PROVISIONAL ATLAS

OF THE

MYXOMYCETES

OF THE BRITISH ISLES

EDITED BY

BRUCE ING

(CHESTER COLLEGE, CHESTER)

BIOLOGICAL RECORDS CENTRE

Institute of Terrestrial Ecology
Monks Wood Experimental Station
Huntingdon

1982

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The Biological Records Centre is operated by the Institute of Terrestrial Ecology (Natural Environment Research Council) and receives financial support from the Nature Conservancy Council. It seeks to help naturalists and research biologists to co-ordinate their efforts in studying the occurrence of plants and animals in the British Isles, and to make the results of these studies available to others.

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Introduction

The study of myxomycetes has developed in the familiar pattern of taxonomy, physiology, biochemistry and genetics, and the last few years have witnessed the start of ecological studies (e.g. Ing, in press). The distribution of British myxomycetes has been recorded in Census Catalogues (Ing, 1968, 1980, 1982) and the time is right for an attempt at mapping.

Species have been selected to illustrate a number of points:

1. that there are several very common species, easily found and readily identified by the non-specialist, that seem to occur wherever a suitable habitat is visited. The maps of these species can be used as a basis for comparing the frequency of the less common species (46 maps).

2. that the majority of species occur in woodland, on dead wood and leaf litter, and their distribution reflects the poorly wooded character of much of these islands.

3. that certain ecological groups of species have a marked geographical bias. For example, the ravine association is decidedly Atlantic (4 maps) and the straw-heap association (8 maps) is characteristic of the corn growing areas of the south and east.

4. some species are especially common in the tropics and apparently are at their geographical limit in the British Isles and appear to have a southerly bias (13 maps). Others are commoner in the north, perhaps reflecting a boreal pattern. Mapping on a continental or world scale will help to elucidate these patterns.

5. the habitats less frequently visited by mycologists such as heathland, marsh or coastal ecosystems have fewer myxomycete records and the species involved are consequently under-recorded.

6. changes in the land use of the British Isles may be reflected in the changes in distribution of organisms such as myxomycetes. An example is the reduction in the frequency of the straw-heap species following changes in agricultural practice, or the increase in coniferous woodland species as a result of re-afforestation (9 maps).

The material presented in these maps is gleaned from specimens maintained in all the public herbaria in the British Isles, from a thorough search of all relevant literature, from the field records of many mycologists and from the compiler's own field work since 1957.

The maps distinguish between records made prior to 1960 and those made after this date. This coincides with the activity of the current generation of myxomycologists, and conforms with other mapping schemes in operation. In order to allow a better evaluation of the species maps, and especially to avoid over-emphasis of the gaps, Map 1 shows all the recorded 10 km. squares of the National and Irish Grids from which at least one myxomycete record has been made. This map illustrates the uneven coverage of the British Isles and suggests areas for further study.

Acknowledgements

This atlas could not have been compiled without the help of many mycological colleagues, and in particular members of the British Mycological Society. I would, however, like to thank most warmly Malcolm Clark, Peter Holland, Roland McHugh and David Mitchell, who have made major contributions to the records. I should also like to thank Dorothy Greene, John Heath and Christopher Preston of the Biological Records Centre for their encouragement and help - and for producing the maps!

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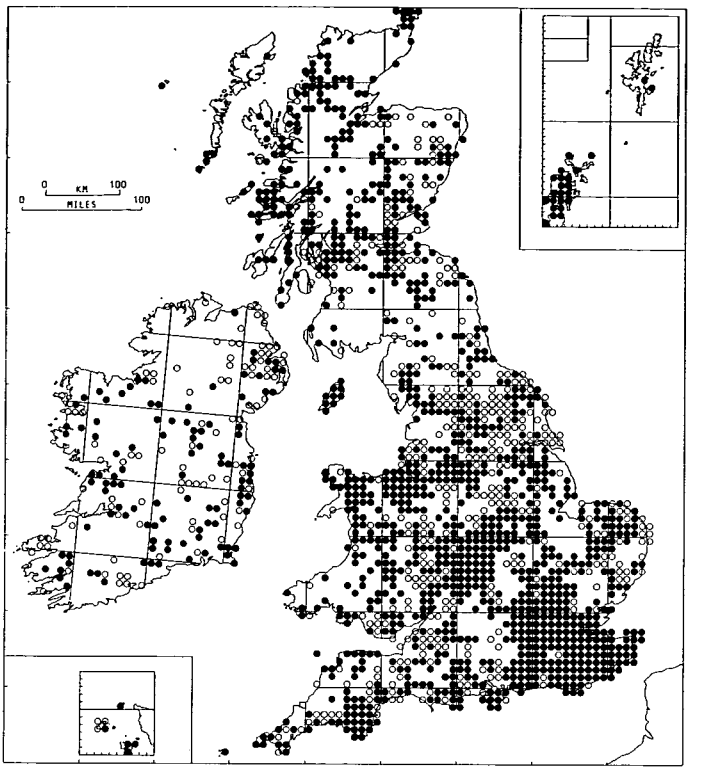
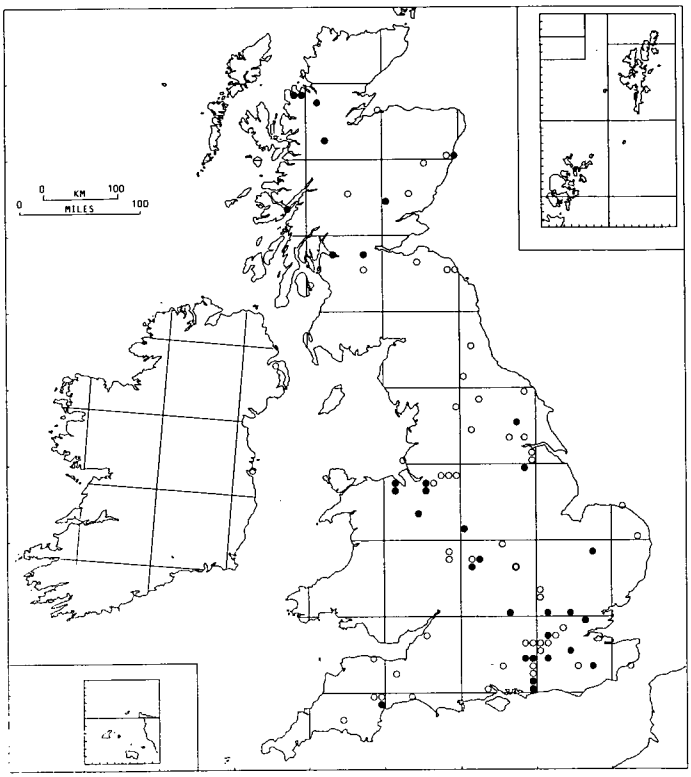
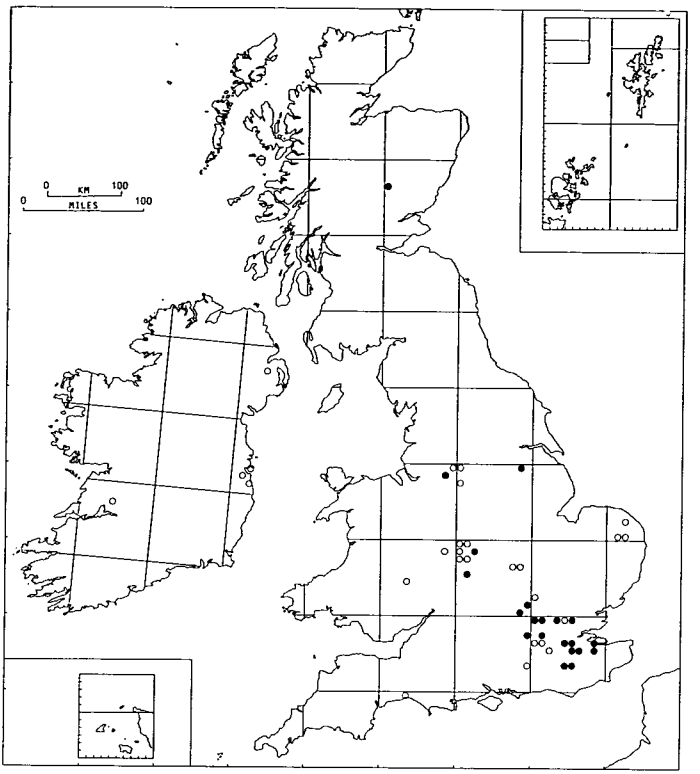


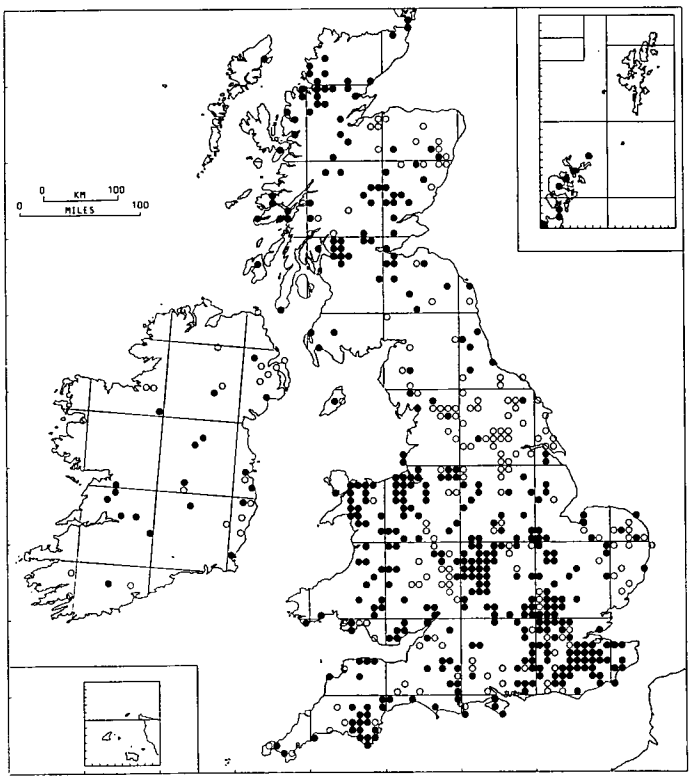
Map 1. **All recorded squares.** All 10 km. squares of the National and Irish Grids in which any record of a myxomycete species has been made. The map shows the areas of Scotland and Ireland apparently unexplored for myxomycetes compared with the better coverage of southern England and North Wales. As in all succeeding maps, an open circle o indicates a record made before 1960 and a closed circle ● a record made after this date.



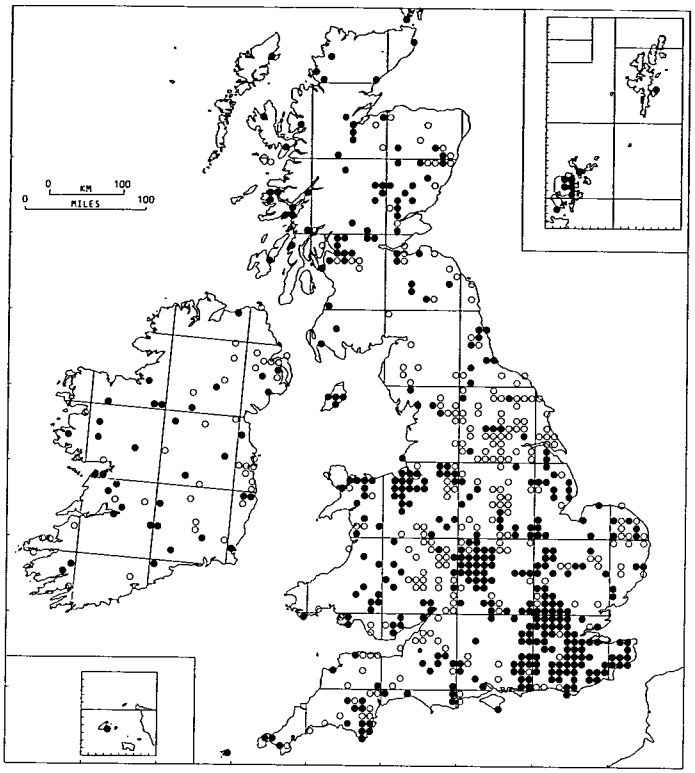
Map 2. **Amaurochaete atra** (Alb. & Schw.) Rost. An uncommon species confined to newly felled coniferous wood. Perhaps increasing with the spread of plantations.



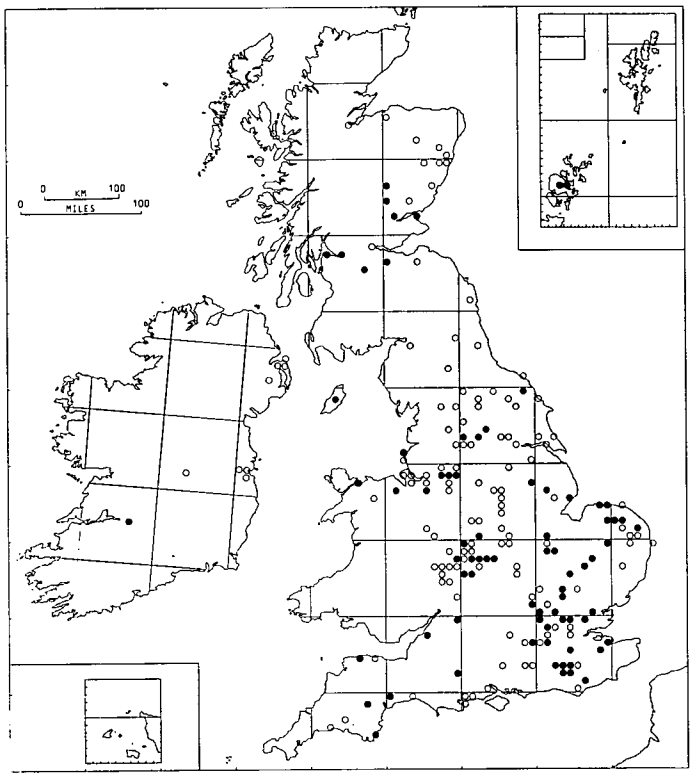
Map 3. **Arcyria affinis** Rost. (*A. incarnata* var. *fulgens* G. List.). An uncommon species, characteristic of the beechwoods of the south-east.



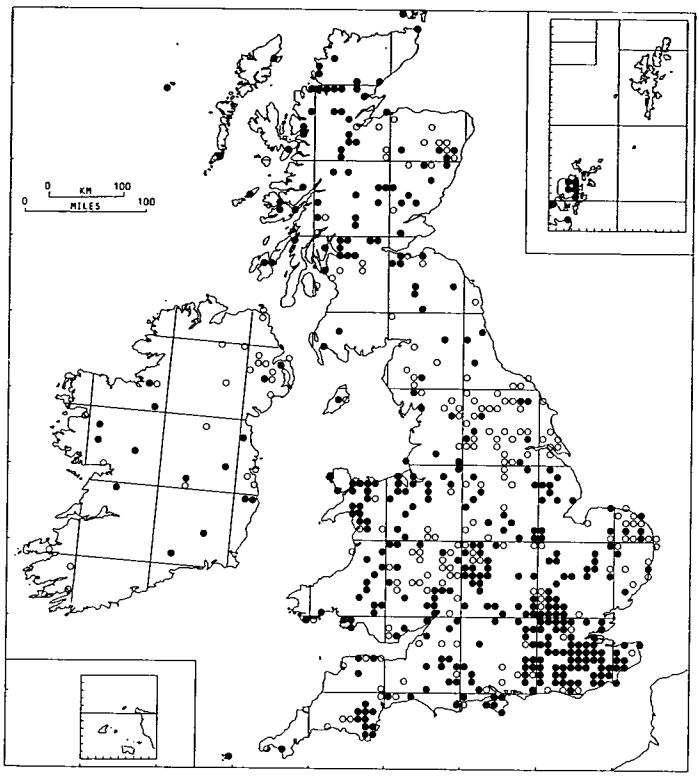
Map 4. **Arcyria cinerea** (Bull.) Pers. A common and widespread species found on mossy, rotten logs and the bark of living trees, especially oak.



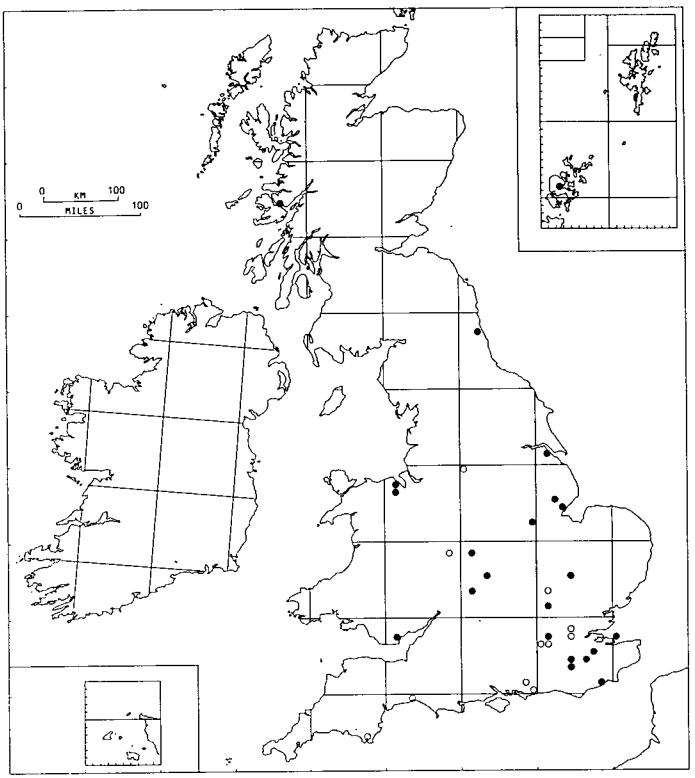
Map 5. **Arcyria denudata** (L.) Wettst. A common species found on well rotted logs, especially in woodland on deeper soils. Probably a lowland species.



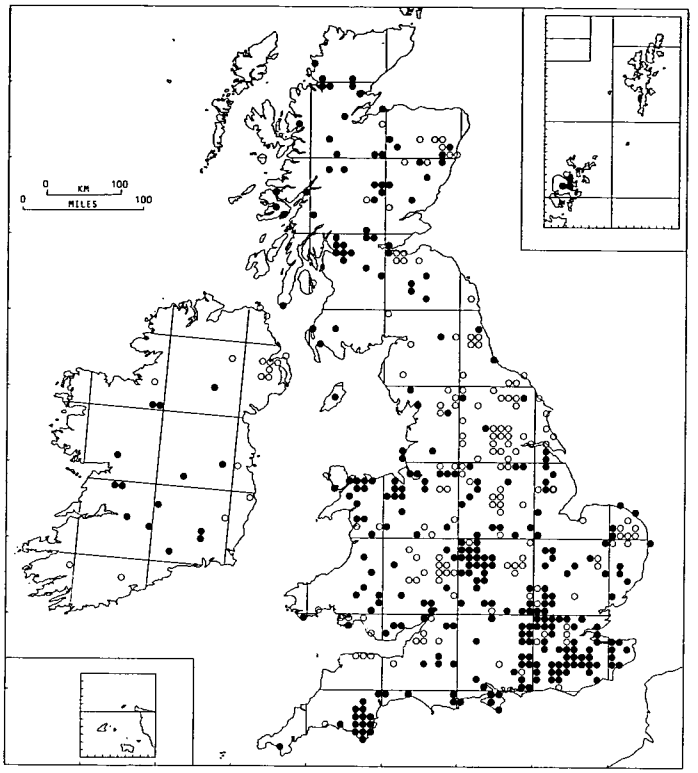
Map 6. **Arcyria ferruginea** Sauter. An uncommon species found on dead wood, especially in winter, thus probably under-recorded.



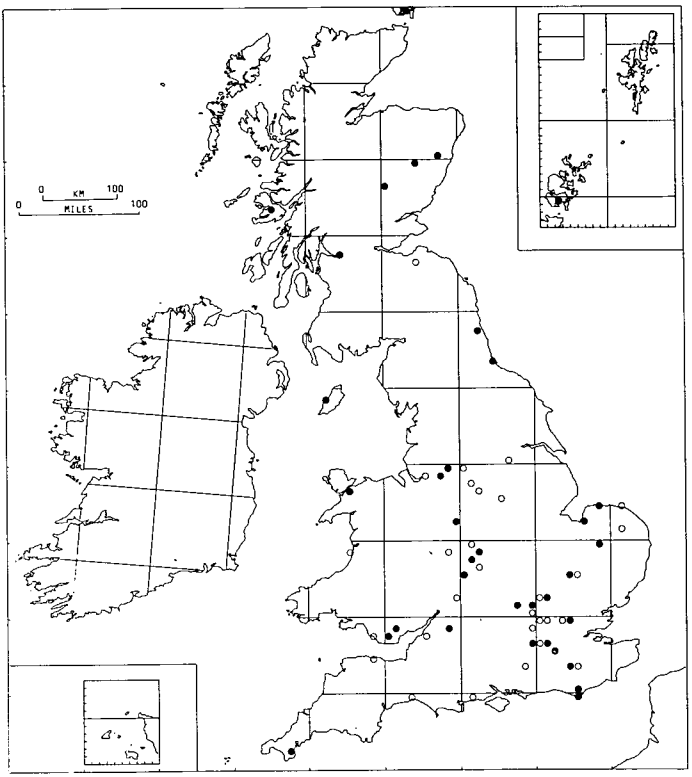
Map 7. **Arcyria incarnata** (Pers.) Pers. A very common species of broad-leaved woodland, especially characteristic of oak woods where it is found on sticks and branches rather than logs.



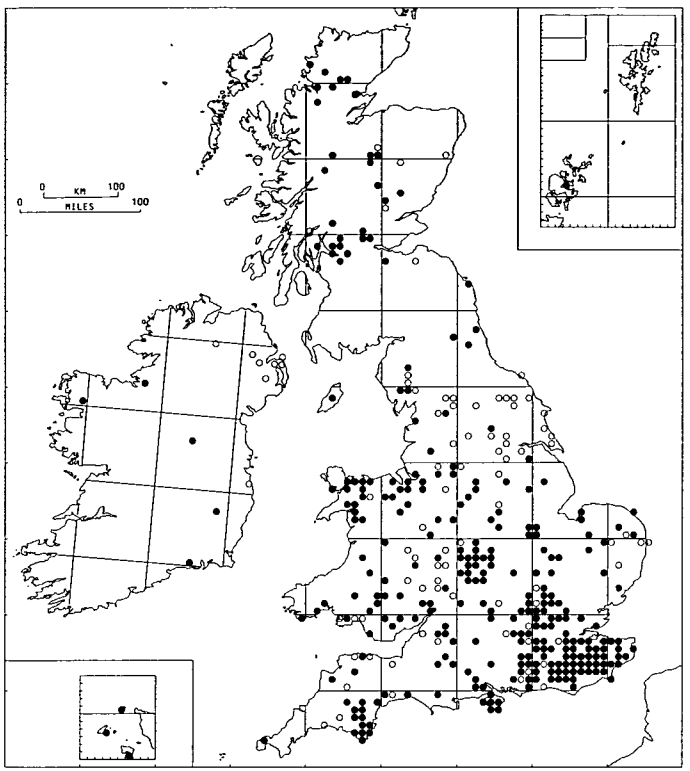
Map 8. **Arcyria minuta** Buchet (*A. gulielmae* Nann.-Brem.; *A. carnea* (G. List.) G. List.). An uncommon species, perhaps overlooked or misidentified, possibly commoner in the eastern half of the country.



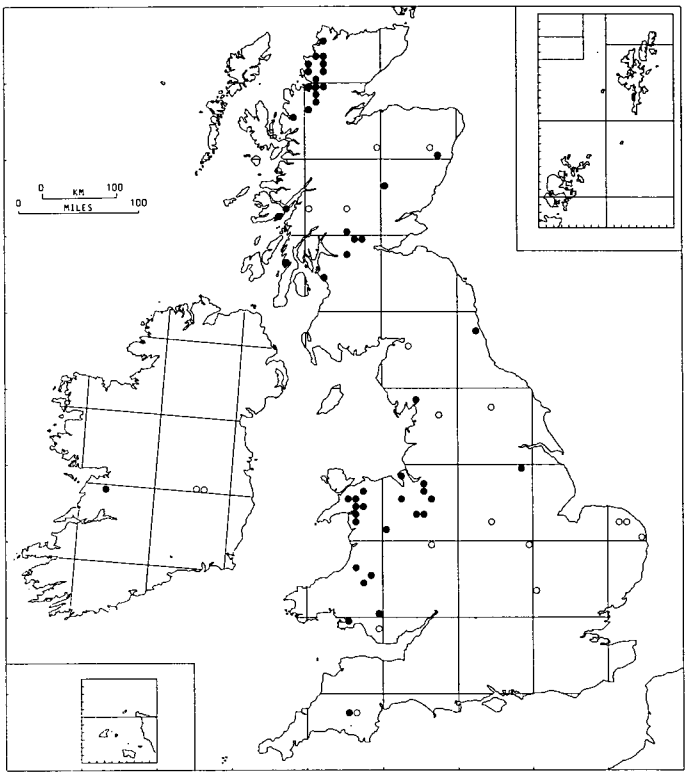
Map 9. **Arcyria obvelata** (Oeder) Onsberg. (*A. nutans* (Bull.) Grev.). A common and conspicuous species found in summer, often in exposed places, on logs of beech and oak in particular.



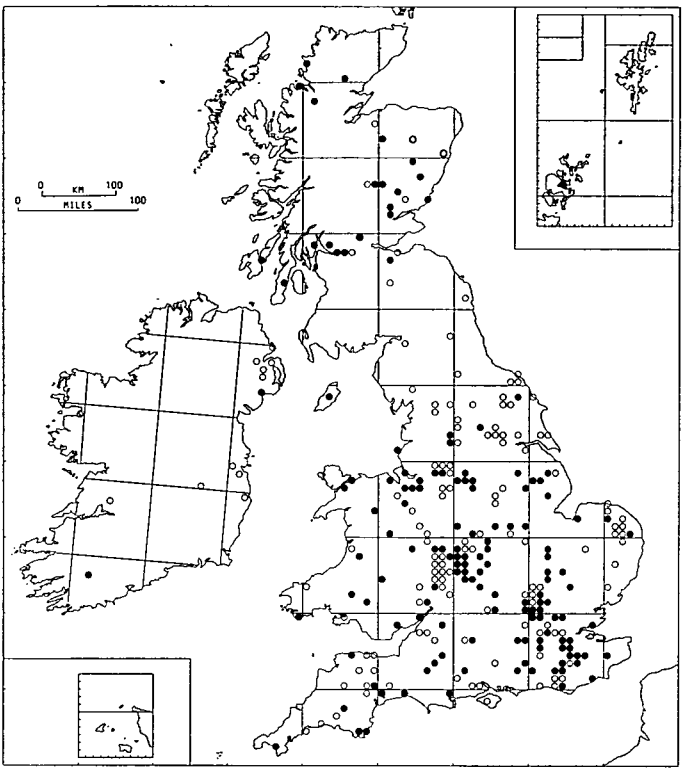
Map 10. **Arcyria oerstedtii** Rost. An uncommon but conspicuous species, perhaps more frequent in the south and east, becoming rare in the north and west.



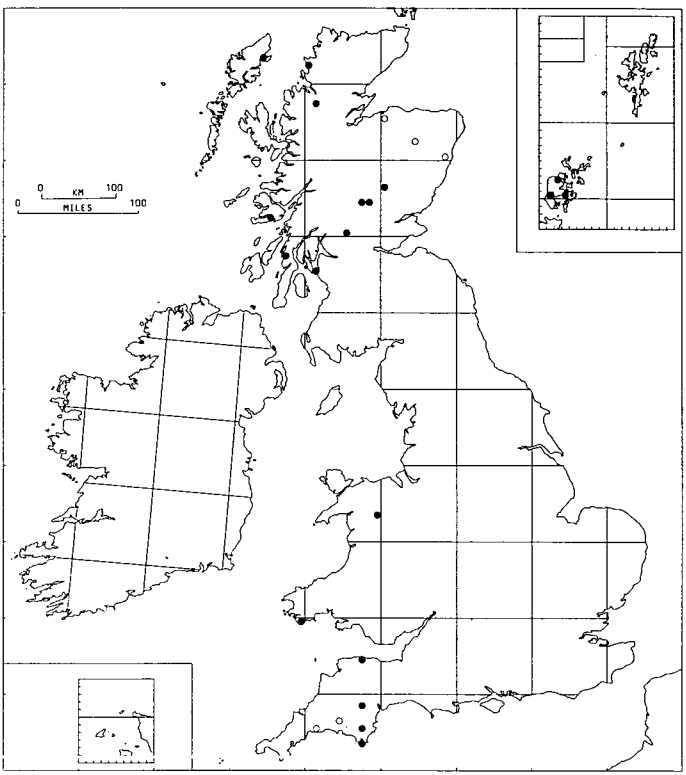
Map 11. **Arcyria pomiformis** (Leers) Rost. A common species on sticks of oak and bark of living trees. Sometimes misidentified and possibly overlooked.



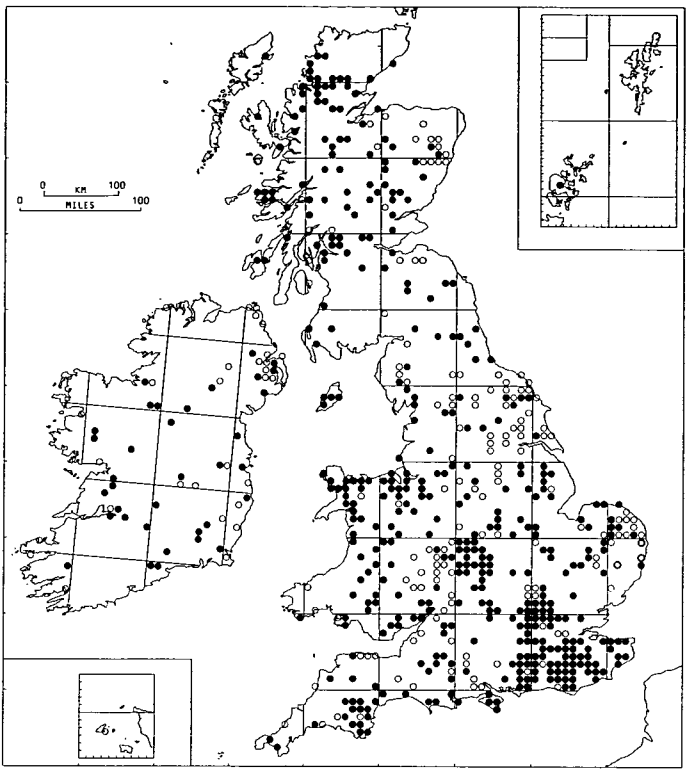
Map 12. **Badhamia lilacina** (Fr.) Rost. More or less confined to *Sphagnum* bogs and therefore predominantly western in distribution.



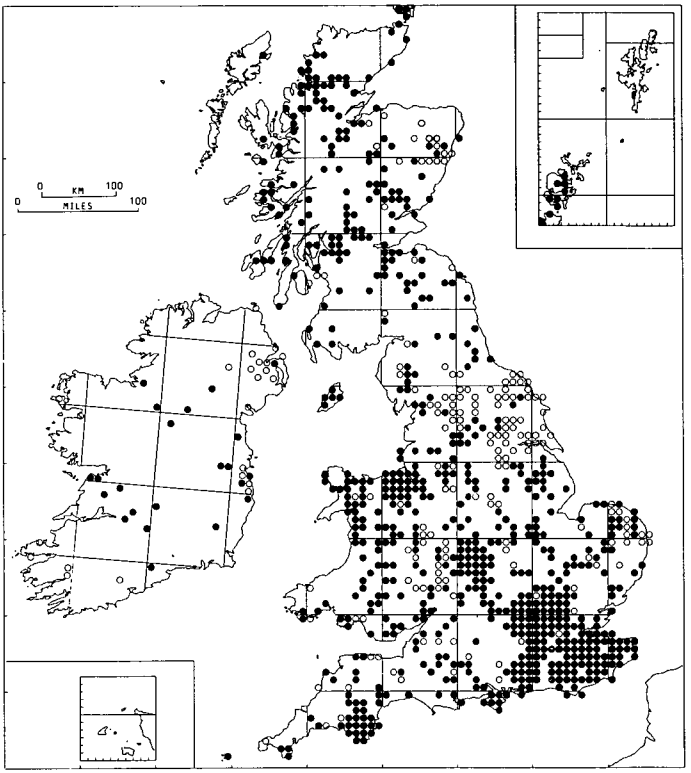
Map 13. **Badhamia utricularis** (Bull.) Berk. A common and familiar species found on *Stereum* and similar fungi on logs of broad-leaved trees.



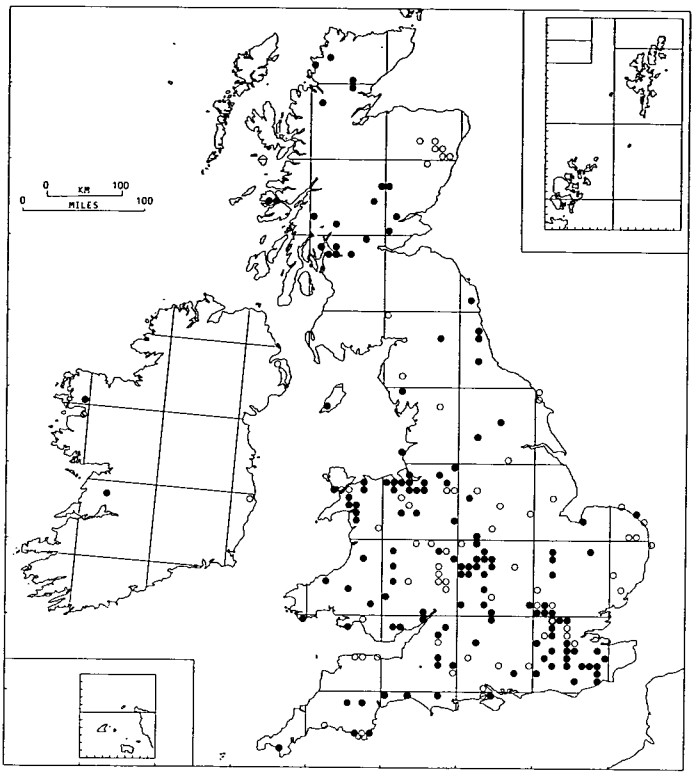
Map 14. **Badhamia versicolor** A. List. A rare species found on mossy bark of living trees, more western in distribution than many corticolous species.



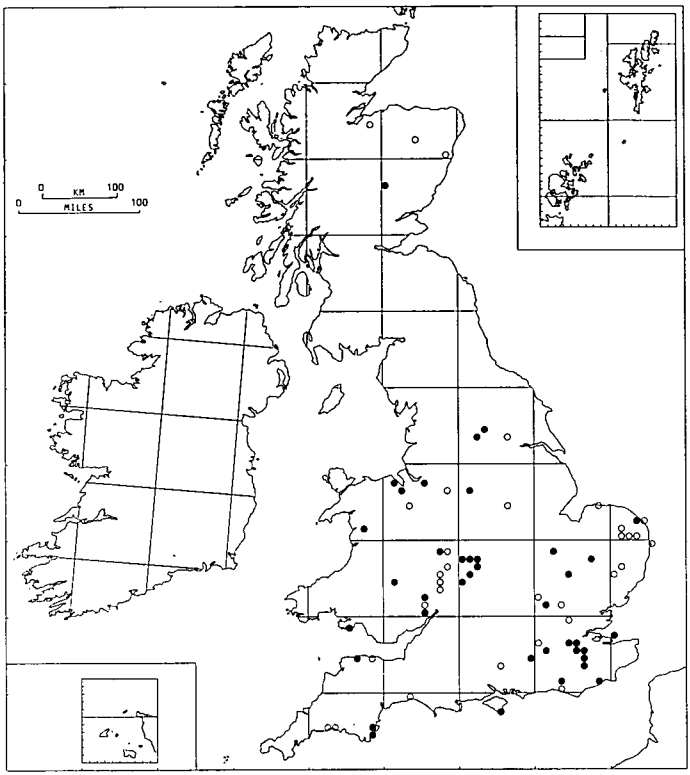
Map 15. **Ceratiomyxa fruticulosa** (Mull.) Macbr. A common species, especially in wet summers, on very rotten wood, particularly coniferous.



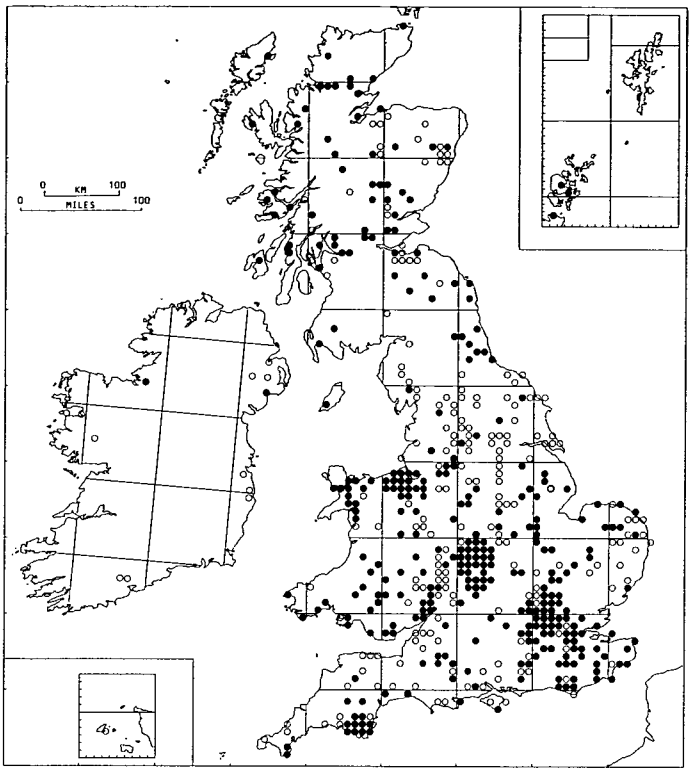
Map 16. **Comatricha nigra** (Pers.) Schroet. Ubiquitous, on dead wood of all kinds. Found wherever and whenever suitable habitats are searched, but overlooked by the non-specialist.



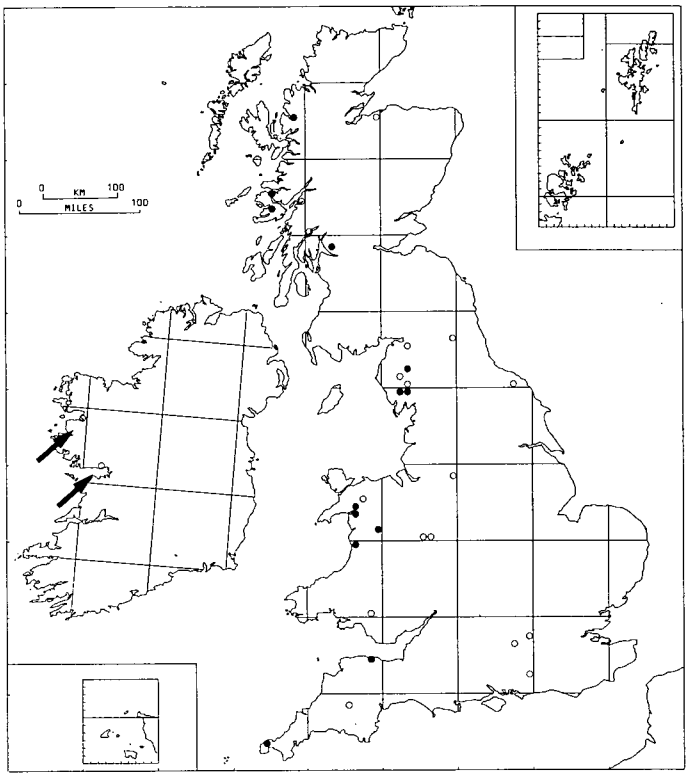
Map 17. **Comatricha pulchella** (C. Bab. ex Berk.) Rost. A common species on leaf litter and dead fern fronds.



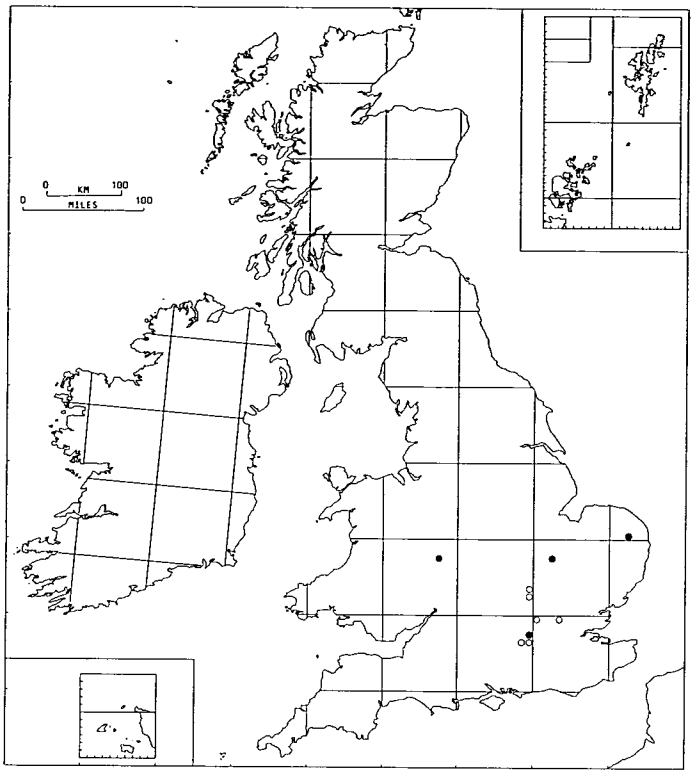
Map 18. **Comatricha tenerrima** (M.A. Curt.) G. List. Widely scattered but apparently uncommon, perhaps because its main habitats - marshes and reedswamps - are infrequently searched for myxomycetes.



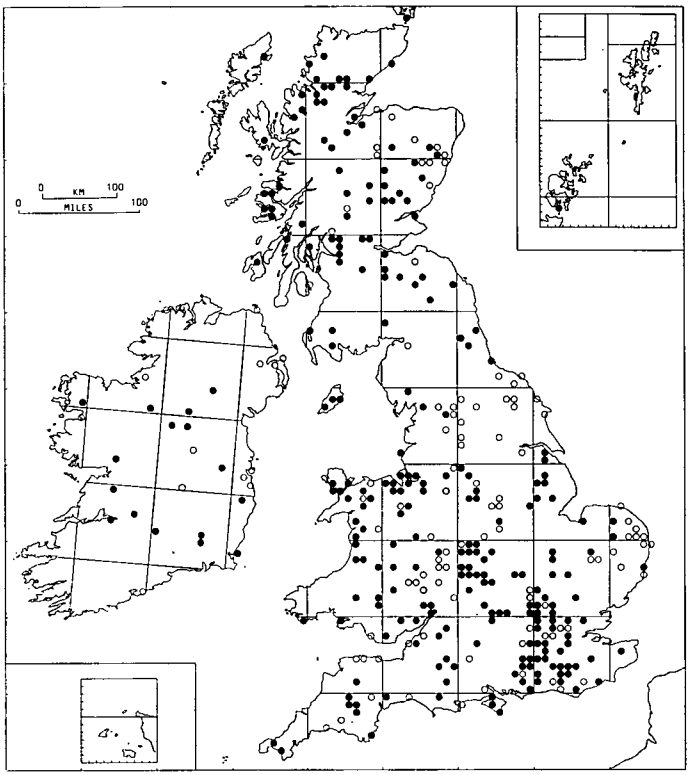
Map 19. **Craterium minutum** (Leers) Fr. A very common litter species, often fruiting on living plants a short distance above ground.



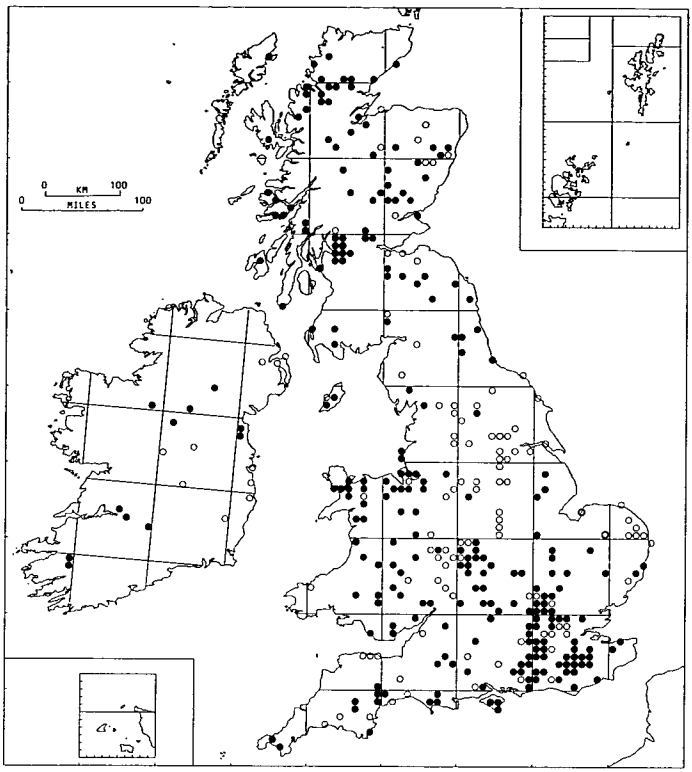
Map 20. **Craterium muscorum** B. Ing. (*Badhamia rubiginosa* (Chev.) Rost. var. *globosa* A. & G. List.). A rare, Atlantic species, characteristic of moss-covered rocks in wooded ravines.



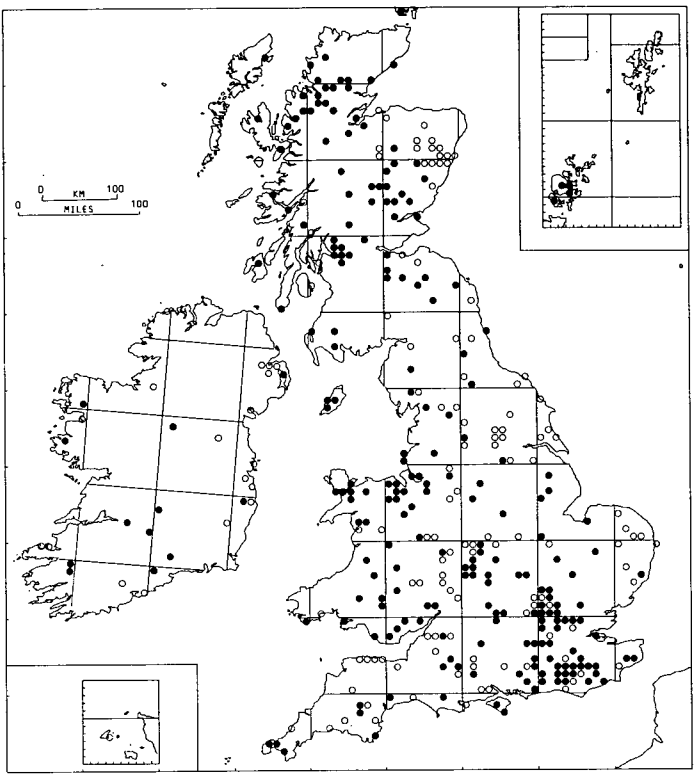
Map 21. **Craterium obovatum** Peck (*Badhamia obovata* (Peck) S.J. Smith). A rare species of fern litter, confined to the south-east of the British Isles.



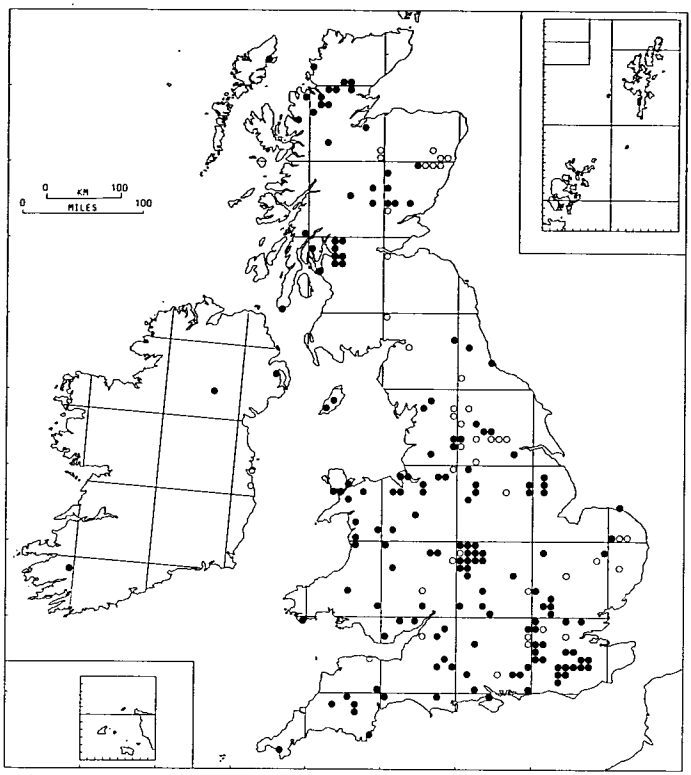
Map 22. **Cribraria argillacea** (Pers.) Pers. More or less confined to coniferous woodland and increasing with the spread of forestry plantations.



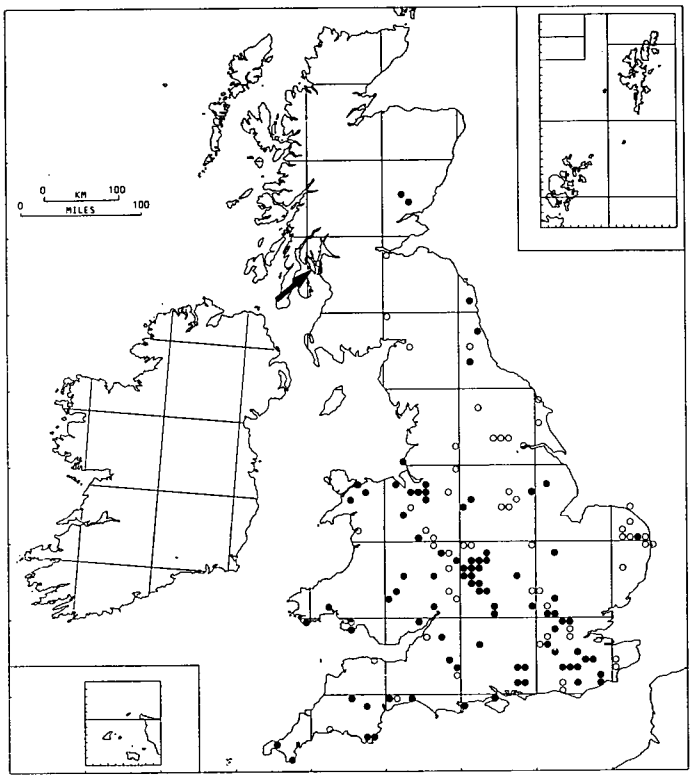
Map 23. **Cribraria aurantiaca** Schrad. More or less confined to coniferous woodland and increasing with the spread of forestry plantations.



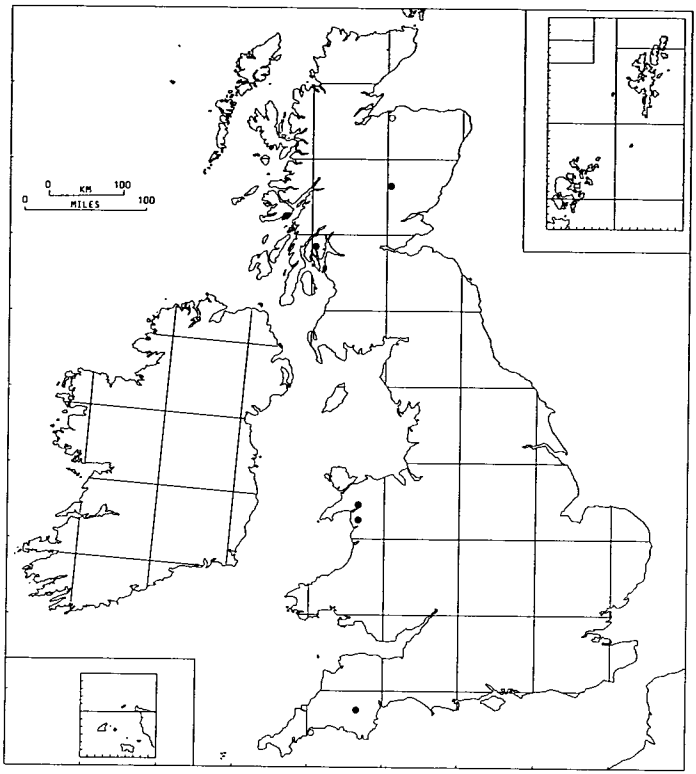
Map 24. **Cribraria cancellata** (Batsch) Nann.-Brem. (*Dictydium cancellatum* (Batsch) Macbr.). Largely confined to coniferous woodland and increasing with the spread of forestry plantations.



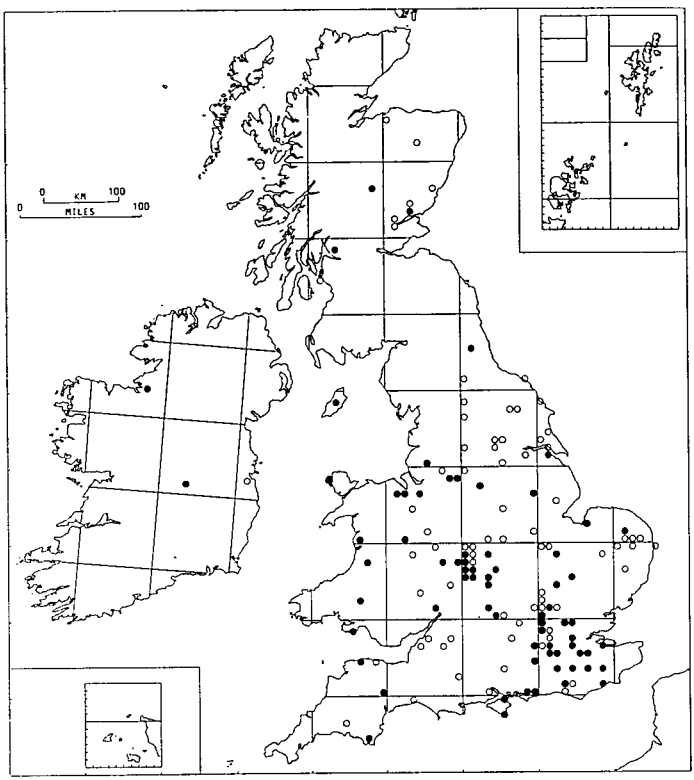
Map 25. **Cribraria rufa** (Roth) Rost. Characteristic of dead coniferous wood and rapidly increasing with the spread of forestry plantations.



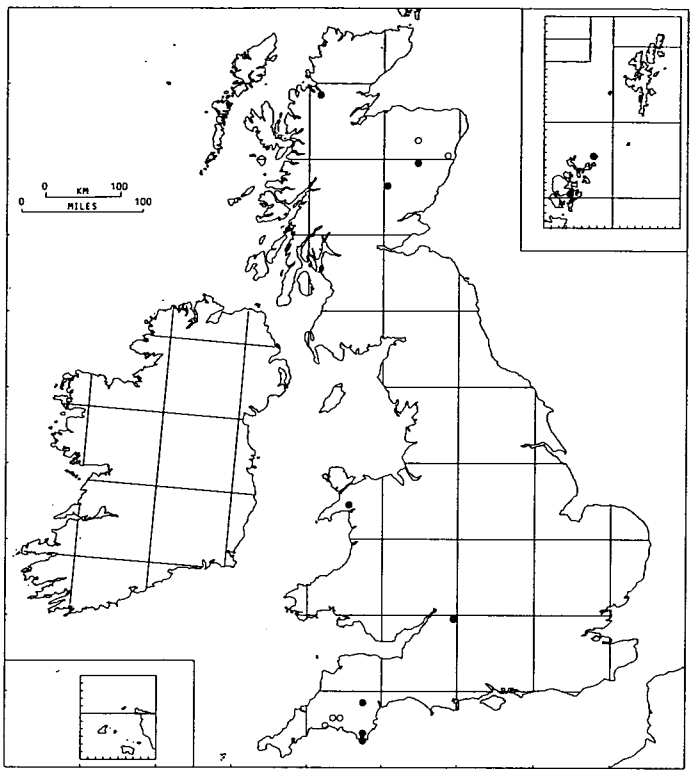
Map 26. **Diachea leucopodia** (Bull.) Rost. A characteristic and widespread species of leaf litter in the tropics which thins out northwards and westwards in the British Isles.



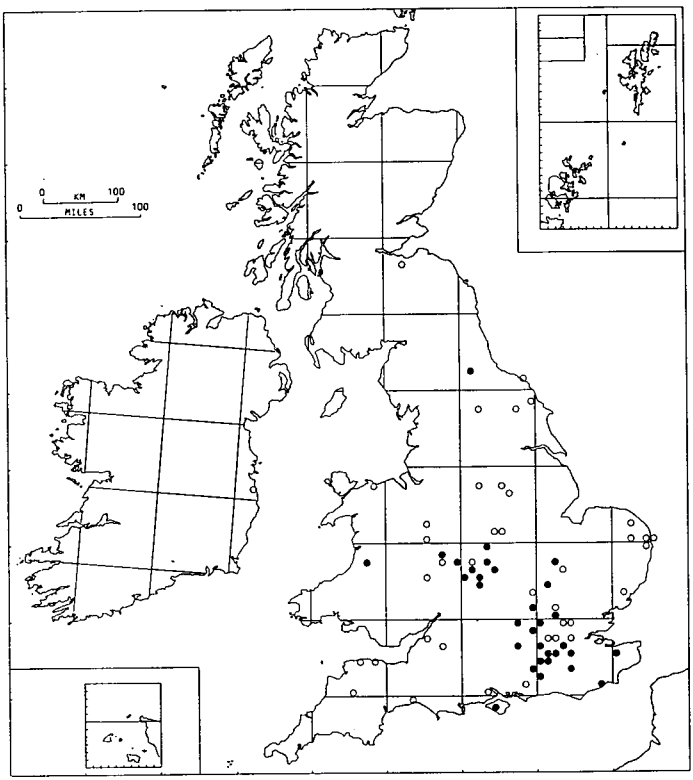
Map 27. **Diacheopsis insessa** (G. List.) B. Ing. A rare lichenicolous species with a markedly Atlantic distribution. Possibly endemic.



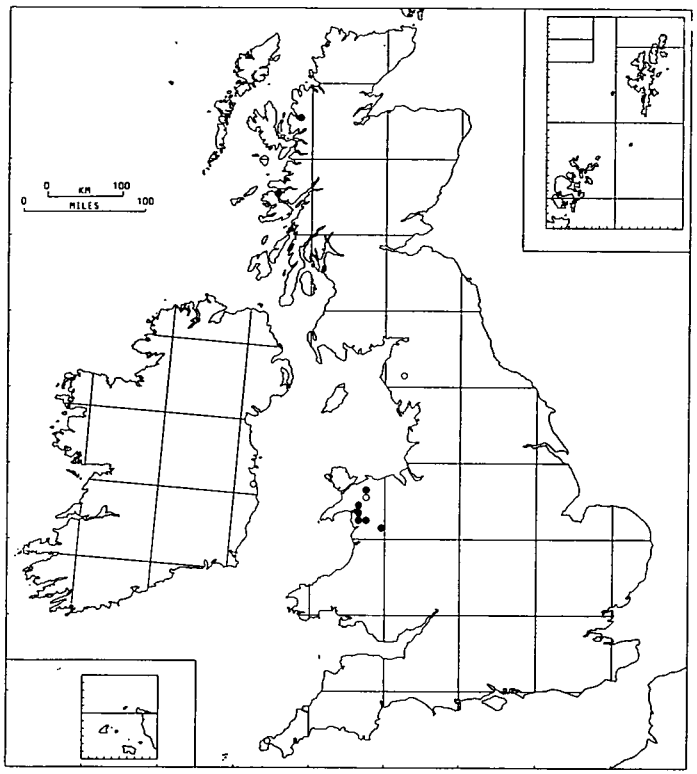
Map 28. **Dictydiaethalium plumbeum** (Schum.) Rost. A characteristic species of beech logs in south-eastern England, thinning out northwards and westwards.



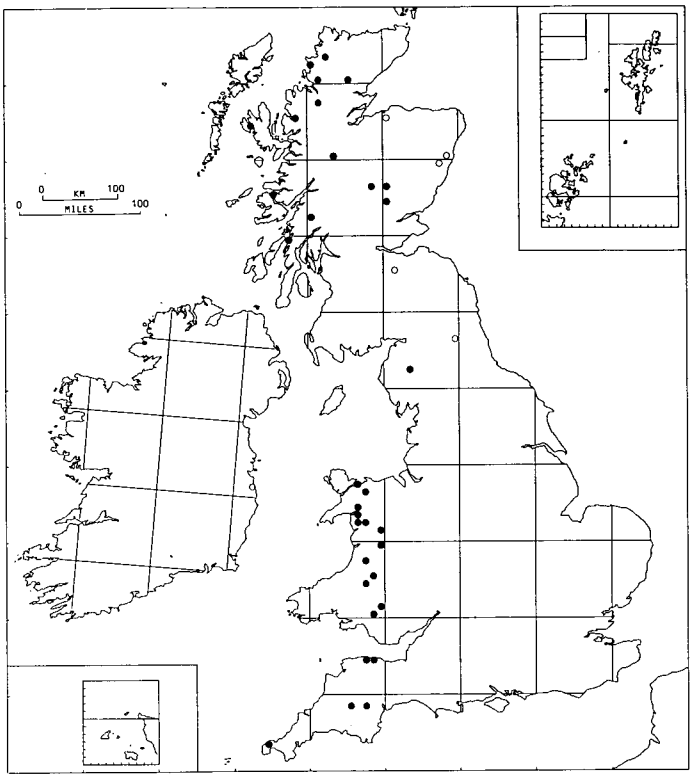
Map 29. **Diderma chondrioderma** (de Bary & Rost.) G. List.
A rare species of mossy bark of living trees;
moderately Atlantic.



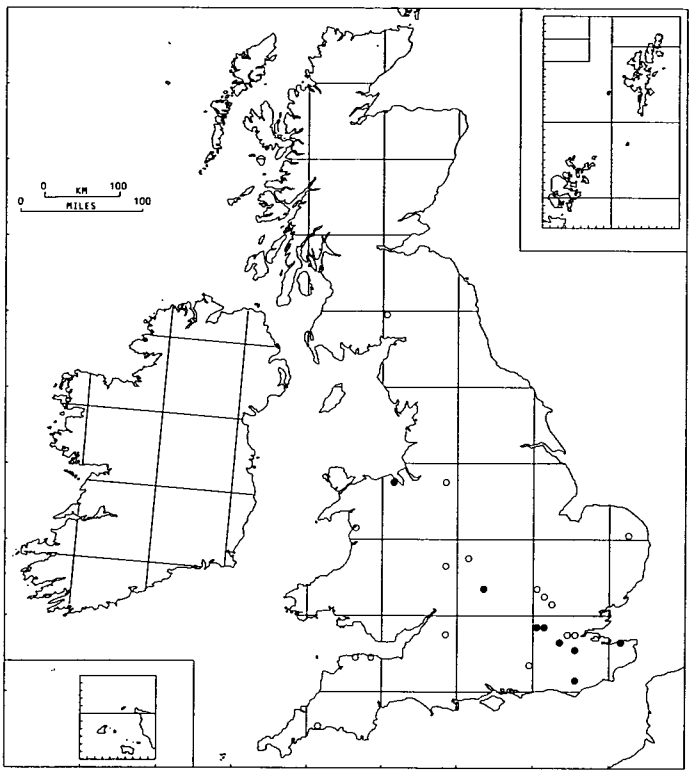
Map 30. **Diderma floriforme** (Bull.) Pers. An uncommon species, on rotten logs, with a south-eastern bias in its distribution.



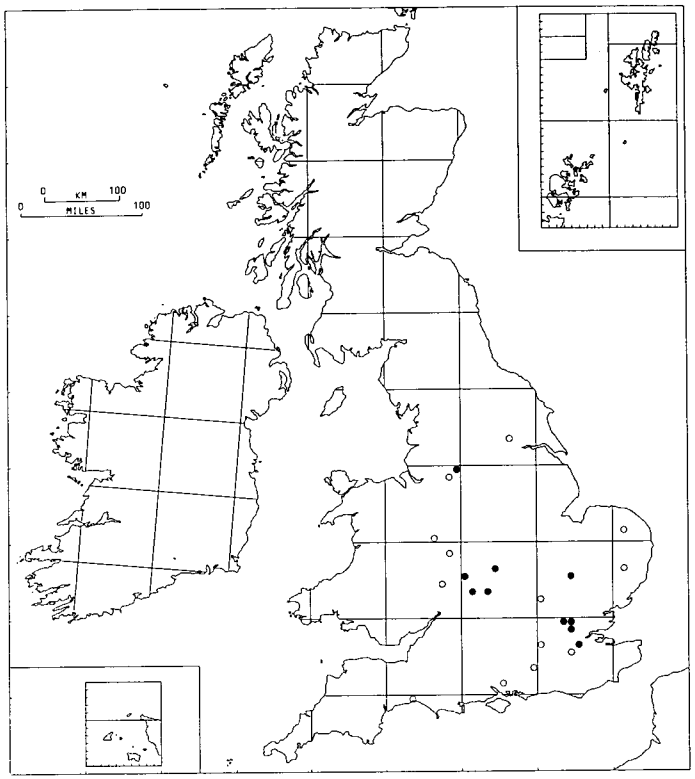
Map 31. **Diderma lucidum** Berk. & Br. A rare and beautiful species of moss-covered rocks in ravines - the characteristic Atlantic myxomycete. Previously thought to be endemic but now known from Japan.



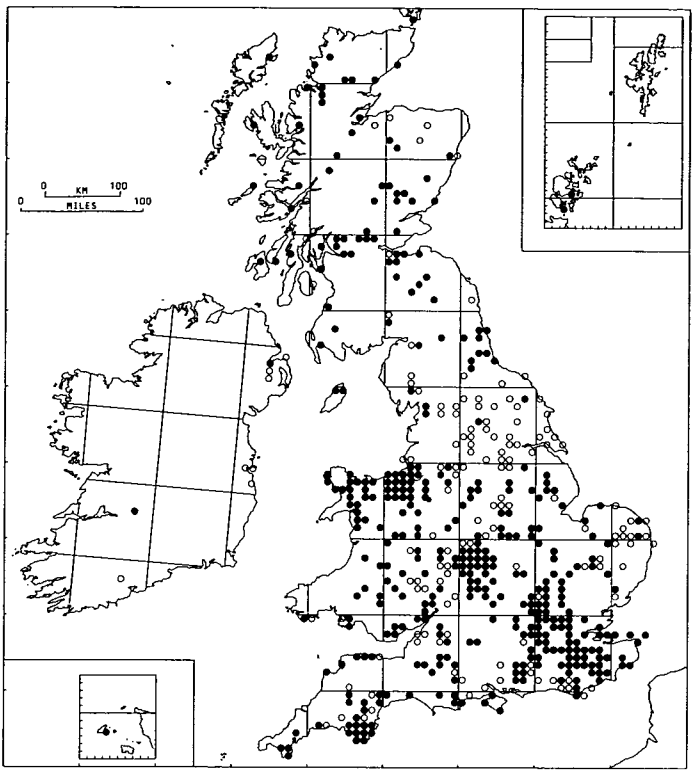
Map 32. **Diderma ochraceum** Hoffm. A ravine species, part of the Atlantic element.



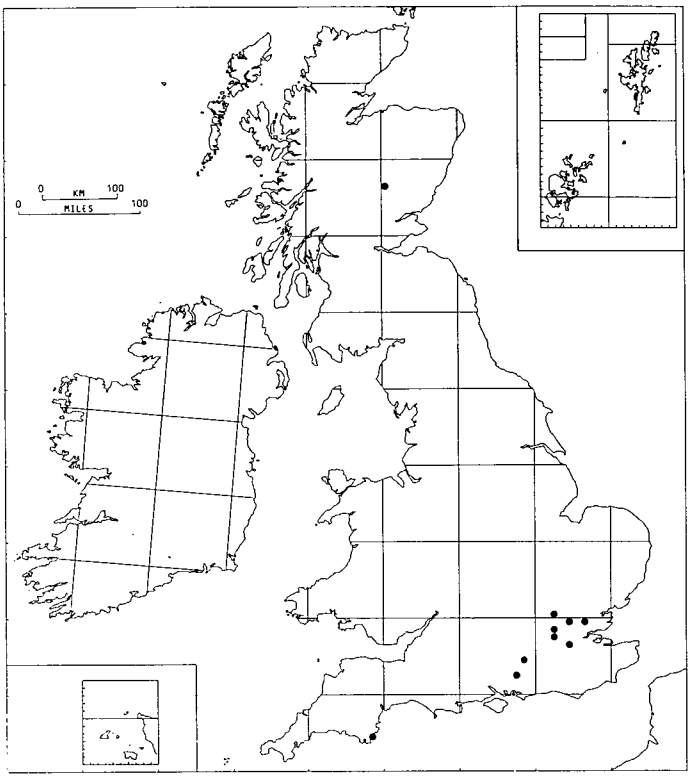
Map 33. **Diderma testaceum** (Schrad.) Pers. An uncommon litter species, distinctly southern in distribution.



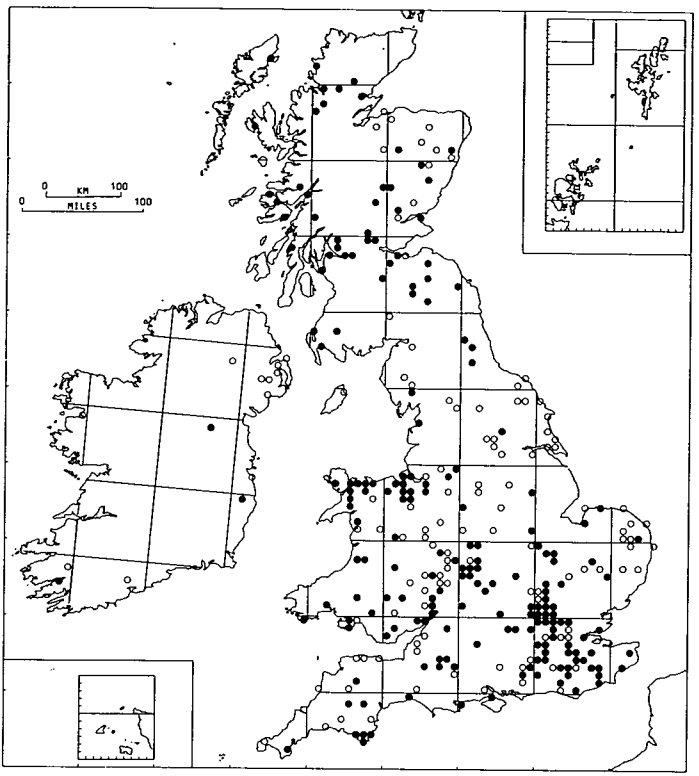
Map 34. **Didymium anellus** Morg. An uncommon litter species, tending to a south-easterly pattern.



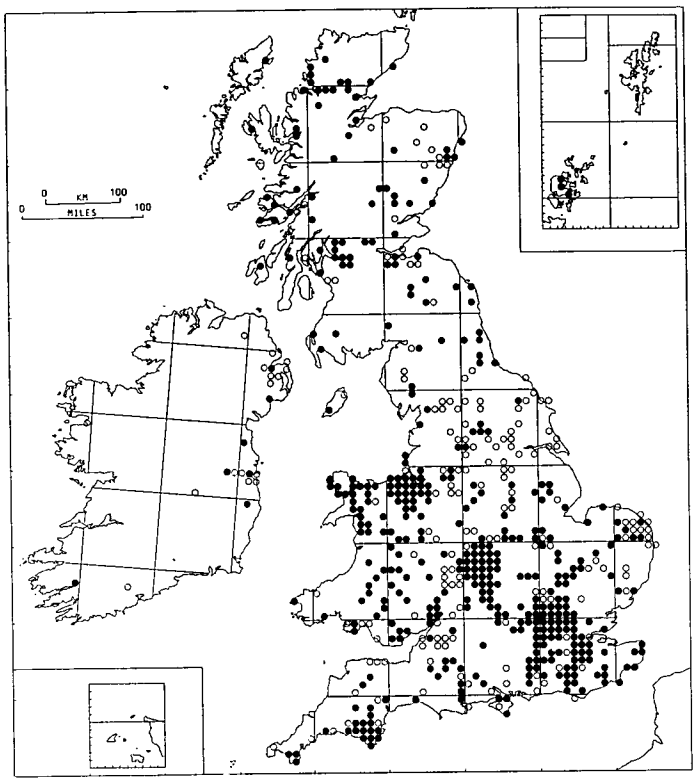
Map 35. **Didymium difforme** (Pers.) S.F. Fray (excluding vars. *comatum* A. List. and *repandum* G. List.). A common and widespread species of soil and litter, found wherever sought in suitable habitats.



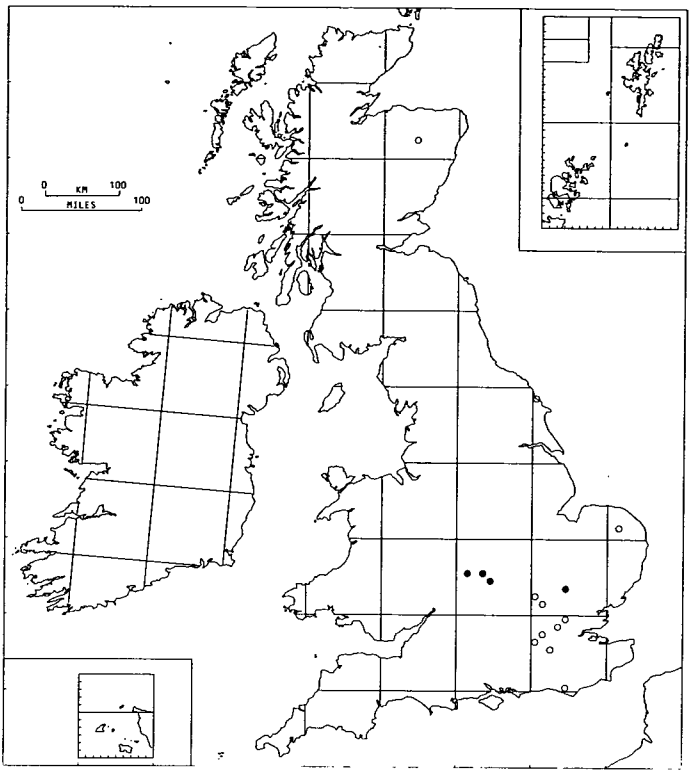
Map 36. **Didymium laxifila** G. List. & Ross. A rare species with a disjunct distribution pattern, centred on the London area. Found in deep leaf litter, especially of sweet chestnut.



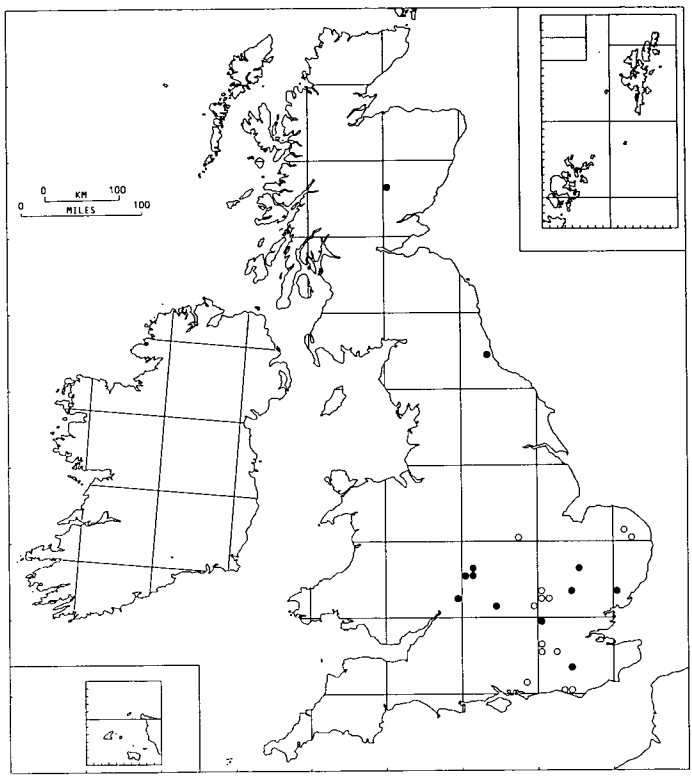
Map 37. **Didymium nigripes** (Link) Fr. A common and widespread species, characteristic of holly litter.



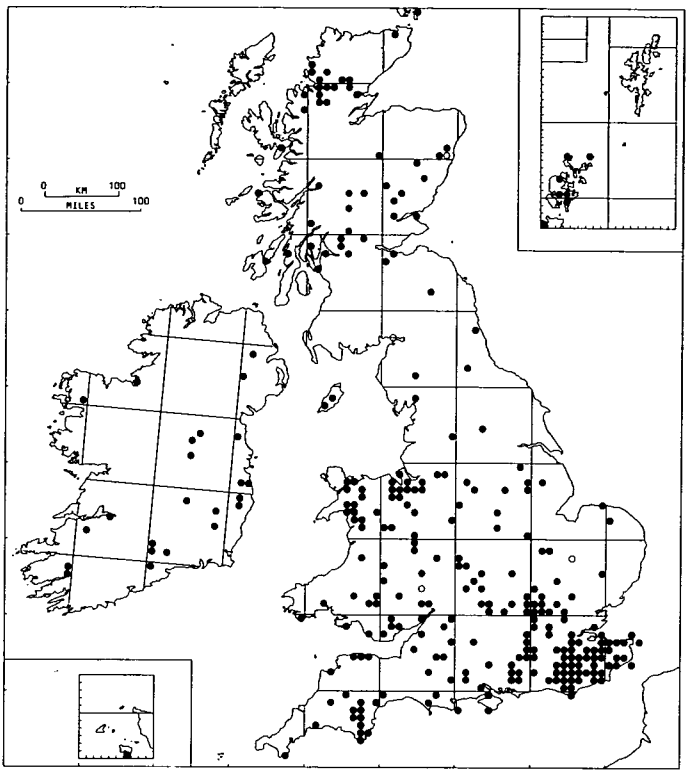
Map 38. **Didymium squamulosum** (Alb. & Schw.) Fr. A widespread and abundant species of litter of all kinds.



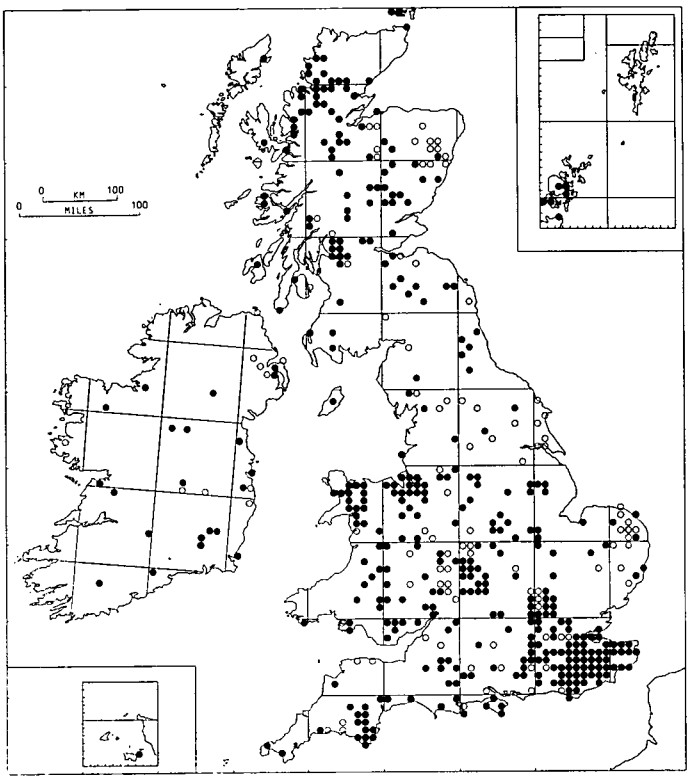
Map 39. **Didymium trachysporum** G. List. Characteristic of straw heaps and perhaps confined to arable areas. The Scottish record is from old thatch. As straw heaps disappeared, so did a distinctive group of species; the recent change to production of straw bales has brought a partial recovery.



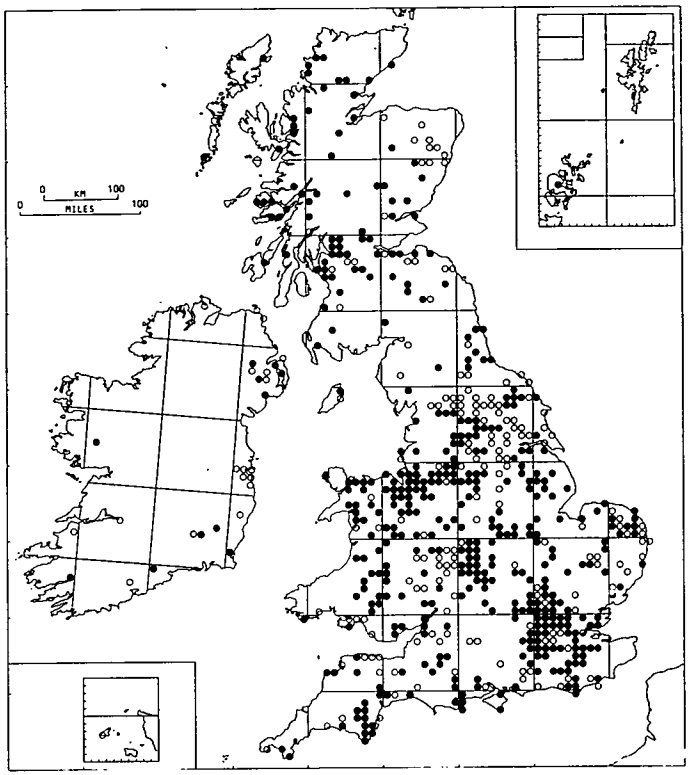
Map 40. **Didymium vaccinum** (Dur. & Mont.) Buchet. Another straw heap species, now not uncommon on straw bales and grass piles.



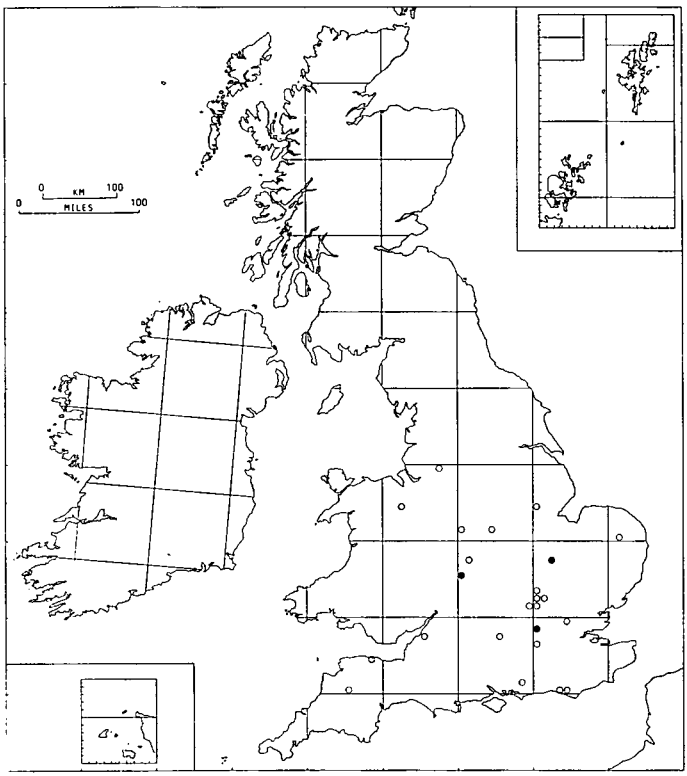
Map 41. **Echinostelium minutum** de Bary. A common and widespread species on the bark of living trees. Its known distribution reflects the increasing use of moist chamber culture techniques.



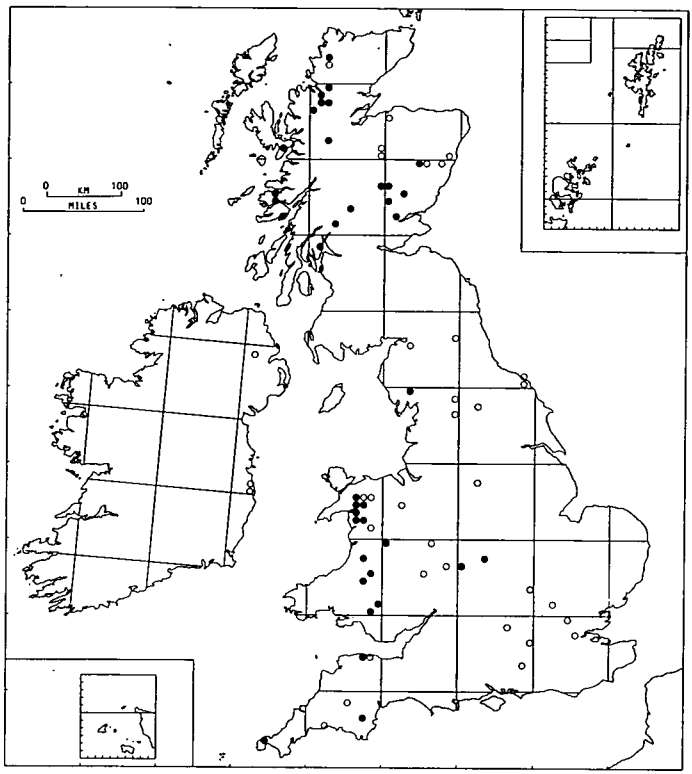
Map 42. **Enerthenema papillatum** (Pers.) Rost. A common species found on rotting wood and the bark of living trees.



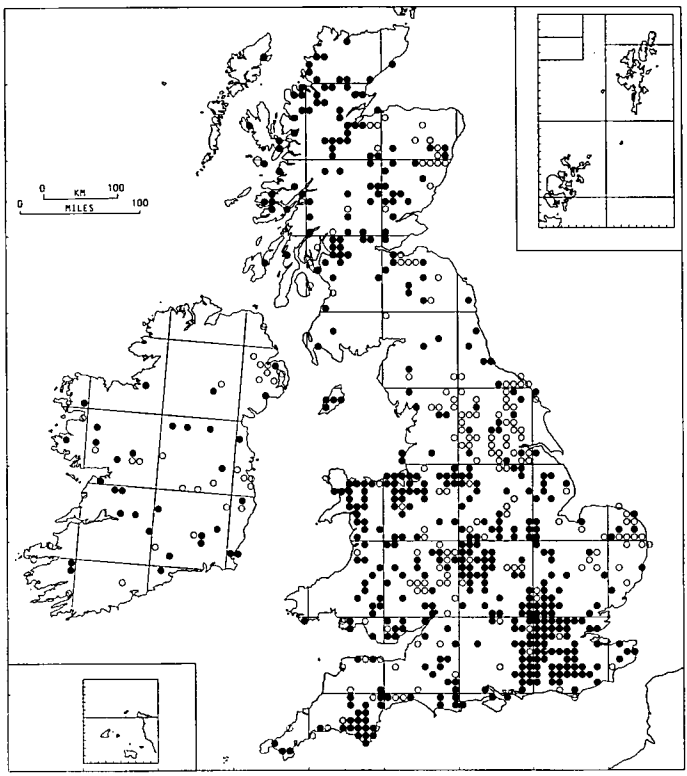
Map 43. **Enteridium lycoperdon** (Bull.) Farr (*Reticularia lycoperdon* Bull.). A large, conspicuous and easily identified species found in spring on many kinds of rotten wood, including fences, house timbers and dead standing trees.



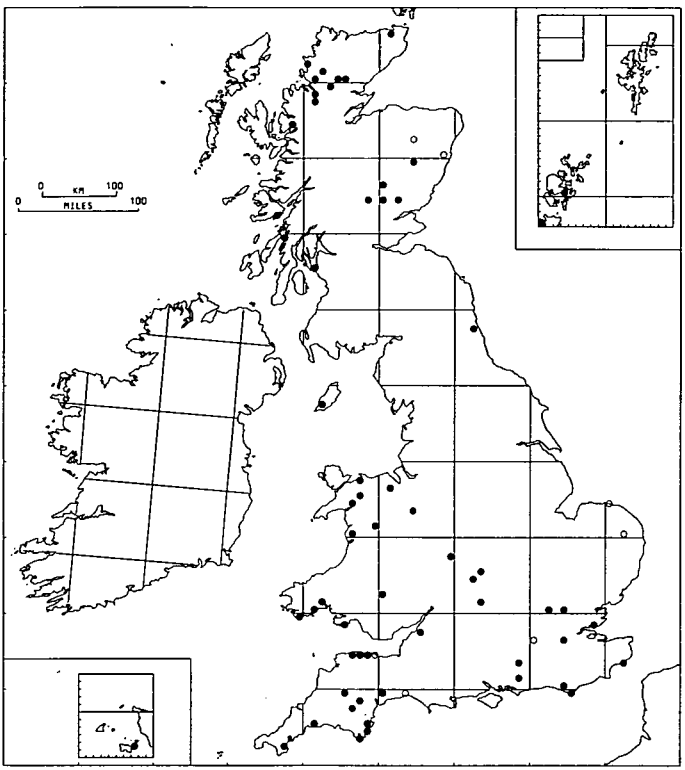
Map 44. **Fuligo cinerea** (Schw.) Morg. A rare species of straw heaps. Confined to the south of Britain and apparently decreasing.



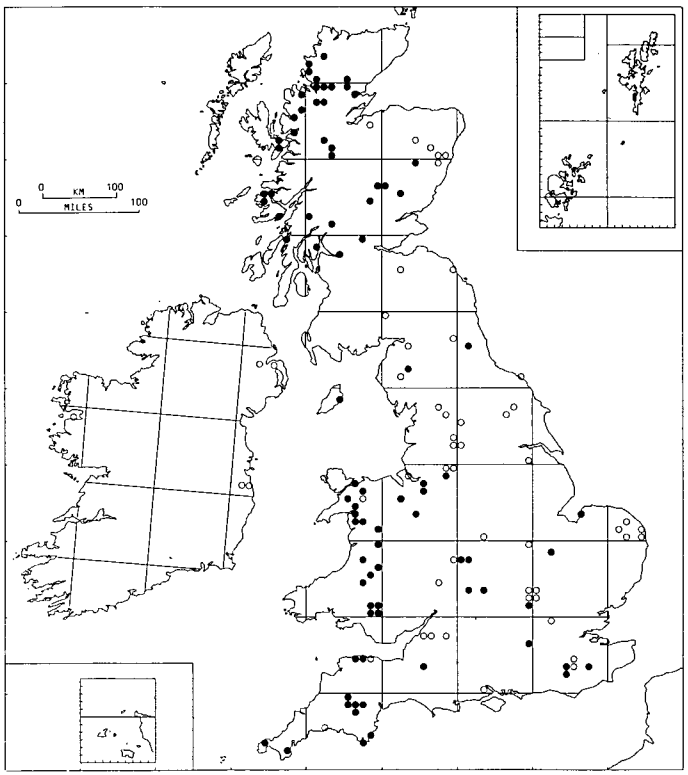
Map 45. **Fuligo muscorum** Alb. & Schw. A species of wet terrestrial mossy habitats and western in distribution. In the east it is confined to permanently moist acid sites.



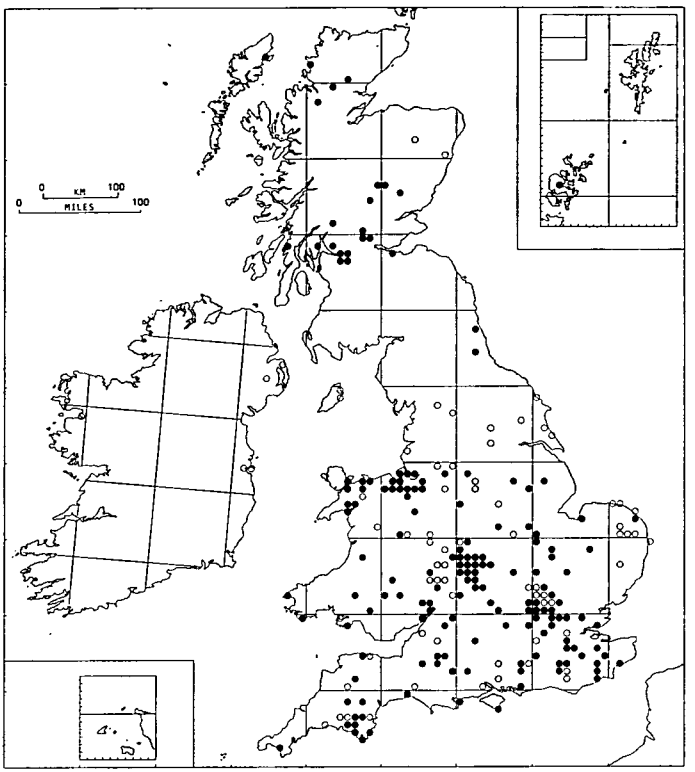
Map 46. **Fuligo septica** (L.) Wiggers. A large, conspicuous and easily identified species on logs and stumps in woodland.



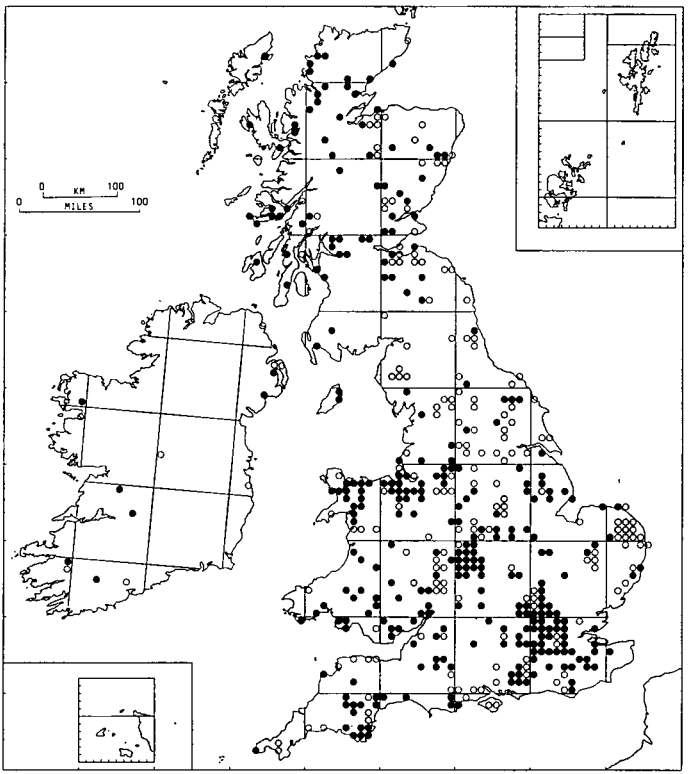
Map 47. **Hemitrichia minor** G. List. (*Perichaena minor* (G. List.) Hagelst. in part). An uncommon species associated with liverworts on the bark of living trees.



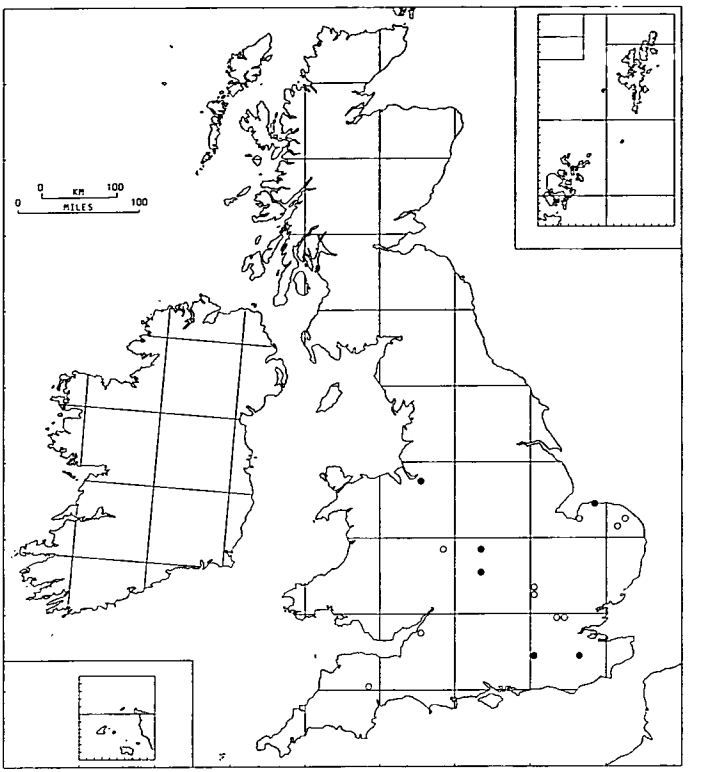
Map 48. **Lamproderma columbinum** (Pers.) Rost. A constant member of the ravine myxomycete association but also found on damp, mossy stumps and confined to this habitat in the south-east.



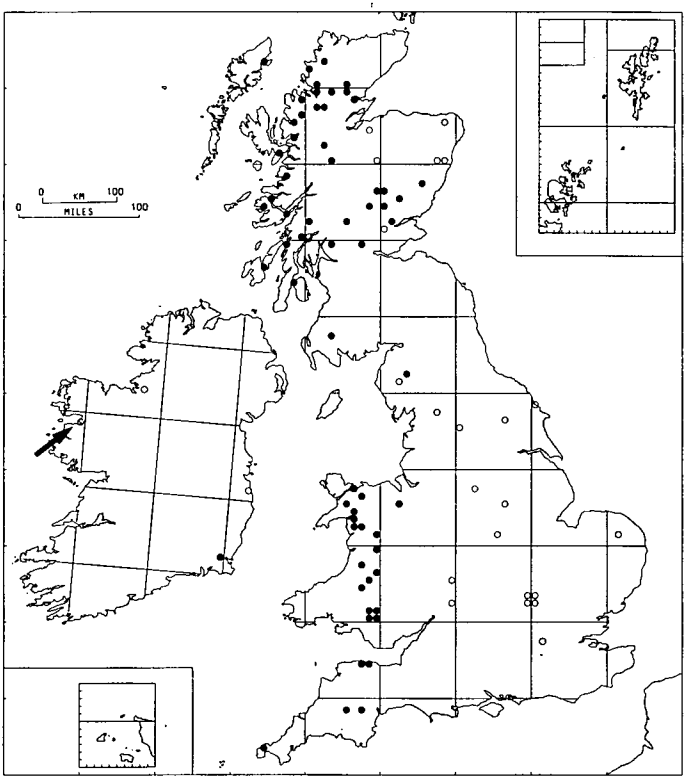
Map 49. **Lamproderma scintillans** (Berk. & Br.) Morg. A common species characteristic of holly litter but less common in the north and west.



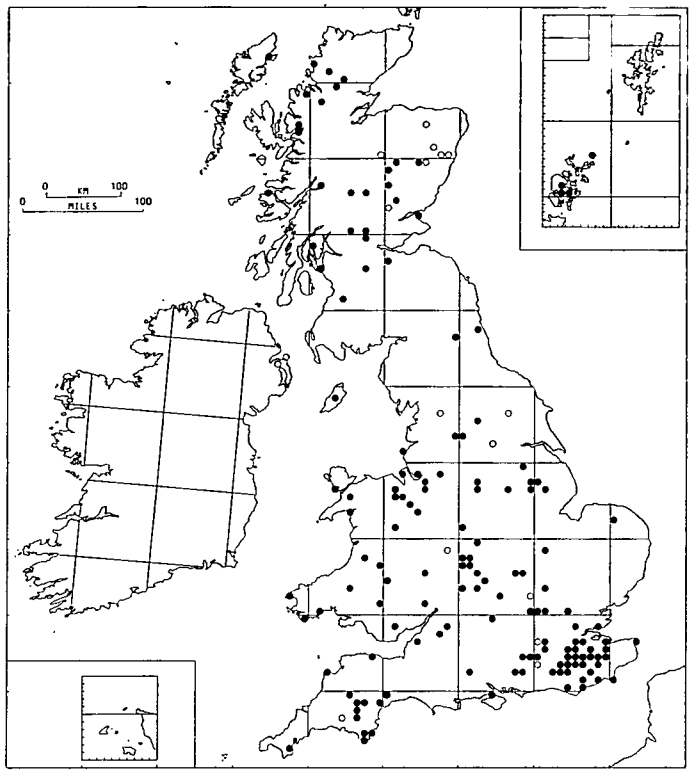
Map 50. **Leocarpus fragilis** (Dicks.) Rost. Common on litter of all kinds, often fruiting on stems of living plants.



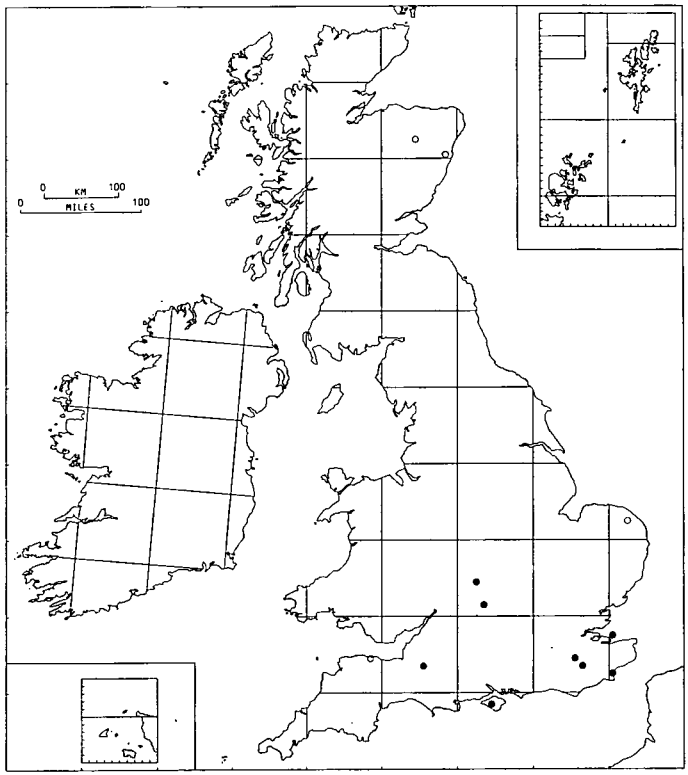
Map 51. **Lepidoderma chailletii** Rost. An uncommon lowland species confined to the southern half of England.



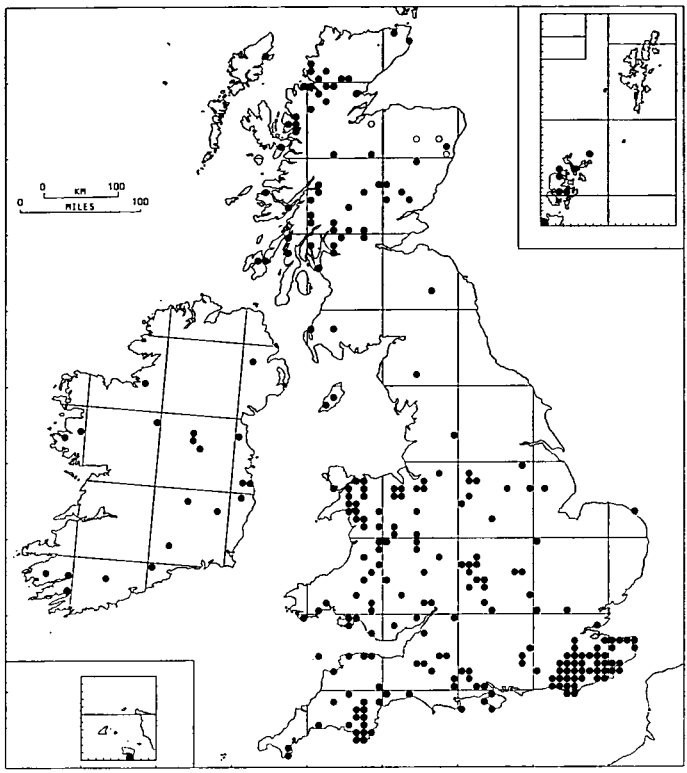
Map 52. **Lepidoderma tigrinum** (Schrad.) Rost. A characteristic ravine species also found on mossy wood. Moderately Atlantic in distribution.



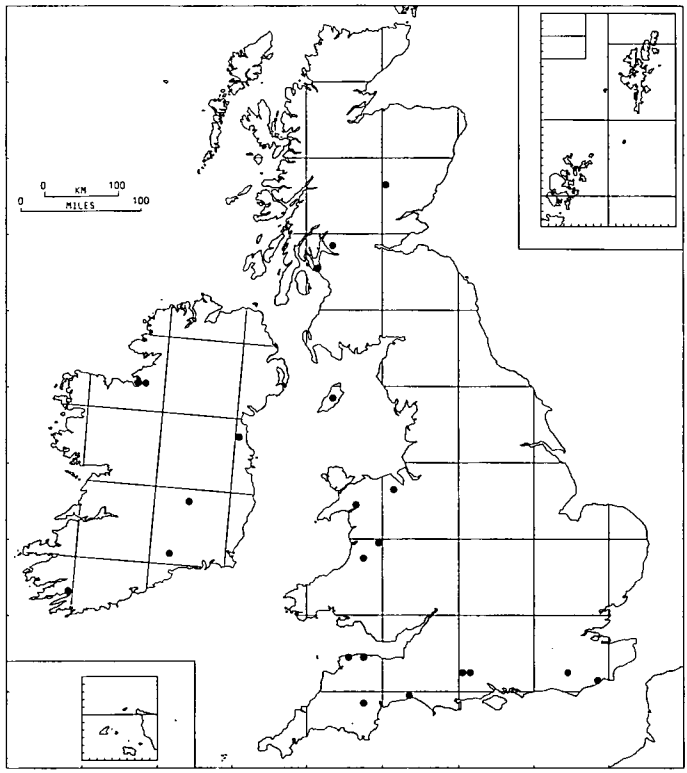
Map 53. **Licea minima** Fr. A widespread species on the bark of living trees; recorded more frequently in recent years as a result of use of moist chamber techniques.



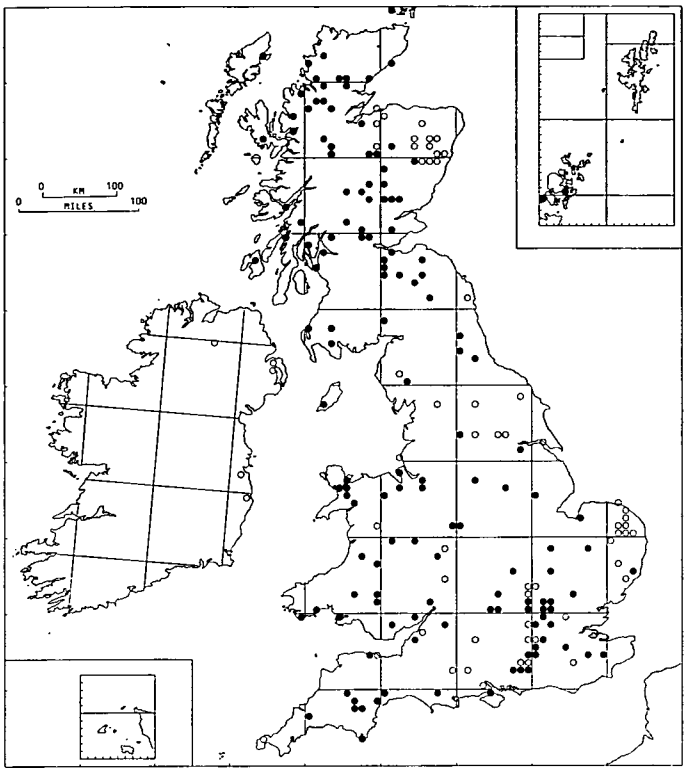
Map 54. **Licea operculata** (Wing.) Martin. A rare species of exposed trunks of living trees, with an easterly bias. Specimens from western Britain have been redetermined as *L. scyphoides* (Map 56).



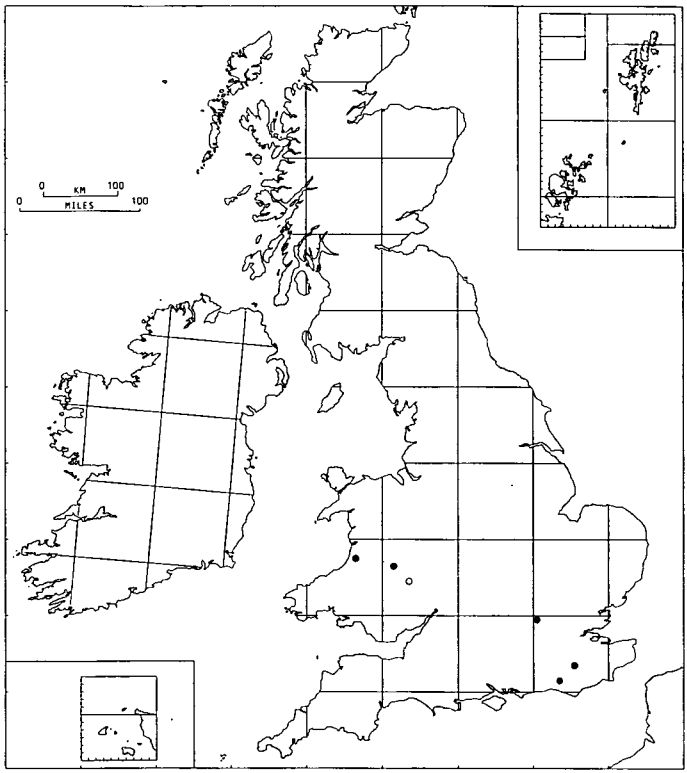
Map 55. **Licea parasitica** (Zukal) Martin. A widespread corticolous species, found wherever moist chamber culture of bark is used.



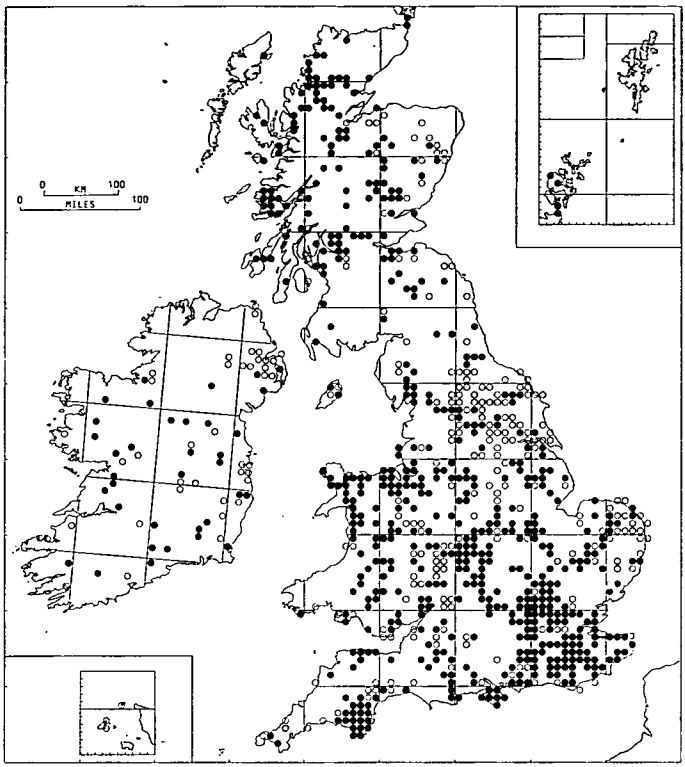
Map 56. **Licea scyphoides** Brookes & Keller. A recently described species, separated from *L. operculata* by its mode of dehiscence and nature of its stalk. This taxon appears to be Atlantic in distribution pattern.



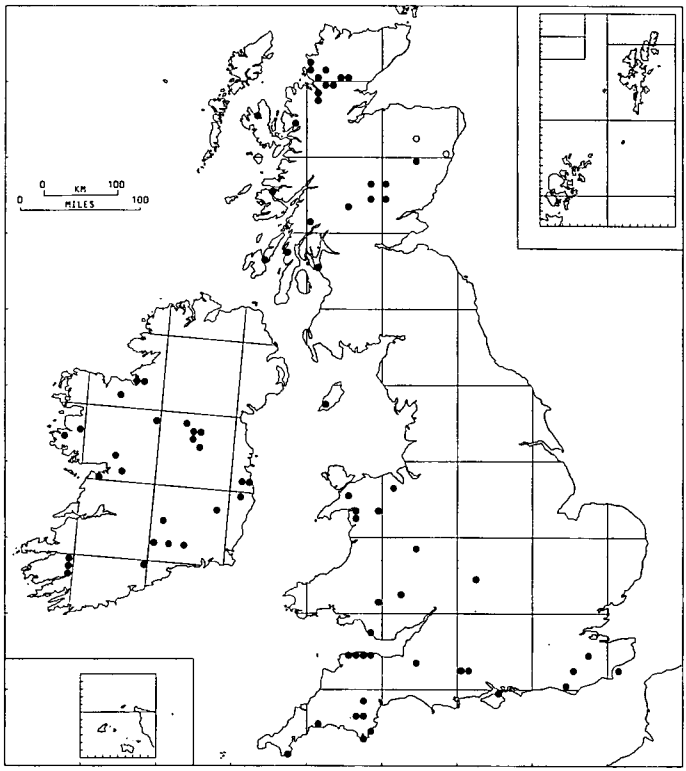
Map 57. **Licea variabilis** Schrad. Once regarded as uncommon, this species, which is more or less confined to small conifer sticks, is increasing with the spread of forestry plantations.



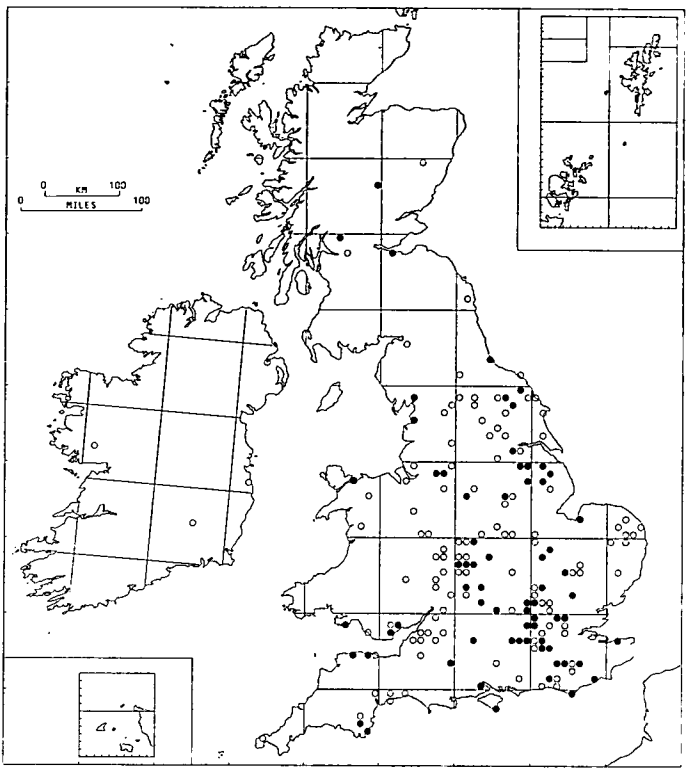
Map 58. **Lycogala conicum** Pers. A rare species of old forest in southern Britain.



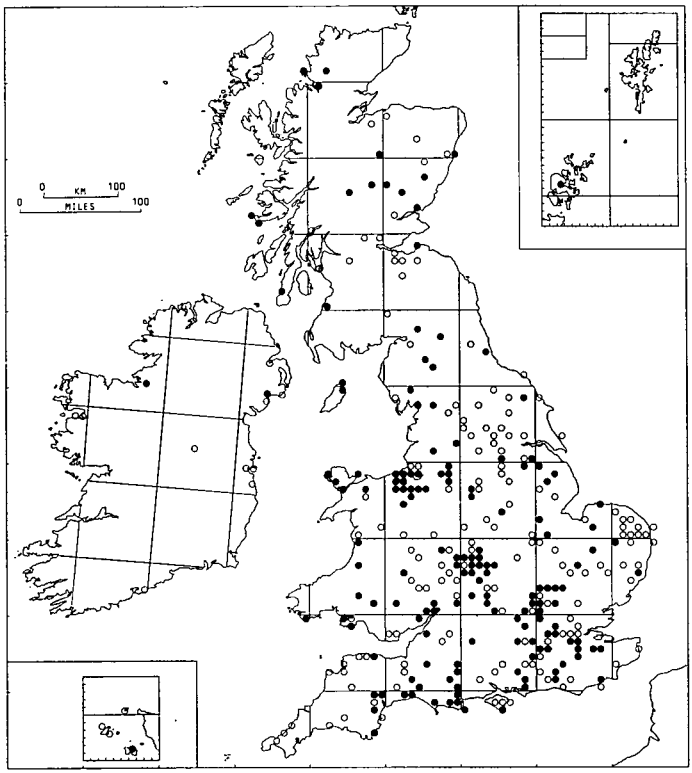
Map 59. **Lycogala epidendrum** (L.) Fr. Widespread, very common and conspicuous, this is an easily identified species on logs, especially in spring and early summer.



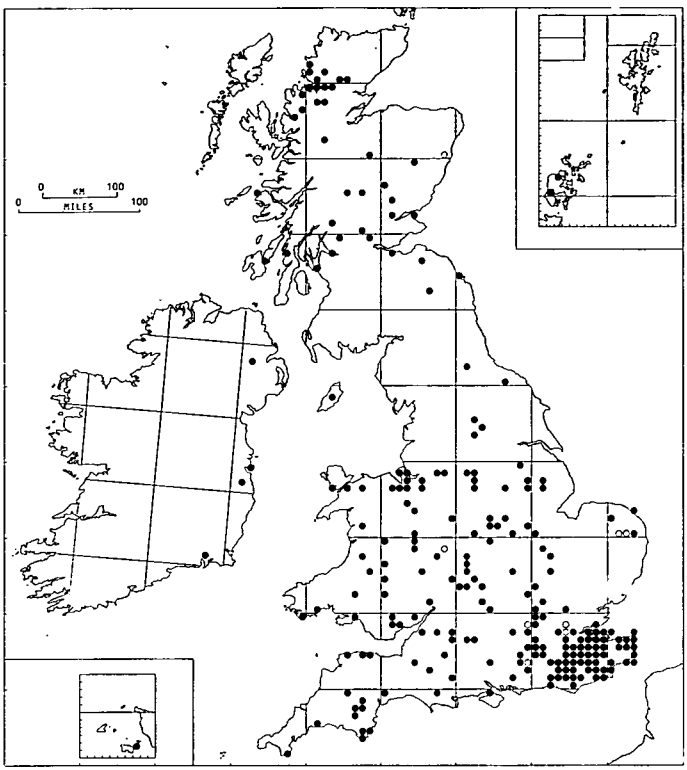
Map 60. **Macbrideola cornea** (G. List. & Cran) Alexop. A bark species, usually associated with bryophytes and lichens; Atlantic in distribution.



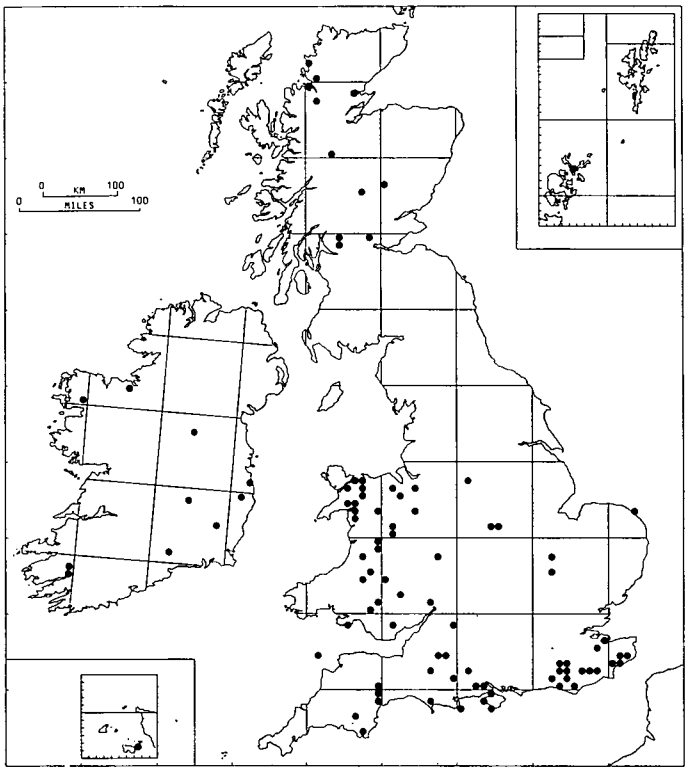
Map 61. **Metatrichia vesparium** (Batsch) Nann.-Brem. A common species in the tropics which thins out northwards and westwards in the British Isles.



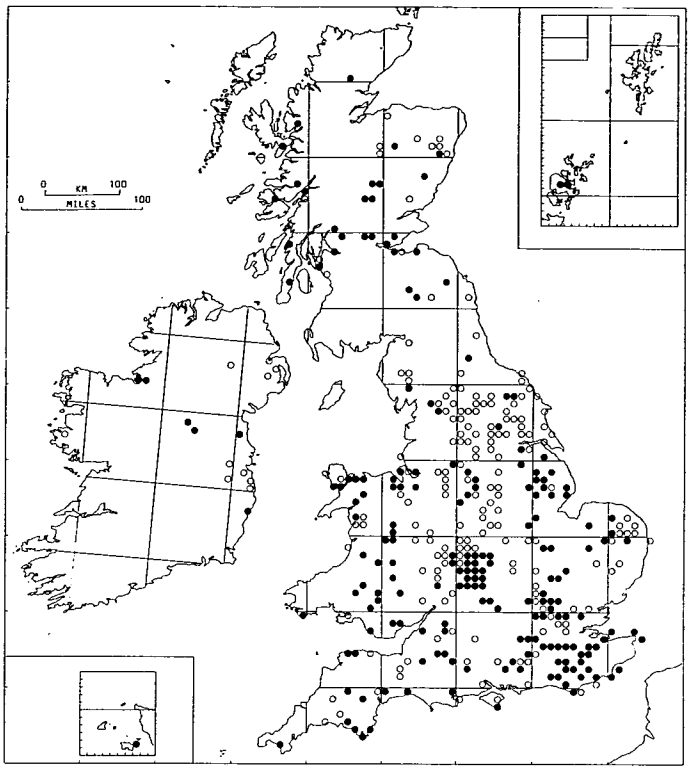
Map 62. **Mucilago crustacea** Wiggers. Characteristic of grassland on chalk and limestone and rarely found on lime-deficient soils. Large, conspicuous and easily recognised.



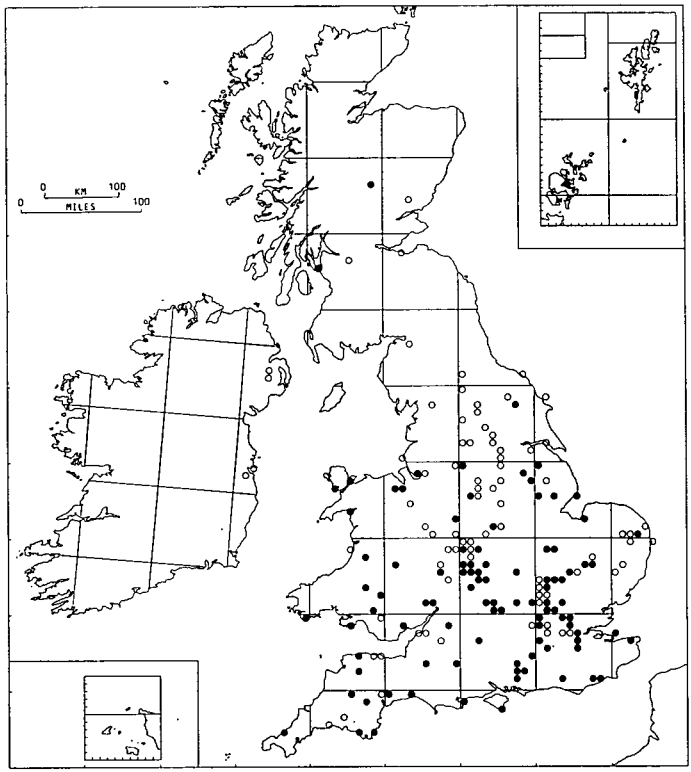
Map 63. **Paradiacheopsis fimbriata** (G. List. & Cran) Hertel (*Comatricha fimbriata* G. List. & Cran). A common bark species which seems to be commoner in the east. Known to be tolerant of atmospheric pollution and often associated with *Pleurococcus*.



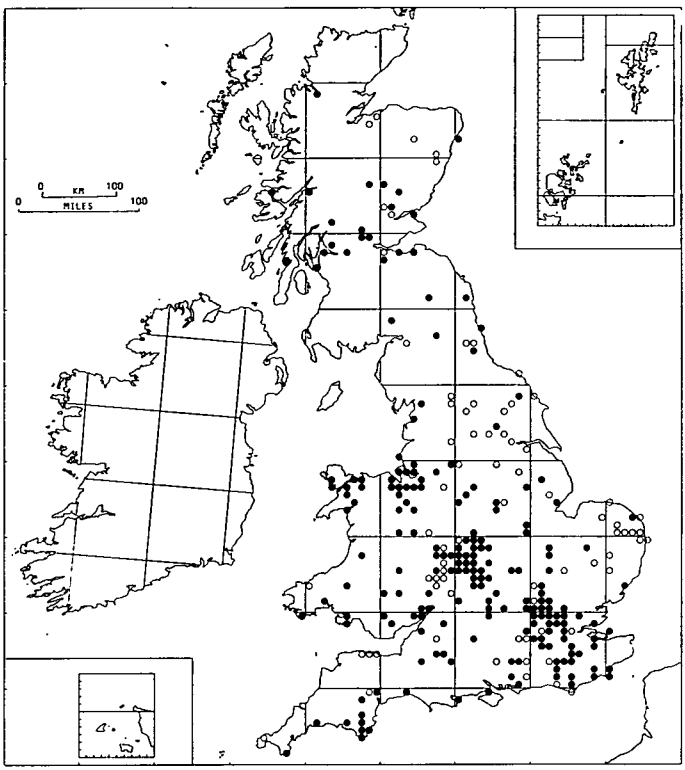
Map 64. **Paradiacheopsis solitaria** (Nann.-Brem.) Nann.-Brem. (*Comatricha solitaria* Nann.-Brem.). On bark, often with mosses and lichens; commoner in the west and perhaps replacing *P. fimbriata* in ancient woodland.



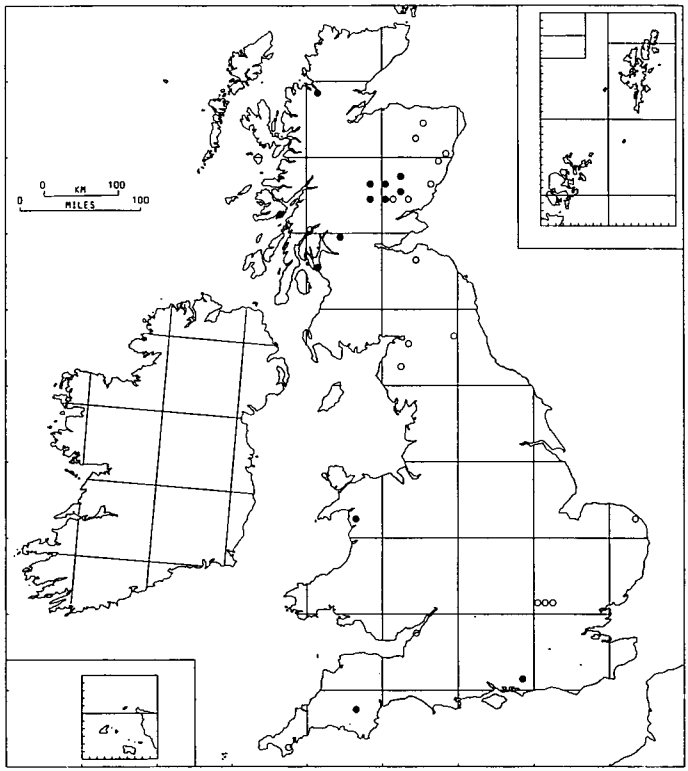
Map 65. **Perichaena corticalis** (Batsch) Rost. Especially characteristic of mossy bark on fallen ash trunks but common on fallen bark generally.



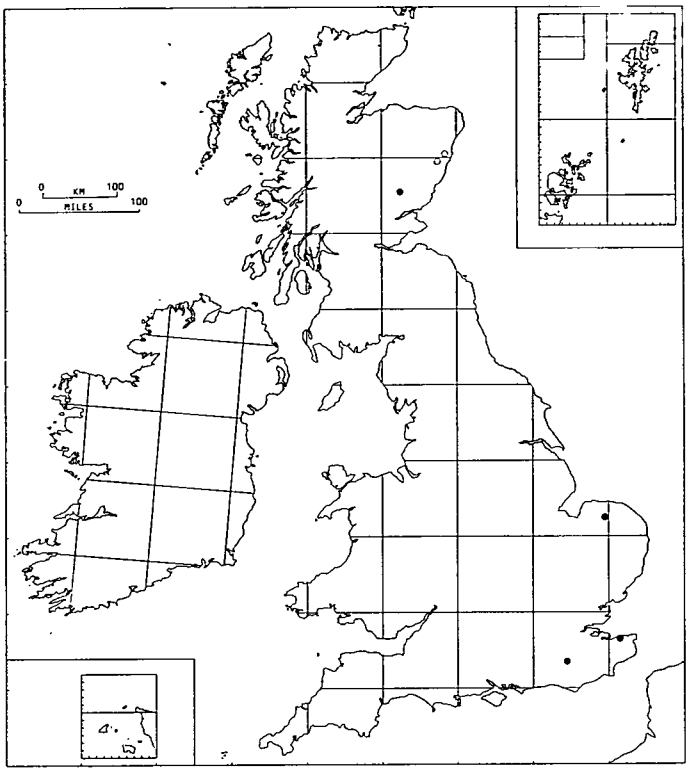
Map 66. **Perichaena depressa** Libert. A southern species, rare in Scotland; perhaps recorded less frequently in recent years.



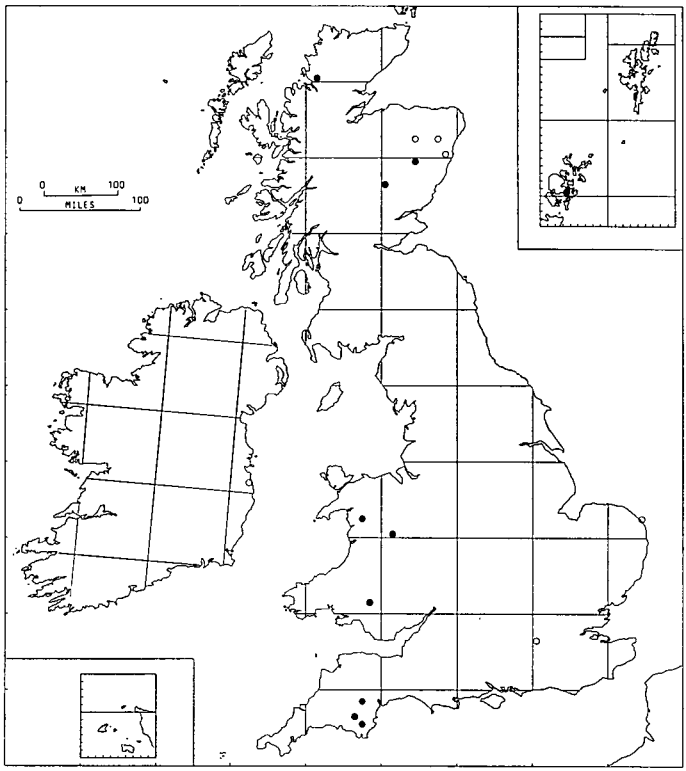
Map 67. **Physarum bivalve** Pers. A common litter species in the south and east, less so in the north and west.



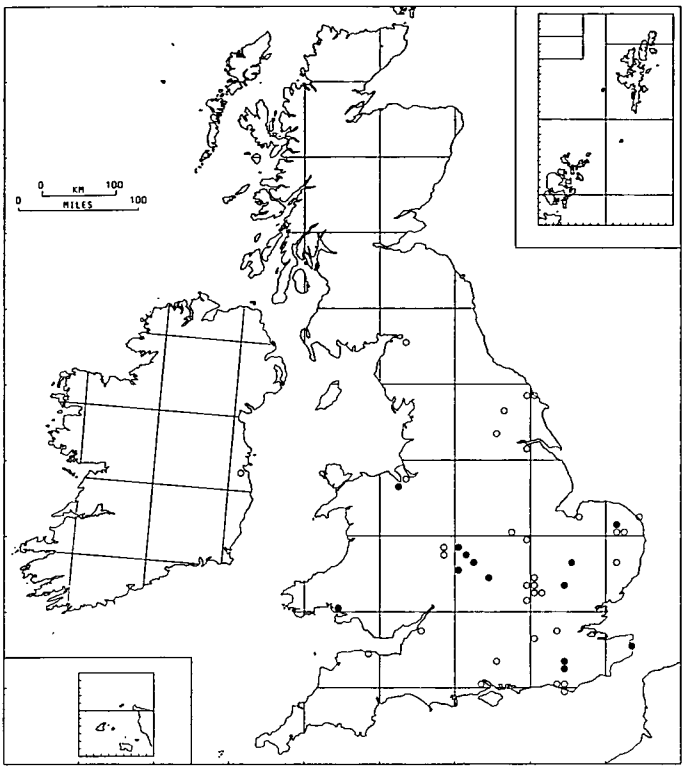
Map 68. **Physarum citrinum** Schum. A species with a northern bias, on terrestrial mosses in woodland.



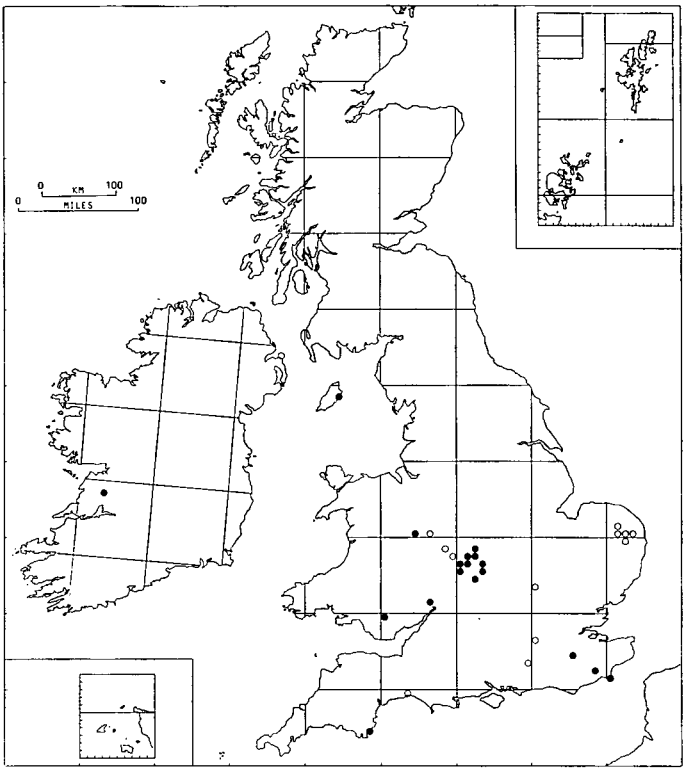
Map 69. **Physarum confertum** Macbr. A rare species with a markedly eastern bias.



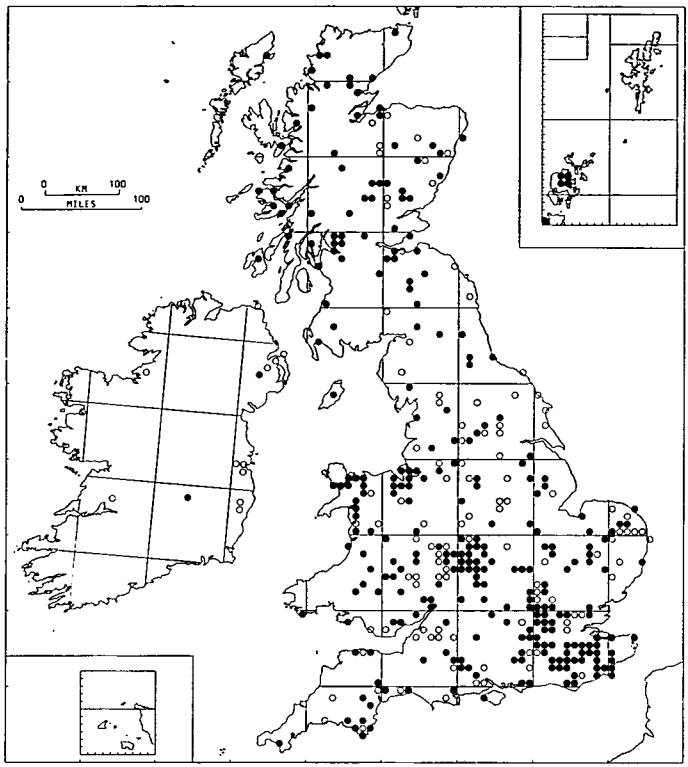
Map 70. **Physarum crateriforme** Petch. A rare species found on bark of living trees in the north and west and on dune litter in the extreme east.



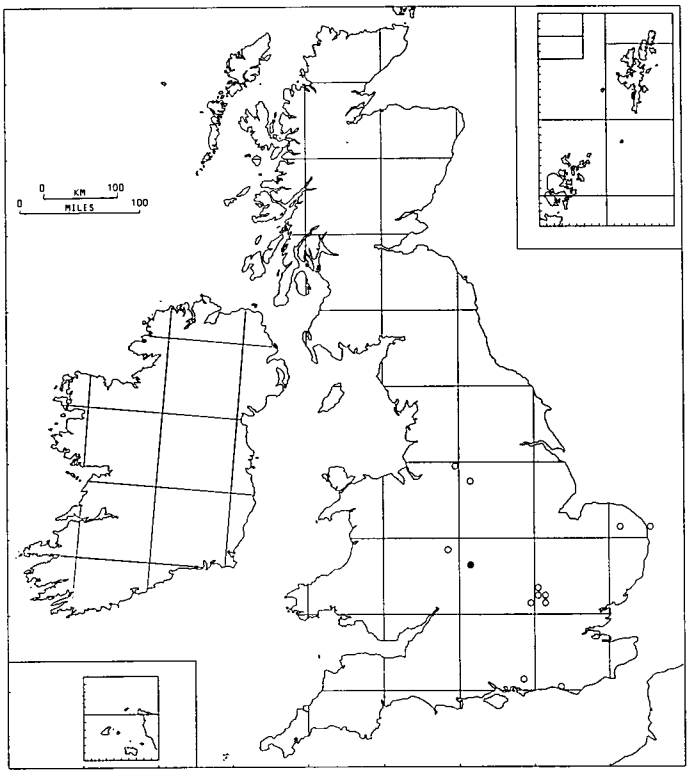
Map 71. **Physarum didermoides** (Pers.) Rost. A typical member of the straw heap association, now rarely recorded but widespread in arable areas at the start of the century.



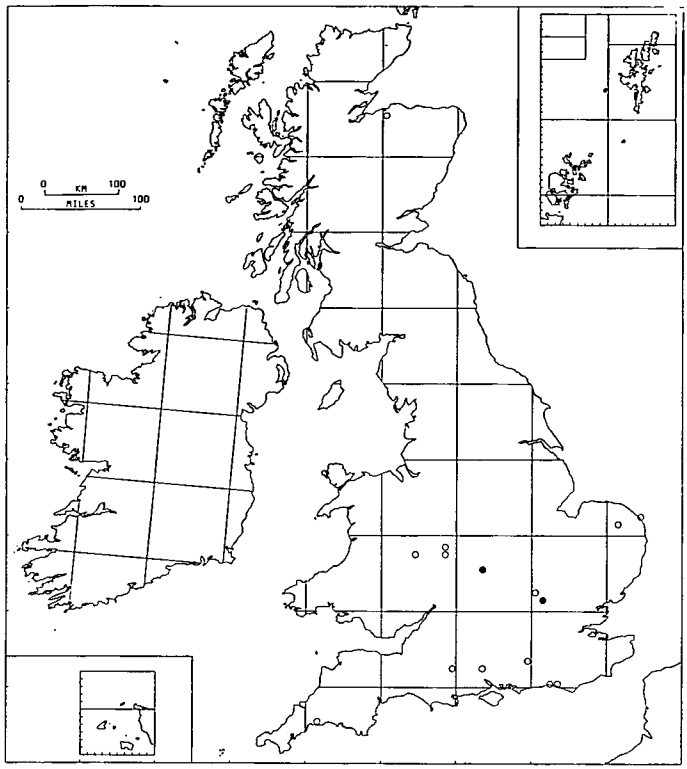
Map 72. **Physarum galbeum** Wing. A characteristic species of bramble and rosebay clumps; a southern species, but nowhere common.



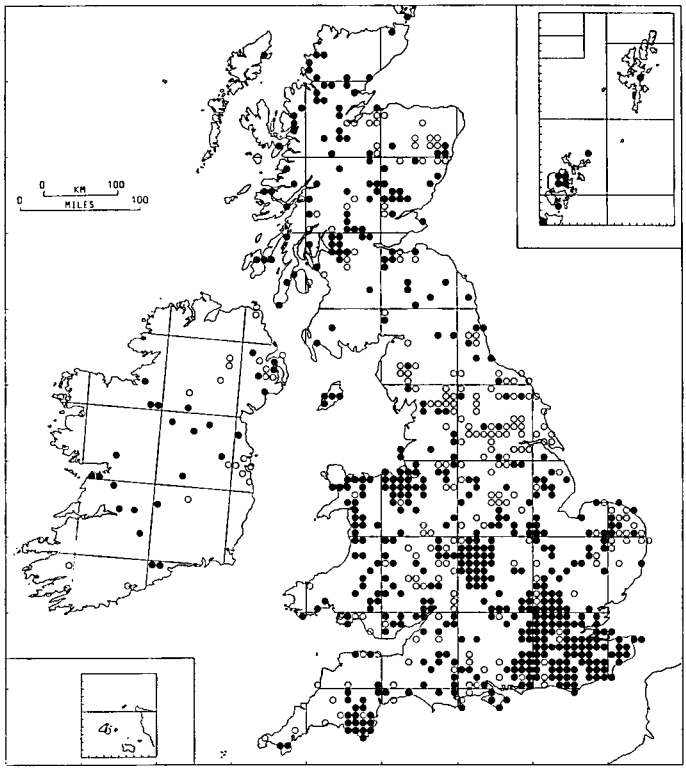
Map 73. **Physarum leucophaeum** Fr. A common and widespread species but probably not always distinguished from *P. nutans* in the past.



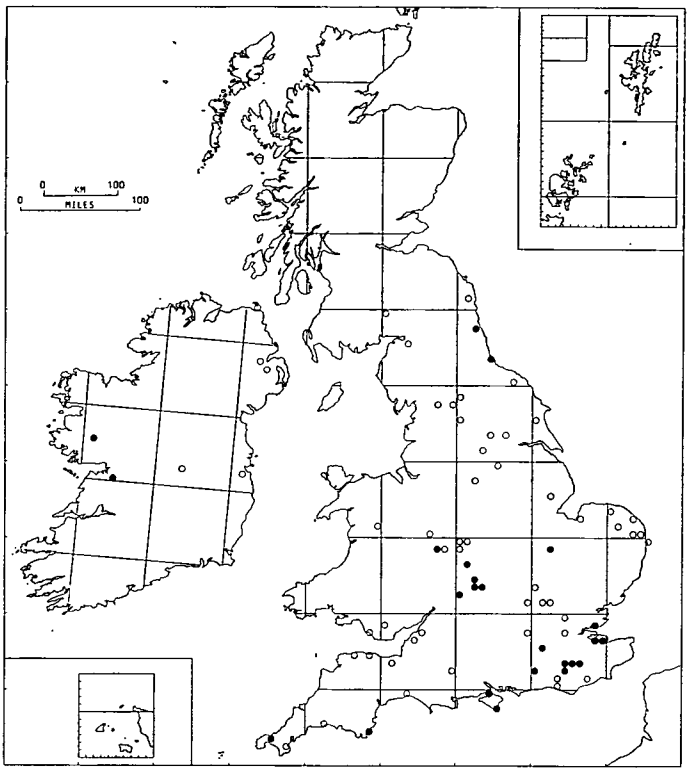
Map 74. **Physarum lividum** Rost. (*P. didermoides* var. *lividum* A. List.). A rare species of straw heaps, confined to the south of Britain and decreasing with its habitat.



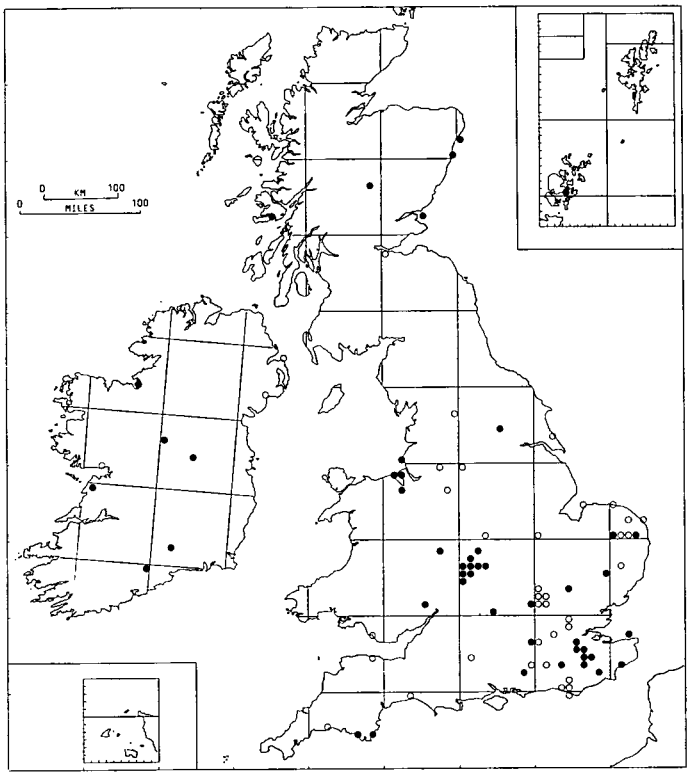
Map 75. **Physarum mutabile** (Rost.) G. List. Straw heaps and grass litter are the habitats of this now rare species.



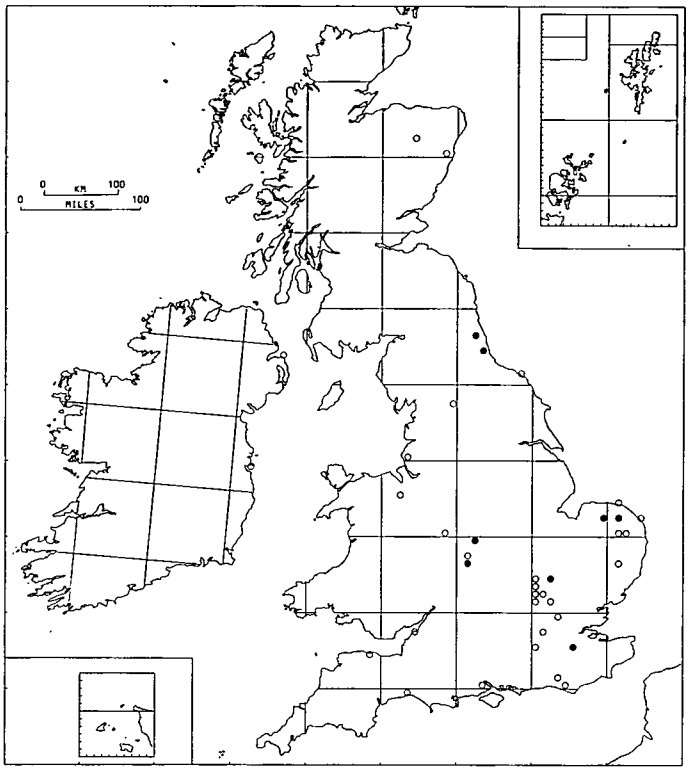
Map 76. **Physarum nutans** Pers. A common and widespread species on dead wood of all kinds.



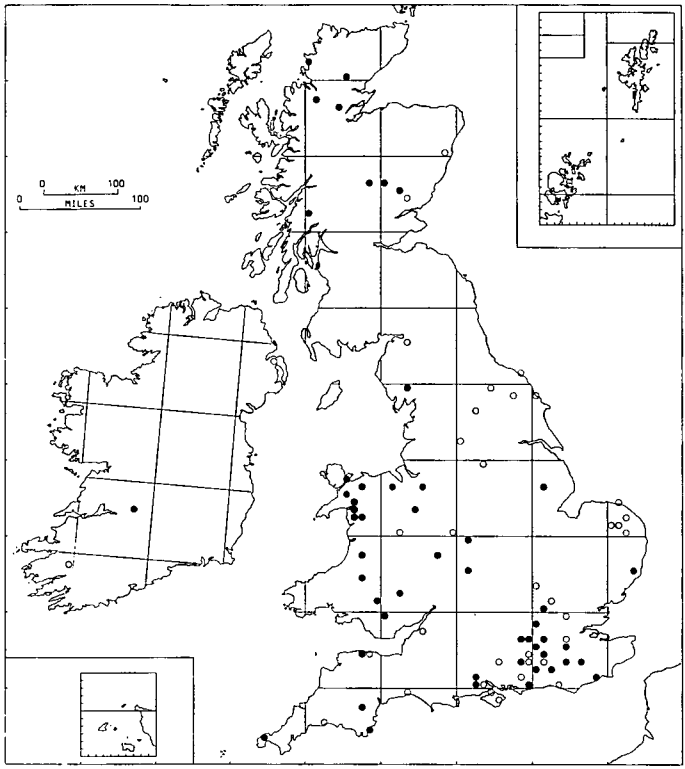
Map 77. **Physarum psittacinum** Ditm. A brilliantly coloured, uncommon species of mossy, rotten logs; commoner in the south of Britain but less so than formerly.



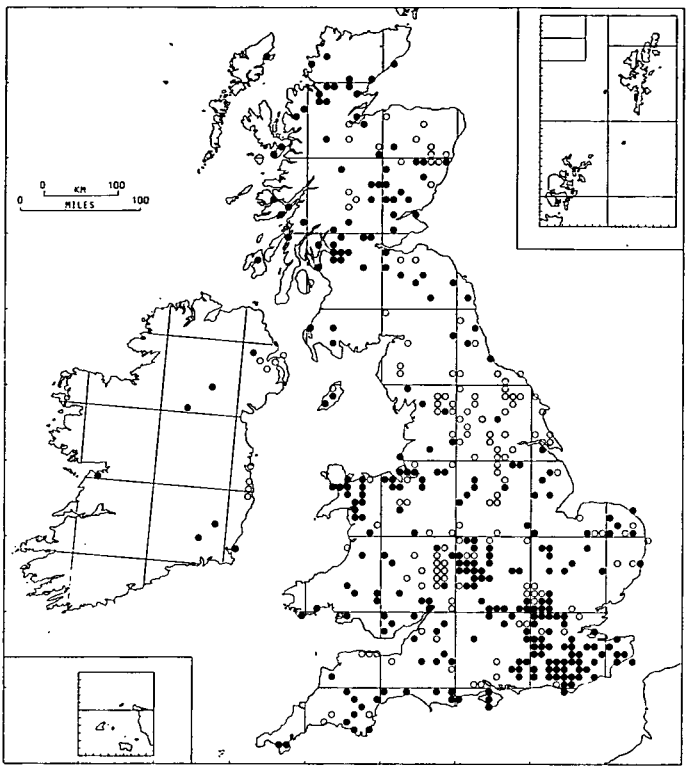
Map 78. **Physarum pusillum** (Berk. & Curt.) G. List. A widespread species found in three major habitats: straw heaps, reedswamps and dune grass litter.



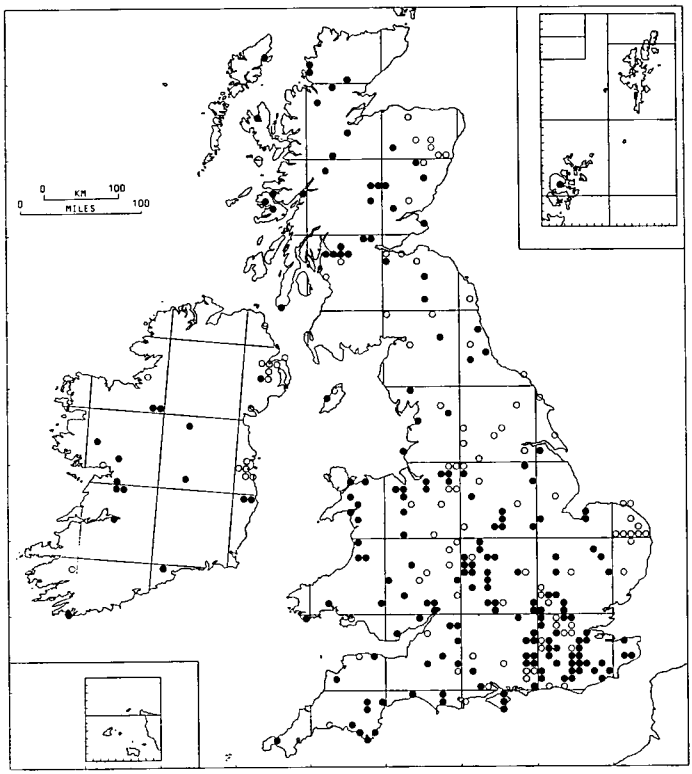
Map 79. **Physarum straminipes** A. List. Another straw heap species.



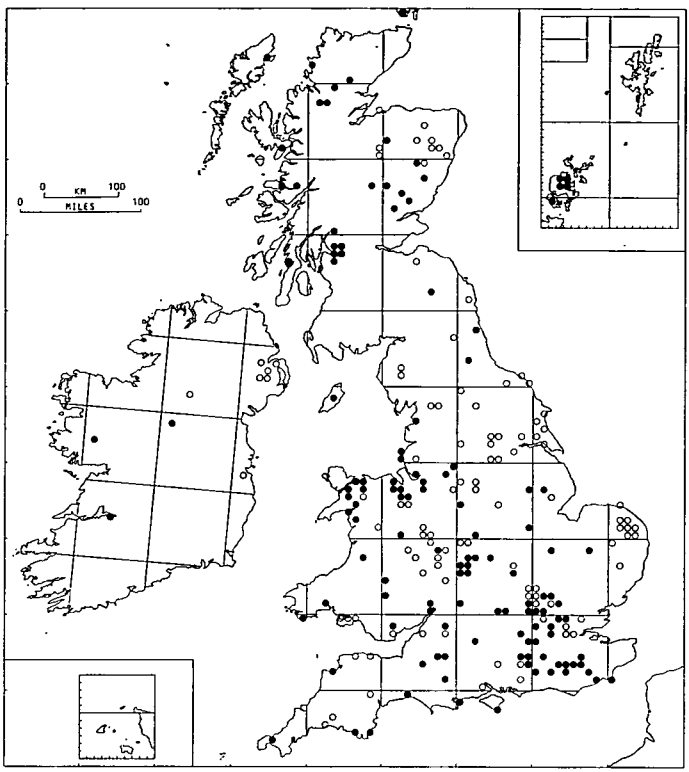
Map 80. **Physarum virescens** Ditm. (excluding vars. *nitens* G. List. and *obscurum* A. List.). Found mostly on terrestrial mosses in woodland and characteristic of the western sessile oakwoods.



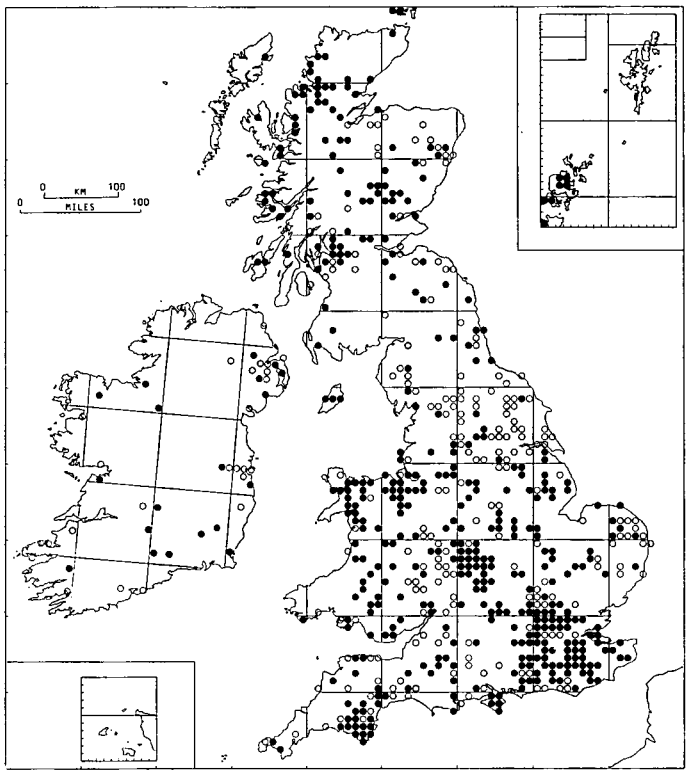
Map 81. **Physarum viride** (Bull.) Pers. A common species and apparently increasing on brashings and sticks in conifer plantations.



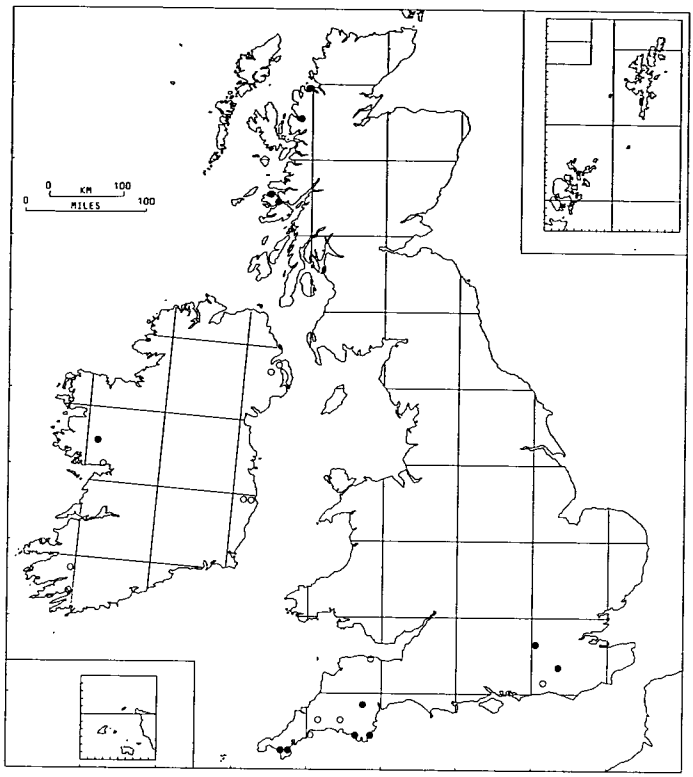
Map 82. **Stemonitis axifera** (Bull.) Macbr. A common species on dead wood, especially well rotted logs.



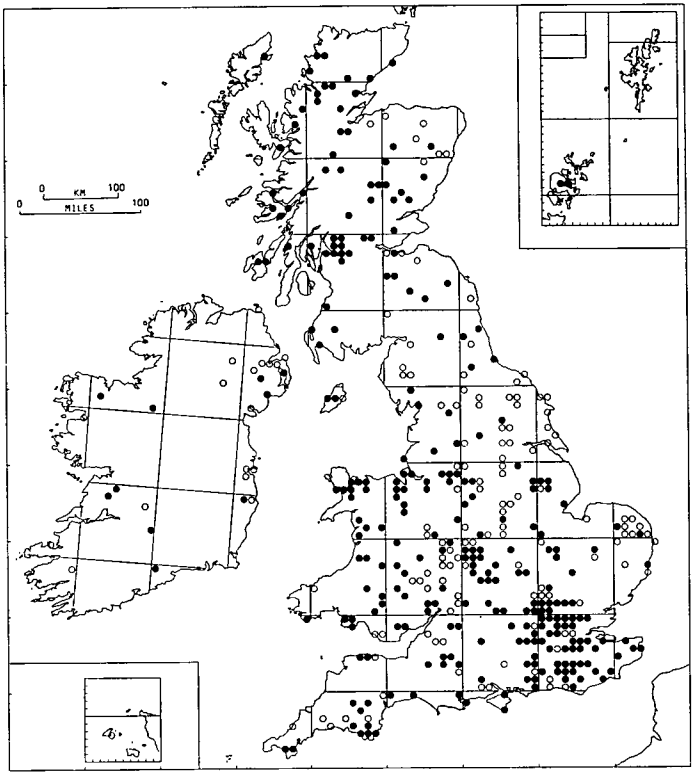
Map 83. **Stemonitis flavogenita** Jahn. Common, but less often recorded and confused with *S. axifera*. As well as on wood, this species fruits on herbaceous stems.



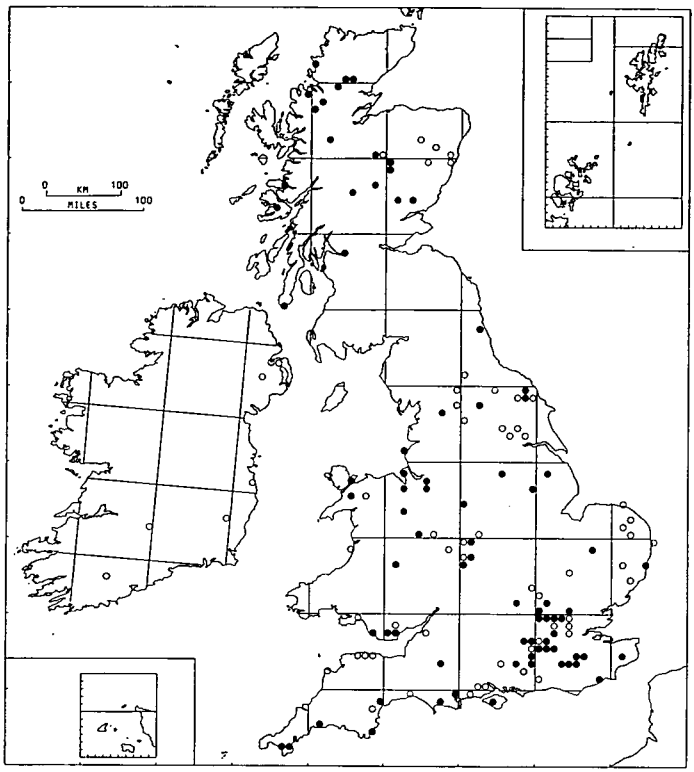
Map 84. **Stemonitis fusca** Roth. An abundant species of rotting logs and stumps.



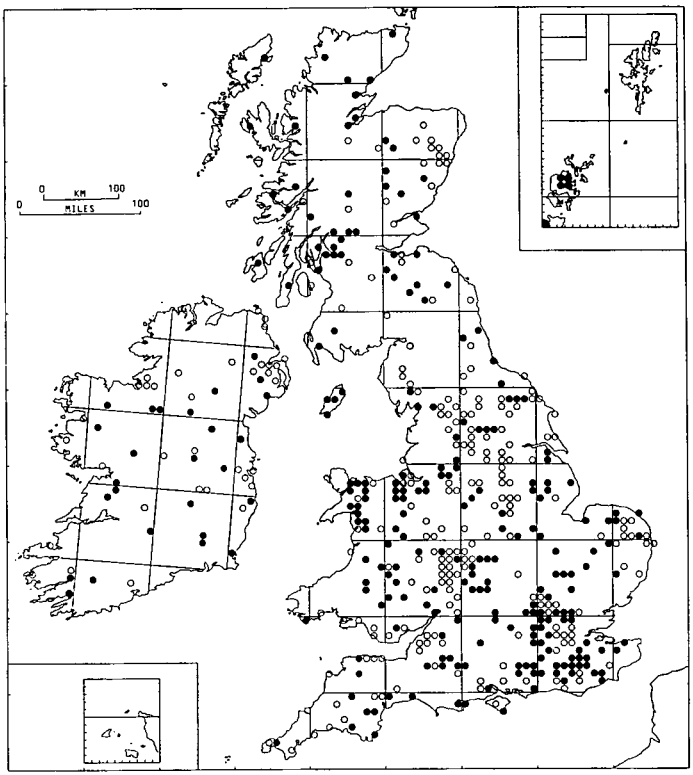
Map 85. **Stemonitis splendens** Rost. A rare species with a distinctly south-western bias in the British Isles.



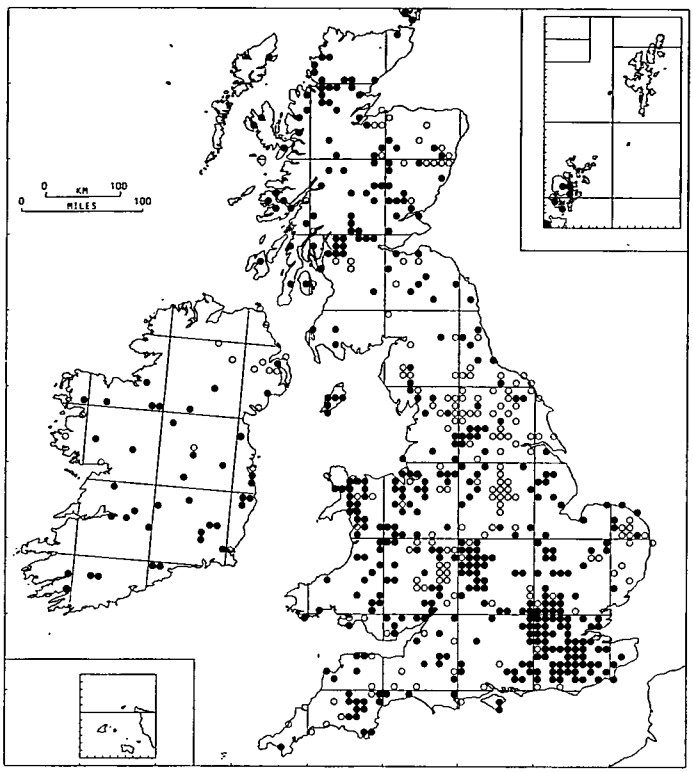
Map 86. **Stemonitopsis typhina** (Wiggers) Nann.-Brem. (*Comatricha typhoides* (Bull.) Rost.). Common on very rotten, often soggy, logs.



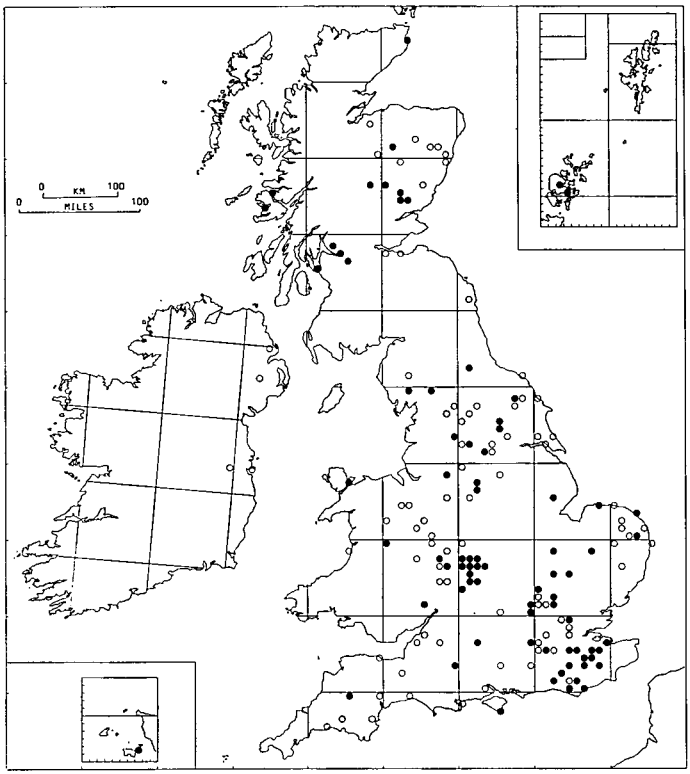
Map 87. **Symphytocarpus flaccidus** (A. List.) B. Ing & Nann.-Brem. (*Stemonitis splendens* var. *flaccida* A. List.). Previously treated and recorded as part of *S. splendens*. It occurs on exposed wood, especially of dead standing trunks of pine and oak, and is often found on house timbers.



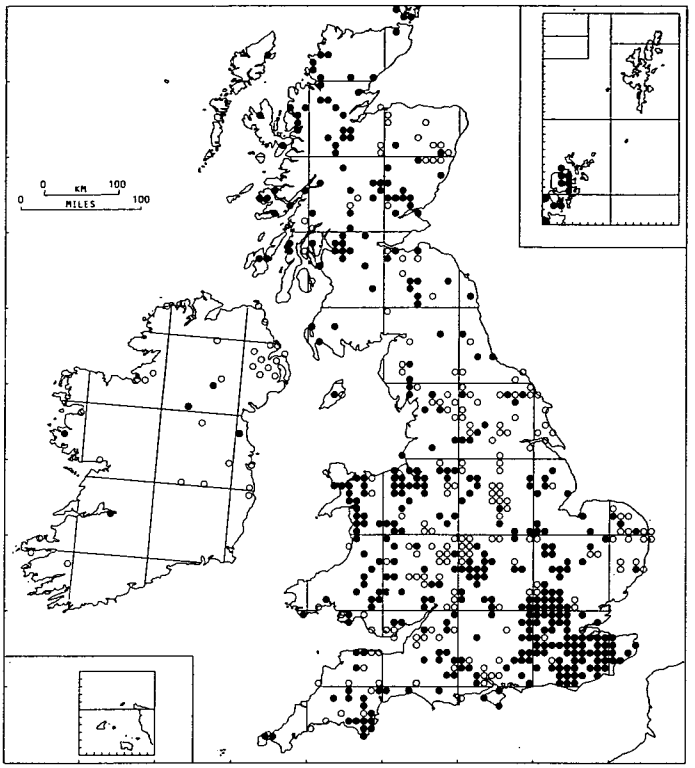
Map 88. **Trichia affinis** de Bary (*T. favoginea* (Batsch) Pers.). A common species on moss and very rotten wood. Previously confused with *T. persimilis* and other species and now united under *T. favoginea* by some authorities.



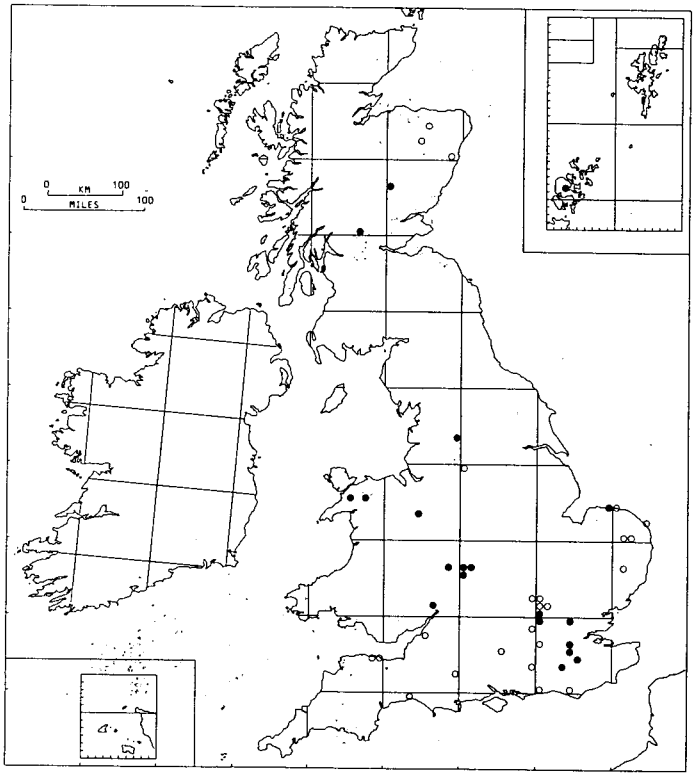
Map 89. **Trichia botrytis** (Gmel.) Pers. A common and widespread species on dead wood of all kinds.



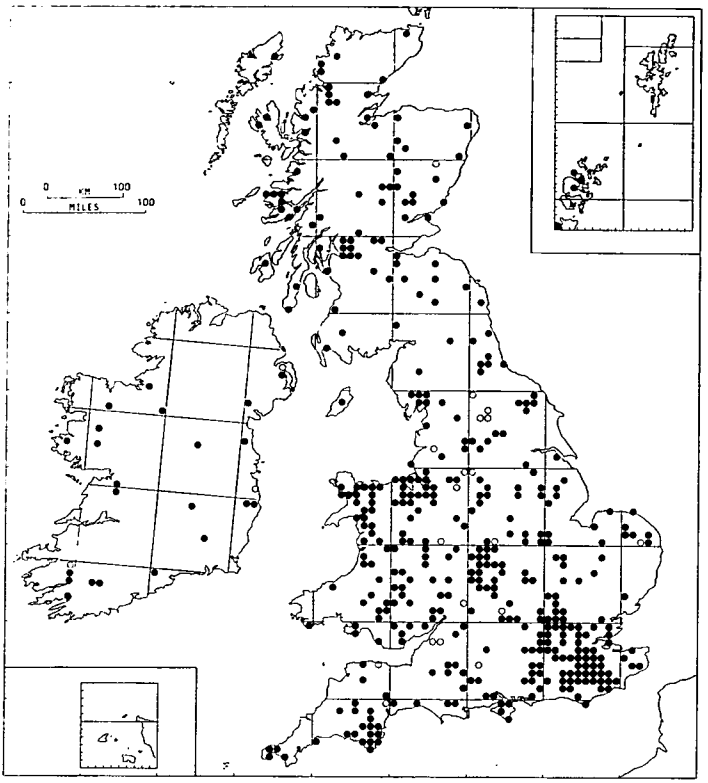
Map 90. **Trichia contorta** (Ditm.) Rost. A widespread species on dead wood and sticks but probably confused with commoner species in the past and therefore under-recorded.



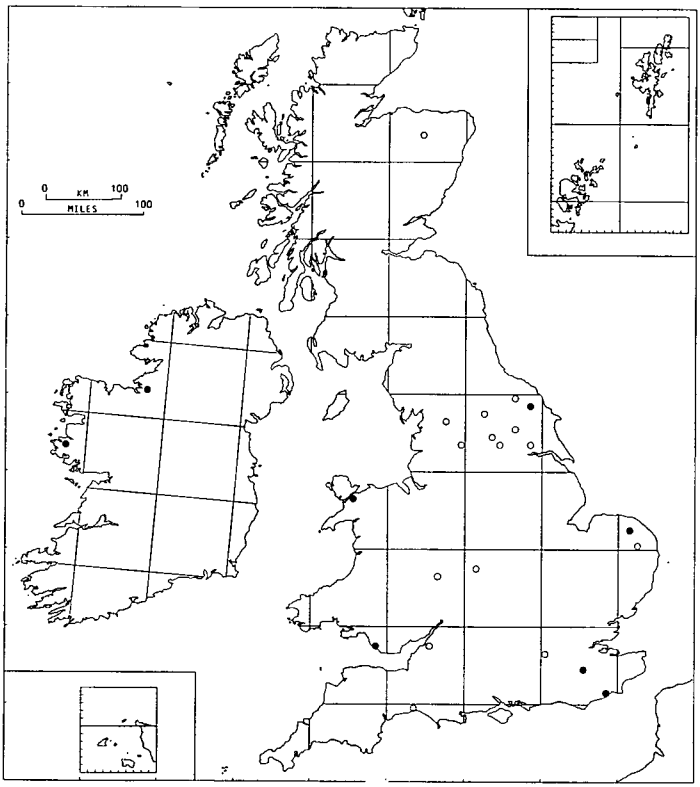
Map 91. **Trichia decipiens** (Pers.) Macbr. Very common on dead wood of all kinds.



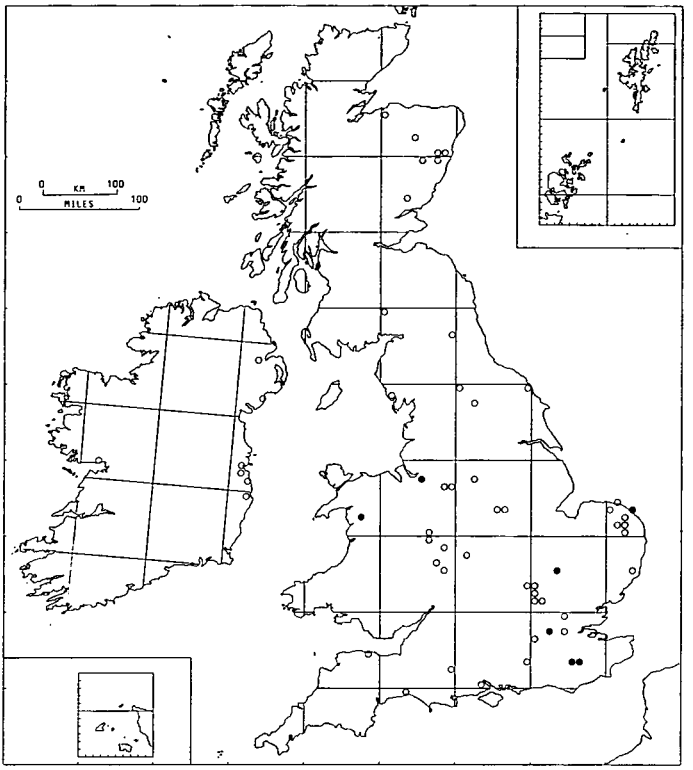
Map 92. **Trichia flavicoma** (A. List.) B. Ing. (*T. botrytis* var. *flavicoma* A. List.). On leaf litter, perhaps commoner in the south and east.



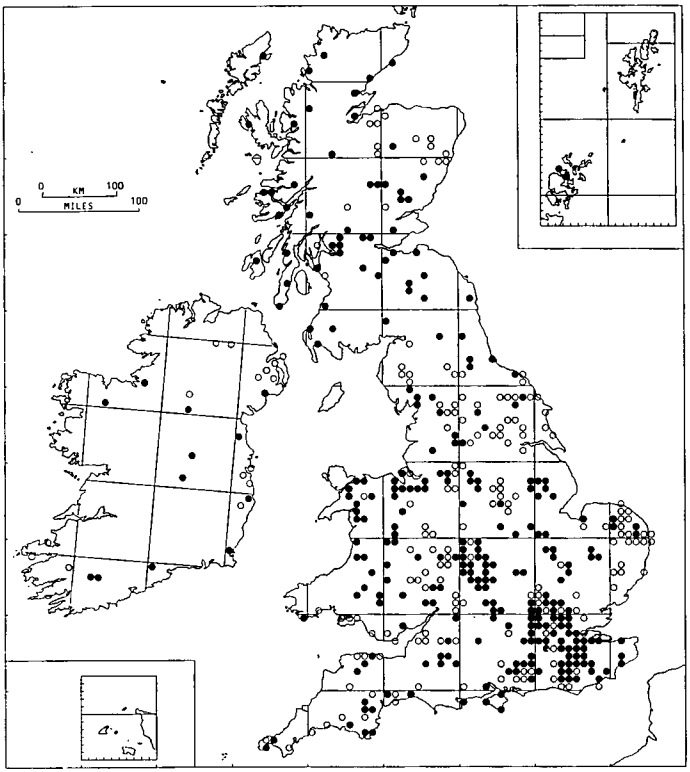
Map 93. **Trichia floriformis** (Schw.) G. List. On dead wood of all kinds. Fifty years ago this was regarded as a rarity - now it is one of the most abundant species, especially in secondary woodland.



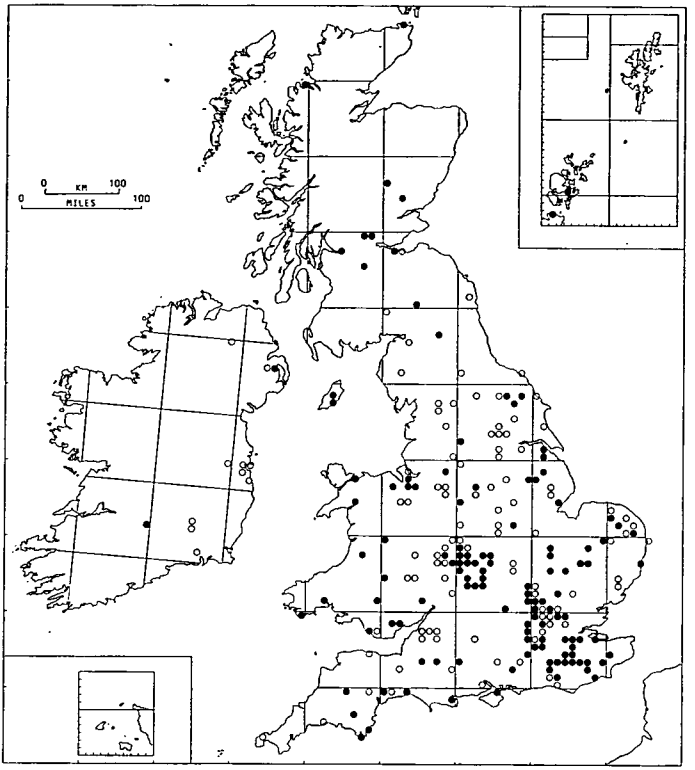
Map 94. **Trichia lutescens** A. List. An uncommon species of rotten wood in damp places and the bark of living trees. Some of the older records may refer to *T. contorta*, with which it has been confused.



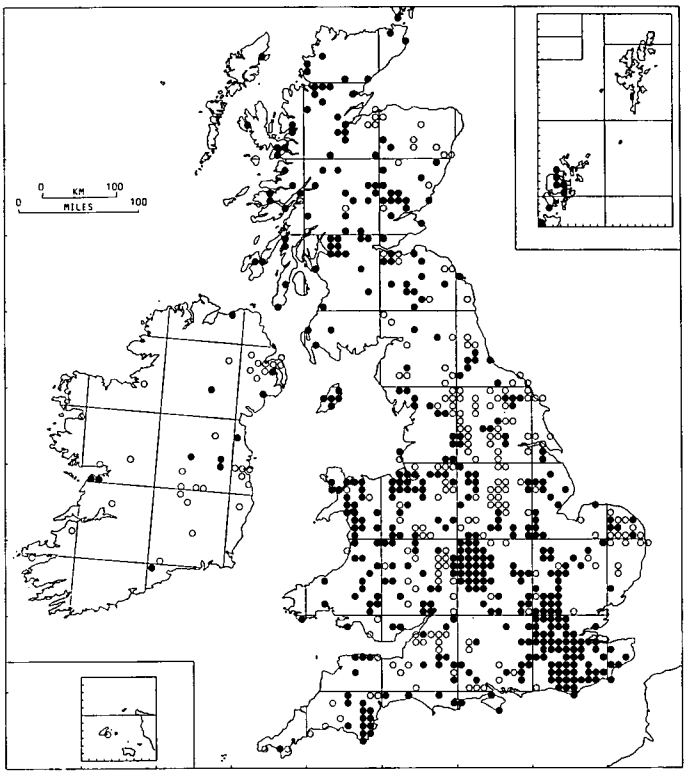
Map 95. **Trichia munda** (A. List.) Meylan (*T. botrytis* var. *munda* A. List.). An uncommon segregate from *T. botrytis* and perhaps under-recorded. Microscopic examination is essential for its determination.



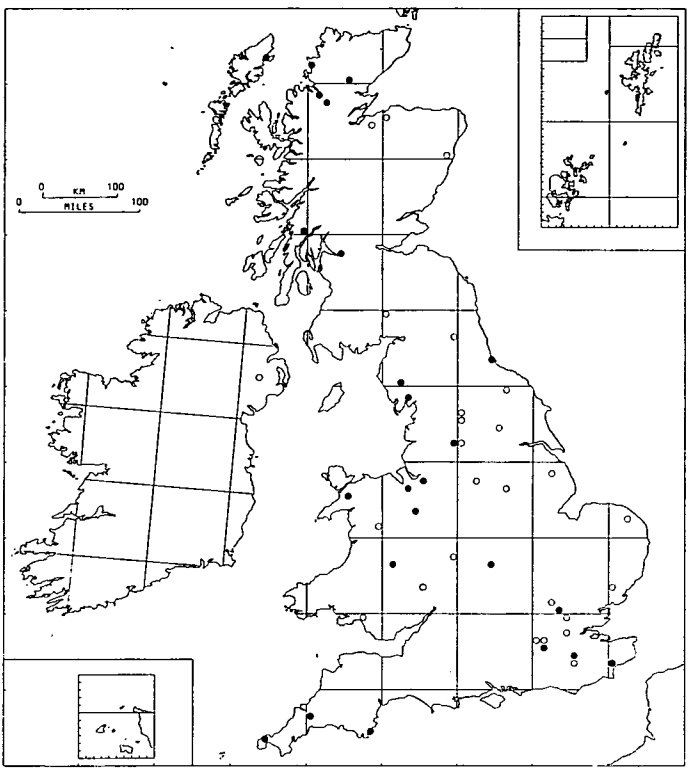
Map 96. **Trichia persimilis** Karst. (*T. favoginea* (Batsch) Pers.). Common on rotten logs that are still firm. See remarks under *T. affinis* (Map 88).



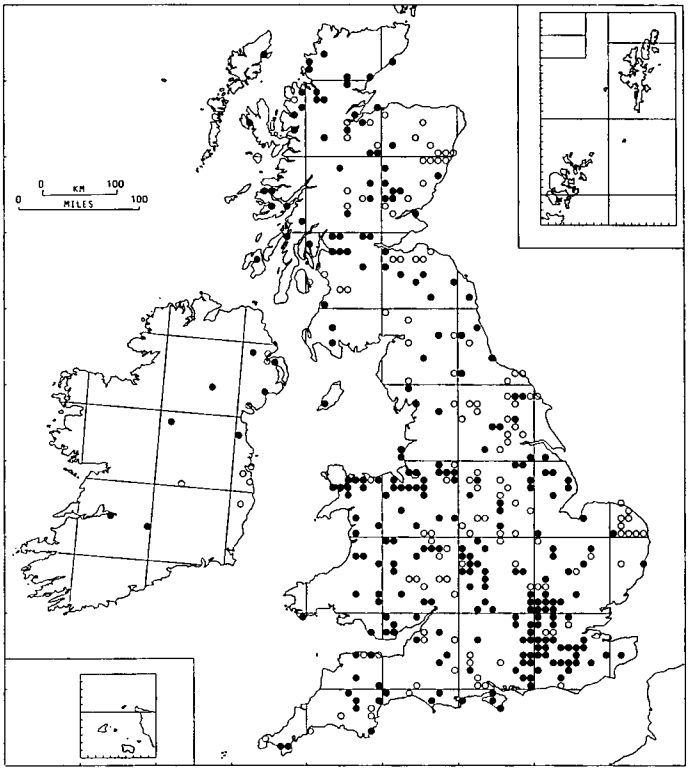
Map 97. **Trichia scabra** Rost. On rotten logs, especially of elm. Commoner in the south of England than elsewhere in the British Isles.



Map 98. **Trichia varia** (Pers.) Pers. Abundant on dead wood, especially if rather damp.



Map 99. **Trichia verrucosa** Berk. A generally distributed species on well-rotted coniferous wood, but nowhere common. The single Irish record requires confirmation.



Map 100. **Tubifera ferruginosa** (Batsch) Gmel. Very common on rotten conifer and alder logs and stumps, conspicuous in summer.

INDEX

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Synonyms are in italics.