

RECENT DISCOVERIES FROM PREHISTORIC MACEDONIA

AN INTERIM REPORT

Immediately west of Thessaloniki and bordering upon the Thermaic Gulf lie the rich, alluvial plain and encompassing foothills which are the heart of Classical Macedonia (Pl. IA). This lowland is ringed by mountain ranges, except towards the sea, and is drained by two important rivers, the Haliakmon and the Axios (Vardar). Both the wood, mineral and agricultural wealth of the area and its strategic location on the important trade-routes at the head of the northern Aegean have made Macedonia and its port, Thessaloniki, much sought after from antiquity down to the present. This paper is concerned with the evidence for human activity in this region during prehistoric times.

Much of what is now known is the result of the assiduous attention given to reports of chance discoveries by the Ephor of Antiquities for Western Macedonia for the Greek Archaeological Service, Mr. Photios Petsas; a systematic survey of the area for prehistoric sites has added to our knowledge, and this is being continued. Excavation of a Neolithic settlement with both very early and late levels at the site of Nea Nikomedeia is suggesting a chronological framework into which to place some of the otherwise undated archaeological material, and is providing an opportunity for archaeologists and natural scientists to work together to reconstruct the ecological setting and the economic activities of the prehistoric groups represented by the archaeological record.¹ The results of the investigations thus far indicate settlement of the area by primary Neolithic village-farming groups at a very early date and, to a much greater extent, by Late Neolithic farmers and traders; evidence of Palaeolithic hunters and food-gatherers has also been found.

1. The Nea Nikomedeia excavations and the co-ordinated scientific investigations, together with the site survey, constitute a Research Project of the Peabody Museum of Harvard University in co-operation with the Faculty of Archaeology and Anthropology of the University of Cambridge and sponsored by the National Science Foundation. The excavations at Nea Nikomedeia are being conducted under the auspices of the British School of Archaeology at Athens.

Because of the apparently considerable influence of geographical features and environment upon prehistoric settlement and intercourse in the region, particularly at the early and the developed food-producing stages, it seems pertinent first to outline those physical characteristics of the area which seem to have directed and controlled movement and settlement during prehistoric times.

Geographical Considerations.

A particular feature of all the prehistoric discoveries made up to now is the degree to which they reflect the strategic position of Macedonia intermediate between Central Greece and the Danube drainage, on the one hand, and Anatolia, on the other. By its geographical conformation, the region is open directly to the penetration of cultural influences and population movements from Anatolia and Western Asia along the northern Aegean coastal plain or from Thessaly by way of the Olympus-Ossa-Pelion coastal plain or the Vale of Tempe (the gorge of the river Peneios). The major mountain blocks on the south and west of the Plain of Macedonia, which include Olympus, Pieria and Vermion, bar inland routes of access to the south. In this mountain belt the only defile is a practically impassable gorge, cut by the river Haliakmon before it enters the Plain of Macedonia at its southeastern corner. North of the Vermion Range, the river Agras provides easy access to a north-south orientated upland basin province which extends from Prilep (Yugoslavia) in the north practically to the edge of the western Plain of Thessaly in the south. The Nice mountains and the rugged highland block which form the northern border of the Plain of Macedonia constitute of formidable barrier in that direction, and the only means of communication with the north is the river Axios (Vardar), which enters the Plain of Macedonia at its north-eastern edge. This river, together with the Morava, defines what has probably been, in the thinking of prehistorians, the most famous route from the northern Aegean to the Danube drainage. Present evidence suggests that it came into use during the Neolithic but only after both the Northern Aegean and the Danube drainage had already been settled by Early Neolithic farmers, and that initially it did not serve as a route of direct penetration into the Balkans from the Northern Aegean.

The dominant feature of the Plain of Macedonia, where practically all of the Macedonian prehistoric sites now known are located, was the large, recently-drained lake of Yiannitsa (Fig. 1). Nineteenth century travellers' accounts indicate that it was a great, shallow, salt or brackish-water lake surrounded by marshes and peat-forming fens, particularly in the south and

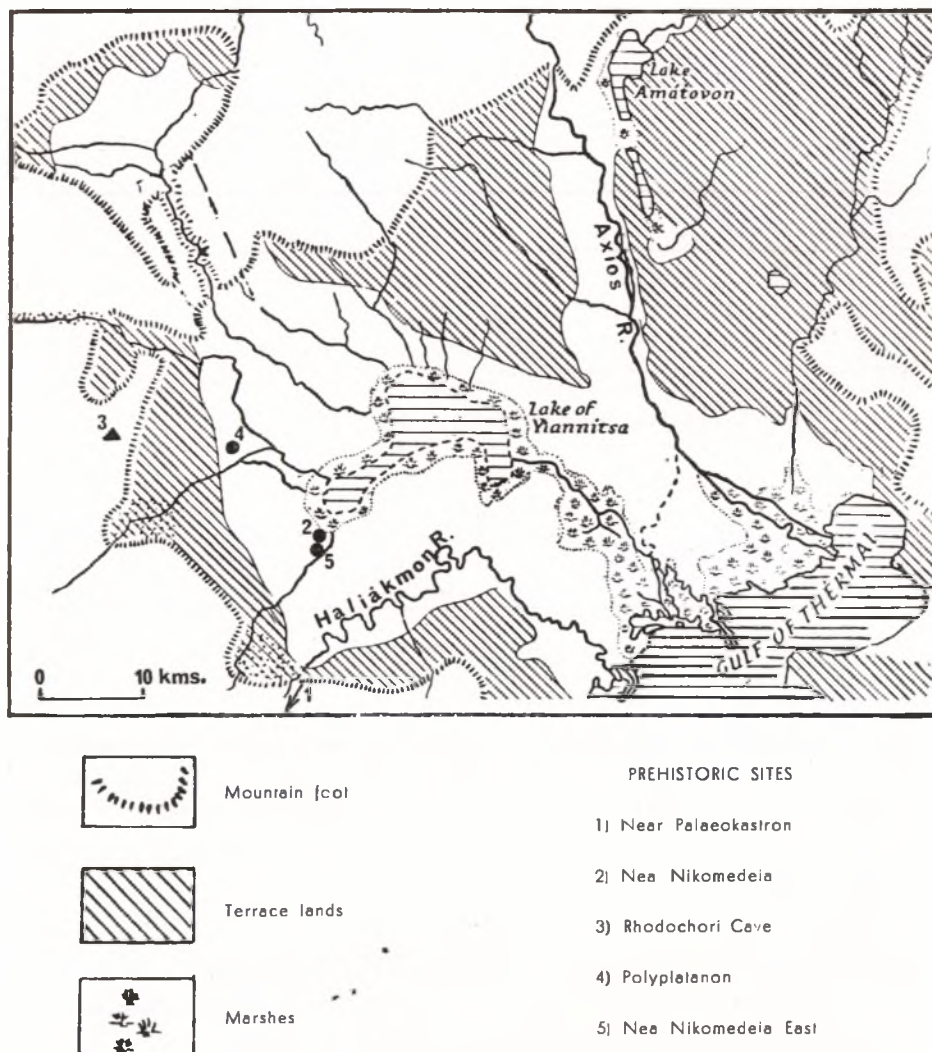


Fig. 1. Sketch map of the Plain of Macedonia before drainage, showing the location of the prehistoric sites discussed in the text. [Map based on Greece, (London, Naval Intelligence Division, Geographical Handbook Series, 1944), III, Fig. 24].

west.² On the sides framed by mountains and foothills the plain itself rises at first very gently and then more noticeably as the terrace lands and foothills are approached. All of the Neolithic settlement sites which have been found thus far are located on this marginal plain between the former lake and the foothills.³ There is the possibility, originally suggested by the German geographer Struck in order to account for the nature of references made to the area in Classical times, that the Yiannitsa Lake was a modern remnant of a former inlet of the Thermaic Gulf;⁴ if true, the Neolithic sites shown in Fig. 1 would originally have been in close proximity to the coast. The presence of discarded cockle shells (*Cardium edule*) in considerable numbers in the occupation debris of these settlement sites might be taken as supporting evidence for this hypothesis. It is possible that with a rise in sea-level in Classical times the Axios (Vardar) and Haliakmon rivers rapidly extended their deltas southwards and northeastwards respectively, to form a natural embankment impounding the waters of the lake; but this remains to be confirmed by geomorphological studies.

In the past year the first palaeobotanical survey was made of Macedonia and parts of Thrace and Thessaly;⁵ a preliminary sampling of stratified series of deposits from different lakes (including the lakes Khimadhitis (drained), Koronia and Volvi, the former lake near Zaglivérion and Lake Voiveis in Thessaly) and from the Plain of Macedonia itself was undertaken in order to determine whether the fossil pollen from these deposits will permit a reconstruction of the main course of ecological development in these areas in Post-Glacial times, and if the appearance of the first Neolithic farmers is marked in the pollen record in any particular way. In view of these investigations, it would be premature at this juncture to attempt any detailed discussion of the environments of the various prehistoric groups living in the area since the end of the Pleistocene. It may be noted, however, that on the basis of provisional pollen counts and the identification of animal bones and of carbonized woods collected from the 1961 excavations at Nea Nikomedeia⁶ there is some reason

2. Particularly relevant are: Ilitscheff, D.C., *Ein Beitrag zur Geographie von Makedonien* (Leipzig, 1899) 22, 34, 40 and 41; Cousinery, E.M., *Voyage dans la Macédoine* (Paris, 1831) 57-99.

3. cf. Petsas, Photios M., "Pella: Literary Tradition and Archaeological Research." *Balkan Studies* 1 (1960) 124.

4. Struck, A., *Makedonischen Fahrten* 2, Die Makedonischen Niederlande (Sarajevo, 1908).

5. This survey was undertaken by the palaeobotanists working in co-operation with the Nea Nikomedeia investigations, Dr. Willem van Zeist and Mr. Sietze Bottema, of the Biological-Archaeological Institute of the University of Groningen, The Netherlands.

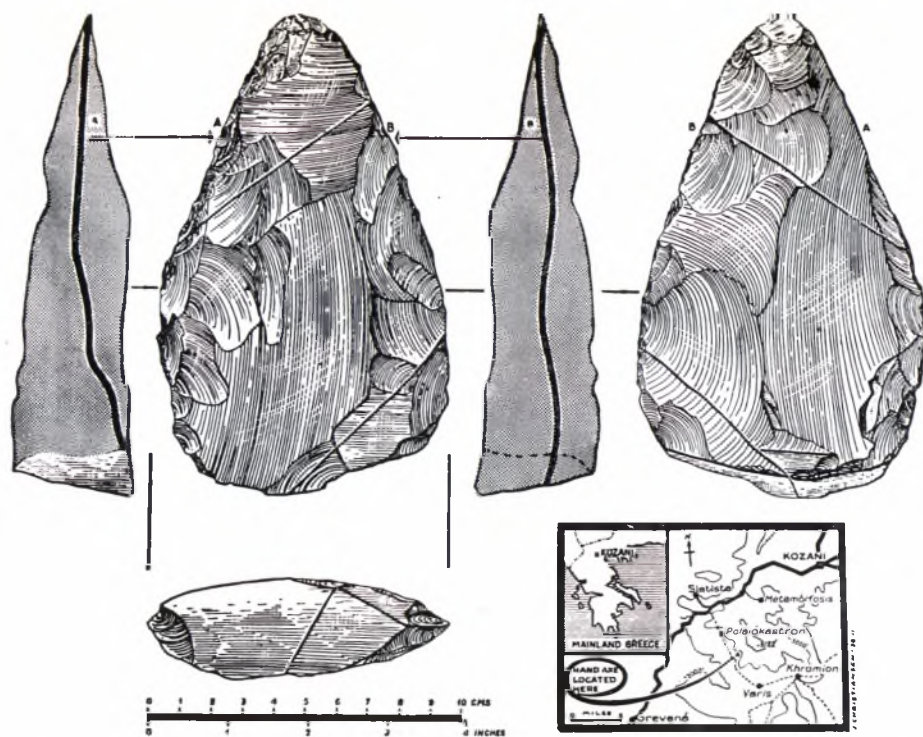
6. Rodden, Robert J., et al., "Excavations at the Early Neolithic Site at Nea



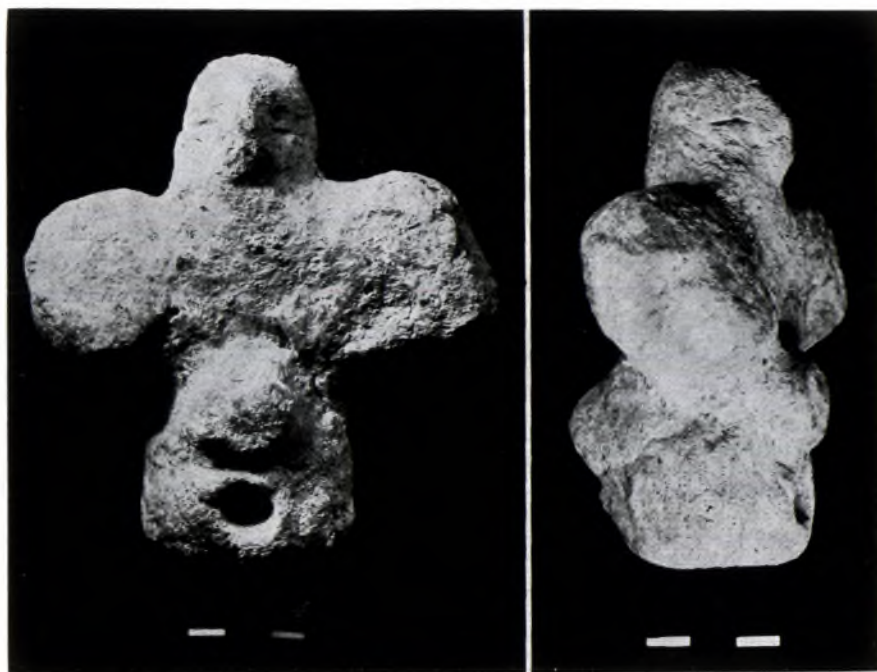
Pl. 1A. The Plain of Macedonia and surrounding foothills, viewed from the south-west.



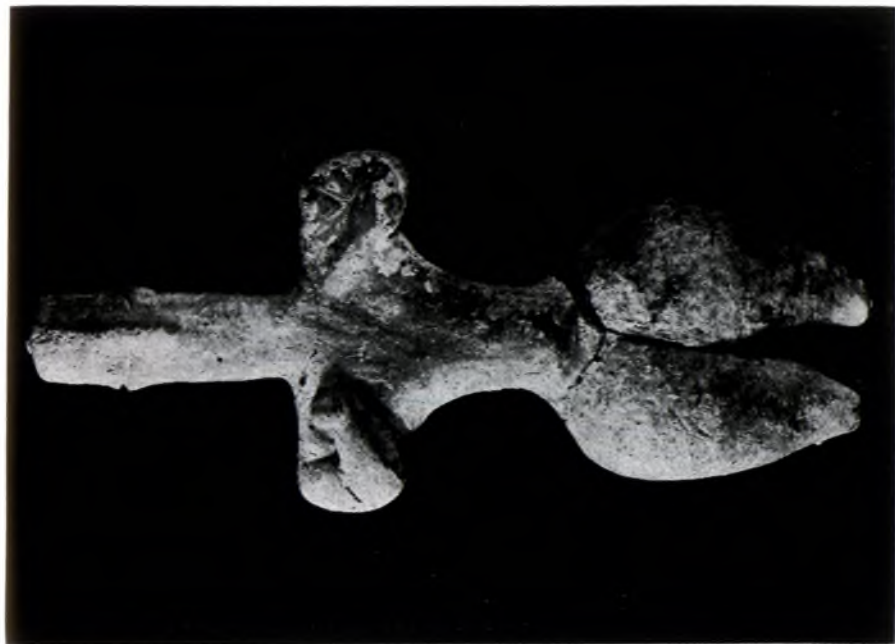
Pl. 1B. An aerial view of the eastern half of the Nea Nikomedeia settlement mound, from the north-west. The area of the Early Neolithic occupation levels excavated in 1963 is shown. (Photographed with the kind cooperation of the Greek Army).



Pl. 2A. The Acheulian hand-axe found near Palaeokastron. (Drawing: courtesy of Antiquity).



Pl. 2B. A clay fertility-goddess from the central "ritual" structure, first Early Neolithic building level, Nea Nikomedeia; found with Pl. 3A. Front and side views ($\frac{2}{3}$).



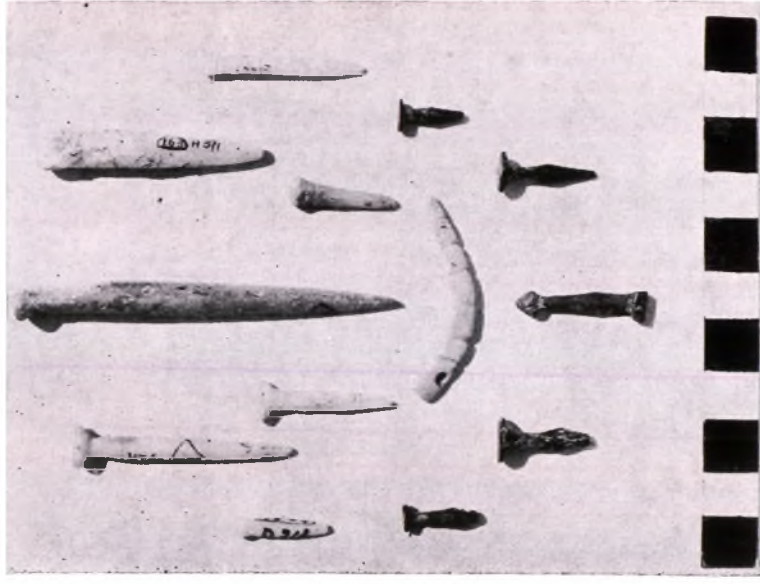
Pl. 3 A. A goddess figure, modelled in sun-dried clay, from the central "ritual" structure, first Early Neolithic building level, Nea Nikomedeia ($\frac{2}{3}$).



Pl. 3 B. Part of an anthropomorphic vessel of red-slipped ware, with face modelled just below the rim. Early Neolithic occupation level, Nea Nikomedeia ($\frac{2}{3}$).



Pl. 4A. One of two asymmetrical pottery vessels of monochrome ware, found in close proximity to Pls. 2B, 3A; central 'ritual' structure, first Early Neolithic building level, Nea Nikomedeia.



Pl. 4B. Carved stone pins and stud ornaments made from 'greenstone' and local marble. Early Neolithic occupation level, Nea Nikomedeia.



Pl. 5A. Carinated bowl of 'black-topped' ware. Late Neolithic occupation level, Nea Nikomedeia ($\frac{5}{7}$).



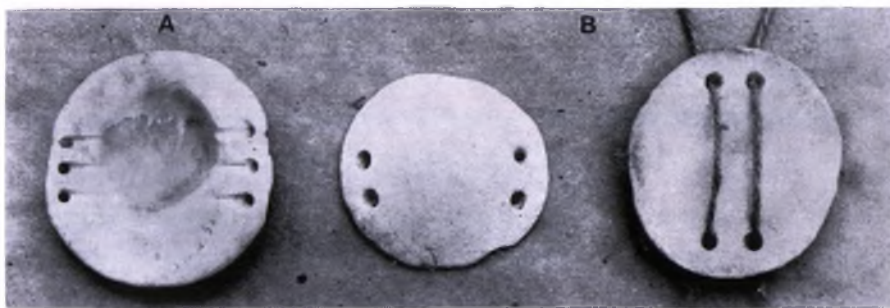
Pl. 5B. Pottery 'scoop' of dark burnished ware with incised and pink-crusted decoration. Surface find, Nea Nikomedeia; probably Late Neolithic ($\frac{1}{2}$).



Pl. 6. "Black-topped" wares from Rhodochori cave. Late Neolithic ($1\frac{1}{3}$).



Pl. 7. Pottery and figurines from Polyplatanon. Late Neolithic. Surface collection (¹/₉).



*Pl. 8A. Pendants made of *Spondylus* shell (A) and marble (B) from Rhodochori cave. Late Neolithic ($1\frac{1}{2}$).*



Pl. 8B. The Nea Nikomedeia East settlement mound from the south-east. (Grateful acknowledgement is made to Mr.Ph.Petsas for permission to reproduce this photograph).

to believe that ecological conditions approximating to those characteristic of the area today may possibly have existed during the earliest part of the Neolithic. At present, the Plain of Macedonia and the surrounding foothills have a modified type of Mediterranean climate: rainfall is distributed more evenly throughout the year than in the south, the seasonal range of temperatures is greater, and the streams are permanent.⁷ The surrounding mountains have a true mountain climate similar to Central Europe. The vegetation of lowland Macedonia is transitional between true Mediterranean and continental European, with a strong Mediterranean bias; open brushwood communities of various types predominate at low altitudes, giving way in places successive to mixed deciduous forest on the lower slopes and beech and coniferous forest at greater heights.⁸ Northwards, this modified Mediterranean vegetation province extends up the Axios (Vardar) valley as far as the Demir Kapija Gap.

Bearing in mind these geographical and environmental features, the archaeological evidence may now be reviewed.

Description of Sites and Assemblages.

The sites and assemblages listed below are arranged according to what is probably their relative sequence. Most, but not all, recent discoveries in the area are mentioned.

Near Palaeokastron⁹ (Pl. 2A).

Until very recently, there were no indications as to whether or not Western Macedonia was inhabited by Palaeolithic food-gatherers, during the Pleistocene. The chance discovery of a hand-axe of Acheulean type, found during the summer of 1963 by Mr. E.S. Higgs, palaeozoologist with the Nea Nikomedeia expedition, constitutes the earliest evidence for hominid habitation in the region known up to the present time; the find may be attributed to early Middle Palaeolithic food-gatherers. The find-spot, on the high-level gravels above the middle reaches of the river Haliakmon, is on the south-western edge of the upland basin province which is separated from the Plain of Macedonia by the Vermion Range. The implement is made from trachyte and measures 15.3 cms. in length and 10 cms. in breadth; both edges of the tool were retouched by step-flaking.

Nikomedeia, 1961 Season," *Proceedings of the Prehistoric Society* 28 (1962) 271-276.

7. *Greece* 1 (London, Naval Intelligence Division, Geographical Handbook Series, 1944) I, 104.

8. *Ibid.*, 109, 110-126.

9. Higgs, E.S., "A Hand Axe from Greece," *Antiquity* 38 (1964) 54.

*Cave near Petralona, in Chalcidice.*¹⁰

The recent discovery of a Neanderthal or Neanderthaloid type skull in a cave near Petralona, approximately 37 kms. southeast of Thessaloniki in the Chalcidice Peninsula, provides tentative evidence that the region was inhabited also in the early Late Pleistocene by Middle Palaeolithic hunters and gatherers. Bones of animals including cave bear and red deer have been reported from the find-spot. No associated artifactual material has as yet been recovered.

*Nea Nikomedeia*¹¹ (Pl. 1B).

The next evidence for human occupation in the area is of much later date and occurs on the Plain of Macedonia itself, at the Neolithic site of Nea Nikomedeia. The site is located 10.5 kms N 30° E of Verroia and only eight or nine metres above present sea-level at the very edge of the former Yian-nitsa Lake. It is a low settlement mound made up of accumulated occupation debris and disintegrated mud-walling from collapsed structures, and covers an area of approximately 220 metres (east-west) by 110 metres (north-south). Both very early and late Neolithic levels are represented.

Early Neolithic (Fig. 2, Pls. 2B-4).

A radiocarbon age determination has placed the primary occupation of the site late in the 7th. millenium B.C. (6,180 B.C. \pm 150 years). Excavation indicates that there were at least two major building periods in the Early Neolithic level (Fig. 2): the first with rectangular houses measuring six to eight metres on a side apparently grouped around a much larger central structure which seems to have served a special ritual purpose. This is suggested by the unique finds from the buildings: including five figurines of fertility goddesses (Pls. 2B, 3A), two outsized greenstone axes, two large caches of unused flint blades, two very unusual gourd-shaped pottery vessels (Pl. 4A) and several hundred clay "roundels" of unknown function. Because of foreign parallels, particularly notable objects in the chipped and polished stone industries are two trapeziform arrowheads and a number of very small polished bluestone, greenstone and marble studs or "nails" (Pl. 4B). The

10. Kokkoros, P., and Kanellis, A., "Découverte d'un crâne d'homme Paléolithique dans la péninsule Chalcidique." *L'Anthropologie* (1961) 438-446.

11. Rodden, Robert J., et al., *op. cit.*; Rodden, R.J. and J.M., "A European Link with Chatal Huyuk: The 7th Millenium Settlement of Nea Nikomedeia in Macedonia." *The Illustrated London News*, Part I (Site and Pottery) April 11, 1964, 564-567; Part II (Burials and the Shrine) April 18, 1964, 604-607.

decorated pottery includes painted red-on-cream and white-on-reddish-brown monochrome and wares decorated by finger-impressed rustication. The plain pottery is either fired dark grey, beige or dark reddish-brown or coated with a slip which may be pink, light reddish-orange or reddish-brown.

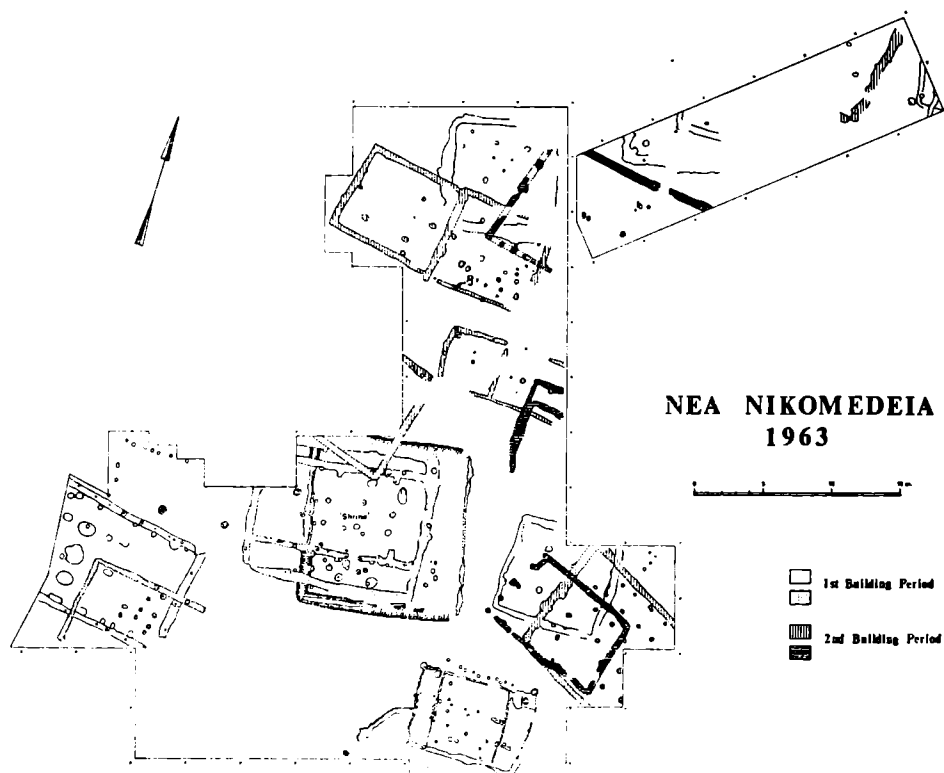


Fig. 2. A preliminary plan of the 1963 excavations of the Early Neolithic building levels at Nea Nikomedeia. (Storage and refuse pits and intrusive Late Neolithic features have been omitted for the sake of clarity).

Vessels with faces modelled just below the rim were also made (Pl. 2B). Preliminary examination of several thousand carbonized grains and some 25,000 animal bone fragments established that wheat, barley and pulse were grown by these first farmers, and that sheep, goat, cattle and pig were being kept.

Late Neolithic (Pls. 5A and 5B).

Following the Early Neolithic occupation, the site seems to have been uninhabited for a long period, the duration of which is as yet uncertain. When

again reoccupied, the top of the mound appears to have been encircled with a trench approximately $1\frac{1}{2}$ metres deep and at least as broad, which may have been constructed for defensive purposes. No remains of houses or other structures were found, as modern intrusive features and deep ploughing have disturbed much of the Late Neolithic deposit. Because of this disturbance, the possibility of more than one Late Neolithic phase of occupation at the site must be considered, although there is no indication of a stratigraphical break in the deposit. A preliminary study of the excavated material and surface finds suggests that the Late Neolithic pottery assemblage is characterized by dark burnished wares with carinated shapes predominating; bowls with pedestal bases; vertical-sided, carinated bowls in black-topped ware (Pl. 5A); scratched and incised wares, white-painted and matt brown-black on orange-buff painted wares. Of particular interest are a pottery ladle or scoop with alternating dark burnished and pink-crusted zones outlined by incision (Pl. 5B), baked clay figurines with incised features and geometric designs and baked clay stamps with spiral motifs.

*Rhodochori Cave*¹² (Pls. 6 and 8A).

The material most directly comparable to the Late Neolithic pottery assemblage from Nea Nikomedeia is from a recently discovered cave site located in the foothills bordering the western edge of the Plain of Macedonia. The cave is a deep limestone solution cavern near the village of Rhodochori, approximately 8.2 kms N 20°W of Naoussa. The find-spot is located at a depth of at least 100 metres into the hillside and may be a burial site. It is highly probable that the finds are part of a closed series, i.e., entire and undisturbed in any way. As at Late Neolithic Nea Nikomedeia, white-painted, incised and black-topped wares are found, and strongly-profiled pots with flat bases predominate. In the category of black-topped wares (Pl. 6) there are large, sharply-carinated vessels painted originally with series of parallel short bold strokes arranged vertically or obliquely above the carination (a fugitive, possibly crusted paint is suggested) (Pl. 6A), a carinated bowl with a narrow band of indentations on the carination (Pl. 6B), a deep, sharply-carinated bowl on a high pedestal base and a large urn or storage-vessel with four pairs of double knobs on the belly (Pl. 6C). The single bowl with incised decoration, again a sharply-profiled form, has four different incised geometric motifs widely spaced in a zone on the upper part of the

12. The author wishes to express his deep gratitude to Mr. Ph. Petsas for permission to illustrate and discuss these discoveries before their publication in: *Ἀρχαιολογικὸν Δελτίον Ἑλλάδος* (1963) in press; *Bulletin de Correspondance Hellénique*: Chronique (1963) in press:

vessel and knob lugs just below the rim and on the belly. Shapes of the well-smoothed plain ware vessels include deep, flat-bottomed bowls with straight, slightly flaring sides and string-hole lugs on the angle of the base and side, crudely-shaped cups with a single, solid raised handle, and large, deep urns with double knobbed lugs immediately beneath the rim. Found with this pottery were four polished stone axes, having rectangular cross-sections and large, slightly ovoid pendants with opposing pairs of double or triple perforations close to the edge (Pl. 8A). The finest examples were made from the shell of the Mediterranean mussel *Spondylus gaederopus* (Pl. 8A); other examples, made of marble, may be imitations (Pl. 8B). A small, flat annular bead made from marble and a small version of the *Spondylus* shell ornament also were found.

*Polyplatanon*¹³ (Pl. 7).

Material collected by the author from the surface of the prehistoric settlement mound near Polyplatanon indicates that the site was occupied primarily during the Late Neolithic; although stratigraphic evidence is not available, the pottery from the site suggests that it was inhabited during a phase different from that represented either by the Late Neolithic Nea Nikomedeia or the Rhodochori assemblages. The site of Polyplatanon is located c. 1.750 kms northwest of the village of the same name, and approximately 12 kms E 30° N of Naoussa. The settlement mound rises about 4.25 metres above the level of the surrounding plain and at its base measures c. 165 metres by 150 metres. It is situated much closer to the outwash terraces and foothills of the Vermion Range than is Nea Nikomedeia (at the site of Polyplatanon the plain is approximately 24 metres above sea-level), not far from the confluence of the Arapitsa and the Agras, two of the major streams which drain the western part of the Plain of Macedonia. The material collected from the surface includes true classic Dimini chocolate-on-cream painted ware (Pl. 7a), black-on-red painted ware (Pl. 7b, d), finger-tip impressed ware (Pl. 7e) and a sherd of black grooved ware from a carinated vessel with a small knob on the carination and three concentric grooves half surrounding the knob below the break in the profile; a miniature cup of plain ware was also found (Pl. 7c). Two figurines are known: an "idol-holder" made in baked clay (Pl. 7g) and a small figure with accentuated buttocks and incised features (Pl. 7f).

13. The site of Polyplatanon was first mentioned in: Petsas, Photios M., *op. cit.*, 124.

*Nea Nikomedeia East*¹⁴ (Pl. 8B).

What appears to be yet a third Late Neolithic assemblage is represented at another settlement mound about 2.6 kms south of the first Nea Nikomedeia site. The mound, to be designated Nea Nikomedeia East, is located about 600 metres ESE of the village of the same name, and approximately 8.1 kms N 35°E of Verroia. The site measures c. 155 metres by 90 metres in area, and rises about 1.5 metres above the level of the plain; it is intersected by a modern irrigation canal. The Late Neolithic pottery from this site,¹⁵ although known only from surface collections, tentatively may be characterized by greyish-black burnished wares; fine, horizontal rippling is a feature of the external surface of some carinated bowls above the break in profile. Carinated bowls with set-in rims, such as are known from Larissa Culture assemblages, are also found; so are painted white-on-light-brown monochrome wares (vertical linear designs), grooved ware and thick incised ware (with spiral designs). A polished stone axe and a quadrangular flake scraper with steep retouch on all four edges may also be mentioned.

Discussion.

The finds described above indicate that Macedonia was probably inhabited by Middle Palaeolithic food-gatherers, and that, during what must, by comparison, be considered comparatively recent times, Early and Late Neolithic farming groups settled in the area. There seems to be no reason why the region should not have been inhabited in the intervening periods as well, although at present evidence is lacking. Taken in a broader context — that of Aegean and Balkan prehistory — the available evidence, and lack thereof, helps to resolve some problems and inevitably poses others.

The Palaeokastron hand-axe (Pl. 2A) has the distinction of being what is probably the earliest artifact known from Greece.¹⁶ Early Middle Palaeolithic assemblages with similar bifaces have a wide distribution in Europe and the Middle East in geologically datable Middle Pleistocene contexts.

14. The author and Mr. Ph. Petsas visited this site in 1961 at the time when levelling operations were in progress in the area; the mound, then in danger of being levelled, is now a scheduled archaeological site.

15. Other evidence, indicating possible Bronze Age and Classical occupation of the site, is not discussed in the present report.

16. F.R. Lenormant reported what is possibly a large amygdaloid biface, also of Acheulean type, from the Argolid, supposedly found in Quaternary sands near Megalopolis and said to be accompanied by bones of large pachyderms; the present whereabouts of this object is unknown. cf. Lenormant, F.R., "L'Age de la Pierre en Grèce." *Revue Archéologique* 2ème. Série 15 (1867) 1, 16-19.

This implement, although only a surface find, is of significance in demonstrating that comparable tool-kits and traditions, belonging to what were possibly hunters and food-gatherers adapted specifically to a forest environment, must also exist in Greece and the Balkans.

The Neanderthal skull from Petralona probably can be attributed to a later context in the Pleistocene in view of other Neanderthal finds which are more or less accurately geologically dated.¹⁷ In the absence of associated artifactual material, it is impossible to relate the discovery directly to any particular Palaeolithic tool-making tradition. It seems probable, however, that the Petralona Neanderthal is to be associated with Middle Palaeolithic flake industries of Mousterian or Levallois-Mousterian type.¹⁸ Such assemblages have been reported from the Louros river valley in Epirus and from Thessaly.¹⁹

The chronological gap between the Middle Palaeolithic hunters and gatherers, and the first Neolithic settlement at Nea Nikomedeia, at present the earliest radiocarbon-dated settlement of Neolithic farmers known in the northern Aegean or on the continent of Europe²⁰ obviously is an extremely large one. Considerations relating to the problem of the inception and development of Neolithic culture in the area, and in Europe in general, make it not only desirable but extremely important to understand the local cultural sequence during this interval; in particular, it seems important to establish whether or not the region was occupied by pre-Nea Nikomedeia, possibly Pre-Pottery, farming groups. As the northern Aegean lowlands form a geographical and environmental extension of the Western Asiatic focal area where the basic elements of the village-farming way of life apparently emerged first, it would seem not unlikely that the earliest farmers on the continent of Europe should be sought for in this region. Thus far, the survey for archaeological sites has yielded no indications of a village-farming phase

17. cf. von K  nigswald, G.H.R., (Edit.) *Neanderthal Centenary, 1856-1956* (Utrecht, 1958).

18. This is not to say that these assemblages are to be associated exclusively with Neanderthal Man, cf. Brothwell, D.R., "The People of Mount Carmel." *Proceedings of the Prehistoric Society* 27 (1961) 155-159, for discussion and references.

19. Higgs, E.S., "A Middle Palaeolithic Industry from Greece: Preliminary Report." *Man* (January, 1963) 1-3.

Miloj  i  , V., and Biesantz, H., "Bericht   ber die Ausgrabungen in Thessalien 1958, I, Die Ausgrabungen im Gebiet der Gremnos, Otzaki und Soufli-Magula bei Larissa." *Arch  ologischer Anzeiger* 1959. cols. 36 ss.

20. This date may either be substantiated or modified on the basis of radiocarbon age determinations to be made on samples of charcoal collected during the 1963 season of excavations.

preceeding Early Neolithic Nea Nikomedeia, and although the palaeobotanical record may provide the decisive means of establishing its existence, it would be premature to draw on the fossil pollen studies at this time.

When the specialists' studies are completed, the grain and animal bone material from the Nea Nikomedeia excavations should reveal the extent to which cereal cultivation and the domestication of animals had progressed at this site and, by extension, may clarify the status of other contemporary or earlier settlements in Greece or the Balkans for which the samples are not sufficiently large to permit significant metrical and statistical studies. As in the earliest Western Asiatic food-producing communities, wheat, barley and legumes were grown and harvested at Nea Nikomedeia;²¹ similarly, sheep and goat were numerically the most important animals husbanded.²² Wild pig and cattle were hunted, and provisionally it may be stated that domesticated forms were also kept.²³ As domesticated cow and pig are known only from later contexts in Western Asia²⁴ the degree to which the Nea Nikomedeia pig and cattle were domesticated seems, in the opinion of the writer, to be of particular importance, for it raises the possibility of a Southeast European (including the Russian Pontus) or Anatolian centre or centres for the domestication of these forms.

Particular archaeological finds from the culture layer also help to fix the general context of Early Neolithic Nea Nikomedeia in relation to early farming settlements both in Central Greece (Thessaly) and in the southern Balkans, for close similarities are found in Early Neolithic assemblages in both of these regions. The stratigraphical association at Nea Nikomedeia of elements accepted as diagnostic of different sub-phases in the Early Neolithic succession in these adjacent areas, however, raises certain problems if the established relative cultural sequences (and their absolute chronological dating) are accepted without reservation. Until definitive publication of the Nea Nikomedeia material, it seems inappropriate to enter into a detailed analysis of these difficulties. It may be noted here that the vessel shapes and decorative pat-

21. Braidwood, Robert J., and Howe, Bruce, *Prehistoric Investigations in Iraqi Kurdistan* (The Oriental Institute of the University of Chicago, Studies in Ancient Oriental Civilization, No. 31, Chicago, 1960) 99-118; Mellaart, James, "Catal Hüyük in Anatolia: Excavations which Revolutionize the History of the Earliest Civilization." Part III, *The Illustrated London News*, February 9, 1963, 198.; Rodden, R.J. and J.M., *op. cit.*, Part I, 565.

22. Braidwood, R.J., and Howe, B., *op. cit.*, 119-145. Rodden, Robert J., et al., *op. cit.*, 272-273.

23. Rodden, Robert J., et al., *op. cit.*, 272-273; and a preliminary study of the 1963 material.

24. Excepting possibly in the Amouk. Braidwood, R.J., and Howe, B., *op. cit.*, 138-145.

terns of the red-on-cream painted wares point to a Macedonian equivalent of the earliest Thessalian painted wares, whereas the finger-nail and fingertip impressed pottery and the white-painted wares appear to be closely related to a similar association from the primary settlement phase at the important stratified site of Vršnik, in the southern Yugoslav Highlands, suggesting a possible correlation with, but not a chronological precedence over, the earliest certainly verifiable food-producing groups in the Balkans.²⁵ However, impressed pottery, identical to that found at Nea Nikomedeia, occurs stratigraphically succeeding the early red-on-cream painted wares at two sites in Western Thessaly, Magoulitsa and Tsani; in the type sequence for the Thessalian Early Neolithic cultures established by Miložić's soundings, it is taken as the characteristic feature of a phase succeeding the appearance of the first painted ware.²⁶ Another problem is raised by the discovery of several indubitable "trapezes" in the Early Neolithic deposits at Nea Nikomedeia; up until now, these retouched flint blade segments of trapeziform shape have been considered diagnostic of Thessalian "Pre-Pottery Neolithic" assemblages, which are found immediately underlying the first pottery levels at the sites of Argissa and Sesklo.²⁷ In view of the early radiocarbon date for the first settlement phase at Nea Nikomedeia — suggesting approximate contemporaneity with the "Era of Primary Village-Farming Communities" in Western Asia — it may be significant to note that marble studs very similar to those from Nea Nikomedeia (Pl. 4B, Upper) are known from the early sites of Tell Judeideh, Jarmo, Hassuna, Matarrach and Sialk I.²⁸ Fragments

25. Rodden, Robert J., et al., *op. cit.*, 281-287.

26. Παπαδοπούλου, Μ. "Μαγουλίτσα, Νεολιθικός Συνοικισμός παρά την Καρδίτσαν", *Θεσσαλικά Α'* 1 (1958) 39-49; Wace, A.J.B., and Thompson, M.S., *Prehistoric Thessaly* (Cambridge, 1912) 147; Miložić, V. "Ergebnisse der Deutschen Ausgrabungen in Thessalien (1953-1958)", *Jahrbuch des Römisch-Germanischen Zentralmuseums* (Mainz, 1960) 6. Jahrgang, 10.

27. Most recently, cf. Miložić, V., *Die Deutschen Ausgrabungen auf der Argissa-Magula in Thessalien I*, Das Präkeramische Neolithikum sowie die Tier- und Pflanzenreste (Bonn, 1962) 25. Also: Miložić, V., "Präkeramisches Neolithikum auf der Balkanhalbinsel." *Germania* 38. Jahrgang (1960) Heft 3/4, 325.

28. For Tell Judeideh, in the Syro-Cilician coastal plain. cf. Braidwood, R.J. and L.S., "Excavations in the Plain of Antioch, I, the Earlier Assemblages, Phases A-J." *Oriental Institute Proceedings* 61 (1960) 95, fig. 69 (Phase B); also figs. 99, 102 (first mixed range). For Jarmo, in the foothills of Iraqi Kurdistan, cf. Braidwood, R.J. and Howe, B., *op. cit.*, 46. For Hassuna and Matarrach, on the piedmont plain of the Tigris River, see respectively: Seton Lloyd and Fuad Safar, "Tell Hassuna" *Journal of Near Eastern Studies* 4 (1945) 288, Figs 26, 7, 8, 13 and 16; and Braidwood, R.J. and L.S., Smith, J. and Leslie, C., "Matarrach" *Journal of Near Eastern Studies* 11 (1952) 21-22, figs. 20, 2 and 6. For Sialk I, cf. Ghirshman, R., *Fouilles de Sialk I* (1938) pl. lii.

of vessels with faces modelled or painted just beneath the rim are known from two of these sites: Hassuna and Matarrah.²⁹

The 1963 excavations at Nea Nikomedeia have revealed for the first time in the Aegean information concerning the plan or layout of an Early Neolithic village (Fig. 2); at other sites it has generally not been practicable to uncover large areas of the primary settlements because of the great overburden of later deposits. Although by no means all of the Early Neolithic settlement at Nea Nikomedeia has been excavated, the preliminary plan of that part which has been uncovered suggests an open settlement pattern in the two Early Neolithic building periods for which there is stratigraphical evidence. The layout of detached and individual structures compares most closely with that known from the early Neolithic levels at Karanovo in Bulgaria.³⁰ It is interesting to note that it stands in marked contrast to the tradition of building one house immediately against another around the nucleus of a courtyard, which appears to have been the rule at Çatal Hüyük and Haçilar in Asia Minor and at Jarmo and the other early sites mentioned above, which are situated on the hilly flanks and piedmont plain of the "Fertile Crescent."

In considering the recent discoveries pertaining to Late Neolithic Macedonia, a full comprehension of the archaeological material is hampered by the absence of a complete, stratigraphically confirmed succession; for this reason it is necessary for the present to turn to adjacent areas for a framework in which to view the find-material. In Thessaly, the recent excavations of V. Milošević at the sites of Arapi and Otzaki have suggested: (I) the subdivision of the Late Neolithic Dimini Culture complex into four phases termed Middle Greek matt-painted, Arapi, Otzaki and Classic Dimini; (II) the definition of a later phase, which Milošević calls the Larissa Culture, and which is succeeded by the immediately pre-Early Bronze Age Rakhmani phase.³¹

The discovery of Classic Dimini painted ware at Polyplatanon (Pl. 7a) establishes that this site was occupied at the same time that Dimini itself and other Classic Dimini Culture sites in Thessaly were flourishing; this find represents the most northerly known occurrence of this very fine ware, and it is possible that it is an import. The black-on-red painted ware and the figurine with incised features (Pl. 7, b, d and f) are more typically Mace-

29. Seton Lloyd and Fuad Safar, *op. cit.*, Fig. I, no. 2, and Pl. 17, 1 and 2; Braidwood, R.J. and L.S., Smith, J. and Leslie, C., *op. cit.*, Fig. 6 and Pl. 7, no. 1.

30. Georgiev, G.I., "Kulturgruppen der Jungstein- und der Kupferzeit in der Ebene von Thrazien (Südbulgarien)". in: *L'Europe à la fin de l'âge de la pierre* (Actes du Symposium consacré aux problèmes du Néolithique européen; Prague, 1961) 62 and pl. II, 1.

31. Cf. mainly Milošević, V., *op. cit.* (1960) 14-26. However, the relationships between these sub-phases have not as yet been exactly defined.

donian Late Neolithic, and while it is possible that they are to be attributed to the same occupation level as the Dimini ware, again they may not. The black-on-red painted ware is representative of a large class of similar wares from a number of sites in northern Greece which are generally reckoned to be related to the final stages of the Early Neolithic Starčevo Culture complex as it is manifested in the southern Serbian and Yugoslav Highlands.³² The evidence from Level IV at the Vršnik site suggests that in the same context in which the parallels for the northern Greek black-on-red painted ware is sought (those assemblages having fine, dark-on-light painted wares with spiral motifs) that Vinča Culture elements (including black-topped ware) are also found.³³

It has long been known that Neolithic farmers living in middle Europe imported the shell of *Spondylus gaederopus*, a mussel native to only the Aegean, the Sea of Marmara and the Black Sea, for use as pendants or bracelets.³⁴ The discovery at Rhodochori cave of pendants made from *Spondylus gaederopus* shell raises the question as to whether or not the Late Neolithic Nea Nikomedeia-Rhodochori people were engaged in the trade of this shell with the north, the linking Axios (Vardar)-Morava system being the route used. Close parallels of the pottery assemblages from the cave and from the Nea Nikomedeia settlement occurring in the Vinča Culture sites on the middle Danube and lower Theiss, where *Spondylus* shell ornaments are known in all phases, would argue in favour of such a trade connection, possibly via Vršnik. The preliminary comparisons which may be made between the Nea Nikomedeia-Rhodochori pottery assemblage and Vinča-Tordos types indicate the following common elements: the particular types of carinated vessel shapes, admitting those in black-topped ware; pedestalled-base bowls; the limited use of crusted painting to special objects, and the designs which were employed in the crusted decoration.³⁵ These features also appear in Late Neolithic Thessaly, where provisionally they may be attributed to the Dimi-

32. Schachermeyr, Fritz, *Die Ältesten Kulturen Griechenlands* (Stuttgart, 1955) 108 ff. Garašanin, Milutin V., "Neolithikum und Bronzezeit in Serbien und Makedonien." *Bericht der Römisch-Germanischen Kommission* 39 (1958) 112.

33. Garašanin, M. and D., "Neolitska Naselba Vršnik, kaj Selo Tarinci" *Zbornik na Štipskiot Narodni Muzej* 2 (1960-1961) 37.

34. cf. Clark, J.G.D., *Prehistoric Europe, the Economic Basis* (London, 1952) 241, for recent discussion and references.

35. Garašanin, Milutin V., *Hronologija Vinčanske Grupe* (Ljubljana, 1951) 32-37 and 174-176.

ni I (Middle Greek) phase.³⁶ In this somewhat varied assemblage, the particularly sharply-profiled vessels with vertical or slightly flaring rims, which are so typical of the Rhodochori and Nea Nikomedeia Late Neolithic assemblages seem to appear as innovations; concomitantly, pedestalled-base bowls and matt white-painted ware with very similar designs are found. It may be significant to note that at Tsangli, one of the Thessalian sites at which the Middle Greek phase is represented, ornaments made from *Spondylus* shell were found.³⁷

As adumbrated already by French, it is possible that parallels may exist between the Middle Greek wares and northwest Anatolian Late Chalcolithic types (Beycesultan 3/4).³⁸ The Rhodochori cave and Late Neolithic Nea Nikomedeia assemblages tentatively would reinforce such a correlation; this is suggested by the white-painted black burnished ware, and again by the very diagnostic vessel shapes. If the connections which are implied above between these assemblages and Vinča, on the one hand, and early Late Neolithic Thessaly, on the other, are sustained by detailed analysis and comparison of all of the relevant material when available, it may prove possible to extend the argument one step further and to see in all of these trait-complexes the first appearance of Anatolian Late Chalcolithic influences in these respective regions.³⁹

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36. Excepting the limited use of crusted painting to special objects; Milojević, V., *op. cit.*, (1960) 14-15, Abb. 13. Θεοχάρης, Δ. Π. "Νεολιθικά ἐκ τῆς περιοχῆς τῆς Ἰωλκοῦ." *Θεσσαλικά Α'* (1958) 6 ff; Θεοχάρης, Δ. Π., "Πύρασος." *Θεσσαλικά Β'* (1959) 55.

37. Wace, A.J.B., and Thompson, M.S., *op. cit.*, 125 and Fig. 78, e.

38. French, D.H., "Late Chalcolithic Pottery in North-West Turkey and the Aegean." *Anatolian Studies* 11 (1961) 116 and 120.

39. Although the succeeding phases of Late Neolithic occupation in the area and their foreign connections are still very imprecisely understood, it seems not unlikely that the 'rippled ware' and other Late Neolithic pottery from Nea Nikomedeia East will prove itself to be a local manifestation of the Macedonian Late Neolithic as defined by Heurtley at the site of Servia, and a northern variant of the Thessalian Larissa Culture. (The points of comparison between the Nea Nikomedeia East pottery types and Larissa Culture assemblages as defined are more convincing than those which could be made between the latter and Late Neolithic Nea Nikomedeia-Rhodochori cave). The connections between Nea Nikomedeia East-Servia-Larissa Culture and the groups which preceded and succeeded them in the closing phases of the Neolithic in Macedonia and Thessaly are a problem for the future. None of these assemblages seems to bear any close resemblance to any of the Western Anatolian Late Chalcolithic or Early Bronze Age assemblages.