹ Alexander of Tralles, *Therapeutica*, 249, 12, vol. II.

⁸⁸⁰ Alexander of Tralles, *De febribus*, 339, 23–27, vol. I.

⁸⁸¹ Alexander of Tralles, *De febribus*, 339, 26, vol. I.

saffron, aloe and mastic, to the abdomen. In *Therapeutica* we read that, since the patients felt burning in their stomachs⁸⁸², an effective remedy to their condition was *álphita* mixed with fresh cheese⁸⁸³. Moreover, in a disease identified as cholera⁸⁸⁴, Alexander of Tralles prescribed (for strengthening the stomach) compresses or plasters called *epiplasma*⁸⁸⁵ with an addition of barley groats⁸⁸⁶. They were supposed to be helpful to those who could not keep food within their organisms, as it happened in case of cholera, instead but expelled it, for instance through vomiting. The physician recommended that *álphita* for these *epiplásmata* should be boiled in myrtle wine or another alcoholic beverage of this type, and then listed three preferred kinds thereof. Various substances, such as wormwood from Pontus, roses, apples (and others) had to be boiled in the recommended drinks, at the beginning of their preparation.

It has already been said that Alexander of Tralles was the only one of the analysed authors who mentioned *ámylon* obtained from barley. This rarity of this product in literature probably reflects the fact that *ámylon kríthinon* was less popular than wheat starch that was predominant in the recipes included in medical sources. This product, possessing the properties analogical to the qualities of *ámylon* made from *pyrós*, was utilised in the production of substances which were used when a medicament had to be gentle in its effects, for example in ointments applied to the face or eyes. One type of such specifics was referred to as *kollourion*⁸⁸⁷. A recipe for one of these *kollouría*⁸⁸⁸ included zinc ore slaked with donkey's milk, white zinc, clay from Samos (*gé astéros*), as-tragalus (*Astragalus parnassi* L.), mandrake, starch obtained from barley

⁸⁸² Alexander of Tralles, *Therapeutica*, 267, 11–17, vol. II.

⁸⁸³ Alexander of Tralles, *Therapeutica*, 267, 16, vol. II.

⁸⁸⁴ Alexander of Tralles, *Therapeutica*, 323, 24–31, vol. II.

⁸⁸⁵ Alexander of Tralles, *Therapeutica*, 327, 6–16, vol. II.

⁸⁸⁶ Alexander of Tralles, *Therapeutica*, 327, 9; II, 327, 14, vol. II.

⁸⁸⁷ Definition and overview of application – Alexander of Tralles, *Therapeutica*, 7, 17–25, vol. II.

⁸⁸⁸ Alexander of Tralles, *Therapeutica*, 11, 1–13, vol. II.

(*ámylon kríthinon*)⁸⁸⁹, juice squeezed out of lettuce, resin called *kómmiti*, poppy juice (opium) and egg whites. This mixture was believed to have an anti-inflammatory effect.

In the legacy of Alexander of Tralles *ptisáne* is treated as a food, beverage and *phármakon* worth including in numerous medical procedures. Its dominant application was in diets, particularly in ailments accompanied by a fever. For instance, if a patient of a naturally hot constitution was diagnosed with a blockage causing difficulties in the flow of juices⁸⁹⁰, he was prescribed *ptisáne*⁸⁹¹ both for external and internal use, as it was considered to be thirst-quenching, cleansing and diluting⁸⁹². On the other hand, when deliberating on encephalitis (*phrenítis*)⁸⁹³ and having reached the subject of diet⁸⁹⁴, Alexander mentioned *ptisáne*⁸⁹⁵ as the main medicament (*boéthema*) recommended to the patients. The soup should have been carefully cooked and the sick were only given its *chylós*. Pomegranate seeds or *hydrómeli*, or another sweet liquid, were added to the dish. The physician remarked that alcoholic beverages containing a sour element in their flavour – like vinegar, or those prepared on the basis of fruit such as quinces – should be not be used as a flavouring additive to *ptisáne*. However, if one was not fond of *ptisáne*, and many, as he claimed, did not even want to hear its name, other soups, for instance those based on barley⁸⁹⁶, could be served instead. Sometimes, though, Alexander of Tralles advised against feeding patients with the discussed product. That was the case when a patient, during a fever, suffered from dyspepsia, which led to the creation of acidic juices in the body⁸⁹⁷. The physi-

⁸⁸⁹ Alexander of Tralles, *Therapeutica*, 11, 9, vol. II.

⁸⁹⁰ Alexander of Tralles, *De febribus*, 305, 15 – 311, 10, vol. I.

⁸⁹¹ Alexander of Tralles, *De febribus*, 309, 12, vol. I.

⁸⁹² Alexander of Tralles, *De febribus*, 309, 13–14, vol. I.

⁸⁹³ Alexander of Tralles, *Therapeutica*, 515, 10 – 519, 14, vol. I.

⁸⁹⁴ Alexander of Tralles, *Therapeutica*, 521, 20 – 523, 18, vol. I.

⁸⁹⁵ Alexander of Tralles, *Therapeutica*, 523, 7, vol. I.

⁸⁹⁶ Alexander of Tralles, *Therapeutica*, 523, 7–18, vol. I.

⁸⁹⁷ Alexander of Tralles, *De febribus*, 303, 5–305, 6, vol. I.

cian maintained that *chylós ptisánes*⁸⁹⁸ was also easily soured, staying on the surface of other foods⁸⁹⁹ and thus using it in this kind of indigestion could only cause exacerbation of the disease. Finally, Alexander of Tralles mentioned using *chylós ptisánes* in enemas. For instance, in case of colic resulting from inflammations of the digestive system⁹⁰⁰, he recommended enemas prepared from thin *ptisáne*⁹⁰¹ with an addition of camomile or watered-down extract of linseed or of *hydrélaion*⁹⁰².

Anthimus had a lot to say about therapeutic applications of *polenta* cooked with barley⁹⁰³. Firstly, the author of *De observatione ciborum* stated in explicit terms that this dish mixed with hot wine was an excellent medicament (*remedium*). The author also maintained that that he would administer one *cochleare* of this mixture, which was, *nota bene*, supposed to be drunk slowly, in order to cure gastric conditions and strengthen the stomach. This dish served in the same manner with hot wine, Anthimus continued, was an effective remedy in the treatment of patients suffering from dysentery. In such a case, one *cochleare* of the *álphita* gruel dissolved in wine and mixed with it well was consumed on an empty stomach after the evening crowing of the cock, or whenever the condition of the patient required it. After taking a dose of the medicament, the sick should not consume any other food until the medicament got digested completely. Finally, the physician stated that polenta was a suitable dish for people who had high temperature. Such feverish patients were served a dish made from *álphita* mixed with fresh, hot water, so that the consistency of the soup, or beverage, was thin rather than thick. *Ptisáne* also had its place as a medicament in the deliberations of Anthimus. It was served to patients suffering from high fever⁹⁰⁴. This

⁸⁹⁸ Alexander of Tralles, *De febribus*, 303, 23, vol. I.

⁸⁹⁹ Alexander of Tralles, *De febribus*, 303, 20–25, vol. I.

⁹⁰⁰ Alexander of Tralles, *Therapeutica*, 371, 26–373, 31, vol. II.

⁹⁰¹ Alexander of Tralles, *Therapeutica*, 373, 15, vol. II.

⁹⁰² Alexander of Tralles, *Therapeutica*, 373, 14–15, vol. II.

⁹⁰³ Anthimus, 64.

⁹⁰⁴ Anthimus, 64.

application was typical and present in the entire medical literature analysed in our study.

In the seventh century, Paul of Aegina recorded relatively numerous recipes which included *krithai* in their composition. It is worth citing a few examples. When the physician was considering the problem of removing so-called sties, that is, ulcers located on eyelids⁹⁰⁵, he recommended washing the infected places with an extract (*apóbregma*) of *krithé*⁹⁰⁶. Another method of treatment was applying hot wax onto the ulcer or rubbing it with a mouse deprived of its head. In curing scalding⁹⁰⁷ the physician advised another type of medications⁹⁰⁸. In accordance with the recorded recommendations, a piece of material had to be saturated with honey, then coated with barley⁹⁰⁹, and finally burnt. The obtained ash was mixed with white zinc, butter, wax and goat's fat in suitable proportions. Such substances were usually applied to the places that needed treatment. A wound caused by a bite of a common shrew (*mygalé* – *Sorex araneus* L.)⁹¹⁰ was covered with a cataplasm from *áleuron* flour, obtained from *krithai*⁹¹¹, which was mixed with *oxýmeli*, or with a poultice from burnt barley grains⁹¹² with wine vinegar. Finally, barley extract⁹¹³ was utilised in the process of dying hair, in which it was actually needed for washing the dye off. We know of it as the author of *Epitome* devoted in his work some attention to this issue⁹¹⁴. Paul of Aegina recorded a formula for a hair dye which gave the desirable blond colour (*chrysoeidés*). The recipe included alum or

⁹⁰⁵ Paul of Aegina, III, 22, 14, 1–4.

⁹⁰⁶ Paul of Aegina, III, 22, 14, 4.

⁹⁰⁷ Paul of Aegina, IV, 11, 1, 1–2, 15.

⁹⁰⁸ Paul of Aegina, IV, 11, 2, 1–3.

⁹⁰⁹ Paul of Aegina, IV, 11, 2, 2.

⁹¹⁰ Paul of Aegina, V, 12, 1, 1–23. Such bites could cause throbbing pains, reddening in the places where the animal's teeth stuck in, blisters filled with serous fluid (in the same places) and also ulcerations.

⁹¹¹ Paul of Aegina, V, 12, 1, 9.

⁹¹² Paul of Aegina, V, 12, 1, 22.

⁹¹³ Paul of Aegina, III, 2, 6, 7–8.

⁹¹⁴ Paul of Aegina, III, 2, 6, 1–9.

iron sulphate, sandarac (red arsenic sulphide), saffron, smoketree (*Rhus cotinus* L.) and lye (*konía pilopoietiké*). The author also wrote that in order to prepare the hair dye, lye was supposed to be boiled with ground smoketree and then both ingredients had to undergo this process until the amount of liquid was reduced by half. Subsequently, the liquid had to be squeezed out of the mixture and alum, sandarac and saffron were added. Finally, the finished substance was poured into a glass container, in which it was then kept. The mixture was applied to hair and washed off using a hot extract of fenugreek, barley and cumin together with dissolved soap. It needs to be said that the substance described above must have been quite common, since the same recipe was included by Alexander of Tralles in *Therapeutica*.

Áleuron kríthinon also appears several times on the pages of Paul of Aegina's *Epítome*. It was particularly often used in poultices of various applications, some of which are worth citing. In treating mumps⁹¹⁵, a cataplasm from barley flour⁹¹⁶ cooked in *melikraton*, or in fenugreek extract, marshmallow (*Althaea officinalis* L.), or camomile was administered. When patients suffered from *orthopnoea* (*orthópnoia* – an ailment, in which breathing was possible only in a standing position), asthma or dyspnoea (*dýspnoia*)⁹¹⁷, poultices prepared from figs, darnel flour (*Lolium temulentum* L.) or barley⁹¹⁸, with an addition of resin, wax, honey and possibly also other ingredients were applied. In the treatment of patients spitting out phlegm, or with suspected tuberculosis⁹¹⁹, a cataplasm from barley flour⁹²⁰ cooked with figs, resin, pigeon excrements, soda and ryegrass was recommended. In the chapter dealing with liver diseases⁹²¹, when inflammations (*phlegmonai*)⁹²² were discussed, Paul

⁹¹⁵ Paul of Aegina, III, 23, 13, 1–29.

⁹¹⁶ Paul of Aegina, III, 23, 13, 11.

⁹¹⁷ Paul of Aegina, III, 29, 1, 1–28.

⁹¹⁸ Paul of Aegina, III, 29, 1, 20.

⁹¹⁹ Paul of Aegina, III, 32, 1, 1–2, 30.

⁹²⁰ Paul of Aegina, III, 32, 2, 3.

⁹²¹ Paul of Aegina, III, 46, 1, 1–7, 7.

⁹²² Paul of Aegina, III, 46, 6, 1–28.

of Aegina maintained that in such cases blood was let from the right forearm, and on the surface of the body (to the place where the gland was located) a physician would apply a cataplasm from barley flour⁹²³ (or fenugreek, or linseed) mixed with figs or quinces and flowers of melilot and wormwood, all this in accordance with the rule for mixing substances with styptic properties with those of softening effects. Apart from this, if patients had their tendons damaged⁹²⁴ with an inflammatory condition (and gangrene of tissues set in), a physician would apply a poultice from barley⁹²⁵ (or broad bean or vetch) *áleuron*, cooked in ley, myrrh oil (*stakté*) and *oxýmeli*⁹²⁶. Finally, a cataplasm from *áleuron* flour obtained from *krithe*⁹²⁷, mixed with *oxýmeli* or a compress from burnt barley grains⁹²⁸ with wine vinegar were applied to a wound resulting from a bite of a common shrew (*mygalé*)⁹²⁹.

Álphita were also mentioned several times as an ingredient of a whole range of substances promoted by Paul of Aegina. Moreover, they were a product recommended in some of the diets (for those travelling by land⁹³⁰ and sea⁹³¹, which we listed in the part devoted to the culinary uses of these groats). As for cataplasms, *Épitome* includes a whole variety of recipes for them, as the following examples will demonstrate. In the discussion regarding headaches caused by a fever⁹³², Paul of Aegina recommended placing a poultice from *álphita*⁹³³ and common knot-grass (*Polygonum aviculare* L.), or bread and roses with an addition of

⁹²³ Paul of Aegina, III, 46, 6, 3.

⁹²⁴ Paul of Aegina, IV, 54, 1, 1 – 10, 5.

⁹²⁵ Paul of Aegina, IV, 54, 2, 11.

⁹²⁶ Paul of Aegina, IV, 54, 2, 10 – 3, 1.

⁹²⁷ Paul of Aegina, V, 12, 1, 9.

⁹²⁸ Paul of Aegina, V, 12, 1, 22.

⁹²⁹ Paul of Aegina, V, 12, 1, 1 – 23. As was mentioned earlier such bites could cause throbbing pains and reddening around the bite marks, as well as blisters filled with serous fluid, and ulceration.

⁹³⁰ Paul of Aegina, III, 55, 1, 1 – 25.

⁹³¹ Paul of Aegina, I, 56, 1, 1 – 18.

⁹³² Paul of Aegina, II, 43, 1, 1 – 25.

⁹³³ Paul of Aegina, II, 43, 1, 9.

myrtle or thymes⁹³⁴, on the forehead. It should also be remarked that an *álphita* cataplasm could be mixed with pennyroyal (*Plantago psyllium* L.) or coriander⁹³⁵. In case of diseases manifested in stomach aches⁹³⁶, the physician suggested applying a cataplasm prepared from dates, wine, *álphita*⁹³⁷, saffron, mastic and aloe⁹³⁸. Finally, we must also mention a comment stating that the smell of these groats⁹³⁹ soothed sneezing fits accompanying diseases of which symptoms included high fever⁹⁴⁰.

The work of Paul of Aegina constitutes another evidence of only a limited role of barley bread in popular medical procedures. In *Epitome* there is only one mention of recommending it in a medicinal diet, that is, in a long passage devoted to elephantiasis⁹⁴¹, in the fragment dealing with foods recommended for those suffering from it⁹⁴², the physician administered barley bread⁹⁴³ and *máza*, which were dishes of low nutritional value, and somewhat cooling.

Ptisáne was mentioned in many cases as an ingredient of diets and medicaments in the works of Paul of Aegina as well; such medications were supposed to have potent curative properties. It is worth citing a few examples of recommendations suggesting *ptisáne* as either a food or beverage. *Chylós ptisánes*⁹⁴⁴, probably understood as thin gruel based on barley, together with water and lettuce juice were recommended as beverages suitable for patients suffering from fevers⁹⁴⁵. They were supposed to accompany the consumption of rock fish cooked in white

⁹³⁴ Paul of Aegina, II, 43, 1, 7–10.

⁹³⁵ Paul of Aegina, II, 43, 1, 10–14.

⁹³⁶ Paul of Aegina, II, 44, 1, 1–13.

⁹³⁷ Paul of Aegina, II, 44, 1, 2.

⁹³⁸ Paul of Aegina, II, 44, 1, 1–3.

⁹³⁹ Paul of Aegina, II, 48, 1, 11.

⁹⁴⁰ Paul of Aegina, II, 48, 1, 1–15.

⁹⁴¹ Paul of Aegina, IV, 1, 1, 1–8, 6.

⁹⁴² Paul of Aegina, IV, 1, 4, 12–17.

⁹⁴³ Paul of Aegina, IV, 1, 4, 13.

⁹⁴⁴ Paul of Aegina, I, 15, 2, 24.

⁹⁴⁵ Paul of Aegina, II, 15, 1, 1–2, 35.

broth (*leukós zomós*)⁹⁴⁶. In the treatment of dry gastric *dyskrásiai* (that is, parching of the stomach)⁹⁴⁷, the physician recommended including in the diet the classic *ptisáne*⁹⁴⁸ prepared only from barley, or barley soup with an addition of wheat groats of the *chóndros* type⁹⁴⁹, and serving it after the second bath of the day. For curing encephalitis (*phrenítis*)⁹⁵⁰, Paul of Aegina administered *chylós ptisánes*⁹⁵¹, this time, as we understand, as a food. Apart from this gruel, he recommended using *rhóphe-ma* prepared from *chóndros*, accompanied by a sweet beverage⁹⁵². Furthermore, when the author of *Epítome* focused on methods of treating patients suffering from ailments caused by excess of juices (of the properties of bile⁹⁵³), Paul of Aegina recommended a diet⁹⁵⁴ consisting of products of cooling and moistening properties; among them he listed soups based on *ptisáne*⁹⁵⁵ and *chóndros*, certain vegetables (mallow, lettuce and so forth), certain types of meat, especially young poultry, such as chickens, and also particular kinds of seafood, like rock fish. He also provided a list of foods that should be avoided.

Finally, it must be pointed out that *ptisáne* was an ingredient of medicaments *sensu stricto*. This time, too, a few examples should be sufficient to illustrate these uses. Paul of Aegina advised readers to treat *ptisáne* as a suitable means of delivering various active substances. For instance, when considering the issue of regulating normal defecation in healthy people⁹⁵⁶, he recommended adding a root of common fern to barley soup⁹⁵⁷. Whereas, in the passage dealing with the quality of

⁹⁴⁶ Paul of Aegina, I, 15, 2, 19–25.

⁹⁴⁷ Paul of Aegina, I, 72, 1, 1–6, 13.

⁹⁴⁸ Paul of Aegina, I, 72, 2, 12.

⁹⁴⁹ Paul of Aegina, I, 72, 2, 10–12.

⁹⁵⁰ Paul of Aegina, III, 6, 2, 1–51.

⁹⁵¹ Paul of Aegina, III, 6, 2, 17.

⁹⁵² Paul of Aegina, III, 6, 2, 17–19.

⁹⁵³ Paul of Aegina, III, 78, 6, 1–10, 11.

⁹⁵⁴ Paul of Aegina, III, 78, 10, 1–11.

⁹⁵⁵ Paul of Aegina, III, 78, 10, 2.

⁹⁵⁶ Paul of Aegina, I, 43, 1, 1–22.

⁹⁵⁷ Paul of Aegina, I, 43, 1, 16.

milk⁹⁵⁸ which was fed to little children, he listed typical medicines facilitating lactation. Among them, there were roots and fruit of fennel, both cooked in *ptisáne*, and lucerne leaves in red wine or *ptisáne*⁹⁵⁹, or (probably also cooked in the above mentioned liquids) *Nigella sativa* L. (also known as fennel flower), dill, carrot root and its fruit. It was applied externally, as it was done with a medicine for treating gout⁹⁶⁰, which, on the other hand, contained *chylós ptisánes*⁹⁶¹. *Epitome*, similarly to earlier sources, shows that *chylós ptisánes*⁹⁶² was utilised in enemas, such as those aimed at soothing the effects of hot juices⁹⁶³. These enemas were prescribed, for instance, during disorders of stomach functions in fever. Aside from watered-down *ptisáne*, water and extracts of *chóndros*, rice or *trágos* were also used. Such enemas were applied not once, but several times; the last application was made with an addition of rose flowers and berries of myrtle and gall-nuts⁹⁶⁴, as the physician informed us. Paul of Aegina recommended enemas prepared from rose oil dissolved in *chylós ptisánes*⁹⁶⁵ also for encephalitis (*phrenítis*)⁹⁶⁶.

Ptisáne is the only food obtained from barley whose medicinal use was explicitly stated by the author of *De cibis*. He regarded it as a product which was supposed to be prescribed in feverish condition, as it reduced increasing of temperature and had a thirst-quenching effect⁹⁶⁷. Furthermore, *ptisáne* was described as helpful in treating diseases of organs located in the chest⁹⁶⁸.

⁹⁵⁸ Paul of Aegina, I, 4, 1, 1–21.

⁹⁵⁹ Paul of Aegina, I, 4, 1, 14–15.

⁹⁶⁰ Paul of Aegina, VII, 13, 22, 1–11.

⁹⁶¹ Paul of Aegina, VII, 13, 22, 6.

⁹⁶² Paul of Aegina, II, 57, 1, 25.

⁹⁶³ Paul of Aegina, II, 57, 1, 1–31.

⁹⁶⁴ Paul of Aegina, II, 57, 1, 24–27.

⁹⁶⁵ Paul of Aegina, III, 6, 2, 7–8.

⁹⁶⁶ Paul of Aegina, III, 6, 2, 1–51.

⁹⁶⁷ *De cibis*, 2, 35–36.

⁹⁶⁸ *De cibis*, 2, 36–37.

Conclusions. To summarise all the above deliberations, it must be said that medicine made of barley and products obtained from this cereal a powerful tool in the battle against various diseases out. The uses in specialised medical procedures resulted from its properties, which were listed by dieticians.

It was *ptisáne* in particular, a panacea of antiquity, given to both the sick and the healthy alike, that was particularly often used in the treatment of patients suffering from fevers, and thus weakened. Barley flour was utilised in the production of a variety of poultices, especially those aimed at opening ulcers and absorbing calluses and swellings. *Álphita* had a similar function and were mainly used in compound medicaments. Barley bread, on the other hand, was consumed on a limited scale and was less popular in medical applications than wheat bread.

Last but not least, the treatises of the ancient and Byzantine physicians make an impression of universality of medicaments based on barley (which could only compete with those including wheat products) and thus explicitly indicate the important role of *krithé* in the reality depicted by these sources.



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Final conclusions



It is now time to summarise our research concerning the development and changes of dietetic doctrines and to assess the value of the medical treatises for a food historian.

As far as the first issue is concerned, we observe on the basis of the analysed material that the final form of medical theories on the values of crops was shaped by Galen at the beginning of the period we are examining here. The physician did it through adapting to his works the legacy of ancient dietetics and verifying it through his own medical practice. Galen rarely questioned the findings of his predecessors. This, however, did happen when he cited the reflections of Herodotus of Attaleia on the subject of the properties of hulled wheats, or commented on the findings of Philotimus (and his teacher Praxagoras) concerning *máza*, but the modifications implemented by Galen are not the fundamental trend in our discourse, due to their rarity.

The presented analyses indicate that doctrines formed in the second century did not undergo any transformations and therefore they represent immutability and continuity until the seventh century. Moreover, we need to emphasise that the additional material studied for the sake of the present work, much like our already published outcomes of the analyses of dietary sources, going beyond the scope of the present work (that is, dating back to the time of Simeon Seth's activity in the eleventh

century)⁹⁶⁹ show that no significant change occurred after the seventh century. The only considerable modification regarded the approach to discussing dietetic matters, introduced by Oribasius in the fourth century, that was based on collecting and determining precise nutritional categories (*nota bene* present even in the discourses of his predecessors). This supplement was well adapted, which is visible, for instance, in the works of Aetius of Amida.

The outcome of the stability of the theories is the fact that in the practice of medical literature we can encounter systematic, often literal repetitions of similar views expressed by consecutive authors, either in the form of descriptions of particular products, or in lists of substances ordered according to their dominant features. Although, for our narrative, it caused certain monotony of restated ideas, we decided to emphasise this phenomenon systematically in order to prove the stability that we are discussing.

Moving on to the second issue, we must point out that medical works abound in information about food. We are aware, however, that the aforementioned stability of concepts and terms may question the credibility of these treatises as sources for studying the culinary reality of the period between the second and seventh century. This problem requires additional research, and in the present paper, as a methodological basis, the assumption of relatively slow changes in this area was adapted. We would like to remark that there is no evidence proving that foods and technologies of producing and processing them underwent any substantial changes. We reckon, therefore, the stable theory reflected relatively

⁹⁶⁹ Cf. M. Koko szko, K. Jagusi ak, Z. Rze źnicka, *Ryż jako pokarm i medykament w antycznej i bizantyńskiej literaturze medycznej*, PNH 12.1, 2013, p. 5–38; M. Koko szko, K. Jagusi ak, Z. Rze źnicka, *Rice as a foodstuff in ancient and Byzantine materia medica*, SCer 3, 2013, p. 47–68; M. Koko szko, K. Jagusi ak, Z. Rze źnicka, *Owies w greckich traktatach medycznych starożytności i Bizancjum (V w. przed Chr. – XI w. po Chr.)*, VP 33, 2013, p. 421–447; M. Koko szko, K. Jagusi ak, Z. Rze źnicka, *Oats in ancient and Byzantine „Materia Medica” (5th century BC – 11th century AD (A commentary on the popularity of oats as a foodstuff))*, Pbg 37.4, 2013, p. 21–42.

slowly evolving gastronomic practice. The basis for this reasoning lies in the fact that the same terms appear in almost all of the analysed treatises, and thus we do not find any evidence that their designates changed. Our analysis has also demonstrated that if, in the scope of the studied period, any modifications of nomenclature⁹⁷⁰ or technology⁹⁷¹ occurred, they were immediately noted in the discourse of physicians. Lack of mentions of this kind, which would be additional to what we have recorded, proves that no other evolutionary processes than those specified in our study took place.

Medical sources obviously focus on the preparation of healthy and medicinal dishes; since, by definition, they were aimed at readers who could afford varied diet, they depict the eating habits neither of the poor nor of the rich, but of the middle classes. What is interesting, our discussion also shows that they do not usually include information about luxurious or extraordinary dishes⁹⁷². Recipes for healthy dishes prepared from cereal plants lack sophisticated and expensive seasonings. For instance, *ptisáne* was flavoured with salt, wine vinegar, dill and leek. All of these products, along with barley, were commonly available, and probably the biggest problem in preparing this soup was in its long cooking time⁹⁷³, and thus also in necessity of providing a large amount of firewood. *Chóndros* was cooked in water, with an addition of sweet ingredients (*síraion*, wine and so forth), to taste. *Máza* was created as a result of mixing *álphita* with water, and possibly honey. The most valued bread was white and fresh, but stale bread, according to Dieuches, was used to prepare various kinds of *rhophémata*; this allowed to both

⁹⁷⁰ *Ítria* versus *lágana/rhýmata*, *ártos autópyros* versus *ártos synkomistós*, *ártos rhyparós* versus *ártos rhyparós* or *katastatón* versus *ámylon*.

⁹⁷¹ Alleged issue of introducing a new form of *kribanon*.

⁹⁷² There are, however, certain remarks concerning their luxurious forms, such as cooking unwholesome *ptisáne*.

⁹⁷³ On the appearance of kitchen and the techniques of cooking cf. A. D a l b y, S. G r a i n e r, *The classical cookbook*, London 2000, p. 17; R. I. C u r t i s, *Professional cooking, kitchens, and work service*, [in:] *A cultural history of food in antiquity*, eds. P. E r d k a m p, London–New York 2012, 113–132, especially 125–132.

obtain food which maintained the balance of organic juices, and to utilise the leftovers. It appears, therefore, that the everyday “healthy” diet of the middle class was far from compositional complications, which can be found in some of the recipes from *De re coquinaria*, and was distinguished by simplicity that did not require considerable expenses. It was closer to eating habits of those who were forced to save money, rather than high-spending elite.

These features are also visible in the majority of formulas of medicaments which required foodstuffs. For example, poultices with barley flour were often used to treat inflammations and local lumps. The very fact of using this product determined the effects the medicine had, which, as we understand, was facilitated by an addition of honey. Another way of preparing a cataplasm of a similar function consisted in cooking a root or green parts of mallow soft in *melikraton*, and then adding *aleurón krithinon*. Generally, the ingredients of both recipes were easily available, and nothing indicates to them being expensive. More costly additives, such as *malabathron* or *sílfhion*, were noted only in isolated instances, which seems to indicate that *phármaka* containing foodstuffs were rather cheap medicaments with a wide range of applications, and their use was not limited by the wealth of the patients. They were available to the poor, while the number of cited formulas suggests that they were also commonly used for treating middle classes.

Medical sources turn out to be vital literary material useful in determining the gradation of importance of particular products in a diet. It is so, since they do not usually put foods in an alphabetical order⁹⁷⁴, but adapt as a criterion the role of the given product in feeding. If we accept the categories of products presented in *De alimentorum facultatibus* by Galen, and later in *Collectiones medicae* by Oribasius, then the basis of this schema are cereal products, the next ones are leguminous plants, then fruit and vegetables, while products obtained from animals, including milk, cheese and eggs, constituted just an additive to bread or

⁹⁷⁴ Alphabetical order is only adapter in the analyses of *haplá phármaka*.

póltos. The society relied on food that was common and widely available. The fact that this pattern did not change throughout the period of interest to us can also be proven by *De cibis*, in which to such an extent did the author regard foods from seeds and fruit as the basis of the diet, that he did not distinguish the category of animal products at all. The latter can only be found in the lists of food classes ordered according to their dominant properties.

Generally, both the gastronomic and pharmacological sources suggest rather simplicity than excess in the field of eating habits. Transgression was an exception, not a rule in this area of life.

Wheat

When cereals are concerned, medical sources provide the most information about wheat. The narrative concerning *pyrós* is doctrinally stable and extraordinarily detailed throughout the period studied in the present work. Physicians of antiquity and the Byzantine period agreed that this gift of Demeter had warming properties and was particularly nourishing and thus described it as the most valuable food in this regard. In these roles, wheat was much more effective than barley.

A detailed dietetic discourse concerned products obtained from *pyrós* as well. From the physicians' deliberations it appears that bread was particularly valued, although experts warned that some of its types (those prepared without yeast, i.e. unleavened bread) could be harmful to health. Similarly, other *pyrós* products, much like dishes from boiled flour, or with an addition of various wheat cakes⁹⁷⁵ and inappropriately prepared foods from wheat groats, could be dangerous because they thickened juices and caused blockades of internal organs. Sources also inform readers how to avoid the risks involved in obtaining the most appropriate food.

Medical treatises are a relatively vast store of data on the subject of utilising wheat in gastronomy. From our analysis it can be concluded that this product was the main ingredient in the production of various

⁹⁷⁵ Here, products based on *áleuron* prepared without *zýme*.

kinds of bread. Numerous types of the latter were known, while their names were formed depending on the type of flour used, its thickness, the presence or absence of yeast and the method of baking. The main recipe for bread remained unchanged and was similar to the one used nowadays. These products were the main foodstuffs of the city dwellers, whereas more types of *ártos* from locally grown cereals were produced in the countryside. Apart from that, flour obtained from *pyrós* (*áleuron pýrinon*) was utilised for frying *sui generis* pancakes (*tagenítai*) and making *ítria*, i.e. cakes from wheat flour and water, which were used in preparing cooked dishes of various kinds. Also groats (*chóndros* and *krímnon*), which were usually boiled and served in form of mushes, soups and gruels, were obtained from wheat. Although the remarks about the formulas are rather general, they do provide us with an idea about the methods used by bakers and cooks.

Pyrós products were presented as *phármaka* that were often utilised in the medical practice of the second–seventh century period. In order to familiarise readers with the role of common wheat, it is worth bringing up Galen's view stating that certain wheat products, in particular *ártos*, *chóndros* and *áleuron*, were valued as *boéthema*, with which all seriously ill patients had to be provided. We have also observed that wheat and products obtained from it were listed in a whole range of medicinal diets as strength-giving foods. Similarly, they were utilised in numerous medicaments applied internally and externally. The amount of pharmacological data suggests that this cereal was one of the most commonly used and (relatively easily) available medicinal substances.

Einkorn wheat

We have determined that einkorn wheat was considered a beneficial food, however, it was less valued than common wheat; *típhe* thus played a secondary role in the diet of Mediterranean Basin's inhabitants of the second– seventh century period. Special attention was paid to its lower nutritional value in comparison with *pyrós*, as well as the greater difficulties in digesting it and less attractive taste and smell. This opinion did not change throughout the analysed period.

From the presented data it appears that *típhe* was used in the production of bread. It was noted, though, that this product quickly went off, as a consequence lost its flavour. It was mainly consumed in the countryside, although there was some demand for fresh bread made of it in cities as well. The analysed cereal was also utilised in gastronomy. It was typically made into thick gruels, and then served in the form of sweet or salty dishes. In general, the authors' respect for einkorn wheat products cannot be compared with their assessment of *pyrós*, which is reflected in the limited number of culinary details provided.

The recorded medical data indicate that the role of *típhe* was marginal in therapeutic procedures practiced between the second and the seventh century. We suppose that it was supplanted by *pyrós* wheat, which was regarded as a much more effective *phármakon*.

Emmer wheat

The analysed data clearly show that the dietetic doctrine concerning emmer wheat was formed in the pre-Galenic antiquity. The basic canon of findings regarding *zeiá* was introduced to medicine by Dioscurides, and his teachings were then cited without any alterations until the end of the period studied here.

Materials show that emmer wheat was not disallowed by the medicine of antiquity and Byzantine times. In dietetic terms, it was similar to *pyrós*. Although it was worse than common wheat, it was classified as valuable food, especially in a form of groats (*chóndros* and *krímnnon*), appropriate for cooking soups and gruels. It was praised less as a cereal suitable for baking bread. The latter food, however, must have been quite common, particularly in the areas located far from the centres of Graeco-Roman civilisation.

Zeiá appears to be a *phármakon* of limited applications. In any case, it was probably regarded as less efficient when compared with common wheat or barley. If we also mention its limited availability to readers of the analysed treatises, i.e. to the inhabitants of cities, it is not surprising that information about its therapeutic applications is so rare.

Spelt

We have presented in this study the reasons for regarding the term *ólyra*, which appears regularly in medical sources, as one denoting a cereal other than emmer wheat (*zeiá*), and thus referring to spelt.

The analysed data show that the spelt was not rated highly in comparison with common wheat. First and foremost it was believed to be less nutritious; it was also difficult to digest, and was considered to have an inferior taste and smell. Generally, these evaluations suggest *ólyra* played only a supporting role in the diet between the second and seventh century.

Information about the uses of spelt as food is relatively limited. From the recorded sources it can be deduced that this cereal was mainly consumed by countryside dwellers. The only product popular in cities was fresh *ártos olýrinos*, which, however, lost its desirable properties while becoming stale. Apart from bread, *ólyra* was also used in making groats and the so-called *trágos*, that is, a product created by soaking cleaned grains, and resembling those. Both products were utilised in cooking soups and gruels of varying thickness.

The analysed sources lack data concerning the applications of spelt in medical procedures.

Barley

The analysis of medical treatises has led us to a conclusion that the second most popular cereal of the second to seventh century period was barley. Its dietary description stood in contrast to the image of common wheat. It was deemed that *kriothé* had low nutritive value and a cooling rather than warming effect on the body. In accordance with the dietary doctrine, juices created as a result of processing this product in a human organism were rather thin, and could be cleansing. We must add that the views of physicians on barley were as consistent throughout the period of interest to us as those regarding *pyrós* wheat.

To summarise our findings, one may conclude that barley was a common and recommended food. Sources suggest, though, that in terms of popularity in the cuisine of urbanised areas it was second to wheat. In

culinary art it was mainly used as a product for making *álphita* groats, which were produced from roasted barley (*káchrys*) and cooked to a form of gruels or soups. *Máza*, in turn, was produced from *álphita*. It was a type of groats mixed with water (and possibly other flavouring additives) to the form of small loaves or cakes, which were usually served without cooking or roasting. *Álphita* were the main ingredient of the famous *ptisáne* soup. On the basis of medical sources, it is possible to reconstruct a canonical recipe for this medicinal dish, including the proportions of ingredients. Slightly fewer data are preserved on the subject of barley bread, which was not as highly valued as wheat bread; It was therefore a food of less wealthy people.

The uses of *krithé* in specialised medical procedures resulted from the properties of the substance itself, listed by dieticians. Barley and the products obtained from it constituted a powerful weapon at medicine's disposal in the battle against various diseases. Particularly *ptisáne*, an ancient panacea of sorts, was commonly used in treating patients debilitated by fevers. Barley flour was utilised in the production of various types of poultices, particularly those which were supposed to cause opening of ulcers and absorption of lumps and swellings. *Álphita* had a similar function and was often used in compound medicaments. Medical treatises of antiquity and Byzantine times create an impression of omnipresence of medicines based on barley, which could only compete with those prepared from wheat, and thus explicitly indicate the important role of *krithé* in the reality depicted by the sources.



KRZYSZTOF JAGUSIAK

Prosopographical glossary⁹⁷⁶



Andromachus (*fl.* second half of the first century AD) – a son of another famous physician of the same name, and thus he is often confused with him. He worked in Rome, probably like his father serving at the imperial court. In the time of Flavian dynasty he wrote a work devoted to medicines applied internally and externally and – separately – for eye ailments. In creating these works he followed the example of earlier authors. Subsequent physicians often cited him, although, according to Galen, his works were not flawless or fully precise.

Literature: M. Wellmann, *Andromachos* (18), [in:] *RE*, Bd. I, Stuttgart 1894, col. 2154; V. Nutton, *Andromachus* (5), [in:] *BNP*, vol. I, Leiden–Boston 2002, col. 685–686; G. Marasco, *Andromachos v. Kreta*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 50–51.

Antyllus (around the first half of the second century AD) – Greek physician of the Pneumatic school of medicine. The author of now lost works on medicaments and surgery. Fragments of his works devoted

⁹⁷⁶ Authors of sources which were crucial to our publication were presented in the Introduction.

to other numerous medical issues, such as surgery, hygiene, climatology, baths, ophthalmological surgeries or physical activity were stored in the oeuvres of later physicians coming from the Greek and Arabic cultural backgrounds, such as Oribasius, Aetius of Amida, Paul of Aegina or Avicenna.

Literature: A.M. Ieraci Bio, *Antyllus*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 62–63; V. Nutton, *Antyllus*, [in:] *BNP*, vol. I, Leiden–Boston 2002, col. 810–811; idem, *Ancient medicine*, London–New York 2005.

Apollonius of Pergamum – Greek physician. Even approximate time of his activity is difficult to determine; however, it must have been before the fourth century AD, since Oribasius, who lived during that time, cited his works. Perhaps he should be identified with Apollonius who was cited by Alexander of Tralles, which would mean that he lived at the turn of the first and second centuries (according to Alexander's chronology, he lived after another physician, Xenocrates of Aphrodisias, who lived in the first century AD). He lived in Asia Minor and witnessed, as well as suffered from, bubonic plague. He managed to survive thanks to cutting his skin and passages of his works devoted to this procedure were later cited by Oribasius. He also wrote about bloodletting and recommended moderation in applying this procedure and using it only when the patient's condition was serious.

Literature: M. Wellmann, *Die pneumatische Schule bis auf Archigenes*, Berlin 1895; M. Wellmann, *Apollonios v. Pergamon*, [in:] *RE*, Bd. II, Stuttgart 1896, col. 150.

Archigenes (first–second century AD) – Greek physician from Syrian Apamea. He enjoyed great prestige among later practitioners of medicine (such as Galen, Soranus, Oribasius, Alexander of Tralles, Aetius of Amida or Paul of Aegina), who cited him frequently, despite certain ambiguities of his teachings. He was counted among members of

the Eclectic school of medicine, although he did draw some ideas from the Pneumatic school, trying to overcome doctrinal contradictions between the contemporary medical theories. He regarded the elimination of *dyskrasia*, that is, improper proportions of juices in an organism, as a crucial problem of therapeutics and distinguished eight kinds of such disorders. Apart from that, he mentioned various issues connected with healthcare. He dealt with examining the pulse, which led him to recognising its eight values. He made some specific observations regarding types of pain accompanying different diseases. He also influenced the development of pharmacology, nosology and pathology. He wrote about fevers, surgery and symptomatology. Moreover, he wrote a lot of letters to his friends, in which he gave recommendations on maintaining good health. Although some of his opinions were rejected by Galen and later authors, many of his views were considered to be exceptional achievements of medicinal thought and valued throughout the period of interest to us.

Literature: M. Wellmann, *Die pneumatische Schule bis auf Archigenes*, Berlin 1895; M. Wellmann, *Archigenes*, [in:] *RE*, Bd. II, Stuttgart 1896, col. 484–486; V. Nutton, *Archigenes*, [in:] *BNP*, vol. I, Leiden–Boston 2002, col. 989–990; C. Oser-Grote, *Archigenes v. Apameia*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 80; V. Nutton, *Ancient medicine*, London–New York 2005.

Asclepiades (second/first century BC) – one of the several famous ancient physicians of this name, author of a work devoted to medications, applied internally and externally. He came from Prusa in Bithynia, but became famous for his activity in Rome. For Galen, his works were one of the main sources of information about medications and passages from his texts, included in Galen's treatises, are nowadays an excellent source of knowledge about medical formulas from the early Roman Empire. Asclepiades claimed that body consists of invisible elements and health is dependent on their free and well-balanced movement through

pores, while illnesses result from their improper flow. He was a supporter and promoter of correctly adjusting the diet, undergoing massages and, as long as it was possible, exercising; he also recommended that patients drank wine. Opinions of later ancient physicians on the subject of his methods were contradictory, but the importance of Asclepiades in paving the way for introducing Greek achievements in medicine among the Romans is undeniable.

Literature: M. Wellmann, *Asklepiades* (43), [in:] *RE*, Bd. II, Stuttgart 1896, col. 1633–1634; J. Vallance, *The medical system of Asclepiades of Bithynia*, [in:] *ANRW*, T. II, Bd. 37, 1, Berlin–New York 1993, p. 693–727; V. Nutton, *Asclepiades* (6), [in:] *BNP*, vol. II, Leiden–Boston 2003, col. 96–98; S. Ihm, *Asklepiades v. Bithynien*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 107–108.

Athenaeus of Attaleia (*fl.* in the mid-first century AD) – a Greek physician who became famous during the reigns of Claudius and Nero. He created his own, separate school of medicine, called the Pneumatic school. His views were contrary to those of Asclepiades. He claimed that health and illness were dependant on the state of air (*pneuma*) and a correct mixture of four qualities in an organism: hot, cold, dry and wet (the disturbance of balance between them – *dyskrasia* – caused diseases). He emphasised keeping proper diet as a practice essential to retaining a healthy balance between them. His views were included in a work consisting of 30 books, which was known to, and appreciated, by Galen and then Oribasius. The work did not survive to modern day and we do not know its title. We also do not know whether any other works of Athenaeus of Attaleia existed.

Literature: M. Wellmann, *Athenaios aus Attalia*, [in:] *RE*, Bd. II, Stuttgart 1896, col. 2034–2036; E. Kulf, *Untersuchungen zu Athenaios von Attaleia. Ein Beitrag zur antiken Diätetik*, Göttingen 1970, *passim*; V. Nutton, *Athenaeus* (6), [in:] *BNP*, vol. II, Leiden–Boston

2003, col. 244–245; K.-H. Leven, *Athenaios v. Attaleia*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 119–120.

Athenaeus of Naucratis (second/third century AD) – Greek scholar. Not much is known about his life. He probably lived in Rome during and after the reign of Commodus. He was an author of at least three works whose titles we are familiar with. Two of them (one devoted to anecdotes and histories of Seleucid monarchs, the other a literary study of Archippus' work on fish) did not survive to modern day. However, a substantial part of the third work, entitled *Deipnosophistae*, has been preserved. This monumental work, consisting of fifteen books, is an inexhaustible treasury of citations, stories, customs, anecdotes and descriptions devoted to, generally speaking, food. Its special significance results from the fact that Athenaeus directly quoted or mentioned hundreds of authors and thousands of works, most of which are now completely unknown. The comparison of his citations with corresponding passages of the preserved works shows that his extracts were precise and accurate to the originals. A lot of attention in *Deipnosophistae* paid to therapeutic properties of foods. Nonetheless, experts, as Byzantine physicians can certainly be called like that, did not cite Athenaeus' oeuvre in their works.

Literature: G. Wentzel, *Athenaios* (22), [in:] *RE*, Bd. II, Stuttgart 1896, col. 2026–2033; B. Baldwin, *Athenaeus and his work*, *AClass* 19, 1976, p. 21–42; E. Bowie, *Athenaeus* (3), [in:] *BNP*, vol. II, Leiden–Boston 2003, col. 240–243; H. Hein, *Athenaios v. Naukratis*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 120–121; K. Bartol, J. Danielewicz, *Wstęp*, [in:] A tenajós, *Uczta mędrców*, transl. K. Bartol, J. Danielewicz, Poznań 2010, p. 7–64.

Cato (234–149 BC) – Marcus Porcius Cato, also known as Cato the Elder or Cato the Censor. He was born in Tusculum. He was an

eminent Roman politician (204 quaestor, 199 aedile, 198 praetor, 195 consul, 184 censor), soldier (campaigns against Hannibal, the Iberians, Antiochus the Great, triumph in 195), lawyer and writer. Out of all his works, and we know that he wrote at least eight of them (excluding recorded speeches), in which he dealt with various issues, from historical, through military, to didactic. We are particularly interested in his treatise devoted to life (in general) and the organisation of labour on a farm, entitled *De agri cultura*. It was the first Latin text on this subject, and its author belonged to people brought up in the countryside and familiar with the hardships and ins and outs of peasants' work. In his text he included information on types of crops, appropriate food for workers, slaves and livestock, culinary recipes and formulas for simple medications. Some attention was also devoted to technical (e.g. concerning olive press) and religious matters.

Literature: R. Helm, *Porcius* (10), [in:] *RE*, Bd. XXII, 1, Stuttgart 1953, col. 108–165; W. Kierdorf, *Cato* (1), [in:] *BNP*, vol. III, Leiden–Boston 2003, col. 20–23; I. Mikołajczyk, *Rzymska literatura agronomiczna*, Toruń 2004; S. Szczygieł, *Katon – rzymski tradycjonalista, czy polityk realista*, Warszawa 2011, *passim*, esp. p. 185–213.

Columella (first century AD) – Lucius Junius Moderatus Columella, was born in Gades in Hispania Baetica, but was connected with Italy throughout his life. After the military service, that as a tribune in Syria and Cilicia, he became disillusioned with Roman politics and settled near the capital where he successfully ran several farms. He wrote a treatise concerning the issues that he dealt with in practice on a daily basis, entitled *De re rustica*, which is the most serious, apart from the work of Palladius, Roman text devoted to the art of arable farming and animal breeding, and a minor work *De arboribus*, preserved to this today. However, at least one of his works, aimed against the astrologists who attempted to forecast the weather, went missing. The agricultural treatise, which we cite in our book, contains numerous recommendations supported

by practical knowledge, experience and experiments of the author, who was a supporter of reasonable and intensive farming and an opponent of many methods of cultivation used in his times. Columella was considered to be an authority in the field of agronomy by the subsequent generations of Roman and mediaeval authors.

Literature: A. K a p p e l m a c h e r, *Iunius* (104), [in:] *RE*, Bd. X, 1, Stuttgart 1918, col. 1054–1068; E. C h r i s t m a n n, *Columella*, [in:] *BNP*, vol. III, Leiden–Boston 2003, col. 584–586; I. M i k o ł a j - c z y k, *Rzymska Literatura agronomiczna*, Toruń 2004.

Crito (first–second century AD) – a Greek physician connected with Rome, he worked at the imperial court during the reign of Trajan (98–117), he might have taken part in the Emperor’s campaign against the Dacians, which he described in a separate text, and exchanged correspondence with Apollonius of Tyana. He was likely a follower of the Eclectic school of medicine. We know that he wrote a work dealing with the issues of bodily beautification and care, but also analysing human diseases, and separate treatises devoted to pharmacology. His works went missing and are only known to us through Galen, who cited a few of their fragments, and also later writers, including Oribasius.

Literature: E. K i n d, *Kriton* (7), [in:] *RE*, Bd. XI, 2, Stuttgart 1922, col. 1935–1938; J. S c a r b o r o u g h, *Criton, physician to Traian: historian and pharmacist*, [in:] *The craft of the ancient historian: Essays in honor of Chester G. Starr*, eds. J.W. E a d i e, J. O b e r, Lanham, MD–London–New York 1985, p. 387–405.

Damocrates of Athens (first century AD) – a freedman of a consul of 3 AD, Marcus Servilius (thus he is sometimes referred to as Servilius Damocrates), whose daughter, who was suffering from a serious disease, he cured; he was known and respected in Rome in the mid-first century. He was an author of at least several works. A characteristic feature of the fragments of his texts that are known to us was their atypical

form. They were constructed in accordance with the rules of ancient meter (quantitative meter). On the basis of these passages we can assume that he was particularly interested in pharmacy. He left highly valued and clear recipes for preparing and applying medicinal substances such as poultices for soothing pain, tooth powder, various antidotes and purgative medicaments. His works are known today exclusively through Galen's texts.

Literature: M. Wellmann, *Damokrates* (8), [in:] *RE*, Bd. IV, Stuttgart 1901, col. 2069–2070; E. Bowie, *Damocrates*, [in:] *BNP*, vol. IV, Leiden–Boston 2004, col. 64; S. Vogt, *Damokrates*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 207–208.

Diocles of Carystus (fourth century BC) was a highly esteemed Greek physician, sometimes referred to as “the second Hippocrates”. He belonged to the Dogmatic school of medicine. He was probably connected with Athens. Among his numerous interests were various branches of medicine, which presents him in a special light when compared with the other contemporary physicians. He is also regarded as a skilful innovator, as he is attributed with constructing a tool for removing arrows from wounds. His works are only known to us through citations in texts of later authors, thus determining Diocles' views might be problematic. It appears that he attached much importance to pneuma; Galen considered him to be a follower of Hippocrates and the theory of four humours. In the field of dietetics, the physician recommended adjusting the type of food to the season, ascribing certain qualities such as hot-dry and cold-wet to them. He also recommended adjusting food to the age and the degree of physical activity of the patient. In his vast work concerning dietetics he included detailed opinions about healthy lifestyle, body care, good sleep and proper balance of the elements in everyday diet. Diocles was also a great botanist and pharmacist (the first scholar to describe the influence of plants on a human body), anatomist and gynaecologist.

Literature: M. Wellmann, *Diokles* (53), [in:] *RE*, Bd. V, Stuttgart 1905, col. 802–812; W. Jaeger, *Diokles von Karystos*, Berlin 1938; P.J. van der Eijk, *Diocles of Carystus: A collection of the fragments with translations and commentary*, vol. I–II, Leiden–Boston–Köln 2000–2001; V. Nutton, *Diocles* (6), [in:] *BNP*, vol. IV, Leiden–Boston 2004, col. 424–426; K.-H. Leven, *Diokles v. Karystos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 225–227.

Heraclides of Tarentum (around the second and first century BC) – an outstanding representative of Empirical school of medicine. He probably worked in Alexandria. He is an author of works dealing with the preparation and significance of medicinal substances and medicaments important for the army (pharmacology was his main field of research), pulse, a text concerning venomous animals, another one describing the views of empiricists and comments to the entirety of the Hippocratic works. He was an expert in surgery, particularly of the eye. From our point of view, his works devoted to dietetics (he wrote at least two of them) seem particularly interesting. He was often cited by Galen and Athenaeus of Naucratis. Among the following generations of physicians he was held in high esteem, even among those belonging to other medical schools. His works were known in Greek, Latin and also Arabic cultural *milieux*.

Literature: H. Gossen, *Herakleides* (54), [in:] *RE*, Bd. VIII, Stuttgart 1913, col. 493–496; A. Guardasole, *Herakleides v. Tarent*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 401–402; V. Nutton, *Heraclides* (27), [in:] *BNP*, vol. VI, Leiden–Boston 2005, col. 173–174.

Hippocrates (around 460 – around 370 BC) – the most famous of all physicians in the history of medicine, known as the father of medicine. He came from the island of Cos, from a family with medical traditions (his father and grandfather were physicians). His life became

a subject to numerous legends and contradictory. He certainly was famous among his contemporaries, he travelled a lot, thus gaining experience and treating patients. He supposedly refused to work for the king of Persia. He created his own medical school. The contribution of Hippocrates to the development of science is enormous. He was believed to be the first to separate medicine from divine issues and explain diseases through natural factors. He focused on prognosis rather than diagnosing illnesses. He considered the moment of crisis in a disease to be significant, as it was the point after which the patient either regained strength and recovered or was defeated by the illness. He approached the subject of diet very seriously and understood it not only as eating habits but as the entire physical activity of a human being. The creation and development of the theory of humours is also connected with the name of Hippocrates; this tradition was maintained by Galen and played an important role in the ancient and Byzantine medicine. The views and experiences gained during Hippocrates' medical practice were included in his treatises, around which, during a century after his death, several dozen other works were written by his apprentices and followers. These texts, together with works rated among those of the medical school of Cnidus, constitute the *Hippocratic Corpus*; within it, it is difficult to distinguish original works of the Father of medicine from the others.

Literature: H. G o s s e n, *Hippokrates* (16), [in:] *RE*, Bd. VIII, Stuttgart 1913, col. 1801–1852; L. E d e l s t e i n, *Hippokrates*, [in:] *RE*, Supplementband VI, Stuttgart 1935, col. 1290–1345; R. W i t t e r n, *Hippokrates*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. L e v e n, München 2005, col. 414–416; i d e m, *Hippokratische Schriften/Corpus hippocraticum*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. L e v e n, München 2005, col. 418–420; P. P o t t e r, B. G u n d e r t, *Hippocrates* (6), [in:] *BNP*, vol. VI, Leiden–Boston 2005, col. 354–363; M. W e s o ł y, *Po co nam dziś Hippokrates?*, [in:] *Hippokrates, Wybór pism*, transl. M. W e s o ł y, Warszawa 2008, p. 11–42.

Leontinus (perhaps Leon) – an author about whom practically no information survived. He may have lived in the third century AD. We know his name only from citations included in *Geoponica*, from which it appears that he wrote a work or works devoted to running a farm (he analysed, among others, the choice of seeds appropriate to the type of soil, tending fruit trees and rules of breeding and treating livestock).

Literature: A. Dalby, *List of sources cited in Geoponica*, [in:] *Geoponica. Farm work*, transl. A. Dalby, Blackawton, Totnes, Devon 2011, p. 43–44; I. Mikołajczyk, *Wstęp*, [in:] *Kassianus Bassus, Geoponika, bizantyńska encyklopedia rolnicza*, transl. I. Mikołajczyk, Toruń 2012, p. 31.

Lycus (first century BC) – born in Naples. Not much is known about his life. He represented the Empirical school of medicine. His works are known only in fragments. He wrote, among others, commentaries to the works of Hippocrates, dealt with pharmacology, gynaecology, anatomy and therapeutics. He probably did not write separate texts devoted to dietetics. He was later cited by Latin authors (Pliny) and Greek writers (Oribasius, Paul of Aegina).

Literature: E. Kind, *Lykos* (51), [in:] *RE*, Bd. XIII, 2, Stuttgart 1927, col. 2407–2408; A. Towaiide, *Lycus* (10), [in:] *BNP*, vol. VII, Leiden–Boston 2005, col. 938–939.

Mnesitheus of Athens (fl. fourth century BC) – physician representing the Dogmatic school of medicine. He was famous among his contemporaries, in particular as a dietician. We know very little about his life. He was a follower of the theory of humours. He wrote at least a several works devoted to the issue of feeding, in which he described the influence of plant and animal products on the human organism, the effect of alcoholic intoxication on a human being (he recommended getting inebriated once in a while) and types of wine, but also recommendations regarding dietetics in the upbringing of little children.

He made numerous observations about the effects of food on a human body. The works of Mnesitheus of Athens, now lost, were frequently cited by Galen, Athenaeus of Naucratis and Oribasius (the latter also cited another, less famous, physician of the name of Mnesitheus, who came from Cos – but these fragments were not used in the present book).

Literature: K. D e i c h g r ä b e r, *Mnesitheos* (3), [in:] *RE*, Bd. XV, 2, Stuttgart 1932, col. 2281–2284; R. d e L u c i a, *Mnesitheos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. L e v e n, München 2005, col. 623–624; V. N u t t o n, *Mnesitheus*, [in:] *BNP*, vol. IX, Leiden–Boston 2006, col. 102.

Orestinus (before the second century BC) – physician known only thanks to two recipes for medicaments against balding, which were cited by Heraclides of Tarentum and which survived to our times in the works of Galen, who cited Heraclides. Nothing can be said about his life or legacy.

Literature: H. D i l l e r, *Orestinos*, [in:] *RE*, Bd. XVIII, 1, Stuttgart 1939, col. 1017.

Palladius (fourth/fifth century AD) – Rutilius Taurus Emilianus Palladius was the last eminent Roman author of a gastronomic work. Hardly anything is known about his life, apart from the information stating that he was a land owner connected with the Western part of the Roman Empire. He wrote a treatise entitled *Opus agriculturae*, which is the second largest Roman work in the subject of agronomy, after that of Columella. The author described activities undertaken on a farm, treating orchard maintenance and animal care separately. In the creation of this work he followed the example of previous Greek and Roman authors and also his own, rather extensive, experience.

Literature: J. S v e n n u n g, *Palladios* (7), [in:] *RE*, Bd. XVIII, 3, Stuttgart 1949, col. 209–211; I. M i k o ł a j c z y k, *Rzymska literatura*

agronomiczna, Toruń 2004; K. Ruffing, *Palladius (II, 1)*, [in:] *BNP*, vol. X, Leiden–Boston 2007, col. 393–394.

Philotimus (around the fourth and third century BC) was a follower of Praxagoras and a physician, whose life is not well known today. His works did not survive to modern times and we can learn about them only through the references of later authors. He wrote, among others, a treatise about food, in which he, most likely, described properties of various kinds of food, devoting a separate book to each of the groups. Apart from this we know that he dealt with surgery and anatomy. He was cited, among others, by Galen, Athenaeus of Naucratis and Oribasius.

Literature: H. Diller, *Phylotimos*, [in:] *RE*, Bd. XX, 1, Stuttgart 1941, col. 1030–1032.

Philumenus (around the second century AD) – physician basing his works on the views of the Methodical and Pneumatic schools of medicine. He dealt with numerous issues concerning health care. Passages of his works surviving to this day concern internal diseases, gynaecological diseases, problems with abdominal body parts, as well as pharmacology and venomous animals (that is, toxicology). He wrote in a clear, simple style that was easy to understand. He was cited by such authors as Oribasius, Alexander of Tralles and Aetius of Amida; he was also well-known among scholars of the Arabic and Latin cultures.

Literature: H. Diller, *Philumenos (7)*, [in:] *RE*, Bd. XX, 1, Stuttgart 1941, col. 209–211; S. Ihm, *Philumenos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 699; A. Touwaide, *Philumenus*, [in:] *BNP*, vol. XI, Boston–Leiden 2007, col. 126–127.

Pliny (23/24–79 AD) – Gaius Plinius Secundus, called the Elder. He came from Comum, north of Italy. He did his military service in

Germania, he might have participated in suppressing the rebellion in Judaea, was involved in public activity under the reign of the Flavian dynasty. In the year 79 he was the commander of the Roman navy from Misenum, and tried to help the victims of the eruption of Vesuvius; he died commanding the rescue operation. He wrote numerous texts devoted to various issues (cavalry combat, historiography, rhetoric, grammar), which are now lost. His last monumental work survived to our times. It was originally finished in the year 77, but it was edited and published after his death by his nephew, Pliny the Younger. It is known as *Natural history* and deals with astronomy, geography, mineralogy, metallurgy, zoology and, which is of interest to us in the context of our publication, botany, agronomy and medicine; he attempted to include the entire knowledge of his time within it. In his work he cited hundreds of authors of both Greek and Roman origin, occasionally also basing his work on his own experiences.

Literature: W. Kroll, *Plinius* (5), [in:] *RE*, Bd. XXI, 1, Stuttgart 1951, col. 271–439; J.F. Healy, *Pliny the Elder on science and technology*, Oxford 2000; I. Mikolajczyk, *Rzymska literatura agronomiczna*, Toruń 2004.

Polemo Periegetes (also known as Polemo of Athens, Polemo of Ilion) (*fl.* second century BC) – a Greek philosopher, counted among the stoics, a traveller and a geographer. He wrote many works, none of which survive to our times. Since he is not a figure crucial to our publication, we are going to be selective in his presentation. He is the author of a description of Athenian Acropolis, Greek lands and cities (Lacedaemon, Boeotia, Thebes, Sicyon, Delphi, Phocaea), Italy, Sicily and the history of Greece. Furthermore, he dealt with descriptions of mythical traditions of certain regions, subjects of antiquarian interest and reviewed art; he also wrote letters. In the context of our publication, the legacy of Polemo is only important as one of the sources of Athenaeus of Naucratis regarding the gifts presented to Demeter, Cybele and Attis.

Literature: H. B i s c h o f f, *Perieget*, [in:] *RE*, Bd. XIX, 1, Stuttgart 1937, col. 728–732; K. D e i c h g r ä b e r, *Polemon* (9), [in:] *RE*, Bd. XXI, 2, col. 1288–1320; A.A. D o n o h u e, *Polemon* (2), [in:] *BNP*, vol. XI, Leiden–Boston 2007, col. 458–459.

Praxagoras (fourth century BC) – born in Cos, in a family of long medical traditions. He was a teacher of many other famous physicians, including Philotimus, who was mentioned in our glossary. He was a follower of Hippocrates' theories, which he attempted to develop. He followed the great author's example in the field of dietetics, prognosis and venesection. He was a supporter of the theory of humours, but he increased the number of humours from four to ten. He carried out research in anatomy, during which he distinguished veins containing blood from arteries filled with pneuma and dealt with processes which occurred in the vascular system (with heart as a central organ) referred to as pulse. He wrote at least eight treatises: on therapy, on diseases, their symptoms and prognosis, and about human anatomy, which is known only from excerpts made by later authors, mainly Galen, who knew and cited some of their fragments, but was critical about Praxagoras' views.

Literature: K. B a r d o n g, *Praxagoras* (1), [in:] *RE*, Bd. XXII, 2, Stuttgart 1954, col. 1735–1743; T. T i e l e m a n, *Praxagoras v. Kos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. L e v e n, München 2005, col. 726–727; V. N u t t o n, *Praxagoras*, [in:] *BNP*, vol. XI, Leiden–Boston 2007, col. 782–783.

Rufus of Ephesus (first–second century AD) – one of the most prominent Greek physicians of the time, both an eminent theoretician and practitioner of medicine. He was among the supporters of the Hippocratic theory of humours, but he remained independent of the competing medical schools of his time. He worked for a long time in Egypt, where he may have learned medicine, and subsequently worked in Asia Minor. He wrote numerous works, only some of

which survived to our times, and a part of which is now known thanks to the excerpts made by later authors. Among these treatises we can list works dealing with dietetics, diseases of bladder and kidneys, diseases connected with reproductive system, anatomical vocabulary, jaundice, or a text containing questions that a physician was supposed to ask his patient. He probably also wrote commentaries to the *Hippocratic Corpus*. His works were liberally used by the next generations of physicians. He was highly valued by Galen, Oribasius, Aetius of Amida, Paul of Aegina and also physicians of the Arabic culture and the Latin West.

Literature: H. G o s s e n, *Rufus* (18), [in:] *RE*, 2. Reihe, Bd. I, 1, Stuttgart 1914, col. 1207–1212; A. S i d e r a s, *Einleitung*, [in:] R u f u s E p h e s i u s, *De renum et vesicae morbis*, eds. A. S i d e r a s, Berlin 1977, p. 58–69; i d e m, *Rufus von Ephesos und sein Werk im Rahmen der antiken Medizin*, [in:] *ANRW*, T. II, Bd. 37, 2, Berlin–New York 1994, p. 1077–1253; H. T h o m s s e n, C. P r o b s t, *Die Medizin des Rufus von Ephesos*, [in:] *ANRW*, T. II, Bd. 37, 2, Berlin–New York 1994, p. 1254–1292; S. I h m, *Rufus v. Ephesos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. L e v e n, München 2005, col. 759–760; V. N u t t o n, *Rufus* (5), [in:] *BNP*, vol. XII, Leiden–Boston 2008, col. 756–758.

Soranus (first–second century AD) – born in Ephesus, probably studied in Alexandria. He then gained recognition among the Roman elite, whose representatives gladly paid well-educated Greek physicians (and among whom he definitely belonged) and for a time worked in Rome. He also travelled to Aquitaine to work. He belonged to the Methodic school of medicine, and wrote many medical works. The most well-known of these are the ones devoted to gynaecology, in which Soranus was a brilliant expert (he presented advice for midwives and requirements they had to meet, recommendations for the time of pregnancy and childbirth, he described diseases of women’s urinary-reproductive system and methods of curing them). The other works known

to us were devoted to surgery, chronic diseases and anatomical vocabulary. Besides these, he wrote a biographical work about famous physicians and commentaries to the *Hippocratic Corpus*, and at least one philosophical text. In the context of our publication, he appears as the author of recipes for medicaments containing cereals, which were cited by later authors. Many later authors, such as Galen or Oribasius, used the works of Soranus.

Literature: E. K i n d, *Soranos*, [in:] *RE*, 2. Reihe, Bd. III, 1, Stuttgart 1927, col. 1113–1130; J. S c a r b o r o u g h, *The pharmacy of Methodist medicine: the evidence of Soranus' Gynecology*, [in:] *Les Écoles médicales à Rome: Actes du 2ème Colloque International sur les textes médicaux latins antiques*, Lausanne 1986, eds. P. M u d r y, J. P i g e a u d, Geneva 1991, p. 204–216; S. I h m, *Soran*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. L e v e n, München 2005, col. 822–823; *Soranus*, [in:] *BNP*, vol. XIII, Leiden–Boston 2008, col. 653–655.

Theophrastus (around 370–287 BC) – actually called **Thyrtamus**, born in Eresos. He was connected with Athens, became a follower of Plato, then an apprentice and a friend of Aristotle, after whom he took over the leadership of the Peripatetic school (Lyceum); it greatly flourished under his lead. He was among the most outstanding and most respected minds of his time. His scientific interests were broad: from ethics, through historiography, logic, psychology to law, but his main focus was on biology, medicine and meteorology. He wrote numerous works on various subjects, but the majority of them is now lost. To the most significant ones (also from the point of view of our work), and surviving to our time, belong *Historia plantarum* and *De causis plantarum*, through which he made a great contribution to the development of biology through extensive studies in physiology, morphology, systematic and geographic location of flora. He paid close attention to the usefulness of plants in the various field of human activity. His botanical studies played a crucial role in science all the way until the modern times. Later Greek authors (Athenaeus of Naucratis and Galen) and Roman writers

(Pliny, agronomic authors), ones important for our work, based their writings on his oeuvre.

Literature: O. Regenbogen, *Theophrastos*, [in:] *RE*, Supplementband VII, Stuttgart 1940, col. 1354–1562; G. Wöhrle, *Theophrast v. Eresos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 853–855; P. Millet, *Theophrastus and his world*, Cambridge 2007.

Trypho of Alexandria (second/first century BC) – an outstanding Greek grammarian, an author of at least a several treatises devoted to, among others, rhetorical figures, parts of speech and dialects. Today his works are only known from later citations. From our point of view, the important passages of his texts are the ones which were preserved in *Deipnosophistae* by Athenaeus of Naucratis as they refer to issues concerning, broadly speaking, food.

Literature: C. Wendel, *Tryphon* (25), [in:] *RE*, 2. Reihe, VII, 1, Stuttgart 1939, col. 726–744; M. Baumbach, *Tryphon* (3), [in:] *BNP*, vol. XIV, Leiden–Boston 2009, col. 988–989.

Varro (116–27 BC) – Marcus Terentius Varro. He probably originated from Italian Reate, and studied in Rome and Athens. His eventful clerical and military career (he was, among others, a quaestor, participated in war against Sertorius in Spain, served as tribune of the people, subsequently a praetor, and took part in war against pirates in the Mediterranean Sea) was ended by his participation in the war between Caesar and Pompey, in which, because of his conservative views, he supported the latter, determined to protect the Republic. After the defeat in Spain, and the subsequent one at Pharsalus, he was pardoned twice by Caesar and devoted the rest of his life to scientific work. Supposedly, he was to supervise the construction of a great library in Rome, but the death of Caesar made it impossible. He was considered to be the greatest of Roman scholars. He left over seventy works in more than six hundred

books, but only one of them survived to our time in its entirety (*Rerum rusticarum* on agriculture), the other was preserved in fragments (*De lingua latina*). It is the former treatise is significant for the purposes of our work. Its final version was created in 37 BC as a result of observations and experiences of the author, conversations he had with farmers and analyses of earlier agricultural works.

Literature: H. D a h l m a n n, *Terentius* (84), [in:] *RE*, Supplementband VI, Stuttgart 1935, kol 1172–1277; K. S a l l m a n n, *Varro* (2), [in:] *BNP*, vol. XV, Leiden–Boston 2010, col. 210–226; I. M i k o - ł a j c z y k, *Rzyska literatura agronomiczna*, Toruń 2004, p. 114–169.

Zopyrus (around the second and first century BC) – physician from Egyptian Alexandria, representing the Empirical school. He became famous as the author of a recipe for an antidote against poisons, prepared for one of the Ptolemies and because of his correspondence about remedies, which he exchanged with Mithridates VI (120–63), a great expert on this subject. Zopyrus became an authority for later physicians because of his pharmacology; he described a variety of medicaments and their effect on the organism. We know that he also dealt with surgery. He was cited, among others, by Galen, Oribasius and Aetius of Amida.

Literature: J. K o l l e s c h, *Zopyros* (15), [in:] *RE*, 2. Reihe, Bd. X A, München 1972, col. 771–772; V. N u t t o n, *Zopyrus* (8), [in:] *BNP*, vol. XV, Leiden–Boston 2010, col. 964.



Glossary of basic Greek terms



- áchylos* (ἄχυλος) – of limited nutritional value
áchylótera (ἄχυλώτερα) – (comparative of *áchylos*) of limited nutritional value (see *áchylos*)
áchyra (ἄχυρα) – (pl. of *áchyron*) chaff; bran (see *áchyron*)
áchyródes (ἄχυρώδης) – non-cohesive; loose
áchyron (ἄχυρον) – chaff; bran
ázyma (ἄζυμα) – (pl. of *ázymos*) bread without yeast; unleavened bread (see *ázymos*)
ázymos (ἄζυμος) – prepared without yeast
aedía (ἀηδία) – bad, unpleasant taste
aphépsēma (ἀφέψημα) – stock; decoction
áphysa (ἄφυσα) – (pl. of *áphysos*) foods not contributing to the production of gases (see *áphysos*)
áphysos (ἄφυσος) – not contributing to the production of gases
akosté (ἀκοστή) – barley (see *kritbé*)
akrokólia (ἀκροκώλια) – a term denoting less valuable parts of meat from quadruped animals: ears, snouts, legs
áleuron (ἄλευρον) – flour from common wheat or other kinds of cereal
áleuron adiákriton (ἄλευρον ἀδιάκριτον) – wholemeal flour
áleuron kríthionon (ἄλευρον κριθίνον) – barley flour
áleuron kyáminon (ἄλευρον κυάμινον) – broad bean flour
áleuron pýrinon (ἄλευρον πύρινον) – wheat flour
áleuron synkomistón (ἄλευρον συγκομιστόν) – wholemeal flour
álphita (ἄλφιτα) – barley groats
alrhós (ἀλφός) – a type of rash
alix (ἄλιξ) – groats (probably from spelt) (see *hálix*)

- alopekías* (άλωπεκίας) – spot baldness or another ailment manifesting in losing hair from the head
- ámes* (ἄμης) – a type of oven for baking cakes and bread
- ammoniakón* (ἀμμωνιακόν) – a type of resin
- ámylon* (ἄμυλον) – starch; a type of flour created through grinding grains (see *katastatón*)
- anadorá* (ἀναδορά) – irritation, wound or ulcer
- anakóllema* (ἀνακόλλημα) – poultice or plaster
- apóbregma* (ἀπόβρεγμα) – infusion or decoction
- apómeli* (ἀπόμελι) – beverage created through cooking honey combs in spring water
- apóstema* (ἀπόστημα) – ulcer
- ártoi* (ἄρτοι) – (pl. of *ártos*) bread (see *ártos*)
- ártoi katharói* (ἄρτοι καθαροί) – (pl. of *ártos katharós*) white bread (see *ártos katharós*)
- ártoi kribanítai* (ἄρτοι κριβανίται) – (pl. of *ártos kribanítēs*) bread baked in an oven *kribanon* (see *ártos kribanítēs*)
- ártoi kríthinoi* (ἄρτοι κρίθινοι) – (pl. of *ártos kríthinos*) barley bread (see *ártos kríthinos*)
- ártoi pityriái* (ἄρτοι πιτυρίαι) – (pl. of *ártos pityriás*) bran bread (see *ártos pityriás*)
- ártoi pityrítai* (ἄρτοι πιτυρίται) – (pl. of *ártos pityrítēs*) bran bread (see *ártos pityrítēs*)
- ártoi plýtoi* (ἄρτοι πλυτοί) – (pl. of *ártos plýtós*) light bread (see *ártos plýtós*)
- ártoi rhyparói* (ἄρτοι ρυπαροί) – (pl. of *ártos rhyparós*) black bread (see *ártos rhyparós*)
- ártos* (ἄρτος) – bread
- ártos ázyμος* (ἄρτος ἄζυμος) – bread baked/prepared without leavening; unleavened bread
- ártos aleurítēs* (ἄρτος ἀλευρίτης) – wheat bread baked from *áleuron* flour
- ártos autózyμος* (ἄρτος αὐτόζυμος) – leavened bread; yeast bread (see *ártos zymítēs*)
- ártos autópyros* (ἄρτος αὐτόπυρος) – bread from wholemeal flour (see *ártos syнкомistós*)
- ártos chondrítēs* (ἄρτος χονδρίτης) – bread prepared from *chóndros*
- ártos dípyros* (ἄρτος δίπυρος) – bread baked twice; rusk
- ártos enkryphías* (ἄρτος ἐγκρυφίας) – pancake; a kind of bread baked directly in embers (see *ártos spodítēs*)
- ártos escharítēs* (ἄρτος ἐσχαρίτης) – bread baked directly on an *eschára* hearth
- ártos ipnítēs* (ἄρτος ἰπνίτης) – bread baked in an *ipnós* oven (see *ártos kamínitēs*)
- ártos kachrydíās* (ἄρτος καχυρδίας) – bread baked from flour from roasted barley
- ártos kamínitēs* (ἄρτος καμινίτης) – bread baked in a *káminos* oven (see *ártos ipnítēs*)
- ártos katharós* (ἄρτος καθαρός) – white bread baked from purified flour
- ártos klibanítēs* (ἄρτος κλιβανίτης) – bread baked in a *kribanon* oven (see *ártos kribanítēs*)
- ártos kribanítēs* (ἄρτος κριβανίτης) – bread baked in a *kribanon* oven (see *ártos klibanítēs*)
- ártos kríthinos* (ἄρτος κρίθινος) – barley bread
- ártos kybarós* (ἄρτος κυβαρός) – black bread (see *ártos rhyparós*)

- ártos olýrinos* (ἄρτος ὀλύρινος) – spelt bread
- ártos peplyménos* (ἄρτος πεπλυμένος) – light bread (see *ártos plytós*)
- ártos pityrías* (ἄρτος πιτυρίας) – bran bread (see *ártos pityrites*; *ártos pityródes*)
- ártos pityrites* (ἄρτος πιτυρίτης) – bran bread (see *ártos pityrites*) *ártos pityrias*; *ártos pityródes*)
- ártos pityródes* (ἄρτος πιτυρώδης) – bran bread (see *ártos pityrias*; *ártos pityrites*)
- ártos plytós* (ἄρτος πλυτός) – light bread; a type of *ártos katharós* of low nutritional value
- ártos pýrinos* (ἄρτος πύρινος) – wheat bread
- ártos rhyparós* (ἄρτος ῥυπαρός) – black bread (see *ártos kybarós*)
- ártos semidalítes* (ἄρτος σεμιδαλίτης) – bread from *semidalis*
- ártos silígnites* (ἄρτος σιλιγνίτης) – *silígnis* wheat bread
- ártos spodítes* (ἄρτος σποδίτης) – a kind of bread baked directly in embers (see *ártos enkryphías*)
- ártos synkomistós* (ἄρτος συγκομιστός) – wholemeal bread (see *ártos autópyros*)
- ártos zymítes* (ἄρτος ζυμίτης) – leavened bread; yeast bread (see *ártos autózyμος*)
- athéra* (ἄθήρα) – a kind of soup or gruel cooked from cereal products
- autópyroi* (*ártoi*) (αὐτόπυροι [ἄρτοι]) – (pl. of *autépyros* [*ártos*]) bread baked from wholemeal flour (see *ártos autópyros*)
- bérex* (βήρηξ) – a type of *máza*
- boéthema* (βοήθημα) – medicinal substance of any kind
- boéthemata* (βοηθήματα) – (pl. of *boéthema*) medicinal substances of all kinds (see *boéthema*)
- bradýpora* (βραδύπορα) – (pl. of *bradypóros*) foods slowly transported through the organism (see *bradypóros*)
- bradypóros* (βραδυπόρος) – slowly transported through the organism (about food)
- brytón* (βρυτόν) – a type of alcoholic beverage made from barley (see *brytós*)
- brytós* (βρυτός) – a type of alcoholic beverage made from barley, similar to modern beer (see *brytón*)
- chémosis* (χήμωσις) – inflammation of cornea
- chídon* (χίδρον) – a type of groats produced from unripe cereal (e.g. wheat, barley or foxtail millet)
- chondrítai* (*ártoi*) (χονδρίται [ἄρτοι]) – (pl. of *chondrites* [*ártos*]) bread prepared from *chóndros* (see *ártos chondrites*)
- chondroptísane* (χονδροπτίσανη) – *ptísane* with an addition of *chóndros*
- chóndros* (χόνδρος) – groats obtained from common wheat or emmer wheat
- chóndros álikos* (χόνδρος ἄλικος) – groats similar to *chóndros*, but prepared from spelt
- chóndros plytós* (χόνδρος πλυτός) – specially purified type of *chóndros* groat
- chrísma* (χρίσμα) – ointment
- chrysoeidés* (χρυσοειδής) – golden; (about hair) blond

- chýlisma* (χύλισμα) – stock; decoction; brew
- chylós chónδrou* (χύλος χόνδρου) – thin *chónδros* decoction
- chylós ptísanes* (χύλος πτισάνης) – thin *ptísane*
- chymoi* (χυμοί) – (pl. of *chymós*) organic juices (see *chymós*)
- chymós* (χυμός) – any type of organic juice, such as blood, bile, black bile and phlegm
- Demetriaká spérματα* (Δημητριακά σπέρματα) – Demeter's gifts; edible grains
- diábroxis* (διάβρωσις) – erosion; erosion of tissues; epidermis or mucous membrane epithelium wastage *diaphoretiká* (διαφορητικά) – (pl. of *diaphoretikós*) substances facilitating diaphoresis (see *diaphoretikós*)
- diápasma* (διάπασμα) – powder
- diaphoretikós* (διαφορητικός) – facilitating excretion through perspiration stimulating diaphoresis
- diéxodoi* (διέξοδοι) – (pl. of *diéxodos*) passes; canals in internal organs, e.g. in the liver (see *diéxodos*)
- diéxodos* (διέξοδος) – a pass; canal in internal organs, e.g. in the liver
- drimýtes* (δριμύτης) – sharpness, understood as gustatory sensation
- dýnamis rhyptiké* (δύναμις ρυπτική) – purifying power of a substance
- dyskrasia* (δυσκρασία) – imbalance of the humours
- dýspepta* (δύσπεπτα) – (pl. of *dýspeptos*) foods difficult for initial digestion in the stomach (see *dýspeptos*)
- dýspeptos* (δύσπεπτος) – difficult for initial digestion in the stomach
- dýspnoía* (δύσπνοια) – difficulties in breathing
- ekryetiká* (έκρυητικά) – (pl. of *ekryetikós*) substances removing pus from the organism (see *ekryetikós*)
- ekryetikós* (έκρυητικός) – that which is removing pus from the organism
- elaiógaron* (έλαιόγαρον) – a mixture of olive oil and *garum*
- élymos* (έλυμος) – foxtail millet
- emphrattiká* (έμφραττικά) – (pl. of *emphrattikós*) blocking substances, especially causing blockades of liver, enlargement of spleen and kidney stones (see *emphrattikós*)
- emphrattikós* (έμφραττικός) – blocking, especially causing blockages of liver, enlargement of spleen, and kidney stones
- émpasma* (έμπασμα) – powder
- emplastiká* (έμπλαστικά) – (pl. of *emplastikós*) substances blocking through adherence (see *emplastikós*)
- emplastikós* (έμπλαστικός) – blocking through adherence
- émplastroi* (έμπλαστροι) – (pl. of *émplastros*) medicinal plasters (see *émplastros*)
- émplastros* (έμπλαστρος) – medicinal plaster
- énklyisma* (έγκλυσμα) – enema

- enkryphíai* (άρτοι) (ἐγκρυφίαι [ἄρτοι]) – (pl. of *enkryphías* [άρτος]) a kind of bread baked directly in embers (see *ártos enkryphías*)
- éntera* (έντερα) – intestines
- epiphorá* (ἐπιφορά) – extensive watering of eyes
- epikauma* (ἐπίκαυμα) – ulcer
- epikaiúmata* (ἐπικαύματα) – (pl. of *epikauma*) ulcers (see *epikauma*)
- epíplasma* (ἐπίπλασμα) – poultice
- epiplásmata* (ἐπιπλάσματα) – (pl. of *epíplasma*) poultices (see *epíplasma*)
- epithema* (ἐπιθέμα) – medicinal poultice *epithémata* (ἐπιθέματα) – (pl. of *epithema*) medicinal poultice (see *epithema*)
- eregmós* (ἐρεγμός) – seeds of leguminous plants, usually *kýamos*, with removed husks
- erikís* (ἐρειαίς) – groats from unroasted barley (see *erikís*)
- erikís* (ἐρειαίς) – groats from unroasted barley (see *erikís*)
- erysípelas* (ἐρυσίπελας) – erysipelas; skin disease
- eschára* (ἐσχάρα) – hearth used for preparing food
- eschára* (ἐσχάρα) – irritation or scab
- escharítai* (άρτοι) (ἐσχαρίται [ἄρτοι]) – (pl. of *escharites* [άρτος]) bread baked directly on an *eschára* hearth (see *ártos escharites*)
- étnos* (ἔτνος) – thick soup or gruel usually prepared from leguminous plants
- eúchyma* (εὐχυμα) – (pl. of *eúchymos*) foods with good juiciness (see *eúchymos*)
- eúchymos* (εὐχυμος) – with good juices
- euchymótata* (εὐχυμώτατα) – (superlative of *eúchymos*) with good juices (see *eúchymos*)
- eúkratón* (εὐκρατον) – a type of beverage
- exochás* (ἐξοχάς) – a type of haemorrhoids
- gé astéros* (γῆ ἀστέρος) – white clay from Samos, of medicinal qualities
- glíschra* (γλίσχρα) – (pl. of *glíschros*) foods with glutinous juices (see *glíschros*)
- glíschros* (γλίσχρος) – viscous, glutinous
- gýris* (γύρις) – a type of fine-grained flour
- haimoptýikoí* (αἱμοπτύικοί) – (pl. of *haimoptýikós*) blood-spitting; patients with ailments causing mouth bleeding (see *haimoptýikós*)
- haimoptýikós* (αἱμοπτύικός) – blood-spitting; patient with ailments causing mouth haemorrhages
- hálme* (ἄλμη) – salty water, brine; also sea water
- hapaloí klystéres* (ἁπαλοί κλυστήρες) – gentle enemas
- haplá phármaka* (ἁπλὰ φάρμακα) – (pl. of *haplón phármakon*) simple medicinal substances (see *haplón phármakon*)
- haplón phármakon* (ἁπλὸν φάρμακον) – a simple medicinal substance
- helléboros* (ἐλλέβορος) – veratrum

- hemikotýlai* (ἡμικοτύλαι) – (pl. of *hemikotýle*) measure of volume equal to half a *kotýle* (see *hemikotýle*)
- hemikotýle* (ἡμικοτύλη) – measure of volume equal to half a *kotýle* (about 0, 15 litre)
- hépsema* (ἔψημα) – boiled dish, e.g. soup
- hépsema* (ἔψημα) – reduced must (see *straion*)
- hepsémata* (ἐψήματα) – (pl. of *hépsema*) – soups; boiled dishes (see *hépsema*)
- hólkimos* (ὄλκιμος) – viscous
- hólkimóteron* (ὄλκιμώτερον) – (comparative of *hólkimos*) a property of *típhe* wheat causing the creation of viscous juices in the organism (see *hólkimos*)
- homalyntiké dýnamis* (ὁμαλντική δύναμις) – power of a substance to smoothen
- hósa adéktos xeraínei* (ὅσα ἀδέκτως ξηραίνει) – substances which are drying but do not damage tissues
- hósa áphysa* (ὅσα ἄφυσα) – non-flatulent foods
- hósa emphráttei* (ὅσα ἐμφράττει) – foods which lead to blockages of internal organs
- hósa glischra* (ὅσα γλίσχρα) – foods with viscous juices
- hósa oligótrophha* (ὅσα ὀλιγότροφα) – foods of low nutritional value
- hósa psýchei* (ὅσα ψύχει) – cooling foods
- hósa rhýptei* (ὅσα ῥύπτει) – cleansing foods
- hósa xeraínei* (ὅσα ξηραίνει) – drying foods
- hyalódes* (υἰαλώδης) – translucent
- hyalódeis* (*chymoi*) (υἰαλώδεις [χυμοί]) – translucent juices
- hydrélaion* (υἰδρέλαιον) – a mixture of water and olive oil used in gastronomy and medicine
- hydrómeli* (υἰδρόμελι) – a mixture of water and honey (see *melikraton*)
- hydropikoi* (υἰδρωπικοί) – (pl. of *hydropikós*) those suffering from hydropsy (see *hydropikós*)
- hydropikós* (υἰδρωπικός) – one suffering from hydropsy
- hydrorosáton* (υἰδροροσᾶτον) – rose water or watered-down rose wine
- hyperkathárseis* (ὑπερκαθάρσεις) – (pl. of *hyperkátharsis*) excessive menstrual bleeding or haemorrhages from reproductive ducts (see *hyperkátharsis*)
- hyperkátharsis* (ὑπερκαθάρασις) – excessive menstrual bleeding or haemorrhage from reproductive ducts
- hypochóndria* (ὑποχόνδρια) – (pl. of *hypochóndrion*) side parts of the abdomen (see *hypochóndrion*)
- hypochóndrion* (ὑποχόνδριον) – side parts of the abdomen
- hypóthermon* (ὑπόθερμον) – boiled dish based on cereal products of a consistency of soup or gruel
- idiótai* (ιδιόται) – (pl. of *idiótes*) ordinary people (see *idiótes*)
- idiótes* (ιδιότης) – an ordinary person

- ipnítai* (άρτοι) (ἰπνίται([ἄρτοι]) – (pl. of *ipnítēs* [ártos]) bread baked in an oven *ipnós* (see *ártos ipnítēs*)
- ipnós* (ἰπνός) – bread oven (see *phoúrnos*)
- ischiadikós* (ισχιαδικός) – those suffering from sciatica
- itria* (ἴτρια) – flat breads prepared from *aleuron*-type wheat (see *lágana*; *rhýema*; *rhým-ma*)
- káchrys* (κάχυρος) – roasted barley as a material for *álphita* or a separate food
- kakóchyma* (κακόχυμα) – (pl. of *kakóchymos*) foods characterised by unwholesome juices (see *kakóchymos*)
- kakochymía* (κακοχυμία) – disrupted balance of humours in an organism
- kakóchymos* (κακόχυμος) – containing unwholesome juices
- kakostómachos* (κακοστόμαχος) – bad for the stomach, tasteless
- kardamále* (καρδαμάλη) – a type of *máza* mixed with cress
- kardiakói* (καρδιακοί) – (pl. of *kardiakós*) those suffering from heart diseases (see *kardiakós*)
- kardiakós* (καρδιακός) – one suffering from a heart disease
- karykeía* (καρυκεία) – gustatory additive; seasoning
- karykeíai* (καρυκείαι) – (pl. of *karykeía*) gustatory additives, seasonings (see *karykeía*)
- katárasma* (κατάπασμα) – powder
- katastatón* (καταστατόν) – starch (see *ámylon*)
- kathartiká* (καθαρτικά) – (pl. of *kathartikós*) purifying substances (see *kathartikós*)
- kathartikós* (καθαρτικός) – purifying
- kaúsos* (καῦσος) – fevers
- kaúsos nóthos* (καῦσος νόθος) – a type of ailment manifesting in a way similar to fever
- kénchroi* (κέγχροι) – (pl. of *kénchros*) common millet (see *kénchros*)
- kénchros* (κέγχρος) – common millet
- kénchros hephthós* (κέγχρος ἐφθός) – boiled millet
- kérnos* (κέρνος) – ritual dishes supplied with smaller containers called *kotylískoi*
- keroté* (κηρωτή) – a type of ointment made with ingredients combined with wax
- klýsma* (κλύσμα) – an enema or a rinse
- klýsmata* (κλύσματα) – (pl. of *klýsma*) enemas or rinses (see *klýsma*)
- klýsmós* (κλύσμός) – an enema or a rinse (see *klýsma*)
- klýstér* (κλυστήρ) – enema
- klýstéres* (κλυστήρες) – (pl. of *klýstér*) enemas (see *klýstér*)
- kochliáριον* (κοχλιάριον) – a measure of volume (about 0,011 litre)
- koiliaké diáthesis* (κοιλιακή διάθεσις) – an abnormal susceptibility to digestive system ailments
- koiliakói* (κοιλιακοί) – (pl. of *koiliakós*) patients with chronic disorders of the digestive system (see *koiliakós*)

- koiliakós* (κοιλιακός) – a person with chronic disorders of the digestive system
- koilótes* (κοιλότης) – eye disease
- kólla* (κόλλα) – a type of glue prepared from flour
- kólla* (κόλλα) – a medication based on flour
- kóllai* (κόλλαι) – (pl. of *kólla*) medications based on flour; (see *kólla*)
- kóllix* (κόλλιξ) – a type of bread made from barley flour
- kollourion* (κολλούριον) – medicinal ointment (see *kollyrion*)
- kollyrion* (κολλύριον) – ointment used for treating eye diseases (see *kollourion*)
- kómmi* (κόμμι) – resin of the acacia tree
- konditon* (κονδίτον) – flavoured wine, especially with an addition of pepper; Latin *conditum*
- konia* (κονία) – lye
- konia pilopoietiké* (κονία πλοποιητική) – lye used in felting
- koptáron* (κοπτάριον) – a medicine in the form of a pastille
- kotýle* (κοτύλη) – a measure of volume (about 0,30 litre)
- kotylískoi* (κοτυλίσκοι) – (pl. of *kotylískos*) containers that were a part of *kérnos* (see *kotylískos*)
- kotylískos* (κοτυλίσκος) – a container which was a part of *kérnos*
- koúrmí* (κούρμι) – a type of alcoholic beverage similar to modern beer
- krásis* (κράσις) – temperament; a set of personal features resulting from an individual mixture of humours
- kri* (κρί) – barley (see *kriothé*)
- kribanítai* (άρτοι) (κριβανίται [άρτοι]) – (pl. of *kribanítēs* [ártos]) breads baked in a *kribanon* (see *ártos kribanítēs*)
- kribanon* (κριβανον) – a type of portable oven
- krímmōn* (κρίμμων) – a type of groats from common wheat or emmer, finer than *chón-dros* (see *krímmos*)
- krímmos* (κρίμμος) – a type of groats from common wheat or emmer, finer than *chón-dros* (see *krímmōn*)
- kriothái* (κριθαί) – (pl. of *kriothé*) barley (see *kriothé*)
- kriothé* (κριθή) – barley
- kýamos* (κύαμος) – broad bean
- kybarói* (άρτοι) (κυβαροί [άρτοι]) – (pl. of *kybarós* [ártos]) black bread (see *ártos rhyparós*)
- kykeón* (κυκεών) – beverage made with barley groats, cheese and wine
- kynódes órexis* (κυνώδης ὄρεξις) – bulimia; insatiable appetite
- lágana* (λάγανα) – a type of *itria* (see *itria*; *rhyéma*; *rhymma*)
- leichen* (λειχήν) – lichen
- lépra* (λέπρα) – leprosy
- leptýnousa díaita* (λεπτύνουσα διαίτα) – a diet diluting thick organic juices

- leúke* (λεύκη) – a type of rash
- leukós zomós* (λευκὸς ζωμός) – stock used for cooking meat and vegetables
- lithárgyros* (λιθάργυρος) – lead oxide
- lytiká* (λυτικά) – (pl. of *lytikós*) substances or foods with purgative effects (see *lytikós*)
- lytikós* (λυτικός) – purgative
- malaktikós* (μαλακτικός) – softening
- malaktikós koilías* (μαλακτικὸς κοιλίας) – (about food or medicament) leading to the softening of the digestive system
- máza* (μάζα) – *álphita* groats mixed with water and other ingredients
- melancholikós chymós* (μελαγχολικὸς χυμός) – a juice with the properties of black bile; black bile
- melikraton* (μελίκρατον) – a mixture of honey and water (see *hydrómeli*)
- melínai* (μηλίνας) – (pl. of *melíne*) medicinal plasters (see *melíne*)
- melíne* (μηλίνη) – a type of a medicinal plaster
- melíne* (μηλίνη) – foxtail millet (see *élymos*; *melínos*)
- melínos* (μηλίνος) – foxtail millet (see *élymos*; *melíne*)
- metexéteroí* (μετεξέτεροι) – some (i.e. people)
- metrenchýtes* (μητρεγχύτης) – a syringe used for injecting intrauterine rinses
- mochtherá spérmata* (μοχθηρὰ σπέρματα) – worse grains; a term referring to cereals of properties much worse than those ascribed to wheat or barley (see *ponerá spérmata*)
- mygalé* (μυγαλή) – common shrew
- neúra* (νεῦρα) – tendons
- odontotrímma* (ὀδοντοτρίμμα) – powder used for cleaning teeth
- ophthalmía* (ὀφθαλμία) – any serious eye disease
- oinómeli* (οἰνόμελι) – wine flavoured with honey
- oínos kríthinos* (οἶνος κριθίνος) – barley wine; a type of alcoholic beverage similar to modern beer
- oligótrophá* (ὀλιγότροφα) – (pl. of *oligótrophos*) foods providing few nutrients (see *oligótrophos*)
- oligótrophos* (ὀλιγότροφος) – providing little nutrition
- ólura* (ὄλυρα) – spelt
- omós* (ὠμός) – raw, indigested
- omós chymós* (ὠμὸς χυμός) – raw, indigested juice
- órzya* (ὄρυζα) – rice
- osphrantón* (ὀσφραντόν) – a medicinal aromatic substance
- óspria* (ὄσπρια) – (usually) leguminous plants or (in a wider sense) grains unsuitable for making bread
- otalgía* (ὠταλγία) – any ear disease causing pain
- oxygaláktinos* (τυρός) (ὄξυγαλάκτινος [τυρός]) – fresh cheese made from sour milk

- oxýkraton* (ὄξύκρατον) – a mixture of wine vinegar and water
- oxýmeli* (ὄξύμελι) – a mixture of wine vinegar and honey
- pachýchyma* (παχύχυμα) – (pl. of *pachýchymos*) foods containing thick juices or contributing to their creation (see *pachýchymos*)
- pachýchymos* (παχύχυμος) – containing thick juices or contributing to their creation
- paipále* (παιπάλη) – a type of fine-grained flour
- pále* (πάλη) – a type of flour, with grains smaller than *áleuron*
- parákollon* (παράκολλον) – poultice or ointment of a viscous consistency
- pémma* (πέμμα) – a type of baked food, for instance cake (see *pémma ek pyrouí*)
- pémma (ek pyrouí)* (πέμμα [ἐκ πυροῦ]) – a baked cake made from wheat (see *pémma*)
- pémmata* (πέμματα) – (pl. of *pémma*) a type of bread (see *pémma*)
- pépsis* (πέψις) – digestion
- peptiká* (πεπτικά) – (pl. of *peptikós*) substances facilitating digestion (see *peptikós*)
- peptikós* (πεπτικός) – facilitating digestion
- peripneumonia* (περιπνευμονία) – pneumonia
- perittoma* (περίττωμα) – undigested elements
- perittomatikós* (περιττωματικός) – (about food) leaving many undigested elements
- perittomatikotéra* (περιττωματικωτέρα) – (comparative of *perittomatikós*) products leaving many undigested elements (see *perittomatikós*)
- phagédaina* (φαγέδαινα) – tumourous growth
- phagédainai* (φαγέδαιναι) – (pl. of *phagédaina*) tumourous growths (see *phagédaina*)
- phaké* (φακῆ) – lentil soup
- phakós* (φακός) – lentil
- phakós* (φακός) – birthmark or growth on the surface of the body, which looked like lentil grains
- phármaka* (φάρμακα) – (pl. of *phármakon*) medicines (see *phármakon*)
- pharmakeíe* (φαρμακείη) – a potent substance used for therapeutic purposes (see *phármakon*)
- phármakon* (φάρμακον) – a potent substance used for therapeutic purposes (see *pharmakeíe*)
- phlégma* (φλέγμα) – phlegm; one of the organic juices
- phlegmonaí* (φλεγμοναί) – (pl. of *phlegmoné*) inflammatory condition (see *phlegmoné*)
- phlegmoné* (φλεγμονή) – inflammatory condition
- phlýktaina* (φλύκταινα) – ulcer or growth
- phlýktainai* (φλύκταιναι) – (pl. of *phlýktaina*) ulcers or growths (see *phlýktaina*)
- phoúrnos* (φοῦρνος) – bread oven (see *ipnós*)
- phrenítis* (φρενίτις) – encephalitis or meningitis
- phthísis* (φθίσις) – consumption (lung tumour or tuberculosis)
- phýma* (φῦμα) – nodular callus

- phýmata* (φύματα) – (pl. of *phýma*) nodular calluses (see *phýma*)
- phýste* (φύστη) – a type of *máza*
- pítura* (πίτυρα) – (pl. of *píturon*) bran (see *píturon*)
- pítura rýrina* (πίτυρα πύρινα) – wheat bran
- píturon* (πίτυρον) – bran
- póleis* (πόλεις) – (pl. of *pólis*) cities, urban communities (see *pólis*)
- pólis* (πόλις) – a city, an urban community
- poliáron hygρόn* (πολιάριον ύγρόν) – *póltos* of thin consistency (see *póltos*)
- poliáron rophematódes* (πολιάριον ροφηματώδης) – *póltos* of thin consistency (see *póltos*)
- póltoi* (πόλτοι) – (pl. of *póltos*) thick soups or pulps (see *póltos*)
- póltos* (πόλτος) – thick soup or gruel
- polysarkía* (πολυσαρκία) – obesity
- polýtropha* (πολύτροφα) – (pl. of *polýtrophos*) foods with high nutritional value (see *polýtrophos*)
- polýtrophos* (πολύτροφος) – nutritious, providing the body with substantial amount of nutrients
- póma* (πώμα) – beverage
- ponerá spérmata* (πονηρά σπέρματα) – grains of poorer quality; a term referring to cereals of qualities much poorer than wheat and barley (see *mochtherá spérmata*)
- psathyroí* (ψαθυροί) – (pl. of *psathyrós*) brittle; falling apart (about bread; see *psathyrós*)
- psathyrós* (ψαθυρός) – brittle; falling apart
- psilothron* (ψίλωθρον) – a substance used for depilation or a medicine applied externally
- psilothron podagrikón* (ψίλωθρον ποδαγρικόν) – medicine in the form of an ointment used in treating gout
- psóra* (ψώρα) – scabies
- ptisáne* (πιτσάνη) – barley soup with medicinal properties
- ptisáne pyríne* (πιτσάνη πυρίνη) – barley soup from *chón-dros* characterised by medicinal effects
- ptisanistí* (πιτσανιστί) – like *ptisáne* (about dishes cooked in the same way as barley soup)
- pyretós* (πυρετός) – fever
- pyretóslingódes* (πυρετόσλυγγώδης) – fever accompanied by hiccups
- pyretósfhonódes* (πυρετόσφονώδης) – lethal fever
- pyría* (πυρία) – hot poultice
- pyrikausta* (πυρίκαυστα) – (pl. of *pyrikaustos*) poultices used for treating injuries caused by scalding (see *pyrikaustos*)
- pyrikaustos* (πυρίκαυστος) – injured as a result of a scalding; burned
- pyrínos* (πύρινος) – wheat; made from *pyrós* wheat (see *pyrós*)

- pyroi* (πυροί) – (pl. of *pyrós*) wheat (see *pyrós*)
- pyroi hephthoi* (πυροὶ ἐφθοί) – a dish from boiled *pyrós* wheat (see *sítos hephsetós*)
- pyrós* (πυρός) – a term used to denote common wheat and durum wheat
- pyrós aleurítēs* (πυρὸς ἀλευρίτης) – common wheat
- pyrós kachrydíās* (πυρὸς καχυρδίας) – wheat with grains similar to roasted barley seeds
- pyrós semidalítēs* (πυρὸς σεμιδαλίτης) – durum wheat
- pyrós setánios* (πυρὸς σητάνιος) – common wheat (see *pyrós sitánios*)
- pyrós silignítēs* (πυρὸς σιλινγίτης) – common wheat (see *silignis*)
- pyrós sitánios* (πυρὸς σιτάνιος) – common wheat (see *pyrós setánios*)
- pyrós trimeniáios* (πυρὸς τριμηνιαῖος) – spring common wheat (see *pyrós triménios*)
- pyrós triménios* (πυρὸς τριμήνιος) – spring common wheat (see *pyrós trimeniáios*)
- rhetíne* (ῥητίνη) – resin
- rheúma* (ῥεῦμα) – an inflow of harmful juices
- rhéxis* (ῥήξις) – tissue damage
- rhoós erythrós* (ῥοός ἐρυθρός) – red discharge; feminine disease
- rhóphema* (ῥόφημα) – soup or gruel
- rhóphema ek chónδrou* (ῥόφημα ἐκ χόνδρου) – soup from *chónδros*
- rhýema* (ῥύημα) – a type of *itria* (see *itria*; *lágana*; *rhýmma*)
- rhýmata* (ῥύματα) – (pl. of *rhýema*) a type of *itria* (see *rhýema*)
- rhýmma* (ῥύμμα) – a type of *itria* (see *itria*; *lágana* *rhýema*)
- rhýmματα* (ῥύματα) – (pl. of *rhýmma*) a type of *itria* (see *rhýmma*)
- semidalis* (σεμιδαλῖς) – term denoting durum wheat and flour obtained from it
- semidalis phyté* (σεμιδαλῖς πλυτή) – possibly *chónδros phytós*
- semidalítai (ártōi)* (σεμιδαλίται [ἄρτωι]) – (pl. of *semidalítēs* [ártos]) bread from *semidalis* (see *ártos semidalítēs*)
- sepsis* (σῆψις) – sepsis
- silignis* (σιλίγνις) – common wheat (see *pyrós silignítēs*)
- silignítai (ártōi)* (σιλιγνίται [ἄρτωι]) – (pl. of *silignítēs* [ártos]) *silignis* wheat bread (see *ártos silignítēs*)
- silphion* (σίλφιον) – asafoetida juice
- siraion* (σίραινον) – reduced, sweet-flavoured must (see *hépsema*)
- sitóde* (σιτώδη) – (pl. of *sitódes*) cereal foods (see *sitódes*)
- sitódes* (σιτώδες) – cereal; concerning cereals
- sítos* (σίτος) – any kind of cereal used as a basic food; later synonymous with *pyrós*
- sítos hadromerés alelesménos* (σίτος ἀδρομερῆς ἀλληλεσμένος) – coarsely ground wheat; probably *chónδros*
- sítos hephsetós* (σίτος ἐψητός) – boiled wheat (see *pyroi hephthoi*)
- skammonía* (σκαμμωνία) – bindweed used in medications
- skeuasía* (σκευασία) – a dish

- skeuasíai* (σκεουασίαι) – (pl. of *skeuasía*) dishes (see *skeuasía*)
- smégma* (σμήγμα) – a cleaning substance
- smégmata* (σμήγματα) – (pl. of *smégma*) cleaning substances (see *smégma*)
- spodítai* (*ártotai*) (σποδίται [ἄρτοι]) – (pl. of *spodítes* [*ártos*]) flatbread; a type of bread baked directly in embers (see *ártos spodítes*)
- stais* (σταίς) – bread dough
- stakté* (στακίη) – myrrh oil
- stomachiká páthe* (στομαχικὰ πάθη) – ailments of the stomach or the digestive system
- stomachikóí* (στομαχικοί) – (pl. of *stomachikós*) those suffering from ailments of the stomach or the digestive system (see *stomachikós*)
- stomachikós* (στομαχικός) – a person suffering from stomach diseases and/or ailments of the digestive system
- stýpsis* (στύψις) – a styptic effect causing contraction of tissues
- sykotón* (συκωτόν) – liver of pigs or geese that were fed figs, considered a delicacy
- sympeptiká* (συμπεπτικά) – (pl. of *sympeptikós*) substances facilitating digestion (see *sympeptikós*)
- sympeptikós* (συμπεπτικός) – facilitating digestion
- sympeptikós oidemáton* (συμπεπτικός οίδημάτων) – causing absorption of lumps and swellings
- synánche* (συνάγχη) – tonsillitis
- sýntexis* (σύντηξις) – disease manifested in excreting discharges from the digestive system resulting from self-digestion of tissues
- sýntheta phármaka* (σύνθετα φάρμακα) – compound medicines
- tagenítai* (ταγγίται) – products similar to modern-day pancakes, fried in a *téganon* (see *teganítai*)
- talaiporóúntes* (ταλαιπορούντες) – people doing hard physical work
- teganítai* (τηγανίται) – wheat products similar to modern-day pancakes fried in *téganon* (see *tagenítai*)
- téganon* (τήγανον) – frying-pan
- teinesmós* (τεινεσμός) – long-lasting and painful inability to defecate; tenesmus
- témnon* (τέμνων) – “cutting”; causing watering down of thick and viscous juices
- témnonta* (τέμνοντα) – (pl. of *témnon*) foods watering down thick juices (see *témnon*)
- thermaínon* (θερμαίνων) – warming food
- thermaínonta* (θερμαίνοντα) – (pl. of *thermaínon*) foods with heating properties (see *thermaínon*)
- típhai* (τίφαι) – (pl. of *típhe*) einkorn wheat (see *típhe*)
- típhe* (τίφη) – einkorn wheat (see *zeá haplé*; *zeá mikrós*)
- tolýpe* (τολύπη) – a type of *máza* formed in round cakes
- trágos* (τράγος) – a type of groat produced from spelt

- trípte* (τρίπτυ) – a type of *máza* popular in Athens
- trochískoi* (τροχίσκοι) – (pl. of *trochískos*) suppository or tablets (see *trochískos*)
- trochískos* (τροχίσκος) – a suppository or tablet
- trophé* (τροφή) – food
- tróphimoi klystéres* (τρόφιμοι κλυστήρες) – (pl. of *tróphimos klystér*) nutritive enemas
(see *tróphimos klystér*)
- tróphimos* (τρόφιμος) – nutritious
- tróphimos klystér* (τρόφιμος κλυστήρ) – nutritive enema
- trypherón* (τυρυφερόν) – a type of ointment or poultice used ophthalmologically
- xeraínon* (ξηραίνον) – drying, dessicative
- xeraínonta* (ξηραίνοντα) – (pl. of *xeraínon*) drying foods (see *xeraínon*)
- zeá* (ζεά) – emmer wheat (see *zeiá*)
- zeá dikokkos* (ζεά δίκοκκος) – emmer wheat
- zeá haplé* (ζεά άπλή) – einkorn wheat (see *típhe*)
- zeá mikrós* (ζεά μικρός) – emmer wheat (see *típhe*)
- zeiá* (ζειά) – emmer wheat (see *zeá*)
- zeiá káthepthos* (ζειά κάθεφθος) – boiled emmer wheat
- zýme* (ζύμη) – yeast; leaven
- zymítai* (*ártoi*) (ζυμίται [άρτοι]) – (pl. of *zymítes* [*ártos*]) bread with yeast; bread with
leaven (see *ártos zymítes*)
- zýthion* (ζύθιον) – a type of alcoholic beverage (see *zýthon*; *zýthos*)
- zýthon* (ζύθον) – a type of alcoholic beverage (see *zýthion*; *zýthos*)
- zýthos* (ζύθος) – a type of alcoholic beverage similar to modern beer (see *zýthion*; *zý-
thon*)



Abbreviations



AClas	Acta Classica: Proceedings of the Classical Association of South Africa
AHis	Agricultural History
AHR	American Historical Review
ANRW	Aufstieg und Niedergang der römischen Welt. Geschichte und Kultur Roms im Spiegel der neueren Forschung, eds. H. Temporini, W. Haase 1972–1998.
An	Antiquity
Ara	Arabica
Ar.ASS	Archeion. Archivio di Storia della Scienza
Ath	Athenaeum. Studi di Letteratura e Storia dell'Antichità
Ath.AEH	Athena. Syngramma periodikon tes en Athenais Epistemonikes Hetaireias
AWo	The Ancient World
Bsl	Byzantinoslavica. Revue internationale des études byzantines
B	Byzantion. Revue internationale des études byzantines
BMC.EB	BMC Evolutionary Biology
BZ	Byzantinische Zeitschrift
CGS	Chinese Geographical Science
CIBA	Ciba Zeitschrift
CA	Classical Antiquity
CP	Classical Philology

CQ	Classical Quarterly
CWe	The Classical Weekly
DOP	Dumbarton Oaks Papers
GR	Greece & Rome
GRBS	Greek, Roman and Byzantine Studies
EcHR	The Economic History Review
E	Eos. Commentarii Societatis Philologiae Polonorum
GRCE	Genetic Resources and Crop Evolution
H	Hermes. Zeitschrift für klassische Philologie
Jan	Janus
JArS	Journal of Archaeological Science
JHB	Journal of the History of Biology
KWo	Klinische Wochenschrift
M	Meander. Miesięcznik poświęcony kulturze świata antycznego
MBE	Molecular Biology and Evolution
BNP	<i>Brill's New Pauly. Encyclopaedia of the Ancient World</i>
Osi	Osiris
Pbg	Palaeobulgarica
PPC	Petits Propos Culinaires
Prag	Pragdhara. Journal of the Uttar Pradesh State Archaeology Department
PNAS	Proceedings of the National Academy of Sciences of the United States of America
PH	Przegląd Historyczny
PhH	Pharmacy in History
PNH	Przegląd Nauk Historycznych
RE	<i>Pauly's Real-Encyclopädie der classischen Altertumswissenschaft</i> , hrsg. G. Wissowa, W. Kroll, Stuttgart 1894–1978
RMP	Rheinisches Museum für Philologie
Rom	Romania. Revue consacrée à l'étude des langues et des littératures romanes

SCer	Studia Ceranea. Journal of the Waldemar Ceran Research Center for the History and Culture of the Mediterranean Area and South-Eastern Europe
ScM	The Scientific Monthly
TPAPA	Transactions and Proceedings of the American Philological Association
TEE	Trends in Ecology and Evolution
VHA	Vegetation History and Archaeobotany
VLat	Vox Latina. Commentarii Periodici
VP	Vox Patrum. Antyk Chrześcijański
WBot	Wiadomości Botaniczne
ZW	Zeszyty Wiejskie



Bibliography



Sources

Aetius of Amida

Aetii Amideni libri medicinales I–VIII, eds. A. Olivieri, Lipsiae–Berolini 1935–1950.

'Αετίου Ἀμιδηνοῦ λόγος ἕνατος, eds. S. Zervos, Ath.AEH 23, 1911, p. 273–390.

Iatricorum liber XI, eds. C. Daremberg, C.E. Ruelle, [in:] *Oeuvres de Rufus d'Éphèse*, Paris 1879, p. 85–126.

'Αετίου λόγος δωδέκατος, eds. G.A. Kostomiris, Paris 1892.

'Αετίου Ἀμιδηνοῦ λόγος δέκατος πέμπτος, eds. S. Zervos, Ath.AEH 21, 1909, p. 7–138.

Alexander of Tralles, *De febribus*

Alexandri Tralliani de febribus, [in:] *Alexander von Tralles*, eds. T. Puschmann, vol. I–II, Amsterdam 1963.

Alexander of Tralles, *Therapeutica*

Alexandri Tralliani therapeutica, [in:] *Alexander von Tralles*, eds. T. Puschmann, vol. I–II, Amsterdam 1963.

Ammianus Marcellinus

Ammianus Marcellinus with an English translation, eds. J.C. Rolfe, London–Cambridge, MA, 1952.

Anthimus

Anthimus, *On the observance of foods. De observatione ciborum*, eds. and transl. M. Grant, Totnes, Blackawton, Devon 2007.

Athenaeus of Naucratis

Athenaei Naucraticae deipnosophistarum libri XV, eds. G. K a i b e l, vol. I–III, Lipsiae–Berolini 1887–1890.

Cassius Dio

Dio Cassius, *Roman History*, transl. E. C a r y, Cambridge, MA 1914.

Cato, *De agri cultura*

M. Porci Catonis De agri cultura, eds. H. K e i l, Lipsiae 1895.

Columella, *De re rustica*

Lucius Julius Moderatus Columella, *On agriculture in three volumes*, vol. I, *Res rustica I–IV*, eds. and transl. H. B o y d A s h, London–Cambridge, MA 1960.

De alimento

Hippocrate, *De alimento*, [in:] *Oeuvres complètes d'Hippocrate*, eds. E. L i t t r e, vol. IX, Paris 1861.

De cibis

Anonymus, *De cibis*, [in:] *Anecdota medica Graeca*, eds. F.Z. E r m e r i n s, Leiden 1963.

De diaeta

Hippocratis de diaeta, eds. R. J o l y, adiuvante S. B y l, Berlin 2003.

De mulierum affectibus

De mulierum affectibus, [in:] *Oeuvres complètes d'Hippocrate*, eds. E. L i t t r e, vol. VIII, Paris 1853.

De prisca medicina

De prisca medicina, [in:] *Hippocratis Indices librorum, Iusiurandum, Lex, De arte, De medico, De decente habitu, Praeceptiones, De prisca medicina, De aere locis aquis, De alimento, De liquidorum usu, De flatibus*, eds. J.L. H e i b e r g, Leipzig–Berlin 1927.

Dioscurides, *Euporista vel de simplicibus medicinis*

Dioscuridis *περί ἀπλῶν φαρμάκων*, [in:] *Pedanii Dioscuridis Anazarbei de materia medica libri quinque*, eds. M. W e l l m a n n, vol. III, Berolini 1914.

Dioscurides, *De materia medica*

Pedanii Dioscuridis Anazarbei de materia medica libri V, eds. M. Wellmann, vol. I–III, Berolini 1906–1914.

Edictum Diocletiani

Edictum Diocletiani et Collegarum de pretiis rerum venalium, eds. M. Giaccherio, vol. I–II, Genova 1974.

Frontinus, *Strategemata*

Frontinus, *Strategems*, [in:] Frontinus, *Strategems. Aqueducts of Rome*, transl. C.E. Bennett, Cambridge, MA, 1925.

Galen, *In Hippocratis de victu acutorum commentaria*

Galenii in Hippocratis de victu acutorum commentaria libri IV, [in:] *Galenii In Hippocratis de natura hominis, In Hippocratis de victu acutorum, De diaeta hippocratis, In morbis acutis*, eds. I. Mewaldt, G. Halmreich, I. Westenberger, Lipsiae–Berolini 1914.

Galen, *De locis affectis*

Galenii De locis affectis libri VI, [in:] *Claudii Galeni opera omnia*, eds. C.G. Kühn, vol. VIII, Lipsiae 1824.

Galen, *De victu attenuante*

Galenii De victu attenuante, eds. K. Kalbfleisch, Leipzig–Berlin 1923.

Galen, *De rebus boni malisque succi*

Galenii de probis pravisque alimentorum succis, [in:] *Claudii Galeni opera omnia*, eds. C.G. Kühn, vol. VI, Lipsiae 1823.

Galen, *De semine*

Galenii De semine libri II, [in:] *Claudii Galeni opera omnia*, eds. C.G. Kühn, vol. IV, Lipsiae 1822.

Galen, *De ptisana*

Galenii De ptisana, eds. O. Hartlich, [in:] *Galenii De sanitate tuenda, De alimentorum facultatibus libri III, De bonis malisque succis liber, De victu attenuante, De ptisana*, eds. K. Koch, E. Helmreich, C. Kalbfleisch, O. Hartlich, Lipsiae–Berolini 1923.

Galen, *De compositione medicamentorum per genera*

Galeni de compositione medicamentorum per genera libri VII, [in:] *Claudii Galeni opera omnia*, ed. C.G. Kühn, vol. XIII, Lipsiae 1827.

Galen, *De compositione medicamentorum secundum locos*

Galeni de compositione medicamentorum secundum locos libri X, [in:] *Claudii Galeni opera omnia*, eds. C.G. Kühn, vol. XII–XIII, Lipsiae 1826–1827.

Galen, *De simplicium medicamentorum temperamentis ac facultatibus*

Galeni de simplicium medicamentorum temperamentis ac facultatibus libri XI, [in:] *Claudii Galeni opera omnia*, eds. C.G. Kühn, vol. XI–XII, Lipsiae 1826–1827.

Galen, *De alimentorum facultatibus*

Galeni de alimentorum facultatibus libri III, [in:] *Claudii Galeni opera omnia*, eds. C.G. Kühn, vol. VI Lipsiae 1823.

Galen, *De sanitate tuenda*

Galeni de sanitate tuenda libri VI, [in:] *Claudii Galeni opera omnia*, eds. C.G. Kühn, vol. VI, Lipsiae 1823.

Galen, *Linguarum seu dictionum exoletarum Hippocratis explicatio*

Galeni linguarum seu dictionum exoletarum Hippocratis explicatio, [in:] *Claudii Galeni opera omnia*, eds. C.G. Kühn, vol. XIX, Lipsiae 1830.

Geoponica

Geoponica sive Cassiani Bassi Scholastici de re rustica eclogae, eds. H. Beckh, Lipsiae 1895.

Geoponika, farm work, transl. A. Dalby, Blackawton, Totnes, Devon 2011.

Herodotus, *Historiae*

Herodoti historiarum librum IX, ved. H. Dietrich, vol. I–II, Lipsiae 1884–1891.

Hesychius of Alexandria

Hesychii Alexandrini lexicon, post I. Albertum eds. M. Schmidt, vol. I–V, Ienae 1859–1868.

Homer, *Ilias*

Homer, *The Iliad*, transl. A. T. Murray, London–Cambridge, MA 1960.

Oribasius, *Libri ad Eunapium*

Oribasii Libri ad Eunapium, [in:] *Oribasii synopsis ad Eustathium filium et libri ad Eunapium*, eds. I. R a e d e r, vol. VI, 3, Leipzig 1964.

Oribasius, *Synopsis ad Eustathium filium*

Oribasii Synopsis ad Eustathium filium, [in:] *Oribasii synopsis ad Eustathium filium et libri ad Eunapium*, eds. I. R a e d e r, vol. VI, 3, Leipzig 1964.

Oribasius, *Eclogae medicamentorum*

Oribasii Collectionum medicarum eclogae medicamentorum, [in:] *Oribasii collectionum medicarum reliquiae*, vol. IV, *libros XLIX–L, libros incertos, eclogae medicamentorum, indicem continens*, eds. I. R a e d e r, Lipsiae–Berolini 1933.

Oribasius, *Collectiones medicae*

Oribasii collectionum medicarum reliquiae, eds. I. R a e d e r, vol. I–IV, Lipsiae–Berolini 1928–1933.

Palladius, *Opus agriculturae*

Palladii Rutilii Tauri Aemiliani viri inlustris Opus agriculturae de veterinaria medicina de insitione, eds. R.H. R o d g e r s, Leipzig 1975.

Paul of Aegina

Paulus Aegineta, eds. I.L. H e i b e r g, vol. I–II, Lipsiae–Berolini 1921–1924.

Peri trophón dynámeos

Περὶ τροφῶν δυνάμεως, [in:] *Anecdota Atheniensia et alia*, eds. A. D e l a t t e, vol. II, Paris 1939, p. 467–479.

Philoxenus

Philoxeni deipnon, [in:] *Poetae medici graeci. Alcmantis, Stesichordi, Ibyci, Anacreontis, Simonidis, Corinnae, poetarum minorum reliquias. Carmina popularia et convivialia quaque adespota ferentur*, eds. D.L. P a g e, Oxford 1962.

Uczta Filoksenosa. Tekst, przekład, komentarz; [in:] M. S t u l i g r o s z, *Uczta Filoksenosa na tle tradycji greckiej poezji gastronomicznej*, Poznań 2012.

Photius, *Bibliotheca*

Photius, *Bibliothèque*, eds. R. H e n r y, vol. I–VIII, Paris 1959–1977.

Plato, *Respublica*

Plato, *Republic*, vol. I, *Books 1–5*, transl. C. Emlyn-Jones, W. Preddy, Cambridge, MA 2013.

Pliny, *Naturalis historia*

Pliny, *Natural History*, transl. H. Rackham, W.H.S. Jones, D.E. Eichholz, vol. I–X, Cambridge, Mass. 1938–1963.

Plutarch, *Marcellus*

Plutarch, *Marcellus*, [in:] Plutarch, *Lives*, transl. B. Perrin, vol. V, Cambridge, MA, 1917.

Polybius

Polybius, *The histories*, transl. W.R. Paton, vol. I, Cambridge, Mass. 1998.

Procopius, *Historia arcana*

Procopii Caesariensis Anecdota sive Historia arcana, eds. J.K. Orellius, Lipsiae 1827.

Procopius, *De bellis*

Procopius with an English translation, transl. H.B. Dewing, vol. I–VI, London–New York 1914–1928.

Strabo, *Geographica*

Strabonis geographica, eds. A. Meineke, vol. I–III, Graz 1969.

Suda

Suidae lexicon, eds. A. Adler, vol. I–IV, Lipsiae 1928–1935.

Suetonius, *De vita cesarum*

Suetonius with an English translation, eds. J.C. Rolfe, London 1913–1914.

Symeon Seth, *Syntagma de alimentorum facultatibus*

Simeonis Sethi Syntagma de alimentorum facultatibus, eds. B. Langkavel, Lipsiae 1868.

Tacitus, *Germania*

Publius Cornelius Tacitus, *Germania*, eds. E. Fehrle, München 1939.

Theodoret of Cyrus, *Historia religiosa*

Theodoret de Cyr, *L'histoire des moines de Syrie*, eds. P. Canivet, A. Leroy-Molinghen, t. I–II, Paris 1977–1979.

Theophylact Simocatta, *Epistulae*

Theophylacti Simocattae epistulae, eds. G. Zanetto, Lipsiae 1985.

Theophrastus, *Historia plantarum*

Enquiry into plants and minor works on odours and weather signs, eds. A. Hort, vol. I–II, London–Cambridge, Mass. 1961.

Theophrastus, *De causis plantarum*

Theophrastus, *De causis plantarum*, transl. B. Einarson, G.K.K. Link, vol. I–III, London 1976–1990.

Varro, *Rerum rusticarum*

M. Terenti Warronis Rerum rusticarum, eds. W.D. Hooper, H.B. Ash, Londinio 1934.

Vegetius

Vegetius, *Epitome of Military Art*, transl. N.P. Milner, Liverpool 2001.

Xenophon, *Anabasis*

Anabasis of Xenophon with an interlinear translation, eds. T. Clark, Philadelphia 1859.



Modern scholarship

- A Greek-English lexicon*, eds. H.G. Liddell, R. Scott, Oxford 1996.
- Alcock J.P., *Food in Roman Britain*, Briscombe Port 2001.
- Anagnostakis I., *Byzantine aphrodisiacs*, [in:] *Flavours and delights. Tastes and pleasures of ancient and Byzantine cuisine*, eds. I. Anagnostakis, Athens 2013, p. 77–79.
- Anagnostakis I., *Byzantine diet and cuisine. In between ancient and modern gastronomy*, [in:] *Flavours and delights. Tastes and pleasures of ancient and Byzantine cuisine*, eds. I. Anagnostakis, Athens 2013, p. 43–63.
- Ancient medicine. Selected papers of Ludwig Edelstein*, eds. O. Temkin, C.L. Temkin, transl. C.L. Temkin, Baltimore 1967.
- André J., *L'alimentation et la cuisine à Rome*, Paris 1961.
- André J., *Les noms de plantes dans la Rome antique*, Paris 1985.
- de Angelis F., *Going against the grain in Sicilian Greek economics*, GR 53, 2006, p. 29–47.
- Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005.
- Athenaeus and his world. Reading Greek culture in the Roman Empire*, eds. D. Braund, J. Wilkins, Exeter 2000.
- Badr A., Müller K., Schäfer-Pregl R., El Rabey H., Effgen S., Ibrahim H.H., Pozzi C., Rohde W., Salamini F., *On the origin and domestication history of barley (*Hordeum vulgare*)*, MBE 2000, p. 499–510.
- Baldwin B., *Athenaeus and his work*, AClaS 19, 1972, p. 21–42.
- Baldwin B., *The career of Oribasius*, AClaS 18, 1975, p. 85–97.
- Bardong K., *Praxagoras (1)*, [in:] *RE*, Bd. XXII, 2, Stuttgart 1954, col. 1735–1743.
- Barker G., *Prehistoric farming in Europe*, Cambridge 1985.
- Bartol K., *Atenajosa z Naukratis księga win („Deipnósophistai”, 25 f – 40 f)*, M 50, 1995, p. 215–226.
- Bartol K., Danielewicz J., *Wstęp*, [in:] *Athenaeus, Uczta mędrców*, transl. K. Bartol, J. Danielewicz, Poznań 2010, p. 7–64.
- Baudy G., *Cereal diet and the origins of man. Myths of the Eleusinia in the context of ancient Mediterranean harvest festivals*, [in:] *Food in antiquity*, eds. J. Wilkins, D. Harvey, M. Dobson, Exeter 1999, p. 177–195.
- Baumbach M., *Tryphon (3)*, [in:] *BNP*, vol. XIV, Leiden–Boston 2009, col. 988–989.
- Bednarczyk A., *Galen. Główne kategorie systemu filozoficzno-lekarskiego*, Warszawa 1995.
- Bednarczyk A., *Medycyna i filozofia w starożytności*, Warszawa 1999.

- Biologia pszenicy*, eds. P. Strebeyko, Warszawa 1976.
- Bischoff H., *Perieget*, [in:] *RE*, Bd. XIX, 1, Stuttgart 1937, col. 728–732.
- Bober P.P., *Art, culture, and cuisine. Ancient and Medieval gastronomy*, Chicago–London 1999.
- Bourbou C., *Health and disease in Byzantine Crete (7th–12th centuries AD)*, Farnham–Burlington 2010.
- Bowie E., *Athenaeus* (3), [in:] *BNP*, vol. II, Leiden–Boston 2003, col. 240–243.
- Bowie E., *Damocrates*, [in:] *BNP*, vol. IV, Leiden–Boston 2004, col. 64.
- Braudel F., *La Méditerranée et le monde méditerranéen à l'époque de Philippe II*, vol. I–II, Paris 1966.
- Braun T., *Barley cakes and emmer bread*, [in:] *Food in antiquity*, eds. J. Wilkins, D. Harvey, M. Dobson, Exeter 1999, p. 25–37.
- Braund D., *Learning luxury and Empire: Athenaeus' Roman patron*, [in:] *Athenaeus and his world. Reading Greek culture in the Roman Empire*, eds. D. Braund, J. Wilkins, Exeter 2000, p. 3–22.
- Brick R., *Athenaeus on Greek wine*, [in:] *Athenaeus and his world. Reading Greek culture in the Roman Empire*, eds. D. Braund, J. Wilkins, Exeter 2000, p. 455–465.
- Brothwell D., Brothwell P., *Food in antiquity. A survey of the diet of early peoples*, Norwich 1969.
- Brown T.A., Jones M.K., Powell W., Allaby R.G., *The complex origins of domesticated crops in the Fertile Crescent*, *TEE* 24, 2009, p. 103–109.
- Byl S., *L'alimentation dans le Corpus Hippocratique*, [in:] *Voeding en geneeskunde/Alimentation et médecine. Acten van het colloquium/Actes du colloque Brussel–Bruxelles* 12.10.1990, eds. R. Jansen-Sieben, F. Daelmans, Brussel/Bruxelles 1993, p. 29–39.
- The Cambridge companion to Galen*, eds. R.J. Hankinson, Cambridge 2008.
- The Cambridge world history of food*, eds. K.F. Kiple, K.C. Ornelas, vol. I–II, Cambridge 2000.
- de Candolle A., *Origin of cultivated plants*, New York 1959.
- Casson L., *The grain trade of the Hellenistic world*, *TPAPA* 89, 1954, p. 168–187.
- Casson L., *The role of the state in Rome's grain trade*, [in:] *The seaborne commerce of ancient Rome. Studies in history and archeology*, eds. J.H. D'Arms, E.C. Kopff, Rome 1980, p. 21–33.
- Christmann E., *Columella*, [in:] *BNP*, vol. III, Leiden–Boston 2003, col. 584–586.
- Colloque. Pratiques et discours alimentaires en Méditerranée de l'antiquité à la renaissance. Actes*, eds. J. Leclant, A. Vauchez, M. Sartre, Paris 2008.
- A Companion to the archaeology of the ancient Near East*, vol. I, eds. D.T. Potts, Malden, Mass.–Oxford 2012.

- Constantinople and its hinterland*, eds. G. Dagron, C. Mango, Cambridge 1995.
- Cool H.E.M., *Eating and drinking in Roman Britain*, Cambridge 2006.
- Corvisier J.-N., *Athenaeus, medicine and demography*, [in:] *Athenaeus and his world. Reading Greek culture in the Roman Empire*, eds. D. Braund, J. Wilkins, Exeter 2000, p. 492–502.
- Craik E., *Hippocratic diaita*, [in:] *Food in antiquity*, eds. J. Wilkins, D. Harvey, M. Dobson, Exeter 1999, p. 343–350.
- The craft of the ancient historian: Essays in honor of Chester G. Starr*, eds. J.W. Eadie, J. Ober, Lanham, MD–London–New York 1985.
- Crum, E. LeV., *Diet in ancient medical practice as shown by Celsus in his 'De medicina' (concluded)*, *CWe* 25, 1932, no. 22, p. 169–173.
- A cultural history of food in antiquity*, eds. P. Erdkamp, London–New York 2012.
- Curtis R.I., *Ancient food technology*, Leiden–Boston–Köln 2001.
- Czerwiński E., *Pszenica*, Warszawa 1964.
- Dahlmann H., *Terentius (84)*, [in:] *RE*, Supplementband VI, Stuttgart 1935, col. 1172–1277.
- Dalby A., *Siren feasts. A history of food and gastronomy in Greece*, London–New York 1996.
- Dalby A., *Flavours of Byzantium*, Blackawton, Totnes 2003.
- Dalby A., *Food in the ancient world from A to Z*, London–New York 2003.
- Dalby A., *Tastes of Byzantium. The cuisine of a legendary empire*, London–New York 2010.
- Dalby A., *List of sources cited in Geoponica*, [in:] *Geoponica. Farm work*, transl. A. Dalby, Blackawton, Totnes 2011, p. 36–49.
- Dalby A., *The flavours of classical Greece*, [in:] *Flavours and delights. Tastes and pleasures of ancient and Byzantine cuisine*, eds. I. Anagnostakis, Athens 2013, p. 17–35.
- Darmstaedter E., *Ptisana: ein Beitrag zur Kenntnis der antiken Diaetetik*, *Ar.ASS* 15, 1933, p. 181–201.
- The dawn of farming in the Near East*, eds. R.T.J. Cappers, S. Bottema, Berlin 2002.
- Debru O.A., *Physiology*, [in:] *The Cambridge companion to Galen*, eds. R.J. Hankinson, Cambridge 2008, p. 263–282.
- Decker M., *Tilling the Hateful Earth. Agricultural production and trade in the late antique East*, Oxford 2011.
- Deichgräber K., *Mnesitheos (3)*, [in:] *RE*, Bd. XV, 2, Stuttgart 1932, col. 2281–2284.
- Deichgräber K., *Polemon (9)*, [in:] *RE*, Bd. XXI, 2, Stuttgart 1954, col. 1288–1320.
- Dembińska M., *Diet: A comparison of food consumption between some eastern and western monasteries in the 4th–12th centuries*, *B* 55, 1985, p. 431–462.

- Deroux C., *Alimentation et médecine dans la diététique d'Anthime*, [in:] *Voeding en geneeskunde/Alimentation et médecine. Acten van het colloquium/Actes du colloque Brussel-Bruxelles* 12.10.1990, eds. R. Jansen-Sieben, F. Daelmans, Brussel/Bruxelles 1993, p. 49-73.
- Diamandopoulos A., *The effect of medicine, in particular the ideas about renal diseases, on the "well-being" of Byzantine citizens*, [in:] *Material culture and well-being in Byzantium (400-1453). Proceedings of the International Conference (Cambridge, 8-10 September 2001)*, eds. M. Grünbart, E. Kislinger, A. Muthesius, D. Stathakopoulos, Wien, 2007, p. 93-99.
- Diepgen P., *Zur Frauenheilkunde im byzantinischen Kulturkreis des Mittelalters. Akademie der Wissenschaften und der Literatur. Abhandlungen der Geistes- und Sozialwissenschaften Klasse*, Wiesbaden 1950.
- Dieta Mediterránea. Comidas y hábitos alimenticios en las culturas Mediterráneas*, eds. A. Pérez Jiménez, G. Cruz Andreotti, Madrid 2000.
- Diller H., *Orestinos*, [in:] *RE*, Bd. XVIII, 1, Stuttgart 1939, col. 1017.
- Diller H., *Philumenos (7)*, [in:] *RE*, Bd. XX, 1, Stuttgart 1941, col. 209-211.
- Diller H., *Phylotimos*, [in:] *RE*, Bd. XX, 1, Stuttgart 1941, col. 1030-1032.
- Dixon D.M., *A note on cereals in ancient Egypt*, [in:] *The domestication and exploitation of plants and animals*, eds. P.J. Ucko, G.W. Dimbleby, London 1969, p. 131-142.
- The domestication and exploitation of plants and animals*, eds. P.J. Ucko, G.W. Dimbleby, London 1969.
- Donohue A.A., *Polemon (2)*, [in:] *BNP*, vol. XI, Leiden-Boston 2007, col. 458-459.
- Drugs and narcotics in history*, eds. R. Porter, M. Teich, Cambridge-New York 1995.
- Duffy J., *Byzantine medicine in the sixth and seventh centuries. Aspects of teaching and practice*, *DOP* 38, 1984, p. 21-27.
- Durliat J., *L'approvisionnement de Constantinople*, [in:] *Constantinople and its hinterland*, eds. G. Dagron, C. Mango, Cambridge 1995, p. 19-33.
- Düring B.S., *The prehistory of Asia Minor. From complex hunter-gatherers to early urban societies*, Cambridge 2011.
- Dzino D., *Sabaianus: Beer, wine and Ammianus Marcellinus*, [in:] *Feast, fast, or famine. Food and drinking in Byzantium*, eds. W. Mayer, S. Trzcionka, Brisbane 2005, p. 57-68.
- The economic history of Byzantium. From the seventh through the fifteenth century*, eds. A.E. Laiou, vol. I-II, Washington, DC 2002.
- Edelstein L., *Hippocrates*, [in:] *RE*, Supplementband VI, Stuttgart 1935, col. 1290-1345.

- Edelstein L., *The dietetics of antiquity*, [in:] *Ancient medicine. Selected papers of Ludwig Edelstein*, eds. O. Temkin, C.L. Temkin, transl. C.L. Temkin, Baltimore 1967, p. 303–316.
- Eijk P.J. van der, *Galen's use of concept of 'qualified experience' in his dietetic and pharmacological works*, [in:] *Galen on pharmacology. Philosophy, history and medicine. Proceedings of the Vth International Galen Colloquium, Lille, 16–18 March 1996*, eds. A. Debru, Leiden–New York–Köln 1997, p. 35–57.
- Eijk P.J. van der, *Diocles of Carystus: A collection of the fragments with translations and commentary*, vol. I–II, Leiden–Boston–Köln 2000–2001.
- Eijk P.J. van der, *Therapeutics*, [in:] *The Cambridge companion to Galen*, eds. R.J. Hankinson, Cambridge 2008, p. 283–303.
- Erdkamp P., *The grain market in the Roman Empire. A social, political and economic study*, Cambridge 2005.
- Ermerins F.Z., *L.S (Introductio)*, [in:] *Anecdota medica Graeca*, Leiden 1963, p. V–XVI.
- Evans J.K., *Wheat production and its social consequences in the Roman world*, CQ 31, 1981, p. 228–242.
- Falkowski J., Kostrowicki J., *Geografia rolnictwa świata*, Warszawa 2001.
- Feast, fast, or famine. Food and drinking in Byzantium*, eds. W. Mayer, S. Trzcionka, Brisbane 2005.
- Flavours and delights. Tastes and pleasures of ancient and Byzantine cuisine*, eds. I. Anagnostakis, Athens 2013.
- Flemming R., *The physicians at the feast. The place of the medical knowledge at Athenaeus' dinner table*, [in:] *Athenaeus and his world. Reading Greek culture in the Roman Empire*, eds. D. Braund, J. Wilkins, Exeter 2000, p. 476–482.
- Food in antiquity*, eds. J. Wilkins, D. Harvey, M. Dobson, Exeter 1999.
- Forbes R.J., *Studies in ancient technology*, vol. III, Leiden 1965.
- Formes de pensée dans la collection hippocratique. Actes du IVe Colloque International Hippocratique, Lausanne, September 1981*, eds. F. Lasserre, P. Mudry, Geneva 1983.
- Gabriel R.A., *Man and wound in the ancient world. A history of military medicine from Sumer to the fall of Constantinople*, Washington, D.C. 2012.
- García Gaul C., *Dieta hipocrática y prescripciones alimentarias de los pitagóricos*, [in:] *Dieta Mediterránea. Comidas y hábitos alimenticios en las culturas Mediterráneas*, eds. A. Pérez Jiménez, G. Cruz Andreotti, Madrid 2000, p. 44–50.
- Garnsey P., *Famine and food supply in the Graeco-Roman world*, Cambridge 1989.
- Garnsey P., *Food and society in classical antiquity*, Cambridge 2002.
- Garvin D.F., Raman H., Smith K.P., *Barley*, [in:] *Encyclopedia of food and culture*, eds. S.H. Katz, vol. I, New York 2003, p. 166–170.

- Garzya A., *Aetios v. Amida*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 19–20.
- Garzya A., *Alexander v. Tralles*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 27–28.
- Garzya A., de Lucia R., Guardasole A., Ieraci Bio A.M., Lamagna M., Romano R., *Medici byzantini. Oribasio di Pergamon. Aezio d' Amida. Alessandro di Tralle. Paolo d'Egina. Leone medico*, Torino 2006.
- Gierat K., *Cechy botaniczne i fizjologia rozwoju jęczmienia*, [in:] *Jęczmień*, Warszawa 1973, p. 20–39.
- Gossen H., *Herakleides (54)*, [in:] *RE*, Bd. VIII, Stuttgart 1913, col. 493–496.
- Gossen H., *Hippokrates (16)*, [in:] *RE*, Bd. VIII, Stuttgart 1913, col. 1801–1852.
- Gossen H., *Rufus (18)*, [in:] *RE*, 2. Reihe, Bd. I, 1, Stuttgart 1914, col. 1207–1212.
- Gourevitch D., *Hicesius' fish and chips. A plea for an edition of the fragments and testimonies of the περι ὄλης*, [in:] *Athenaeus and his world. Reading Greek culture in the Roman Empire*, eds. D. Braund, J. Wilkins, Exeter 2000, p. 483–491.
- Grant M., *Oribasios and medical dietetics or the three ps*, [in:] *Food in antiquity*, eds. J. Wilkins, D. Harvey, M. Dobson, Exeter 1999, p. 368–379.
- Grant M., *Introduction*, [in:] M. Grant, *Galen on food and diet*, London-New York 2000, p. 1–13.
- Grant M., *Roman cookery. Ancient recipes for modern kitchens*, London 2002.
- Guardasole A., *Herakleides v. Tarent*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 401–402.
- Guillou A., *La civilisation byzantine*, Paris 1974.
- Haldon J., *Feeding the army: Food and transport in Byzantium, ca 600–1100*, [in:] *Feast, fast, or famine. Food and drink in Byzantium*, eds. W. Mayer, S. Trzcionka, Brisbane 2005, p. 85–100.
- Hancock J.F., *Plant evolution and the origin of crop species*, Wallingford–Cambridge, Mass., 2004.
- Hankinson R.J., *The man and his work*, [in:] *The Cambridge companion to Galen*, eds. R.J. Hankinson, Cambridge 2008, p. 1–33.
- Hankinson R.J., *Philosophy of nature*, [in:] *The Cambridge companion to Galen*, eds. R.J. Hankinson, Cambridge 2008, p. 217–223.
- Harlan J.R., *The origins of cereal agriculture in the Old World*, [in:] *Origins of agriculture*, eds. C.A. Reed, the Hague–Paris 1977, p. 357–384.
- Healy J.F., *Pliny the Elder on science and technology*, Oxford 2000.
- Heath M., *Do heroes eat fish? Athenaeus on the Homeric lifestyle*, [in:] *Athenaeus and his world. Reading Greek culture in the Roman Empire*, eds. D. Braund, J. Wilkins, Exeter 2000, p. 342–352.

- Hein H., *Athenaios v. Naukratis*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 120–121.
- Helm R., *Porcius* (10), [in:] *RE*, Bd. XXII, 1, Stuttgart 1953, col. 108–165.
- Hill S., Bryer A., *Byzantine porridge tracta, trachanás and trabana*, [in:] *Food in antiquity*, eds. J. Wilkins, D. Harvey, M. Dobson, Exeter 1999, p. 44–54.
- Histoire de l'alimentation*, eds. J.-L. Flandrin, M. Montanari, Paris 1996.
- Human bioarchaeology of the transition to agriculture*, eds. R. Pinhasi, J.T. Stock, Chichester 2011.
- Hunger H., *Die hochsprachliche profane Literatur der Byzantiner*, Bd. I, München 1978.
- Ieraci Bio A.M., *Antyllos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 62–63.
- Ihm S., *Asklepiades v. Bithynien*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 107–108.
- Ihm S., *Philumenos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 699.
- Ihm S., *Rufus v. Ephesos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 759–760.
- Ihm S., *Soran*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 822–823.
- Jacob C., *Athenaeus the librarian*, [in:] *Athenaeus and his world. Reading Greek culture in the Roman Empire*, eds. D. Braund, J. Wilkins, Exeter 2000, p. 85–110.
- Jaeger W., *Diokles von Karystos*, Berlin 1938.
- Jagusiak K., Kokoszko M., *Życie i kariera Orybazjusza w świetle relacji źródłowych*, PNH 10, 2011, no. 1, p. 5–21.
- Jagusiak K., Kokoszko M., *Pisma Orybazjusza jako źródło informacji o żywieniu ludzi w późnym Cesarstwie Rzymskim*, VP 33, 2013, p. 339–357.
- Jagusiak K., Kokoszko M., Rzeźnicka Z., *Delicacies from the sea. A selection of data on the genus Thunnus from medical and other sources*, FAH 24, 2011, p. 33–38.
- Jasny N., *Competition among grains in classical antiquity*, AHR 47, 1942, p. 758–772.
- Jasny N., *The wheats of classical antiquity*, Baltimore 1944.
- Jasny N., *The breads of Ephesus and their prices*, AHIS 21, 1947, p. 190–192.
- Jasny N., *The daily bread of the ancient Greeks and Romans*, Osi 9, 1950, p. 227–253.
- Jęczmień*, a joint publication, Warszawa 1973.
- Jones H., Civián P., Cockram J., Leigh F.J., Smith L.M.J., Jones M.K., Charles M.P., Molina-Cano J.-L., Powell W., Jones G., Brown T.A., *Evolutionary history of barley cultivation in Europe revealed by genetic analysis of extant landraces*, BMC.EB 11, 2011, p. 320–331.

- Jouanna J., *Le régime dans la médecine hippocratique: définition, grands problèmes, prolongements*, [in:] *Colloque. Pratiques et discours alimentaires en Méditerranée de l'antiquité à la renaissance. Actes*, eds. J. Leclant, A. Vauchez, M. Sartre, Paris 2008, p. 53–72.
- Jouanna J., *Greek medicine from Hippocrates to Galen*, Leiden–Boston 2012.
- Jouanna J., Boudon V., *Remarques sur la place d'Hippocrate dans la pharmacologie de Galien*, [in:] *Galen on pharmacology. Philosophy, history and medicine. Proceedings of the Vth International Galen Colloquium, Lille, 16–18 March 1996*, eds. A. Debru, Leiden–New York–Köln 1997, p. 213–234.
- Kappelmacher A., *Iunius* (104), [in:] *RE*, Bd. X, 1, Stuttgart 1918, col. 1054–1068.
- Kaufman C.K., *Cooking in ancient civilizations*, Westport, CT–London 2006.
- Kerényi K., *Eleusis. Archetypowy obraz matki i córki*, transl. I. Kania, Kraków 2004.
- Kessler D., Termin P., *The organization of the grain trade in the early Roman Empire*, *EcHR* 60, 2007, p. 313–332.
- Keyser P.T., *Science and magic in Galen's recipes (sympathy and efficacy)*, [in:] *Galen on pharmacology. Philosophy, history and medicine. Proceedings of the Vth International Galen Colloquium, Lille, 16–18 March 1996*, eds. A. Debru, Leiden–New York–Köln 1997, p. 175–198.
- Kierdorf W., *Cato* (1), [in:] *BNP*, vol. III, Leiden–Boston 2003, col. 20–23.
- Kind E., *Kriton* (7), [in:] *RE*, Bd. XI, 2, Stuttgart 1922, col. 1935–1938.
- Kind E., *Lykos* (51), [in:] *RE*, Bd. XIII, 2, Stuttgart 1927, col. 2407–2408.
- Kind E., *Soranos*, [in:] *RE*, 2. Reihe, Bd. III, 1, Stuttgart 1927, col. 1113–1130.
- Kislinger E., *Les chrétiens d'Orient: règles et réalités alimentaires dans le monde byzantin*, [in:] *Histoire de l'alimentation*, eds. J.-L. Flandrin, M. Montanari, Paris 1996, p. 325–344.
- Kislinger E., *Anthimus*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 56.
- Koder J., *Gemüse in Byzanz. Die Versorgung Konstantinopels mit Frischgemüse im Lichte der Geponika*, Wien 1993.
- Koder J., *Everyday food in the middle Byzantine period*, [in:] *Flavours and delights. Tastes and pleasures of ancient and Byzantine cuisine*, eds. I. Anagnostakis, Athens 2013, p. 139–155.
- Kokoszko M., *Descriptions of personal appearance in John Malalas' Chronicle*, Łódź 1998.
- Kokoszko M., *Nauka antyczna a opisy portretowe w dziełach Prokopiusza z Cezarei*, E 87, 2000, p. 255–277.

- Kokoszko M., *Skąd brać rekruta do armii i dlaczego? Antyczna nauka wyjaśniająca sugestie Wegecjusza zamieszczone w dziele „Epitoma rei militaris”*, PZH 3, 2001, p. 11–29.
- Kokoszko M., *Ryby i ich znaczenie w życiu codziennym ludzi późnego antyku i wczesnego Bizancjum (III–VII w.)*, Łódź 2005.
- Kokoszko M., *Medycyna bizantyńska na temat aiora (αἰώρα), czyli kilka słów o jednej z procedur terapeutycznych zastosowanych w kuracji cesarza Aleksego I Komnena (na podstawie pism medycznych Galena, Orybazjusza, Aecjusza z Amidy i Pawła z Eginny, [in:] Cesarstwo bizantyńskie. Dzieje, religia, kultura. Studia ofiarowane Profesorowi Waldemarowi Ceranowi przez uczniów na 70-lecie Jego urodzin, eds. P. Krupczyński, M.J. Leszka, Łask–Łódź 2006, p. 87–111.*
- Kokoszko M., *Sosy w kuchni greckiej. Garum (γάρος) i pochodne*, VP 26, 2006, p. 289–298.
- Kokoszko M., *Some technical terms from Greek cuisine in classical and Byzantine literature*, E 95, 2008, p. 269–283.
- Kokoszko M., *Fish as a food source in Greek dietetics. An overview of late antique and early Byzantine doctrines*, [in:] *Fishes – culture – environment through archeoichthyology, ethnography and history. The 15th meeting of the ICAZ fish remains working group (FRWG). September 3–9, 2009 in Poznań and Toruń, Poland*, eds. D. Makowiecki, S. Hamilton-Dyer, I. Riddler, N. Trzaska-Nartowski, M. Makohonienko, Poznań 2009, p. 122–125.
- Kokoszko M., *What was administered to Christ on the cross. A few words on the alimentary and therapeutic role of vinegar*, [in:] *Biblia Slavorum Apocryphorum. II. Novum Testamentum*, eds. G. Minczew, M. Skowronek, I. Petrov, Łódź 2009, p. 42–54.
- Kokoszko M., *Aromaty kuchni antyku i Bizancjum w teorii medycznej i praktyce kulinarnej*, PH 102, 2011, p. 539–544.
- Kokoszko M., *Smaki Konstantynopola*, [in:] *Konstantynopol – Nowy Rzym. Miasto i ludzie w okresie wczesnobizantyńskim*, eds. M.J. Leszka, T. Wolińska, Warszawa 2011, p. 471–575.
- Kokoszko M., Gibel-Buszevska K., *The term kandaulos/kandylos in the Lexicon of Photius and the Commentarii ad Homeri Iliadem of Eustathius of Thessalonica*, BZ 104, 2011, p. 125–146.
- Kokoszko M., Gibel-Buszevska K., *Photius and Eustathius of Thessalonica on Greek cuisine intricacies, or a few words on abyrtake (ἀβυρτάχη)*, Bsl 69, 2011, p. 114–123.
- Kokoszko M., Jagusiak K., *Zboża Bizancjum. Kilka uwag na temat roli produktów zbożowych na podstawie źródeł greckich*, ZW 17, 2012, p. 19–38.

- Kokoszko M., Jagusiak K., Rzeźnicka Z., *Ryż jako pokarm i medykament w antycznej i bizantyńskiej literaturze medycznej*, PNH 12.1, 2013, p. 5–38.
- Kokoszko M., Jagusiak K., Rzeźnicka Z., *Kilka słów o zupie zwanej ptisáne (πιτσάνη)*, ZW 18, 2013, p. 282–292.
- Kokoszko M., Jagusiak K., Rzeźnicka Z., *Rice as a foodstuff in ancient and Byzantine materia medica*, SCer 3, 2013, p. 47–68.
- Kokoszko M., Jagusiak K., Rzeźnicka Z., *Oats in ancient and Byzantine „Materia Medica” (5th century BC – 11th century AD (A commentary on the popularity of oats as a foodstuff))*, Pbg 37.4, 2013, p. 21–42.
- Kokoszko M., Rzeźnicka Z., *Dietetyka w De re coquinaria*, PNH 10.2, 2011, p. 5–25.
- Kokoszko M., Rzeźnicka Z., Jagusiak K., *Health and culinary art in Antiquity and early Byzantium in the light of De re coquinaria*, SCer 2, 2012, p. 145–164.
- Kokoszko M., Wolińska T., *Zaopatrzenie Konstantynopola w żywność*, [in:] *Konstantynopol – Nowy Rzym. Miasto i ludzie w okresie wczesnobizantyńskim*, eds. M.J. Leszka, T. Wolińska, Warszawa 2011, p. 462–470.
- Kollesch J., *Zopyros (15)*, [in:] *RE*, 2. Reihe, Bd. XA, München 1972, col. 771–772. *Konstantynopol – Nowy Rzym. Miasto i ludzie w okresie wczesnobizantyńskim*, eds. M.J. Leszka, T. Wolińska, Warszawa 2011.
- Kroll W., *Plinius (5)*, [in:] *RE*, Bd. XXI, 1, Stuttgart 1951, col. 271–439.
- Kulf E., *Untersuchungen zu Athenaios von Attaleia. Ein Beitrag zur antiken Diätetik*, Göttingen 1970.
- Laiou A.E., *The agrarian economy, thirteenth–fifteenth centuries*, [in:] *The economic history of Byzantium. From the seventh through the fifteenth century*, eds. A.E. Laiou, vol. I–II, Washington, DC 2002, p. 311–375.
- Laiou A.E., *The Byzantine economy. An overview*, [in:] *The economic history of Byzantium*, eds. A. Laiou, vol. I–II, Washington, DC 2002, p. 1146–1164.
- Larioux B., *Athénée, Apicius et Platina. Gourmands et gourmets de l'Antiquité sous le regard des humanistes romains du XVe siècle*, [in:] *Colloque. Pratiques et discours alimentaires en Méditerranée de l'antiquité à la renaissance. Actes*, eds. J. Leclant, A. Vauchez, M. Sartre, Paris 2008, p. 389–409.
- Lefort J., *The rural economy, seventh–twelfth centuries*, [in:] *The economic history of Byzantium. From the seventh through the fifteenth century*, eds. A. Laiou, vol. II, Washington, DC 2002, p. 231–310.
- Leontini M., *Hens, cockerels and other choice fowl. Everyday food and gastronomic pretensions in Byzantium*, [in:] *Flavours and delights. Tastes and pleasures of ancient and Byzantine cuisine*, eds. I. Anagnostakis, Athens 2013, p. 113–131.
- Les Écoles médicales à Rome: Actes du 2ème Colloque International sur les textes médicaux latins antiques*, Lausanne 1986, eds. P. Mudry, J. Pigeaud, Geneva 1991.

- Leven K.-H., *Athenaios v. Attaleia*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 119–120.
- Leven K.-H., *Demosthenes Philaletes*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 214–215.
- Leven K.-H., *Diokles v. Karystos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 225–227.
- Lindsay H., *Food representations*, [in:] *A cultural history of food in antiquity*, eds. P. Erdkamp, London–New York 2012, p. 163–179.
- Longrigg J., *Greek medicine from the heroic to the Hellenistic age. A source book*, London 1998.
- Lucia R. de, *Mnesitheos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 623–624.
- Lucia R. de, *Oreibasios v. Pergamon*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 660–661.
- Lucia R. de, *Oribasio di Pergamo*, [in:] A. Garzya, R. de Lucia, A. Guardasole, A.M. Ieraci Bio, M. Lamagna, R. Romano, *Medici byzantini. Oribasio di Pergamon. Aezio d' Amida. Alessandro di Tralle. Paolo d'Egina. Leone medico*, Torino 2006, p. 21–29.
- Łubkowski Z., *Pszenica. Charakterystyka botaniczna, hodowla i agrotechnika*, Warszawa 1968.
- Magika hiera. Ancient Greek magic and religion*, eds. C.A. Faraone, D. Obbink, Oxford 1991.
- Maniatis G.C., *The wheat market in Byzantium, 900–1200. Organization, marketing and pricing strategies*, Bsl 62, 2004, p. 103–124.
- Marasco G., *Andromachos v. Kreta*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 50–51
- Marsili A., *Prefazione*, [in:] *Anthimi de observationem ciborum. Prefazione, testo latino, traduzione italiana e commento filologico* A. Marsili, Pisa 1959.
- Material culture and well-being in Byzantium (400–1453). Proceedings of the International Conference (Cambridge, 8–10 September 2001)*, eds. M. Grünbart, E. Kislinger, A. Muthesius, D. Stathakopoulos, Wien, 2007.
- Mazoyer M., Roudart L., *A history of world agriculture. From the Neolithic Age to the current crisis*, transl. J.H. Membrez, London 2006.
- McCorrison J., *Wheat*, [in:] *The Cambridge world history of food*, eds. K.F. Kiple, K.C. Ornelas, vol. I, Cambridge 2000, p. 158–174.
- Messing G.M., *Remarks on Anthimus De observatione ciborum*, CP 37, 1942, p. 150–158.
- Mikołajczyk I., *Rzyska literatura agronomiczna*, Toruń 2004.

- Mikołajczyk I., *Wstęp*, [in:] Kassianus Bassus, *Geoponika, bizantyńska encyklopedia rolnicza*, transl. I. Mikołajczyk, Toruń 2012, p. 7–46.
- Millet P., *Theophrastus and his world*, Cambridge 2007.
- Moritz L.A., *Husked and “naked” grain*, CQ 5, 1955, p. 129–134.
- Morison B., *Language*, [in:] *The Cambridge companion to Galen*, eds. R.J. Hankinson, Cambridge 2008, p. 116–156.
- Morison B., *Logic*, [in:] *The Cambridge companion to Galen*, eds. R.J. Hankinson, Cambridge 2008, p. 66–115.
- Morrisson C., Sodini J.-P., *The sixth-century economy*, [in:] *The economic history of Byzantium*, eds. A. Laiou, vol. I–II, Washington, DC 2002, p. 171–220.
- Nawracała J., *Genetyczne podstawy hodowli pszenicy (Triticum aestivum L.)*, [in:] *Zarys genetyki zbóż*, vol. I, *Jęczmień, pszenica i żyto*, eds. A.G. Górny, Poznań 2004, p. 183–200.
- Nelson M., *The barbarian’s beverage. A history of beer in ancient Europe*, London–New York 2005.
- Nesbitt M., *When and where did domesticated cereals first occur in southwest Asia*, [in:] *The dawn of farming in the Near East*, eds. R.T.J. Cappers, S. Bottema, Berlin 2002, p. 113–132.
- Noonan T.S., *The grain trade of the northern Black Sea in antiquity*, AJP 94, 1973, p. 231–242.
- Nutton V., *From Galen to Alexander. Aspects of medicine and medical practice in late Antiquity*, DOP 38, 1984, p. 1–14.
- Nutton V., *Galen and the traveler’s fare*, [in:] *Food in antiquity*, eds. J. Wilkins, D. Harvey, M. Dobson, Exeter 1999, p. 359–370.
- Nutton V., *Andromachus (5)*, [in:] *BNP*, vol. I, Leiden–Boston 2002, col. 685–686.
- Nutton V., *Antyllus*, [in:] *BNP*, vol. I, Leiden–Boston 2002, col. 810–811.
- Nutton V., *Archigenes*, [in:] *BNP*, vol. I, Leiden–Boston 2002, col. 989–990.
- Nutton V., *Asclepiades (6)*, [in:] *BNP*, vol. II, Leiden–Boston 2003, col. 96–98.
- Nutton V., *Athenaeus (6)*, [in:] *BNP*, vol. II, Leiden–Boston 2003, col. 244–245.
- Nutton V., *Demosthenes (4)*, [in:] *BNP*, vol. IV, Leiden–Boston 2004, col. 297–298.
- Nutton V., *Diocles (6)*, [in:] *BNP*, vol. IV, Leiden–Boston 2004, col. 424–426.
- Nutton V., *Ancient medicine*, London–New York 2005.
- Nutton V., *Heraclides (27)*, [in:] *BNP*, vol. VI, Leiden–Boston 2005, col. 173–174.
- Nutton V., *Mnesitheus*, [in:] *BNP*, vol. IX, Leiden–Boston 2006, col. 102.
- Nutton V., *Praxagoras*, [in:] *BNP*, vol. XI, Leiden–Boston 2007, col. 782–783.
- Nutton V., *Rufus (5)*, [in:] *BNP*, vol. XII, Leiden–Boston 2008, col. 756–758.
- Nutton V., *Zopyrus (8)*, [in:] *BNP*, vol. XV, Leiden–Boston 2010, col. 964.
- Origins of agriculture*, eds. C.A. Reed, the Hague–Paris 1977.

- Oser-Grote C., *Archigenes v. Apameia*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 80.
- Potter P., Gundert B., *Hippocrates (6)*, [in:] *BNP*, vol. VI, Leiden–Boston 2005, col. 354–363.
- Powell O., *Introduction*, [in:] Galen, *On the properties of foodstuffs (De alimentorum facultatibus)*, transl. O. Powell, foreword J. Wilkins, Cambridge 2003, p. 1–19.
- Pucci Donati F., *Dieta, salute, calendari. Dal regime stagionale antico ai regimina mensium medievali: origine di un genere nella letteratura medica occidentale*, Spoleto 2007.
- Quick R., Simon S.J., *Wheat production and the romanization of Northern Gaul*, *AWO* 30, 1999, p. 59–62.
- Rautman M.L., *The daily life in the Byzantine Empire*, Westport 2006.
- Regenbogen O., *Theophrastos*, [in:] *RE*, Supplementband VII, Stuttgart 1940, col. 1354–1562.
- Reger G., *The public purchase of grain on independent Delos*, *CA* 12, 1993, p. 300–334.
- Rickman G.E., *The grain trade under the Roman Empire*, [in:] *The seaborne commerce of ancient Rome. Studies in history and archeology*, eds. J.H. D'Arms, E.C. Kopff, Rome 1980, p. 261–275.
- Riddle J.M., *Dioscurides on pharmacy and medicine*, Austin 1985.
- Rodzińska-Nowak J., *Gospodarka żywnościowa ludności kultury przeworskiej*, Kraków 2012.
- Rowland R.J., *The case of the missing Sardinian grain*, *AWO* 10, 1984, no. 1/2, p. 45–48.
- Ruebenbauer T., *Pochodzenie i użytkowanie pszenicy w ujęciu historycznym*, [in:] *Biologia pszenicy*, eds. P. Strebeyko, Warszawa 1976, p. 13–32.
- Ruffing K., *Palladius (II, 1)*, [in:] *BNP*, vol. X, Leiden–Boston 2007, col. 393–394.
- Sallares R., *The ecology of the ancient Greek world*, Ithaca–London 1991.
- Sallmann K., *Varro (2)*, [in:] *BNP*, vol. XV, Leiden–Boston 2010, col. 210–226.
- Sands Elliott J., *Outlines of Greek and Roman medicine*, London 1914.
- Sarton G., *Galen of Pergamon*, Lawrence, KS., 1954.
- Scarborough J., *Nicander's toxicology I: snakes*, *PhH* 19, 1977, p. 3–23.
- Scarborough J., *Theophrastus on herbals and herbal remedies*, *JHB* 11, 1978, p. 353–385.
- Scarborough J., *Nicander's toxicology II: spiders, scorpions, insects and myriapods*, *PhH* 21, 1979, p. 3–34, 73–92.
- Scarborough J., *Theoretical assumptions in Hippocratic pharmacology*, [in:] *Formes de pensée dans la collection hippocratique. Actes du IV^e Colloque International*

- Hippocraticae*, Lausanne, September 1981, eds. F. Lasserre, P. Mudry, Geneva 1983, p. 307–325.
- Scarborough J., *Early Byzantine pharmacology*, DOP 38, 1984, p. 213–232.
- Scarborough J., *Criton, physician to Traian: historian and pharmacist*, [in:] *The craft of the ancient historian: Essays in honor of Chester G. Starr*, eds. J.W. Eadie, J. Ober, Lanham, MD–London–New York 1985, p. 387–405.
- Scarborough J., *The pharmacology of sacred plants, herbs and roots*, [in:] *Magika hiera. Ancient Greek magic and religion*, eds. C.A. Faraone, D. Obbink, Oxford 1991, p. 138–174.
- Scarborough J., *The pharmacy of Methodist medicine: the evidence of Soranus' Gynecology*, [in:] *Les Écoles médicales à Rome: Actes du 2ème Colloque International sur les textes médicaux latins antiques*, Lausanne 1986, eds. P. Mudry, J. Pigeaud, Geneva 1991, p. 204–216.
- Scarborough J., *The opium poppy in Hellenistic and Roman medicine*, [in:] *Drugs and narcotics in history*, eds. R. Porter, M. Teich, Cambridge–New York 1995, p. 4–23.
- Scarborough J., *Theodora, Aetius of Amida, and Procopius: some possible connections*, GRBS 53, 2013, p. 742–762.
- The seaborne commerce of ancient Rome. Studies in history and archeology*, eds. J.H. D'Arms, E.C. Kopff, Rome 1980.
- Sideras A., *Einleitung*, [in:] Rufus Ephesius, *De renum et vesicae morbis*, eds. A. Sideras, Berlin 1977, p. 58–69.
- Sideras A., *Rufus von Ephesos und sein Werk im Rahmen der antiken Medizin*, [in:] ANRW, T. II, Bd. 37, 2, Berlin–New York 1994, p. 1077–1253.
- Sirks A.J.B., *The size of the grain distributions in Imperial Rome and Constantinople*, Ath 79, 1991, fasc. 1, p. 215–237.
- Słaboński A., *Jęczmień jary i ozimy*, Warszawa 1976.
- Smith W.D., *The Hippocratic tradition*, Ithaca 1979.
- Sosin J.D., *Grain for Andros*, H 130, 2002, p. 131–145.
- Staden H. von, *Inefficacy, error and failure: Galen on δόκιμα φάρμακα ἀπρακτα*, [in:] *Galen on pharmacology. Philosophy, history and medicine. Proceedings of the Vth International Galen Colloquium*, Lille, 16–18 March 1996, eds. A. Debru, Leiden–New York–Köln 1997, p. 59–83.
- Stamatu M., *Dioskurides*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 227–229.
- Stannard J., *Hippocratic pharmacology*, [in:] J. Stannard, *Pristina medicamenta. Ancient and medieval medical botany*, eds. K.E. Stannard, R. Kay, Aldershot–Brookfield–Singapore–Sydney 1999, p. 497–518.

- Stannard J., *Pristina medicamenta. Ancient and medieval medical botany*, eds. K.E. Stannard, R. Kay, Aldershot–Brookfield–Singapore–Sydney 1999.
- Stock J.T., O’Neill M.C., Ruff C.B., Zabecki M., Shackelford L., Rose J.C., *Body size, skeletal biomechanics, mobility and habitual activity from the Late Palaeolithic to the Mid-Dynastic Nile Valley*, [in:] *Human bioarchaeology of the transition to agriculture*, eds. R. Pinhasi, J.T. Stock, Chichester 2011, p. 347–370.
- Stoneman R., *You are what you eat: diet and philosophical diata in Athenaeus’ Deipnosophistae*, [in:] *Athenaeus and his world. Reading Greek culture in the Roman Empire*, eds. D. Braund, J. Wilkins, Exeter 2000, p. 413–422.
- Stuligrosz M., *Uczta Filoksenosa na tle tradycji greckiej poezji gastronomicznej*, Poznań 2012.
- Svennung J., *Palladios (7)*, [in:] *RE*, Bd. XVIII, 3, Stuttgart 1949, col. 209–211. *Szczegółowa uprawa roślin*, vol. I, eds. Z. Jasińska, A. Koteccki, Wrocław 2003.
- Szczygieł S., *Katon – rzymski tradycjonalista, czy polityk realista*, Warszawa 2011.
- Teall J.L., *The grain supply of the Byzantine Empire, 330–1025*, *DOP* 13, 1959, p. 87–139.
- Temkin O., *Geschichte des Hippokratismus in ausgehenden Altertum*, Leipzig 1932.
- Temkin O., *Hippocrates in a world of pagans and Christians*, Baltimore 1991.
- Tengström E., *Bread for the people. Studies of the corn-supply of Rome during the Late Empire*, Stockholm 1974.
- Thomssen H., Probst C., *Die Medizin des Rufus von Ephesos*, [in:] *ANRW*, T. II, Bd. 37, 2, Berlin–New York 1994, p. 1254–1292.
- Thorndike L., *Galen. The man and his times*, *ScM* 14, 1 (1922), p. 83–93.
- Thorndike L., *Relation between Byzantine and western science and pseudo-science*, *Jan* 51, 1964, p. 1–47.
- Thurmond D.L., *A handbook of food processing in classical Rome. For her bounty no winter*, Leiden–Boston 2006.
- Tielemans T., *Praxagoras v. Kos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 726–727.
- Totelin L.M.V., *Hippocratic recipes. Oral and written transmission of pharmacological knowledge in fifth- and fourth-century Greece*, Leiden–Boston 2009.
- Touwaide A., *Lycus (10)*, [in:] *BNP*, vol. VII, Leiden–Boston 2005, col. 938–939.
- Touwaide A., *Philumenus*, [in:] *BNP*, vol. XI, Boston–Leiden 2007, col. 126–127.
- Unger R.W., *Beer in the Middle Ages and in the Renaissance*, Philadelphia 2004.
- Vallance J., *The medical system of Asclepiades of Bithynia*, [in:] *ANRW*, T. II, Bd. 37, 1, Berlin–New York 1993, p. 693–727.
- Voeding en geneeskunde/Alimentation et médecine. Acten van het colloquium/Actes du colloque Brussel–Bruxelles 12.10.1990*, eds. R. Jansen-Sieben, F. Daelmans, Brussel/Bruxelles 1993.

- Vogt S., *Damokrates*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 207–208.
- Vogt S., *Drugs and pharmacology*, [in:] *The Cambridge companion to Galen*, eds. R.J. Hankinson, Cambridge 2008, p. 306–310.
- Volpe Cacciatore P., *El régimen según Galeno*, [in:] *Dieta Mediterránea. Comidas y hábitos alimenticios en las culturas Mediterráneas*, eds. A. Pérez Jiménez, G. Cruz Andreotti, Madrid 2000, p. 91–101.
- Walther-Ast M., *Ärzte und Gastronomie*, CIBA 29, 1936, p. 978–984.
- Wellmann M., *Andromachos* (18), [in:] *RE*, Bd. I, Stuttgart 1894, col. 2154.
- Wellmann M., *Die pneumatische Schule bis auf Archigenes*, Berlin 1895.
- Wellmann M., *Apollonios v. Pergamon*, [in:] *RE*, Bd. II, Stuttgart 1896, col. 150.
- Wellmann M., *Archigenes*, [in:] *RE*, Bd. II, Stuttgart 1896, col. 484–486.
- Wellmann M., *Asklepiades* (43), [in:] *RE*, Bd. II, Stuttgart 1896, col. 1633–1634.
- Wellmann M., *Athenaios aus Attalia*, [in:] *RE*, Bd. II, Stuttgart 1896, col. 2034–2036.
- Wellmann M., *Chrysippos* (21), [in:] *RE*, Bd. III, Stuttgart 1899, col. 2511.
- Wellmann M., *Damokrates* (8), [in:] *RE*, Bd. IV, Stuttgart 1901, col. 2069–2070.
- Wellmann M., *Demosthenes* (11), [in:] *RE*, Bd. V, Stuttgart 1905, col. 190–191.
- Wellmann M., *Diokles* (53), [in:] *RE*, Bd. V, Stuttgart 1905, col. 802–812.
- Wellmann M., *Dioskurides*, [in:] *RE*, Bd. V, Stuttgart 1905, col. 1131–1142.
- Wendel C., *Tryphon* (25), [in:] *RE*, 2. Reihe, VII, 1, Stuttgart 1939, col. 726–744.
- Wentzel G., *Athenaios* (22), [in:] *RE*, Bd. II, Stuttgart 1896, col. 2026–2033.
- Wesoły M., *Po co nam dziś Hippokrates?*, [in:] *Hippokrates, Wybór pism*, vol. I, transl. M. Wesoły, Warszawa 2008, p. 11–44.
- White K.D., *Roman farming*, London 1970.
- White K.D., *Greek and Roman technology*, London 1986.
- White K.D., *Cereals, bread and milling in the Roman world*, [in:] *Food in antiquity*, eds. J. Wilkins, D. Harvey, M. Dobson, Exeter 1999, p. 38–39.
- White C.E., Makarewicz C.A., *Harvesting practices and early Neolithic barley cultivation at el-Hemmeh, Jordan*, VHA 21, 2012, p. 85–94.
- Wilkins J., *Visions de la comédie grecque sur l'alimentation des élites*, [in:] *Colloque. Pratiques et discours alimentaires en Méditerranée de l'antiquité à la renaissance. Actes*, eds. J. Leclant, A. Vauchez, M. Sartre, Paris 2008, p. 157–170.
- Wilkins J., *Foreword*, [in:] Galen, *On the properties of foodstuffs (De alimentorum facultatibus)*, transl. O. Powell, Cambridge 2003, p. IX–XXI.
- Wilkins J.M., Hill S., *Food in the ancient world*, Malden, Mass.–Oxford 2006.
- Willcox G., *The beginnings of cereal cultivation and domestication in Southwest Asia*, [in:] *A Companion to the archaeology of the ancient Near East*, vol. I, eds. D.T. Potts, Malden, Mass.–Oxford 2012, p. 163–180.

- Wittern R., *Hippokrates*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 414–416.
- Wittern R., *Hippokratische Schriften/Corpus hippocraticum*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 418–420.
- Wöhrl G., *Theophrast v. Eresos*, [in:] *Antike Medizin. Ein Lexikon*, eds. K.-H. Leven, München 2005, col. 853–855.
- Zarys genetyki zbóż*, vol. I, *Jęczmień, pszenica i żyto*, eds. A.G. Górny, Poznań 2004.
- Zohary D., *The progenitors of wheat and barley in relation to domestication and agricultural dispersal in the Old World*, [in:] *The domestication and exploitation of plants and animals*, eds. P.J. Ucko, G.W. Dimbleby, London 1969, p. 47–66.
- Zohary D., Hopf M., *Domestic of plants in the Old World. The origin and spread of cultivated plants in West Asia, Europe, and in the Nile Valley*, Oxford 1993.



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