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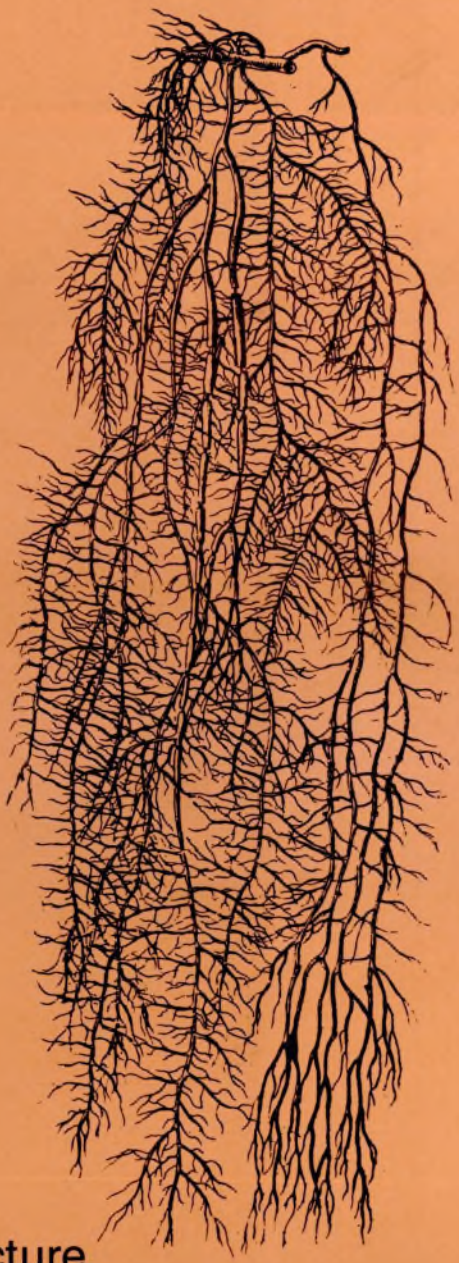

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CHANGES IN THE POPULATION OF FULGENSIA FULGENS AT LAKENHEATH WARREN OVER THE LAST 15 YEARS

Fulgensia fulgens has been known from Lakenheath Warren for many years. The first record appears to be by F.K. Eagle (Mayfield, 1930) with a subsequent record by the British Lichen Society in 1958.I was first shown the colonies by Peter Lambley in 1978.The ecological requirements of Fulgensia fulgens have been well documented by Gilbert (Lichenologist 1978).At Lakenheath Warren it is at the northern edge of its range. Here micro-climatic conditions have a greater effect on distribution than would be the case further south. It is a strict calcicole of well-drained soils of approximately pH 7.8, in sunny sheltered sites and prefers a short grazed open sward, where there may be a 50% cover of higher plants with the remainder consisting of bare earth, lichens and moss. These conditions are met at Lakenheath as the lichen occurs on raised areas of chalky boulder clay surrounded by low rolling sand-dunes. Fig. 1, taken in 1973 shows these conditions and Fulgensia fulgens in a very healthy state. The thalli, abundantly fertile, were dense on the ground and producing the effect of a yellow carpet.

Since those days conditions have seriously changed and the size of the colony has vastly decreased. The present conditions are shown in Fig. 2. The area is much less sunny and open and there are no bare patches of soil, though the vegetation is still low and sparse with much moss forming a continuous cover. Pines have now almost swamped the area. A large quantity of seed is produced annually and there is also a heavy leaf fall of needles; these are very acid and have reduced the surface pH to 6.0. The regeneration of pine is rapid and will soon cause the two remaining patches of Fulgensia fulgens to disappear completely. The many young pines in the area, without the grazing of rabbits, are becoming dominant. Rabbits also caused a good deal of disturbance to the soil with their scrapes and burrowing which is beneficial to the Fulgensia. With repeated outbreaks of myxomatosis and shooting rights extended to the local air base, rabbits are virtually non-existent now.

Fig. 1. Fulgensia at Lakenheath Warren with lichen thalli in the foreground and a few small pine trees, 1973, (Photo O.L. Gilbert).

Fig. 2. The same area with depauperate Fulgensia overshadowed by mature seed bearing pine trees, 1988, (Photo C.J.B.Hitch)

As a means of halting damage to the lichen population pine seedlings have been removed in the immediate vicinity of the colonies, but the mature seed-bearing trees remain. The problem is that the exceptionally glaucous-leaved pines are a source of income to the estate as Christmas trees for the Americans on the air base, so the estate forester is against the wholesale removal of the parent trees. In view of this in spring 1986 a core of soil approximately 15cm diameter containing twenty minute Fulgensia thalli was transplanted into an adjacent area where species such as Squamarina lentigera, Buellia asterella and Toninia caeruleonigricans still exist abundantly.I suspected the core might get shoved out by a passing mole, but the colony remained healthy and by summer 1988 had made spectacular growth.

One remaining hurdle had to be overcome at Lakenheath. In a report on the status of Fulgensia fulgens that I wrote in spring 1987, I suggested that if a circle of radius 25 - 50 m round the colonies was cleared of pines this ought to alleviate the problem and the pH might rise sufficiently to allow recolonisation. The NCC have been very active since the Warren was designated an environmentally sensitive area (ESA) for reasons such as the presence of breeding stone curlews. They got the estate to agree that 2 ha of pines around the Fulgensia site could be cleared. It is therefore hoped that with this happening, and by initially raking out the moss in the immediate vicinity of the remaining Fulgensia plants, the thalli may regenerate when the pH again rises in the absence of pine needles.

One of the more interesting facts about the Fulgensia at Lakenheath is that no collections show any formation of schizidia which are abundant on thalli in sites in SW Britain, so their increase is limited to fragmentation or spore dispersal. It would be interesting to transplant schizidial forming material to a grassland knoll in the area, about 200 m from the existing plants, and see if it continued to produce schizidia.

Literature:

Mayfield, A. (1930) The Hepatics, Mosses and Lichens of Suffolk. The Journal of the Ipswich and District Natural History Society,1(2):89-140.

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