

VEGETATIONAL HISTORY OF THE NEW FOREST:

A PRELIMINARY NOTE

By K. E. BARBER

INTRODUCTION

THE present vegetation of the New Forest is the result of natural and anthropogenic changes acting over thousands of years. The more recent history of this vegetation has been detailed by Tubbs (1968) working from documents and evidence available in the present structure of the woodlands and heaths, with some results of soil pollen analyses carried out by Professor G. W. Dimbleby. The potential of the organic sediments of the numerous valley bogs in the Forest has been largely neglected; earlier work by Seagrief (1960) seemed to indicate that many of these bogs had either stopped active accumulation of peat at an early stage in the post-glacial or that the evidence had been removed by peat-cutting.

Since 1970 the author has investigated over twenty sites within the Perambulation in an effort to find stratified pollen-analytical sequences – as distinct from the more limited though valuable evidence of soil pollen analyses (Dimbleby 1962) – which could extend our knowledge of the vegetational history to the greater part of post-glacial period. At least one such site has now been proved, as outlined below, and various other sites look promising. The ‘master’ site is Church Moor (SU 247069), centrally situated in the Forest in Mark Ash Wood and, as pollen diagrams are comparable within a region of the size of the New Forest, it should be possible to link less complete pollen sequences from other bogs with a radiocarbon-dated standard diagram from Church Moor. Besides Church Moor, Seagrief’s (1960) pollen diagrams from Cranes Moor provide a detailed picture of that area from about 7000 BC to 4000BC and the author has been successful in obtaining cores of the soft white mud at the bottom of Sphagnum Bog, Cranes Moor, which Seagrief was unable to sample because of the design of peat sampler then in general use. These muds extend from 370 cm (Seagrief’s maximum depth) to very nearly 500 cm and so may extend the pollen record back to the earliest post-glacial.

At Warwick Slade Bog (SU 276067), The Noads Bog (SU 397061) and the bogs alongside the Avon Water (SU 2499), preliminary work has revealed pollen sequences broadly similar to Church Moor. Once a definitive history of Church Moor has been completed these sites will be fully investigated and it is hoped that shorter sequences from other sites may then be integrated to give a coherent picture of New Forest vegetational history from 8000 BC to the present.

CHURCH MOOR, NEW FOREST.

CORE AC1: POLLEN

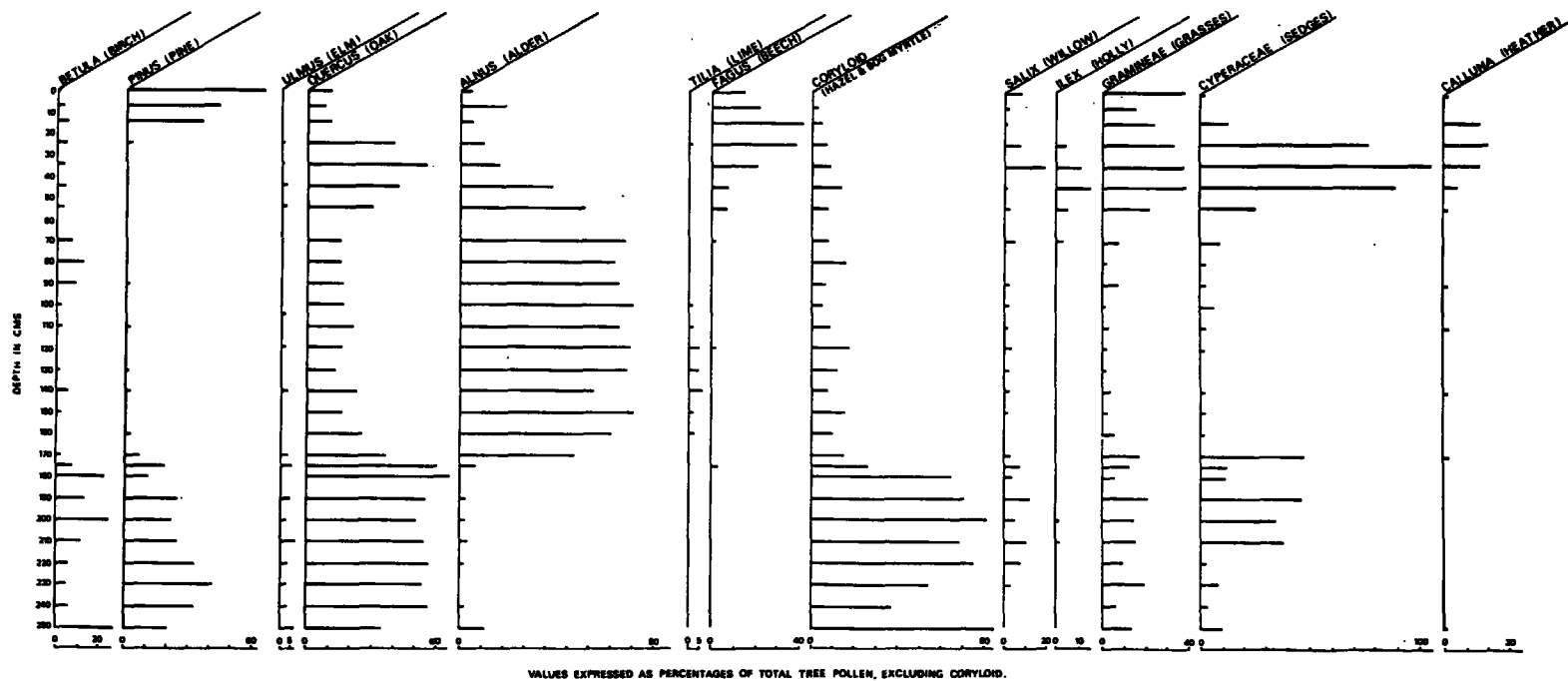


Fig. 1.

THE CHURCH MOOR POLLEN DIAGRAM

The discovery of this important site was based on the premise that the only bog likely to have escaped the attention of peat-cutters over the last few centuries would be one relatively distant from the main settlements of Lyndhurst, Brockenhurst and Burley, and too small to have been worth exploiting. Church Moor is only some 200 metres long by 50 metres or so wide and more or less equidistant from Lyndhurst and Burley. It has a central alder carr with a ground flora of *Sphagnum* moss and a *Molinia-Sphagnum* association surrounds this. The deepest point found so far, 250 cm, is just inside the carr and the peat is light to medium brown throughout with no signs of stratigraphic breaks or disturbance.

The pollen diagram shown here (Fig. 1) was constructed from counts by a final year undergraduate supervised by the author. Counts by other students and check-counts by the author bear out the general trends shown in the curves but it must be stressed that these students were relatively inexperienced in pollen analysis. Various 'difficult' plant taxa recorded at low levels have therefore been omitted and no zonation has been attempted, but the broad changes are certainly reliable and it was felt that the importance of the site warranted early publication.

The lowest part of the diagram, from 250–170 cm, is clearly Boreal (Zone VI of Godwin 1956) though with a higher and more sustained oak representation than is usually found. The pollen assemblage indicates a mixed woodland of oak (*Quercus*), pine (*Pinus*), birch (*Betula*), and hazel (*Corylus*), with elm (*Ulmus*) and willow (*Salix*). The *Coryloid* grains are of *Corylus* (hazel) type rather than *Myrica* (bog myrtle). During this period, about 7500–5500 BC, Britain was still joined to the Continent because of the lower sea-level resulting from incomplete ice-sheet melting, and pollen data from this time in Southern England are especially important in elucidating the immigration sequence and composition of the early post-glacial woodlands.

The striking rise of alder (*Alnus*) pollen at 170 cm marks the opening of the Atlantic period (Zone VIIa), the hypsithermal which seems to be the only time of any marked presence of lime (*Tilia*) in New Forest woodlands. This Boreal–Atlantic transition, when Britain finally became separated from the Continent, is often conventionally taken to date from 5500 BC but as Smith and Pilcher (1973) have shown, the boundary is diachronous to the extent of almost three millenia across the British Isles. With the New Forest likely to be one of the first areas in Britain to be widely colonised by alder it is probable that the boundary here is somewhat earlier than 5500 BC; it is hoped to obtain radiocarbon dates to fix this and other features of the diagram on a chronometric scale.

The fall in all other tree pollen percentages above this level is, of course, something of an artifact effect due to the very high numbers of alder pollen grains in the peat. This effect is commonly seen in 'relative' diagrams and can be avoided by 'absolute' methods, that is, counting the fossil grains against modern, exotic marker pollens, or by counting very large numbers of grains at each level and constructing auxiliary diagrams to exclude such disturbing factors (Janssen 1959). These techniques will be explored in future work. Nevertheless the virtual disappearance of pine, elm and lime in the middle section of the diagram is probably real and the resulting oak-alder-hazel woodland persists for many centuries with little apparent disturbance.

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The upper 55 cm of the diagram are especially interesting and show the hitherto unrecorded spread of beech (*Fagus*), accompanied by holly (*Ilex*), and its expansion to some 40% of the tree pollen total. Beech is a very poor pollen disperser and these high levels undoubtedly indicate much beech woodland in the immediate vicinity of Church Moor, as at present. The abrupt return of pine nearer the present day must reflect the plantings in Bolderwood Grounds (around AD 1800) and give a useful datum for estimating the age of the more recent changes such as the spread of heather (*Calluna*). The curves for grasses (*Gramineae*) and sedges (*Cyperaceae*) most probably show local changes in the vegetation of the bog itself.

Preliminary analyses from more closely-spaced horizons in the upper 50 cm show a much more complex pattern of development, especially with regard to beech, oak, hazel and grasses, which must record changing management practices and demands on the woodland and so provide independent evidence of the ecological history arrived at by other means (Tubbs 1968).

Clearly, Church Moor is a very significant site for the study of ecological changes in the New Forest and with work on the other sites mentioned, and on mires in South-East Dorset and Sussex, will go to fill an important gap in our knowledge of the vegetational history of Southern England.

Acknowledgements

I wish to thank Angela Ranson for permission to use her pollen counts to construct the outline diagram of Church Moor, and F. Aldsworth, Veronica Dunbar and Elaine Stainer-Smith for their help in counting the upper horizons.

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