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Prehistoric Field Boundaries in Eastern Denmark

by VIGGO NIELSEN

INTRODUCTION

In 1949 Gudmund Hatt completed 20 years' surveying and planning of Danish prehistoric fields with the publication of his work »Oldtidsagre«. These investigations were carried out in northern and western Jutland. Through the efforts of Gudmund Hatt himself, his coworkers such as Axel Steensberg, C.G. Feilberg and Johannes Humlum, and information from others interested in the work, it was possible to gain an impression of settlement and agriculture in those parts of the country, where the fossil landscape had been preserved in uncultivated heathland. Through planning and excavation it became clear that the groups of boundaries were field systems proper, divided into two main types. One had more irregular square fields, the other long, rectangular, and sometimes very narrow fields. These types dated overwhelmingly from the earlier Iron Age, and within that principally the Pre-Roman Iron Age. No attempt was made to use aerial photographs, despite Gudmund Hatt's awareness of the remarkable results obtained by English colleagues as early as the 1920's. The material Hatt put forward has been added to, and indeed through aerial photography multiplied many times (Jansson 1963, Harder Sørensen 1982), but even so does sum up the main features of the areas cultivated in the Iron age in the investigated regions.

Evidence outside northern and eastern Jutland, from the generally more fertile eastern parts of the country, appeared on the other hand only very sporadically. This difference was because western Jutland formed much the best work area, both because it was there that numerous settlements and house remains from the earlier Iron Age now began to be discovered, and also because field boundaries in the heathlands were easily accessible, simple to recognize and straightforward to plan. Similar traces of fields were much more difficult to find in eastern Denmark, because no corresponding open areas were present.

In general, the chances of observing early topographic features such as field boundaries depend on the area in question not having been too intensely cultivated in more recent times. In a heavily cultivated country such as Denmark, such fossil land surfaces exist only to a limited degree. The huge areas of heathland that covered most of Jutland in around 1800, and in other parts of the country the large grazing and woodland areas that were part of the agricultural system until that time, are now virtually all cultivated fields. Only a few fragments of the grazing land remain in the holdings of a few estates. In eastern Denmark there is also some woodland covering relatively undisturbed land surfaces. They make up, however, only a limited area.

Woodlands were also affected by the structural agricultural revolution that took place in Denmark in the last decades of the 18th century (Danmarks natur vol. 6). A continual reduction and impoverishment of the woodland surviving from the medieval period had been taking place, not least because of the various rights to woodland exercised by owners and users. Now common access to woodland ended at the same time as communal use of the agricultural land. This happened first in crown woodlands, and in 1805 also for private woods and resulted in a parcelling up and fencing off of defined woodland areas and the end of more dispersed woodland growth. At this time woodland covered only 4 % of the country, and was a particularly east Danish phenomenon.

Later – mainly in the second half of the nineteenth century – large areas of heath and grazing land were planted with woodland. The total area of Denmark covered by woods now amounts to about 12 %. This planting took place mainly in Jutland and on the island of Bornholm. The present percentages of woodland for Bornholm (20.9 %), Zealand (11 %), Funen (9.2 %) and Lolland-Falster (9.2 %) indicate roughly (with the subtraction of a few percent) what the percentage of wood-

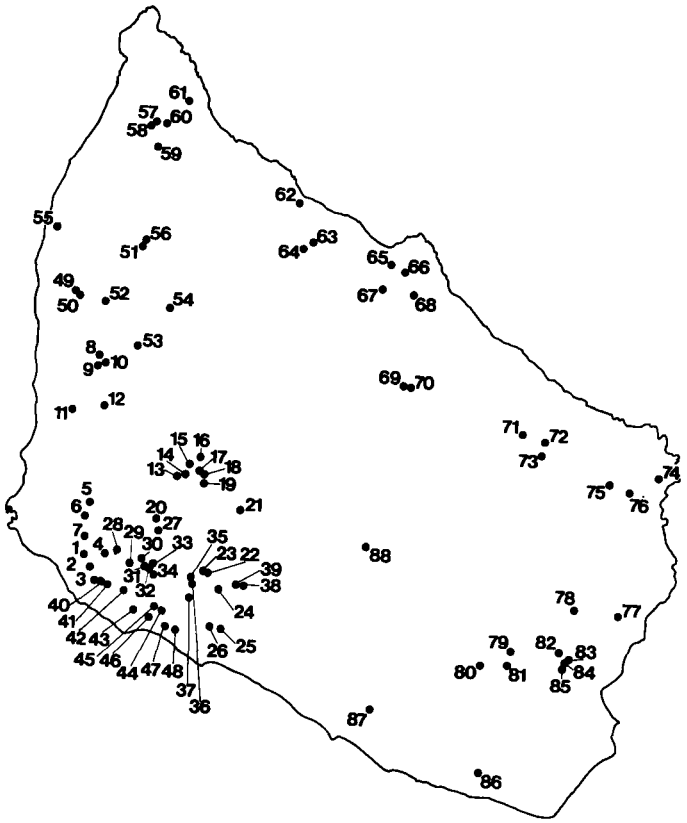

Fig. 1. Occurrences of prehistoric field boundaries in Bornholm.

land was in 1805. Thus the geographical representativeness of the old east Danish woodlands is limited. To this must be added the fact that these woods tend to be located on soils which are more difficult to cultivate. On Bornholm, most of the woodland lies in the high central part of the island where bedrock is close to the surface, and other woodlands on former heaths. Many woods in Zealand, Funen and eastern Jutland are in areas where the soil is gravel or sand, often in hummocky or hilly ground moraine landscapes with wet hollows in between. On Lolland-Falster many woods are on damp soils.

In general, therefore, areas of old woodland do not cover a representative sample of soils. Some of Zealand's most productive districts now have relatively small areas of woodland on their fringes. On the other hand the ancient woodlands do cover a wide range of variation of soil types, including some of the best quality.

Morphologically, the land under the woods will be most strongly affected by the most recent and intensive activites. Where deep ploughing was used to break up the surface of heathland prior to planting, all earlier traces will have vanished. On the other hand, there are areas of woodland that show no traces of ever having been cultivated. This is the case for a number of hilly or gravelly localities, and for some areas of the abovementioned hummocky ground moraine with wet hollows.

Modern forestry can resemble other types of cultivation, so that ploughing and harrowing can cause the deterioration or disappearance of earlier features; use of modern machines such as tractors, and the establishment of roads and paths, also cause much degradation of older landscape features.

Despite this general diminishing of observational potential, it is still in many cases possible to recognize traces of former cultivation. When areas were enclosed due to among other things the forestry laws of 1805, a number of areas of existing cultivation were included and made over to woodland. This included a number of areas with ridge and furrow fields. The extent of these inclusions can be seen from maps of the change in settlement and land use that took place in the decades after 1781. Earlier on, cultivated areas with ridge and furrow were covered with woodland due to the appearance of large estates or the abandonment of arable land. Early medieval field traces in the form of rows of stones cleared from the fields can also be seen in the landscape. In many cases field boundaries, banks and lynchets can be seen, evidence of agricultural use of the land, which usually dates from the earlier Iron Age.

Many old woodlands contain visible remains of graves dating from the Neolithic or Bronze Age, without the landscape showing any traces of cultivation. The landscape was evidently clear at the time, and must have been used for grazing or a cultivation system that has not left traces in the terrain.

In several cases subsequent cultivation has not been able to destroy earlier traces, so that a kind of landuse stratification is visible. Borup Riis on Zealand is an example of this, with megalithic graves, remains of Iron Age fields, of fields dating from the Viking or early Medieval period, and finally of ridge and furrow cultivation (Steensberg 1983), which were apparently abandoned in the beginning of the 14th century.

With a rough idea of what the woodlands might conceal, and after preliminary discussions with Gudmund Hatt and Axel Steensberg, I embarked in 1953 on a pro-

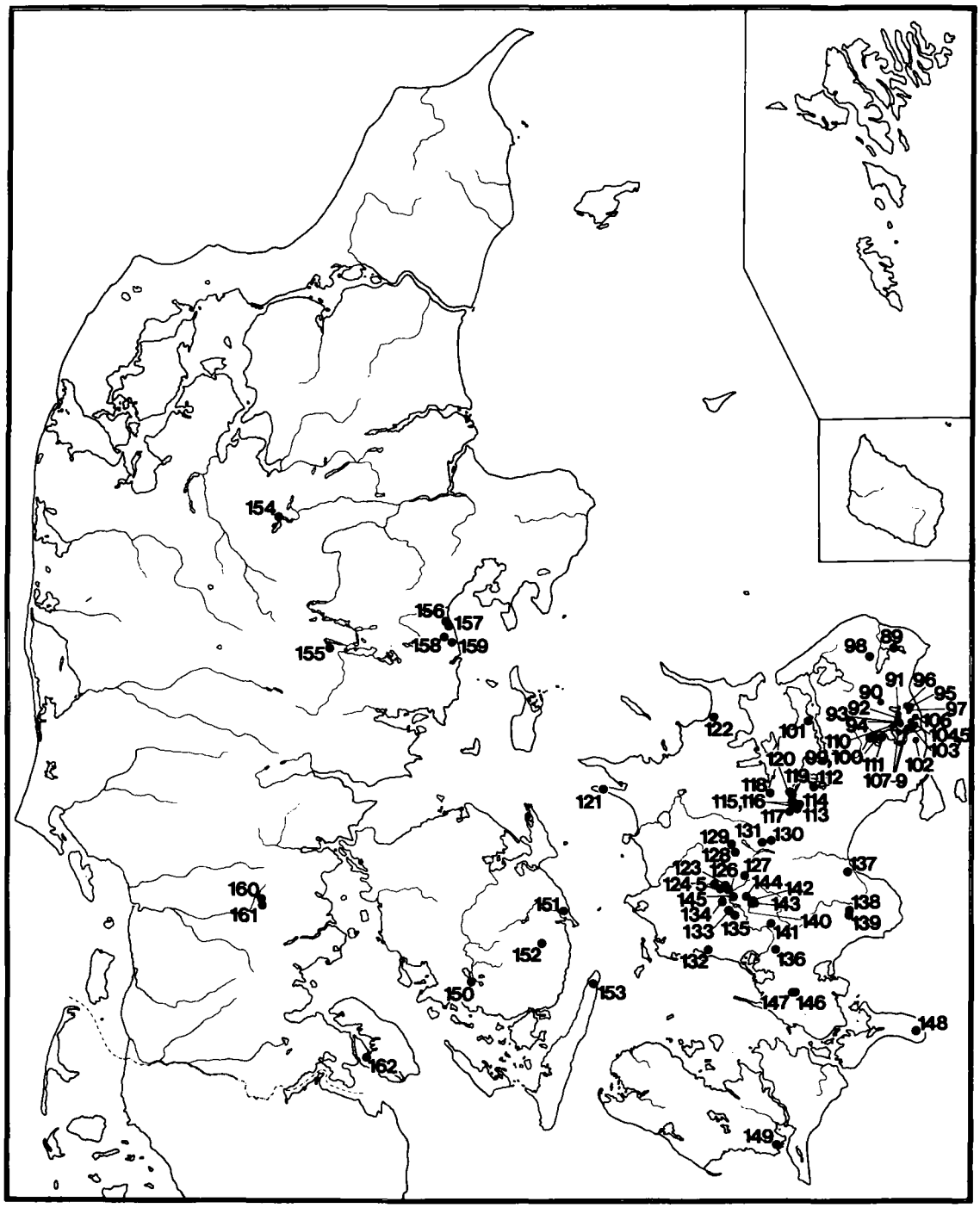

Fig. 2. Occurrences of prehistoric field boundaries in Eastern Denmark, except Bornholm.

ject to record, plan and investigate east Danish occurrences by means of a systematic search of the areas of older woodland. The aims included examining whether cultivation and settlement patterns had the same nature, extent and form in different areas, and whether the better quality soils had supported a more longlived cultivation from back into the Bronze Age and forward into the later Iron Age.

For the next 30 years, although with the main part of the work being done between 1953 and 1963, the woodlands of East Denmark were searched with varying degrees of intensity. Aerial photography was occasionally used as a supplement.[1] (Figs 1 and 2).

Tree growth makes the searching of woodlands difficult. Limited visibility, particularly in new plantation, makes it difficult to see field boundaries, and much more difficult to gain a coherent view of the overall plan. The terrain must therefore be very intensively walked. Lack of visibility also presents problems at the planning stage, which involves much more work in woodland than in open country. The tree growth also means that investigations cannot be made over wide areas, but only at particular points. The recognition of settlements normally has to be done by means of soil analysis, and traces of houses and settlement types can only be examined to a limited degree.

In connection with the survey, a series of plans 1:1000 were made, using a plane table. The plans were drawn up according to the same system used for Gudmund Hatt's maps, in which Axel Steensberg participated: contour lines at 1 m intervals, and symbols for boundary banks and lynchets that contain information about their height and breadth (appendix II). In the period from the first planning of Blemme Lyng in 1953 up to the planning of Næsbyholm Storskov in 1961–64, the planning methods unterwent a continual development. A polygonal pattern of stations was laid out using a theodolite, and planning was based on this. Towards the end, points would be refound to the nearest 10 cm, but such accuracy was not attained in the earlier stages.

In connection with the planning, investigations were made in and outside the field boundaries with a view to dating them and discovering their structure and formation. The dates provided by the material from these excavations are, however, only of limited applicability. They provide information that people lived on the spot at a particular time, but can give only a limited answer to the questions of when the field boundaries and systems were established and when they were abandoned. The potential for geobotanical determinations is thus of decisive importance for understanding developments on a particular site. The Geological Survey of Denmark has carried out such determinations on the two Zealand sites of Geelskov and Næsbyholm Storskov (Andersen S. Th. et al. 1983, figs. 5 and 6). Excavations such as those at Geelskov and Rønne Plantage on Bornholm have also concentrated on areas that were threatened by building and raw material removal respectively.

Because the occurrences are found in woods of very different sizes, the notion of an "occurrence" is relative. It may refer to a few remains of field boundaries in a small woodland; or to one or perhaps several adjoining but geographically bounded field systems within the same large forest.

The work was supported by a series of grants from the former Danish State Research Foundation. In connection with the plannings and investigations a number of unemployment arrangements were organized in cooperation with the National Museum, the Prehistoric Museum at Århus, and Bornholms Museum. During planning and excavation I received help from my wife, Gudrun Nielsen, who among other things undertook most of the planning in Næsbyholm Storskov, and also from a series of assistants, among them for a long period the American student Jonathan Gell.

SURVEY OF FIELD BOUNDARIES IN EASTERN DENMARK

The catalogue follows the normal Danish topographical schemes as used in J.P. Trap: *Danmark* 5. edition with the exception that Bornholm is counted first in order to lead the reader from the east to the west. Consequently no regard is taken of the municipality reform in 1970, where the number of the counties and the municipalities were diminished and a regrouping took place.

As abbreviations are used:

a. – amt, Danish county, h. – herred, Danish district, s. – sogn, Danish parish.

Place names are recorded in Danish. Note the generics – bakke and bjerg = hill, – bæk = brook, – gård = farm, – hegn = enclosure, – kirke = church, – skov = wood or forest, and – å = stream (proper rivers do not exist in Denmark).

The enumeration is continual and indicates all occurrences in each parish. This means that when an occurrence in a few cases reaches over more than one parish, it should be counted more than once.

BORNHOLM

Bornholm a.

Vester h.

1. (1) *Rønne Plantage*, the plantation area west of Onsbæk-Robbedale. Prominent field boundaries with many stones covering

Fig. 3. Rønne Plantage. Cairn situated in boundary bank with ploughmarks.

about 5 ha around the Tornhøj barrow. Naturally limited to the NE by a meltwater valley, and to the E by the brook Onsbæk.

2. (2) *Rønne Plantage*, an area of 50–60 ha in the central part of the plantation area, formerly heathland, bounded to the N by hills and a meltwater valley, to the S and SW by the slopes of a late glacial river bed. The soil is light sandy moraine on top of sand or clay. Plans and investigations 1955–57. Plans were supplemented by aerial photographs. The fields are mainly broad and rectangular, apparently with some regular patterns. The field boundaries are mainly banks about 4 m wide and c. 10–15 cm high. Spread over the terrain are stone clearance cairns, graves in the form of cairns and barrows, and stones with cup marks. The excavations showed settlement traces and plough-marks in the NE-most part, in connection with cairns and lynchets (fig. 3). The area was used in the Late Bronze Age from about 1040 BC (K 2403–05). The ploughmarks and field boundaries are younger than about 620 BC (K 2402) (Appendix I).

3. (3) *Rønne Plantage*, SE part, E of the meltwater valley containing the brook Hakkedam Bæk, and bounded to the S by an erosional slope. This is the W-most part of a large occurrence, topographically clearly bounded, which continues E into Nylarsker s. (see no. 40).

4. (4) *Blemme Lyng*. This site begins S of the NE angle of the parish boundary, bounded to the S by the scarp that delineates the sandstone area. The main part of this site lies in Nylarsker parish (see no. 28).

Knudsker s.

5. (1) Aerial photographs of the area 600 m SSW of Knuds kirke show a 3 ha area where paler lines in the soil form a regular rectangular pattern oriented NNE – SSW. The field area could have been bounded to the NW by cliffs now destroyed by quarrying, and to the S by the By-å and the slopes down to it.

6. (2) *Kanegård skov*. On the slopes of By-å in a 5 ha wood are lynchets and banks with many large stones. A few cairns are placed in connection with the boundaries. Probably connected with site no. 5.

7. (3) Aerial photographs of the area c. 2 km S of Knuds kirke and W of the house Skovhave show a 4 ha area of rectangular fields. It does not continue into the adjoining wood to the N, and presumably extended further W and S.

Nyker s.

8. (1) *Bukkegårds skov*. Banks and lynchets oriented ESE-NNW and NNE-SSW occur in the S part of the 5 ha wood, 50 m N of Bukkegård.

9. (2) In a wood 1.5 ha in size and c. 350 m S of n. 8 is a boundary bank aligned ESE-WNW, with lynchets running across it.

10. (3) In a wood 3 ha in size 200 m E of n. 9 are 4 lynchets aligned ESE-WNW at 40 m intervals.

11. (4) *Blykobbe skov*, a 5 ha wood 150 m N of the farm Blykobbegård, contains lynchets and banks, some of which have single large stones placed in rows.

12. (5) Aerial photographs of the area 1000 m N of Nykirke, N of the Nyker-Blykobbe-Rønne road, show boundaries visible

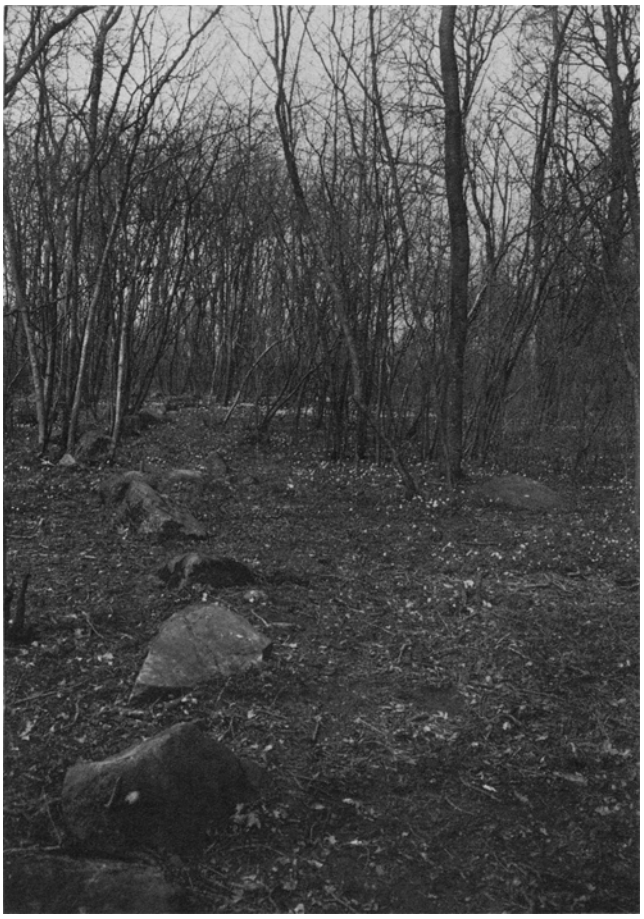

Fig. 4. Curved stone row with a boundary bank running into it at right angles. In the boundary bank a cup-marked stone. Køllergård Stations skov no. 32.

as pale lines, among others a group of relatively small, rectangular fields oriented ESE-WNW, several of them 30 × 40 m.

Vester Marie s.

13. (1) Woods on both sides of the Svanekevej road W of St. Bjergegård. In the W and N parts of this is a c. 8 ha area of banks and lynchets, bounded to the N and NE by a steep narrow valley containing a tributary of Tingsted å. The boundaries reach lengths of up to 150 m, the fields widths of c. 30 m.

14. (2) Woods E of the steep narrow valley mentioned in 13 contain another 8 ha area of banks and lynchets. To the N it abuts Tingsted å, and is bounded to the E and S by wet areas. Rows of large stones occur in several of the banks. The fields area mainly oriented NNE-SSW. Widths of various examples are 20, 25, 27 and 30 m.

15. (3) In the wood from the house Bjergly N to Tingsted å are stone rows and lynchets. This could be connected with the group mentioned in no. 14.

16. (4) The wood belonging to St. Bjergegård contains in its W part a single stone row. In the SE part of the wood are a number of parallel stone rows and a lynchet.

17. (5) The wood SW of St. Bjergegård towards the parish road contains 2 lynchets.

18. (6) The wood S of St. Bjergegård and S of the Svanekevej road contains stone rows and lynchets.

19. (7) The patches of woodland 4–500 m N of Vester Marie church contain a boundary bank with stone rows and lynchets covering several ha. The W part of the wood is wet.

20. (8) *Blemmelyng.* Parts of the E most section of the big, formerly heath section of the area used to have stone-filled lynchets and numerous cairns (Parish Inventory 123, Vedel p. 27).

21. (9) *Højlyngen.* In the parts now under cultivation were formerly many cairns, also stone-filled lynchets »up to 100 feet long, but only 6 feet wide ... In some place these ... are not straight, but almost form an angle« (Parish Inventory 56).

22. (10) The wood of 3 ha size immediately N of Lobbæk contains banks, lynchets and stone rows. The latter seem to be at least in part later, because they are not aligned with the straight banks (fig. 4). The fields are regular rectangles oriented NNE-SSW. Examples of field sizes are 30 × 80 and 40 × 60 m. Planned 1955.

23. (11) Aerial photographs of the land W and NW of the wood in no. 22. show paler lines forming rectangular fields.

24. (12) The 5 ha wood S and SE of Lobbæk has boundary banks and lynchets comprising parts of 9 fields. Oriented NNE-SSW.

25. (13) *Longerne*, a 10 ha wood near Sose, has boundary banks in its W part, which in many cases have single rows of large stones, and lynchets.

26. (14) Aerial photographs of the area W of Longerne towards the farm Dalbygård reveal traces of rectangular fields oriented NNE-SSW.

Nylarsker s.

27. (1) *Fynegårds skov* on the NE part of Blemmelyng contains over 4 ha of boundary banks, which enclose irregular rectangular fields. Planned in 1953 by O. Klindt-Jensen (Klindt-Jensen p. 134 ff, with a sketch).

28. (2) *Blemmelyng.* In the central and S part of this former heath area is a 40 ha area containing about 100 fields, bounded to the S and SE by the sandstone escarpment (see also no. 4), but with no clear boundary on the flat, wet and stony terrain to the N and NW. New plan and investigations 1953–58 (fig. 5). Earlier noted and partly sketched (P. Thorsen 1931). Aerial photographs of the area immediately N-NW of the wood show pale lines oriented NNE-SSW like the boundary banks in the wood.

The fields are mainly oriented NNE-SSW, although inclining more towards N-S further to the E. The banks form straight lines up to 300 m long. Examples of field sizes are 25 × 150 m, 20 × 60 m and 55 × 120 m. The banks are often massively stonefilled (fig. 6). The subdivision of a field is shown by among other things a different stone content in the primary

Fig. 5. Prehistoric field systems in Blemme Lyng, no. 28. Cairns are marked by star-dots. The numbers indicate excavation localities.

Fig. 6. Blemme Lyng. Stone-filled boundary banks, running into each other.

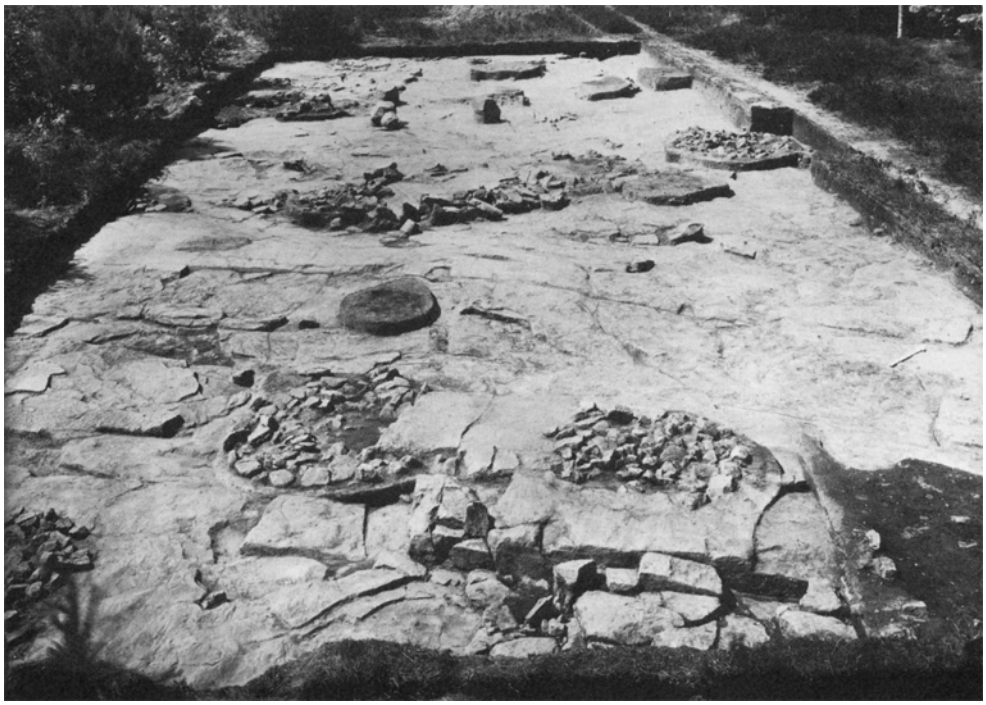

Fig. 7. Blemme lyng. Ditch and fireplaces in the thin cultivation layer over the sandstone rock. The excavation area traversed by a boundary bank.

and secondary banks. The area contains about 200 stone clearance and funerary cairns of various sizes. The phosphate analyses and about 40 excavations in the area reveal a settlement area in the S-central part. Ditches and fireplaces were found (fig. 7), indicating occupation around 1000, 850, 770, 410, 210 and 200 BC (K 2406 – 11). A grave dated to 410 BC is interpreted as contemporary with a nearby lynchet, while a fireplace dated to 200 bc lay beneath a boundary bank.

29. (3) *Hyldebrandsgård skov* is c. 2 ha in size and lies 300 m E of no. 28 on the other side of a marked dip in the landscape. There are boundary banks tightly packed with stones and heaps of stones (fig. 8). Planned and investigated 1959.

30. (4) *Wood near Langensgård.* A 3 ha wood, 400 m E of no. 29 contains banks, running N-S.

31. (5) *2 small woods near Uglegård*, 100 m S of no. 30, contain boundary banks. A well dug in the clay close to the N corner of one of the woods contained pottery dating from the 1st century AD. Planned and investigated 1960.

32. (6) *Køllergård station skov*, a 3 ha wood belonging to Dammegård 200 m E of no. 31, contains boundary banks with stones up to a metre across. Under a bank a pit with bronze age pottery. A dip containing a stream to the E, and Vellensby å to the S, could have formed the boundaries of this field unit. Planned and investigated 1956–57.

33. (7) Aerial photographs reveal fields immediately N of no. 32, covering about 3 ha, and oriented NNE-SSW and WNW-ESE, the same as the fields in the wood.

34. (8) Aerial photographs from S of Vellensby å reveal c. 1 ha of fields between the river and the road. Lighter coloured lines enclosing regular rectangular fields are oriented NNW-SSE and WSW-ENE, i.e. on a different alignment to no. 32–33. One field measures 40 × 50 m.

35. (9) *Nylars Præsteskov* (Præstebysket) lies c. 200 m NE of Nylars church, is 7 ha in size, and contains boundary banks and lynchets. The system is bounded to the S by a depression containing a tributary of the Præsteå, and to the east by water meadows. General orientation is WNW-ESE and NNE-SSW. A number of stone clearance or funerary cairns lie in the area. The field shapes and the course of the banks are irregular. The banks and lynchets contain many stones, some very large. (fig. 9) Planned and investigated 1955–57. (Brøndsted 1960, p. 98 ff).

36. (10) Aerial photographs show paler coloured lines between the stream forming the S boundary of no. 35 and the stream Præsteå. They run NNE-SSW and form a strictly rectangular pattern with some smaller fields. The pattern is not similar to no. 35.

37. (11) Aerial photographs show an 8–10 ha area of pale lines forming rectangular fields 300 m S of no. 36.

38. (12) A wood 1.5 ha in size N of Engegård has boundary banks throughout its area. They are oriented NNE-SSW and WNW-ESE and contain large stones up to 1 m across, sometimes arranged in rows. There is a rectangular enclosure, 10 × 5 m, divided off by stone rows, in a corner between two banks.

39. (13) Aerial photographs show pale lines in the area c. 100 m N and NE of (12) forming rectangular fields oriented NNE-SSW and WNW-ESE, covering 9 ha.

Fig. 8. Hyldebrandsgård skov. Stone-filled boundary bank uncovered.

40. (14) On the parish boundary with Rønne, the *Rønne plantage* system (see no. 3) crosses into Nylars s., bounded by the valley containing the Hakkedam brook.

41. (15) *Hjortheskov* and *St. Myregård skov* contain 6 ha of banks and lynchets forming broad, square fields generally oriented NNE- SSW. On the neighbouring fields, aerial photographs show pale lines forming square fields which to some degree join up with the fields in the woods. The system crosses the parish boundary and enters Rønne Plantage: it is topographically bounded to the W by the Roelsdal meltwater valley, to the E by Vellensby å, to the S by the slope of a late glacial meltwater river, and to the W by the meltwater valley containing the brook Hakkedam bæk. Along the northern edge of the area are several graves, including 3 large barrows. Planned and investigated 1953–60.

42. (16) A wood 0.5 ha in size S of Vellensby å S of Vestergård has a lynchet running WNW-ESE, and a bank at right angles to it.

43. (17) *Lille Myregård skov*, 2 ha in size, contains a lynchet with a few large stones lying singly.

44. (18) *Skyttegård skov*, c. 3 ha in size, contains banks and lynchets grouped on each side of a depression.

45. (19) *Lobberne*, c. 3 ha in size, under St. Myregård farm, has in its S part two powerful banks.

46. (20) A wood 0.5 ha in size 500 m W of St. Myregård contains banks.

47. (21) A wood 2 ha in size under St. Strandbygård contains large boundary banks and lynchets.

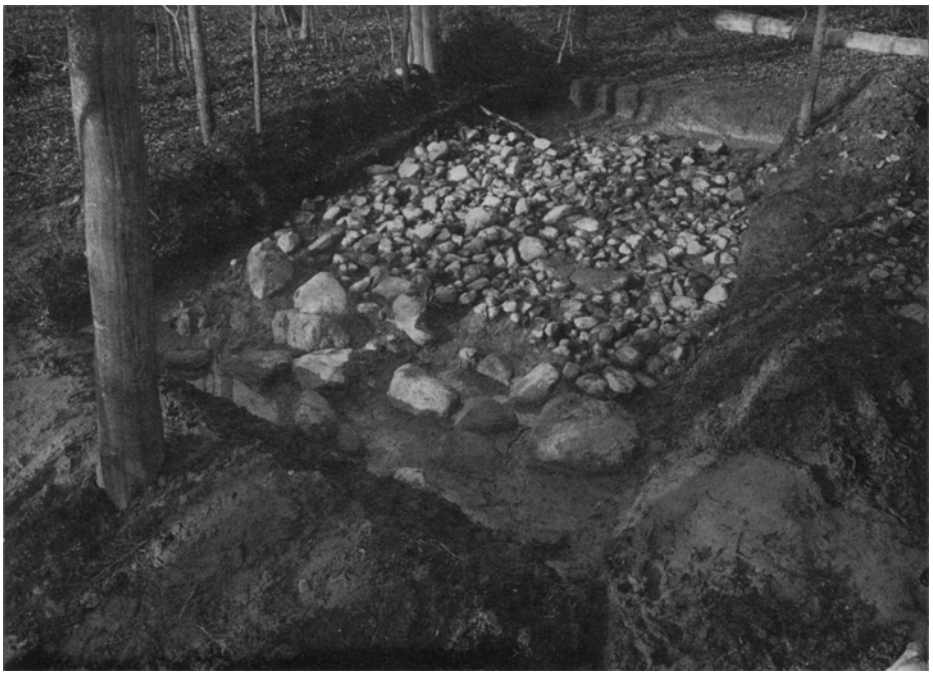

Fig. 9. Nylars Præsteskov no. 35. Stone-filled lynchet.

48. (22) A wood c. 1 ha in size under Lille Strandbygård contained »curious stone rows« noted by the teacher J.A. Jørgensen. They were about 30 m apart, and were cleared along with two bronze age cairns to allow cultivation in 1892–94.

Nørre h.

Hasle s.

49. (1) Aerial photographs of the area 200 m SSW of Julegård show lighter coloured lines, forming fields oriented NNW-SSE and ENE-WSW. The system continues E into Klemensker parish.

Klemensker s.

50. (1) See Hasle s. no. 49.

51. (2) Aerial photographs of c. 30 ha area between Øster Rosendale and Skrubbekrak show pale lines forming rectangular fields aligned NNW-SSE and WNW-ENR. Most of the system lies in Rutsker s. (no. 56), a smaller part in Klemensker.

52. (3) A wood under *Pilegård*, 4.5 ha in extent, has lynchets in the NE and SW.

53. (4) *Galtebuske*, a c. 2 ha wood under Ladegård, has several lynchets.

54. (5) Aerial photographs show destroyed boundaries as pale lines at Bækkegård.

Rutsker s.

55. (1) Aerial photographs of a c. 5 ha area E of the road from Hasle to Allinge, N of the side road to Helligpeder, show paler lines forming broad rectangular fields oriented N-S and E-W.

56. (2) See Klemensker s. no. 51.

Olsker s.

57. (1) *Blåholt skov*, c. 1.5 ha in size, has well-marked lynchets and banks in its N part.

58. (2) Aerial photographs of the W-facing slope of a steep valley c. 300 m SW of no. 57 reveal over 2 ha of dark lines forming broad, rectangular, rather small fields.

59. (3) *Stenløse skov* contains over 2–3 ha of field boundary banks, lynchets and stone rows. Aerial photographs of the area outside the W edge of the wood show over 2 ha pale lines, forming rectangular fields aligned NE-SW.

60. (4) *Vanddale skov* has a few lynchets oriented NNE-SSW in its W part.

61. (3) *Storløkkebakke* S of Allinge rises to 68.5 m. Aerial photographs show a c. 20 ha area of lighter coloured lines, forming rectangular fields oriented (with a little variation) N-S.

Rø s.

62. (1) *Dynddaleskov* contains c. 5 ha of boundary banks and lynchets in its E part on the slope down to the Dynddale å.

63. (2) *Rø Præsteskov* contains over 4 ha of banks and lynchets aligned NNW-SSE and ENE-WSW. An adjoining wood to the N has a single boundary bank. Planned 1960.

64. (3) *Skovholm*. In a 1.5 ha wood under the farm are banks and lynchets. Planned 1960.

Øster h.

Østerlarsker s.

65. (1) *Stokkeland skov*, 6–7 ha in size, contains boundary banks and lynchets. Some of the banks have rows of single stones.

Risen

Østermarie Sogn, Øster Herred, Bornholms Amt.

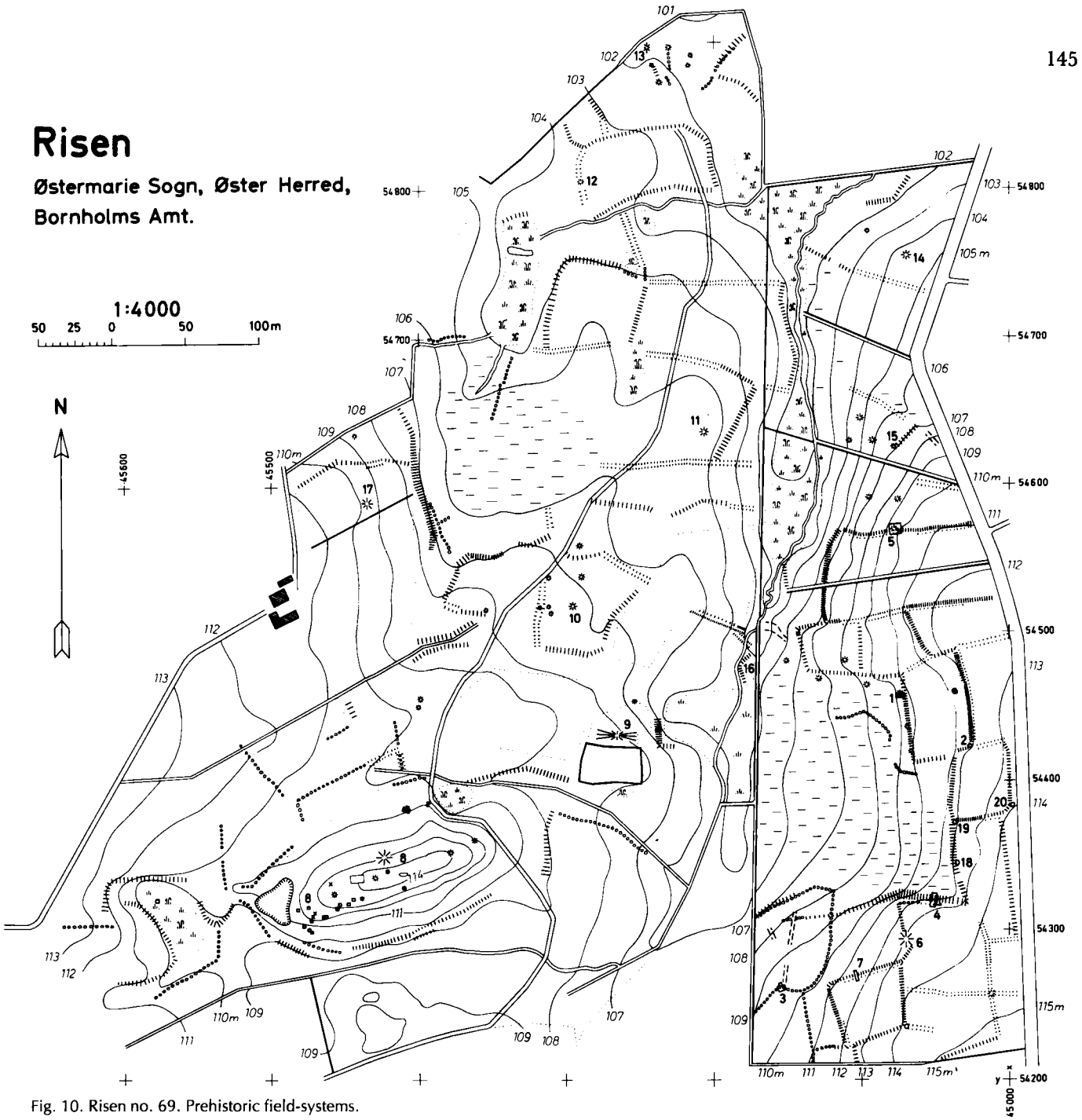

Fig. 10. Risen no. 69. Prehistoric field-systems.

66. (2) Aerial photographs show c. 4 ha of pale lines forming regular, rectangular fields about 500 m SE of no. 65.

67. (3) *Lensgård skov* has a single lynchet in its S part.

68. (4) *Højskov* under Damaskegård has two lynchets in its W part.

69. (5) *Risen* under Risenholm is the W part of a 20 ha wood lying E of the parish road running S from Østerlars Stationsby, and of which a little part is in Østermarie s. no. 70. The wood is situated on both sides of a stream almost following the parish boundary and contains banks, lynchets and stone rows. The hill cemetery, Bøgebjerg, which has graves from the earlier Iron Age through to the Viking period, (Klindt-Jensen 1957, a.o.p. 233), lies in the W part of the area. The area also contains stone clearance and funerary cairns. The boundaries appear to derive from 2 phases: an older, with rectangular fields delineated by boundary banks and lynchets, and a younger formed by stone rows, some of which have a curved and irregular character. – Planned and investigated 1960–61 and 1966. (fig. 10).

Østermarie s.

70. (1) *Risen*, see Østerlarsker s. no. 69.

71. (2) *Stamperelund*, 2 ha in size, has banks and lynchets throughout.

72. (3) *Lyrsby skov*. An outlying parcel of this wood N of the Gyldenå has 5 boundary banks aligned NNE-SSW, 150 m from the big group of standing stones at Louisenlund.

73. (4) *Lyrsby skov*. In this 18 ha wood, bounded to the N by the Gyldenå and cut through by a tributary of it, are widespread, well-marked, boundary banks and lynchets forming rectangular fields aligned NNE-SSW or WNW-ESE.

Ibsker s.

74. (1) A wood 2–3 ha in size S of Frennegård contains a few banks aligned E-W.

75. (2) *Stenskov*, 2 ha in size and with a W point abutting the churchyard of Ibs Kirke, the church of St. Jacob, has boundary banks and lynchets throughout, aligned NNE-SSW or ESE-WNW, forming rectangular fields.

76. (3) A wood of 20 ha 500 m E of Mandhøj under Skovsholm contains in its W part boundary banks surrounding broad rectangular fields.

Sønder h.

Neksø s.

77. (1) Aerial photographs of the gently sloping S and E facing terrain which forms the *Neksøvang field* show over 100–140 ha paler lines, forming rectangular fields. The fields are mainly oriented ESE-WNW. Several subdivisions can be recognized, e.g. the E part, which has trapeze shaped areas 200 m N-S and 100 m wide. These are divided into fields 30–40 m across aligned ESE-WNW. Sample sizes of other fields are 80 × 45 m and c. 120 m × 40 m.

Some dividing lines can be followed over considerable distances. One runs c. 450 m E-W, and another cuts this at right angles and is c. 320 m long. Field shapes and sizes are similar from one end of the area to the other. In the S part of the area the main orientation changes somewhat, so that it runs E-W or ENE-WSW.

Bodilsker s.

78. (1) Aerial photographs of the S and E facing slopes W of Tornegård near the cemetery hill Slamrebjerg, show c. 10 ha pale lines forming rectangular fields. They are bounded to the N and W by the cliffs and rocks of Slamrebjerg. The main orientation is ESE-WNW. The rectangular pattern is strictly adhered to. Examples of field sizes are c. 85 × 30 m and 45 × 30 m.

79. (2) A wood under *Julsgård* N of Sejersminde, N of and up to the road from Bodilsker to Pedersker, contains a few faint boundary banks on a flat area of clay soil sloping to the S.

80. (3) *Brandskov* has in its W part faint traces of banks and lynchets on a flat area of clay soil. In several places the banks have rows of single, large stones.

81. (4) A wood under Skovshøj S of Julsgårde lies on flat clay soil. Clear boundary banks and lynchets are present throughout.

82. (5) Under *Gadegård* is a 4 ha wood on even S sloping terrain. A few boundary banks and lynchets are the remains of at least 6 fields.

83. (6) *Soneskov*, 6 ha in size, is near Store Kannikegård immediately S of no. 82. It contains several lynchets and boundary banks. Because of the terrain these are relatively irregular.

84. (7) Aerial photographs show pale lines forming rectangular fields mainly oriented N-S and E-W in the area SW of Soneskov, no. 83.

85. (8) *Jomfruskov* near St. Kannikegård has a few boundary banks and lynchets in a 1.5 ha area in its N part.

Poulsker s.

86. (1) A small wood W of Dammegård farm has a few boundary banks and lynchets in its W part.

Pedersker s.

87. (1) Aerial photographs show light coloured lines covering c. 12 ha of the even, S facing land S of and running up to the Rønne-Pedersker road. They form a rigid geometric system of regular rectangular fields. To judge from the extent of the lines, the system extended in all directions.

Åker s.

88. (1) On *Åker heath* are "long heaps of stone, sometimes straight, sometimes bent or angled", in connection with some cairns (Vedel p. 27, Parish Inventory 142).

ZEALAND

Frederiksborg a.

Lynge-Kronborg h.

Tikøb s.

89. (1) *Horserød hegn* has c. 20 ha of boundary banks and lynchets in its SW part. The area of cultivation is bounded to the N by the bog Stone Svends mose and Ellingekær, to the E and SE by Gurre sø or the slopes running down to it, and to the S by uneven terrain with depressions and boggy areas. It might have extended a little further to the W. The area is hummocky, with a varied but mainly gravelly soil cover. The whole area has about 80 stone cairns or graves, mainly small and in the S part of the area. Only a few of the c. 30 field areas are fully surrounded by boundary banks. Most are, due to the uneven terrain, irregularly rectangular, only a few being regular. – The area was planned and investigated in 1956. Finds of a firedog, querns and hammerstones suggested cultivation in the earlier Iron Age.

Blovstrød s.

90. (1) *Tokkekøb hegn* has 8–10 ha of boundary banks and lynchets in its SW part. They form broad rectangles. The surface of the area is even in contradiction to the often more hummocky parts of the wood.

Birkerød s.

(1)–(4): *Rude skov* has many areas of boundary banks and lynchets. The landscape is very uneven, and broken up by many meltwater valleys, lakes, bogs and hills, including Mag-

lebjerg, the highest point in N Zealand. There are several, partly interconnected areas:

91. (1) In the N part of the wood banks and lynchets cover about 50 ha, mainly on 6 hills but interconnected to a degree. Planning was begun in 1983.

92. (2) A separate 6 ha area occurs in the central part of the wood.

93. (3) There is a c. 3 ha area in the east central part of the wood.

94. (4) The S area contains a 3 ha system.

Hørsholm s.
(1)–(3): *Folehave* with Sandbjerg Østerskov has 3 areas of clear boundary banks and lynchets. They are separated from one another by meltwater valleys which are partly filled by bogs.

95. (1) The E part of the wood has a system stretching 1 km N-S, about 200–300 m wide.

96. (2) The N central part of the wood has a 15 ha group.

97. (3) The S part of the wood, called Sandbjerg Østerskov, has a group over 1000 m long from N-S, and 300 m wide in the centre.

The pattern seems to be regular, broad rectangles. In all three cases Bronze Age barrows predate the boundary banks.

Holbo h.
Esbønderup s.
98. (1) *Ostrup Kobbel* in Gribskov has over c. 3 ha of lynchets in its western part, immediately W of the road from Nødebo to Esbønderup. They are aligned E-W and N-W. One can be followed over 80 m. 3 funerary cairns are associated. The system is partly bounded by ridge and furrow cultivation to the W.

Ølstykke h.
Ganløse s.
(1)–(2): *Ganløse Ore.* The wood contains c. 30 ha of boundary banks and lynchets, divided into 2 main parts:

99. (1) the eastern encompasses c. 8 ha, and lies on an area of high ground which is bounded by steep drops towards bogs to the S and E and meltwater channels to the W and SW. Only a few of the 12 or 13 field areas are bounded on all sides, so that only a few are of known area. Most of the lynchets are aligned WSW-ENE, but others follow the terrain. In the N part, 2 small barrows abut against a N-S bank. Planned 1960.

100. (2) The western part has a c. 1500 × 250 m area of boundary bank and lynchets on a steep S facing slope overlooking a bog. Wet and uneven areas form the N edge. Orientation is generally WSW-ENE. Immediately to the N are barrows of Bronze Age type.

Horns h.
Dråby s.
101. (1) *Færgelunden's* middle section has a few boundary banks and lynchets on the E-facing slope.

København (Copenhagen) a.
Sokkelund h.
Lyngby s.

102. (1) *Jægersborg dyrehave* has a few parallel lynchets in its S part, on the S facing slope towards Fuglevangs road.

Søllerød s. (note 2)
(1)–(3). *Jægersborg hegn* has ridge and furrow fields in its NW and SE parts, and in its E section several areas with boundary banks and lynchets divided from each other by tunnel valleys and meltwater valleys.

103. (1) The southernmost occurrence is seen N of Rådvad, covering c. 8 ha. It is probably connected with a 15 ha area to the NE which is bounded to the N by the valley containing Skodsborg lake.

104. (2) An area of c. 12 ha runs from the N edge of the Skodsborg valley as far as Bøllemosen.

105. (3) A few rectangular fields can be seen between Bøllemosen and the N edge of the wood.

The usually regular, broad rectangular fields in all 3 areas are generally oriented roughly E-W, between WNW-ESE and ENE-WSW. Only a few field areas are fully bounded, so sizes cannot be determined. Early Bronze Age barrows are present in all 3 areas, and no. 103 and no. 105 also have barrows from the Late Bronze Age.

106. (4) *Trørød skov* includes much of a morainic area surrounded by meltwater valleys. Areas of boundary banks and lynchets are found in the S part, and in a belt on and over the slopes to the NE and NW. These areas form limited sections each of about 5 ha. The preserved boundaries seem to frame regular rectangular fields. The 3 or 4 areas with boundaries could all belong to the same field system. There are about 30 Bronze Age barrows in the area, ranging in size from small to large. Some are used as primary marker points for the field boundaries. Pottery and flint of Late Bronze Age type has been found in the S part.

(5) and 6): *Geelskov*, a large hilly area, up to 50 m in altitude, is bisected by a meltwater channel running NW-SE. The S and W area has an 85 ha field system with natural boundaries almost all the way round (Geelskov I). The NE area has a 30 ha area (Geelskov II). Both were planned and investigated 1954–56 and 1960 (fig. 11).

107. (5) *Geelskov I*, the larger of these field systems has about 100 fields. By virtue of its size alone this is one of the most important sites in east Denmark. Also this area includes the remains of megalithic graves, and particularly along the S section there are a number of barrows dating from the Bronze Age, and a number of stones with cupmarks.

The area is, as mentioned, naturally bounded by slopes and valley bottoms, which would have been difficult or impossible to cultivate. To some extent these could have been grazing areas, possibly also used by neighbouring villages. There would also have been grazing on the promontory in Furesø, at Dronninggård and Næsseslottet, because the terrain and moisture content would not have been suitable for cultivation there either.

Within the field system, on the other hand, the fields are packed closely together (fig. 12), and difficult terrain or water conditions seem to have prevented cultivation in only a few

Fig. 11. Geelskov I and II, no. 107 and 108. 1:10.000.

places. This was the case with a shallow depression running N-S, which still contained a couple of areas of standing water at the time of the investigation, and in a narrow and somewhat steep sided valley running E-W from the SE corner of the Vejlesø into the higher Geelsbakke area. The bottom of this, although surrounded by lynchets, seems itself never to have been cultivated. Finally, further to the S is a single area, partly filled by a small lake and partly with very uneven terrain, which would not have been suitable for cultivation.

Within the complete system, few fields are completely surrounded by boundaries and so of clearly determinable size. It is evident that most of the fields belong to a rectangular type, of which the ratio of the long to the short sides can vary between 1:2 and 1:6, typical field sizes being 140×40 m and 155×30 m. Wider fields appear furthest to the W in Tyvekrogen, e.g. 100×65 m and 70×50 m, and also furthest to the N and S. In other words, it seems that the narrower fields are concentrated in the S central area, where a settlement is documented.

The orientation of the fields on the S part of the hill is mainly N-S, with a slight turn towards NNE-SSW, although in some cases the terrain causes an E-W alignment. On the N part of the hill, where the system has been severely damaged by among other things sunken roads of later date, the general orientation is E-W, although with N-S aligned fields furthest to the N. In the central part, the fields are fairly clearly grouped in pairs, with one of them being rather larger, e.g. by a factor of 5–10%, than the other. Such paired fields can appear either as a very long field divided more or less across the middle, or as a wider field divided parallel to its long axis. This subdivision seems to be a primary feature of the field system.

As mentioned, the field boundaries are complete in only a very few cases. Not only may they have been destroyed, they may indeed never have existed in complete form. In this connection it can be mentioned that most fields have openings or breaks in the boundary banks in the corners. Exact calculation of the areas of individual fields is therefore difficult and problematic.

Phosphate analyses in the W and central parts of the field system have generally given low phosphoric acid levels. Excavations in areas with abnormally high values on the S facing slope produced a Bronze Age pit with pottery dating from around 1150 BC (K 2308–09) (fig. 13). Further under a boundary bank a Pre-Roman Iron Age fireplace appeared to be from about 360 BC (K 2313–14).

The Geological Survey of Denmark, through its Geobotanical Department undertook investigations in a small wet hollow. (*Journal of Danish Archaeology* 1983, p. 190f). Two phases of deforestation were visible, the earlier a grazing horizon with bracken growth, and, after a woodland regeneration, a later one with large open areas. After this the woodland regenerated, dominated by beech.

Archaeological investigations have been carried out in about 50 locations in the W and central parts of the wood, the results of which may be linked with the vegetational history shown by the pollen. Neolithic occupation parallelling the visible megalithic remains has been demonstrated by finds of

Fig. 12. Geelskov, no. 107. Boundary banks in the central part of the wood.

pottery, and charcoal has been dated to c. 3000 BC (K 2306–07). This could correspond to the first clearance phase. Cultural remains are thereafter absent – and the woods thus able to regenerate – until the Bronze Age barrows were erected and the above-mentioned pit dating from 1150 BC was dug; this was in the Middle Bronze Age. There is a series of radio carbon dates for this second clearance phase: 1040 BC (K 2318); 810 BC (K 2317); 780 BC (K 2310); 530 BC (K 2311); 510 BC (K 2312); 430 BC (K 2303); 410 BC (K 2304); 380 BC (K 2313); and 340 BC (K 2314). These supplement the archaeological observations.

The great regularity of the field system suggests that it must have been laid out on cleared land. It probably belongs quite late, because the dates of 430, 410, 380 and 340 BC come from e.g. charcoal from fireplaces lying under lynchets and boundary banks. The abandonment of cultivation and the transition of the area to beech forest and the subsistence practices connected with this, takes place after the introduction of rye. Later activity in the area is shown by a fireplace dated to the 12th or 13th centuries (K 2315–16), and by the many medieval sunken roads which cut down through and destroy parts of the earlier field system in the E part of the area.

108. (6) *Geelskov II.* N and E of the steep sided valley forming the E boundary of the Geelskov I field system is the 30 ha area comprising Geelskov II. It is bounded to the NW by Søllerød lake, to the W and SW of steep valleys, and to the SE of a small meltwater valley. The landscape suggests it could have continued beyond the present Søllerød village (see no. 109).

The preserved section encompasses about 40 distiguishable fields, of which most are broad irregular rectangles. Orienta-

Fig. 13. Geelskov I. Bronze Age vessel from pit.

tion, partly determined by the landscape, is mainly E-W, different from Geelskov I. There is also a difference in the patterning, as the paired fields seen in Geelskov I do not appear in Geelskov II, which seems however to have grooooups of 3 or more similar fields belonging together. Planned 1960. On the edge of the field system are 2 small barrows.

109. (7) *Søllerød kirkeskov* is on very uneven terrain, bounded to the N by a steep-sided meltwater valley containing Søllerød lake, and further S by a side branch of this. In the S part of the wood are wellmarked lynchets and boundary banks. This system could theoretically belong with no. 108, as there is no particular natural dividing line in the 800 m of land in between.

110. *Frederikslund skov* has a single lynchet facing W, which can be followed N-S for about 70 m, in the E part of the wood E of a hollow filled with water.

Smørum h.
Værløse s.

111. (1) *Ryget* and *Præsteskov* form the E and W portions of a woody area S of Farum lake, and occupy a considerable part of a promontory almost completely surrounded by Tunnel valleys (Larsen 1965). The more level, upper part of the promontory has a 15–20 ha area of boundary banks and lynchets. They form apparently regular rectangular fields oriented NE-SW and WNW-ESE.

Sømme h.
Roskilde s. (formerly Skt. Jørgensbjerg s).

112. (1) *Boserup skov* has boundary banks and lynchets in large sections of its S part. The system is bounded to the E by a small meltwater valley, and seems to have included the central part of a promontory (almost an island) surrounded on all sides by Roskilde Fjord or by streams running into the fjord. The boundaries are scattered over c. 80 ha. They have the usual orientation, and seem to have enclosed broad, rectangular fields. Within the field system are two large Bronze Age barrows, and in its S part 3 low barrows.

Voldborg h.
Allerslev s.

113. (1) *Oren.* The NW part of the wood has an area of boundary banks and lynchets measuring 300 m by 50–100 m, above and on a steep N and NW facing slope. The boundaries do not appear to have crossed onto areas on the other side of the low-lying terrain, so the field system must have been of very limited size. A small barrow lies immediately N of the area. In the S part of the wood is a group of 7 barrows, and to the E the small cemetery hill, Vettenbjerg with barrows and stone arrangements.

114. (2) *Møllesø skov* lies on the slope running down into the meltwater valley containing the stream Lejre å. In the widest part of the wood is a flatter area with a 300 × 100 m area of boundary banks and lynchets. They form broad, rectangular fields. To the N they stop at the edge of the wood, and could therefore have continued further to the NW.

115. (3) *Hulegårds skov* contains a large barrow on top of an even area of high ground. There are lynchets around the barrow and below the high ground. Definite fields cannot be made out.

116. (4) *Røgerup skov* has an area of S and SW facing slope in its E part, surrounded on all sides within the wood by depressions with lakes or watercourses. On this slope are several boundary banks and lynchets, some linking up with 2 large barrows. The field system could have continued to the NE.

Hvalsø s.

117. (1) *Storskov* has a few boundary banks and lynchets from 2 or 3 fields in its SE part, connecting with a barrow.

Såby s.

118. (1) *Åstrup skov* has in its N part, Hestehaven, a c. 20 ha area of boundary banks and lynchets. The field system lies on the W and S slopes of a hill, on top of which are 2 Bronze Age barrows. The banks are wide, c. 6 m. They enclose broad rectangular fields, one of which measures 70 × 47 m. Within the area is a stone with cupmarks. The terrain has been heavily cut up by sunken roads.

Gevninge s.

119. (1) *Overdrevsskoven* lies on the N facing slope of a hill which is naturally bounded by the slopes of watercourses except to the S. It contains c. 6 ha of boundary banks and lynchets. These must all form one complex, and enclose 8 visible fields. These are of broadly rectangular shape and generally aligned E-W with the slope (fig. 14). N of the field system are 7 large barrows. – Planned 1978.

120. (2) *Borrevejle skov* has some barrows in its W part, in connection with which are a few lynchets scattered over 1–2 ha. In the central part of the wood there are also a few lynchets and boundary banks.

Holbæk h.
Årby s.

121. (1) *Vesterskov* on Asnæs has a few boundary banks and lynchets in its E part, some connecting up with a Bronze Age barrow.

Ods h.
Vig s.
122. (1) *Jyderup skov* has uncertain traces of a few banks and lynchets among stone cairns in its S part.

Sorø a.
Alsted h.
Lynge s.
123. *Broby Vesterskov* lies partly in Lynge s. S of the road. In this part are c. 10 ha of boundary banks and lynchets. The field system lies on a promontory bounded to the E, S and W by slopes, and by the Tamose bog near the stream Suså to the SV. Its broad rectangular fields do not seem to have extended to the N.

124. (2) *Suserup skov* has a few lynchets in its N part in an area showing evidence of later cultivation in the form of ridge and furrow fields.

125. (3) *Topshøj skov* contains the 7 ha field system planned and described by Gudmund Hatt (Hatt 1949, p. 117 ff). The field system lies on a S facing slope, and is bounded by among other things a hill to the N, a slope to the W and a bog to the SE. The boundaries have an irregular course. The fields, which are not bounded on all sides, are equally irregular and of different form. The terrain has many stone cairns, and the boundaries are full of stones.

Broby s.
126. (1) *Broby Vesterskov* contains c. 8 ha of lynchets and boundary banks, in the S part of the wood on the upper part of the slope down to the stream Suså.

Alsted s.
127. (1) *Alsted skov* has two lynchets around a small barrow in its E central part.

Gyrstinge s.
128. (1) *Lille Bøgeskov* has a few boundary banks and lynchets in its SE part, which due to the natural boundaries on the terrain could have enclosed a few fields only.

129. (2) *Lille Bøgeskov*'s NW central part has boundary banks and lynchets covering several ha.

Ringsted h.
Haraldsted s.
130. (1) *Langebjerg skov* in the W part of Vesterskov has c. 8 ha of boundary banks and lynchets. One side encompasses a hilly area, which is sharply bounded to all sides except the E by slopes down to wet areas. The fields are broad and rectangular.

131. (2) *Kærstrup skov*, the SW part of Allindelille Fredskov, has a few lynchets and boundary banks. On the top of a S facing hill is a small barrow.

Vester Flakkebjerg h.
Holsteinborg s.
132. (1) *Rude skov* has a few boundary banks in connection with 2 barrows in its SE part.

Øster Flakkebjerg h.
Gunderslev s.

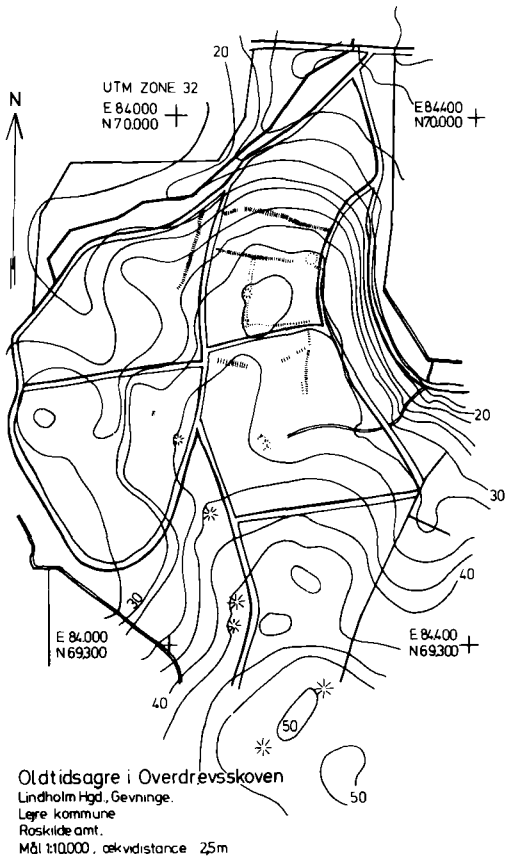

Fig. 14. Overdrevsskoven no. 119. 1:10.000.

133. (1) *Borup Ris* is grazing land and wood containing early and later medieval fields (see p. 136). Within these are several flattened lynchets. A hypothetical reconstruction of the earlier c. 40 ha big system has been published by Axel Steensberg (Steensberg 1983, P. 22).

134. (1) *Dyrehaven's* W section has a few boundary banks and lynchets.

135. (3) *Tvede Vænge* has a few lynchets in its northern part.

Herlufsholm s.
136. (1) *Kalby Ris* has in its eastern part traces of ridge and furrow fields and in the NW (on a N slope) a series of 3–4 weak lynchets with stones.

Bjæverskov h.
Valløby s.
137. (1) The wood Purlund has on a N slope down to a depression opposite the neighbouring Pramskov, a few lynchets and a single boundary bank.

Præstø a.
Fakse h.
Karise s.
138. (1) *Tokkeskov* has 7 ha of boundary banks in its S part, bounded to the N by watercourses. They form several broad

rectangular fields, mainly aligned WNW-ESE. To the NE are later traces of ridge and furrow fields. Planned and investigated by Axel Steensberg in 1944 (Steensberg 1951 p. 241 ff).

139. (2) *Karise Hestehave* has a few banks.

Tybjerg h.

Herlufmagle s.

140. (1) *Glumsø Østerskov* has several ha of strong lynchets on a S facing slope in its SW part.

Fensmark s.

141. (1) *Stenskov* has c. 20 ha boundary banks and lynchets on the S and W slopes of the hilly area, which forms the NE part of the wood and with Vesterhøj as its highest point. The banks are full of stones and form broad rectangular fields.

Glumsø s.

142. (1) *Glumsø Østerskov* has about 10 ha lynchets and banks in its N part. The field system lies on the top of a N facing slope and is bounded by a steep slope to the NE. The prominent lynchets are aligned WNW-ESE.

143. (2) *Østerskov* has lynchets in its SE part which continue in Herluflille Bøgede.

144. (3) *Glumsø Vesterskov* has c. 10 ha lynchets and banks in its S part. The field system covers the N slope of Hejrebjerg hill and the S slope of a hill to the N. The fields are broad and rectangular, and are oriented WNW-ESE.

Bavelse and Næsby s.

145. *Næsbyholm Storskov* is a 550 ha forest which with its N section Enemærket has lynchets and boundary banks throughout. The wood is bounded to the N by the small stream Suså, to the W and SW by Tystrup lake, and partially to the NE by steep slopes. The natural boundaries in some cases extend outside the wood. Areas of hills, slopes and wet areas form natural dividing lines in several places within the large woodland area. The field areas seem to be divided up by these into several sections, although these divisions do not seem to be total. Some of the sections seem to be characterised by long throughgoing boundaries.

The entire forest has been searched for field boundaries, barrows, stones with cupmarks and querns in connection with the planning which was carried out in 1960–65 by the author and his wife. Phosphate sampling was systematically carried out and a few excavations made. At the same time the Geological Survey of Denmark made a surface map of the area. The same body's Geobotanical Department carried out pollen analyses in 1982, particularly at one point in the S part of the area.

The boundaries were overwhelmingly made up of lynchets. Besides these, 280 barrows or other graves were mapped including several megaliths, 33 stones with cupmarks and 8 querns. The phosphate analyses showed a number of concentration. Several of them, mainly along the lake shore, were of very limited size and can be regarded as hunting or fishing sites. Larger ones away from the lake lie in the various areas of fields. One cannot automatically assume a connection with the field systems, however, as the phosphate concentrations presumably reflect 3000 years of settlement between the neolithic in about 3000 bc and the Roman Iron Age.

The section which is most topographically separate is *Enemærket*, the N part of the wood, bounded to the N by the Suså, to the W by Tystrup lake and to the S by a depression with a stream; to the E the system could have continued a bit beyond the woodland edge (fig. 15). Field boundaries cover here about 20–25 ha of land gently sloping down from a hill with a large Bronze Age barrow on top. Field sizes and shapes are difficult to determine, because only a few fields are completely surrounded by field boundaries, but a number of irregular, broad rectangular fields can be recognized aligned E-W and N-S. Some fields run almost onto the lake shore. The visible boundaries – the lynchets – formed as a result of agricultural activities, and generally merge with the landscape without the soil suggesting any continuation. On this background it is characteristic that in several cases the fields have access ramps which in this gentle terrain shows that the fields were basically closed, without this having left any direct trace. 20 small barrows, presumably Middle or Late Bronze Age, lie on hills between the field system and the Suså. The highest phosphate values were in the centre of the field system around the large barrow on the hilltop. In this area were surface finds of flint and pottery of Bronze Age character.

The second section encompasses the *middle part of the forest* as far as to the old parish boundary between Næsby and Bavelse, an area measuring c. 1.8 km NE-SW, and c. 0.8 km wide. The area contains 119 Bronze Age barrows, mostly small or medium in size, but a few of them large. They are scattered throughout the field system, but round the edges are several groups of 5–10 barrows, on the hills or promontories that form the limit of the cultivation area. In only a few cases are the barrows included in the boundary system, so they can be regarded as predating it. In most cases the barrows are set inside the actual fields, sometimes taking up a large part of the area of a field.

Most of the fields are completely irregular. Their sides are often curved, sometimes strongly so, a.o. according to features of the terrain. Often it can thus be difficult to speak of regular shapes as such. Indeterminate rectangles, rhomboids, trapezes, triangles, kidney shapes and semicircles appear everywhere. A special feature is that several of the barrows are situated inside quite small fields with powerful lynchets. With the reservations about determining field size just mentioned being taken into account, sizes vary between ca. 300 m^2 and 9000 m^2. Some difference in shape and orientation can, however, be discerned between the fields in the very uneven W areas and the more even terrain to the E. The latter area is cut across by a 500 m lynchet aligned NNE-SSW, and several of the fields are straight sided and uniformly oriented NNE-SSW. Fields of less definite shape seem to be secondary additions onto the straight field boundaries.

Phosphate values are high in several places. This was the case in the N central part of the field system, and at 3 locations in the S part near more regular fields. In one of the areas of high phosphate values were sherds apparently of Pre-Roman Iron Age date. An Early Roman Iron Age settlement deposit

Fig. 15. Næsbyholm storskov no. 145. North part of the wood, lynchets with access ramps are seen in the middle of the picture.

was excavated on the slope of a steep gravel bank in one of the others. This dated to the 1st century AD. Besides such pottery, about 15000 bone fragments were recovered. These have been examined by Dr. Ulrich Møhl. The animal life they represent reflect a grazing countryside with woodland close by, and also lake or riverine exploitation for fish.

The eastern part of the forest forms a third unit. This is bounded to the NW and W by steep slopes, and to the S by small bogs and low areas, though the system extended further NE and E. The fields are rather scattered, because the landscape is hummocked and has lowlying areas. There are about 25 barrows spread along the S fringe. Down towards this area inside the field system is a high phosphate area. The countryside in the S and SW part of the forest is cut through by many hills, slopes and bogs, although groups of fields cannot be distinguished as separate units.

Great variation in size and shape is also here evident within the various field groups. Orientation is normally N-S and E-W, but many exceptions can be seen in the often curved boundaries. One notable feature is the presence of some very small fields of 145, 160 and 170 m^2 abutting against much larger fields. The grouping of Bronze Age barrows on several of the high areas seem to be connected to groups of fields.

In the eastern part there are several places of high phosphate values, including the areas furthest to the NE and SE, and to the SW next to a bog. This part also contains several megaliths, dolmens and a passage grave. The settlement areas giving rise to the high phosphate values could thus derive from different times within a long timespan.

In one of the small kettle holes, one side of which was formed by a lynchet and which lay close to irregular fields and some barrows, was deposit suitable for pollen analysis. The analysis has not been completed. A few radiocarbon determinations have been made. Provisional results (note 3) from the Geobotanical Department of the Geological Survey of Denmark suggest that the pollen diagram covers the whole of the postglacial period. It shows two periods of human activity belonging to the Neolithic (older than 2400 BC, calibrated C14 years). The earliest shows the burning of the original lime forest (which also contains oak and hazel). Only the lime itself

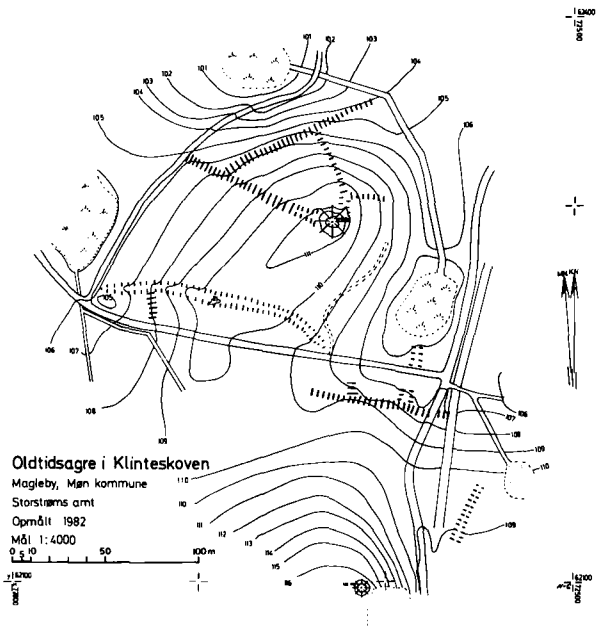

Fig. 16. Klinteskov, Plantehaverne no. 148.

escaped this fate, possibly because of its usefulnes as leaf fodder. During the later phase the area was used for grazing (oak, alder, ash and hazel woods with glades containing grasses, plantain and bracken). It is not known how long these periods lasted, but they must be some hundreds or thousand of years long.

From some time in the Neolithic until c. 1200 BC the area was abandoned, and lime forest (lime, oak and ash) regenerat- After 1200 BC forest clearance and cultivation took place again, and only a few limes survived this. Weeds were common (grasses, plantain, sheep's sorrel, mugwort, knotgrass, various composites). Cultivation stopped before 160 AD (calibrated C14 date). Grazing took place thereafter for about a century (oak, hazel, a little beech and lime, with clearings containing grass). Then the area was abandoned and was overgrown with beech woods.

The megalithic graves and neolithic finds can be fitted into the first clearance phase of the development. The appearance of the many Bronze Age barrows fits with the cultivation phase after 1200 BC. Linked with this cultivation is at least the lynchet at the investigated kettle hole. The planned field system, which must in large measure be described as amorphous, could thus belong to this period. In suppport of this is the fact that the barrows do not, as they usually do, appear as elements predating the field systems. The existence of the excavated settlement layer from the 1st century AD and not least the faunal material does not conflict with the cessation of cultivation shortly before 160 AD.

Bårse h.
Beldringe s.
146. (1) *Dyrlev skov* has several ha of boundary banks and lynchets in its central part W of Highway 2. One of the banks has stones set into the ground bearing cupmarks. This system crosses into Udby s.

Udby s.
147. (1) see Beldringe s. (no. 146).

MØN
Møn h.
Magleby s.
148. (1) The *Plantehaverne* section of *Klinteskov* contains c. 4 ha boundary banks and lynchets (fig. 16). The system is bounded on most sides by kettle holes containing small bogs, and to the SE by a hill slope on top of which are 12 small barrows. Hills further N and NE have more barrows, including some small ones presumably dating from the Late Bronze Age. Within the field system, a barrow is used as the starting point of a field boundary in the WNW and the N. Field shapes are diffuse. Only one, more or less triangular, is completely delineated by boundaries. It is estimated that there cannot have been more than 8 fields. – Planned 1981.

LOLLAND
Maribo a.
Musse h.
Nysted s.
149. (1) *Roden skov* has several ha boundary banks and lynchets, some with stones, in its SW part immediately E of the Forest Supervisor's house. The boundaries enclose rectangular fields of e.g. 30 m breadth, aligned E-W.

FYN
Svendborg a
Salling h.
150. Brahetrolleborg s.
(1) *Brahetrolleborg Storskov*, in its central part near *Store Tangbakke*, has 8 ha boundary banks and lynchets (fig. 17). The field system is bounded to the E by St. Tangbakke, and elsewhere by wet areas. To the W it is touched by the path of the former railway from Nyborg to Svendborg. During the middle ages the area was used for cultivation with long, narrow fields. Stone rows in the furrow boundaries between them were located by probing. In the S part these were aligned NNNE-SSSW, in the centre NW-SE, and formed at least 8 parallel fields forming a 125 m wide band. The prehistoric system was damaged by the later cultivation, so that evaluating the fields' shapes and areas is difficult. In particular, the extent of several powerful lynchets shows that the system must originally have consisted of 15–20 fields, which were mainly irregular squares. – Planned 1960.

Vindinge h.
Avnslev s.
151. (1) *Skemark skov* under Juelsberg contains 4 ha boundary banks and lynchets. The system is bounded by bogs on several sides, and within it are two Bronze Age barrows.

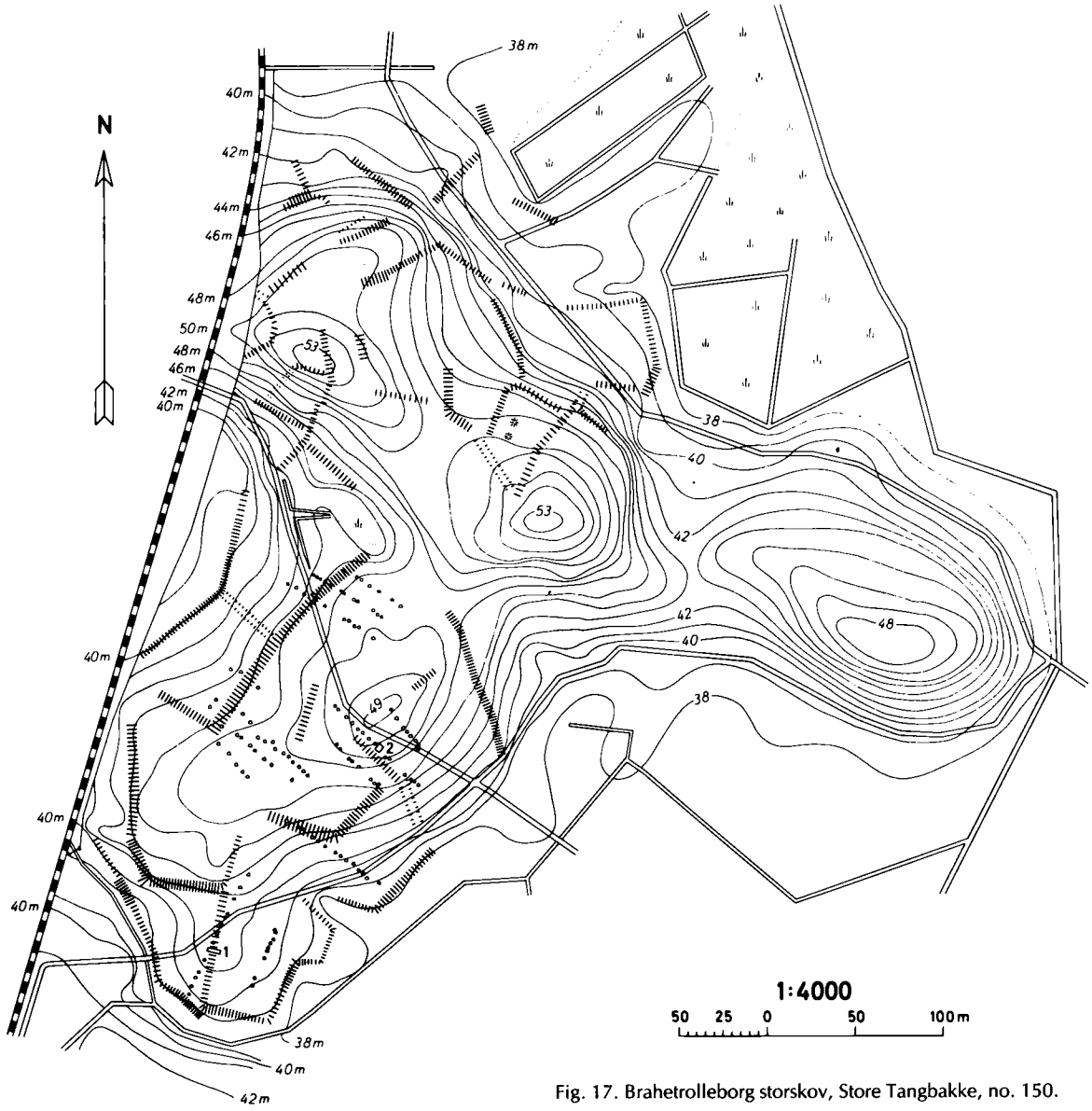

Fig. 17. Brahetrolleborg storskov, Store Tangbakke, no. 150.

Ørbæk s.

152. (1) *Dyrhave* under Ørbæklunde has c. 8 ha boundary banks and lynchets on a hill surrounded by hollows.

LANGELAND

Langelands Nørre h.

Hov s.

153. (1) *Østre og Vestre Stigtehave skov* has 10–15 ha banks and lynchets surrounded by hollows in its central part on Alexander bakke and further NE. There is no natural boundary to the W outside the wood. Also a level area in Østre Stigtehave further E bounded by wet hollows has c. 10 ha banks and lynchets forming broad rectangular fields. In the SE part of the wood on hills 3–5 ha banks and lynchets. In Østre Stigtehave were found settlement remains from the older Iron Age.

JUTLAND

Viborg a.

Nørlyng h.

Dollerup s.

154. (1) *Hald Egeskov* has c. 5 ha boundary banks and lynchets in its S part (fig. 18). The system is bounded to the N by enclosed land and to the E and S by slopes and depressions, but could have extended further to the W where it is cut by a railway. About 30 fields can be discerned, some of them relatively small. The fields are irregular squares or, depending on the

Hald Egeskov

Dollerup Sogn, Nørlyng Herred, Viborg Amt.

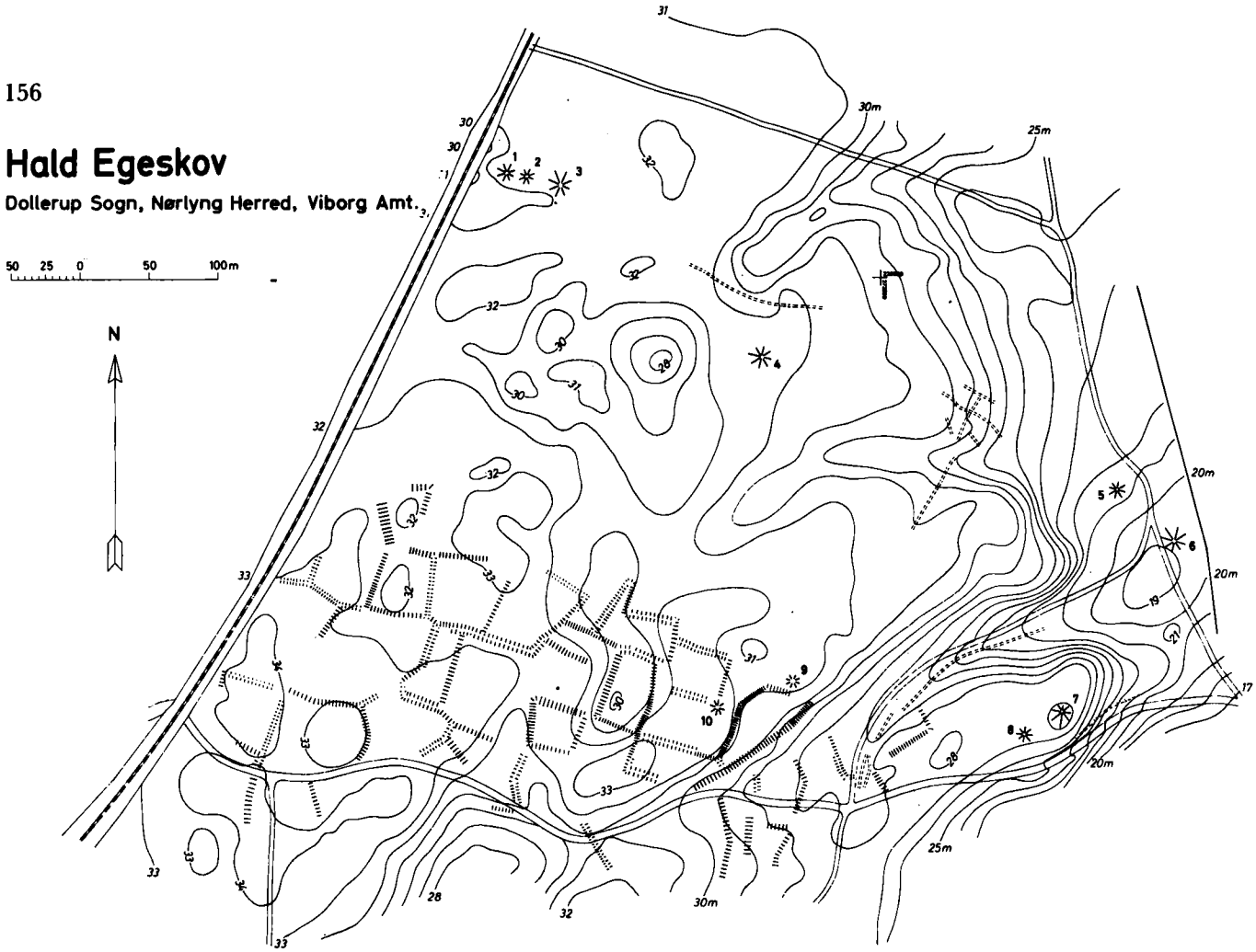

Fig. 18. Hald Egeskov, no. 154. 1:5000.

terrain, wholly irregular. Within the wood but N of the field system are some burial mounds, and others lie up against the field system. – Planned 1956 and 1965.

Århus a.

Tyrstrup h.

Sønder Vissing s.

155. (1) *Addit skov* has c. 25 ha boundary banks and lynchets. The system is naturally bounded to the W, N and E by slopes, but could have continued to the S. The fields are irregular squares. There are many stones in the field boundaries, and stone clearance cairns dotted about the area. Planned in 1877–78 by N.F.B. Sehested (Sehested 1884, p. 117–18, Hatt 1949 p. 6).

Viby s.

156. (1) *Hestehave* N of Skambæk has c. 3 ha of scattered lynchets and banks surrounding broad rectangular fields in its NE part (Laursen 1982 pp. 98 ff and 114).

Holme s.

157. (1) *Thorskov*'s W part contains c. 20 ha boundary banks and lynchets (fig. 19). The field system is naturally bounded more or less on all sides: to the W and NW by steep slopes down to Skambæk, to N and NE by uneven terrain towards the sea S of Århus, to the S and SE by more uneven terrain, and to the S by hills and small bogs.

The relatively more even terrain containing the field system has varied but generally sandy or gravelly soil cover. There are some stones in the field boundaries. Only a few of the fields are completely enclosed, most being roughly rectangular and N-S or E-W oriented, but many are irregularly square or have completely different shapes determined by the terrain. The backbone of the system is a 300 m lynchet with groups of fields on each side of it. There are some cairns and barrows in the area, mainly placed on hilltops just outside or on the edges of the field system. Phosphate analyses produced an area with high values in the southern part of the system. – Planned and investigated 1958–59. The Prehistoric Museum, Århus, also undertook investigations in the area at a later date. The finds belong to the Late Bronze Age or the earliest Iron Age.

Mårslet s.

158. (1) *Hørret skov* has c. 15 ha lynchets with many stones, in

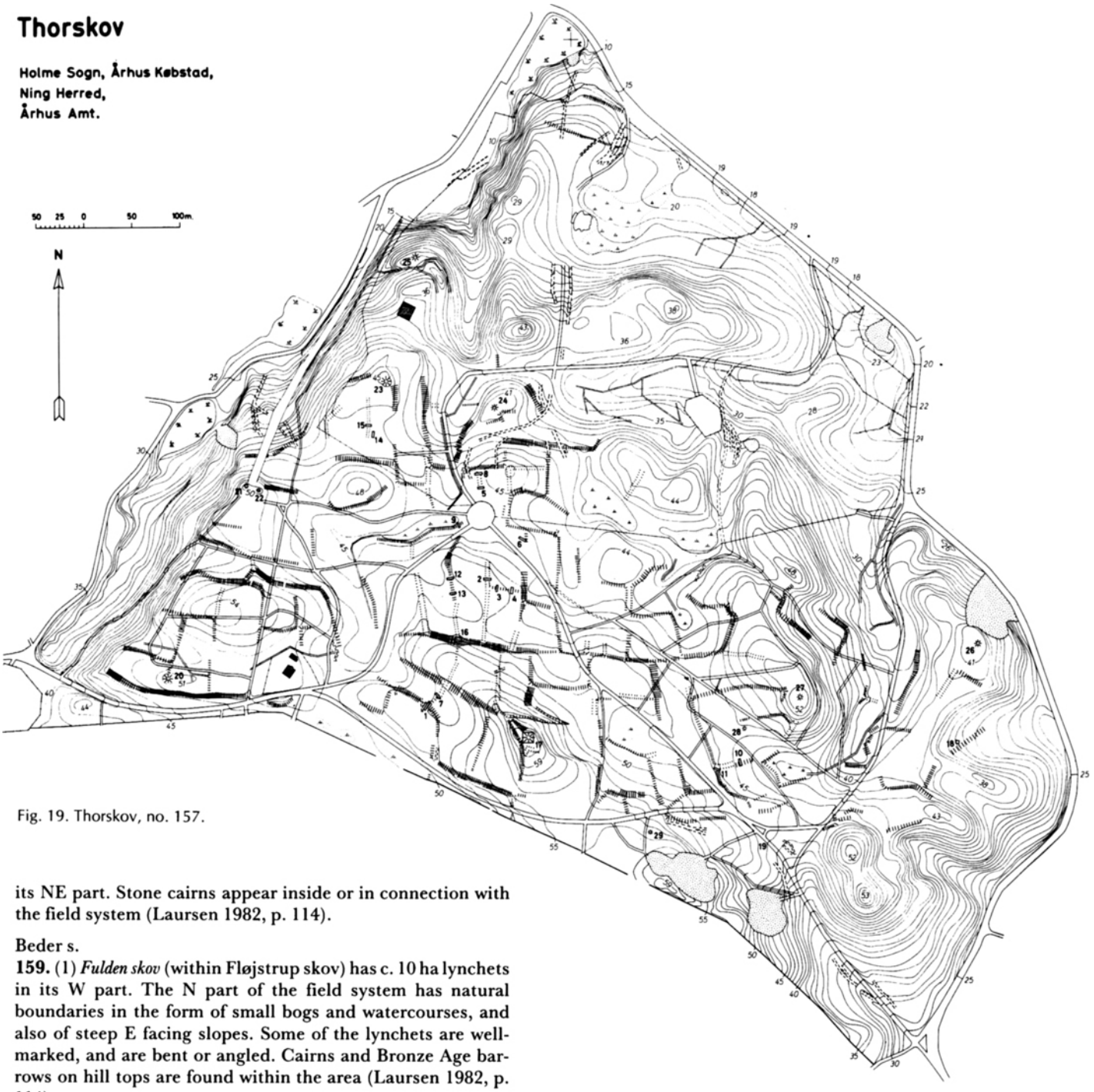

Fig. 19. Thorskov, no. 157.

its NE part. Stone cairns appear inside or in connection with the field system (Laursen 1982, p. 114).

Beder s.

159. (1) *Fulden skov* (within Fløjstrup skov) has c. 10 ha lynchets in its W part. The N part of the field system has natural boundaries in the form of small bogs and watercourses, and also of steep E facing slopes. Some of the lynchets are well-marked, and are bent or angled. Cairns and Bronze Age barrows on hill tops are found within the area (Laursen 1982, p. 114).

Haderslev a.
Tyrstrup h.
Sommersted s.

160. (1) *Revsø skov* has several ha boundary banks and lynchets in its E part (Müller-Wille 1965, p. 147).

161. (2) *Sommersted skov* has boundary banks and lynchets.

ALS
Sønderborg a.
Als Sønder h.
Ulkebøll s.

162. (1) *Sønderskov* has in its central part c. 10–15 ha boundary banks and lynchets. The field system is naturally bounded by watercourses and small bogs.

CONCLUSIONS

This review of the finds of prehistoric field boundaries in eastern Denmark and particularly in the old woodland areas shows that some 80 finds are known from Bornholm, c. 60 from Zealand, 1 on Møn, 1 on Lolland, 3 on Funen, 1 on Langeland, 1 on Als and a few in Jutland. These totals must be compared with the approximately 100 finds Hatt made in Jutland (fig. 20), but which today with the help of aerial photographs number many hundreds and cover enormous areas. The east Danish totals lead to a number of questions: How representative are they with regard to their various areas, and thus to attempting a general view of the east Danish situation? Do the field systems illustrate or merely supplement the settlement picture already available? Analysis of the individual systems adds the questions of whether they result from a similar subsistence economy to that of western Denmark and whether there are variations in the systems themselves or in the forms of the fields and their boundaries. All these questions must be reviewed against the available dating evidence, limited in quality and quantity though this is.

An estimation of the representativeness of the available material, the density of the finds etc. must be evaluated regarding the intensity of research.

On *Bornholm*, the town of Rønne was used as the starting point for the work, and the many finds in SW Bornholm suggest that this may have had an influence. On the other hand the whole island has been closely searched also by local people in a series of campaigns, so the picture is unlikely to be altered through future finds of further major field systems.

On *Zealand*, it is similarly noticeable that a large number of finds concentrate in the E, around Copenhagen and Roskilde. Work was not, however, limited to a particular geographical region. In general, the picture in these areas may be supplemented to some degree by future finds, but it is not likely that major hitherto unknown finds will appear to substantially alter the pattern revealed.

On *Møn*, all woods were searched, on *Lolland* and *Falster*, a significant proportion; it is not impossible that further finds will come to light.

On *Funen*, searches by the author and others have been made of woods in the N and E parts of the island, and of estate woodlands round the island, particularly in the S. Many of these contain ridge and furrow, and so were cultivated within the period from the middle ages to the dispersal of nucleated villages at the end of the 18th century. Further finds could supplement the 3 now known. The searches of the woods of Funen undertaken in recent years in connection with settlement pattern surveys do not, however, seem to have located more prehistoric fields.

Most of the woods on the island of *Langeland* have also been searched, many of them containing ridge and furrow fields. Further finds than the single one known may appear, but this is not likely. On the island of *Tåsinge* all woods were visited, several of them had ridge and furrow fields.

Eastern Jutland should perhaps not qualify as part of eastern Denmark. In earlier times the heathland stretched in several areas all the way to the east coast (Hatt 1949, p. 6 and n. 7–9 and 51–54), so soil conditions were similar to those further W. The basis of the present surveys was the older woodlands within the areas under ice during the last glaciation.

Eastern Jutland has not been searched as thoroughly as the other areas. It has thus only been possible to survey superficially the major forest complexes such as Rold Skov, Frijsenborg skovene and Løvenholm skovene. Recent examinations of the woods around Århus undertaken by the Prehistoric Museum, Århus, has located additional sites to those discovered by the earlier work of the author (Laursen 1982). Finds may also have been made by others in other parts of eastern Jutland. For the time being, however, so many East Jutish woods have been searched that the main features are firmly established – e.g. it seems that on *Als* only one field system exists (the one in Sønderskov no. 162) despite the large areas of woodland on the island. Several of these, furthermore, contain later ridge and furrow. The same applies to many of the other woods in the S part of S Jutland, the opposite to what appears to be the case in Angel on the other side of the frontier to Germany, where H. Jankuhn has published many examples of prehistoric field systems (Jankuhn 1957).

It can, therefore, be said in general terms that the material now available is total or nearly so for some areas of eastern Denmark, and sufficiently representative in others, as far as the number of existing examples is concerned. On the other hand, it is equally clear that, except perhaps for Bornholm, the material is not representative with regard to the areas cultivated within the various regions. The very limited areas covered by old

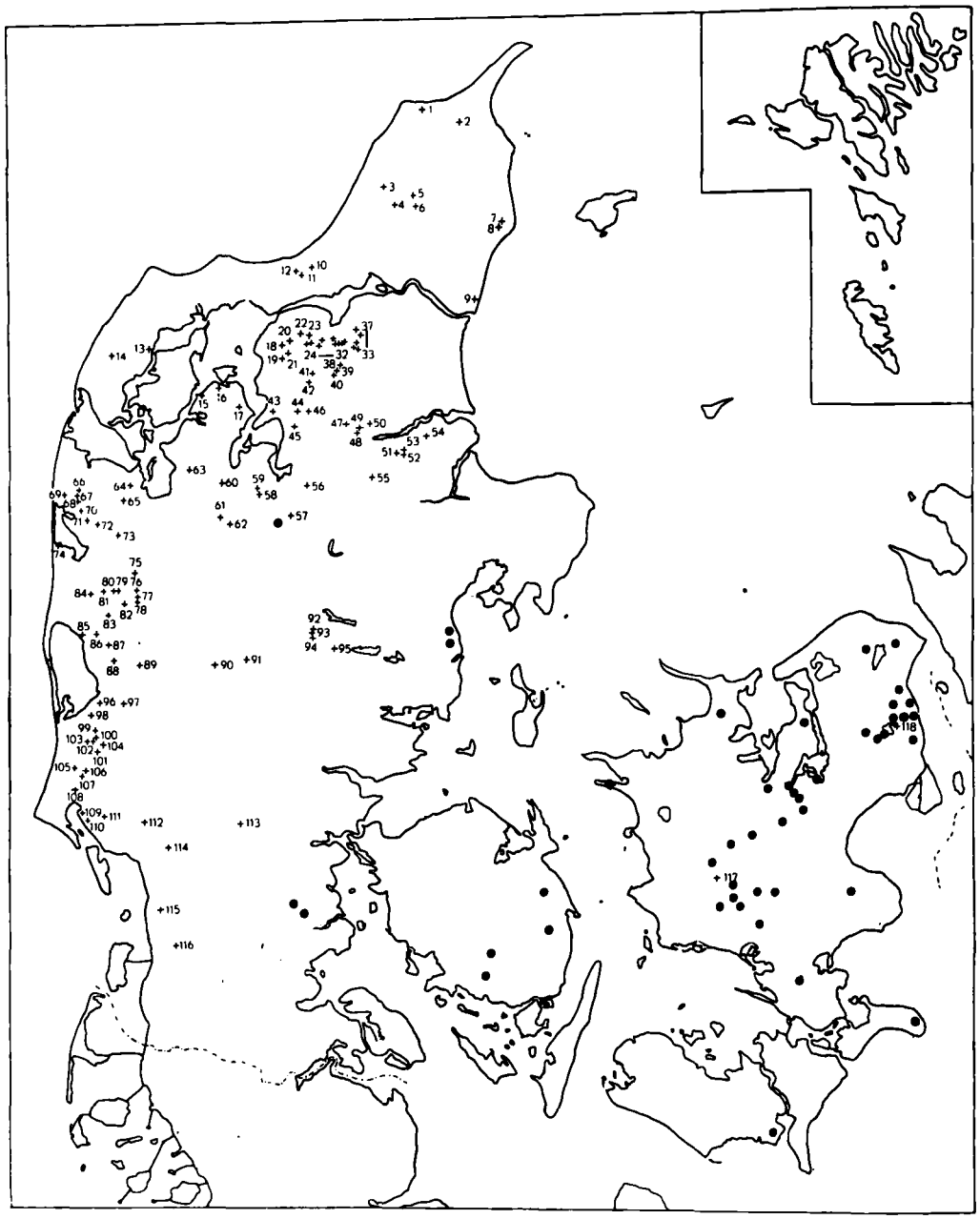

Fig. 20. Map fig. 2 seen in connection with the occurrences given by Hatt.

woodland in Denmark means, as mentioned above, that they must to an extent be regarded as marginal areas. The main areas of cultivation would also in the prehistoric period have been the more useful or better soils, which either were cultivated at some later period in history or have continued in cultivation until the present day.

The finds put forward here do, however, show areas settled and cultivated at the time. On Bornholm, this corresponds to the settlements and finds from the Late Bronze Age and Earlier Iron Age (Becker 1975, p. 6.). It can also be said that the material adds a little to the picture, both for poorer soils formerly covered by heath, and for the better soils. It seems that both the poorest heathland and the heavy clay soils were acceptable. The finds therefore give an impression of a comprehensive

and closely spaced system of cultivation which filled all parts of the island which were not too rocky (as the centre was).

Such a clear picture of settlement in the Late Bronze Age and Earlier Iron Age is not available for Zealand. The c. 60 finds are relatively so few that by themselves they cannot show the full nature of Late Bronze and Early Iron Age settlement on the island. They do, on the other hand, make an important contribution to our understanding of the extent of this settlement. In eastern Zealand, proximity to water could have been an important factor influencing settlement. This is the case for finds in the parishes along Øresund, and on the major waterways in E and central Zealand. Apart from the normal water supply, location near water offers potential for adding to the food supply by means of fishing, and also a means of communication.

The few finds on Møn and Lolland can tell us nothing about the nature or density of settlement on the two islands. They do lie close to (but not immediately next to) the coast. The same is the case with the occurrence in the island of Langeland. Nor do the finds on Funen add much to the previously known pattern of settlement and finds. They appear to reflect settlement of the interior. The finds in eastern Jutland agree with the distribution of finds from the earlier Iron Age. They tend to be located near to water, but usually separated from it by lying in the lee of higher ground.

In general, soil cover does not seem to have been of decisive importance regarding location, except where soils are extremely bad (as in parts of Bornholm). Other factors, such as terrain, water supply and not least drainage, were what determined settlement location. The long-term use of very poor soils suggests that manuring was of decisive importance within the agricultural system.

The review makes clear that on Bornholm and Zealand as in eastern Jutland there are many large cultivation units, separated into what might be village areas by natural boundaries such as very uneven ground, slopes, steep valleys, watercourses or lakes. Within or close to several of these units there also seem to have been uncultivated areas, e.g. in the boundary regions between them. The boundaries of the settlement units are not always very clear. It is e.g. hard to make out the various units that must have made up the 550 ha area in Næsbyholm (no. 145).

The sizes of the field systems at e.g. Geelskov (no. 107) correspond to the wellknown field systems in western Jutland such as those at Skørbæk heath and Øster Lem heath.

What appears special and at the same time very characteristic for eastern Denmark is, however, the very limited size of some of the field systems. It can of course be difficult to decide whether a system is in fact completely naturally bounded, but in some cases the topographic features leave little room for doubt. The picture thus seems to emerge that many of the field systems only comprised about 10 ha, and some, such as Klintholm on Møn (no. 148), Lindholm on Zealand (no. 119) and Juelsberg on Funen (no. 151), only a very few ha; and that these lay like islands in uncultivated terrain, which was – as also the barrows suggest – open grazing land. In these cases the subsistence economy must thus have been different to what is assumed to have characterized the areas where the field systems were much larger.

As far as the field systems themselves are concerned, it is typical of Bornholm that they are generally fairly regular, with groups of fields of traditionally rectangular or less regular square shape. This regularity seems greater on some of the sites, such as that at Neksø (no. 77), which are only visible on aerial photographs. The dated examples on Bornholm, which in a few cases show a secondary subdivision within the field system, belong according to the radiocarbon dates to the Pre-Roman Iron Age – perhaps the middle of this period.

A few field systems have other plans and field shapes. the system in Nylars Præsteskov (no. 35) has very irregular field shapes, and the boundaries do not completely surround the fields. This primitive type is not dated. Finds from beneath the lynchets date to the Bronze Age.

A completely different system of subdivision appears in the Risen system (no. 69), which apparantly has a traditional Iron Age system with rectangular fields, onto which has been imposed a second system with curving stone rows, which pays little or no attention to the earlier boundaries. It is not really possible to make out a regular division into fields in the later boundaries. The later system seems to reflect a different subsistence economy combining cultivation and grazing. Similar economic change has been noted on Gotland (Lindquist 1974). This later use of an area cultivated in the earlier Iron Age parallels what can be observed regarding even later cultivation systems. This can be seen at

Store Tangbakke on Funen (no. 150). The long, narrow fields divided by stones bear no relationships to the earlier boundaries.

Because of the relatively few large areas planned, it is difficult to draw general conclusions about the system of subdivision within the individual systems. This is also because many of the fields are not bounded on all sides. In many cases it must therefore involve an estimate of the original size of the single fields.

Geelskov I (no. 107) is among the examples where an evaluation of the subdivision can be made. In many cases the fields appear to be paired, without this apparently being the result of secondary subdivision. In Rønne Plantage (no. 3 and 40) consistent patterning seems to be replicated within trapeze shaped groups of fields.

On Blemme Lyng (no. 4 and 28) are field groups each marked by the inclusion of a very small field. Investigation of one of these revealed that the boundary of the smaller field was later than the boundary of the field into which it was fitted.

In Næsbyholm Storskov (no. 145) a certain grouping of the fields can be observed. In a few cases subdivisions can be demonstrated, but for the most part the field system is strongly determined by the terrain, and only to a limited extent deliberately structured.

In Næsbyholm (no. 145) and other systems such as in Thorskov (no. 157) boundaries can be followed over hundreds of metres. They appear to form axes, with groups of fields on each side of the line.

As far as the structure of the field systems and their subdivisions is concerned, eastern Denmark can be shown to have cases corresponding to the west Jutland examples such as Skørbæk heath and Øster Lem heath. There are, however, no cases in eastern Denmark of systems of advanced type with large groups of long, narrow fields, similar to Byrsted heath in Jutland. As a particular feature of the east Danish material (apart from the small area of many of the systems), mention can be made of the larger, fairly unstructured groups of fields such as those in Næsbyholm skov.

As mentioned, the shapes of individual fields are in most cases difficult to determine. This can be shown by e.g. the plan of the Klintholm skov group (no. 148), where only one of the fields is fully bounded, so that size can be determined in this one case only. In cases like Rønne Plantage (no. 3 and 40), Geelskov (no. 107) and Thorskov (no. 157), the field shapes do not differ from earlier known examples. They are regularly rectangular or at least four-sided fields, the dimensions predominantly corresponding to those for fields in western Denmark (Eir 1980, p. 19).

There are, however, two ways in which shapes are different. The first is the appearance, particularly in mid Zealand, of what are here described as amorphous fields (e.g. in Næsbyholm Storskov, no. 145), which include all manner of geometric shapes such as triangles, ovals etc. The other (also exemplified by Næsbyholm) is the appearance of some very small fields, at times no more than 2–300 m^2 in extent, and sometimes in association with Bronze Age barrows. These tiny fields do not seem to be later additions.

The field boundaries themselves are of the same dimensions but still in several ways different from those in the sandy parts of Jutland. Very characteristic is that in some places such as Næsbyholm, almost only lynchets are seen as boundaries. At the same time, the presence of access ramps shows that the fields were not open and immediately accessible (Danmarks Natur 8, p. 19). There must have been some form of boundary which has left no trace, either fences or some kind of hedge. It is also characteristic of East Danish field boundaries that they were used as zones where the stones cleared from the fields were dumped. In the particularly stony regions of Bornholm the boundary banks appear as low linear heaps of stones, and the lynchets can be carpeted with stones. Investigations have shown that these stone-filled banks are the accidental result of many successive dumpings of stone. The stones lie with large and small mixed together without any deliberate system. Rows of larger stones sometimes occur in the boundary banks or on the top edges of lynchets. At Risen (no. 69) on Bornholm some corners seem to be marked by raised stones. On Blemme Lyng (no. 4 and 28) regular menhirs are erected on the field boundaries.

The overall picture derived from the material presented here, on the basis of limited dating evidence but supported by the archaeological material, is of an agricultural development around 1200 BC as seen on Bornholm, and on Zealand in Geelskov (no. 107) and Næsbyholm Storskov (no. 149). This cultivation phase could have left evidence in the form of some of the boundaries around the amorphous fields in Næsbyholm. The establishment of the larger, well organized field system, such as those in Geelskov and on Blemme Lyng (no. 4 and

28) seems on the other hand first to have taken place in the Pre-Roman iron Age in the period 500–300 BC.

It is furthermore clear that, as far as Geelskov (no. 107) and Næsbyholm (no. 145) are concerned, the field systems were abandoned around 200 AD. In the former area there was a subsequent period of grazing in woodland, in the latter beech woodland regenerated which was economically linked to animal production and not least to pig rearing.

In no other cases is there any evidence that the field systems were in use at a later period, except that at Risen (no. 69) on Bornholm there is material suggesting a use at least into the Later Roman Iron Age. The upper limit of the use of the traditional prehistoric field systems has not yet been established.

Translated by Peter Rowley-Conwy

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Appendix I

Survey of the Carbon-14 datings in connection with examinations in Geelskov, Rønne Plantage and Blemme Lyng.

Test	*Locality*	*Conv. C-14 b.c. and A.D.*	*Calibrated dating (Clark) B.C. and A.D.*
K-2304	Geelskov	310 ± 100 b.c.	410 B.C.
K-2305	Geelskov	350 ± 100 b.c.	430 B.C.
K-2306	Geelskov	2390 ± 100 b.c.	3080 B.C.
K-2307	Geelskov	2320 ± 100 b.c.	2990 B.C.
K-2308	Geelskov	910 ± 100 b.c.	1120 B.C.
K-2309	Geelskov	950 ± 100 b.c.	1180 B.C.
K-2310	Geelskov	580 ± 100 b.c.	780 B.C.
K-2311	Geelskov	470 ± 100 b.c.	530 B.C.
K-2312	Geelskov	460 ± 100 b.c.	510 B.C.
K-2313	Geelskov	270 ± 100 b.c.	380 B.C.
K-2314	Geelskov	240 ± 100 b.c.	340 B.C.
K-2315	Geelskov	1100 ± 100 A.D.	1180 A.D.
K-2316	Geelskov	1250 ± 100 A.D.	1320 A.D.
K-2317	Geelskov	610 ± 100 b.c.	810 B.C.
K-2318	Geelskov	860 ± 100 b.c.	1040 B.C.
K-2402	Rønne Plantage	510 ± 100 b.c.	620 B.C.
K-2403	Rønne Plantage	590 ± 100 b.c.	790 B.C.
K-2404	Rønne Plantage	700 ± 100 b.c.	880 B.C.
K-2405	Rønne Plantage	860 ± 100 b.c.	1040 B.C.
K-2406	Blemmelyng	660 ± 100 b.c.	850 B.C.
K-2407	Blemmelyng	310 ± 100 b.c.	410 B.C.
K-2408	Blemmelyng	820 ± 100 b.c.	1000 B.C.
K-2409	Blemmelyng	190 ± 100 b.c.	200 B.C.
K-2410	Blemmelyng	200 ± 100 b.c.	210 B.C.
K-2411	Blemmelyng	570 ± 100 b.c.	770 B.C.

Appendix II

Scale for Signatures for width and height of boundary banks and lynchets established and used first by Axel Steensberg planning prehistoric fields for Gudmund Hatt. Ratio 1 : 1000.

Distance between the marks	Boundary banks: Fall in cm height per m. half width Lynchets: fall in cm. height per m. width	Relation between half width and height.
	10 cm on 5 m	1:0,02
	10 cm on 4 m	1:0,025
3 mm	10 cm on 3 m	1:0,033
	20 cm on 5 m	1:0,04
	10 cm on 2 m, 20 cm on 4 m	1:0,05
2¾ mm	30 cm on 5 m	1:0,06
	20 cm on 3 m	1:0,066
	30 cm on 4 m	1:0,075
2½ mm	40 cm on 5 m	1:0,08
	10 cm on 1 m, 20 cm on 2 m, 30 cm on 3 m, 40 cm on 4 m, 50 cm on 5 m	1:0,10
	60 cm on 5 m	1:0,12
	50 cm on 4 m	1:0,125
2¼ mm	40 cm on 3 m	1:0,133
	70 cm on 5 m	1:0,14
	30 cm on 2 m, 60 cm on 4 m	1:0,15
	80 cm on 5 m	1:0,16
2 mm	50 cm on 3 m	1:0,166
	70 cm on 4 m	1:0,175
	90 cm on 5 m	1:0,18
	20 cm on 1 m, 40 cm on 2 m, 60 cm on 3 m, 80 cm on 4 m, 100 cm on 5 m	1:0,2
1¾ mm	90 cm on 4 m	1:0,225
	70 cm on 3 m	1:0,233
1½ mm	100 cm on 4 m, 50 cm on 2 m	1:0,25
	80 cm on 3 m	1:0,266
	30 cm on 1 m, 60 cm on 2 m, 90 cm on 3 m	1:0,3
1¼ mm	100 cm on 3 m	1:0,333
	70 cm on 2 m	1:0,35
	40 cm on 1 m	1:0,4
1 mm	90 cm on 2 m	1:0,45
	50 cm on 1 m, 100 cm on 2 m	1:0,5
¾ mm	60 cm on 1 m	1:0,6
	70 cm on 1 m	1:0,7
½ mm	80 cm on 1 m	1:0,8
	90 cm on 1 m	1:0,9
¼ mm	100 cm on 1 m	1:1

NOTES

1. The basis for this for Bornholm was a systematic photographing by the Geodetic Institute starting in 1967. Stored by Bornholm County Council, Section for Conservation.
2. Several occurrencies in Søllerød s. are mentioned by Avnholt (1945) and Knudsen (1982).
3. Given in a letter from the leader of the department, Dr. phil. Sv. Th. Andersen.

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