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15. PALAEOECOLOGICAL IMPLICATIONS FOR THE LATER PREHISTORY OF NORTHERN ITALY

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At the beginning of the Atlantic period, the late Mesolithic Castelnovian Culture replaced the earlier Sauveterrian all over Northern Italy (Kozłowski and Kozłowski 1979). Great concentrations of sites of this period are known in the North Eastern Alpine region (Bagolini *et al.* in press; Broglio 1971; Cremonesi 1978-81), in the Ligurian (Biagi and Maggi in press) and Emilian Apennines (Biagi *et al.* 1981), while there are new discoveries of Castelnovian encampments scattered along the fluvial terraces of the Central Po Valley as well as on the shores of small intermorainic basins of lakes Garda and Iseo (Biagi 1980). Environmentally, the area between the Emilian Apennines and the Alps had a very complicated tectonic and geomorphological evolution. Climatic conditions were highly favourable to the development of a woodland cover dominated by different deciduous oak species, alder and ash, as shown by the pollen diagrams and charcoal analyses (Bertoldi 1968; Beug 1964; Biagi *et al.* 1981; Lona 1960). Most of the environmental and faunal data provided by the Castelnovian camps come from the rock shelters of the Adige Valley (Boscato and Sala 1980; Cattani 1977a) and from one cave in the Berici Hills in the Veneto (Cattani 1977b).

The only known site of this period to have provided faunal data is that of Gazzaro situated in the Po Valley at the foot of the Emilian Apennines (Alessio *et al.* 1980). Here the hunting of red deer and roe deer seems to predominate over that of wild boar.

This camp, on the right bank of the Enza river, consists of a few hearths. The charcoal from these hearths was of oak, ash and fir (Biagi *et al.* 1981).

The first Neolithic villages appear at the end of the 5th millennium b.c. North of the Po, they are often located on fluvial terraces or on the shores of small intermorainic lakes or, on the northern edge of the Apennines, on wide fluvial fans (Biagi and Cremaschi 1981; Gruppo Ricerca Geomorfologia C.N.R. 1982). They belong to two different cultures: the Fiorano, distributed south and north east of the Po, and that of Vhò, north of the same river (Bagolini and Biagi 1975; 1976; Malavolti 1951-52). The site of Vhò, Campo Ceresole, which lies on a very low hill once surrounded by swamps and marshy areas, as indicated by the environmental data (Biagi *et al.* 1983; Cattani 1975; Girod 1978; 1982) extended over at least 20,000 m.² (Bagolini *et al.* 1977). It has been dated to 4220±110 b.c. (I 11445), while the nearby settlement of Ostiano, Dugali Alti (Biagi 1979), produced a

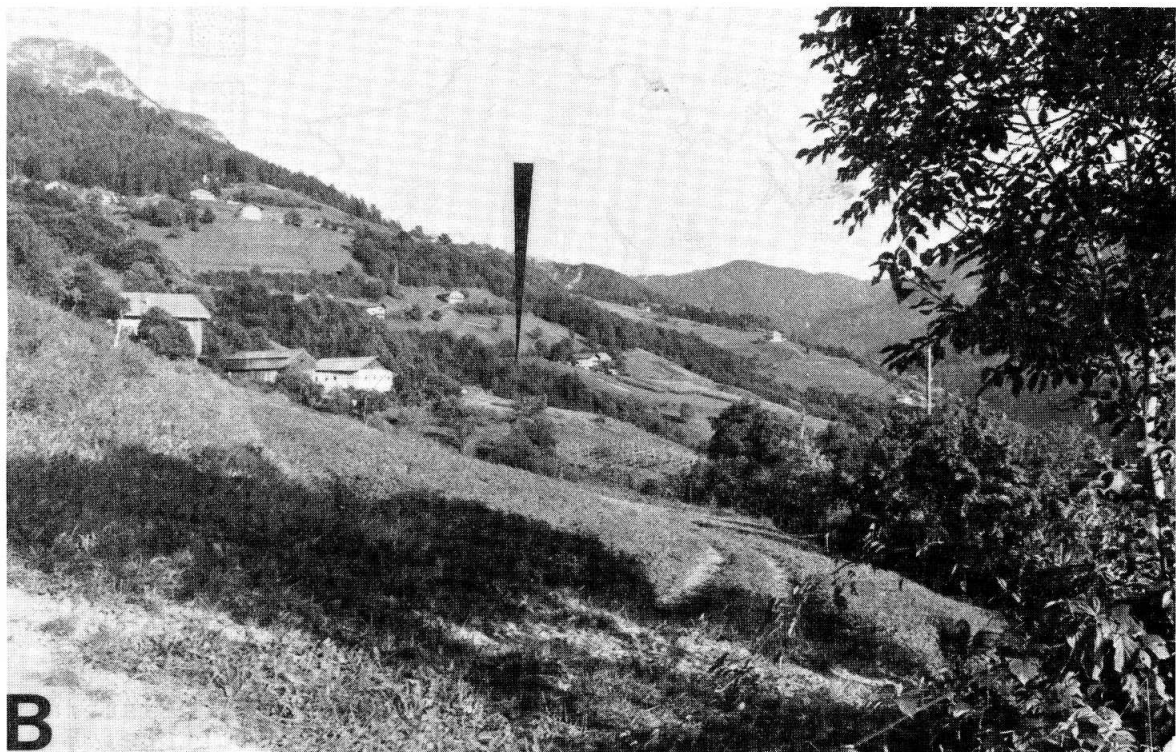
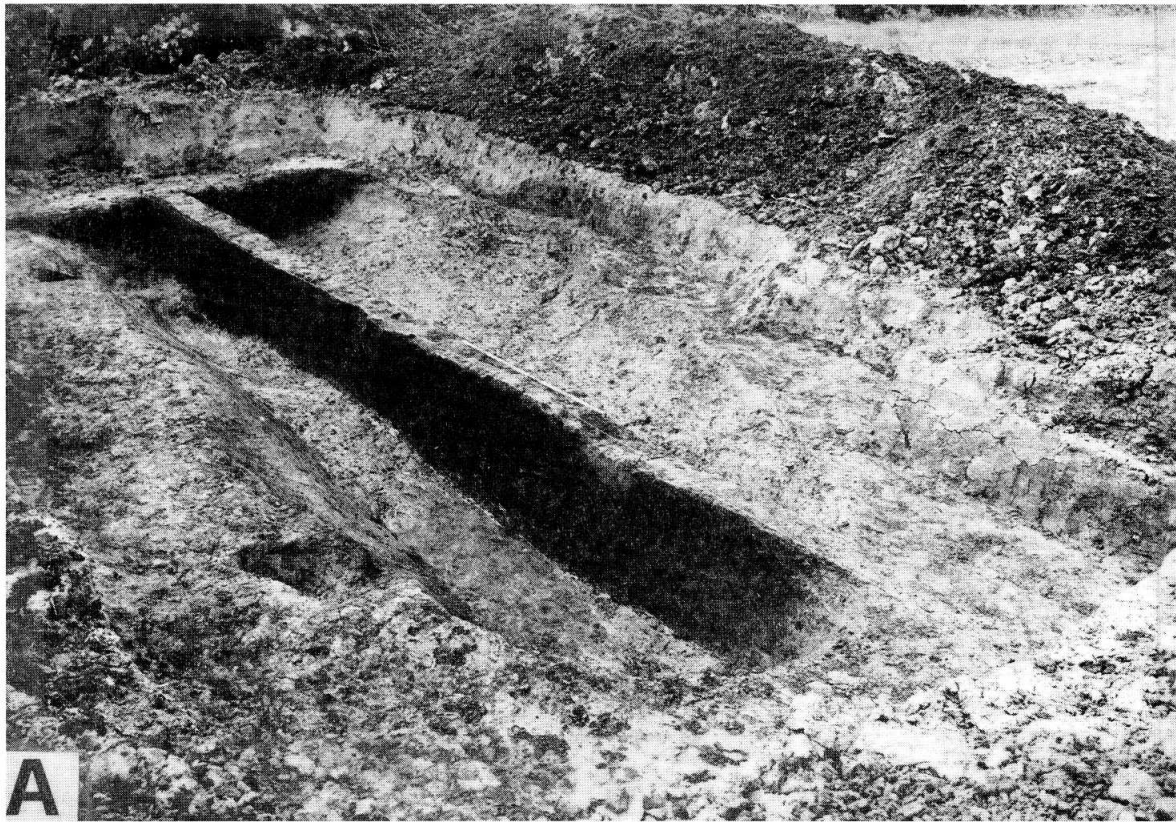


Plate 15.1. - A) Pit IV at the early Neolithic, Vhò Group, site of Ostiano Dugali Alti, whose profile shows traces of hydromorphy. B) The terraced site of Völseraicha (Aica di Fiè), in south Tyrol (arrow) settled during the IVth, IIIrd and IInd millennia b.c. (Photo P. Biagi).

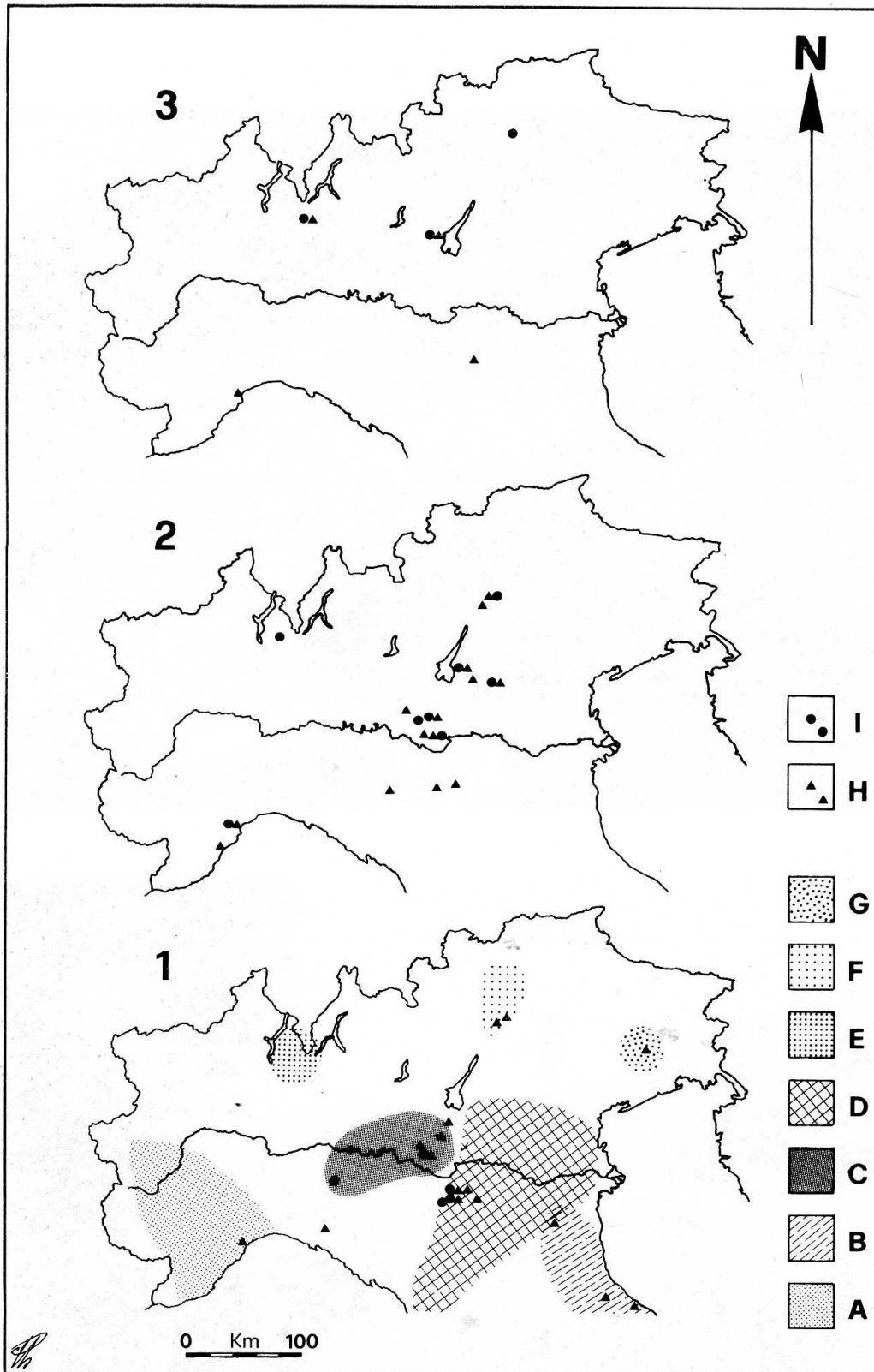


Fig. 15.1. Evidence of north Italian agriculture in early Neolithic (1), middle Neolithic, Square Mouth Pottery Culture (2) and late Neolithic Chassey and Lagozza Culture (3) period. A) Western Impressed Ware Culture, B) Eastern Impressed Ware Culture, C) Vhò Group, D) Fiorano Culture, E) Isolino Group, F) Gaban Group, G) Fagnigola Group. H) Agricultural implements (querns and/or sickles). I) Wheat and/or barley grains.

¹⁴C date of 4140±110 b.c. (Bln 2795) (Quitta pers. comm. 1983) and that of Cecima, in the Staffora Valley, where a shallow pit, or 'hut floor foundation' according to the excavator, has been recently brought to light, gave a date of 3980±130 b.c. (Har 5123) (Simone in press). Quite an opposite picture is given by the Fiorano villages extending south of the Po. Here the early Neolithic diet was based on domesticated animals, mostly cattle (Malavolti 1951-52).

Only one site of this period has been investigated in Friuli. Some early Neolithic pits were excavated at Fagnigola in 1974 and in 1979 (Biagi 1975). Pit IV and pit I produced two radiometric dates of 3810±160 b.c. (R 1545) and 4100±90 b.c. (R 1544) respectively. All the structures brought to light consist of cylindrical pits, one of which, possibly a storage pit, was lined with clay. At Fagnigola, the few bones recovered, indicate that the economy of the site was mainly based on hunting. Burnt hazelnut shells, but no seeds, come from the pits, while agriculture is only documented by a few sickle blades with oblique gloss (Biagi and Nisbet in press).

The earliest agriculture in the Po Plain was practised in an environment characterized by stable conditions and formation of Sols bruns lessivés (Haploxeralfs) with a development of a forest dominated by oak and ash, hornbeam, lime, elm, alder and maple, though microclimate and local ecological conditions must be taken into account. Only two of the sites previously mentioned produced evidence of domesticated plants: Vhò, Campo Cersole, with einkorn and emmer, and Cecima, with barley. Barley was cultivated also at the Fiorano sites of Albinea and Rivalentella as shown by seed impressions on pottery (Evetts and Renfrew 1971) (Fig. 15.2/1).

Early Neolithic people seem to have preferred to settle on the Holocene flat terraced areas of the Po valley as well as on the partly drained alluvial plain soils of the Apennine fringe. The soils from some of these sites, like Vhò and Ostiano, show clear evidence of hydromorphy (Plate 15.1/A) while well drained soils were selected by the Neolithic settlers of the IVth millennium b.c. The dominant woodland covering of the Po Plain at that time was composed of oak, ash, wild pear and sorb with maple and lime. Pedunculate oak (Quercus robur) seems to be the commonest oak. Some of these sites, like Cavriana, Tobiera Cascina, show evidence of Turkey Oak (Quercus cerris), while pine and poplar appear at Cecima, in the Apennine area.

The Square Mouthed Pottery Culture makes its appearance at the beginning of the IVth millennium b.c. It reached its apex at the middle of the millennium to decline soon afterwards (Bagolini et al. 1979) with the spread of the Chassey and Lagozza Cultures from the south west (Biagi in press). The villages of this Culture, in the Central Po valley, are often located on fluvial terraces. Many of these have been discovered in the region between the old bed of the Oglio river and the lowlands extending towards the Po. Settlements of this Culture have also been found in the

morainic amphitheatre of lake Garda, both on top of the moraines and along the shores of the small lakes. In this region the economy of the Square Mouthed Pottery people shows radical changes from that of the preceding early Neolithic communities as can be seen also from the different flint sources exploited (Cremaschi 1978), and being based on domesticated animals, especially cattle, at the beginning of the IVth millennium b.c., and sheep/goats in the later phases (Biagi et al. 1983). There seems to be a tendency towards the fragmentation of the mixed oak forest certainly due to the expansion of the human settlements.

Consequently there is a gradual increase in plants of ecotonal environment like hazel and cornelian tree, more or less spread between diverse floral associations. Hexaploid wheat and legumes make their first appearance even though the best represented cereal is still naked barley followed by emmer and einkorn (Fig. 15.1/2).

Between the IVth and IIIrd millennium b.c., most of the sites of the Central Po Valley were abandoned. The changes in land use had a profound effect on the structure of the vegetation and soil, in particular in the development of the Sols bruns lessivés which formed during the early and middle Neolithic. These soils were badly or completely eroded during the Subboreal period. This phenomenon has been studied in detail thanks to the excavations carried out at Casatico di Marcaria and Rivarolo Mantovano in the Province of Mantua (Biagi et al. 1983).

The abandonment of sites, as a consequence of final or post Neolithic deforestation and, perhaps, of a climatic deterioration (identified in the Swiss Alps as the Piora phase (eg. Zoller 1960)), could have caused an interruption of the fersiallitic brown soils of the Atlantic period and a change of the forest ecosystem with a progressive break-up of the canopy. However, the cold Piora oscillation, dated between 3250 and 2050 b.c., seems to play a minor influence on the human settlement south of the Alps, as in this period increasing evidence of the spread of upland farming is documented, particularly at Aica di Fiè, at about 1000 m., where barley was grown on terraced fields of the slope (Bagolini et al. 1982) (Plate 15.1/B).

The changing landscape of the IIIrd millennium b.c. could explain why the Lagozza sites and the associated palaeo-environmental data are often confined to specially selected areas such as lake shores (Lagozza) (Guerreschi 1967) or fluvial fans (Monte Covolo) (Barfield et al. 1975-76; 1977-79); Pals and Voorrips 1979). Emmer and einkorn were cultivated at both these sites, but at Monte Covolo naked barley was found together with many other plants gathered from the forest surrounding the site such as wild grape, sloe and Physalis Alkekengi. Lagozza produced the second example found so far of hexaploid wheat (Triticum aestivum) as well as barley and flax. Numerous examples of wild plants such as strawberry, apple, blackberry and wild grape also come from

the site. Of special interest are seeds of opium poppy (Castelletti pers. comm. 1981) (Fig. 15.1/3). In this period the pressure of human activity on the ecosystem on the edges of the Po Plain even began to be felt on the forest cover as shown by the pollen diagrams from the lake of Biandronno (Schneider 1978), where a rather sharp decrease in the mixed oak forest coincides with an increase in the plantain and other ruderal plants.

Bibliography

- Alessio, M., Allegri, L., Bella, E., Calderoni, Cortesi, G.M G., Cremaschi, M., Improta, S., Papani, G. and Petrone, V. 1980. Le datazioni ^{14}C della pianura tardowürmiana ed olocenica nell'Emilia Occidentale. Contributi preliminari alla realizzazione della Carta Neotettonica d'Italia. (Pubblicazione 356 del Progetto Finalizzato Geodinamica) Roma, C.N.R., 1411-1435.
- Bagolini, B. and Biagi, P. 1975. Il Neolitico di Vhò di Piadena. Preistoria Alpina 11, 77-121.
- Bagolini, B. and Biagi, P. 1976. The origins of the Neolithic in Northern Italy. Actes IX Congrès U.I.S.P.P. (Nice), 58-73.
- Bagolini, B., Belistq, C. and Biagi, P. 1977. Vhò, Campo Ceresole: Scavi 1977. Preistoria Alpina 13, 67-98.
- Bagolini, B., Barbacovi, F. and Biagi, P. 1979. Le Basse di Valcalaona (Colli Euganei). Alcune considerazioni su una facies con vasi a bocca quadrata e sulla sua collocazione cronologico-culturale. Monografie di Natura Bresciana 3, 3-72.
- Bagolini, B., Biagi, P. and Nisbet, R. 1982. Ricerche negli insediamenti di Fingerhof presso Aica di Fiè (Völseraicha - BZ). Rapporto preliminare sugli scavi 1980-1981. Rivista di Archeologia 6, 11-22.
- Bagolini, B., Broglio, A. and Lunz, R. in press. Le Mésolithique des Dolomites. Preistoria Alpina 19.
- Barfield, L.H., Barker, G.W.W., Chesterman, J.T., Pals, J.P. and Voorrips, A. 1977-79. Excavations at Monte Covolo, Villanuova sul Clisi, Brescia (1972-73). Part II. Annali del Museo (Gavardo) 13, 5-89.
- Barfield, L.H., Biagi, P. and Borrello, M.A. 1975-76. Scavi nella stazione di Monte Covolo (1972-73). Parte I. Annali del Museo (Gavardo) 12, 7-160.
- Bernabò-Brea, M., Cremaschi, M. and Steffè, G. in press. Neolithic communities and their environment in the

Panaro Valley in light of the excavations at Savignano. In Premières communautés paysannes en Méditerranée occidentale. (Montpellier).

- Bertoldi, R. 1968. Ricerche pollinologiche sullo sviluppo della vegetazione tardiglaciale e postglaciale nella regione del lago di Garda. Studi Trentini di Scienze Naturali sez. B. 45 (1), 87-162.
- Beug, H.J. 1964. Untersuchungen zur spät- und post-glazialen Vegetationsgeschichte im Gardaseegebiet unter besonderer Berücksichtigung der mediterranen Arten. Flora 5 (154), 401-444.
- Biagi, P. 1975. Stazione Neolitica a Fagnigola (Azzano Decimo - Pordenone). Relazione preliminare dello scavo 1974. Annali dell'Università di Ferrara, sez. 15 (II) 6, 247-269.
- Biagi, P. 1979. Stazione Neolitica a Ostiano (CR), località Dugali Alti: scavi 1980. Preistoria Alpina 15, 25-38.
- Biagi, P. 1980. Introduzione al Mesolitico della Lombardia. In Atti I Convegno Archeologico Regionale (Milano), 55-76.
- Biagi, P. in press. Observations on the Late Neolithic of Northern Italy. Journal of Mediterranean Anthropology and Archaeology 2.
- Biagi, P., Barker, G.W.W. and Cremaschi, M. 1983. La stazione di Casatico di Marcaria nel quadro paleoambientale ed archeologico dell'Olocene antico della Val Padana Centrale. Studi Archeologici (Bergamo), 3.
- Biagi, P., Castelletti, L., Cremaschi, M., Sala, B. and Tozzi, C. 1981. Popolazione e territorio nell'Appennino tosco emiliano e nel tratto centrale del bacino del Po tra il IX ed il V millennio. Emilia Preromana 8, 13-36.
- Biagi, P. and Cremaschi, M. 1981. Distribution and chronology of the Neolithic settlement of Northern Italy. Journal of Mediterranean Anthropology and Archaeology 1 (2), 211-216.
- Biagi, P. and Maggi, R. in press. Aspects of the Mesolithic Age in Liguria. Preistoria Alpina 19.
- Biagi, P. and Nisbet, R. in press a. The Earliest Farming Communities in Northern Italy. In Premières communautés paysannes en Méditerranée Occidentale. (Montpellier).
- Biagi, P. and Nisbet, R. in press b. Ursprung der Landwirtschaft in Norditalien. Das Altertum.

- Boscato, P. and Sala, B. 1980. Dati paleontologici, paleo-ecologici e cronologici di tre depositi epipaleolitici in Valle dell'Adige (Trento). Preistoria Alpina 16, 45-61.
- Broglio, A. 1971. Risultati preliminari delle ricerche sui complessi epipaleolitici della Valle dell'Adige. Preistoria Alpina 7, 135-241.
- Castelletti, L. 1975. Resti vegetali macroscopici di Campo Ceresole - Vhò di Piadena (Neolitico Inferiore). Preistoria Alpina 11, 125-126.
- Cattani, L. 1975. Il neolitico del Vhò di Piadena - Nota palinologica. Preistoria Alpina 11, 123-124.
- Cattani, L. 1977a. Dati palinologici inerenti ai depositi di Pradestel e di Vatte di Zambana nella Valle dell'Adige (TN). Preistoria Alpina 13, 21-29.
- Cattani, L. 1977b. La Grottina dei Covoloni del Broion (Colli Berici, Vicenza). Analisi pollinica. Rivista di Scienze Preistoriche 32, 287-296.
- Cremaschi, M. 1978. The source of the flint artefacts for the central Po Plain and Apennine sites, between the 7th and 2nd millennium b.c. Staringia 6.
- Cremonesi, G. 1978-81. Caratteristiche economico-industriali del Mesolitico nel Carso. Atti della Società di Preistoria e Protostoria della Regione Friuli-Venezia Giulia 4, 171-186.
- Evett, D. and Renfrew, J. 1971. L'agricoltura neolitica italiana. Una nota sui cereali. Rivista di Scienze Preistoriche 26 (2), 403-409.
- Girod, A. 1978. Vhò, Campo Ceresole (Piadena): Scavi 1976 - La Malacofauna. Preistoria Alpina 14, 205-208.
- Girod, A. 1982. Vhò, Campo Ceresole (Piadena): Scavi 1979 - La Malacofauna. Preistoria Alpina 18, 225-229.
- Gruppo Ricerca Geomorfologia C.N.R. 1982: Bidini, D., Lulli, L., Rodolfi, G., Busoni, E., Ferrari, G. and Cremaschi, M. 1982. I suoli più rappresentativi nell'evoluzione geomorfologica dell'area. In Geomorfologia del territorio di Febbio tra il M. Cusna e il F. Secchia (Appennino Emiliano). Geografia Fisica e Dinamica Quaternaria 5 (2), 325-343.
- Guerreschi, G. 1967. La Lagozza di Besante e il Neolitico Superiore Padano. Nose dal Como.
- Kozlowski, J.K. and Kozlowski S.K. 1979. Upper Palaeolithic and Mesolithic in Europe. Taxonomy and Palaeohistory. Prace Komisji Archeologicznej. Ossolineum (Krakow)

18, 1-179.

- Lona, F. 1960. I depositi lacustri euganei: archivio paleontologico del tardo glaciale e del periodo postglaciale. Memorie Biogeografia Adriatica 5, 3-11.
- Malavolti, F. 1951-52. Appunti per una cronologia relativa del neo-eneolitico emiliano. Emilia Preromana 3, 3-28.
- Pals, J.P. and Voorrips, A. 1979. Seeds, fruits and charcoals from two prehistoric sites in Northern Italy. Archaeo-Physika 8, 217-235.
- Schneider, R. 1978. Pollenanalytische Untersuchungen zur Kenntnis der spät- und post-glazialen Vegetationsgeschichte am Südrand der Alpen zwischen Turin und Varese (Italien). Botanische Jahrbuch Systematische 100 (1), 26-109.
- Simone, L. in press. Un fond de cabane du Néolithique ancien dans l'Oltrepo Pavese (Lombardie-Italie). In Premières communautés paysannes en Méditerranée Occidentale. Montpellier.
- Zoller, H. 1960. Pollenanalytische Untersuchungen zur Vegetationsgeschichte der Insubrischen Schweiz. Mémoires Hélvétiques de Sciences Naturelles. 83 (2), 45-157.

Summary

The Castelnovian is distributed, at the beginning of the Atlantic period, in all of north Italy, preferring fluvial terraces and small intermorainic basins. Favourable climatic conditions allowed the development of a uniform and dense vegetation cover in the valley bottoms; deer were the main species hunted.

In this context, at the end of the Vth millennium b.c., the first Neolithic settlements appeared, that maintained, nevertheless, the same ecological locations of the Castelnovian sites. These settlements belong to the Fiorano and Vhò cultures, with dates from 4200 to 4000 b.c. The economy of Fiorano is based predominantly on domestic animals whereas at Vhò, although wheat cultivation is documented, hunting remains dominant. More to the east, the contemporary group of Fagnigola, in Friuli, developed an economy of hunting and collection of wild fruits.

The stable environmental conditions favoured the development of Haploxeralfs with Oak, ash, lime, elm, alder and maple. These soils were also used for the first

agriculture at Vhò (Triticum monococcum and Triticum dicoccum) and at Cecima (Hordeum vulgare); the most ancient Neolithic sites of northern Italy are often found, however, on poorly drained or hydromorphic soils, in contrast to the sites of the IVth millennium (Square Mouthed Pottery Culture), which are often found on soils much more favourable to agriculture. The principal economic changes introduced by the Square Mouthed Pottery Culture consisted of new sources of flint, the transfer from cow to goat herding and the appearance of soft wheat and legumes. At the beginning of the IIIrd millennium b.c., profound modifications of the environment took place that caused erosion of the soil and transformations of the forest. Consequently, the prehistoric sites changed location and some of the principal settlements were lake edge (Lagozza) or valley sites (Monte Covolo).

Riassunto

Il Castelnoviano si diffonde all'inizio dell'Atlantico in tutto il Nord Italia, prediligendo terrazzi fluviali e piccoli bacini intermorenici. Condizioni climatiche favorevoli consentono lo sviluppo di una copertura vegetale uniforme e compatta in tutta la pianura; vengono cacciati preferibilmente il cervo e il capriolo.

In questo contesto, alla fine del V millennio b.c., si affermano i primi insediamenti neolitici, che mantengono tuttavia le medesime collocazioni ecologiche dei siti castelnoviani. Essi appartengono alla Cultura di Fiorano e di Vhò, con date comprese tra il 4200 e il 4000 b.c. L'economia di Fiorano è basata prevalentemente su animali domestici, mentre a Vhò, dove peraltro è documentata la coltivazione del frumento, permane predominante l'attività di caccia. Più ad Est il coevo gruppo di Fagnigola, in Friuli, sviluppa un'economia di caccia e raccolta di frutti spontanei.

Le condizioni ambientali stabili favoriscono lo sviluppo di Haploxeralfs con Quercia, Frassino, Tiglio, Olmo, Ontano ed Acero. Questi suoli ospitano anche le prime forme agricole a Vhò (Triticum monococcum e T. dicoccum) e a Cecima (Hordeum vulgare); spesso i più antichi siti neolitici del Nord Italia si trovano comunque su suoli poco drenati o idromorfi, a differenza di quelli del IV millennio (Cultura Vaso a Bocca Quadrata), che sono molto più favorevoli all'agricoltura. I principali cambiamenti economici introdotti dalla Cultura VBQ consistono in nuove fonti di approvvigionamento della selce, nel passaggio dalla pastorizia basata su bovini a quella dei caprovini, alla comparsa del frumento tenero e dei legumi. All'inizio del III millennio b.c., intervengono profonde modificazioni dell'ambiente, che causano erosione del suolo e trasformazioni della struttura forestale. Di conseguenza i siti preistorici cambiano collocazione geografica e alcuni dei principali insediamenti sono perilacustri (Lagozza) o interni nelle valli (Monte Covolo).