

ECONOMIC ARCHAEOLOGY, NEOLITHIC STUDIES  
AND THE EARLY HISTORY  
OF AGRICULTURE: CENTRAL ITALY EAST OF THE APENNINES  
Graeme Barker, Sheffield University, England.

1. *Introduction*

It is probably true to say that the study of prehistoric economies in Europe has pivoted on the problem of when, how and why agriculture began. The introduction of agriculture to an area has traditionally been regarded as a neolithic phenomenon. The publication of the first radiocarbon dates from sites with early neolithic pottery seemed to confirm earlier theories of the spread of neolithic farmers across Europe from the south-east (Clark, 1965). Many more radiocarbon dates from neolithic sites were published in the late sixties and Ammerman and Cavalli-Sforza used these in an attempt to measure the rate of neolithic dispersal across Europe more accurately. Stating their basic premise as follows: «early farming and Neolithic are virtually equivalent, if we employ an economic definition of the latter term... the spread of pottery over most of Europe takes place in association with and essentially at the same time as the spread of early farming» (Ammerman and Cavalli-Sforza, 1971, p. 674), they measured the time and space relationships between dated sites with early neolithic pottery across Europe. On the assumption that the spread of neolithic dates could be correlated directly with the spread of neolithic colonists, they constructed a population diffusion rate of 1.08 kilometres per year across Europe. They concluded that the major implication of their «wave of advance» model was that «it would seem to offer little support... (for) ...the traditional view that environmental factors (climate, soils, forest cover etc.) have played a major role in determining the rate of expansion of early farming over Europe» (Ammerman and Cavalli-Sforza, 1971, p. 686).

The purpose of this paper is to test current neolithic models such as theirs by examining land use and the early history of agriculture in one area of Europe, central Italy east of the Apennines — the provinces of Marche, Abruzzo and Molise. The paper is in part a summary account of data and argument presented elsewhere in a fuller discussion of the economic prehistory of central Italy as a whole (Barker, 1975a). The Molise data, however, are unpublished; they are derived from a preliminary survey I carried out in the Biferno valley during September 1974 on behalf of the Soprintendenza alle antichità del Molise (Barker, 1976).

The three provinces discussed in this paper make up a long, narrow strip of country which lies on a north-west/south-east axis down the eastern side of the Italian peninsula, some 300 kilometres long by 80-100 kilometres wide. They provide a section across half of the central peninsula, from the Adriatic littoral up to the Apennine range some 2000-3000 metres above sea level. Although the climate is basically 'Mediterranean', the drastic changes in relief bring very marked climatic variations within the area. The Apennine winters are very harsh, with snow lying on the mountains for several months, at a

time when the lowlands are pleasantly cool and snow-free; in summer the lowlands are very hot and arid. These climatic differences mean that there is a natural vegetational cycle of summer upland and winter lowland grazing. Transhumant systems of stock management, especially of sheep, have been very common in Italy as a result; they are documented from the Roman period and have been an integral part of the medieval and modern rural economy (Barker, 1975a, p. 113). The shortest routes to winter pasture for stock summered in the Apennines of Marche, Abruzzo and Molise are straight down the main river valleys to the lowlands of the three provinces, but today the transhumant flocks which are pastured in this part of the Apennines in the summer are taken out of the area in the winter, either west to the Roman plains or south-east to the Tavoliere plain in Apulia (Barker, 1975a, fig. 3). The lowland part of the study area is now used mainly for polyculture by small farms, cultivating cereals and associated crops, olives and vines. I argue in this paper that the present dichotomy between the utilisation of the high Apennines and the lowlands of Marche, Abruzzo and Molise is a phenomenon of comparatively recent times.

## *2. Postglacial economic systems in the study area*

Late Palaeolithic and Epipalaeolithic assemblages were manufactured in Italy from the last part of the last glaciation through much of the postglacial period. The changes in flint technology over the millennia of use of this 'epigravettian' toolkit were relatively minor — for example, the diminution in size of backed blades and points and sometimes of scrapers, and the appearance and increasing use of geometric microliths and microburins at some sites — and there is a remarkable degree of continuity in the tradition as a whole, from the appearance of epigravettian assemblages c. 15,000 B.P. to their final occurrence at some sites associated with neolithic pottery some 10,000 years later.

Evidence for epipalaeolithic economy has been recovered from both Marche and Abruzzo. The epigravettian sequence is best documented in Marche by three sites excavated a few years ago by A. Broglio: Ponte di Pietra, the Grotta della Ferrovia and the Grotta del Prete (Lollini, 1966). Ponte di Pietra is the earliest of the three; it is an open site, occupied towards the end of the last glaciation. The deposit in the Grotta della Ferrovia spans the end of the Würm glaciation and the beginning of postglacial conditions: a microfaunal sequence from the cave showed the change from the cold and arid grassland of the Würm to a damper and more temperate environment (Bartolomei, 1966). Red deer and ibex were killed by the group using the cave and the faunal sample was associated with a toolkit of backed blades and points, truncated pieces and occasional geometric microliths. A radiocarbon date of  $9990 \pm 190$  B.P. (8040 B.C.) was obtained from the third site, Grotta del Prete. The assemblage was similar to that of the Grotta della Ferrovia and the faunal sample consisted of red deer, ibex and cattle.

All three sites are situated a few kilometres from one another. A section across Marche at this point (drawn from the Apennines on a south-west/north-east axis to the sea) traverses four main topographical units: first the mountains themselves, then an inland basin around Sassoferrato, followed by a narrow but high ridge 5-10 kilometres wide, which separates the inland basin from the last unit, the coastal lowlands. All three epigravettian sites are at the end of narrow valleys or gorges which cut through the ridge and so link the inland

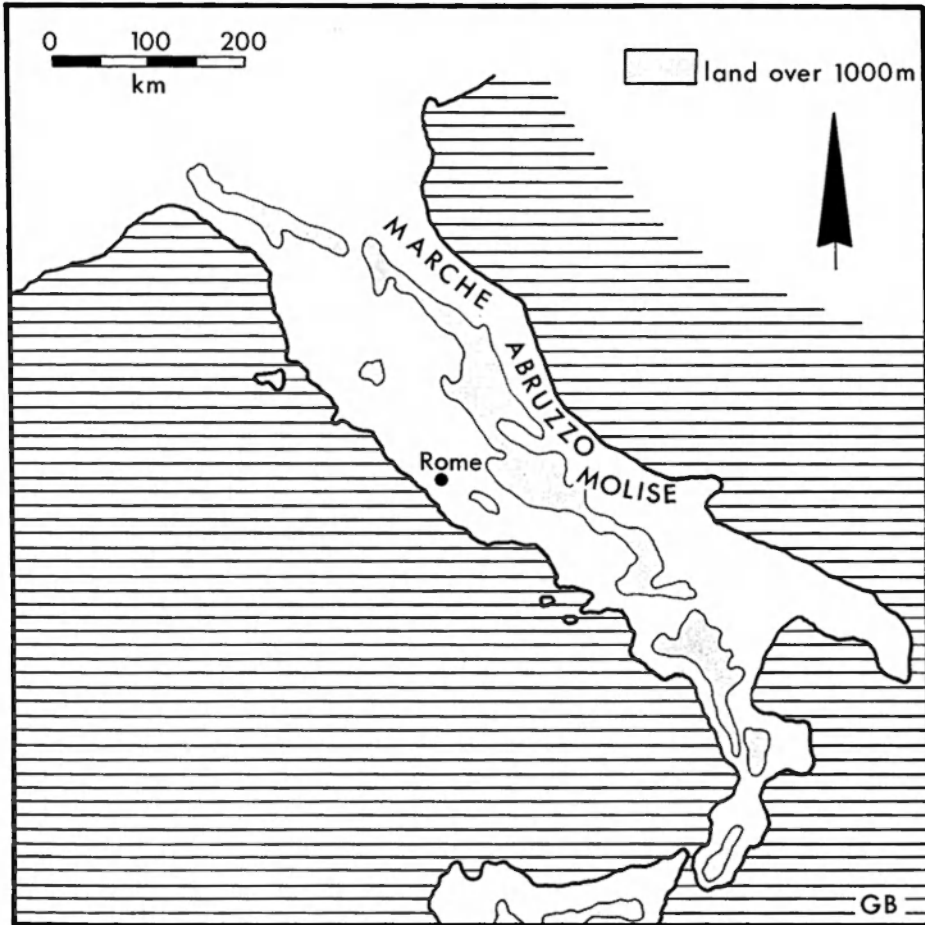


Fig. 14  
 Central Italy, showing the area discussed in the paper.

country with the lowlands. There is little reason to suppose that the kind of constraints affecting stock caused by the seasonality of grazing resources in highland and lowland areas would have been any less severe at the time of the occupation of the three sites — if anything, they were probably only exaggerated by the cold and arid conditions of the late Würm. Herbivores like red deer probably moved up to higher grazing in the Apennines during the summer, returning to the lowlands in the winter. If this were in fact the case, all three sites would have been ideally placed to exploit the deer during their spring and autumn migrations. The ibex killed presumably occupied the ridge above the sites. In addition to these major sites, surface scatters of artifacts marking temporary epipalaeolithic camps are known in Marche both in the mountains and on the lowlands, suggesting that epipalaeolithic exploitation systems pivoted on base camps selected on the lowland/highland ecotone, like the three

discussed above, but also involved short-distance treks inland in the summer and towards the Adriatic coast in the winter in search of game.

There is much the same range of site location in Abruzzo. Several caves with epipalaeolithic deposits are known which are situated like the Marche sites on the lowland/highland ecotone, such as the Grotta Sant'Angelo (Radmilli, 1963) and the Grotta del Colle (Leopardi *et al.*, 1954-5); a small faunal sample recovered at the latter site, like those of the Marche caves, consisted of red deer and ibex. 'Late Bertonian' surface scatters have been recovered on the lowlands of Abruzzo, for example at Campo delle Piane (Leopardi and Radmilli, 1951-2; Radmilli, 1954-5) and, at the other extreme, between 1000 and 2000 metres above sea level in the high Apennines (Leopardi *et al.*, 1954-5; Radmilli, 1959; Tozzi, 1967). In addition sites are known in the intermontane basins of the Abruzzo Apennines. For example, the caves around the edge of the Fucino basin were used occasionally in the Postglacial by groups hunting the game on the mountains above the lake (Cremonesi, 1968; Grifoni and Radmilli, 1964) and an open site on the floor of the basin was probably used as a fishing camp (Cremonesi, 1962). Similar late epigravettian assemblages with very small backed blades, backed points, geometric microliths and microburins have been recovered on the lowlands of the province at Ripoli (Radmilli and Cremonesi, 1963) and at Capo d'Acqua in the Capestrano basin (Tozzi, 1966). Like the Marche sites, the Capo d'Acqua camp was selected with easy access to the Apennine range and was probably used for the exploitation both of the local resources of the lake basin (cattle, pig, roe deer) and of the mobile resource (red deer), for the deer would have traversed the basin in spring and autumn to and from the Apennines. The distribution and the location of the 'late Bertonian' and late epigravettian sites in Abruzzo are identical to those of the Marche sites; the available faunal samples are also very similar. The implication is that a range of resources was exploited by the same kind of short-distance mobile economies postulated for Marche. In Molise our 1974 survey recovered surface material likely to be epipalaeolithic at over seventy findspots throughout the survey area, from the Matese massif to the Adriatic littoral (Barker, 1976). The data are such that we cannot hazard any guesses on the size of the epipalaeolithic population of the three provinces, but their economic systems clearly embraced the whole area, from the central Apennines to the lowlands. This population has to be integrated into any models of neolithic beginnings.

There is unmistakable evidence for continuity between some final epipalaeolithic and some early neolithic industries in this area, as in other parts of Italy (e.g. Acanfora, 1962-3; Bagolini, 1971; Broglio, 1971). On the present radiocarbon dates, pottery (impressed and *figulina*) had appeared in Marche, together with domesticated caprines, by c. 4500 B.C. and in Abruzzo perhaps a little later. The earliest neolithic date (of  $4630 \pm 70$  B.C.) comes from Maddalena di Muccia in Marche (Lollini, 1965). Some five millennia separate the group at this site from that of the Grotta del Prete, but the origins of the geometric flint industry recovered from Maddalena di Muccia can more reasonably be found in the epigravettian tradition in Marche than in a putative 'neolithic homeland' outside Italy. Likewise in Abruzzo the flint industry of the early neolithic camp at Capo d'Acqua (Bonuccelli and Faedo, 1968), which consists of blades and flakes (both retouched and unretouched), scrapers, a few truncated and denticulated tools and rare backed blades, has an obvious parent in the assemblage of the epipalaeolithic site found a few hundred metres away (Tozzi, 1966). Both sites have faunal samples dominated by the bones of anim-

als such as red deer and pig. Maddalena di Muccia and Capo d'Acqua are examples of 'neolithic' sites where the economy of the group was in fact much the same as that of the epipalaeolithic population in the area, although augmented by the herding of a few caprines. Other sites with early neolithic pottery, however, have very different flint assemblages, consisting mostly of plain and retouched blades, a few scrapers and burins, and have faunal assemblages dominated by the bones of domestic animals. The different types of toolkit, different faunal samples and different site locations suggest that there was no single 'neolithic economy', but rather that a range of economies was practised in Marche and Abruzzo by groups using similar neolithic pottery.

In Marche, for example, Ripabianca di Monterado, a lowland site dated a few centuries later than Maddalena di Muccia towards the end of the fifth millennium B.C., has an entirely different blade industry and a faunal sample dominated by sheep and goats (Broglia and Lollini, 1963; Lollini, 1965); the site was probably a winter camp used by shepherds who summered in the Apennines at sites such as Arcevia (Alessio *et al.*, 1967) and Serra San Abbondio (Lollini, 1971). By the later Neolithic, probably by the latter part of the third millennium B.C., the inland camps were augmented by permanent settlements in the intermontane basins such as Berbentina (Lollini, 1965). At about the same time the first evidence for cereal cultivation in Marche appears on the lowlands, at sites dating to the later Neolithic such as S. Maria in Selva (Evet and Renfrew, 1971). On this evidence it would seem that the integration of cereal cultivation with the earlier herding economies on the Marche lowlands in the latter part of the fourth millennium B.C. was accompanied by the development of more intensive patterns of exploiting the inland resources by both shepherd groups and new, permanent, communities.

The prehistory of Abruzzo in the neolithic period reveals different patterns of subsistence and different rates of economic change. On the present evidence, for example, cereal cultivation seems to have developed at least a millennium earlier than in Marche. Two groups of sites are known in the province with earlier neolithic pottery. The first group consists of sites which have produced evidence for mixed economies of stock-keeping and plant cultivation, located on the light ridge soils best suited for agriculture with an early neolithic technology — sites like Pianaccio (Leopardi *et al.*, 1954-5) and Villaggio Leopardi (Cremonesi, 1966). The second group is better positioned for herding economies, for these sites are located at the upper limit of the arable immediately below the Apennine summer pastures; the faunal samples from sites in this group such as the Grotta Sant'Angelo (Radmilli, 1965, 1967, 1968) and the Grotta dei Piccioni (Radmilli, 1959, 1962) support this interpretation.

Later neolithic sites in Abruzzo also cluster into the same two groups, the one mainly agricultural (e.g. Fossacesia: Radmilli, 1970, 1971; Ripoli: Cremonesi, 1965) and the other mainly pastoral (e.g. Grotta dei Piccioni; Grotta delle Marmitte: Grifoni Cremonesi, 1969; Paterno: Fraia, 1970). However, it would be misleading to lump together the 'arable' later neolithic sites of the Marche and Abruzzo lowlands as one entity, practising one economy. The early neolithic 'arable' sites of Abruzzo like Villaggio Leopardi and the later neolithic 'arable' sites of Marche like S. Maria in Selva are all situated on the lighter ridge soils above the valley floors. Barley, the commonest cereal found at these sites (Evet and Renfrew, 1971), is well suited to the lighter, more tractable soils. Ripoli, however, the later neolithic 'type site' of Abruzzo, is situated on the heavier soils of the Vibrata valley floor; daub from the site contained grains of emmer, barley and bread wheat, which would have been better suited to

the heavier soils around the site (Evetts and Renfrew, 1971). Neolithic sites of this period in Abruzzo are found both on the light ridge soils and on the heavy valley floor soils; it would appear that the expansion of settlement in lowland Abruzzo at this time, to include the valley floors, was accompanied by more developed agricultural systems involving a greater range of cereals than before. The process of settlement expansion to the heavier soils may have occurred only in the following millennium in Marche. The final neolithic and eneolithic domestic sites of the third millennium B.C. are found both on the ridges and in the river valleys of the lowlands. Further changes in the exploitation of the province took place in the second millennium B.C. In this period we know of both inland and lowland bronze age settlements in Marche. At S. Maria in Selva, the later neolithic lowland settlement, the percentages of caprines, cattle and swine were approximately equal. So too in the Bronze Age the stock economies of lowland sites like S. Paolina di Filottrano (Rellini, 1931) and Bacchero (Lollini, 1959) were based equally on caprines, cattle and swine. The caprines and cattle almost certainly could not have been kept in the vicinity of these lowland settlements in the summer and were probably driven inland for the dry season, perhaps via transit sites such as the Grotta del Mezzogiorno (Puglisi, 1956) to inland camps in the Apennine valleys such as Pievetorina (Rellini, 1931). There are also several bronze age settlements in the hinterland of the province, especially in the Sassoferato basin (e.g. Monte San Croce: Lollini, 1957). Inland settlements had existed in this area from the later neolithic period, but it is clear that stock-keeping did not remain unchanged from that time until the second millennium B.C.: caprines in particular grew less and less important. For example, caprines made up 60 per cent of the fauna at late neolithic Berbentina, 30 per cent in the final neolithic level 6 of Attiggio, 22 per cent in the eneolithic level 4 of the same site and were insignificant at Monte San Croce in the Bronze Age. The decline in sheep and goats at the inland sites could perhaps have been the result of population expansion on the lowlands depriving the inland groups of the winter pastures necessary for a successful herding economy.

In Abruzzo the pattern of exploitation established in the latter part of the Neolithic seems to have continued in later periods. Bronze age settlement in the Vibrata valley, for example, like the later neolithic, included both sites on the valley floor and sites on the neighbouring ridges (e.g. Costa del Monte and Fortelezza: Radmilli, 1965). Sites are still found at the upper limit of the arable on the lowland/highland ecotone (e.g. Grotta dei Piccioni; Grotta Sant'Angelo; Campovalano: Radmilli, 1971). Summer shepherd camps at high altitudes are known, for example at Collarmele 1000 metres above sea level (Radmilli, 1965) and on the Maiella at Blokhaus, 2000 metres above sea level (Radmilli, 1959). In the Fucino basin there were also fishing settlements by the lake such as Ortucchio (Radmilli, 1965) and the caves at the edge of the basin such as the Grotta la Punta (Cremonesi, 1968) were still used by herding groups, as in the Neolithic. Presumably the shepherds from such sites wintered on the lowlands of Abruzzo. It is apparent that there was a range of economic systems in Abruzzo during the second millennium B.C., which cannot usefully be classified together as a single bronze age economy such as 'pastoralism' or 'sedentary agriculture'.

The exploitation of central Italy east of the Apennines in the classical period was very different from that of the Bronze Age in the second millennium B.C. By the end of the first millennium the rural population of the eastern lowlands was very large: Pliny, for example, refers to '*quondam uberrima multitudine*'

(Pliny, *Nat. Hist.* III.13.18). The area was the recruiting ground for the armies of the civil wars in the first century B.C., when Pompey boasted that he had only to stamp his foot in Picenum to raise an army (White, 1970, p. 70). By this time the Ager Gallicus (the Marche lowlands) was exploited by small intensive farms for cereals, olives and vines, with very little emphasis on stock-keeping,

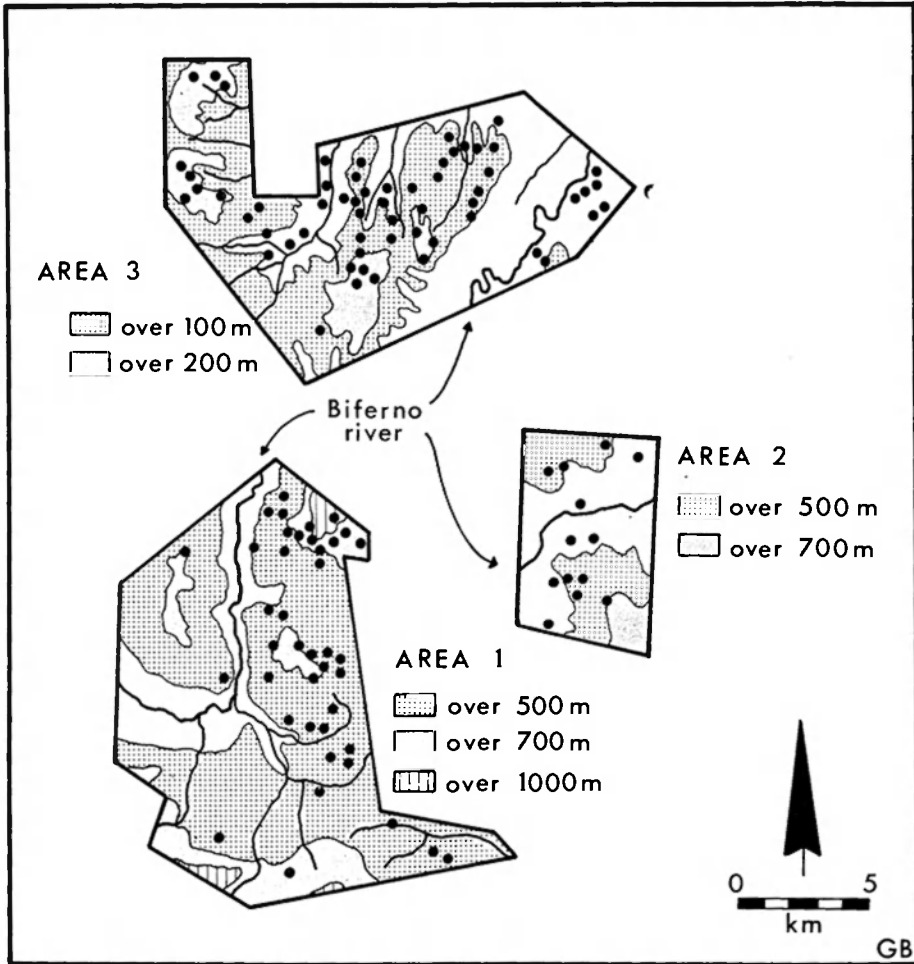


Fig. 15  
*The distribution of Samnite farmsteads discovered in the Biferno valley in three areas surveyed. Area 1 is at the head of the valley, Area 2 midway down the valley and Area 3 near the Adriatic coast.*

despite the proximity of the summer pastures on the Apennines (White, 1970, p. 78). In the Bronze Age the flocks and herds were an important part of the economies of the lowland settlements of Marche and Abruzzo but by the Roman period they had gone and the exploitation of this part of Italy had changed dramatically. In view of this, it is very unfortunate that remarkably little is known about settlement patterns and economic systems in Marche and Abruzzo during the intervening period, the Iron Age.

In Molise, however, the 1974 survey produced a very large amount of new data for rural settlement during the Italic Iron Age. Scores of Italic 'farmsteads' dating to the middle and second half of the first millennium B.C. were discovered in the Biferno valley, marked by heavy scatters of coarse and fine pottery, tile and *dolium* fragments, in areas some 50 to 100 metres in diameter. The 'farmsteads' occurred regularly at roughly half-kilometre intervals in the areas surveyed, on the spurs of light soil above the Biferno valley. The intensity of Italic settlement is very impressive, comparing very favourably in many areas with the distribution of modern farms and hamlets. The Greek colonies of Campania and Apulia introduced olive and vine cultivation to peninsular Italy from c. 750 B.C. and it is probably significant that the appearance of major scatters of sites in Molise follows on from this date. The same rapid increase in numbers of sites in the middle of the first millennium B.C. was revealed by the British School at Rome's survey of the Ager Veientanus, the territory of the city of Veii to the north of Rome (Ward-Perkins *et al.*, 1968). The evidence from these surveys in two different parts of peninsular Italy suggests that the change from prehistoric mixed economies to intensive polyculture (of olives, vines and cereals with little or no stock-keeping) occurred in many lowland areas around the middle of the first millennium B.C.

This hypothesis, that iron age economy on the lowlands was based on polyculture, will be tested in our future work in Molise by the excavation of an Italic farmstead. If my interpretation of the survey evidence is accepted, then the change in subsistence patterns in many lowland areas at this time from prehistoric mixed economies to intensive small farming was at least as significant as any in the prehistoric period, for it established the pattern of small intensive arable farms known from the Roman period which has survived to the present day. The development of this pattern of lowland exploitation must obviously have had major repercussions for the stock economies of the inland groups. It has been suggested that one of the major factors leading to hostilities between Rome and the Samnites, the mountain people of southern Abruzzo and Molise, was the expansion of settlement on the northern plains of Campania in the fourth century B.C., depriving the Samnite peoples of the winter pastures needed for their animals (Salmon, 1967, pp. 69-70); likewise Samnite incursions into the eastern lowlands of Molise and Apulia in the same century (Salmon, 1967, p. 109) may well have been caused by similar pressure on winter grazing lands. Their natural, most accessible, winter pastures were on the eastern lowlands of Abruzzo and Molise, but these were occupied by peasant farmers in the Roman period. The well-known inscription (CIL.IX.2438) over the western gate of Saepinum, a Roman town in Molise, makes it clear that, already by the second century A.D., imperial drove-roads like the medieval *tratturi* had been established through the lowland arable, providing artificial cross-country routes for the transhumant flocks between the Apennine summer pastures of Marche, Abruzzo and Molise and the winter pastures of Apulia. The dichotomy between transhumant stock-keeping and peasant farming in the three provinces has endured to this day.

### 3. Conclusion

In this paper I have considered very briefly the postglacial economic prehistory of one area, central Italy east of the Apennines. In the past we have tended to assume, either explicitly or implicitly, identical economic developments and



equal rates of change in subsistence systems over wide areas. The evidence of the part of Italy discussed in this paper argues strongly against this hypothesis. As far as this area is concerned, I would suggest that we cannot define one economic system satisfactorily as 'typically neolithic' and compare this with a 'typical' epipalaeolithic, bronze age or iron age economy. Nor can we equate 'neolithic' with 'early agriculture'. Some of the earliest neolithic flint industries, faunal samples and site locations were essentially epipalaeolithic in character. The way of life of some groups with early neolithic pottery had more in common with that of the earlier epipalaeolithic population than with that of contemporary groups practising various types of stock-keeping and/or cereal cultivation. The early neolithic 'arable' sites of lowland Abruzzo could be the settlements of new groups, but the greater part of the evidence in the study area suggests a model of negligible population change in the fifth and fourth millennia B.C., of a series of adaptations at different rates by the indigenous groups to new resources.

The process of economic adaptation in this area is not simply a phenomenon worth studying in the neolithic period. We are clearly dealing with a complex prehistory, not with a series of economic phases such as 'hunting', 'herding', or 'arable farming', which can be equated with cultural phases like the Neolithic or the Iron Age and can be studied in isolation from one another. Economic changes which took place in this area *within* cultural stages throughout the Postglacial were at least as significant for the history of animal and plant husbandry as the first appearance of the modern animal and plant domesticates at some sites in the fifth millennium B.C. The evidence from this area cannot easily be reconciled with Ammerman and Cavalli-Sforza's hypothesis that the spread of neolithic pottery across Europe is virtually the same thing as the spread of neolithic farmers (Ammerman and Cavalli-Sforza, 1971, p. 674); here at least there were several 'neolithic economies' which were but one part of a longer story, not of a succession of economic stages correlating with cultural stages, but rather of differing economic systems changing at different rates in different parts of the study area. It may be thought that central Italy is simply an atypical part of Europe, but this seems unlikely in view of the fact that wherever adequate economic data have been collected, the simplistic culture = economy framework has disappeared (e.g. Bulgaria: Dennell and Webley, 1975; northern Italy: Jarman, 1971; Southern Italy: Jarman and Webley, 1975; Switzerland: Higham, 1967; Yugoslavia: Barker, 1975b). As far as the beginnings of farming are concerned, these studies demonstrate that climate, environment (both on a regional and a local scale) and demography almost certainly played important roles in the dispersal of agricultural techniques across Europe. Implicit in many studies of economic change in prehistoric Europe has been the view that prehistoric communities adopted new, more intensive, forms of subsistence because, being more productive, they would have been inherently more attractive. Certainly this assumption underlies many studies of the spread of early agriculture in Europe — that it was obviously a better way of life. In her study of modern farming systems, however, Boserup (1965) demonstrated very clearly that primitive communities with little or no room for manoeuvre rarely change their subsistence base for this kind of reason. She argued that a community will endeavour to maintain its level of economic output with its existing level of economy and technology, but that as population rises so the output of the system decreases until such time as the community is compelled to increase its output and adopt a more productive but more labour intensive economy. If population continues to rise the new system will have to be

abandoned eventually for a yet more intensive system. In other words, population pressure is likely to generate successive economic and technological changes. Of course short-term fluctuations in subsistence need not fit into this model, but few of these in any case will appear in the archaeological record of the prehistoric period. I would suggest that Boserup's model of economic change is likely to be at least as relevant to the study of the economic prehistory of Europe, to the problem of why and how increasingly more intensive systems of exploitation developed, as current anthropocentric models, in which culture change stimulates economic change. Economic systems in the area discussed in this paper changed from low to high productivity, from the epipalaeolithic camp to the Samnite farm, only at the expense of becoming labour intensive systems, requiring the expenditure of more input of labour to maintain the productivity necessary to maintain the population. We are only beginning to construct the economic prehistory of Europe, but this much is clear: economic change in the culture=economy model could be ascribed to monocausal, usually cultural, explanations; with the demise of this model there seems every reason to expect that the new and complex economic prehistories which are emerging now in many areas of Europe will generate new and more elegant models for the mechanisms of economic change.

*Riassunto:* In quest'articolo viene discussa l'economia preistorica del periodo post-glaciale nell'Italia centrale ad est dell'Appennino. Nel modello tradizionale, le varie culture sono considerate coeve con le varie economie, per cui la preistoria della zona è stata vista come una serie di periodi economici (p.e. della caccia, dell'allevamento del bestiame o dell'agricoltura). L'autore suggerisce un abbandono del modello tradizionale perché nuove ricerche mettono in evidenza un'economia preistorica ben più complessa, nella quale i vari sistemi economici sono apparsi a periodi diversi in varie parti della zona. L'autore suggerisce che il modello demografico proposto dal Boserup per spiegare cambiamenti economici possa essere più valido, per spiegare anche i dati dell'Italia centrale, che il modello tradizionale 'culturale' nel quale cambiamenti economici sono spiegati in termini esclusivamente culturali-cronologici.

*Résumé:* Cet article considère l'économie préhistorique de l'époque post-glaciaire en Italie Centrale, à l'est de la chaîne des Apennines. Le modèle traditionnel a toujours identifié les cultures aux systèmes économiques, en présentant la préhistoire de la région comme une série de phases économiques tel que 'la chasse', 'l'élevage', ou 'la culture de la terre'. Dans cet article l'auteur discute de la nécessité de remplacer ce modèle traditionnel. En effet la structure économique de la préhistoire s'avère bien plus complexe: nous trouvons différents systèmes économiques qui se sont développés à des moments différents, dans différents endroits de cette région. Le modèle démographique du changement économique proposé par Boserup peut nous aider à expliquer cette évidence, mieux que le modèle traditionnel dans lequel les changements économiques sont attribués aux facteurs culturels.

#### REFERENCES

- ACANFORA M.O.  
1962-3 - Gli scavi di Valle Ottara presso Cit-  
taducale, *Bullettino Paleontologia Ita-  
liana*, vol. 71-72, n.s. 14, pp. 73-154.
- ALESSIO M., F. BELLA, F. BACHERI &  
C. CORTESI  
1967 - University of Rome Carbon-14 dates  
V, *Radiocarbon*, vol. 9, pp. 346-367.

- AMMERMAN A.J. & L.L. CAVALLI-SFORZA  
1971 - Measuring the rate of spread of early farming in Europe, *Man*, vol. 6, fasc. 1, pp. 674-688.
- BAGOLINI B.  
1971 - Considerazioni preliminari sull'industria litica dei livelli neolitici di Romagnano (Trento) (scavi 1969-1970), *Preistoria Alpina*, vol. 7, pp. 107-133.
- BARKER G.W.W.  
1975a - Prehistoric territories and economies in central Italy, *Palaeoeconomy*, London (Cambridge University Press), pp. 111-175.  
1975b - Early neolithic land use in Yugoslavia, *Proceedings of the Prehistoric Society*, vol. 41, pp. 85-104.  
1976 - *The Archaeology of Early Man in Molise*, Rome (Soprintendenza ai Monumenti alle Antichità e alle Belle Arti del Molise), (in press).
- BARTOLOMEI G.  
1966 - Diagramma microfaunistico con Siccista della Grotta della Ferrovia nella 'Gola della Rossa' del fiume Esino presso Iesi (Ancona), *Annali dell'Università di Ferrara*, Sez. 9, vol. 4, pp. 69-75.
- BONUCCELLI G. & L. FAEDO  
1968 - Il villaggio a ceramica impressa di Capo d'Acqua, *Atti della Società Toscana di Scienze Naturali*, Ser. A., vol. 75, pp. 87-101.
- BOSERUP E.  
1965 - *The Conditions of Agricultural Growth*, London (Allen and Unwin).
- BROGLIO A.  
1971 - Risultati preliminari delle ricerche sui complessi epipaleolitici della Valle dell'Adige, *Preistoria Alpina*, vol. 7, pp. 135-241.
- BROGLIO A. & D.G. LOLLINI  
1963 - Nuova varietà di bulino su ritocco a stacco laterale nell'industria del neolitico medio di Ripabianca di Monterado (Ancona), *Annali dell'Università di Ferrara*, Sez. 15, vol. 1, pp. 143-155.
- CLARK J.G.D.  
1965 - Radiocarbon dating and the expansion of farming culture from the Near East over Europe, *Proceedings of the Prehistoric Society*, vol. 21, pp. 58-73.
- CREMONESI G.  
1962 - I resti degli ultimi mesolitici del Fucino, *Atti della Società Toscana di Scienze Naturali*, Ser. A., vol. 69, pp. 447-456.  
1965 - Il villaggio di Ripoli alla luce dei recenti scavi, *Rivista Scienze Preistoriche*, vol. 20, pp. 85-155.
- 1966 - Il villaggio Leopardi presso Penne in Abruzzo, *Bullettino Paleontologia Italiana*, vol. 75, n.s. 17, pp. 27-49.
- 1968 - Contributo alla conoscenza della preistoria del Fucino: la Grotta di Ortucchio e la Grotta la Punta, *Rivista Scienze Preistoriche*, vol. 23, pp. 145-204.
- DENNELL R.W. & D. WEBLEY  
1975 - Prehistoric settlement and land use in southern Bulgaria, *Palaeoeconomy*, London (Cambridge University Press), pp. 97-109.
- EVETT D. & J.M. RENFREW  
1971 - L'agricoltura neolitica italiana: una nota sui cereali, *Rivista Scienze Preistoriche*, vol. 26, pp. 403-409.
- FRAIA T., de  
1970 - Tracce di uno stanziamento all'aperto presso Paterno (L'Aquila), *Atti della Società Toscana di Scienze Naturali*, Ser. A, vol. 77, pp. 289-307.
- GRIFONI CREMONESI R.  
1969 - La grotta culturale delle 'Marmite' presso Ofena (L'Aquila), *Atti della Società Toscana di Scienze Naturali*, Ser. A, vol. 76, pp. 151-194.
- GRIFONI R. & A.M. RADMILLI  
1964 - La Grotta Maritza e il Fucino prima dell'età romana, *Rivista Scienze Preistoriche*, vol. 19, pp. 53-127.
- HIGHAM C.F.W.  
1967 - Stock rearing as a cultural factor in prehistoric Europe, *Proceedings of the Prehistoric Society*, vol. 33, pp. 84-106.
- JARMAN M.R.  
1971 - Culture and economy in the north Italian Neolithic, *World Archaeology*, vol. 2, pp. 255-265.
- JARMAN M.R. & D. WEBLEY  
1975 - Settlement and land use in Capitanata, Italy, *Palaeoeconomy*, London (Cambridge University Press), pp. 177-221.
- LEOPARDI G. & A.M. RADMILLI  
1951-2 - Giacimento preistorico all'aperto di Campo delle Piane (Pescara), *Bullettino Paleontologia Italiana*, n.s., vol. 8, parte 4, pp. 89-92.
- LOLLINI D.G.  
1957 - Stanziamento appenninico di Monte di S. Croce (Sassoferrato), *Bullettino Paleontologia Italiana*, vol. 66, n.s. 11, pp. 289-301.  
1959 - Appenninici, Protovillanoviani e Piceni nella realtà culturale delle Mar-

- che, *Atti 2 Convegno di Studi Etruschi*, pp. 45-60.
- 1965 - Il Neolitico nelle Marche alla luce delle recenti scoperte, *Atti 6 Congresso Istituto Italiano per la Preistoria e Protostoria*, vol. 2, pp. 309-315.
- 1966 - Notiziario, *Rivista Scienze Preistoriche*, vol. 21, p. 418.
- 1971 - Notiziario, *Rivista Scienze Preistoriche*, vol. 26, pp. 371-372.
- PUGLISI S.M.
- 1956 - Gli scavi nella Grotta del Mezzogiorno, *Bullettino Paleontologia Italiana*, vol. 65, n.s. 10, pp. 499-521.
- RADMILLI A.M.
- 1954-5 - Una nuova facies del paleolitico superiore italiano presente in Abruzzo, *Bullettino Paleontologia Italiana*, vol. 64, n.s. 9, pp. 73-105.
- 1959 - Gli insediamenti preistorici in Abruzzo, *L'Universo*, vol. 39, pp. 861-898.
- 1962 - *Piccola Guida della Preistoria Italiana*, Florence (Sansoni).
- 1963 - *La Preistoria d'Italia alla Luce delle Ultime Scoperte*, Florence (Istituto Geografico Militare).
- 1965 - Considerazioni sull'età del bronzo in Abruzzo, *Abruzzo*, vol. 3, pp. 135-149.
- 1967 - I villaggi a capanne del neolitico italiano, *Archivio di Antropologia ed Etnologia*, vol. 97, pp. 53-62.
- 1968 - La situazione degli studi paleontologici in Abruzzo, *Atti 2 Convegno Nazionale della Cultura Abruzzese, Abruzzo*, vol. 6, pp. 45-58.
- 1970 - Notiziario, *Rivista Scienze Preistoriche*, vol. 25, p. 424.
- 1971 - Notiziario, *Rivista Scienze Preistoriche*, vol. 26, pp. 483-484.
- RADMILLI A.M. & G. CREMONESI
- 1963 - Note di preistoria abruzzese, *Atti 7 Riunione Istituto Italiano di Preistoria e Protostoria*, pp. 127-153.
- RELLINI U.
- 1931 - Le stazioni enee delle Marche di fase seriore e la civiltà italiana, *Monumenti Antichi*, vol. 34, pp. 129-280.
- SALMON E.T.
- 1967 - *Samnium and the Samnites*, London (Cambridge University Press).
- TOZZI C.
- 1966 - Il giacimento mesolitico di Capo d'Acqua (L'Aquila), *Bullettino Paleontologia Italiana*, vol. 75, n.s. 17, pp. 13-25.
- 1967 - Giacimenti paleolitici in superficie sulle montagne abruzzesi, *Atti della Società Toscana delle Scienze Naturali*, Ser. A., vol. 74, pp. 107-119.
- WARD-PERKINS J.B., A. KAHANE & L. MURRAY THREIPLAND
- 1968 - *The Ager Veientanus north and east of Veii*, Papers of the British School at Rome, vol. 36, Rome (British School).
- WHITE K.D.
- 1970 - *Roman Farming*, London (Thames and Hudson).