

## The B.S.B.I. Black Poplar survey, 1973-88

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### ABSTRACT

The B.S.B.I. Black Poplar survey is described and the chief results reported. The distribution of the Black Poplar, *Populus nigra* L., in Britain is shown to be concentrated chiefly in the flood plains of lowland rivers in England and Wales, where it is probably native, but where it has also been widely planted in the past. The probable reasons for its failure to reproduce naturally by seed in the British countryside today are explained.

### THE SURVEY AND ITS RESULTS

I have been interested in *Populus nigra* L. (Fig.1) since my student days at Cambridge, where I was infected by the enthusiasm for this tree of Humphrey Gilbert Carter, Director of the University Botanic Garden. He showed botany students three standard Black Poplars at Madingley (now no more, the last having been cut down in 1984) and demonstrated the characters separating them from the commonly grown hybrid *P. × canadensis* Moench var. *serotina* (Hartig) Rehder.

During the next 45 years I made mental notes of Black Poplars whenever I came across them in England and Wales, and began to realize what an uncommon tree it was. I helped my father prepare the account of *P. nigra* in Gloucestershire (Riddelsdell, Hedley & Price 1948). I submitted a number of records of the species to the B.S.B.I. Mapping Scheme, and was disappointed when the *Atlas* (Perring & Walters 1962) appeared and the map showed a hotchpotch of species and hybrids, with no recognizable distribution, as many of the contributors could not separate the species from the hybrids!

So, when I retired in 1971 and came to live in Suffolk, I discussed the problem of mapping its distribution with Franklyn Perring (then at the Biological Records Centre, Monks Wood), and offered to undertake a survey of the occurrence of the species in Britain for the B.S.B.I. This started in earnest in 1973: recording-cards were prepared by the Society and sent to its members, and records started to come in. Many I knew to be correct, but others were doubtful, and I soon realized that a lot of checking was going to be necessary in order to eliminate hybrids from the survey. Before long I had compiled a short list of members who knew the native tree and whose records could be trusted, and a longer list of doubtful trees which needed checking before being accepted. All firm records were entered on record cards left over from the mapping scheme and were periodically sent to Monks Wood. The cards recorded the vice-county, the six-figure map reference, the parish, site and altitude, the habitat, the sex (if known), whether standard or pollard, and the recorder's name.

In 1976 I obtained a small grant from the World Wildlife Fund (as it then was) which enabled me to make a fortnight's tour round some of the Black Poplar sites in England and Wales, visiting Hampshire, Dorset and Devon, then north through Somerset, Gwent and Powys to Shropshire and Clwyd, east through Cheshire, Staffordshire and Derbyshire to Lincolnshire and back to Suffolk by Huntingdon and Cambridge. Many doubtful records were confirmed or rejected, and I was able to meet several of my valuable helpers who showed me some of their more outstanding finds, including the first coppiced Black Poplar I had ever seen! This was a most useful trip as, seeing the tree in many different habitats, I got a better idea of the degree of variation within the species. I also began to realize that Black Poplars were largely planted by man, who grew the saplings from cuttings, which usually resulted in local clones of one sex developing.

At this time I knew of only one site in Britain where trees of both sexes grew close enough together to produce abundant fertile seed and, as no male hybrid was to be seen around when I visited this Cheshire site, the seed produced would almost certainly be pure *P. nigra*. I now know of

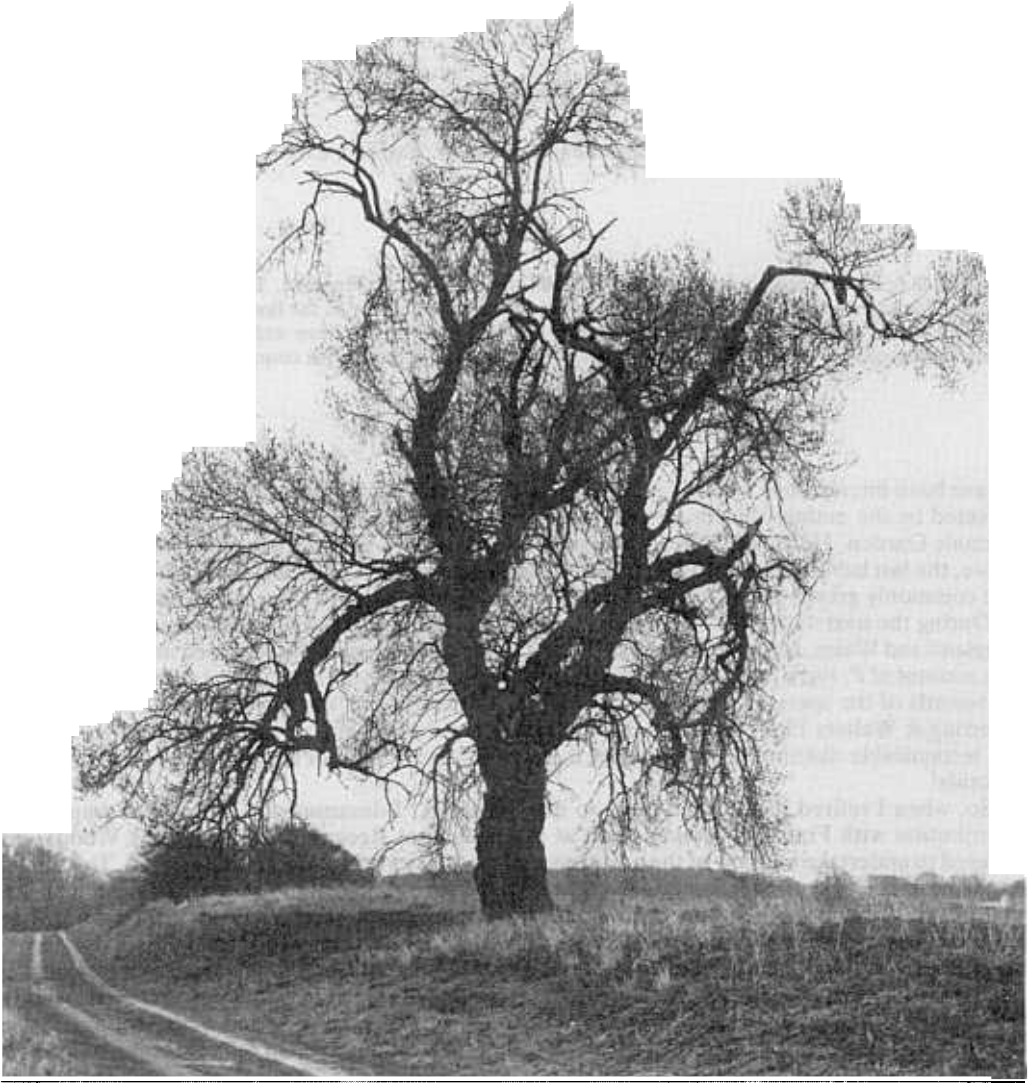


FIGURE 1. Specimen of *Populus nigra*, near Butley Church, E. Suffolk, v.c. 25; photographed by P. Webb, March 1975.

about half a dozen sites where male and female trees grow close enough together to produce some fertile seed, but I have not checked all of them for the absence of nearby male hybrids. I searched in vain for seedlings or saplings around the Cheshire trees, in spite of the fact that probably one million fertile seeds are produced there every year!

The seeds of *P. nigra* need to fall on bare wet mud, soil or silt at the end of June, and the site has to remain bare and wet till leaf-fall in October. The seedling will perish during these first few critical months if there is a drought or if the site gets flooded. By October it will be 10–15 cm high and its roots will have got down about 30 cm. It can then tolerate adverse conditions the following summer. But where do you find bare wet surface conditions in the summer countryside today?

In early days, before the lowland rivers were tamed by man, they used to erode their banks during

winter floods and deposit quantities of silt, making suitable habitats for Black Poplar seed to germinate. Every now and then one or two out of the million or so produced by one tree would be successful, and the species would regenerate naturally.

On my trip I saw few young Black Poplars and none that could have grown from seed, and now, after 15 years studying this tree, I know of only one probable natural seedling in the whole of England and Wales – in E. Suffolk, v.c. 25. The only other recorded seedling, of which I have read, is mentioned in Druce (1927) near Osney, Oxon, v.c. 23, “on mud dredged from the river [Thames]”. To understand the status of *P. nigra* in Britain today, one has to realize that its very existence in our countryside is due to man. Many Floras dismiss it as an alien because it always seems to have been planted. Had it not been planted it would have become extinct long ago!

One reason for the scarcity of the Black Poplar in Britain today is the advent of the man-made hybrid poplars, which became popular early last century and which were widely planted by landowners in place of the native species. Tree-nurseries built up stocks of them and *P. nigra* soon became a forgotten tree. Few if any were planted after the middle of the nineteenth century, so that most of the standard trees here recorded are getting past maturity and starting to die back.

In the early days (1000 years ago or more) *P. nigra* was, in my opinion, a native British tree in the flood plains mainly of lowland rivers in England and Wales, and most occurred south of a line from the Humber to the Mersey. However, on the eastern side it occurred here and there through Yorkshire reaching as far north as the Tees in Co. Durham, v.c. 66. It is not native in Scotland. The high ground in central Wales and in Devon seems to have formed a barrier, and I have only two records for the western coastal areas: a tree (old in 1919) on the lawn of Weare Gifford Hall, N. Devon, v.c. 4, and a stunted tree by the now derelict farm buildings on Skomer Island, Pembs., v.c. 45, both almost certainly introduced. The trees recorded on the River Lune in W. Lancs., v.c. 60, are also introduced, but that is another story!

The distribution today shows *P. nigra* as a lowland tree, being absent from the North and South Downs, the Chilterns, the Cotswolds and the Mendips. It occurs near the sea in N. Somerset, v.c. 6; Dorset, v.c. 9; Wight, v.c. 10; S. Hants., v.c. 11; W. Sussex, v.c. 13; N. Essex, v.c. 19; E. Suffolk, v.c. 25; Flints., v.c. 51; N. Lincs., v.c. 54; and N. E. Yorks., v.c. 62. It is surprisingly scarce in the three southern counties of Hampshire, Sussex and Kent; it appears to have gone from several sites in N. Somerset; and there are very few records from Leicestershire and Nottinghamshire.

There are certain areas where it has been grown extensively as pollards, the most outstanding being the Vale of Aylesbury, where it is by far the most common tree. Pollards also dominate the area of smallholdings known as Castlemorton Common in Worcestershire, the Thames valley west of Wallingford, Berks., v.c. 22, and an area between Taunton and Minehead in S. Somerset, v.c. 5.

In most of its localities it grows at altitudes of well under 100 m, but in Berks., v.c. 22, Bucks., v.c. 24, and Worcs., v.c. 37, it reaches 130 m; in Herefs., v.c. 36, it is found at 200 m; and in Salop, v.c. 40, at 270 m; but the altitude record at present is held by a tree of considerable age flourishing at 300 m in the parish of Penstrowed in Monts., v.c. 47.

Countrymen and farmers over the centuries have found the timber of the native Black Poplar and the poles from pollards useful and it has been extensively propagated. Cook (1676) tells his readers “You that have wet grounds get [some truncheons of Water Poplar] to set by your ditches. . . ., for if you set one worth a half penny, if they grow they will bring you that yearly for twenty years or more”. Evelyn (1664) describes how to propagate the tree by truncheons, seven to eight feet long, but Hunter (1776) prefers cuttings planted out in nurseries, and mentions sides of rivulets, bogs, pasture-grounds and fields as suitable sites for planting out. None of these authors mentions growing the tree from seed.

Not understanding the biology of *P. nigra* and its inability to propagate itself by seed, and noticing that most trees occurred in sites where they had obviously been planted, many authors of county and local Floras dismissed the species as not being native. For instance, Murray (1896) excludes it from being a native Somerset tree with the comment “often planted”, whilst Druce (1927) considered it an alien in Oxfordshire. Hyde (1931) states “rare in Wales, even as a planted tree”, but Wade does not mention it as a native flowering plant of Wales (Hyde & Wade 1957). However, it seemed to Elwes & Henry (1913) to be a native of the counties of the Welsh border, where it was fairly common, and they also considered it was probably indigenous in East Anglia. Other authors failed to distinguish *P. nigra* from the commonly planted variants of *P. × canadensis*, and one, whose Flora was in manuscript when I offered to check his account of *P. nigra*, refused my offer, saving it

was not possible to distinguish it from the hybrids, resulting, in due course, in a useless account of its occurrence and distribution in his county!

During the past 15 years I have accumulated a wealth of information about this magnificent tree, and I hope to write a further paper covering its nomenclature, genetical variation, ability to regenerate vegetatively and its uses, as well as some remarks on the fauna associated with it or which makes use of it. I hope also to deal with its status in Ireland and continental Europe.

The accompanying distribution map (Fig. 2) was up-to-date when submitted for publication, and I

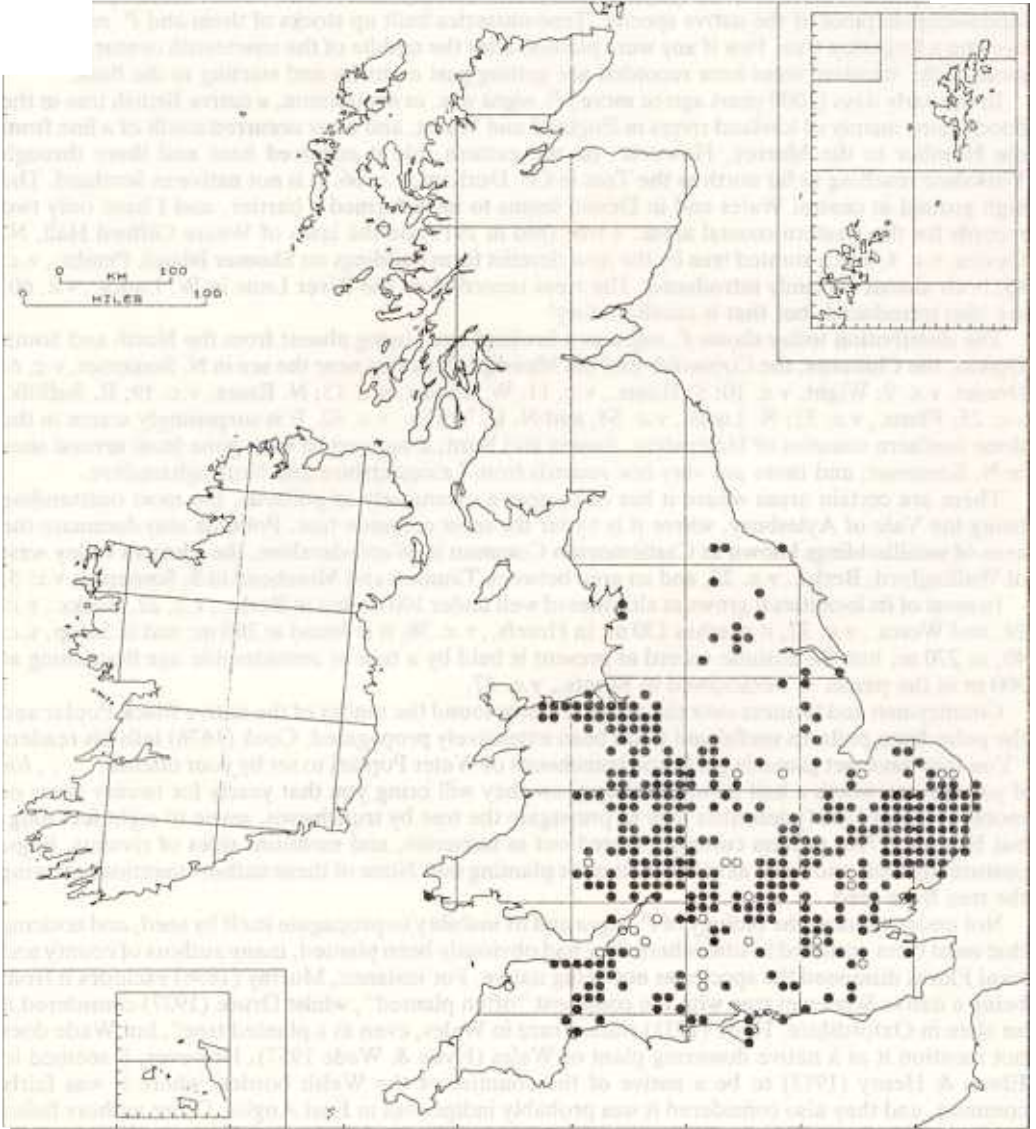


FIGURE 2. The distribution of *Populus nigra* in Britain. ● 1960 onwards, ○ pre-1960 or extinct

am still prepared to receive records. The map may give the impression that the Black Poplar is a common tree, for instance in East Anglia, but a dot very often represents the presence of only one tree in an area of 100 square kilometres!

I have omitted from the map records of the Manchester Poplar, which is a male clone of *P. nigra* of unknown origin. Over 100 years ago it was extensively planted from nursery stock in the older suburbs of Manchester, as it was found to thrive in the heavily polluted atmosphere at that time. For more information about the Manchester Poplar see Stace (1971).

Readers may care to compare this map with that published in Perring & Walters (1962), and they will then see why I was anxious to discover the true distribution in Britain of our rarest and most splendid native timber tree.

#### ACKNOWLEDGMENT

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