

The role of lithic finds in the Neolithic archaeology of the Alföld region

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The archaeological investigation of the Neolithic of the Alföld (Great Hungarian Plain) has traditionally concentrated on the study of chronology, stratigraphy and settlement features with a special emphasis on pottery among the elements of the material culture. In the last few years, a systematical study of lithic artefacts especially concerned with the more recent periods of the Neolithic has been started which has important new implications for prehistoric interpretation.

This paper deals with the specific role of lithic artefacts as sources of archaeological information. Furthermore, some examples of current results are given with comments on further directions in research.

Considerations about the role of lithic artefacts as sources of archaeological information

Archaeology deals with *objects* (features, phenomena) located in *time* and *space*. The history of our subject can be regarded as a continuous refinement of these categories; using methods and techniques to determine and relate the categories more exactly, with increasingly better precision and accuracy.

The concurrent occurrence of certain objects (groups of objects, phenomena etc.) provides a basis for delimiting the archaeological culture, in terms of separating it from contemporary but different assemblages; the formal development of these objects, in relation with stratigraphy, is the basis of typology and, consequently, of archaeological (relative) chronology.

The objects found on an archaeological site could have been made on the site itself or on other sites and activity areas; on the basis of morphological studies, the place of origin can only be determined in specific cases with a degree of certainty (e.g., KALICZ-MAKKAY 1977. Abb.1.)

Taking raw material into consideration, a new aspect is added to the information set. Some of the *natural raw materials* (not transformed chemically by burning, melting etc.¹) can be found in the

everyday activity region (the location of the settlement can be selected accordingly!) – some of the raw materials of vital importance, however, are not necessarily present in the ecological niche of the site and its immediate surroundings.

Thus, the minimal information conveyed by any worked piece of stone is, at least, double: its location (type, shape, place in the production chain, use and discard, stratigraphy and its associated chronological data) and its provenance (geological age, formation conditions, the region of its occurrence and the human utilisation of that region, distance from the location, and possible means of its transport).

Morphological analysis: type, technology and use

Traditional study of lithic assemblages concentrated on the formal – typeable – features of the implements. The peak of this approach concentrated in the so-called „French school of prehistory” lead by F. Bordes and a number of distinguished followers of typological classification. The morphological features of stone artefacts, however, are suitable for more than the mere stylistic comparison of stone industries. The procurement, processing and use of lithic artefacts have important implications concerning the site economy, everyday activities, crafts and the relation of the site to the source region.

Stone tools differ from pottery remains and most other archaeological finds in that they are not generally found as „fragments” but rather, as used and discarded tools, and as debris contemporary with their manufacture. Thus, the process of the production, i.e., „reduction sequence” can be established for the settlement itself – as well as for the corresponding „customers” or related workshops. The use and the production phases can be widely different in time, and particularly in space.

On Fig. 1 a schematical representation of the most important stages of „the lithic cycle” is given after M. De GROOTH (1988.).

¹ Provenancing man-made (artificial) raw materials is another long chapter in the relation of science and archaeology; it can – or cannot – be characteristic of source, workshop, certainly that of industrial tradition. The vast realm of artificial materials however falls outside the scope of this paper.

Raw material analysis: a chance for tracing the movement of goods

It is well known to students of economy, whether prehistoric or more recent, that raw material sources are distributed unevenly and – from a human point of view – randomly. The question for prehistoric economic interpretation is how much the provenance of certain objects can be traced back to sources; how unique and identifiable can the given product or raw materials found in an archaeological context be. To answer these questions with confidence two parallel directions of research should be made simultaneously, namely the analysis of archaeological materials and that of raw material sources.

As a result of the investigations of the last few years, we have reliable and unique information in Hungary concerning the provenance of chipped stone artefacts. The sources were systematically surveyed and the samples analysed. The resulting information and actual pieces of rock samples are stored in the Lithotheca of the Hungarian National Museum (BIRÓ-DOBOSI 1991.). The collection contains raw material samples from larger regions of the Carpathian basin and Central Europe in general, partly as a result of our own collecting trips and exchange programs with colleagues. We would like to extend the scope of the collection to rock samples used for polished stone artefacts and other prehistoric stone utensils. The state of the collection, as well as the amount of analytical information is, however, adequate for doing basic research into prehistoric raw material acquisition and trade. By now, we can form a more-or-less coherent picture of the most important raw materials used in Hungary, and specifically, the Great Hungarian Plain (Fig. 2).

Relation between the raw material source and the settlement

In the earliest period of human history, sites were preferentially selected where basic conditions of living, such as natural shelter, food resources and raw material sources, interacted. Consequently, Lower Palaeolithic and Middle Palaeolithic settlements are located in certain areas which favoured all the above conditions; at least, the basic raw material sources were not further from the settlement than a day's walking distance. Certain prestigious items – e.g., obsidian in the Subalyuk cave (BARTUCZ et al. 1940.) – may have reached beyond these limits. Low population density and chances of survival all acted to this end.

With more effective ways of subsistence such as following herds of animals, the habitation area was detached from the environs of the raw material sources; the route of animals (food) was more important than the vicinity of raw material sources. Further on, the moving communities had the ability

to obtain raw materials by seasonal expeditions or barter trade. According to the generally accepted opinion as well as the evidence of sites and raw material studies, this stage was reached in the Carpathian Basin by the Upper Palaeolithic, especially by the people of the Gravettian complex (KOZŁOWSKI 1972/73.).

By the Early Neolithic the general spread of productive economy, the habitation area and everyday activity zone was definitely detached from the environs of the raw material source. The raw material structure of the Early Neolithic and the Early Middle Neolithic (earliest Transdanubian LBC, Szatmár Group) seems to be fairly complex and sophisticated as high quality material from distant sources was used, and inferior quality material was neglected, even when the sources were near-by. At the same time, the mountainous regions are devoid of traces of settlements. Activity areas around the source were probably in operation, but there is no evidence of habitation there until the stabilisation and general spread of the productive way of life of the Middle Neolithic. From this time on, the mountainous areas were inhabited as a result of specific activities related to providing for „industrial” needs, such as the quest for raw materials, and for a source of energy etc. The density of the population and the stability of these settlements resulted in productivity and this created a demand in the lowlands.

Such an intensive „lithic production period” can be observed in the Middle Neolithic (Tiszadob, Bükk Cultures) in the Tokaj Mts., in the Late Neolithic (Lengyel I. Culture) in the Mecsek Mts., and, by the Early Copper Age (Lengyel III. Culture) in the Southern Bakony. The level of industrialisation found in the assemblages surrounding the sources is fairly high, as traces of workshop activity have been found. Also, as the settlements surrounding the sources are on land unsuited to agriculture, they could serve to protect and exploit the sources.

The fact that the source areas were populated for limited periods does not imply that they were not known and used. For example, the spread of obsidian and Szentgál-type radiolarite is documented in archaeological assemblages throughout prehistory, though inhabitation of the immediate source regions is limited to specific periods. We know from archaeological records, however, that there were certain raw materials with corresponding source regions in use for some periods. In this context, the temporal use of Mátra limnic quartzites (Tisza Culture) and Tevel flint (Transdanubian LPC, Early Lengyel) should be mentioned. There are widely differing reasons for the lack of evidence. The Tevel Mt. source (North West Hungary, in the vicinity of Pápa) is small, and could have been overlooked for a long period of time. The Mátra sources, on the other hand, are distributed over large areas, but the quality is less reliable. Thus it can be seen, that the advance of the Tisza Culture to the Mátra sources – together with the

notable lack of obsidian – was for „political” reasons.

In my opinion, by the beginning of the Late Neolithic Period the Lengyel Culture moving to the east had obtained a certain „monopoly” over the raw material sources of the Tokaj Mts. Recent archaeological studies on the Csőszhalom Group (and, also, the Gorzsa Group on the deep south) both speak for the importance of Lengyel influence on the territories to the east of the Danube. The spread of Lengyel Culture (material culture, features, people?) was, in my opinion, largely motivated by trade and the control of raw material source regions.

For the investigation of changes in the raw material supply of the Alföld region, a series of maps have been produced to register changes in the distribution of important raw material categories.

As details of this study are under publication (BIRÓ in press), only a sample of the most prominent changes are presented here, i.e., changes in the obsidian distribution between the Middle and the Late Neolithic period (Fig. 3/a-b).

Conclusions

Lithic evidence forms a unique, invaluable source of archaeological information. The range of data to be expected include morphologically based typology, technology, use interpretation and raw material distribution studies. All these details add up to prehistoric reconstruction with a special emphasis on the economic elements of prehistoric societies.

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Kőanyag vizsgálatok kapcsolatjelző szerepe az alföldi neolitikum kutatásában

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Mai ismereteink az Alföld neolitikumáról elsősorban a morfológiai (tipológiai) és stratigráfiai kutatások nyomán alakultak ki. Az egykor élt népesség kapcsolatrendszerét a hagyományos régészeti kutatás az „importleletek” alapján közelítette meg; ezek olyan jellemző tipológiai ismérvekkel bíró készítmények, melyek készítési helye behatárolható, és az adott kultúra határain kívül esik.

A hatvanas évektől előtérbe kerülő archeometriai kutatások a kapcsolatjelző értékű „importleletek” körét lényegesen bővítették. Így bizonyítottan tengeri eredetű vagy ismert ritka előfordulású természetes anyagok (Spondylus, obszidián, s – főként a későbbi korokban – borostyán) szintén kapcsolat- és „kereskedelmi út” jelzővé váltak. Ezek a vizsgálódások

azonban többnyire csak egyirányú kapcsolatot jeleznek és kevés adatot kapunk a közvetítés módjára, formájára.

Az elmúlt évek szisztematikus nyersanyag-lelőhely vizsgálatai során sikerült a források begyűjtésével és rendszeres anyagvizsgálatával a kapcsolatjelző leletek körét egy egész tárgycsoporttal – a pattintott kőeszközök csoportjával – bővítenünk. A technológiai lépések követése ugyanakkor a kapcsolat pusztán tényén túl annak jellegére vonatkozóan is értékes adatokkal szolgál. A nyersanyag származási helyére vonatkozó vizsgálatok az egyes lelőhelyek kapcsolatrendszerén túlmutatva a neolitikum során lezajló történeti változásokhoz is jelentős adatokat szolgáltatnak.

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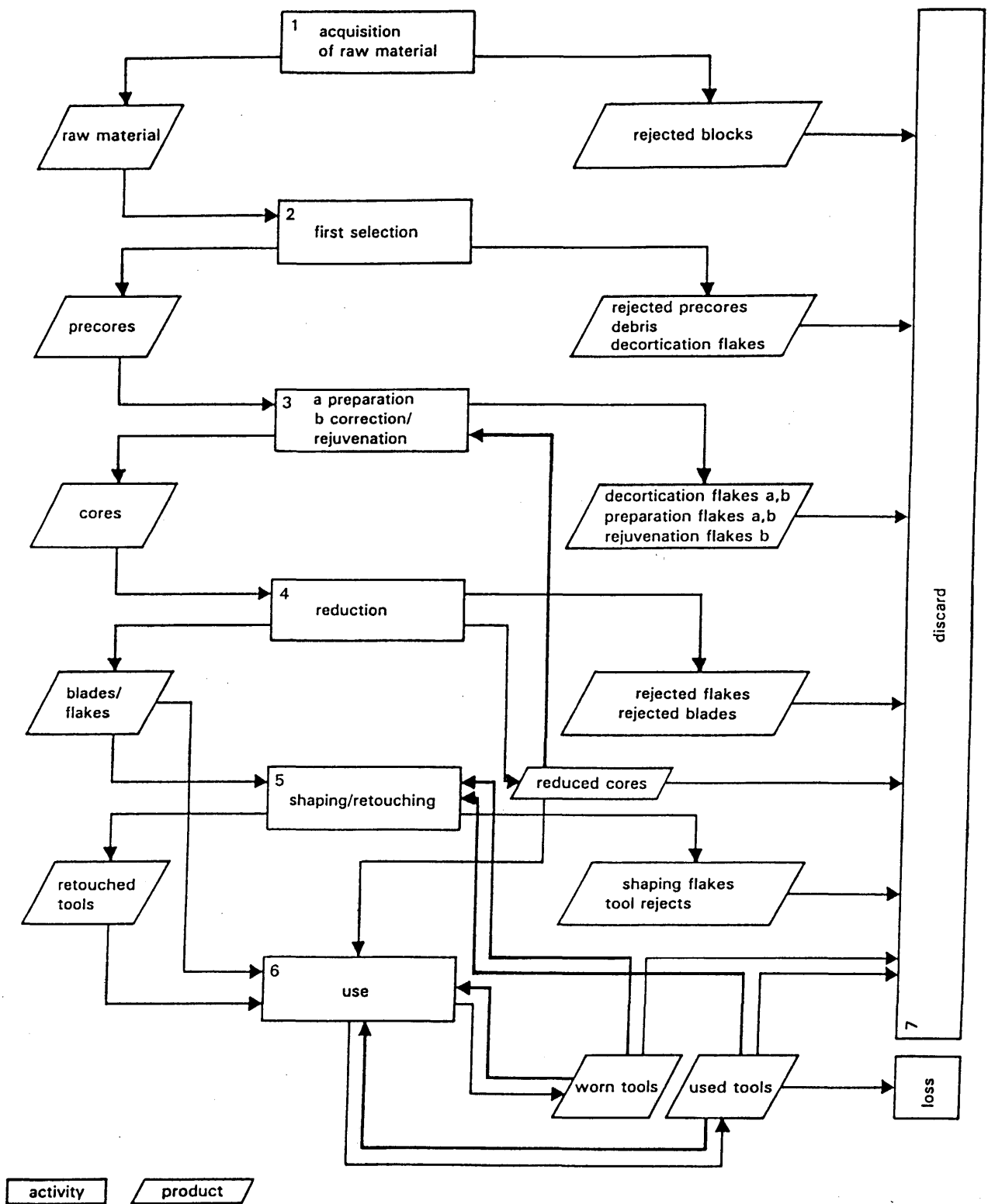
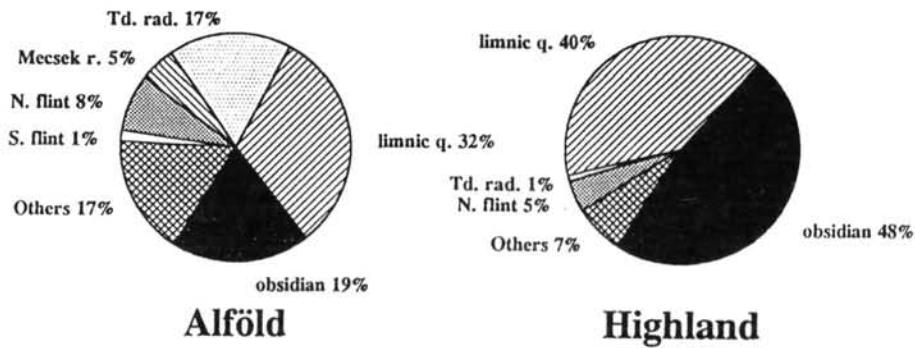
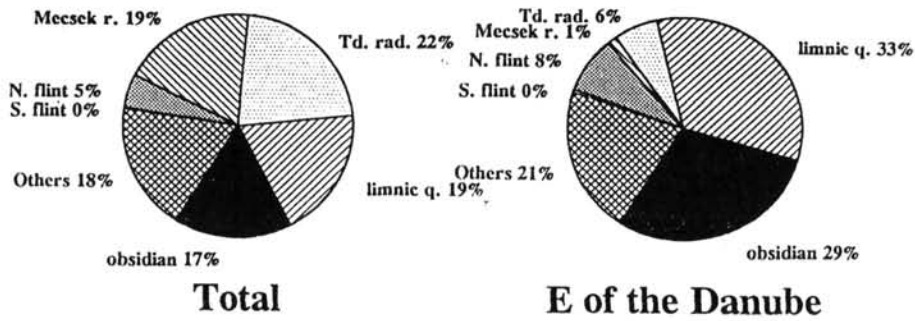
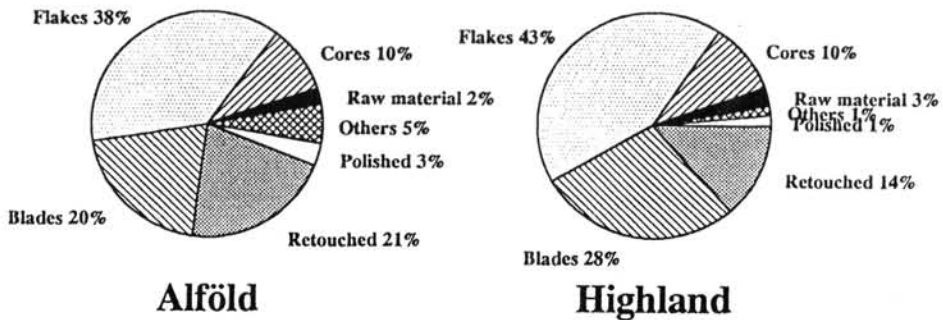
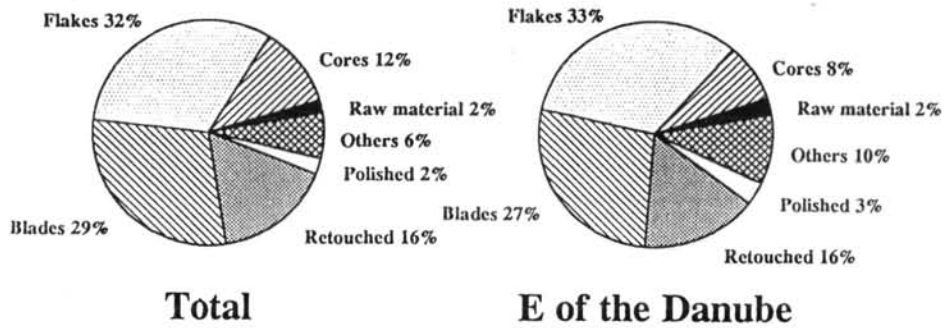


Fig. 1 Flow chart of lithic tool production. After De GROOTH 1988.
1. kép A kőszköz-termelés folyamatábrája De GROOTH 1988. után



a



b

Fig. 2 Summary of lithic distribution data. a: Raw material distribution – limnic g. = limnic quartzite; Td.rad. = Transdanubian radiolarite; Mecsek r. = Mecsek radiolarite; N. flint = Northern flint; S. flint = Southern flint – b: Type group distribution

2. kép A kőeszközök elterjedési adatainak összesítése. a: Nyersanyag szerint – limnic g. = limnokvarcit; Td.rad. = Dunántúli Középhegységi radiolarit; Mecsek r. = Mecseki radiolarit; N. flint = Északi tűzkő; S. flint = Déli tűzkő – b: Típuscsoportok szerint

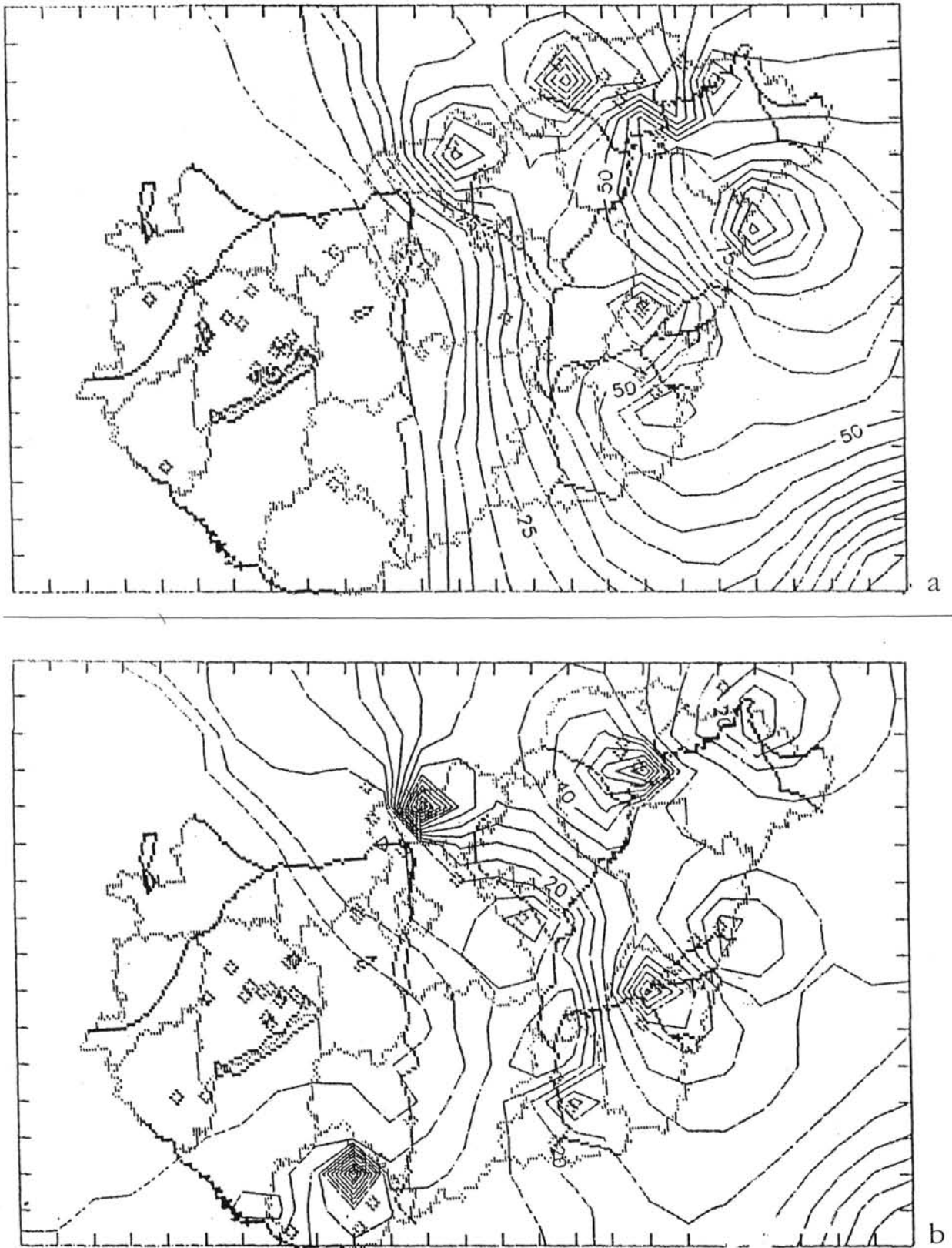


Fig. 3 Obsidian distribution. a: In the Middle Neolithic b: In the Late Neolithic

3. kép Az obszidián elterjedése. a: A középső neolitikum időszakában b: A késő neolitikum időszakában

