

**Meat and animal products in dietetics, therapeutic procedures and gastronomy in
Antiquity and early Byzantium according to selected medical sources**

Summary

The aim of my research was to analyse ancient and Byzantine, mostly medical, sources for information enabling us to determine the role of meat and animal products including offal, eggs, milk and other dairy products in dietetics, medicine and gastronomy of late Antiquity and early Byzantine times. Generally, we can conclude that the foods, regardless of their popularity in the Mediterranean region, were a major subject of interest of the medical circles of the time.

As for the development of medical theory, the sources teach that the foundation of dietetic and pharmacological knowledge in respect to meat and animal products was formed gradually and over a long period of time (and therefore by numerous generations of Greek physicians) until it was finally shaped by Galen. In turn, the majority of doctrines included in his treatises by the doctor of Pergamum became the basis of knowledge for physicians of early Byzantine times, who did not modify the inherited canon.

The results of the research prove that meat and animal offal did not play a significant role in everyday diet of people living in the Mediterranean region in late Antiquity and early Byzantine times. The key factor determining the sizes of herds and availability of the described foods were natural conditions, which did not facilitate inbreeding of grass-eating animals. Mountainous terrain and hot climate made farmers unable to provide their stocks with sufficient amount of fodder. However, exceptions from the rule were omnivorous pigs and chickens, but we need to remember that, in winter, they were fed on human food reserves, which began to run short both for people and for animals. Another, not less important issue, was determined by practical reasons. This means that among domestic animals kept in households, only pigs were bred for slaughter, as other species were a valuable source of products essential in everyday life. Goats and sheep provided milk, which was used both as a beverage and as a base for cheese production. Horned cattle was treated as an essential pulling power in farming. Thus, mostly old or sick animals were intended for slaughter, but their meat was not fully valuable food.

A popular method of obtaining meat without depleting the size of one's stock was hunting. In this way, mostly small game, such as hares or wild fowl (pigeons and ducks), was caught. Big game hunt required appropriate equipment and was a way of spending free time by wealthy people, who could afford to buy their favourite meat. Sometimes rich landowners placed wild animals in

special cages or pens, ensuring fresh supplies of this food and, at the same time, blurred the line between hunting and breeding.

All mentioned above factors made (especially fresh) meat an expensive product, available only to a few people on a daily basis. Its price was conditioned mostly by the age and species of animals and specimens fed on special fodder were valued more. From the preserved sources we learn about a practice of feeding chickens on provender enriched with whey, which enhanced the taste of their meat. Geese and pigs were fed on dried figs, which reduced bitterness of their liver. Gourmets took a special liking to dishes made from young animals which, very often, sucked the milk of their mother. Among poultry, the meat of pheasants, peacocks and cranes were regarded as delicacy.

These preferences were not always in accordance with the principles of ancient and Byzantine dietetics. It was believed that the best meat was obtained neither from very young nor old animals, as the former was considered to be too moist, while the latter was thought to be too dry and stringy, which made it stodgy. Moreover, one should avoid eating species living near marshes and stagnant waters, since they were believed to cause the production of harmful humours.

The authors of medical treatises claimed that the best type of meat was pork, since it was not only thought to be the most nourishing, but due to its similarity to the human organism, it was also easily digested. As to goat's meat and mutton, they were recommended only between summer solstice and autumn, when pasturages were covered with the best vegetation. Physicians emphasized that this was the only period in which these kinds of meat were free from their characteristic smell, which, according to the doctrine, was a sign of humours balance disorders. In the case of beef, there were other reasons for which specialists claimed that it should be avoided. Although it was regarded as nutritious food, it led to the production of thick and melancholic juices. From poultry, easily digestible pheasant and chicken's meat was most frequently recommended, while waterfowl and big birds were not a good choice as their meat caused *kakochymia*.

In the field of *ars medica*, the described product was, first of all, an element of healing diets aimed at restoring a good humoral balance or recuperation of patients who were debilitated by illnesses or medical procedures. In turn, other animal substances such as fat, excrements, blood, bile or bone marrow were used in preparing medicaments. On the basis of the analysed sources it can be concluded that the properties of each of the mentioned substances were conditioned by the species of animals and their natural environment. The substances, depending on the type of treatment, were applied externally (e.g. as cataplasms or ointments) or internally (as oral preparations or enemas). They could be used both as simple medicament or an ingredient of complex medicines.

The analysed material provides us with a great deal of data concerning the culinary use of meat and animal offal. Most of them can be found in the Latin cookbook entitled *De re coquinaria*,

which contains tips concerning the most popular kinds of heat processing of the mentioned products and matching flavourings. We read there that meat and offal were served in various ways, i.e. they were marinated and then roasted in a portable oven, grilled, fried or stewed in sauce. Sometimes, animals were roasted as a whole, which was not an economical practice, since, after melting the fat, the product lost much of its volume. Thus, it was usually divided into smaller portions before heat processing, which created the possibility of gradual utilization of particular parts of the flesh and the obtained meat scraps, which could be used for the production of meat balls or sausages. The latter, sometimes with the addition of animal blood, due to their low prices were very popular among the poor. More valued meat products were hams, especially those regarded as quality products, imported from distant parts of the Empire were highly priced. It should be also added, that the inhabitants of the area also consumed pig's trotters, snouts and ears, which were called a common name *akrokolia*.

Summarizing the key information about eggs, we can conclude that they were an important but not the main element of the diet for inhabitants of the Mediterranean region. Precise analysis of sources allowed us to observe a process, in which accessibility and popularity of this food increased. The first fowl species bred on a larger scale were geese, and their eggs were used in ancient cuisine for a long time. Later on they began to be considered a food of inferior quality, and it was due to the arrival of the hen in Europe. The latter spread relatively fast and became ubiquitous, because chickens did not require any special fodder and had a higher than geese egg-laying capability, thus, becoming the dominant type of domestic fowl and the best source of eggs. The high position of chicken remained stable, despite a new trend, namely that of breeding pheasants, which, due to its considerable costliness, did not spread in the area on a larger scale. No wonder that sources suggest that, over the period in my interest, pheasant eggs were a real delicacy affordable only to the affluent. On the other hand, one can also guess that the low accessibility and high prices caused pheasant eggs to be regarded as healthier and tastier than those of the hen.

In the light of the above arguments, it is not surprising that the majority of data extant in sources concerns chicken eggs. From agronomic treatises we learn that egg-laying capability of the hen and the quality of chicken eggs was largely dependent on the kind of fodder. As for eggs themselves, they were a readily available, cheap product, although their price was probably conditioned by their freshness and size. The analysed texts imply that the first feature was the key criterion of value. That is why agronomic writers devote a lot of attention to the ways of preserving eggs (which prolonged their freshness), while physicians emphasized the necessity of using the fresh product in gastronomy and therapeutic procedures. The latter also claimed that only partly set or totally liquid eggs had the best effect on human body, as they were considered to be easily digestible, quickly excreted from the body and generating good bodily juices. Hardboiled eggs, on

the other hand, were regarded as nutritious but stodgy.

Eggs were also used in pharmacology. It is worth mentioning that, although in the study of dietetics pheasant and chicken or goose eggs were preferred, in therapeutic procedures their origin was not important, since eggs of all species considered to have similar properties. Thus, owing to their availability, chicken eggs were profited from most frequently by medical doctors. Physicians utilized either whole eggs or they separated the whites from the yolks. Owing to their non-invasive properties, eggs played the role of soothing substances, for both internal and external application. Moreover, egg white was utilized by physicians as an ingredient to be admixed to other substances. Ground eggshells, in turn, were regularly used for maintaining dental hygiene, while whole ones were turned into elements of medical equipment (for instance, that facilitating the procedure of inhalation).

Analysed sources provide us with numerous data concerning the role of eggs in ancient and Byzantine gastronomy. We learn, for example, about a variety of methods of subjecting eggs to thermal treatment. Medical authors mentioned, among others, the practice of drinking raw, and only slightly heated eggs, hard-boiling or soft-boiling them, frying in the pan or thickening in a hot water bath. From their notes, it can be concluded that the most popular additive to eggs was fish sauce, but they were also flavoured with honey, wine or Sicilian sumac. Basing on the preserved data, we can assume that eggs were more than occasionally eaten as an independent dish. In this role they were usually served, among many other treats, as either appetizers or snacks (towards or at the end of a feast). However, they were much more frequently used as one of the ingredients of both sweet as well as savoury dishes. Accordingly, they were utilized for thickening casserole-type dishes or sauces, and for bonding minced meat (to produce meatballs or sausages), different stuffings and dough of many kinds.

As for milk, it must be emphasized that in the Mediterranean region it never earned the status of the main beverage, unlike wine. However, even though it was not consumed in large quantities, Greek physicians precisely described the influence of its consumption on the human body, defining the product itself as a heterogeneous substance, consisting of three elements, that is curd, watery whey and fat. What is worth pointing out, data concerning dietetic properties of milk included in medical treatises very often overlap with information from agricultural literature of the time. We can assume that knowledge of this kind was widely spread in this period, especially among rural population, who were engaged in breeding dairy animals.

Accordingly, both experts in *ars medica* and agronomists were aware of the fact that the proportions between milk components were conditioned, among other factors, by the species of an animal. In accordance with the theory, cow's milk was considered to be the thickest, while sheep's and goat's milk was graded as respectively second and third. Conditioning factors of the beverage's

thickness was also the age of an animal and the season of the year. From the analysed texts, we learn that the best milk was obtained from healthy and mature creatures, and it was much thinner in spring, when animals fed on plants, which absorbed most humidity, while it was growing thicker in summer, when rain ceased.

From the point of view of a producer, it was most beneficial to obtain the thickest milk possible, as it was a valuable edible itself and made a perfect raw material for cheese production. On the other hand, authors of medical texts paid attention to threats connected with the consumption of milk with a high percentage of curd, claiming that it led to blockages of internal organs and generated kidney stones. Thus, they recommended the consumption of milk with a balanced proportion of both the thick and the watery element. We can assume that this criterion was best fulfilled by goat's milk. Goats were *nota bene* the most popular species of dairy animals, while sheep were placed the second and cows the third on the list. The reason for such an order was a possibility of pasturage of herds of the two first on mountain slopes and low costs of their upkeep.

Medical treatises are also a good source of information about methods of dealing with the problem of fermentation of milk, which was inevitable in the hot climate. Physicians were aware of the fact that this process not only had negative influence on the taste of milk, but also modified dietary properties of the product. Thus, they recommended drinking milk right after obtaining it, or, if that was impossible, boiling it and adding some preservatives, usually salt or honey, which not only caused milk to last longer but also made it easier to digest.

Milk was easily accessible only to inhabitants of rural areas, who could obtain the beverage directly after milking. We can also assume that in cities, fresh milk was a rarity, which made it a relatively expensive delicacy. This is probably the reason why it was sometimes pictured as sustenance for peasants and barbarians. It can be equally supposed that milk lovers who lived in cities usually consumed the beverage when it was already slightly spoiled. This can explain, why physicians attributed purgative properties to it, as well as often writing about a negative effect on the stomach and other parts of the digestive tract. Furthermore, the Asclepiads paid attention to carminative properties of milk, which, together with other effects, might be regarded as a symptom of common lactose intolerance characteristic of the peoples of the region.

On the other hand, we can also learn that fresh milk was used in various medical procedures. Owing to its palliative properties, it was, above all, utilized in therapies which required external or internal application of non-invasive soothing remedies. That is why we encounter it in a cornucopia of enemas or rinses. Moreover, the Asclepiads, being aware of the opposing effects of curd and whey, very skilfully utilized the advantage of one or the other element in treating digestive tract ailments manifested in a diarrhoea or constipation. In the latter case, physicians recommended the consumption of milk with a high percentage of whey, which stimulated the functions of intestines

and led to excretion. From the preserved texts it can be concluded that, in such cases, donkey's milk was especially recommended (but, for the lack of it, it could be replaced with that of the goat). Patients suffering from dysentery, in turn, were advised to consume the beverage in which the thick substance was dominant. The proper thickness of milk was arrived at through boiling the whey off.

When it comes to thermal processing of milk, medical sources seem to be a reflection of certain aspects of everyday life. Notably, physicians usually employed a method of placing heated stones (or red-hot iron discs) in the pot with milk, which was typical of gastronomy of the time. Such a source of heat made the temperature of the liquid rise evenly in the volume, and thus the risk of burning milk was much lower than the one run while boiling it over a hearth (when only the bottom of the pot absorbed the heat emitted by the embers). In the latter case, in order to minimize the risk of burning the liquid, milk was frequently stirred.

It is also worth pointing out that this piece of information provides us with data allowing to make some assumptions concerning the quality of pots used at that time. We can infer that the vessels usually had coarse surface, which caused milk to stick to their walls. The residue created in this way was probably difficult to remove from non-glazed dishes. The recommendation quite frequent in the sources advised that milk should be boiled in a new dish, which suggests that burnt leftovers were quite often encountered in cooking vessels, and had a negative effect on the taste and flavour of other foods prepared in such pots. Taking into account the cited data, we can also assume that the price of such kitchen accessories was not too high, since they were easily rendered impossible to use, and as a result regularly replaced with new ones.

As for other culinary data, we learn that, in the country, milk was often boiled with flour, groats, starch or *lágana/íttria* into a form of soup. However, due to relatively poor milkability of goats and sheep, one can guess that the mentioned foodstuffs were rather first cooked in pure water, while milk was added in small amounts towards the end of the process. Anyway, a cheap, nutritious and energizing dish was obtained, which additionally, as physicians emphasized, was an effective cure for dysentery. It is also worth pointing out that an analogous method of preparation was used in the case of rice, which was a much more luxurious product at that time. Moreover, milk could be an important ingredient of pies, marinades, sauces and a variety of desserts.

On the basis of the gathered materials, some basic facts about whey can be established. The analysed texts clearly suggest that this liquid was not treated as food in the strict sense but its consumption was recommended only in therapies aiming to neutralize harmful humours in the body or in purging procedures. Moreover, this substance was sometimes used for the production of certain kinds of cheese.

Curdled milk, depending on the way of its obtaining, was called *oksýgala* or *schistón gála*. We can assume that the former term meant milk that was set naturally, i.e. without any additional

ingredients and as a result of fermentation, while the latter related to curd obtained with the use of an appropriate culinary technology, i.e. by means of adding to it animal or vegetable rennet. Sources reveal some information about *oksygala*, while any more detailed dietetic and pharmacological characteristics of *schistón gala* was omitted. We do not know an explanation of the fact, however, the most probable one is that physicians regarded *oksygala* as a separate kind of food, which required more precise description. *Schistón gala*, in turn, was considered to be milk, from which whey was separated and shared milk's characteristics. Leaving aside the above deliberations, limited data concerning the properties of *oksygala* indicate that experts in *ars medica* did not attribute to it any important healing effects. They emphasized its stodginess and cooling action. The latter characteristic made it easy to assimilate exclusively by people of hot constitution and therefore it was recommended as an element of diet advisable to the patients in whom the temperature of certain organs was considerably increased. Despite this unfavourable opinion, an analysis of sources proves that *oksygala* had its enthusiasts. In these sources, we can find not only methods of preparing this kind of food, but also some tips concerning the additives it could be served with.

An analysis of the collected material shows that curdled milk was used mainly for the production of cheese, which was the most popular dairy product of that time. The ubiquity of the foodstuff was mostly conditioned by practical aspects. Cheese production not only allowed people to use up all excess milk but also provided them with valuable food, which did not have to be consumed instantly and could be stored. Medical and agronomic treatises, lexicography, epistolography and different genres of literature preserved proof of big interest in such products and massive demand for cheese. The sources are detailed enough to provide us with a range of data concerning such issues as the appearance of some kinds of cheese, their taste, origin or even methods of production.

From the gathered material it can be concluded that due to the highest number of goats living in the Mediterranean, cheeses from their milk were the most popular, but the ones obtained from sheep's, cow's and horse's milk were also known. They were produced in accordance with a variety of recipes, usually on a local scale. Depending on the kind of milk, the method of production and the way of preservation, they differed in their intensity of taste, flavour, fat content and consistence.

From the examined texts we can also assume that some local cheeses earned a Mediterranean-wide reputation and appreciation of ancient and Byzantine gourmets. Such quality products often were transported over large distances. There is a lot of evidence of such practices, which suggests that, both in antiquity and in the Byzantine period, an efficient transport network was developed enough to cater for a considerable market for fresh and ripening cheeses. Obviously,

such imported foods were costly, which made them affordable only to the rich. Poorer people, on the other hand, had to settle for cheeses regarded as non-quality. It does not mean, though, that their affordable price was synonymous with their poor dietetic characteristic. Quite on the contrary. Home-made cottage cheese, according to the dietetic theory of the time, was not only considered to be nutritious, but also easier to digest and relatively innocuous as far as its ability to contribute to the appearance of internal blockages in the body is concerned. That is why it was contrasted with mature cheeses, because the latter contained large amounts of salt. This additive, in turn, though facilitated long preservation of the product, also removed water from curd, which made cheeses hard and, over time, intense in their taste. Such were perceived to be a stodgy foodstuff, whose consumption led to the formation of kidney stones and increased the feeling of thirst. Freshness of cheese conditioned its therapeutic use. Recently produced cheeses were able to heal open wounds and they could be applied directly on an injury. On the other hand, medications based on mature cheese were capable of affecting depths of the tissue and were so effective that they were recommended as a way of treating arthritis.

Big popularity and wide availability caused cheese to be utilized by cooks in a manifold manner. Depending on the needs and circumstances, the described product was served fresh, mature, with or without an addition of herbs (nuts or fruit), roasted, cooked, fried or smoked. Although cheese was consumed both in the country as well as in cities, we can assume that, similarly to fresh milk, cheese (especially cottage one) was eaten in larger quantities in the countryside. Farmers were involved in cheese-making, so they had especially easy access to the newly obtained product, which, after mixing with herbs, constituted the basic *ópson* of their daily diet, i.e. a nutritious addition to bread, which not only satisfied their appetite but also provided them with energy necessary for their hard work.

A whole range of cheeses were exported to urban areas, often over large distances. Those dairy shipments when reached main urban areas consisted mainly of ripe cheeses, which, due to their high price, toughness and saltiness, were consumed in small quantities. Moreover, we need to remember that wealthy inhabitants of cities maintained a varied diet, as they could afford various food products, including meat, which, in turn, was often too expensive for those who lived in the countryside. Accordingly, it can be assumed that, in cities, the percentage share of cheese in the diet was lower than that characteristic of the areas distant from big urban centres, although city inhabitants could generally eat more cheese than people who lived in the country. Cheese was not only an addition to bread but also an ingredient of many dishes both simple as well as elaborate. Neither can we forget that, after the advent of Christianity, it became an important fasting foodstuff.

Butter was the least popular dairy product. Small interest in this foodstuff was due to a deeply-rooted tradition of the region, according to which olive oil was considered to be the best of

the available fats. Consequently, butter was regarded as its mere substitute, used mainly by barbarian tribes from colder areas, who were not familiar with cultivating the olive tree. The authors of the analysed medical texts, however, demonstrated relatively wide knowledge of this product. For example, they were aware of the fact that it was mainly obtained from cow's milk, although sheep's and goat's milk was also utilized for butter production in the Mediterranean.

Butter was commonly made use of in therapeutics for facilitating digestion of harmful humours as well as softening lumps and swellings of various aetiology. It was applied in a solid or liquid form and recommended for both external and internal use. In the latter case, only non-salted product was prescribed by physicians, which piece of medical advice, of course, made us assume that salting was a common way of preserving butter.

And still one last remark. The research into extant Greek sources has taught us that Ancient and Byzantine medical treatises ought not to be perceived as a mere compilation of medical and pharmacological recipes and should be analysed only for the purpose of sketching the history of medicine. In my opinion, they can be useful as an excellent source of information about society, economy and a cornucopia of aspects of everyday life both of Antiquity as well as of Byzantium.

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