For a long time, Soviet and post-Soviet historiography tended to consider the ancient states of the Northern Black Sea region to some extent separately from the rest of the Greek world and ignore the theoretical achievements of modern (and not only modern) Western, especially British and American historiography of antiquity, specifically, in various areas of the history of ancient Greek economy.

Meanwhile, the use of the findings of European and American scholars looks rather promising as a result of created innovative concepts and the involvement of a range of various written, epigraphic, and archaeological sources concerning the whole Greek world, and not just one of its parts. It is the subject to the agrarian history of ancient Greece as well. In recent decades, the ideas of scholars who prefer to consider ancient Greek agriculture not as static but as a dynamic system open to innovations have become more common. Progressive changes included 1) improving crop rotations; 2) cooperation between crop cultivation and animal husbandry, and 3) intensification of labor through the active use of ‘slave’ labor resources.

Such innovations in agricultural technique, according to many scholars, were implemented primarily in lands where conditions differed from those familiar to Greeks. Those, in particular, were ‘overseas’ territories, where natural conditions were markedly different from the metropolis. Especially it was true of the steppe territories of the Black Sea region from Dobrudzha to the Kuban region, in particular, the Lower Buh region, where climate, soil, and natural vegetation were absolutely unlike the Balkans or Asia Minor. First of all, it is necessary to study the issue of the interaction between the crop cultivation and animal husbandry of Olbia and the history of slave relations in the polis. A comparative analysis of materials from the western and eastern Greek colonies, in particular from southern Italy and Sicily on the one hand and the Northern Black Sea region on the other, should also be carried out.

Using of theoretical achievements of British and American historiography of ancient Greek agriculture while studying the economic history of Olbia in general and its agricultural component, in particular, looks very promising. This will contribute to a fuller and more comprehensive understanding of the accumulated archaeological, archeobiological, and epigraphic materials. On the other hand, such an understanding is needed in the verification of these hypotheses themselves, giving the opportunity to confirm, modify, or even deny them.

**Keywords:** historiography, Olbia, agriculture, agricultural technique, slavery

For a long time, Soviet and post-Soviet historiography tended to consider the ancient states of the Northern Black Sea region to some extent separately from the rest of the Greek world and ignore the theoretical achievements of modern (and not only modern) Western, especially British and American historiography of antiquity, specifically, in various areas of the history of ancient Greek economy from credit and monetary relations to agricultural production.
Meanwhile, the use of the findings of European and American scholars looks rather promising, both in terms of created innovative concepts and the fact that they involve a range of various sources (written, epigraphic, archaeological, etc.) concerning the whole Greek world, rather than just one of its parts. To a considerable degree, this concerns agricultural history, an area in which the last few decades have experienced a marked advance, resulted in the emergence of a number of fundamental works that contain new information and original ideas1.

Of course, it should be noted that not all concepts that exist in modern world study of classical antiquity are necessarily innovative, after all the idea of the extreme level of conservatism of ancient Greek agriculture, which originates from the works of K. Bücher2, continues to exist till now. According to their supporters, such as Jens Eric Skydsgaard and Signe Isager, the authors of the famous work ‘Ancient Greek Agriculture’3, the agricultural techniques of antiquity (or at least ancient Greek) remained virtually unchanged for centuries: primitive two-field rotation of crops without a noticeable connection between crop cultivation and animal husbandry, no introduction of any complex crop rotations, etc. prevailed at that time4.

Some primitivistic views were formed (apparently, quite independently, due to poor knowledge of the works of their Western counterparts) by a number of the ancient states of the Northern Black Sea region scholars, according to which, local agricultural techniques were even more primitive than in the metropolis since even two-field rotation of crops was not widely spread, even somewhere (especially at the stage of new lands reclamation by the first settlers) giving way to the land rotation system of agriculture. And, of course, they believe that even the arrival of new colonists from the metropolis did not bring with it innovative techniques in the agricultural sector. This opinion was formulated for the first time, at least in relation to the Lower Buh region, by the authors of the collective monograph ‘Rural Outskirts of Olbia’5, who, however, did not cite written or archaeological sources, apparently based on parallels with the colonization of steppe lands practice in Modern period and in general on the fact of the availability of large tracts of virgin land, at least in the early stages of Olbia chora development. This concept still exists in a somewhat more substantiated form, but also without due regard for the traditions of ancient agricultural technique and reference to specialized literature on the history of ancient Greece agriculture6.

Meanwhile, in recent decades in British and American historiography, the concepts of scholars who prefer to consider the ancient Greek agriculture not as static but as a dynamic system, open, or at least not as closed to innovations as the supporters of

---

4 It should be noted, however, that the ‘conservators’ use almost exclusively the materials on Attica, with little or no data at all from the western or eastern colonies.
6 Бруйко И.В., Секерская Е.П. Очерки экономики населения Северо-Западного Причерноморья в античную эпоху. Одесса, 2016. С. 120-123.
conservative views on the ancient Greek economy thought, become more and more common.

It has already been emphasized\(^7\) that ‘modernizing’ concepts do not form a single holistic system of views, but rather are a set of ideas that sometimes supplement and sometimes contradict each other. However, in general, progressive changes in the agricultural sector of the ancient Greek economy, as they are understood by the above-mentioned authors, are generally reduced to three factors: 1) improving crop rotations; 2) cooperation between the crop cultivation and animal husbandry, and 3) intensification of labor through the active use of ‘slave’ labor resources.

Thus, the first thing that the authors of the concepts of dynamic development of agriculture in ancient Greece discuss is the introduction of crop rotations, more progressive than the primitive two-field rotation of crops with black fallow\(^8\). The first of those innovations was the introduction of legumes into crop rotations, but if some scholars\(^9\) consider it a step towards introducing crop rotations without fallow, then, for example, R. Sallares prefers to talk about the existence of a specifically Mediterranean variety of three-field system (wheat – legumes – fallow), in which the cultivation of legumes, good nitrogen fixers, helped to improve soil fertility\(^10\).

In addition, a number of scholars claim that Greek farmers used not only black but also seeded fallow. For example, A. Burford Cooper, having much in common with the views of P. Garnsey and T.W. Gallant, writes about the possibility of using legumes in the field, rather than in garden crop rotations, in particular in seeded fallow fields\(^11\). Robert Sallares writes about the practice of cultivating specialized forage crops, such as tree alfalfa (Medicago arborescens), a crop that is not cultivated today but was widespread in ancient times\(^12\). However, he points to the fact that tree alfalfa was a perennial plant, which, accordingly, could not be introduced into crop rotation. But in other parts of Greece, on seeded fallow lands, they could grow not perennial but annual alfalfa, which was found in the chora of Metaponto – Greek apoikia in southern Italy\(^13\), which will be discussed later.

Thus, according to this, we can talk about a whole range of different agrotechnical measures that were to facilitate the transition of ancient Greek agriculture from a primitive system to much more effective land use systems. The simplest of such systems, apparently, was the three-field system of the Mediterranean type, which differed markedly from the widespread to the north system of ‘winter grain crops – spring grain crops – fallow’ in which instead of spring grain crops the legumes were cultivated. In addition, instead of black fallow, a seeded one could be applied, cultivating either legumes or herbaceous forage crops (Vicia ervilia, Vicia sativa, alfalfa,

---

\(^7\) Одрін О. Концептуальне протистояння...


\(^10\) Sallares R. The ecology of the ancient Greek world. London – New York, 1991. P. 331. The author himself bases his conclusions mainly on the materials on Attica, where, according to R. Sallares, legumes in crop rotations were not common. It remains to be suggested that such a three-field system might have been common in the parts of Greece with a higher moisture content of soil than in Attica.


Trigonella foenum-graecum L.). Some authors suggest the existence of other forms of improved land use, such as relay cropping of various types\textsuperscript{14}, and epigraphy evidence indicate the existence of complex crop rotations, which will be discussed below. Though, it is important to emphasize that it is unnecessary to assume that there were some universal agricultural systems common in all poleis at a given time\textsuperscript{15}. They differed significantly in the level of economic development, and their agricultural outskirts were different in natural, primarily edaphic (soil) conditions. So, in different parts of Greek world, and even in one polis, there could be more or less progressive forms of land use.

Another factor in the intensification of agricultural production was the introduction of techniques that closely linked the livestock and crop components of the ancient Greek agriculture, the existence of which is stubbornly denied by traditionalists\textsuperscript{16}. According to a number of scholars, including P. Halstead and V. Hanson, during the archaic period, the animal husbandry was transformed, deviating from pastoralism with its large herds and extensiveness in favor of smaller herds and intensive crop production\textsuperscript{17}. Victor Hanson believes that it was the time of the beginning of regular fertilization (as well as legumes cultivation)\textsuperscript{18}. These ideas are also supported by P. Garnsey, who relies almost exclusively on information from traditional written sources, and A. Burford Cooper, in whose works the epigraphy evidence are widely used. Both scholars, contrary to the views of traditionalists, reasonably prove that in ancient Greece took place an active use of various organic fertilizers (both manure and green manure)\textsuperscript{19}.

The hypothesis of the possibility of cultivating forage crops such as alfalfa also on seeded fallow lands has already been mentioned above. Accordingly, the practice of grazing cattle there seems quite logical. However, for example, the attitude of the above-mentioned R. Sallares, who writes about cultivating alfalfa, for some reason is very skeptical both about such practice and using organic fertilizers in general\textsuperscript{20}. Meanwhile, at least for some regions with a sufficiently developed animal husbandry, such an a priori objection seems at least illogical. Here again, it is necessary to emphasize the differences in the sectoral structure of agriculture in the apoikiai of different parts of the Greek world, because it is obvious that the degree of integration of crop cultivation and animal husbandry, among other things, depended on the level of development of the latter, and the level itself, in turn, was determined by the natural conditions of the region where certain apoikia was located.

\textsuperscript{14} Gallant T.W. Risk and Survival in Ancient Greece... P. 38-40.
\textsuperscript{15} Except for the two-field rotation of crops in early archaic times.
\textsuperscript{16} Isager S., Skydsgaard J.E. Op. cit. P. 99-103. For some reason, these scholars allege that ancient Greek animal husbandry did not have a developed cattle-breeding component. Archaeozoological evidence, at least concerning the Northern Black Sea region, refute this allegation. And the written sources on the economy of the poleis of Southern Italy and Sicily should, it seems, make the authors be less categorical.
\textsuperscript{18} Hanson V.D. The Other Greeks... P. 78.
\textsuperscript{19} Garnsey P. The yield of the land in ancient Greece... P. 210-211; Burford A.P. Op. cit. 122-123.
\textsuperscript{20} Sallares R. Op. cit. P. 385. However, in this case, the author also uses exclusively materials on Attica.
The third important factor that contributed to the intensification of agricultural productivity was the active use of chattel slaves (rather than slaves of the ‘helot’ type). Michael H. Jameson was one of the first (as early as 1971) who raised a question about the widespread use of slave labor on the estates of not only wealthy landowners but also not very rich ones in his fundamental research on agriculture of classical Athens²¹.

It is paradoxically that in Soviet historiography, V.M. Andreev, who generally belonged to the followers of the ideas of the ancient agriculture extreme conservatism, supported Jameson’s ideas about the widespread use of slave labor²².

Meanwhile, in English language historiography, Jameson’s paper provoked sharp controversy. Thus, the well-known researcher of slavery, E. Wood, sharply opposed Jameson’s ideas about the spread of slave labor²³, while another researcher (and also, like Wood, a staunch Euro-Marxist) Geoffrey Ernest Maurice de Ste. Croix strongly supported his conclusions²⁴. For some time, especially in the 1980s, under the influence of Finley paradigm, the first concept was dominated, and Jameson himself suspended research on the slave issue for more than a decade (or at least did not publish the results). But it was in the early 1990s, after the publication of the above-mentioned works of the ‘modernizers’, that he reverted to the issue of slave labor, providing new information to support his concept²⁵.

Perhaps a certain incentive for this was the works of V. Hanson, who believed that qualitative changes in agriculture of ancient Greece, besides changes in agricultural technique, were also associated with more intensive use of labor force, and especially slave labor²⁶. According to V. Hanson, the poleis of the western coast of Asia Minor and the neighboring islands, such as Chios, with its renowned slave market, were the first to begin that process²⁷.

So, how can the theoretical achievements of English-language historiography be important for researchers of the agrarian history of Olbia and the steppe Black Sea region in general? The fact is that all the above-mentioned innovations in agricultural technique, according to scholars such as V. Hanson and M. Jameson, were implemented primarily in lands where conditions differed from those familiar to Greeks. Initially, there were mountain slopes, with their low-productive soil and the need for terracing. Epigraphic evidence from Attica mentioned by M. Jameson²⁸ (land lease agreements)

---

²⁶ And as an example of such lands, he names the mountain terraces of Chios, known for the intensive use of chattel slaves labor in agriculture: Hanson V.D. The Other Greeks... P. 88.
²⁷ Currently, the issue of slave export from the Middle East and Asia Minor to Greek markets is being fruitfully studied by D. Lewis, showing the magnitude of the local slave trade and its development in time and space. See his latest monograph (Lewis D. Greek Slave Systems in their Eastern Mediterranean Context. 800-146 BC. Oxford, 2018), where, besides, the author sharply criticizes the position of E. Wood in a discussion with M. Jameson (Ibid. P. 182-183), and a number of papers that preceded its publication.
²⁸ Jameson M.H. Class in the ancient Greek countryside... P. 57. Unfortunately, these very interesting materials have not been published in full yet.
show that at least on the mountain terraces near Athens, the situation with innovations in the agricultural sector was far from the bleak picture shown in the works of many scholars from M. Finley and V.N. Andreev to J.E. Skydsgaard and S. Isager. At the same time, V. Hanson and M. Jameson emphasize that such new lands were not only the mountain slopes themselves but also any territory with natural conditions different from those familiar to Greek peasants. It is clear that such a broad definition includes primarily those ‘overseas’ territories where natural conditions (climatic, edaphic, etc.) were markedly different from the metropolis. Not surprisingly, that many innovations, according to V. Hanson, were implemented in such new territories, especially in the apoikiai of the western coast of Asia Minor and on the neighboring islands.

And so the prospect of testing their concept on the materials of those far more remote colonies, where land resources differed from the metropolis much more significantly, seems more tempting. Of course, the conditions in the chorai of the Western Mediterranean poleis were also different, but first of all, undoubtedly, we should talk about the steppe territories of the Black Sea region from Dobrudzha to the Kuban region, in particular, the Lower Buh region, where climate, soil and natural vegetation were absolutely unlike the Balkans or Asia Minor.

If we talk about the specifics of the natural conditions of the Lower Buh region and their favorable conditions for introducing advanced agricultural techniques, we should first focus on the interaction between the crop cultivation and animal husbandry of Olbia. Conditions for the development of animal husbandry in Olbia chora were quite favorable, as evidenced by numerous archaeological and archaeozoological materials29. In general, the conditions for the cultivation of many forage crops and dual-purpose crops were also favorable30. Accordingly, the potentialities for introducing innovations described above (seeded fallow, use of green manure and manure, fallow cattle grazing, etc.) were rather considerable.

No less interesting and promising in this context is the study of the history of slave relations in the poleis of the northern coast of the Pontus Euxinus (Póntos Áxeinos), in particular in Olbia. If poleis in Asia Minor had access to the slave markets of Phrygia, Thrace, and the Middle East, then the North Pontic poleis had access to another slave market, the Scythian (and possibly the Gets). Export of slaves from Scythia, as N.O. Havryluk proves, was one of the most important items of export of nomads, if not the most important of them31. In addition, the emergence of new epigraphic evidence demonstrates the development not only of the external but also of the internal market for ‘living goods’ in the poleis of the Northern Black Sea region, at least in Olbia and Bosporus32. This allows us to raise the question of the magnitude of the use of slave

30 Одрін О.В. Екологія господарства античних держав Північного Причорномор’я. Київ, 2014. С. 78-84.
labor in local agriculture, the very possibility of the existence of which has previously been rather debatable.33

Generally speaking, it should be noted that materials from the apoikiai of different parts of the Greek Ecumene become of particular importance in verifying hypotheses based mainly (or exclusively) on the materials of the Aegean basin poleis. After all, it is well known that a variety of innovations, from legislative to architectural, were being introduced in the newly found apoikiai. So why should agriculture be an exception there?

A comparison of materials from the western and eastern Greek colonies, in particular from southern Italy and Sicily from one side, and the Northern Black Sea region from the other, is also very promising in this context. One such, rather conspicuous, a parallel can be drawn now. It is the parallel between structural changes in Metaponto’s agriculture in southern Italy, which chora was studied by J. Carter expedition, and Olbia. Archaeobotanical data from the rural outskirts of Metaponto show that there took place a transition from non-specialized agriculture of the archaic era to a highly specialized in growing grain crops (specifically, cereal crops) agriculture of later times34. In Olbia chora, where, however, due to natural conditions, neither olive growing nor (at least in pre-Roman times) viticulture developed, the changes were very similar, albeit just within the framework of grain crops cultivation. Here, as evidenced by a not very large amount of archaeobotanical data today35, there was a transition from a generally non-specialized grain economy of the archaic era to specialized cultivation of cereal crops in the era of classical Hellenism. The reasons for such changes have yet to be analyzed in the future, but the very fact of such transformations in the organization of agricultural production, moreover, quite simultaneous in time36, is quite obvious.

This, in turn, justifiably calls into question the idea of the absence of evolution in the agriculture of the ancient Greece poleis. Of course, the transformations themselves declare nothing about the introduction of certain agricultural techniques, but at least they unequivocally deny the fact that the agricultural sector of the poleis of ancient Greece was a static, rather than dynamic, system.

As a conclusion, I would like to emphasize the prospects for the use of theoretical achievements of British and American historiography of ancient Greek agriculture in the study of Olbia economic history in general and its agricultural component in particular. This will contribute to a fuller and more comprehensive understanding of the accumulated archaeological, archeobiological, and epigraphic materials. On the other hand, such an understanding should be useful in verifying these hypotheses themselves, allowing to confirm, modify, or even deny some of their provisions, or all concepts as a whole.

33 Одрін О. Рабська праця у сільському господарстві Ольвійського поліса: до постановки проблеми // Український історичний журнал. 2018. № 3. С. 4-22.
34 Carter J.C. Op. cit. P. 26. In fact, the process took place during the 4th century BCE. It is interesting that, although the Metaponto coin had the barley depicted on it, the developed cultivation of soft (or club archaeobotanical wheat) took place in its chora.
36 Of course, it is evidently premature to assert that the changes were completely synchronic. But at least we can say that they took place in both regions during the 4th century BCE.
REFERENCES


Odrin, O.V. (2016). Tvarynnystvo Ol’vii’s’koho polisa kintsia VI – pershi polovyny III st. do n.e. [Livestock Farming of Olbia City-State in the Late 6 – First Half 3rd Centuries BC]. Ukrainskyi istorychnyi zhurnal, 6, 49-66 [in Ukrainian].


Дослідження аграрної історії Ольвії VI-III ст. до н.е. у світлі останніх напрацювань англо-американської історіографії античності

У радянській і пострадянській історіографії протягом тривалого часу переважала тенденція сприймати античні держави Північної Надчорноморщини до певної міри ізольовано від решти греків світу та ігнорувати теоретичні напрацювання англо-американської історіографії античності, зокрема і в різних галузях історії давньогрецької економіки.

Між тим, використання результатів праць європейських та американських дослідників виглядає цілком перспективним через новаторство створених концепцій і залучення комплексу писемних, епіграфічних та археологічних джерел з усього греків світу, але лише з якоїсь однієї його частини. Це стосується, зокрема, й аграрної історії Давньої Греції. В останні десятиліття набувають все більшого поширення погляди дослідників, які воліють розглядає давньогрецьке аграрне господарство не як статичну, а як динамічну систему, відкриту для інновацій. Прогресивні зміни включали в себе: 1) удосконалення сівозмін; 2) кооперацію між рослинницькою та тваринницькою галузями, й 3) інтенсифікацію праці за рахунок активного використання «рабських» трудових ресурсів.

Такі новації в агротехніці, на думку багатьох дослідників, впроваджувалися, у першу чергу, на землях, де умови відрізнялися від звичних для греків землеробів. Ними, зокрема, є «заморські» території, де природні умови суттєво відрізнялися від метеорології. Особливо це стосується степових територій Надчорноморщини від Добруджі до Прикубання, зокрема Нижнього Побужжя, де климат, ґрунтовий покрив і природна рослинність були кардинально неподібними на балканські чи малоазійські. У першу чергу варто дослідити питання взаємодії між рослинницькою та тваринницькою галузями сільського господарства Ольвії та історію рабовласницьких відносин в цьому полісі. Слід також провести порівняльний аналіз матеріалів із західних і східних греків колоній, зокрема з Південної Італії та Сицилії з одного боку та Північної Надчорноморщини – з іншого.

Використання теоретичних напрацювань англо-американської історіографії давньогрецького сільського господарства при вивченні економічної історії Ольвії загалом та й аграрної складової зокрема виглядає дуже перспективним. Це має сприяти повнішому та комплекснішому осмисленню накопичених археологічних, археобіологічних та епіграфічних матеріалів. З іншого боку, таке осмислення потребне при верифікації самих цих гіпотез, дозволяючи їх підтвердити, модифікувати, або й заперечити.

Ключові слова: історіографія, Ольвія, сільське господарство, агротехніка, рабовласництво