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Published in:
Acculturation and continuity in Atlantic Europe mainly during the neolithic period and the Bronze age : papers presented at the IV Atlantic colloquium, Ghent 1975

1976

Reprinted from Dissertationes Archaeologicae Gandenses, Vol. XVI 1976

THE INTRODUCTION OF THE NEOLITHIC STONE AGE INTO THE BALTIC AREA

BY

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A rapidly increasing source material together with series of radiocarbon datings and pollen-analytical and osteological studies of importance for the understanding of the transition from the Mesolithic to the Neolithic Stone Age in the Baltic area has made new reconstructions of this transition compared to those by Becker and Troels-Smith twenty years ago possible. A full presentation of this material will not be given here but a few chronological, chorological and economic models will be proposed. In these models a bristle cone pine calibrated radiocarbon time scale is used (fig. 1) and the two meanings of the concept "the Neolithic Stone Age", that is "Neolithic technology" and "Neolithic economy" are kept entirely apart.

As "the Neolithic Period" is meant the time after the introduction of the Funnel Beaker pottery into South West Scandinavia. Selected litterature on the area (except the Baltic coast of Germany) from 1970-1974 is summarized in a list.

CONTENTS

1. THE SPREAD OF NEOLITHIC TECHNOLOGY

With Neolithic technology is here meant the local manufacturing of pottery. The earliest pottery in the Baltic area is South West Scandinavian Ertebølle pottery from c. 3800-3600 b.c. (4700-4500 B.C.). Of about the same date are the style I pottery of the South West Finnish Comb Pottery culture and the Narva-Sarnate pottery of Estonia and Latvia. Early pottery is present all along the southern and western coasts of the Baltic but only at the southernmost part of the Scandinavian Peninsula (fig. 2). This early pottery is spread within solely food-gathering groups. This process in the East Baltic area is further dealt with in Chapter 3. Within the early Ertebølle culture two types of vessels are known, one storage pot and one low, oval bowl. The latter is interpreted as a blubber lamp and, in fact, the earliest pottery within the South West Scandinavian food-gathering groups seems to be connected with the earliest extensive seal and porpoise hunting. The later spread of pottery is connected with the spread of farming dealt with in Chapter 2.

2. THE SPREAD OF NEOLITHIC ECONOMY

With Neolithic economy is here meant stock-breeding and cultivation of wheat and barley. During the very early stage of farming slash and burn cultivation was carried on in virgin broadleaf forest. The cattle may have been stalled, while later on extensive pasture land was cleared. During the Early and Middle Neolithic periods the farming was regularly involved in a mixed economy system, either as a mixed farming/food-gathering economy within the

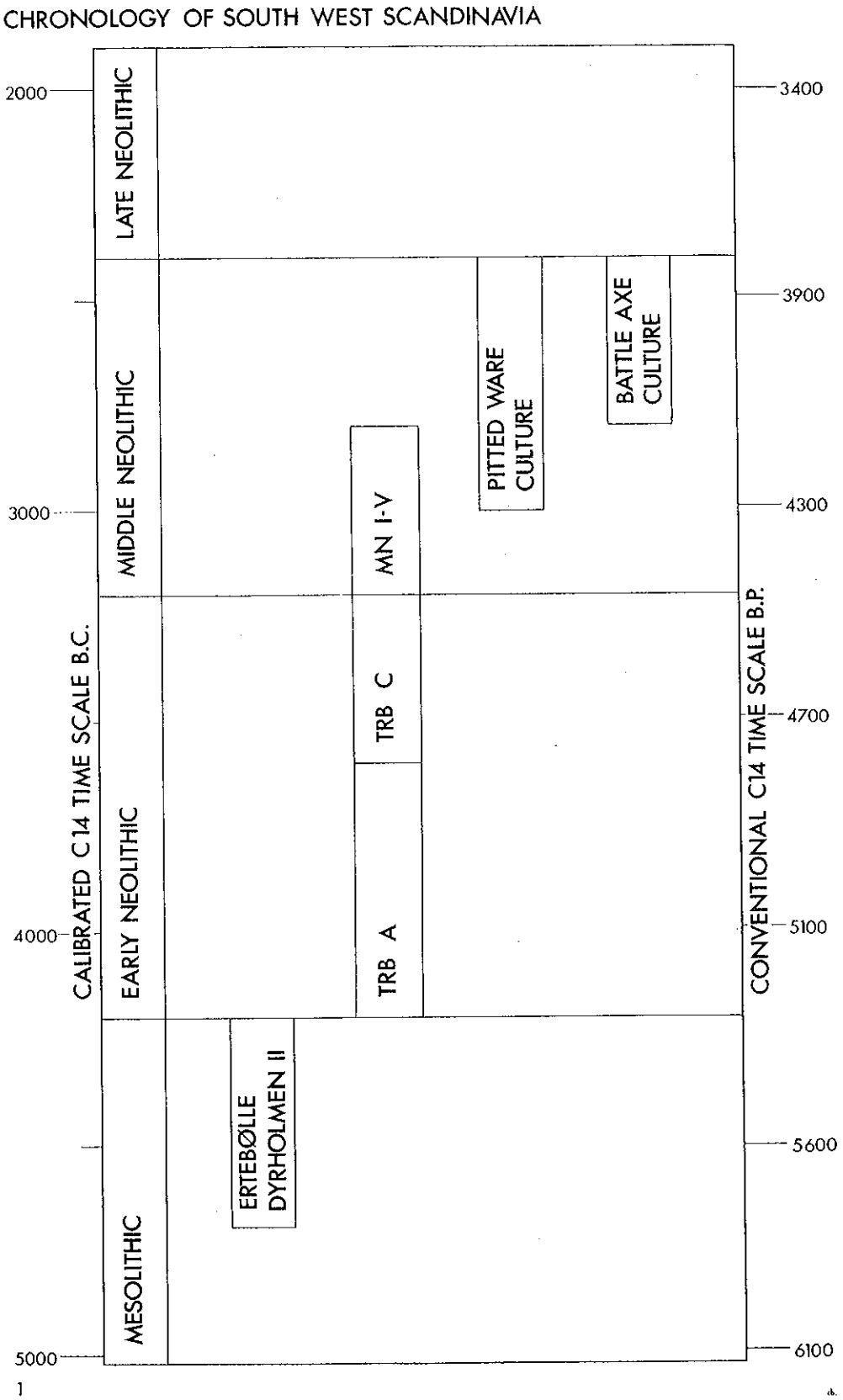

FIG. 1. — Bristle cone pine calibrated radiocarbon chronology for the pottery-containing culture groups of the South West Scandinavian Late Mesolithic, Early Neolithic and Middle Neolithic. This summary of radiocarbon datings is used as both a relative and absolute chronology in this paper.

same group or as a system of exchange between one farming and one food-gathering group.

Farming was introduced into South West Scandinavia and along the southern coast of the Baltic c. 3500 b.c. (4200 B.C.). This process is further dealt with as concerns Scania in Chapter 4. This first expansion of farming in the Baltic area seems to be connected with Funnel Beaker A-pottery. A second rapid expansion of farming to South Norway and Middle Sweden is connected with the Funnel Beaker pottery of C-type c. 2800 b.c. (3600 B.C.) (fig. 3). It is a possible theory that this expansion of farming was restricted to those areas with abundant occurrence of broadleaf forest. After a few hundred years farming disappeared again from most of the Scandinavian Peninsula. It was restricted to the most fertile areas, especially those with soils rich in chalk. During this period secondary Neolithic groups with a food-gathering economy developed.

A third expansion of farming—2300 b.c. (2800 B.C.)—is connected with the Battle Axe culture. The northern boundary of farming was

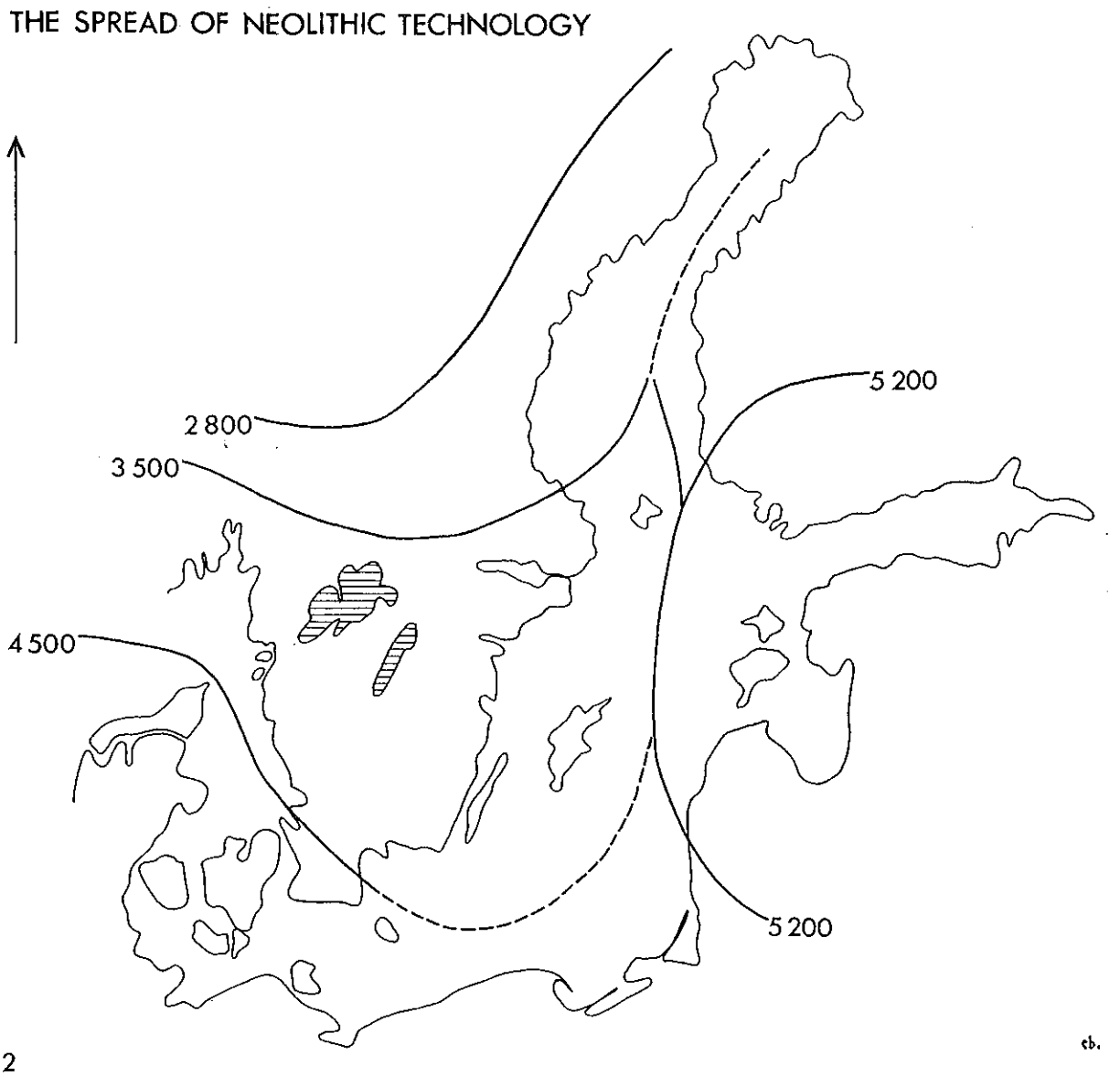

FIG. 2. — The spread of the earliest pottery in the Baltic area. On the western side of the Baltic the lines denote from the south to the north Ertebølle pottery, Funnel Beaker C pottery and Battle Axe pottery. On the eastern side of the Baltic the lines denote Narva-Sarnate pottery and Comb pottery of style II.

extended farther to the north than ever before, including South West Finland and the coast of North Sweden. This expansion involved both the spread of stock-breeding and cultivation within the Battle Axe culture and possibly the introduction of hog-breeding within the food-gathering groups in Sweden. Perhaps the latter was older surviving from the second expansion of farming.

It is still a question of disputation whether the different expansions of farming in the Baltic area were the result of diffusion or migrations. Possibly the former was the case in central areas of farming in the South West, while the latter was the case in marginal areas in the North East.

3. The change to a Neolithic technology in the East Baltic Area

Traces of a Neolithic technology are demonstrable within the food-gathering groups on the southern coasts of the Baltic from about 4500-4000 b.c. (5300-4800 B.C.) The East Baltic area comprises the south and south-eastern coasts of the Baltic: north-eastern Poland (Mazury Lake district); former East Prussia and the three Baltic republics: Estonia, Lithuania and Latvia. North and North-Western Poland will be only sparingly mentioned. In the East Baltic area the introduction of the Neolithic technology was a slow process that was contemporary with no change in the economy. On the contrary, there is continuity in the flint-technology, the food-gathering economy, settlement pattern and the burial customs, that is the use of red-ochre in the graves. The development of the ceramic sequence differs locally within the area. There are both quantitative and chronological differences.

The earliest pottery in North West and North Poland is Linear pottery that is contemporary with the earliest stage of the Funnel Beaker culture. The A stage of the Funnel Beaker culture (locally named Sarnowo A/B) coincides with the first expansion of farming in North West and North Poland c. 4000-3600 b.c. (4800-4400 B.C.), indicated, for example, by indications of farming underneath the radiocarbon-dated megalithic tomb at Sarnowo. The development of farming economy can be noted from the beginning of the Wiórek-phase of the Funnel Beaker culture in Poland, C 14-dated to c. 3000-2600 b.c. (3800-3200 B.C.).

In North East Poland and Lithuania the earliest pottery is dated to about 4000 b.c. (4800 B.C.) The ceramic sequence is the following (fig. 4):

1. Comb Pottery, style I (locally named Serowo culture, older names are Zedmar or Ostroviški culture)
2. Comb Pottery, style II
3. Scanty traces of Funnel Beaker Pottery

Radiocarbon datings of the Serowo culture are lacking. Based upon the pollen-analytical investigations by H. Gross in Lake Ostroviški it can be dated to about 4000 b.c. (4800 B.C.) This dating is in agreement with the earliest radiocarbon datings of the Comb Pottery in style II in Finland (the Jäkärlä pottery of South West Finland) to about 3500 b.c. (4200 B.C.)

Thus, the Serowo culture is contemporary with the pre-pottery Suomusjärvi culture and the Comb Pottery culture, style I:1 in Finland, Estonia and Latvia.

Comb pottery of style I:1 in Finland is radiocarbon-dated to about 4500-4000 b.c. (5300-4800 B.C.).

Two types of vessels are known within the Serowo culture: small vessels with pointed bottoms and big vessels with flat bottoms. The decoration consists of finger-prints and small pits concentrated on the rim or the upper part of the vessel. So far the Serowo-pottery is known only from three sites: Serowo A and D (former Zedmar), Ozjersk district, Soviet Union (previously—Polish Lithuania) and two sites in Mazury Lake district, Poland: Czarne Łąki and Moczyska, Giżycko district.

Pottery with comb decoration and pointed bottoms corresponding to the Comb pottery of style I:1 of Finland, that is the Sperrings pottery, is found in the North East Poland and Lithuania. It is contemporary with the earliest pottery in Estonia and Latvia. The pottery of these areas are locally named Narva and Sarnate pottery respectively. The Narva pottery in Estonia and Karelia is radiocarbon-dated to about 45000-4000 b.c. (5300-4800 B.C.).

Thus, an important chronological conclusion can be drawn. The earliest pottery is nearly contemporary in all of the East Baltic area (fig. 4): Serowo pottery in north-eastern Poland and Lithuania, Comb pottery I:1 in Finland, Narva pottery in Estonia and Sarnate pottery in Latvia.

Traces of the Funnel Beaker culture are lacking in the Soviet republics of the East Baltic area. Such traces are, however, found at a few sites in North East Poland. Fragments of funnel beakers and collared

vessels are known from four sites: Serowo A, Mikołajki Pomorskie, Dąbek-Kaczynos and Biała Góra. They are chronologically comparable with the Comb pottery of style II.

The earliest Neolithic technology in the East Baltic area is an innovation in a traditional mesolithic environment. The same is the case in Finland too. The earliest traces of farming belong to the Middle Neolithic period about 2500 b.c. (3000 B.C.). The local environmental resources were sufficient for a stable development of hunting and fishing within the traditional Mesolithic economy. Vegetable food in the form of Trapa nuts and hazel nuts were used.

No doubt a Mesolithic flint-technology was in use within the earliest pottery-containing cultures in the East Baltic area. Neither in the inventory of flint tools nor in that of bone and antler tools are there any differences between pre-pottery and pottery sites. For

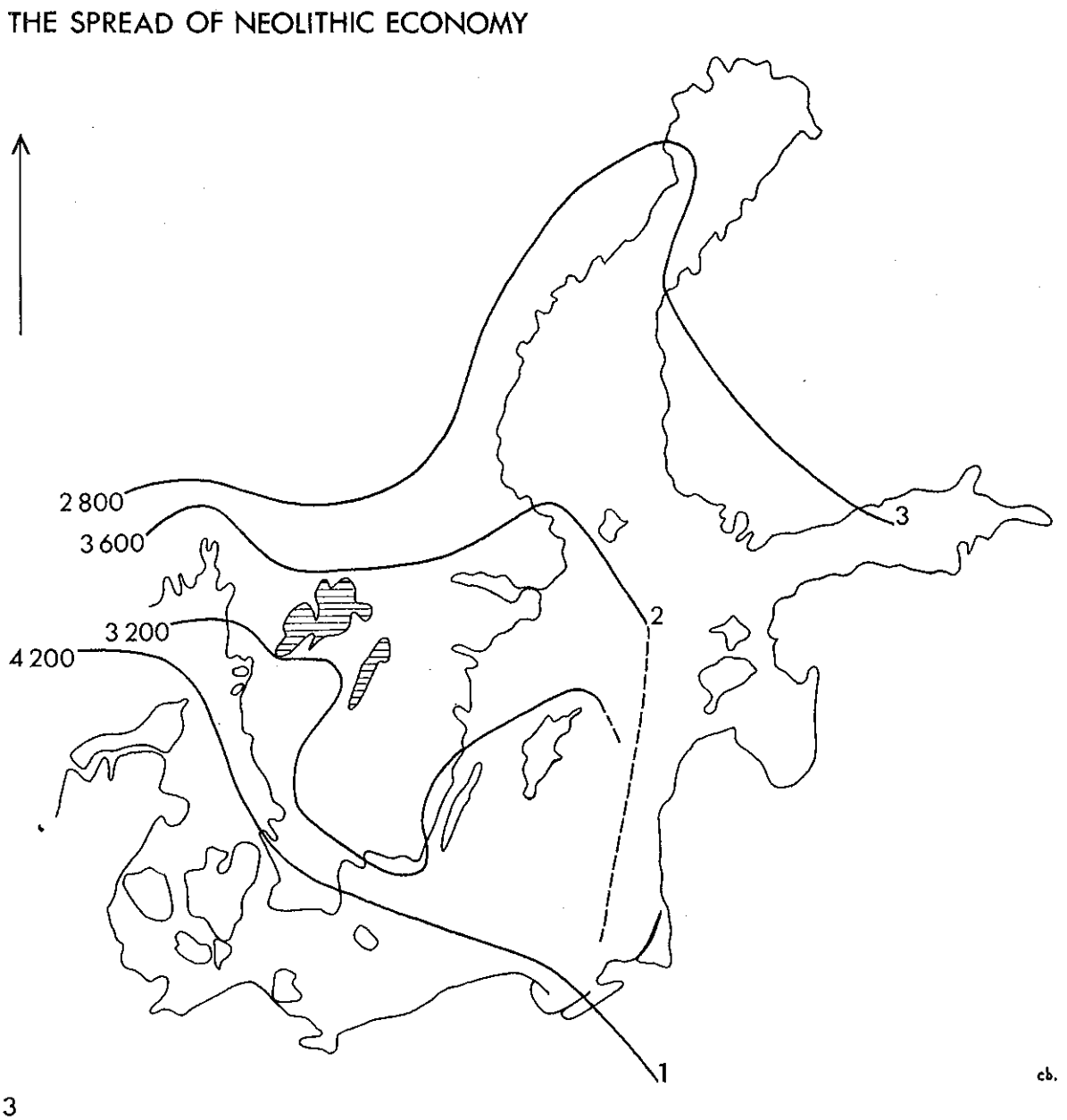

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FIG. 3. — The spread of Neolithic economy in the Baltic area. The map is based mainly upon pollen-analytical studies but also upon the occurence of sites interpreted as Neolithic in the economic sense. The figures denote the expansions of farming.

example, at the early Comb pottery sites in Lithuania (Dubičaj I, Nietiešiai I) and Poland (Osjaków, Sośnia) occur among others Janisławice-microliths, trapezes and bone-points of Mesolithic types. Mesolithic elements appear also in the Funnel Beaker culture.

The transition from the Mesolithic to the Neolithic Stone Age is indicated by only one new element, that is the manufacturing of pottery.

Thus, the term "Ceramic Mesolithic" might be convenient for the period between the introduction of the Neolithic technology and Neolithic economy, into the East Baltic area.

The introduction of Neolithic technology into the East Baltic area is summarized in four stages:

1. 4500-3400 b.c. (5300-4200 B.C.) The introduction

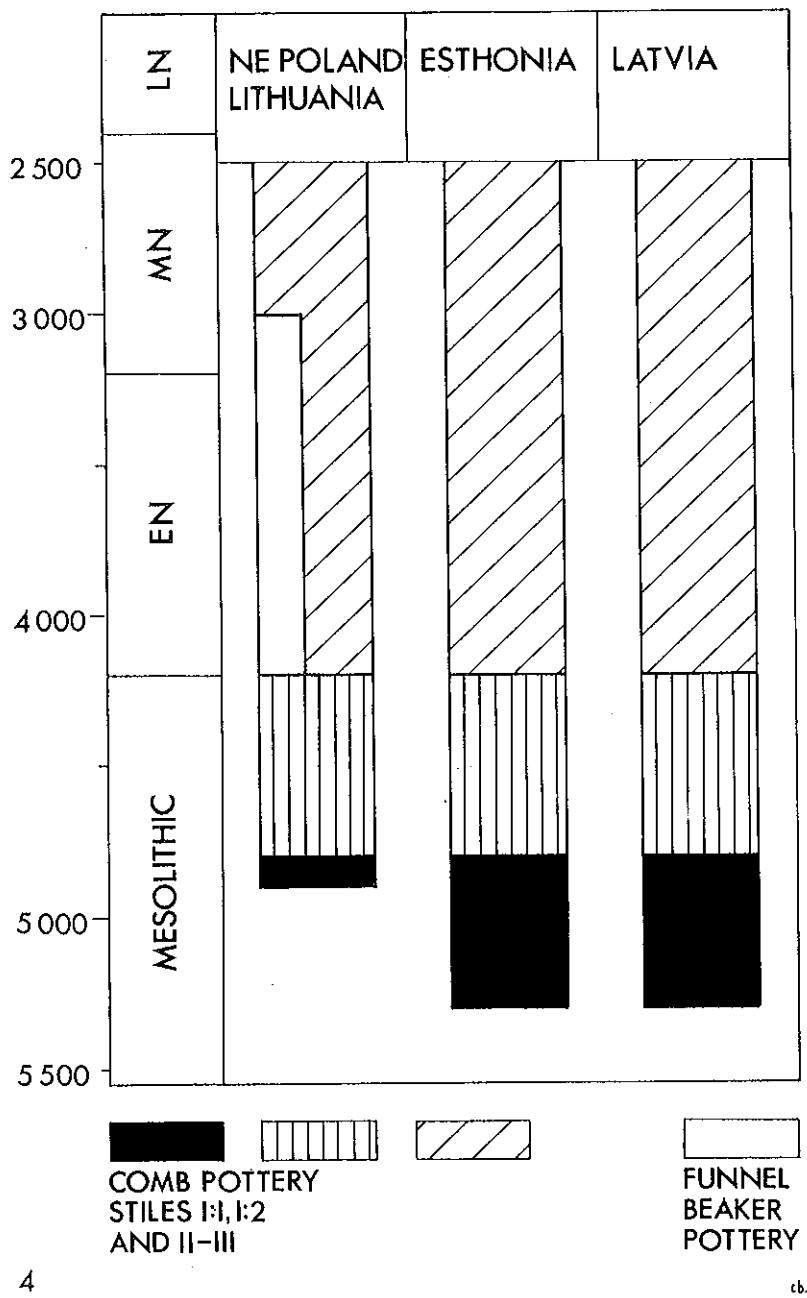

FIG. 4. — Radiocarbon chronology for the early pottery of the East Baltic area in relation to the South West Scandinavian chronology. Black denotes the earliest ceramic horizon in the East Baltic area, that is the Serowo, Narva and Sarnate pottery.

of the earliest pottery, the Comb pottery of style I (local names are Serowo in north-eastern Poland and Lithuania, Sarnate in Latvia, Niemen in south-western White Russia and south-eastern Lithuania, Dubičaj in Lithuania and Narva pottery in Estonia).

2. 3500-2000 b.c. (4200-2500 B.C.) The development of the Comb pottery styles II and III. In Poland these styles were called Comb/Pitted Ware culture.
3. 3500-2500 b.c. (4200-3000 B.C.) Traces of the Funnel Beaker culture in North and North East Poland.
4. From about 2500 b.c. (3000 B.C.) Corded Ware culture in North East Poland and traces of Corded Ware elements in Lithuania, Latvia and Estonia.

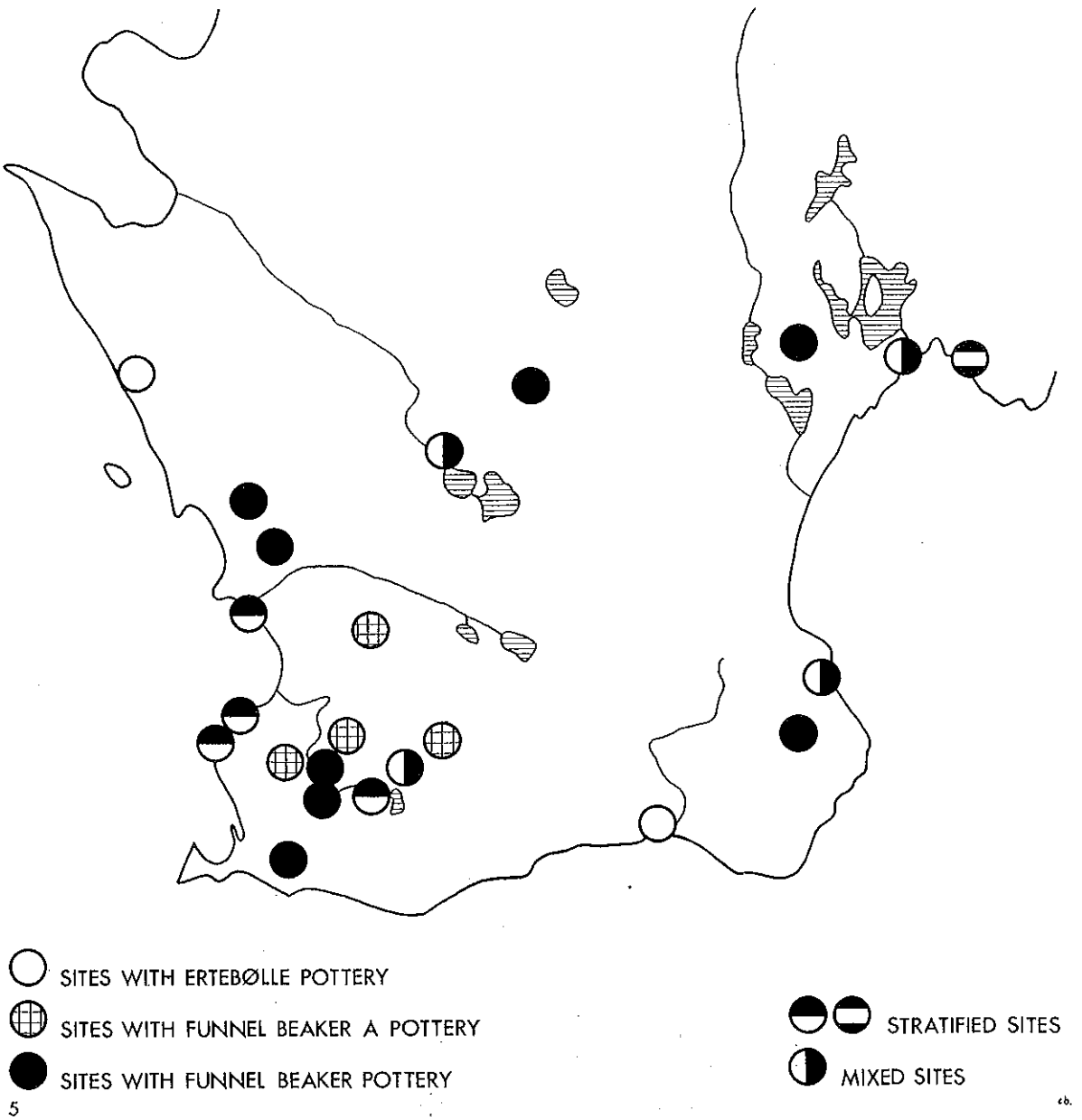

FIG. 5. — Some Mesolithic and Early Neolithic sites in Scania and westernmost Blekinge. The map shows sites with Ertebølle pottery. On most of these sites there is Funnel Beaker pottery too. The symbols on the map show the stratigraphic position of the two kinds of pottery. On the mixed sites there is no interpretable stratigraphy. The Funnel Beaker sites on the map represent a selected number showing the distribution in the province of the early and late stages of the culture during the Early Neolithic.

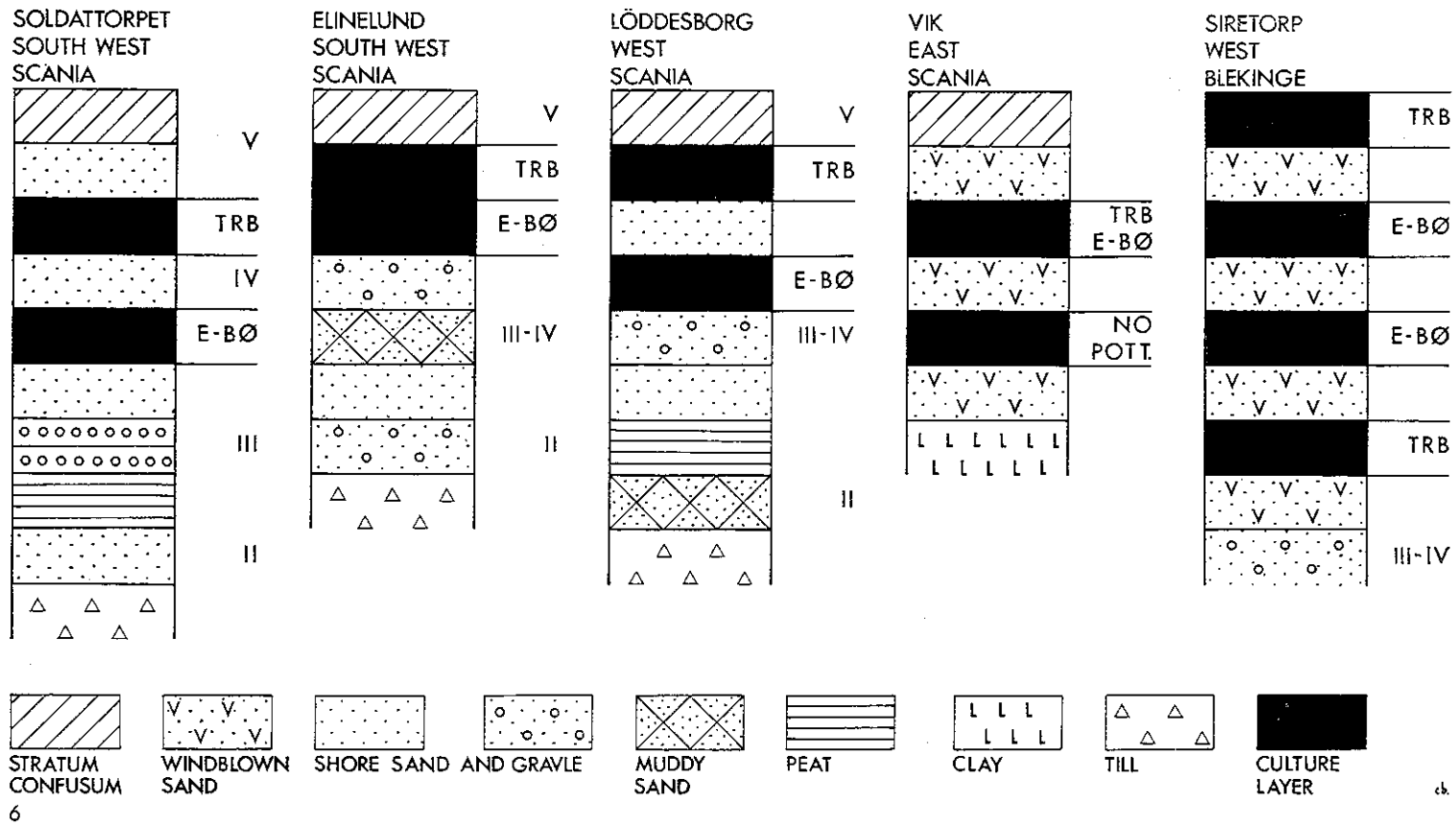

FIG. 6. — The stratigraphy of Late Mesolithic and Early Neolithic sites in Scania and westernmost Blekinge. The Roman figures denote an attempt to correlate with the transgression scheme by Berglund 1971. (E-BØ = Ertebølle pottery, TRB = Funnel Beaker pottery).

The stages 3 and 4 are linked with the expansion of farming in the East Baltic area.

4. The change to a Neolithic economy in Scania

There has been a discussion on the transition from a hunting-gathering-fishing economy to a farming economy in different parts of Scandinavia during the latest decades. In the southermost parts of Sweden, however, the research has stagnated. Because of this the archaeological material from most sites is scarce. Research in adjacent fields of importance for the understanding of the ecological environment and settlement patterns is lacking. Part of the archaeological and other investigations concerning the transition period in Scania are summarized here.

The Scanian sites from the Late Mesolithic and Early Neolithic are plotted on the map Figure 5 with different symbols for different kinds of pottery, that is Late Mesolithic Ertebølle pottery and Early Neolithic Funnel Beaker pottery.

Those sites, that will be described below, have been chosen because of their contents of factors of importance for the interpretation of the transition period in Scania, that is stratigraphy, pottery, bone refuse, and plant remains.

Especially important in regard to the problem of the change from a hunting-gathering-fishing economy to a Neolithic farming economy are those sites with a well-documented stratigraphy with culture layers from both the Late Mesolithic and Early Neolithic. Examples of this type of site are Soldattorpet, Elinelund and Löddesborg in South West Scania, Vik in South East Scania and Siretorp in West Blekinge. The stratigraphy of these sites is shown in Figure 6.

The site Soldattorpet in South West Scania is embedded in the Järavallen, that is the highest Post Glacial beach ridge from the Litorina transgression.

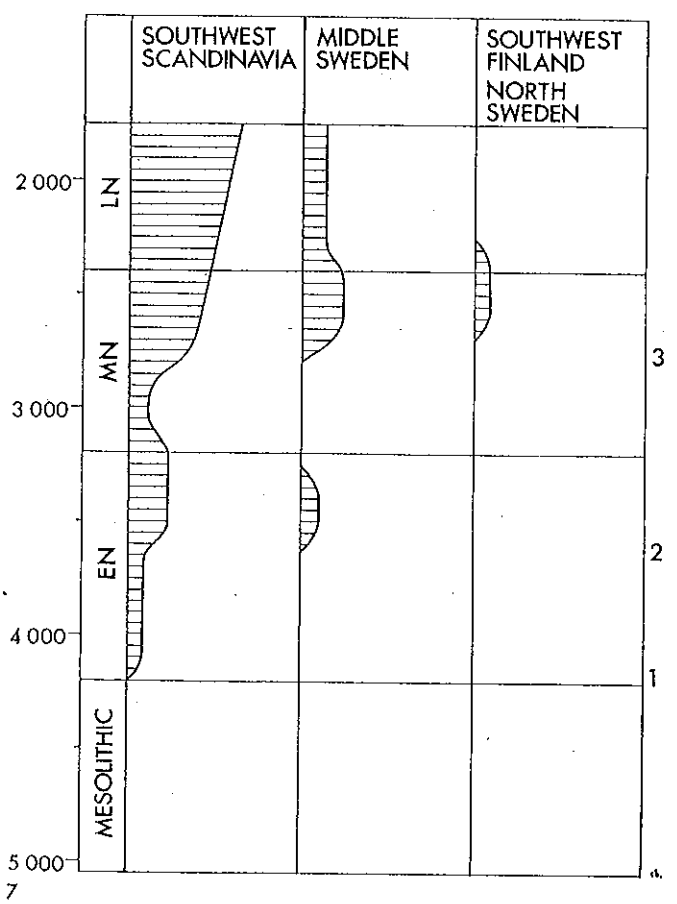

Fig. 7. — Influence diagrams based upon pollen-analytical studies showing the spread and relative intensity of farming during Neolithic time in the Baltic area. The figures denote the three expansions of farming.

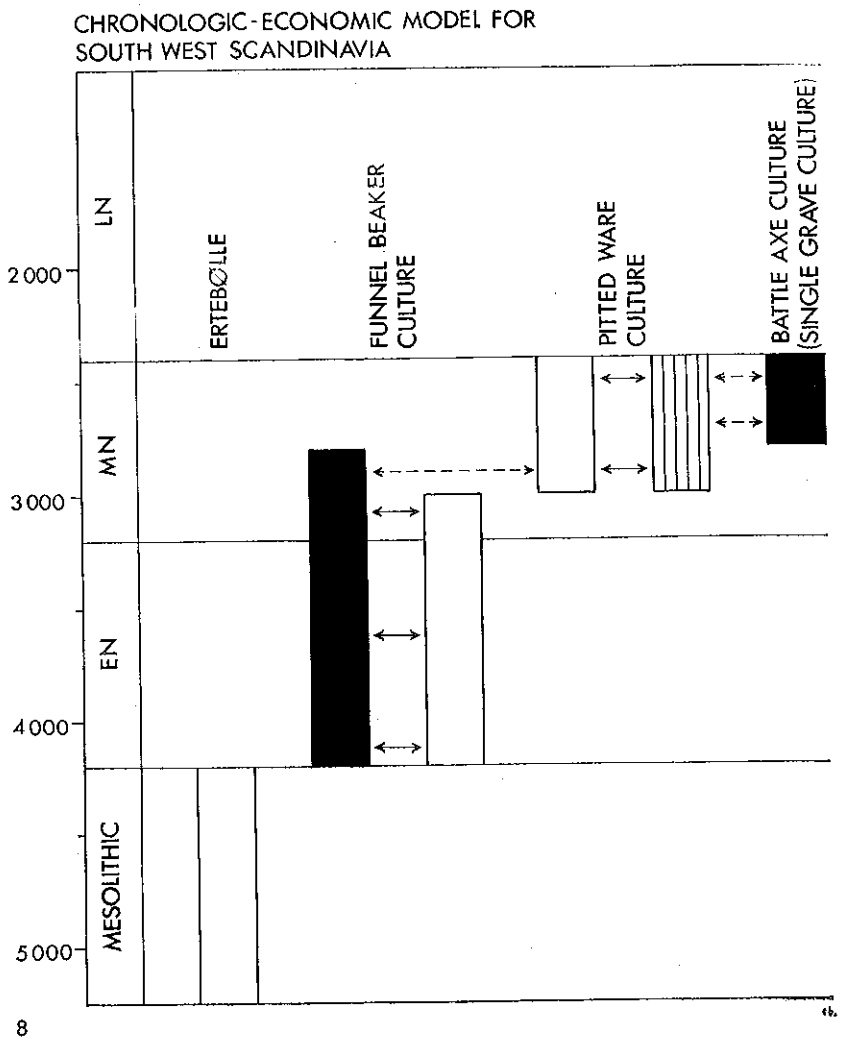

FIG. 8. — Chronological-economic model for South West Scandinavia. White symbols denote food-gathering, striped symbols food-gathering with hog breeding and black symbols farming and stock breeding. Full arrows denote seasonal migrations within the same group and broken arrows exchange of products between two groups. Seasonal migrations within the Ertebølle culture are not denoted.

The site was excavated in the beginning of the 20th century and is will documented. The stratigraphy consists of a lower culture layer with solely thick walled pottery, that is an unmixed classic Ertebølle culture layer, and an upper culture layer with thin walled Early Neolithic pottery. The analysis of the bone refuse shows that the lower culture layer contains bones of red deer, roe deer, seals and dog while the upper culture layer contains bones of sheep and probably cattle and pig. In addition the analysis of plant remains shows that the thin walled pottery of the upper culture layer contains impressions of wheat, husks, and straw. Thus, the stratigraphy of the site Soldattorpet shows a clear connection between the two types of economy during the transition period.

The stratigraphy of the site Siretorp in West Blekinge is more complicated. According to the excavation report from the 1930's a culture layer with Funnel Beaker pottery is situated below a culture layer, with Ertebølle pottery, above which is another layer with Funnel Beaker pottery. There are impressions of wheat and barley in the pottery of both Funnel Beaker layers. The upper one of these two layers has bones of roe deer, red deer and cattle. All layers in the stratigraphic sequence contain bones of seals. The site Siretorp shows that there is no simple unilinear transition from the Mesolithic to the Neolithic. The site needs further investigation in order to elucidate the problems of the transition period.

At the site Elinelund in South West Scania a layer with Ertebølle pottery is situated immediately below a layer with additional Funnel Beaker pottery. There are no bones preserved in the culture layers. One radiocarbon dating from the bottom part of the culture layer with solely Ertebølle pottery has given the result 3360 ± 210 B.C. (charcoal dating, T 1/2 = 5570). The dating must be interpreted with care as there is a probability that it comes from a mixed layer.

The sites with both Ertebølle pottery and Funnel Beaker pottery are of importance for the solving of the problems on contemporaneousness and possible integration between hunting-gathering-fishing economy and farming economy. However, the stratigraphy of this type of sites in Scania is not sufficiently well documented. It cannot be excluded that the mixing of the sites is the result of a mixing of formerly pure sites with exclusively Ertebølle pottery or Funnel Beaker pottery.

The site Värby in South West Scania is a well-documented site with Funnel Beaker pottery belonging to the A-stage. The material comes from a series of refuse pits. There are impressions of wheat and barley in the pottery but unfortunately no bones have been preserved. A thorough typological analysis has shown that there are differences between the flint material combined with Ertebølle pottery and Funnel Beaker pottery at the site Elinelund and the flint material combined with Funnel Beaker pottery of the A-stage at Värby. The same kinds of tools are represented but the detailed shape and technique are different.

Most of the sites from the transition period have been situated on the coasts or along rivers. Neither the hunting-gathering-fishing groups nor the first farming groups have preferred any special kind of terrain. The sites have been localized in both clayey and sandy areas.

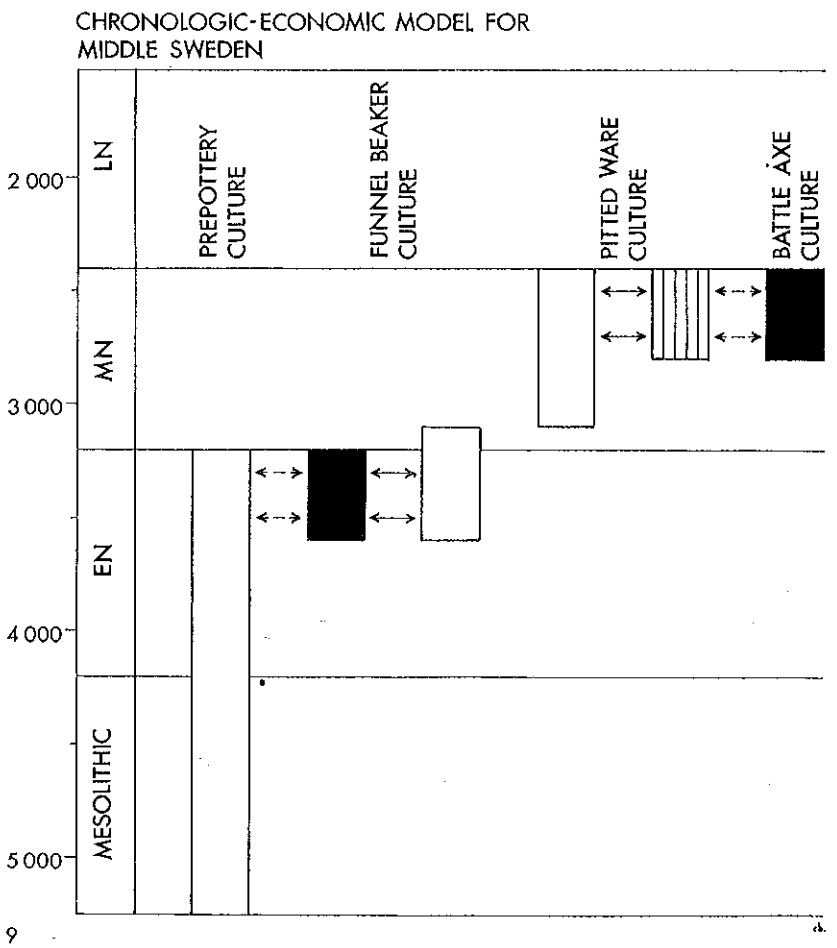

FIG. 9. — Chronological-economic model for Middle Sweden. For symbols see Fig. 8. Seasonal migrations within solely food-gathering groups are not denoted.

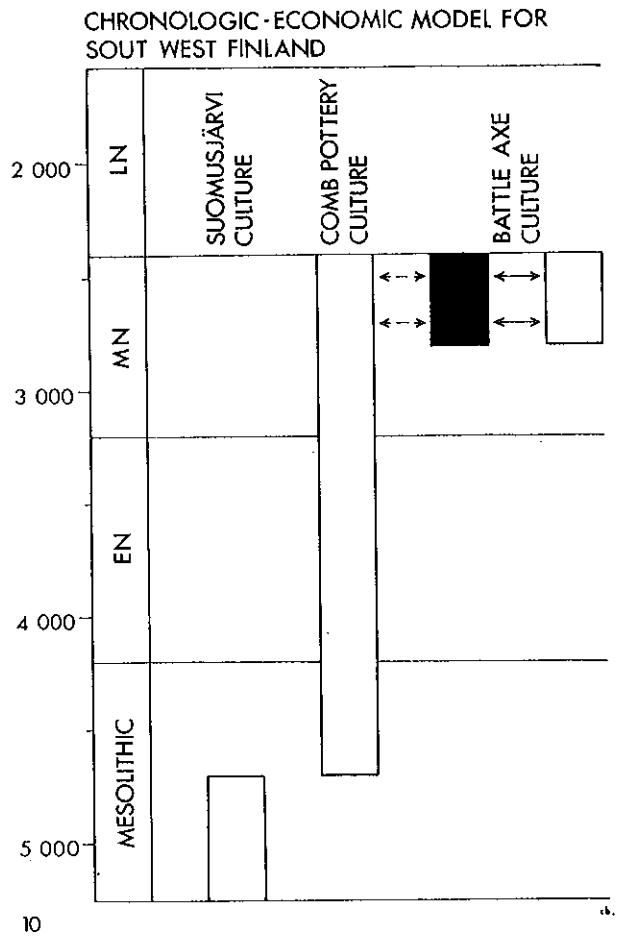

FIG. 10. — Chronological-economic model for South West Finland. For symbols see Fig. 8. Seasonal migrations within solely food-gathering groups are not denoted.

The lack of good radiocarbon datings makes accurate dating of the transition from the Mesolithic to the Neolithic difficult.

Today the material has been analyzed too little to give a picture of the ecological environment and the settlement patterns of the hunting-gathering-fishing groups and the Early Neolithic farming groups. There is still much work to be done on the archaeological material from South Sweden before the problems on the contact between and structure of the hunting groups and farming groups at the Mesolithic/Neolithic transition can be solved.

5. The northern boundary of the oldest farming

As described in Chapter 2 the spread of farming in the Baltic area was not a successive process but took place in distinguishable stages. One important feature of this process is that except for a restricted central area of farming in South West Scandinavia farming was not carried on continuously from the first introduction and onwards (fig. 7). The first period of farming in the marginal areas was of short duration. In Middle Sweden it lasted for about 200 years during the latter half of the Early Neolithic period and in the extreme marginal areas in South West Finland and North Sweden for approximately the same length of time one millenium later during the Late Middle Neolithic. In the central area, too, a stagnation is seen after about half a millenium of expanding farming during the Early Middle Neolithic.

A common explanation of the features described above might be proposed in the following way. At the first introduction of farming into a new area, that is during the Early Neolithic in South West Scandinavia, the Late Early Neolithic in Middle Sweden and the Late Middle Neolithic in South West Finland and North Sweden, slash and burn cultivation was carried out by migrating people primarily in virgin broadleaf forest, in the north other kinds of forest too. Each expansion of farming reached as far to the north as suitable soil, climate and vegetation for the cultivation technique used were available. Vast areas of the forest type required were destroyed by the use of fire clearances. Especially in the northern marginal areas, where farming was executed close to the ecological limit, this was a serious threat to the mere existence of farming as the regeneration of secondary forest suitable for slash and burn farming is a slow process. After a few hundred years people had either to start using bush or grass fallow or stop farming. The source material suggests the latter. Thus the farming techniques developed in the central areas of farming in South West Scandinavia and in the areas immediately south of the Baltic failed when introduced into the marginal areas by migrating people. The migrations from the central to the marginal areas might be explained by population growth and over-exploitation of the natural resources of farming as in shown by the influence diagram for South West Scandinavia (fig. 7).

6. Revised version of the Beacker model from 1947, 1954

The model by Becker from 1947, 1954 on the Early and Middle Neolithic in South Scandinavia can be summarized in the formula: "Twice three cultures".

He proposed the coexistence of three contemporary groups during the Early as well as the Middle Neolithic with different economies occupying different types of terrain so that no concurrence took place, one food-gathering (the Ertebølle culture and the Pitted Ware culture), one nomadic (the non-Megalithic Funnel Beaker culture and the Single Grave culture), and one farming (the Megalithic Funnel Beaker culture). The basis of this model was a series of immigrations.

Today a more unilinear development seems more likely. There never seem to have been anything like nomads in Scandinavia during prehistoric time, and it is more and more clear that the Neolithic economy was a mixed one executed by seasonal movements between different types of terrain. The model proposed here is differentiated into three separate ones for different parts of the Baltic area (figs. 8-10). It is quite clear that it is possible to propose other and —when the huge material now available has been analyzed—more accurate models.

A prominent feature of the models proposed here is that the Neolithic on its first appearence in the Baltic area involved a mixed economy, while at a later stage groups with a pure farming economy developed. The latter were contemporary with secondary Neolithic groups with which an exchange system was established (figs. 11-12). In this respect the Baltic area might be looked upon as a boundary zone between West and Central Europe dominated by groups with a Neolithic economy and East Europe dominated by food-gathering groups with a Neolithic technology.

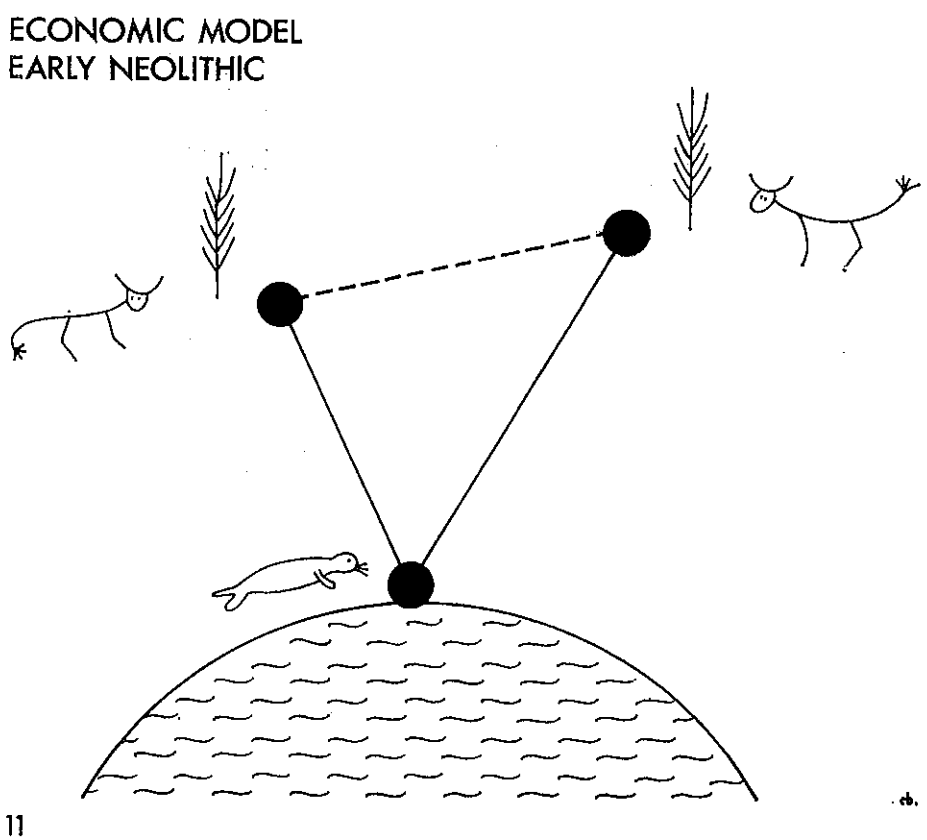

FIG. 11. — Economic model for the Early Neolithic Funnel Beaker culture in South and Middle Scandinavia. Black dots denote settlement sites, full lines denote seasonal migrations and broken lines migrations with a longer interval. The pictures roughly indicate the economy of the sites.

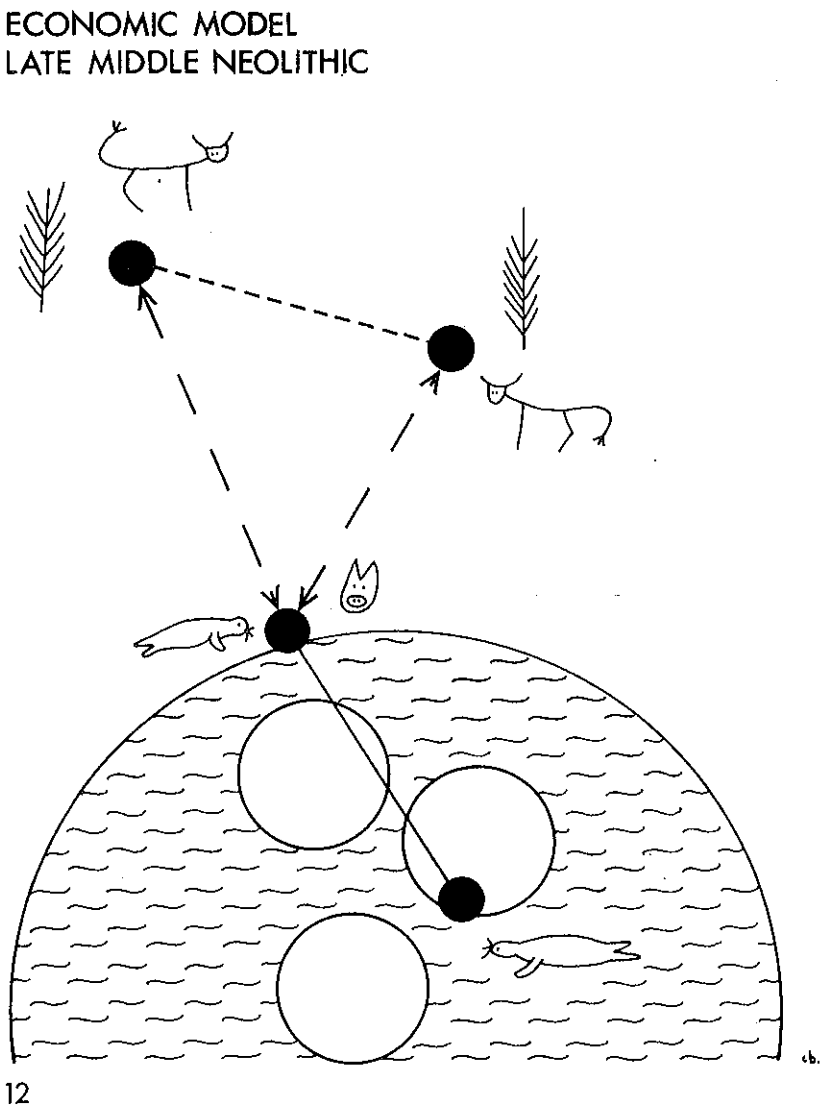

FIG. 12. — Economic model for the Battle Axe culture and the Pitted Ware culture during Late Middle Neolithic in Middle Sweden. The main ideas of the model are valid for South Scandinavia as well. For symbols see Fig. 11. Broken arrows denote exchange of products.

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ST. CATHERINE PRESS, LTD., TEMPELHOF 37, BRUGGE, BELGIUM

DISSERTATIONES ARCHAEOLOGICAE GANDENSES

CURANTE

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VOL. XVI

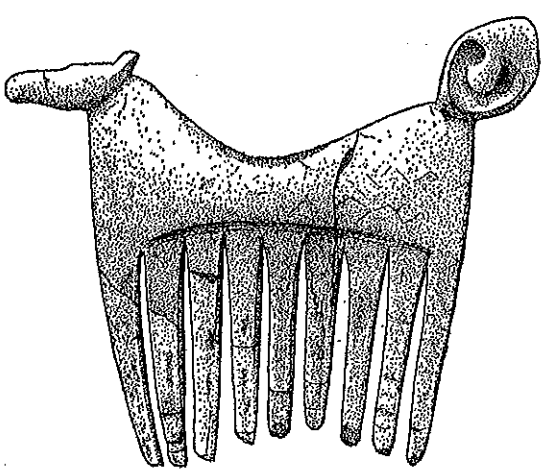
ACCULTURATION AND CONTINUITY IN ATLANTIC EUROPE

mainly during the Neolithic period and the Bronze Age

Papers presented at the IV Atlantic Colloquium, Ghent 1975

edited by

Sigfried J. DE LAET



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