CONFIDENTIAL. NOT FOR PUBLICATION.

An Foras
Forbartha
Teoranta
The National
Institute
for Physical
Planning and
Construction
Research

CONSERVATION AND AMENITY
ADVISORY SERVICE

PLANNING DIVISION

A PRELIMINARY REPORT ON AREAS OF SCIENTIFIC INTEREST IN COUNTY CARLOW

EDWARD FAHY,

December, 1975.

Teach Mhairtín
Bóthar Waterloo
Áth Cliath 4
Telefón 764211
St. Martins House
Waterloo Road
Dublin 4

CONFIDENTIAL. NOT FOR PUBLICATION.

An Foras Forbartha Teoranta
The National Institute for Physical Planning and Construction Research

CONSERVATION AND AMENITY ADVISORY SERVICE

PLANNING DIVISION

A PRELIMINARY REPORT ON AREAS OF SCIENTIFIC INTEREST IN COUNTY CARLOW

EDWARD FAHY,

December, 1975.

Teach Mhairtín
Bóthar Waterloo
Áth Cliath 4
Telefón 764211
St. Martins House
Waterloo Road
Dublin 4

List of Sites (Group E)

SECTION B

Introduction - Layout of Report

Co. Carlow is an intensively farmed region in which large field systems have developed at the expense of hedgerows. The primary purpose of this report is to identify areas which are worthy of preservation but in this case an additional approach is considered worthwhile. The descriptive section (F) deals with areas which should be managed in the future in much the same way as they are now. The following Section (G) describes sites which at present have little value as areas of scientific interest but which could be managed to develop diverse biological communities. A successful conservation policy in the county will necessitate the creation of worthwhile areas as well as the maintenance of existing sites.

SECTION C

GENERAL INTRODUCTION

This report concerns country-planning. It should enable the County Council to pick out those areas that are important on a national or local level and whose conservation can be based on strong grounds, either scientific, educational or amenity. The Conservation and Amenity Advisory Service is attempting to identify a representative range of natural and semi-natural habitats throughout Ireland and also to list sites of special significance, usually containing a rare species or a rare natural phenomenon. Around these areas development can proceed with relative impunity, once amenity and waste-disposal problems have been surmounted. It may be stressed that the amount of land available is such that development will very seldom mean the impoverishment of the national heritage, if it is properly planned. On the contrary, in particular examples it will allow more people to obtain meaningful recreation from the countryside.

However, conflicts will arise in scenically attractive areas where some or all of the elements of water, hills, woodland and rock are combined to make a desirable landscape, sought after by housing or recreational interests. At the same time, such places often contain communities of plants and animals interesting because of their isolation from rural or urban development Usually it will be possible to compromise between the opposing forces but occasionally development will have to be curtailed to preserve the scientific interest in an area.

Conservation of natural communities may be important for amenity, scientific or recreational reasons or any combination of the three. Frequently, the natural vegetation of an area gives to it a characteristic atmosphere, an inde finable value but very real to those who walk or drive through it. Diversity is the key quality of the environment that attracts people to an area or that makes them find relaxation there: the contrast between cultivation and wilderness, between water and land or between trees and grass. Fortunately diversity is also the sine qua non of rich biological communities.

Examples of all habitats must be reserved for scientific research. Uncultivates areas are essential as reservoirs for organisms that may be useful for soil conditioning or pest control in the future. Quite apart from their inherest interest and complexity they are needed also as control areas. Without them it would be impossible to judge the effectiveness of, or to improve man's attempts at land management. For example, how can pollution be controlled if no unpolluted watercourse or lake remains in which to deciphe the natural breakdown processes? Or how can the great productivity of marsh and seasonally flooded land be harnessed, other than by rice growing, if no natural swamps are left? Finally, how can cutover bog be best used for tree growing if no natural self-sustaining bog community or no wooded peaty areas exist? These questions are of growing importance in a competitive world that demands efficiency and an optimum level of food production compatible with little damage to the ecosystem.

In education, field studies of all sorts are of immense value, and biological field studies are a stimulus that many other disciplines envy. Natural communities provide some of the clearest expositions of the ecological principles that operate through all growing and harvesting methods. In addition, there is the challenge of identifying and getting acquainted with numerous and very different species. Field work attracts practically all children at some stage and enables everyone to better appreciate being in rural surroundings. Already, since the introduction of biology teaching, there is a greater awareness of the environment and interest in wildlife. Such constructive recreation should be encouraged by the maintenance of variety in the countryside.

It is the intention of this survey to encourage the use of the countryside by drawing attention to scientifically interesting places. All of those mentioned can support much greater numbers of people - less so in certain cases of marshes and bogs, or at certain times of the year. But the carrying-capacity of each site will eventually have to be analysed. How much recreational use can co-exist with a nesting wildfowl population? How many people can walk a woodland floor without damaging the plant

cover? Or what number of trees can be felled each year while preserving the attractive features of the wood? The idea of preserving any but the smallest areas intact and without change is unrealistic and multiple use should be encouraged. Many of the areas would respond to sound management and become much more productive. The majority of the sites listed are now productive in the crude sense of producing fish, game birds or timber. All are productive if they encourage people to visit the area and make use of services nearby, and we believe that all contribute to the relaxation, mental health and happiness of the community, especially the generation of town-dwellers that now form most of our nation.

SECTION D

CARLOW AS AN AREA OF BIOLOGICAL AND GEOLOGICAL INTEREST

Because Co.Carlow is a non-maritime county one dimension of its potential biological interest is lacking; this has geological implications also for one frequently finds formations of geological interest exposed as coastal structures

The distribution of the solid geology is shown in Fig.1.

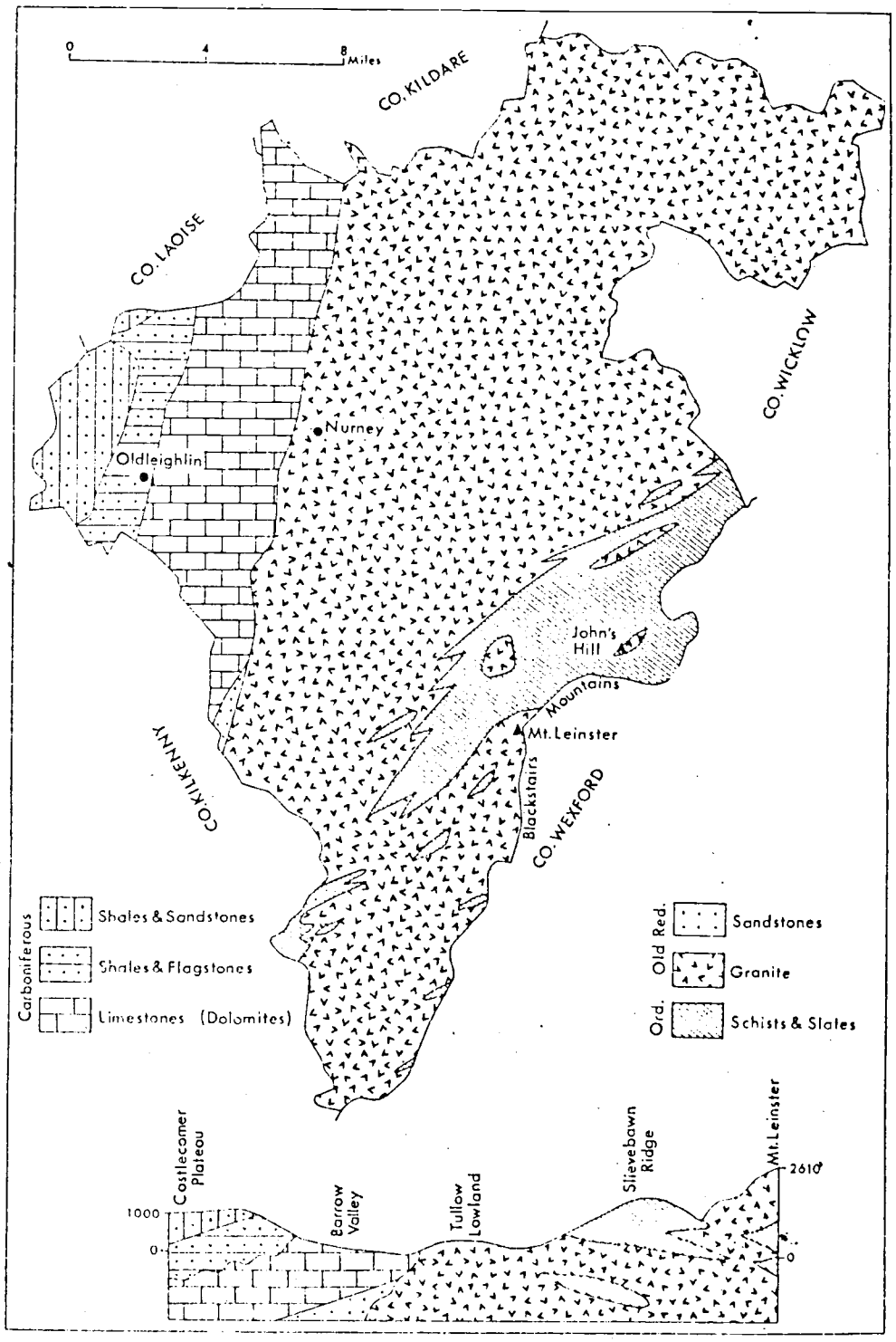


Fig.1 *Distribution of solid geological formations in the county.*

Limestone is of limited extent in the county, the most common rocks being granite and diorite, neither of which is noted for the diversity of its flora. To date there have been no noteworthy discoveries of solid gelogical formations which should be preserved but quarrying on the Mount Leinster range may reveal interesting structures in time.

The solid geology, apart from its intrinsic interest, has determined the shape of the county (Fig. 2). When formulating a conservation policy for Carlow it would be desirable to ensure as far as possible that a wide range of habitats occurs in each of the regions identified.

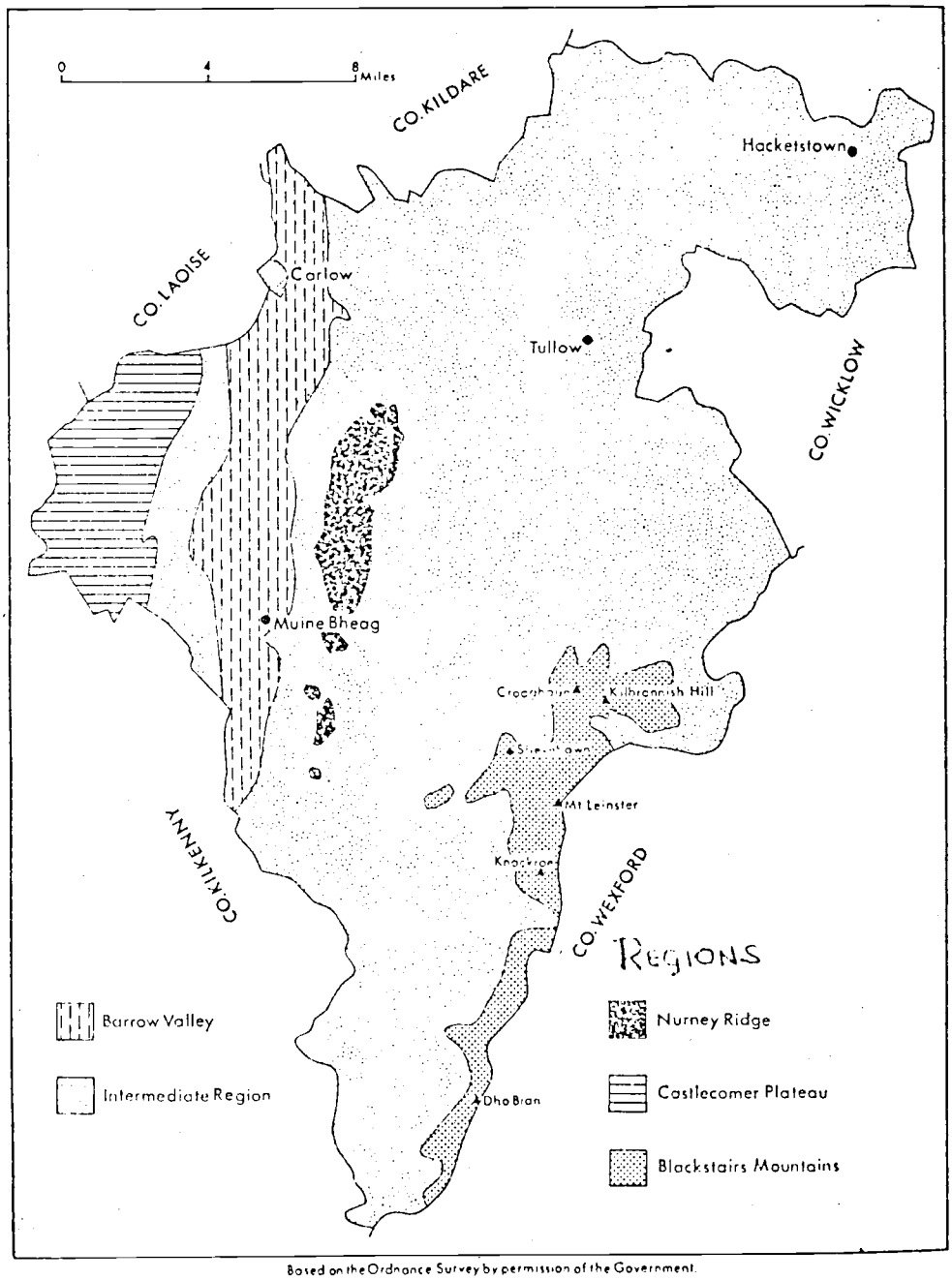


Fig. 2 —*County Carlow —general topographic features.*

The later geological history of the county is represented by the remains of the Saale and Weichsel glaciations. The first of these occur on the Mount Leinster chain which borders the county to the East. The second phase has left more widespread traces.

As is the case elsewhere the evidence for glacial activity takes the form of single rock fragments (erratics etc) and inclusions, fluvio - glacial deposits and outwash gravels. From a research point of view none is singled out as worthy of preservation with the exception of an esker at Bagenalstown which could be of benefit for educational reasons. The only other esker in the county is at Aghade and is not regarded as being particularly interesting.

The glacial phase is important also as a determining factor in the kinds of soil that exist today. Fig. 3 shows the distribution of the main types which are a result of glacial deposits interacting with climate. Rainfall is a critical factor here, the amount of water deciding the degree of waterlogging or leaching of the surface sediments.

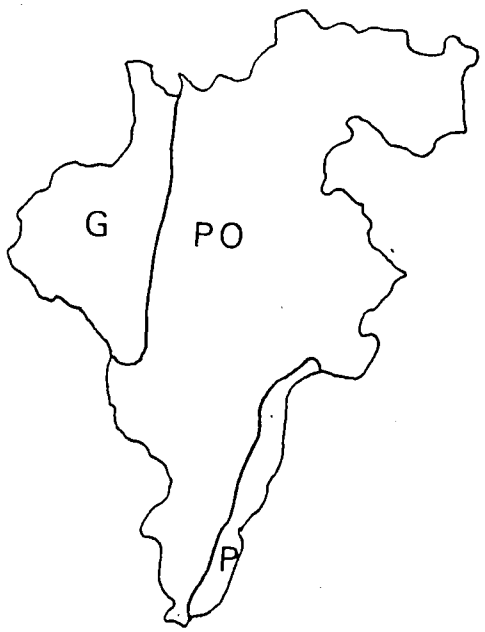


Fig. 3. Greatly simplified soil map of Co. Carlow showing the approximate distribution of Gleys (G), Podsols (PO), and Peat (P).

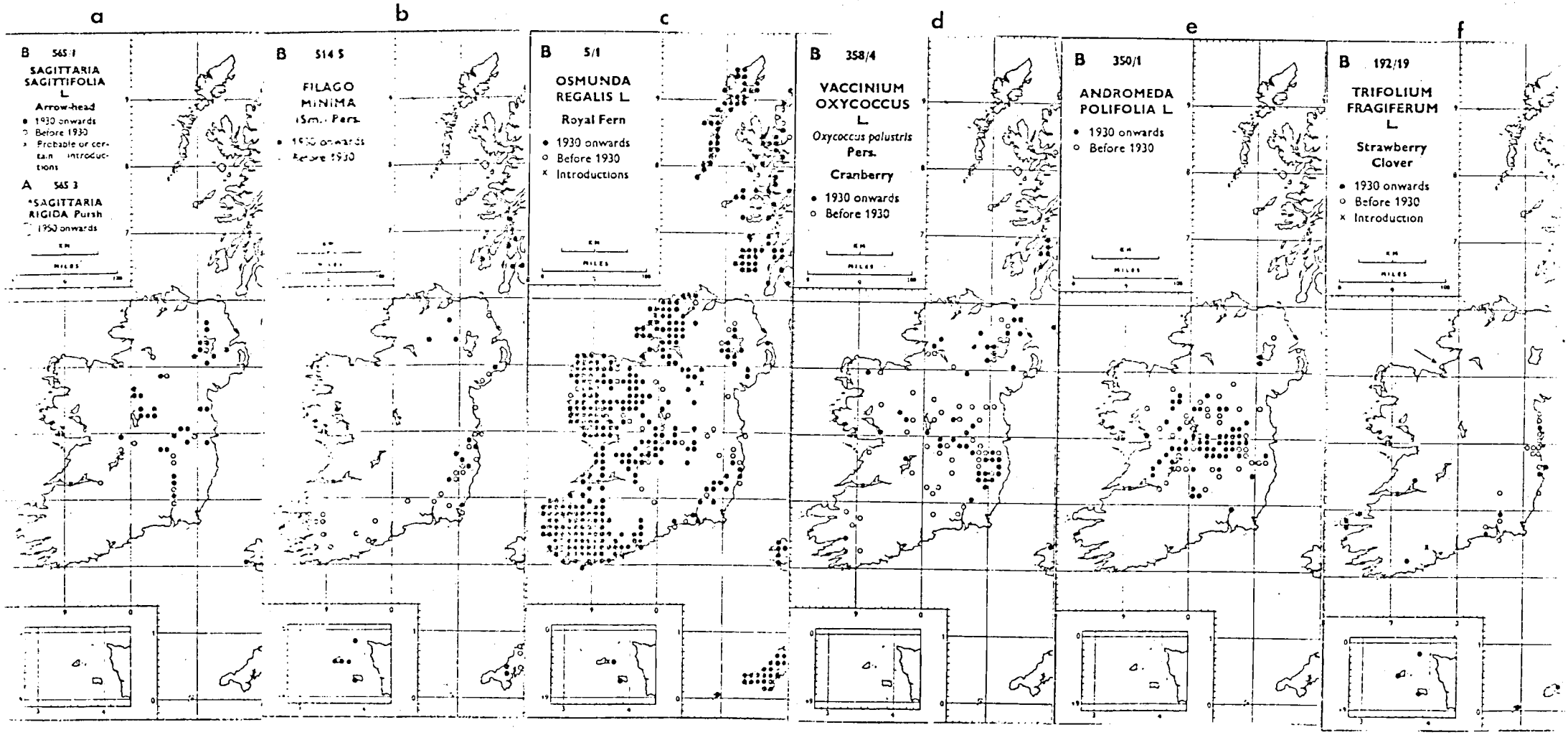


Fig. 4. Some types of plant distribution which are represented in Co. Carlow.
(a) Shannon basin species whose distribution is influenced by a canal
(b) A S.E. Ireland distribution (c) Western Ireland distribution (d) distributed on bogland (e) central distribution, and (f) coastal distribution

On first appearance the soils of Co. Carlow are not very productive : podsols lose much of their nutrient value by leaching and gleys are waterlogged, poorly aerated and unproductive in winter. Drainage and fertilisation will improve either of these conditions and both practices are carried out in the county. Their use has resulted in considerable changes in the natural flora and the fauna could, in certain situations, be adversely affected also. There are now few wetlands remaining in the county and heavy machinery which was originally introduced for the cutting of drainage trenches has been put to work clearing granite boulders which, indirectly by preventing tillage, were responsible for the survival of scrub-patches.

Extant woodlands in the county are mainly coniferous and large areas of the Barrow valley have been set with species which yield a worthwhile commercial crop. There is no naturally regenerating native tree species at the closed canopy stage. The few oak trees which remain are obviously of planted origin and in one or two cases beech trees are in danger of over-running and out-regenerating them. Serious consideration in Co. Carlow should be given to managing coniferous plantations so that their biological interest and diversity is maximised and, in some cases, to allowing beech woods to gain a foothold. Attention will be drawn to these points as the sites in question are dealt with. A general point should at this stage be stressed: woodlands of whatever kind are the customary habitats of birds and animals; such a rarity as the pine marten has been reported from Co.Carlow in recent times and this species is found exclusively where there is forestation.

The flora of Co.Carlow, although it includes some rarities, does not have any noteworthy communities such as the Burren in Co. Clare. However, several types of plant distribution are represented in the county and these are shown in Fig.4.

Co. Carlow is an intensively farmed area, the softly undulating terrain lending itself to large field patterns in which machinery can operate. Dividing hedges are minimal in extent. Areas of the county which have not been cultivated (Co. Carlow, according to figures available, has a relatively small

percentage of land in cultivation) have been put under conifers. In these circumstances it is important that marginal areas should be managed as reservoirs of wildlife, that uncultivated and unused lands should be converted to reserves and that all woodlands should have a conservation function as well as a commercial purpose. The following report suggests how some of these objectives might be achieved.

SECTION E LIST OF SITES MERITING PRESERVATION

Name of Area	Page No.	Grid Reference	Rating	Priority	Interest
Oak Woods at Bunclody	16	S.910,575	Regional	A	Ecological, botanical, zoological and ornithological: a planted oak wood; diverse flora and fauna.
Bagenalstown Esker	18	S.727,620	Regional	A	Geological and botanical: the only listed glacial feature in county.
Ardristan marsh	21	S.830,705	Regional	A	Ecological, botanical and zoological: marsh community of plants and anima.
Oak Park Pond	23	S.735,803	Regional	C	Ornithological, botanical and ecological: a shallow lake with a diverse population of wildfowl.
Baggot's wood	27	S.930,822	Local-Regional	A	Botanical and ecological: a small oak wood and marsh.
Borris Estate	30	S.720,495	Local-Regional	A	Ecological, botanical and zoological: deciduous wood, largely of oak, with typical flora and fauna.
Pollmounty Valley	33	S.747,355	Local	A	Ecological and botanical: a small valley with an interesting flora.

Name of area	Page No.	Grid Reference	Rating	Priority	Interest
Wood in the R. Barrow Valley	36	S.726,413 & S.737,367	Local	A	Ecological, botanical and zoological. Remnant scrub with a typical flora and fauna.
Red Bog, St. Mullin's	39	S.730,384	Local	A	Botanical and ecological: small raised bog.
Scrub south of Borris	43	S.714,577	Local	A	Ecological: hazel scrub with typical fauna and flora
Mount Leinster Mountains	45	S.820,520	Local	A	Ecological, botanical, zoological and ornithological: mountain fauna and flora.
Birch scrub at Clongarran	48	S.913,639	Local	B	Ecological: Birch scrub with typical fauna and fl
R. Slaney Valley at Ardattin	50	S.865,670	Local	B	Ecological, botanical and zoological: wooded river valley
Tullow ponds	52	S.839,721	Local	C	Ornithological and botanical: wildfowl feeding area at which a rare plant species grows.
Cloughristick's wood	54	S.701,698	Local	C	Botanical, ecological, zoological and ornithological: a wet woodland.

Name of area	Page No.	Grid Reference	Rating	Priority	Interest
Bahana wood	56	S.723,395	Local	C	Ecological, botanical, and zoological: coniferous wood nearing maturity.
Hazel scrub in Slaney Valley	59	S.898,610	Local	C	Ecological, botanical and zoological: deciduous scrub with associated herb and insect communities.
Ballynakill marsh	61	S.747,602	Local	C	Ecological and ornithological: a small wildfowl refuge

SECTION F

SITES MERITING PRESERVATION

Name of Area	OAK WOODS AT BUNCLODY
Acreage	150 (North): 70 (South) = 220 acres
Grid Reference	S. 910,575
Scientific Interest	Ecological, botanical, zoological and ornithological
Rating	Regional Importance
Priority	A

Description of Area

Both sites which are outlined on the accompanying six inch map are woodlands composed of a mixture of coniferous and deciduous species. Oak trees which make up the greater part of the canopy, were originally planted and, at the present time, are not regenerating. Some beech were also included when the wc was first set and beech scrub is regenerating actively. In time, if permitted, the wood will probably go to beech. A fair number of yew trees (Taxus baccata) have also reached a large size and these, together with holly, give the aspect of a south-western oak wood to the site. The lowest ground in eac wood is occupied by birch and hazel scrub.

Evaluation

These sites are the largest area of deciduous tree canopy in County Carlow and are probably the most valuable site from a conservation viewpoint. Although in the strict sense artificial (planted) they contain the elements of some of the best known "natural" oakwoods and have in addition a typical and diverse herb flora. Passerine birds are numerous and include garden warblers. Jays are frequent and badgers occur. A rare plant species (Pyrola minor) which sometimes occurs in planted woods is said to be present in one of them.

Threats to the Area

A number of possibilities could threaten the character and survival of the woods. Being close to the town of Bunclody they are vulnerable to clearance for building purposes. The majority of the trees are nearing or have reached the felling stage and their removal has begun. Their replacement is however, by coniferous species which, so far, are being introduced in small blocks.

Recommendations

Because of their scientific value and their proximity to a centre of population these woods should be maintained as mainly, if not entirely, deciduous stands in the future. A high percentage of newly set trees should therefore be deciduous species, preferably oak.

The ideal method of achieving these ends would be the placing of a Tree Preservation Order (Planning & Development Act, 1963) or a Conservation Order and this should be considered without delay. At a more distant time the woods could be set out as a nature trail.

Name of Area	BAGENALSTOWN ESKER
Acreage	More than 200 acres (esker has a more irregular shape than is shown on the 1" map).
Grid Reference	S. 727,620
Scientific Interest	Geological and botanical
Rating	Regional importance
Priority	A

Description and Evaluation of the Site

The site is shown on the accompanying 1" map. The feature is a long hill of s & gravel running in a North, South-East direction. The hill is composed of sand deposits which show some water-sorting where they are exposed. Sand has been quarried at frequent intervals along the structure and only the northern-most section, which supports pine trees, is intact. The vegetation occurring on the sand-hill is similar to that in neighbouring fields on flatter terrain but a wide range of typical esker herbs occur. During a brief visit to the site it was not possible to examine the flora in detail but a thorough search might reveal some rarities.

Threats to the Area

As mentioned above, the hill has been extensively quarried and the outline disturbed. Quarrying is likely to continue.

Recommendations

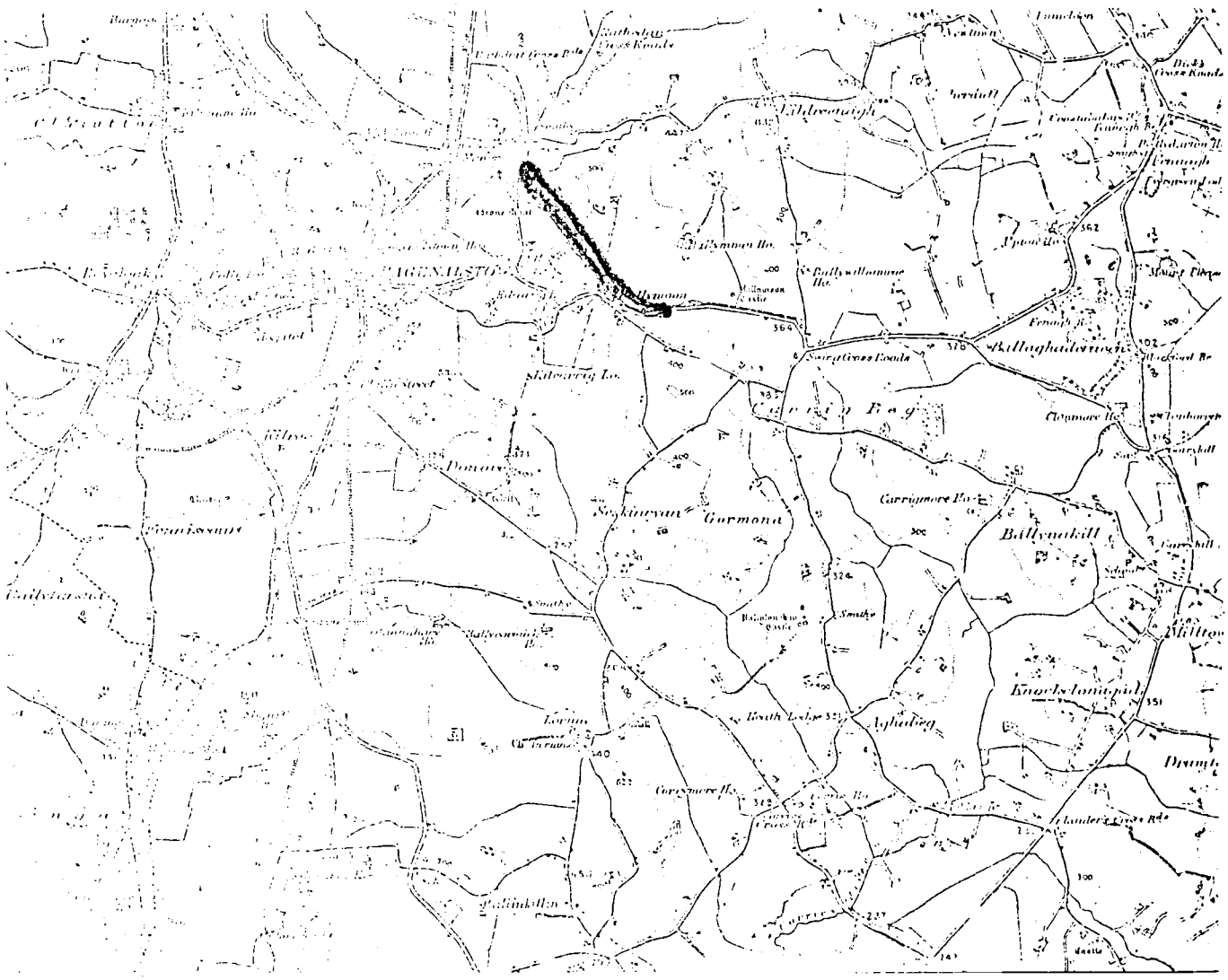
The rarity of this phenomenon in the county and the occurrence nearby of outwash gravels suggests that a switch in emphasis to greater utilization of the gravels would be a good idea. If the sand deposits are of particular value, such as to warrant their exploitation then this should be done in the following way:

1. The site should be landscaped so that removal of sand would not alter the outline more than necessary.

2. The sediment range should be investigated so that structural differences in the hill could be exposed for educational purposes.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 1 Inch to 1 Mile



Quarrying need not be wholly detrimental; indeed the sand faces at the Southern end of the esker are valuable from an educational point of view.

3. A botanical survey of the esker surface should be undertaken as soon as possible with a view to identifying any rarities or unusual associations that occur.

General Planning control would serve to protect this site but in the future, should an interesting structural feature or botanical community on the esker come to light, acquisition of a part of the hill might be considered.

Name of Area	ARDRISTAN MARSH
Acreage	91 acres
Grid Reference	S. 830,705
Scientific Interest	Ecological, botanical and zoological
Rating	Regional importance
Priority	A

Description of the Area

The site which is illustrated on the accompanying map is a waterlogged area supporting a wide range of plant species. Phragmites communis (common reed) is the most abundant but, where the water is deeper, there are others in large quantities, Menyanthes trifoliata (bog bean) being the most obvious of these. Mentha aquatica (water mint) and Hippuris vulgaris (mares-tail) are common and there are some small trees (alder).

Evaluation

The area is selected as a comparatively large marsh containing a wide range of plants and invertebrates. Birds which have been seen there include gulls, herons and duck. A rare species of Utricularia (bladder wort) has been taken at the site.

Threats to the Area

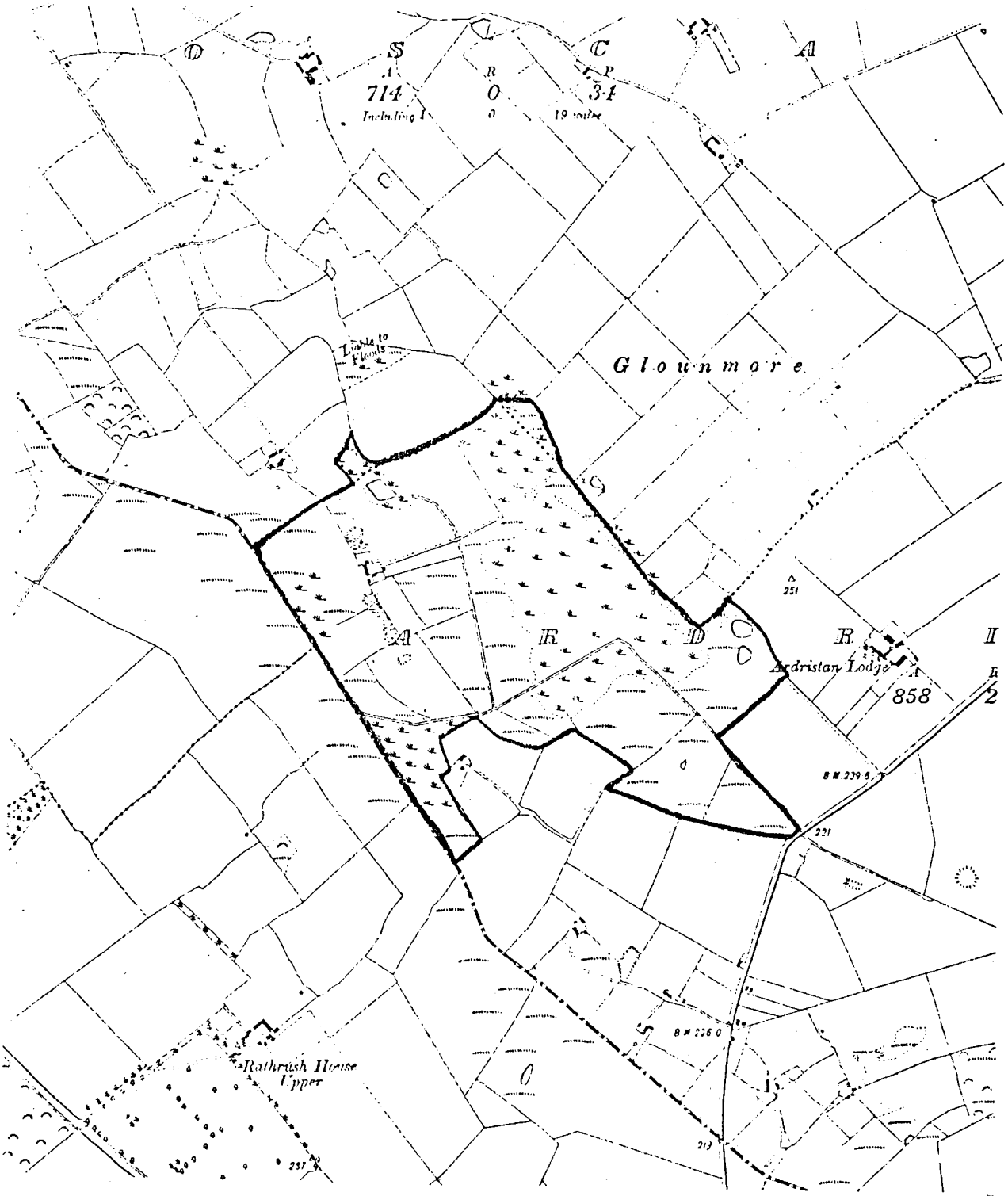
Ardristan marsh is surrounded by large tilled fields. The flat nature of the site would suggest it could be easily drained and this is not an unlikely possibility. Contamination of the water by fertilizer run-off from the land is probably occurring at present.

Recommendations

Every effort to preserve this area should be made and a Conservation Order under the Local Government Planning Act (1963) might be considered. In the meantime the condition of the site should be kept under scrutiny. General planning control should be exercised and especial care taken with the safe disposal of farm and/or domestic wastes.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



Name of Area	OAK PARK POND.
Acreage	43 acres
Grid Reference	S.735,803.
Scientific Interest	Ornithological, botanical and ecological.
Rating	Regional Importance
Priority	C

Description of Area

The site is a shallow artificial pond in which there is a profuse growth of Phragmites communis (common reed). A map of the site follows (over); it is on the borders of Carlow and Kildare. The lake is picturesque with woodlands around it and small islands bearing coniferous and deciduous trees in the centre.

Evaluation

The area is rated highly because it is the largest area of still water in the county. A 1969 mid-winter count of wildfowl and waterfowl (the only one available) revealed the following:-

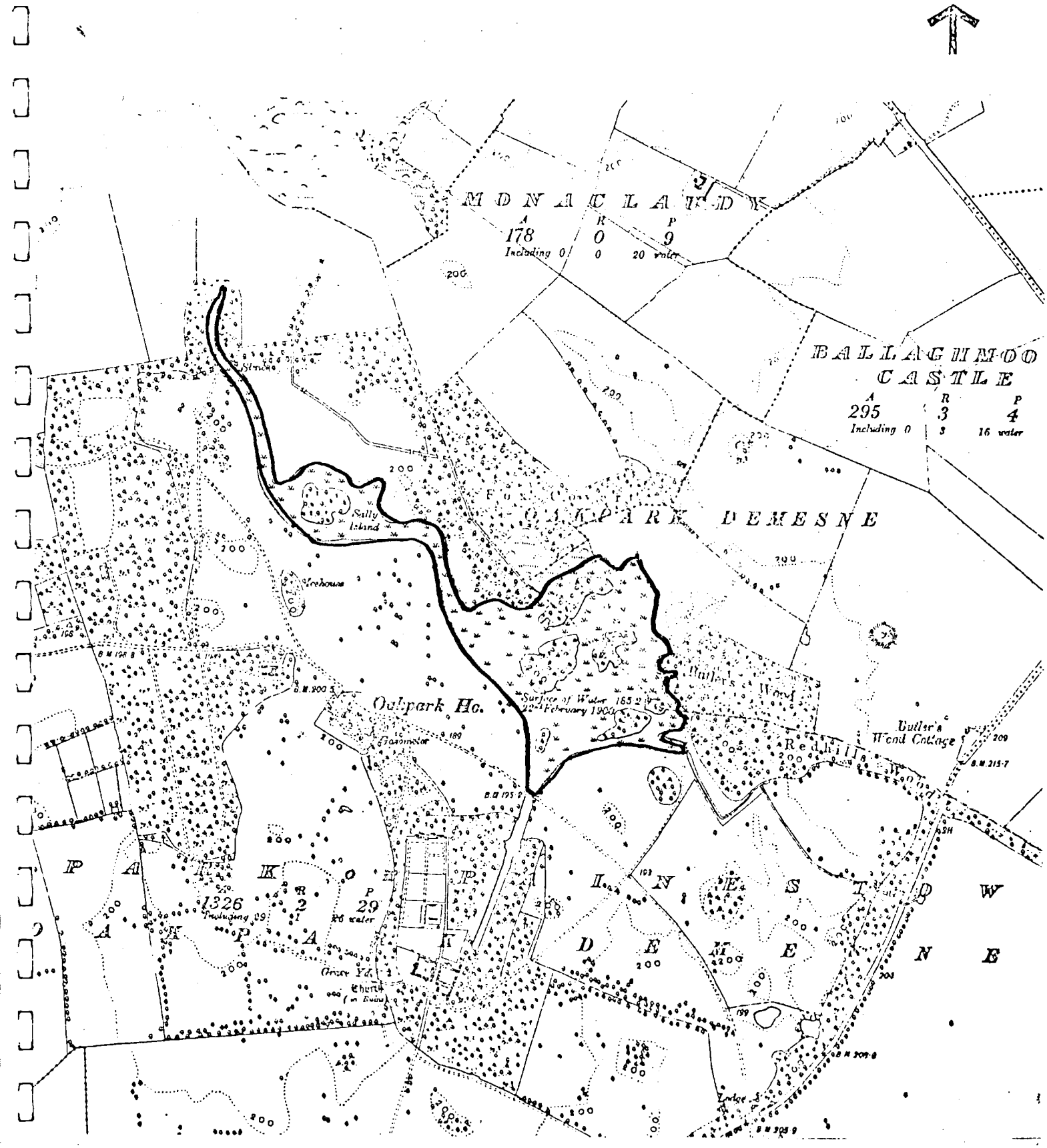
mallard	200+
teal	4
pintail	4
tufted duck	12 (possibly more)
pochard	2
goldeneye	50
mute swan	2
coot	100
TOTAL	374+

This count, which is a minimum estimate for some species, represents about 65% of the total wildfowl recorded in the county during the winter of 1969. The flock of goldeneye is particularly noteworthy for its size - on the largest Irish lakes a figure of 40 would be regarded as exceptional.

In addition to a typical marsh flora a Utricularia sp. (bladderwort) has been recorded.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



Threats to Area

The wetland is at present maintained for its conservation and amenity values and there is no obvious threat to its survival i.e. it is not likely to be filled in for agricultural purposes. The profuse reed growth is however a potential threat at least because in time it could result in siltation of the lake. Further investigation of this feature should be carried out very soon. In practice the biological diversity of this site will diminish if it is allowed to go to one specie of vegetation.

Oak Park is intensively farmed and, in places, chemical dressings and sprays are employed. It is important that these should be kept out of the water and a check on the concentration of obvious potential pollutants should be carried out all the time. Associated with this problem is that of dumping. Some chemical containers have been deposited on the east side of the lake, close to the water's edge. The long term prospects of this tip should be critically examined.

Recommendations

The future of this site should be borne in mind when any development on its margins is considered. A re-organisation of research should where possible be carried out in order to keep the most noxious chemicals at as great a distanc as possible from the water-side. The flat terrain would lend itself to the construction of open drains around the lake margins which would catch and re-route chemicals in solution, thus by-passing the area of interest.

These remarks are made simply to record the kind of action which will contribute to a maintenance of scientific values here. This site is in the hands of a conservation conscious body and no action is recommended by the local Authority.

Behind Oak Park House and to the north of the estate there are deciduous woods which were briefly inspected when the area was visited. The main tree species is oak which is all of the same age and is ready for felling,and there is an understorey of hazel which has been displaced by rhododendron. The outer fringes of the woods display a range of typical herb species but the inner parts are, as a result of rhododendron growth, bare on the ground. The oak is not regenerating.

Planted woods like this pose a problem. On the basis of what is known elsewhere it will not be possible to eradicate rhododendron which can regenerate from root-stocks once it has been cut. The result of pesticide application have not been fully evaluated for this species.

The problem is thus a considerable one, made more acute by the age of the oaks at this site. Although coniferous re-planting appears to be the rule at Oakpark some deciduous woods should be set. Urgent consideration should be given to this problem and there should be consultation between the Local Authority and An Foras Taluntais.

Name of Area	BAGGOT'S WOOD
Acreage	29 acres
Grid Reference	S. 930,822
Scientific Interest	Botanical and ecological
Rating	Local - Regional
Prioity	A

Description of Area

The site which is shown on the accompanying map is a small mixed deciduous coniferous tree wood consisting largely of oak which was originally planted. There is some, but very limited, oak regeneration at this time. Non-deciduous trees in the stand include yew and there is an understorey of hazel and holly. The woodland ground-flora is typical including:-

Oxalis acetosella	wood sorrel
Luzula sylvatica	greater wood rush
Anemone nemorosa	wood anemone
Lonicera periclymenum	honeysuckle

At the southern foot of the slope on which the wood is situated there is a small marsh whose water level is maintained by a stream flowing through it. The dominant plants to be seen are:-

Carex paniculata	panicle sedge
Juncus spp.	rushes
Caltha palustris	marsh marigold

Evaluation

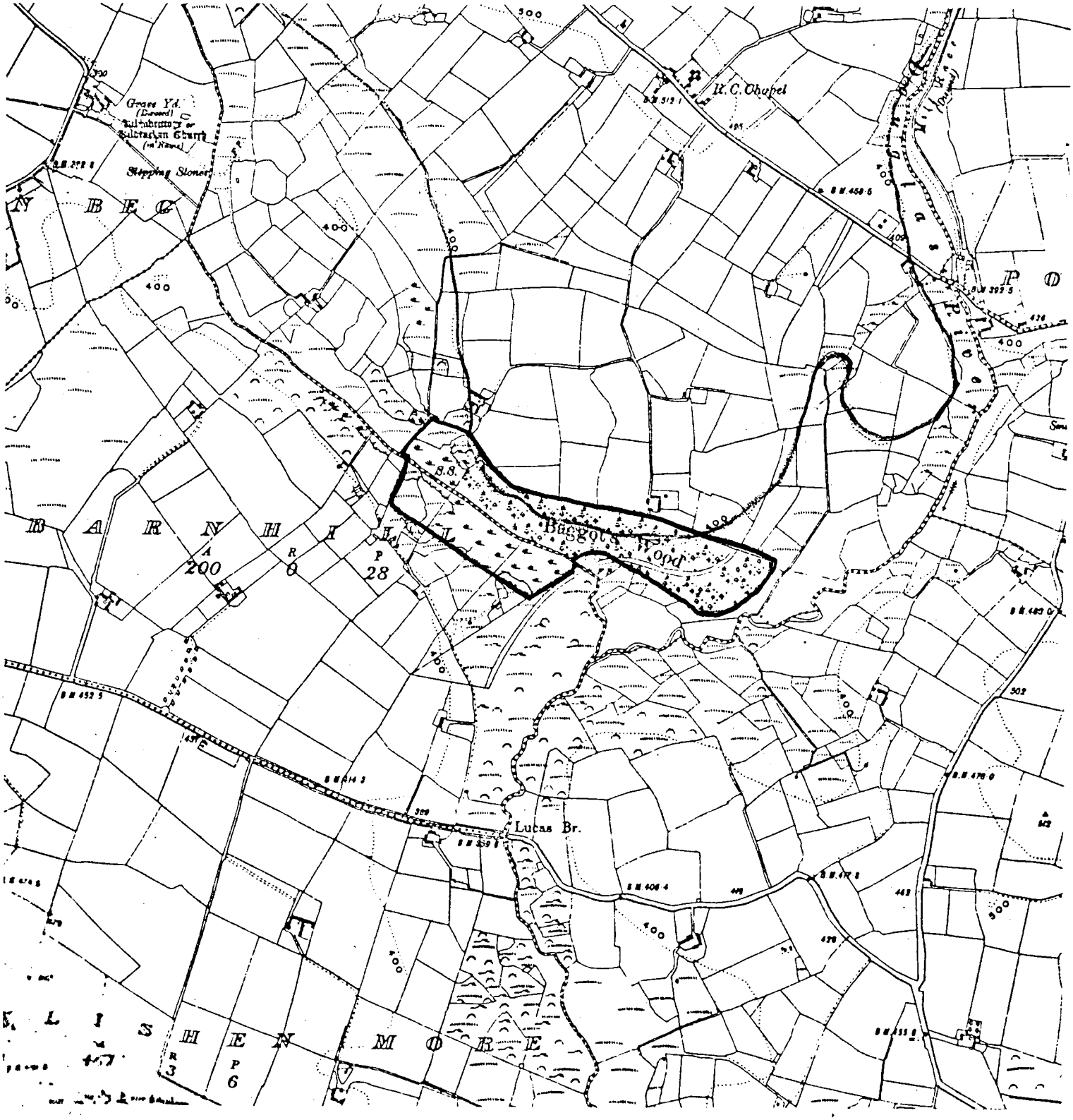
As an oak woodland this site deserves preservation. In the vicinity of the site there are few examples of this community type and the presence of a small marsh adds diversity to the site.

Threats to the Area

As with the other planted deciduous woods in the county the trees at this site are all of the same age and nearing maturity. Their replacement should be considered without delay.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



Recommendations

The likely fate of this wood will be replacement with coniferous vegetation and this should be avoided. Instead deciduous tree cover should be set - beech being a possible alternative to oak. This would produce a larger timber yield, and thus be a more acceptable alternative. As beech is regenerating well elsewhere in the county, it would probably be self-perpetuatin here. From the scientific viewpoint a deciduous wood of any kind would be preferable to a coniferous stand. This site is visible from the Hacketstown Road and represents the only deciduous trees in a predominantly treeless region. For amenity reasons as well as for for conservation therefore a deciduous species should be maintained here. A Tree Preservation Order under the Local Government Planning Act (1963) should be used if necessary to protect the existing trees. Alternatively a management agreement with the owner(s) might be considered.

Name of area	BORRIS ESTATE
Acreage	220 acres
Grid reference	S. 720, 495
Scientific interest	Ecological, botanical and zoological
Rating	Local importance but could be regional
Priority	A

Description of the area

The site is shown on the accompanying map. The woods on the western side of the estate form a thick band adjoining the River Barrow. The woodlands are composed of several tree species but at the northern end of the estate oak predominates though it is not regenerating well. Hazel, beech and holly also occur . The ground flora is typical for oak woods in this part of the country with Scilla non-scriptus(bluebell) in large numbers and wetland plants like Chrysosplenium oppositifolium (saxifrage) occasional where surface water is plentiful.

Evaluation

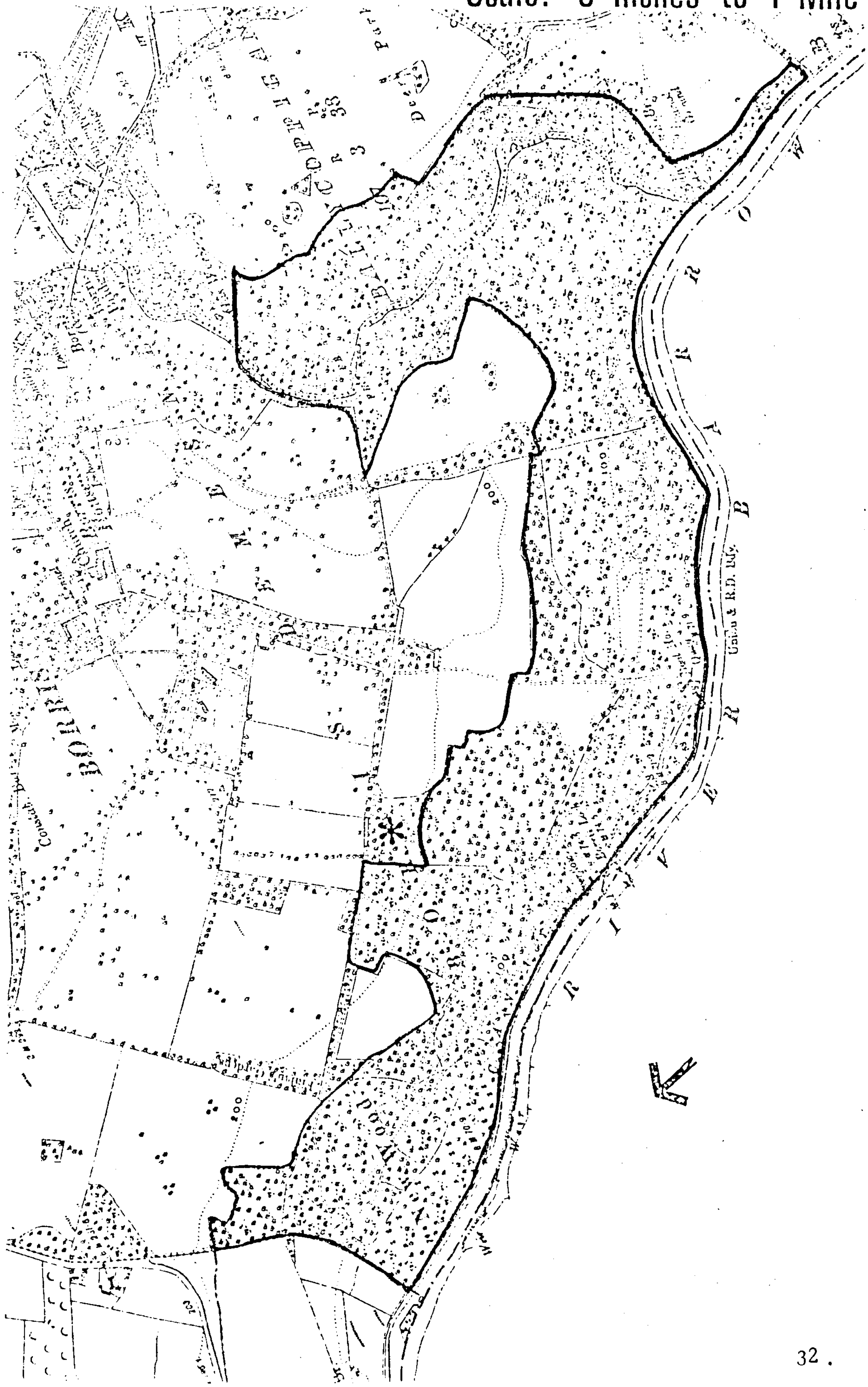
Borris estate contains one of the largest areas of deciduous woodland in Co. Carlow. Although the woods are not in the best condition (there are some stands of conifers and appearances are that more will follow). Passerine birds are diverse and plentiful and insect life in the wood is, like the ground flora, typical.

Threats to the area

Some clearance of the wood has so far occurred to provide more land for agriculture and to make way for conifers in one or two places. The asterisk on the accompanying map indicates a point at which tree clearance has taken place and a feeding lot for cattle has replaced the earlier scrub. Rhododendron ponticum is growing in isolated clumps in the wood and could spread if not kept in check. Rhododendron is in other cases responsible for

MAP SHOWING AREA OF SCIENTIFIC INTEREST –

Scale: 6 Inches to 1 Mile



the destruction of woodlands and is a major pest wherever it gets the opportunity.

Some of the deciduous trees in the wood have reached maturity and are ready to be felled. They should be removed and replaced by the same species.

Recommendations

In view of the large size of this site every effort should be made to maintain it. A mixed tree cover would be desirable if a purely deciduous wood is not to be preserved. In this case the ratio of deciduous to coniferous species should be at least 1.4 (see also p.58). If necessary a Tree Preservation Order could be used to attain this objective.

Name of Area	POLLMOUNTY VALLEY
Acreage	45 (in Carlow) acres
Grid Reference	S. 747, 355.
Scientific Interest	Ecological and Botanical.
Rating	Local Importance.
Priority	A

Description of the Area

The site which is marked on the accompanying 6" map is a steep-sided valley in whose floor a small tributary of the River Barrow flows. The river bed is composed of large boulders which bear an abundant cover of Fontinalis antipyretica (a moss). The soil beside the river in the lower part of the valley is saturated and this part of the site is covered in a rich display of Bryophytes (mosses and liverworts).

On the steep valley sides the dominant vegetation is composed of trees, Corylus avellana (hazel) and Salix spp.(willows). A selection of woodland ground flora also occurs and this has colonized the coniferous woodlands above the road on the eastern side of the site. At the northern end of the site coniferous plantings encroach to the valley floor and, further still, on the western side of the valley surface-soil has been removed.

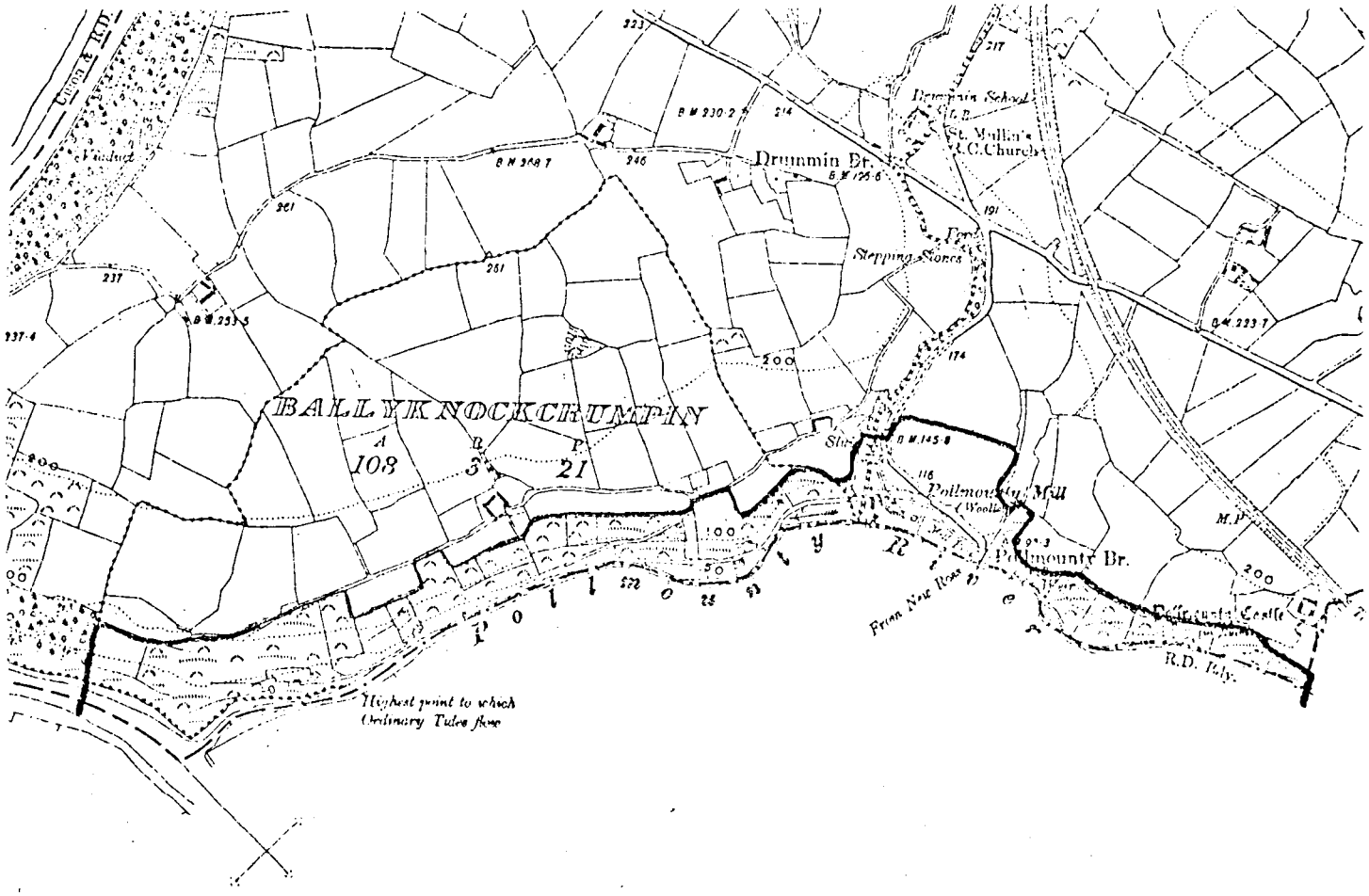
At the lower part of the valley where the stream joins the Barrow the tidal influence of the latter is obvious in the flora and there are elements of a salt marsh community here.

Evaluation

The Pollmounty River formerly contained an interesting mixture of the common calcicole,calcifuge and salt marsh plant species, Scutellaria minor - lesser skull cap; Osmunda regalis - royal fern- Ranunculus omiophyllus - moorland crowfoot; Dryopteris aemula - a fern, (Stellaria palustris - marsh stitchwort; Salix triandra - almond willow) and Trifolium fragiferum - strawberry headed clover; Oenanthe fistulosa - common water dropwort.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



Threats to the Area

Already considerable changes in this valley have resulted from planting with coniferous trees and the casual dumping of rubbish over the walls which separate the valley from the road.

Recommendations

This site is included because its earlier diversity might be restored. It is outside areas of major population pressures so the possibility of conserving it should be good. The first step in a conservation programme would be the preparation of a detailed plan of action and steps in the procedure would be as follows:

1. A resurvey of species listed above and an assessment of their survival. Possibly the reintroduction of some that have disapperared could be considered. There should also be an appraisal of neighbouring areas to ascertain the presence or absence of the flora listed above in other parts of this and other valleys.
2. A relocation of coniferous vegetation possibly involving removal of some trees.
3. Clearance of rubbish which, in time if dumping continues, could cover and thus destroy some of the ground flora.
4. Part of the valley might be set ous as a nature trail.

The Pollmounty valley is under the control of the Department of Lands (Forestry Division) and is thus outside the jurisdiction of the Local Authority. Representations by the Local Authority to the Department are recommended but not the implementation of any of the statutory measures available under the Local Government Planning and Development Act (1963).

Name of area	DECIDUOUS WOODLANDS IN THE RIVER BARROW VALLE
Acreage	27 acres north; south, not calculated but Forestry dat suggests 10 acres.
Grid reference	S. 726, 413 and S 737, 367
Scientific interest	Ecological, botanical and zoological
Rating	Local importance but could be regional
Priority	A

Description of the areas

The sites which are marked with an asterisk on the accompanying map are patches of deciduous woodland and scrub among conifer plantations.

The northern patch of scrub is dominated by beech and elder (Sambucus nigra). The ground flora at this point consists of a typical selection of woodland herbs including Oxalis acetosella (wood sorrel), Dryopteris sp. (a fern), Hedera helix (ivy) and Viola riviniana (violet). The dominant species in the ground flora is Scilla non-scriptus (bluebell).

The southern asterisk marks the location of some of the pre-coniferous deciduous woodland with oak trees of 40 feet. In common with the woods of south Co. Wicklow there is a well established under storey of holly. The herb flora is varied but Rubus fruticosus agg. (bramble) is abundant.

Evaluation

These sites are valuable as reservoirs of native plant and animal life in a predominantly planted, coniferous afforested valley.

Threats to the area

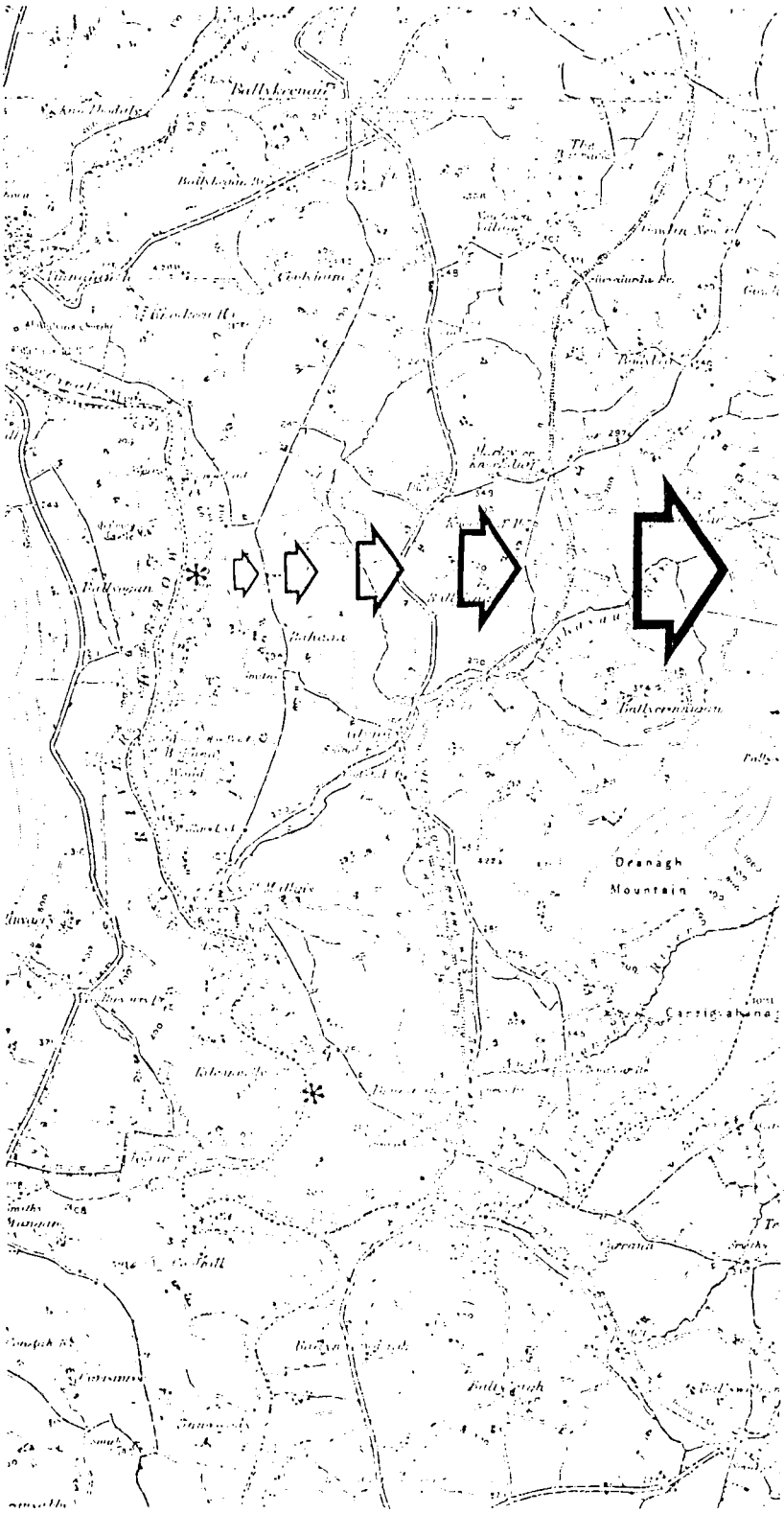
Further clearance of deciduous trees and associated scrub is likely.

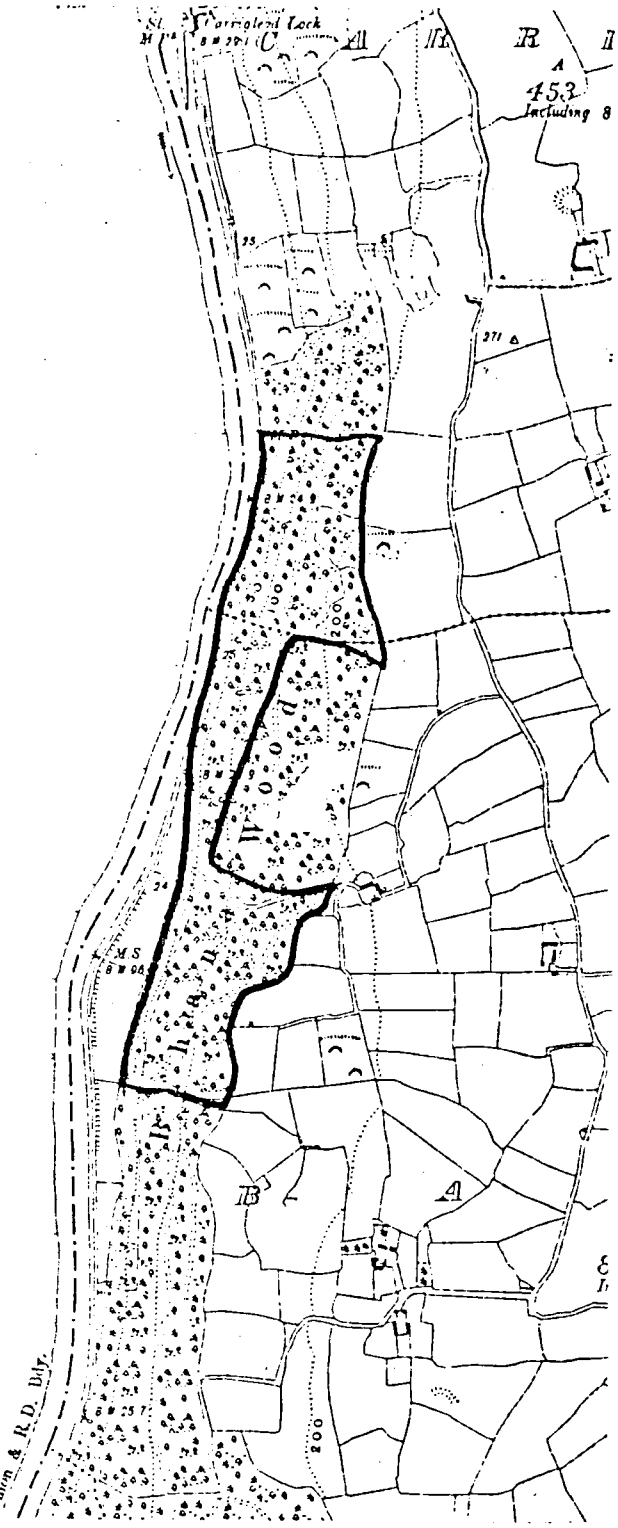
Recommendations

The planted woods in the Lower Barrow valley are composed of coniferous

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

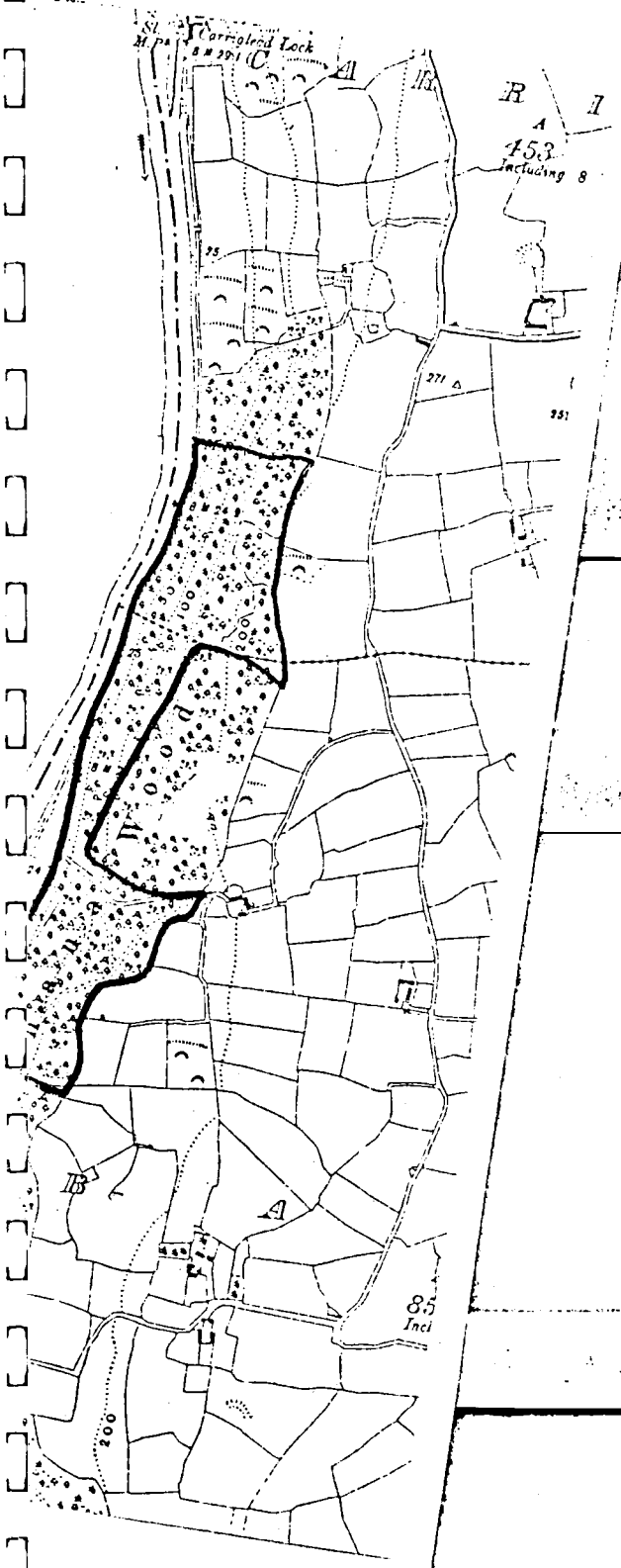
Scale: 1 Inch to 1 Mile





Scale: 6 Inches to 1 Mile

NTIFIC INTEREST —



hes to 1 Mile

Name of Area	THE RED BOG, ST. MULLIN'S
Acreage	34 acres
Grid Reference	S. 730,384
Scientific Interest	Botanical and ecological
Rating	Local importance
Priority	A

Description of Area

The site is a cutover and drained raised bog situated on the Aughavano River. The bog has been considerably altered by human interference and a section of it on the north-west is now planted with conifers. The remainder of the bog is deeply trenched and from part of it peat is being removed and spread over neighbouring fields.

Evaluation

As a result of its alteration, the Red Bog is dry and supports a growth of Calluna vulgaris (ling) and lichens which appear as a typical lichen heath. In places some water is retained by the uneven surface and deep gullies and here Sphagnum has regenerated profusely. There are some birch trees on a part of the bog and these represent a natural climax vegetation.

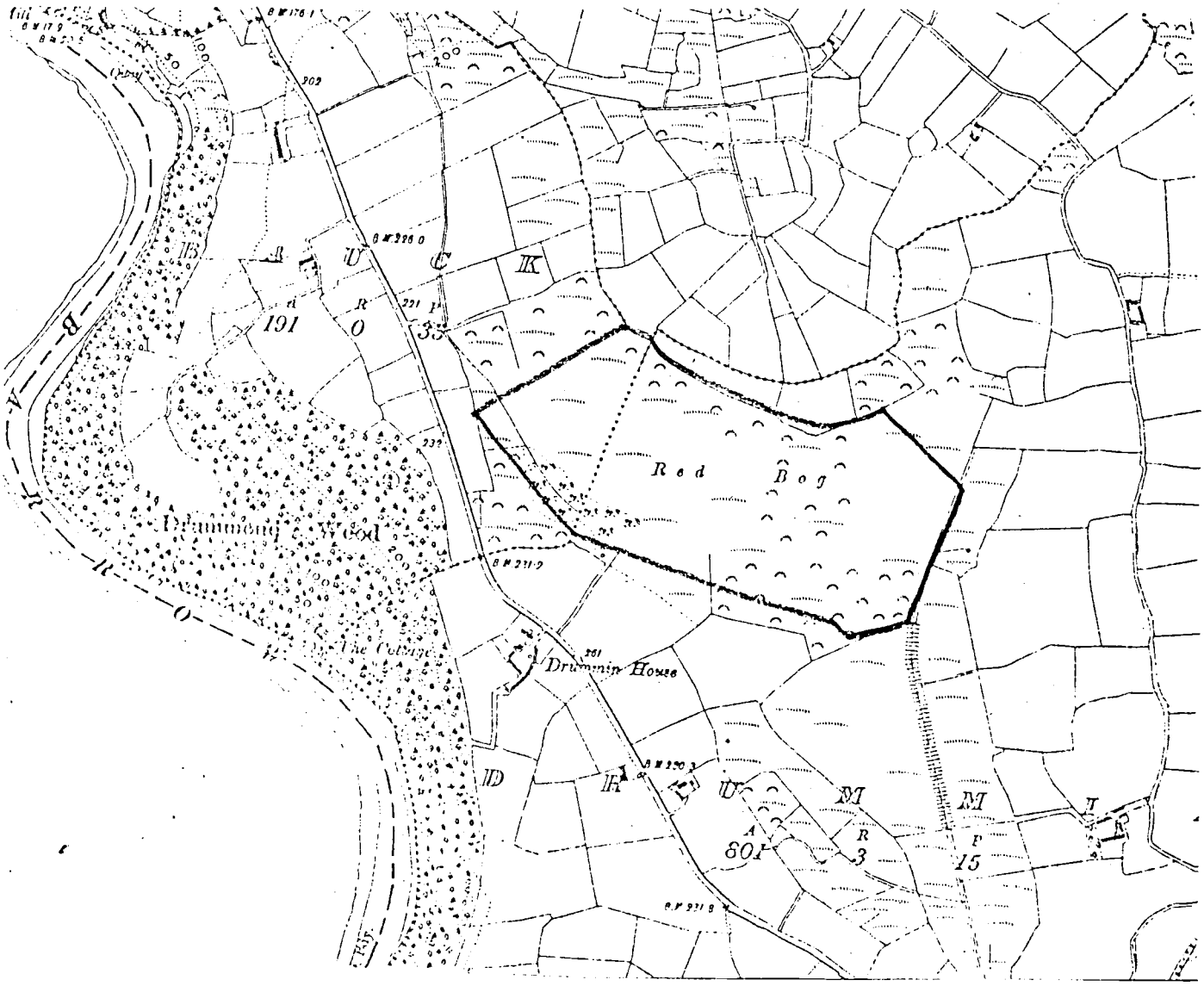
Praeger, who visited this site before drainage began, described it as having a hummock-hollow system on which grew Andromeda polifolia (marsh andromeda), Vaccinium oxycoccus (cranberry), Rhynchospora alba (white beak sedge), Carex limosa (mud sedge), Other species were recorded* in the vicinity. None of the species he lists was found during a brief visit to the site and some are possibly extinct there as a result of a change in habitat. It seems likely, however, that others could remain, although in greatly reduced numbers.

Raised bogs are generally located only in the midlands of Ireland. One of the plants which characterises habitats of this kind is Andromeda and

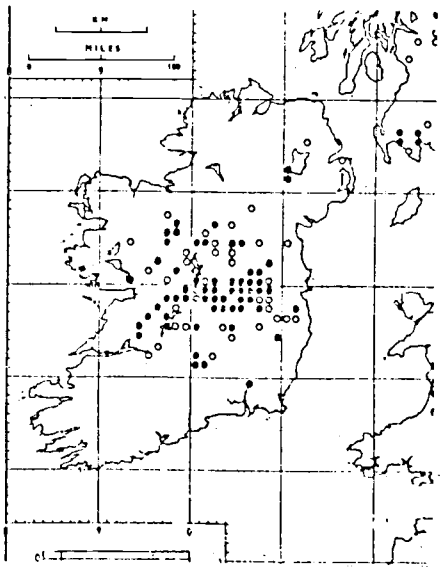
* Thelypteris palustris (a fern)
Filago minima (cudweed)
Fumaria boraei (fumitory)
Campanula trachyelium (narrow leaved bellflower)
Milium effusum (wood millet)
Equisetum hyemale (a horsetail)

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



a map of its distribution in Ireland is given below



The Red Bog, although largely destroyed, is similar in appearance to the Holdenstown bog in Co. Wicklow. These two are outside the geographic area of Irish-raised bogs and, as such, deserve to be preserved in order to maintain their animal and plant associations.

Threats to the area

Continued drainage and peat removal could further reduce the scientific interest remaining at the site. Any accentuation of the existing drainage pattern will increase the biological hazards from fires.

Recommendations

A comprehensive exploitation plan should be drawn up for this site, making provision for the retention of some part of the wetland and the utilization of the rest for afforestation.

Present developments at this relatively small site are proceeding so fast that a re-assessment of it will be required at any time before action is formulated. The urgency of such a reassessment is the only recommendation made here to the Local Authority.

Name of Area	SCRUBLAND ~~SOUTH~~ NORTH WEST OF BORRIS
Acreage	3 acres
Grid Reference	S. 714,517
Scientific Interest	Ecological
Rating	Local Importance
Priority	A

Description of Area

The site is shown on the accompanying 6" map. It is a small hazel coppice containing some scrub birch, a Salix sp and hawthorn. There is a typical woodland ground flora of:

Primula vulgaris	primrose
Rubus fruticosus agg	bramble
Lonicera periclymenum	honeysuckle
Filipendula ulmaria	meadowsweet
Lysimachia nemorum	yellow pimpernel
Viola riviniana	violet
Scilla non-scriptus	bluebell
Ranunculus spp.	buttercup
Glechoma hederacea	ground ivy
Ajuga reptans	bugle
Fragaria vesca	strawberry

Evaluation

From the appearance of other fields in this vicinity they were formerly occupied by scrub interspersed with granite drift. The area was also largely water-logged. Recent agricultural improvements have included the cutting of drainag channels, so that only small patches of marshland survive, and clearance of boulders and scrub by machinery. The site which is listed here is the only remaining scrubland for some distance around.

Threats to the Area

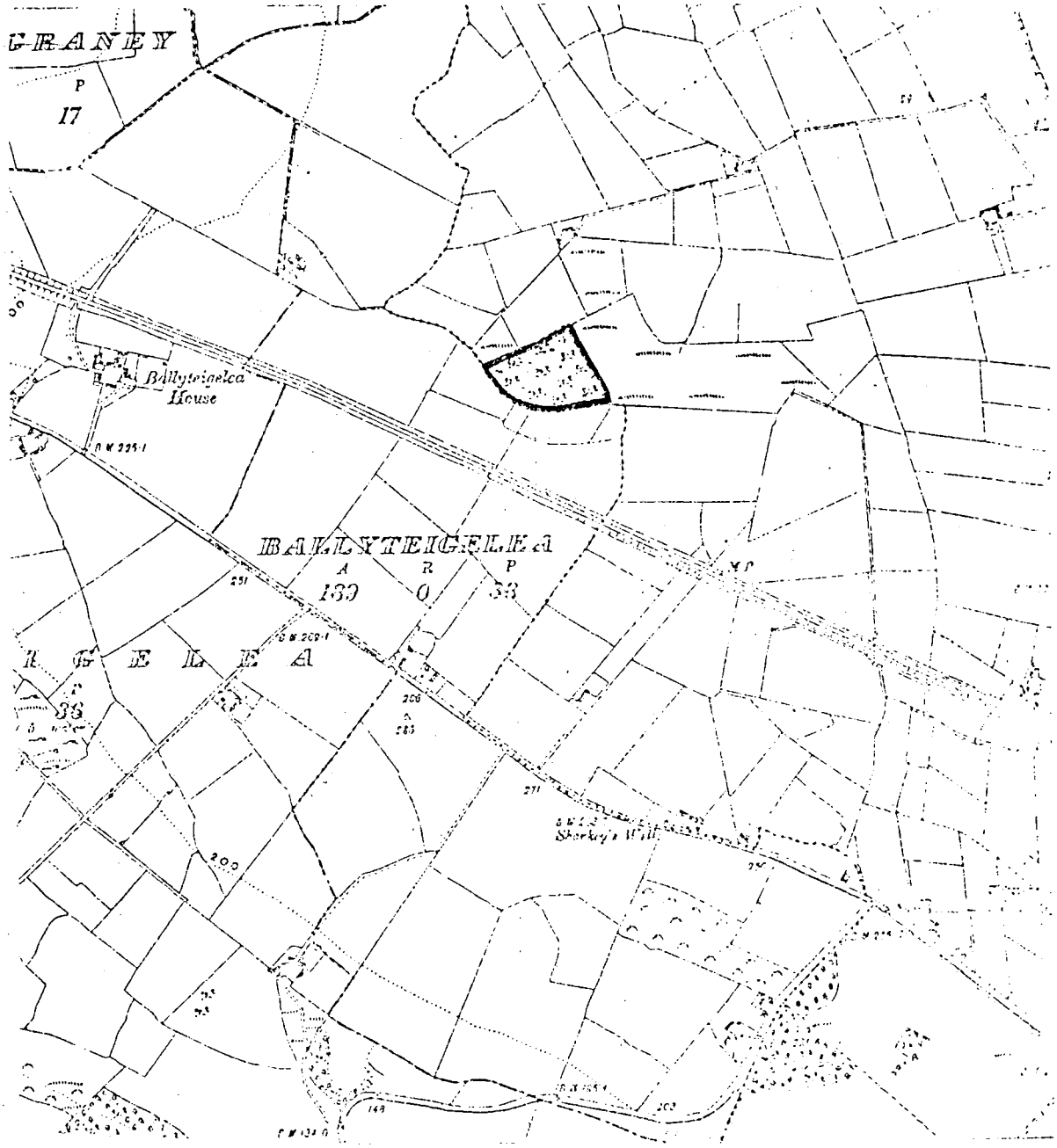
This scrub-patch is likely to meet the same fate as others in the neighbourhood

Recommendations

While it would be desirable to preserve this and other similar patches of scrubland, action should not be taken on them before larger and more important areas have been dealt with.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



Note: Precise location of the boundaries of this site require confirmation.

Name of Area	MOUNT LEINSTER MOUNTAINS
Acreage	5000 acres
Grid Reference	S. 820,520
Scientific Interest	Ecological, botanical, zoological and ornithological
Rating	Local importance
Priority	A

Description of Area

The mountainous area is shown on the accompanying one inch map. It is the highest land area in Co. Carlow and, on the Carlow side, its slopes are covered with a typical moorland plant cover in which Molinia caerulea (purple moorgrass) is dominant. The higher parts of the mountain are covered in a Calluna vulgaris (ling) dominated association of plants. Some parts of the higher moors have been planted with coniferous trees.

Evaluation

The Mount Leinster chain is the only example of moorland above 1,000 feet in Co. Carlow. Its plant and animal (invertebrate and bird) communities are typical of uplands and the growth of heather is particularly profuse, rivallir some of the larger areas of heather cover in Co. Wicklow. Calluna is an important food plant of grouse and it is noteworthy that this game bird is conserved and managed in parts of southern Wicklow on similar terrain. Several species of unusual plants are recorded from the Mount Leinster site* and hen harriers have nested among the heather.

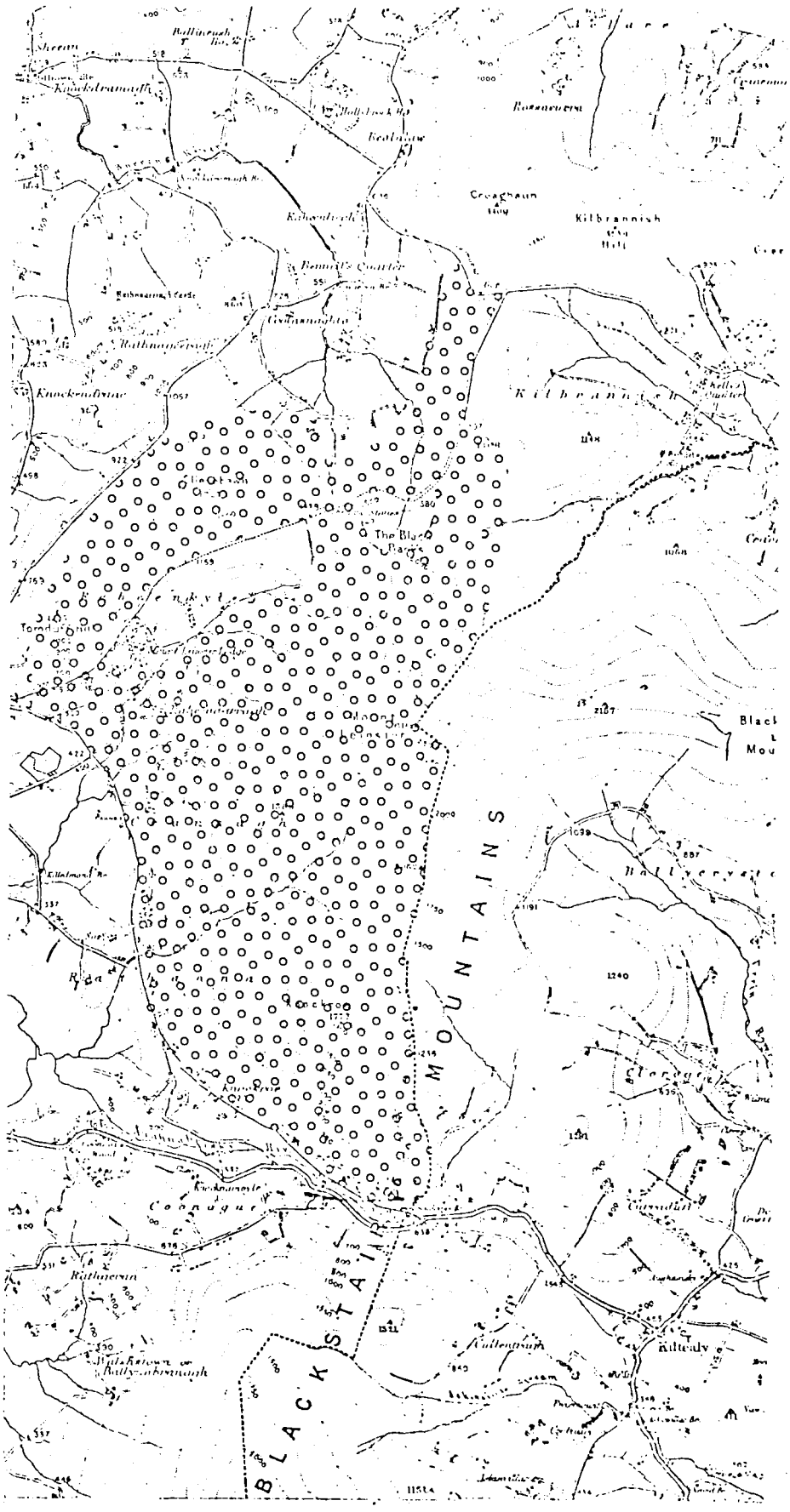
Threats to the Area

It is possible, even likely, that the existing limits of coniferous plantations will be extended to encompass more of the high Calluna zone. The associated spreading of fertilisers would change the nature of the ground flora and possibly lead to peat erosion in time. If fertiliser spread were accomplished by aircraft, overshooting the existing target area could have consequences on the unforested parts of the moor.

* Thelypteris oreopteris (mountain fern), Ranunculus omiophyllus(crowfoot), Hypericum elodes (bog St. John's wort), Pignicula lusitanica (butterwort), Saxifraga stellaris (starry saxifrage).

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 1 Inch to 1 Mile



Ornamented area is the area of interest.

Recommendations

Alternative management plans for this area should be compiled and considered without delay. If land use in the area is to change consideration should be given to the best way of doing this and incorporating into any new techniques provisions to maintain as characteristic a fauna and flora as possible. Alternatively characteristic areas could be selected for preservation and the remainder of the area might then be planted.

A Conservation Order under the Local Government, Planning and Developmen Act (1963) should be used if a small, botanically diverse area is to be preserved. Before this is done hosever, the remaining heather dominated land should be considered for a single use only.

Name of Area	BIRCH SCRUB AT CLONGARRAN
Acreage	not calculated
Grid Reference	S. 913, 639.
Scientific Interest	Ecological
Rating	Local importance
Priority	B

Description of Area

The location, though not the precise boundaries of the scrub, are marked with an asterisk on the accompanying 6" map. The canopy was not inspected in detail but appeared to be fairly closed. An adjoining coniferous plantation contains some oak which was left as a nurse-species when the ground was originally prepared for replanting.

Evaluation

Again this scrub, and the deciduous trees included in the larger coniferous stand are remnants of an, at one time, larger area of broad leaved trees.

Threats to the Area

Clearance of at least part of the birch scrub is a possibility and the scientific values of the vicinity could be further disimproved by felling the remaining oaks.

Recommendations

Consideration should be given to enhancing the existing values of the site by:-

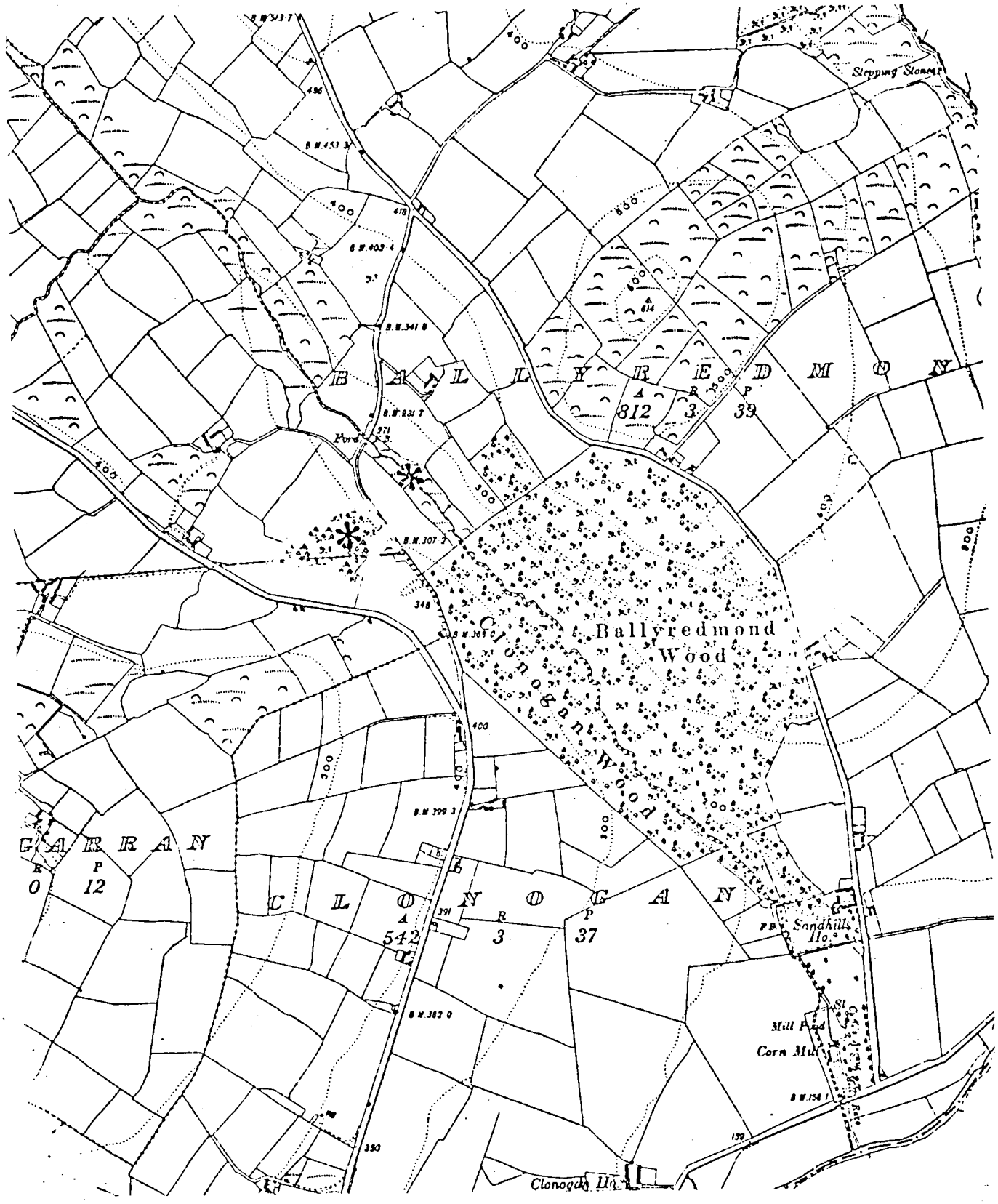
(1) Planting a higher proportion of deciduous trees among the existing conifers.

(2) Maintaining the largest and most closed area of the scrub.

These objectives could be achieved by application of a Tree Preservation Order under the Local Government Planning and Development Act (1963) but this should not be considered before larger areas have been dealt with.

MAP SHOWING AREA OF SCIENTIFIC INTEREST

Scale: 6 Inche



Name of Area	SLANEY VALLEY AT ARDATTIN
Acreage	300 acres
Grid Reference	S. 865, 670.
Scientific Interest	Ecological, botanical and zoological.
Rating	Local importance
Priority	B

Description of Area

The site is a U-shaped valley on the Slaney River. Some of the flatter parts of the area are used as grazing land but the steeper sides are covered in a thick scrub out of which some taller trees protrude. . Oak is the largest of the deciduous trees and there are also some high conifers. The scrub layer is provided by holly and hazel and the herb flora includes the common species normally found in such situations.

Evaluation

The uneven terrain in this area makes it unlikely that grazing land will replace the existing scrub. The scrub thus represents a remnant of uncultivated ground in an otherwise tilled and grazed region.

Threats to Area

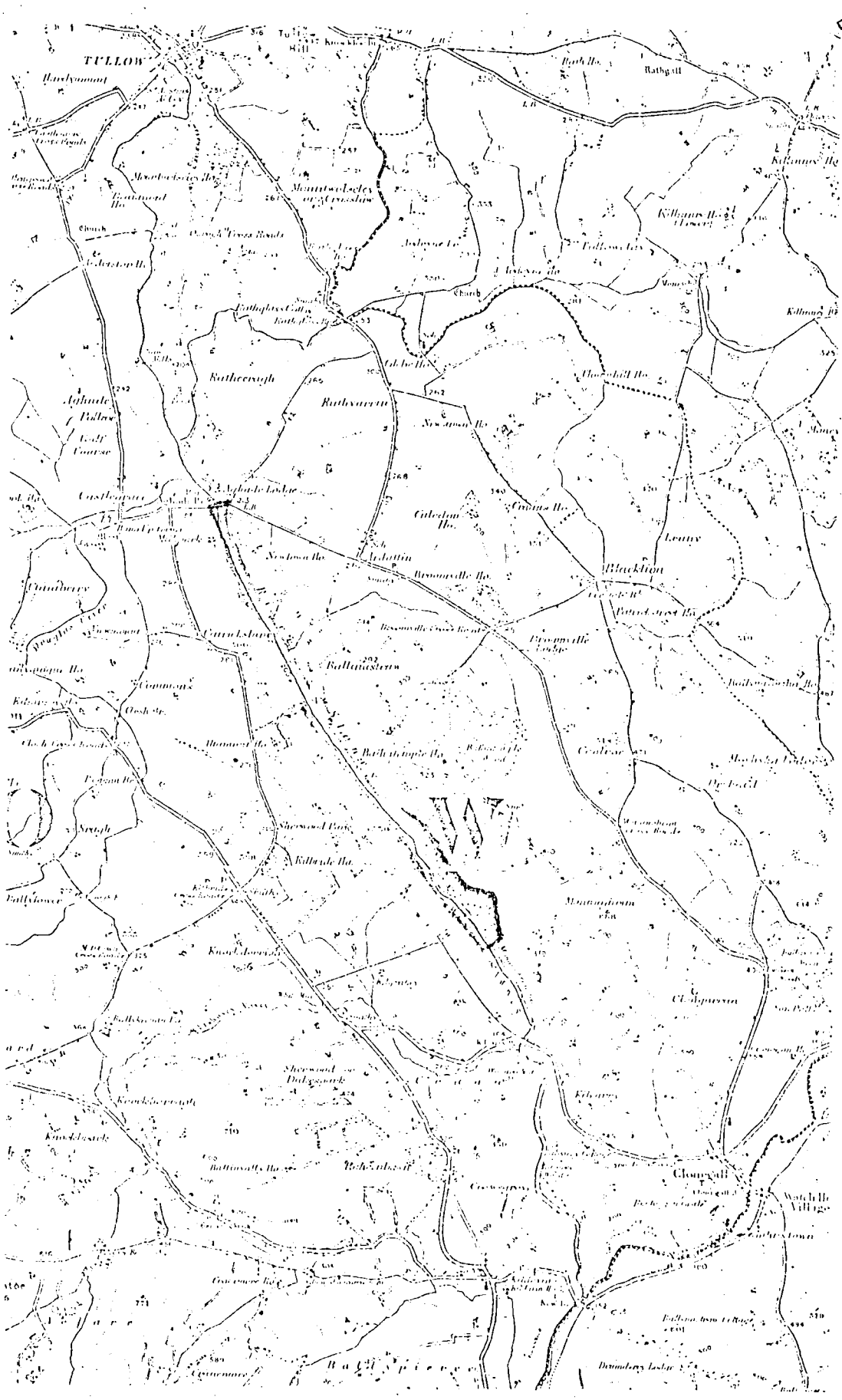
Down-river from this site conifers have been planted and this form of land use co take over the area of interest.

Recommendations

General plannning control should be exercised in order to preserve this small part of the Slaney valley in its present state. The low values of the site in scientific terms do not however warrant further action to preserve it.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 1 Inch to 1 Mile



Name of Area	TULLOW PONDS
Acreage	5.5 acres
Grid Reference	S. 839, 721
Scientific Interest	Ornithological and botanical
Rating	Local Importance
Priority	C

Description of Area

The site is composed of several shallow ponds which are probably flooded seasonally. There is virtually no vegetation around the water bodies which are thus open; the fields surrounding the site afford some protection to feeding birds.

Evaluation

When the ponds were visited small numbers of swans, ducks, gulls and moorhens were recorded. It is unlikely that this area will be converted to other agricultural uses in the future and the ponds thus represent a small wildfowl habitat.*

Recommendations

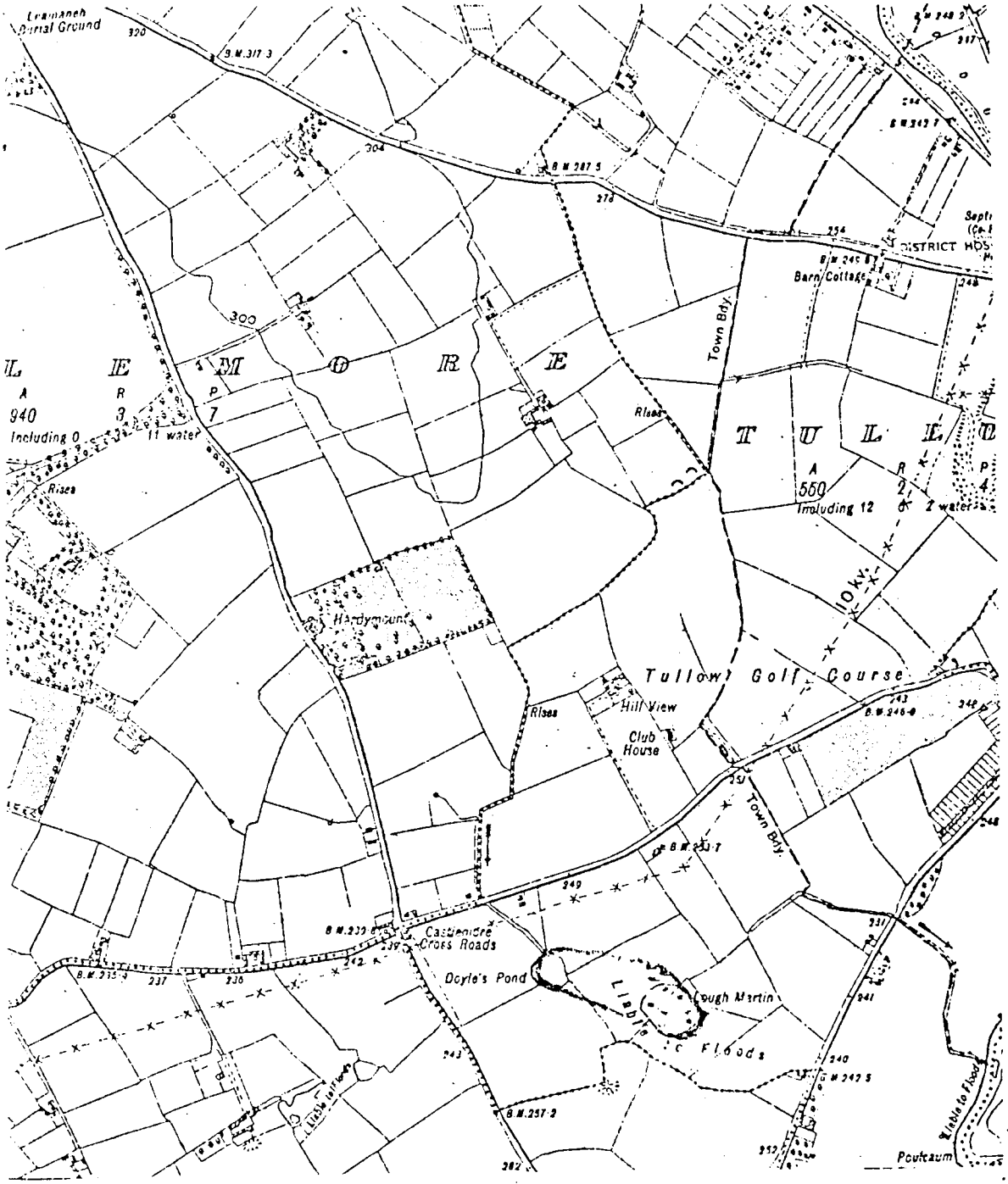
Although it would be desirable to retain the existing features of scientific interest at this site, the small size of the area reduces its potential. Perhaps the most valuable long term improvement at the site would be a more permanent water table. It might be possible to obtain this artificially. Further enquiries on this aspect should be attempted before more specific recommendations are made.

---

* A rare plant species, Carex vesicaria, is said to occur but was not seen when the ponds were visited.

MAP SHEWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



Name of Area	CLOUGHRISTICK'S WOOD*
Acreage	23 acres
Grid Reference	S. 701, 698.
Scientific Interest	Botanical, ecological, zoological and ornithological.
Rating	Local Importance
Priority	C

Description of Area

This is an interesting area of wet woodland forming a fringe on the river Barrow where it flows through Milford. The wide flood-plain is occupied by a variety of trees, both coniferous and deciduous. Oak and beech occur but both are outnumbered by a Salix sp. (willows). Hazel is abundant in the wood and the herb flora comprises a range of wetland and woodland species.

Evaluation

This stand of trees is, by standards prevailing in Co. Carlow, quite large. Its passerine bird and insect fauna are abundant and there is a typical, if unremarkable, herb flora.

Threats to Area

None is obvious here at present, the waterlogged soil on part of the site being non-condusive to utilizing the land for grazing or forestry purposes. However, the area should be kept under review.

Recommendations

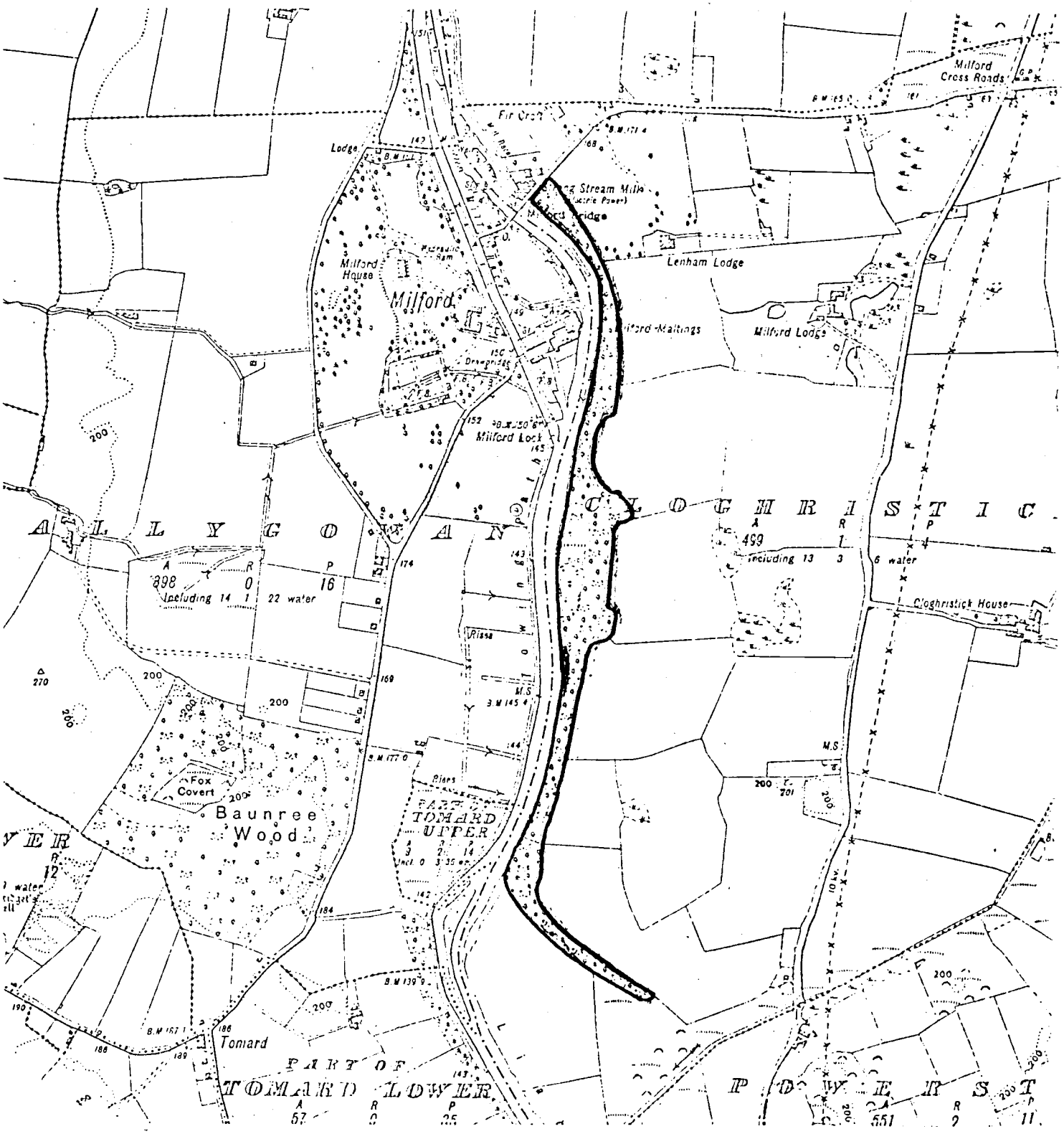
Some improvements to the wood such as the removal of dead trees would be useful in increasing its production of timber and clearing the area for educationa purposes.

---

* Uncommon plants which are recorded from Milford - though they have not yet been verified at this site are:-
Linum bienne (pale flax), Minuartia hybrida (fine leaved sandwort) and Linaria viscida. The last two species are aliens which occur on the railway line.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 inches to 1 Mile



Name of Area	BAHANA WOOD
Acreage	185 acres
Grid Reference	S. 723, 395.
Scientific Interest	Ecological, botanical and zoological
Rating	Local importance
Priority	C

Description of Area

The site is shown on the accompanying six inch map. The woodland is one of the best developed coniferous woods in the Barrow Valley. The trees are as high as 20 m (60 feet) and permit light to reach the ground flora which is consequently well developed. Passerine birds are abundant and seven spec were noted when the woods were briefly inspected. Pheasant, fox and badger also occur.

More recent plantings in the wood are of coniferous seedlings interspersed with some deciduous trees (oak). Felling of the larger trees is taking place at a slow rate and block clearance rather than clear-felling appears to be the procedure.

Evaluation

Bahana wood is more noteworthy as a site which could be managed to develop interesting features than as an area which at present merits conservation. The practise of planting and retaining deciduous trees is to be encouraged but these should be set in larger numbers and could usefully be interspersed throughout a stand rathern than planted as a fringe round coniferous material.*

Threats to the Area and Recommendations

No threat to the area is obvious as long as it is managed as a wood. As is stands the site could be planted and felled to produce a commercial yield at the same time as providing an interesting and educational 'reserve'. Certain methods and principles of procedure should be incorporated into the future

---

* Two uncommon plant species Polypodium australe (a fern) and Milium effusum (wood millet) are recorded from this vicinity.

management of the site:-

1. There should be an even interspersion of deciduous trees with coniferous species in a ratio of approximately 1:4. Interspersions of this order have been observed to contain moderate amounts of ground flora and large numbers of invertebrates when the trees are 20 feet high or so. Planting distances and different tree species will create different sub-canopy conditions of course. A greater proportion of deciduous trees would be desirable.
2. Clear felling of neighbouring blocks of larger than one acre should be avoided and instead smaller non-contiguous areas should be harvested.
3. The spacing of young trees should provide for a reservoir of herb species on the woodland floor i.e. light penetration should be permitted by preventing overcrowding. Some consideration might also be given to the growth of larch in lieu of other conifers; the genus Larix sheds its leaves during the winter months and so allows light penetration resulting in proliferation of ground flora.
4. In time the access to the wood could be enlarged and improved and a nature trail might be developed.

The fact that this area is large together with its recreational and educational potential would suggest it should be used for amenity as well as commercial purposes. The Local Authority should confer with the Department of Lands on its future as soon as possible.

Name of Area	HAZEL SCRUB IN RIVER SLANEY VALLEY.
Acreage	22 acres
Grid Reference	S. 898, 610
Scientific Interest	Ecological, botanical, and zoological
Rating	Local Importance
Priority	C

Description of Area

The site is occupied by a thin strip of bankside vegetation on the eastern side of the river valley. The greater part of the vegetation is composed of hazel although other deciduous trees also occur. The ground flora includes the usual range of herb species, dominated in this case by bluebell.

Evaluation

This area of scrub is without distinctive features but containing deciduous trees in an otherwise cultivated area.

Threats to the Area

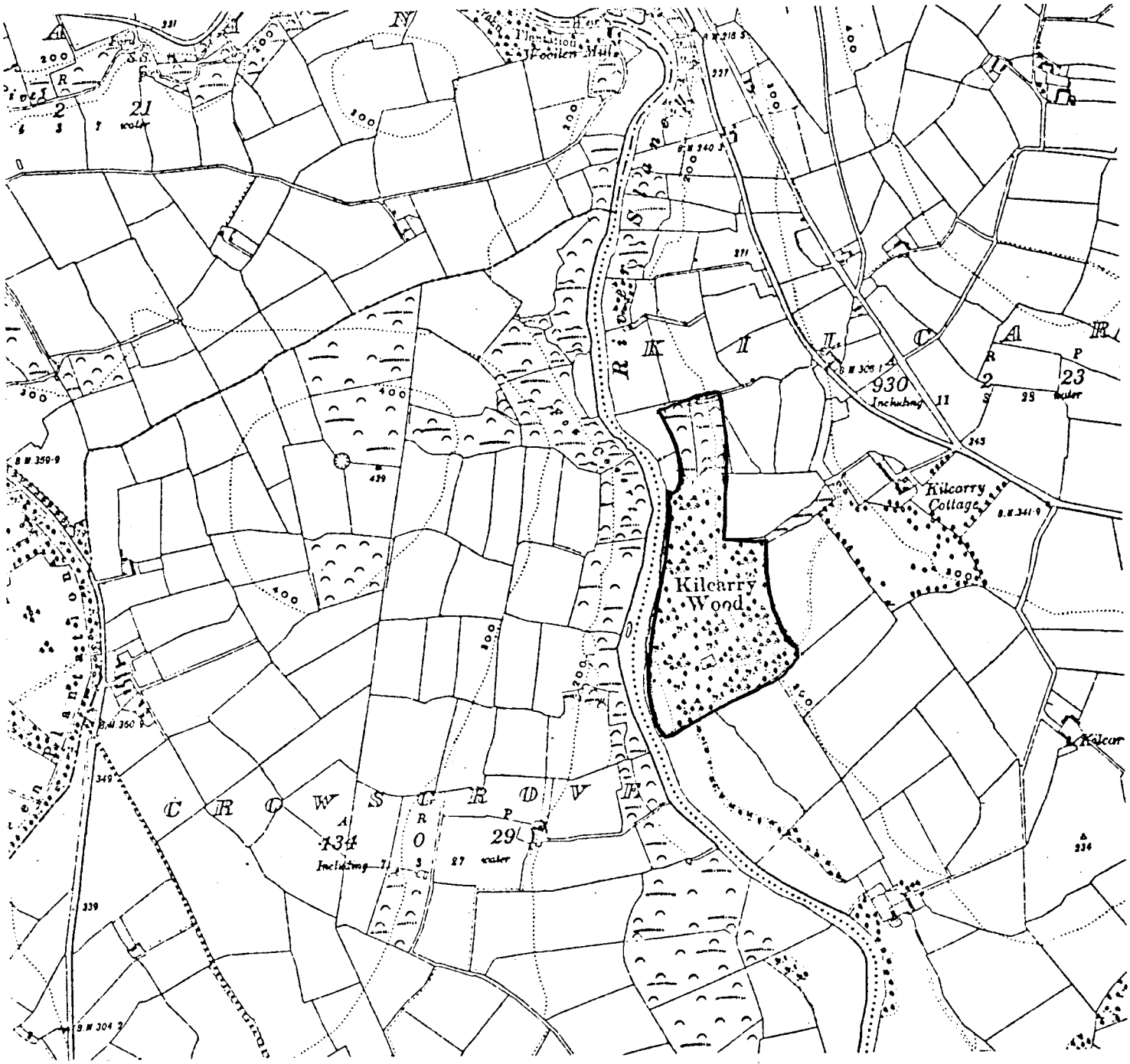
Some of the scrub has been cleared for agricultural purposes and this is likely to continue especially where the terrain is flat.

Recommendations

Any further plans for this valley should include provision for the scrub remaining there. The low biological values of this stand however do not warrent any official action on it.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



Name of Area	BALLYNAKILL MARSH
Acreage	5 acres
Grid Reference	S. 747,602.
Scientific Interest	Ecological and Ornithological
Rating	Local Importance
Priority	C

Description of Area

The site whose location is shown on the accompaning six inch map is a small pond at the western end of which there is a profuse growth of Scirpus lacustris (bulrush) and elsewhere the flora is Potamogeton sp. (pond weed), Menyanthes trifoliata (bogbean), Equisetum fluviatile (horse tail) and Lythrum salicaria (loosestrife). The pond is enclosed in a natural hollow between two roads.

Evaluation

Notices which have been placed at intervals in the pond announce it is a wildfowl sanctuary. It is not clear whether the sancturay is purely for preservation or shooting purposes.

When the area was visited the following wildfowl and waterfowl were counted: 4 mallard, 6 waterhens, 1 swan and some gulls. This count is low. The situation could however possibly be improved by screening the pond with vegetation and possibly by the provision of nesting boxes.

Threats to the Area

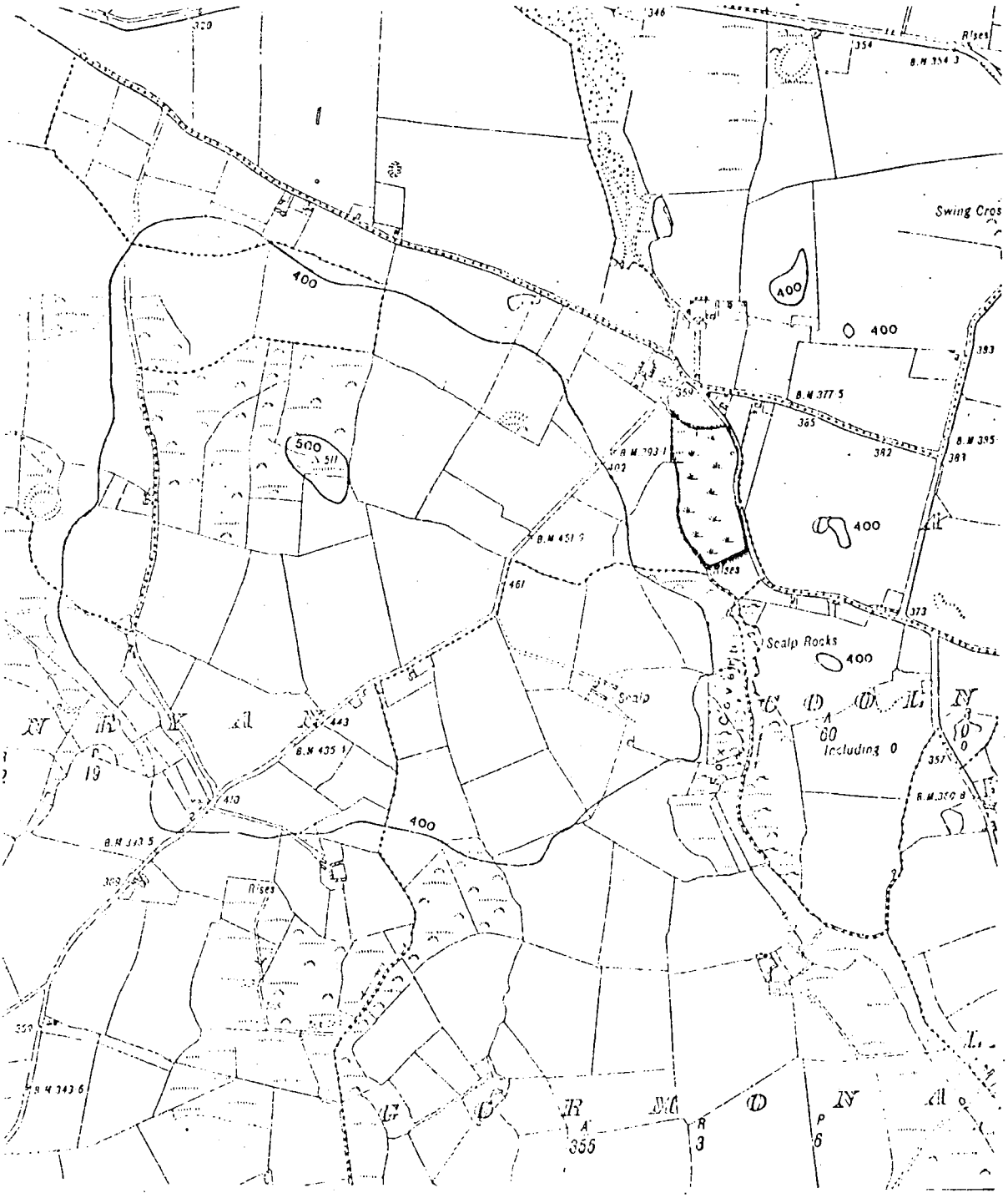
Over-shooting is the only obvious threat.

Recommendations

The creation of sanctuaries for whatever purpose is to be encouraged but the limited interest of this site does not warrant any official action.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



SECTION G

Sites in Central Carlow Which Might in Time Become Worthwhile Conservation Areas.

In the course of the survey several areas of rough and non-cultivated ground were noted. These were hilltops where large numbers of granite boulders lie about and have not been cleared. Among the boulders some small trees and bushes are growing : oak, beech, birch and hazel. In some circumstances these would provide a woodland habitat but in the two sites listed below the trees are small and too scattered to form a closed canopy. The ground flora inlcudes a mixture of woodland species but because of the open nature of the tree cover bracken (Pteridium aquilinum) predominates.

Location of areas described (See attached maps):

1. S. 758,603.
2. S. 752,653.

Evaluation

Both areas are listed because they contain a natural flora and fauna. Because of their rugged nature they are unlikely to be used for agricultural purposes. In addition they are two areas in central Co. Carlow where natural non-cultivated vegetation and animal communities occur.

Threats to Area

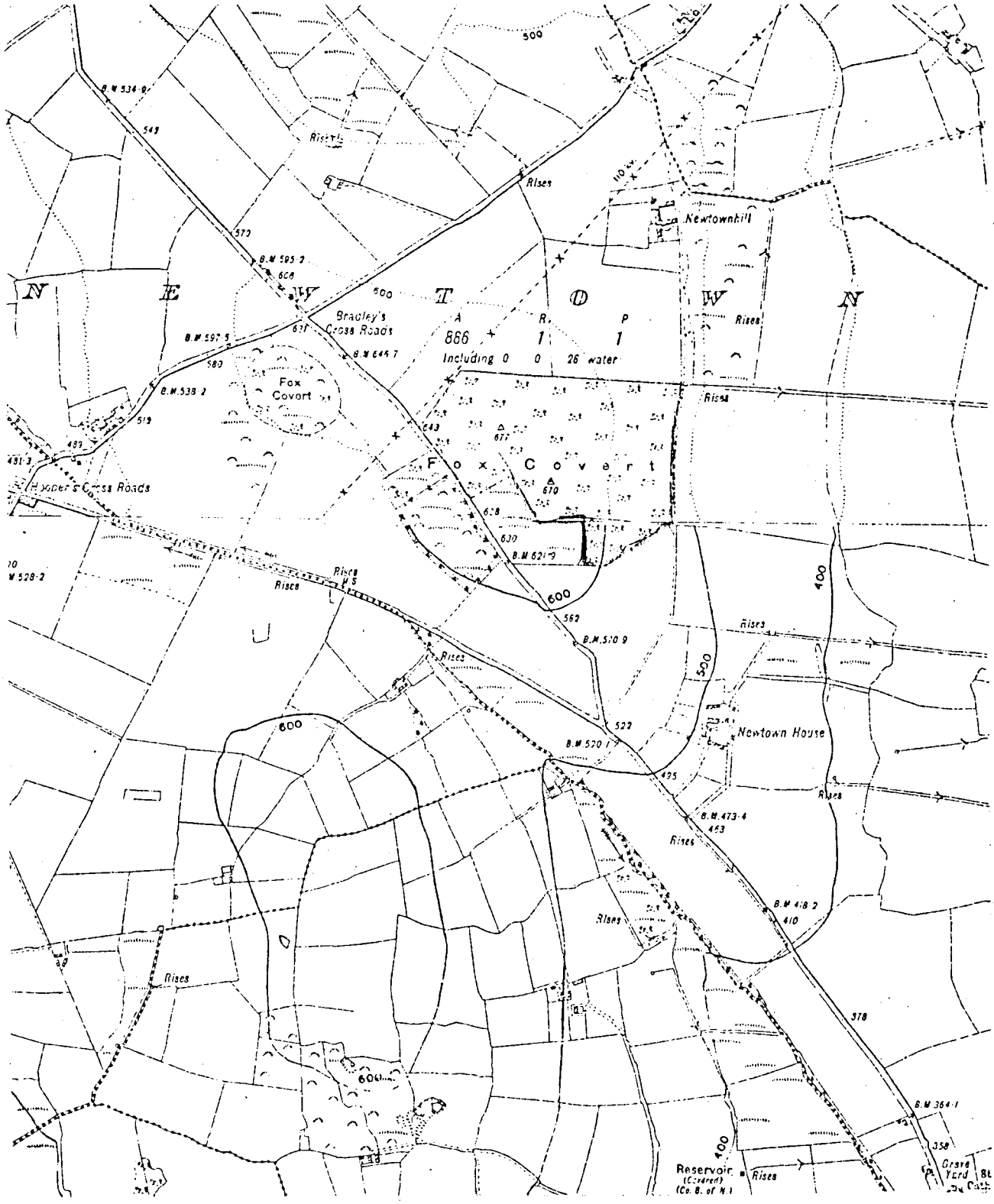
In similar habitats in other parts of lowland Co. Carlow there has been widespread clearance of the granite drift which is responsible for a site being uncultivated. The advent of modern machinery facilitates such clearance which, once it was taken place, leaves the way open to economic agricultural management and the application of fertilisers which in turn gives grasses an advantage over other forms of vegetation.

Recommendations

The feasibility of clearing these sites and the benefits of leaving them to develop as scrublands should be examined.Pending a full evaluation no further action should be taken.

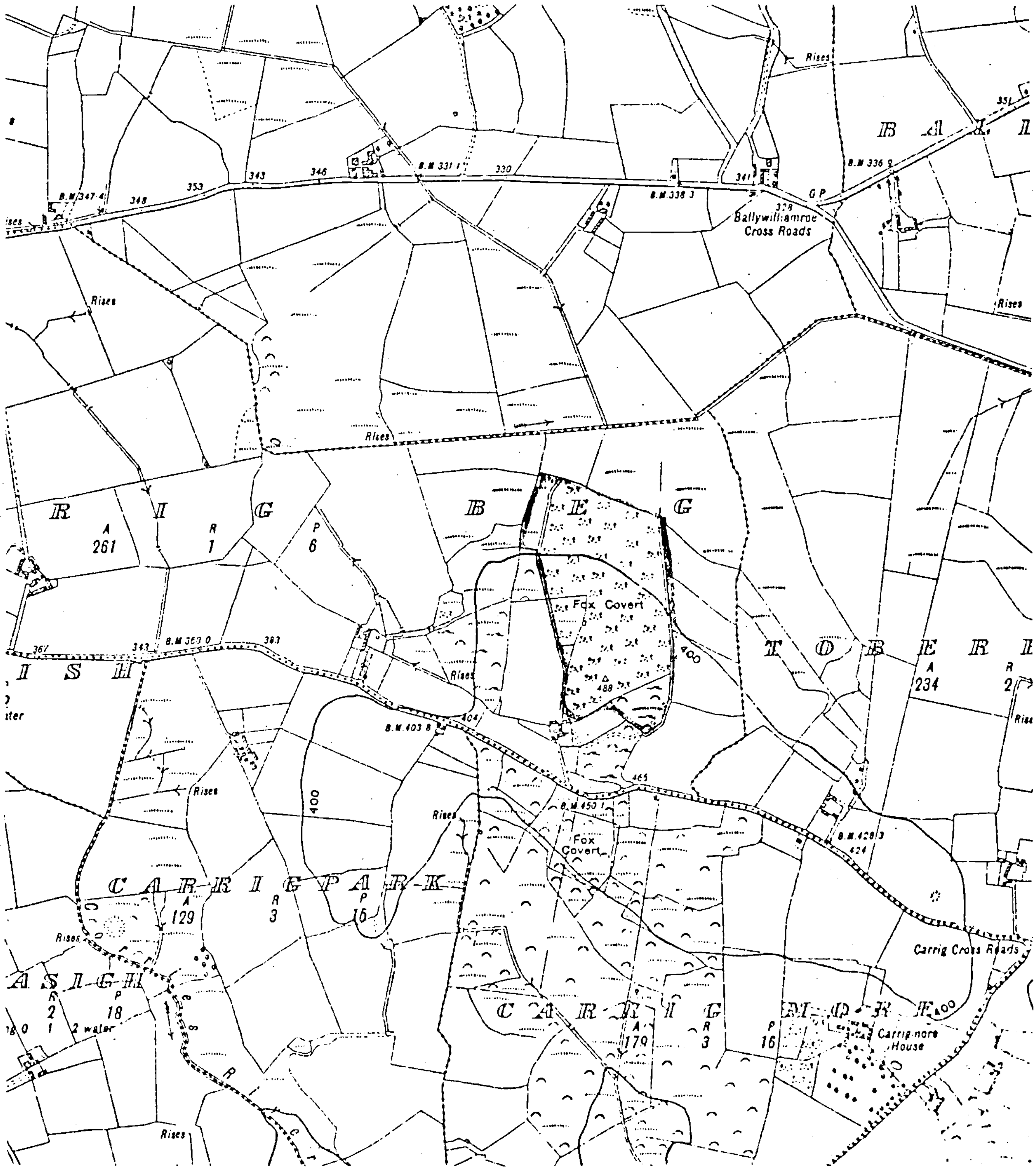
MAP SHOWING AREA OF SCIENTIFIC INTEREST — 1

Scale: 6 Inches to 1 Mile



MAP SHOWING AREA OF SCIENTIFIC INTEREST — 2

Scale: 6 Inches to 1 Mile



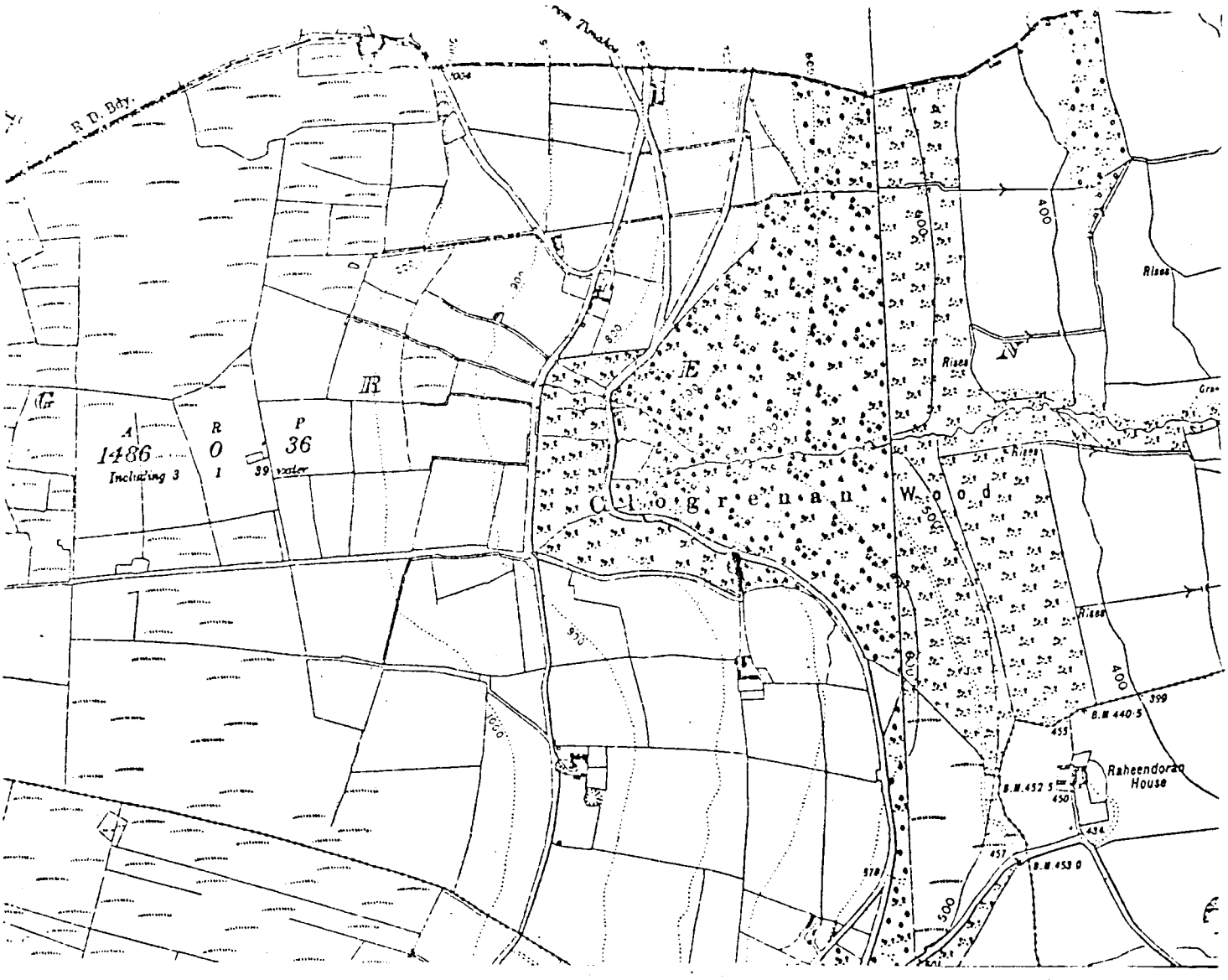
3. Clongrenan Wood. S.680, 728

Description and evaluation of the area. This small scrubland, like the two preceding sites, has developed from grassland and now contains small trees, shrubs and some ground flora. In time this could develop to the closed canopy stage with the consequent elimination of bracken (Pteridium aquilinum) which now dominates the more open spaces between the trees. The area at present contains no noteworthy biological features, either botanical or zoological, apart from a grazed flora which supports a typical insect fauna. It is however the only remnant of deciduous vegetation in an area which has been planted up with conifers.

Recommendations are as for two previous areas.

MAP SHOWING AREA OF SCIENTIFIC INTEREST – 3

Scale: 6 Inches to 1 Mile



Section H.

Sites requiring further exploration

Botanical records particularly have sometimes entered the scientific literature in a vague and imprecise form. An example appears in Section E (Cloughristick's Wood) where plant records from the vicinity, but outside the site, are included. Others, coming from Leighlinbridge and other areas, are added here; effort should be expended in their location:

Leighlinbridge	S. 690,655	
Cynoglossum officinale		green hound's tongue, a rare species, is recorde from a gravel ridge in this locality
Calaminta ascendens		common calamint, normally occurring in calcarec banks, was formerly found by roadside here.
Torilis nodosa		knotted hedge parsley, is a locally common species found in this vicinity.
Orobanche minor		lesser broomrape, parasitic on certain Angiosperms, occurred and possibly still does, ir fields close to Leighlinbridge.
Trifolium fragiferum		strawberry clover, occurs commonly, locally in Ireland. At Leighlinsbridge it has been recorded near the canal.
Carlow	S. 715, 766	
Chenopodium rubrum		grows on lime slurry from the beet factory. It is an introduced species.
Roadside, Borris -		Mount Leinster
Papaver argemone		long rough-headed poppy, found normally in cornfields and dry places.
Stachys palustris X sylvatica		a woundwort hybrid.

Killedemond S. 775,519

Cystopteris fragilis — brittle bladder-fern. A native species which is widespread but uncommon.

Orobanche minor — lesser broomrape, parasitic on other vegetation.

Potentilla procumbens — creeping cuinquefoil; uncommon throughout the British Isles.

Bagenalstown S. 690,615

Myostis ramosissima — early forget-me-not, locally common in the British Isles. Occurs in the vicinity of Bagenalstown on walls.

Kilcarry Bridge S. 894,625

Galeobdolon luteum — yellow archangel, a rare species occurs at this point.

Gowlin S. 77,44.

Asplenium obovatum — lanceolate spleenwort. Formerly taken here.

East Bank of the Barrow above Leighlinbridge S. 695,665.

Rorippa sylvestris — Here a species of watercress was taken by earlier workers. Elsewhere it is rare.

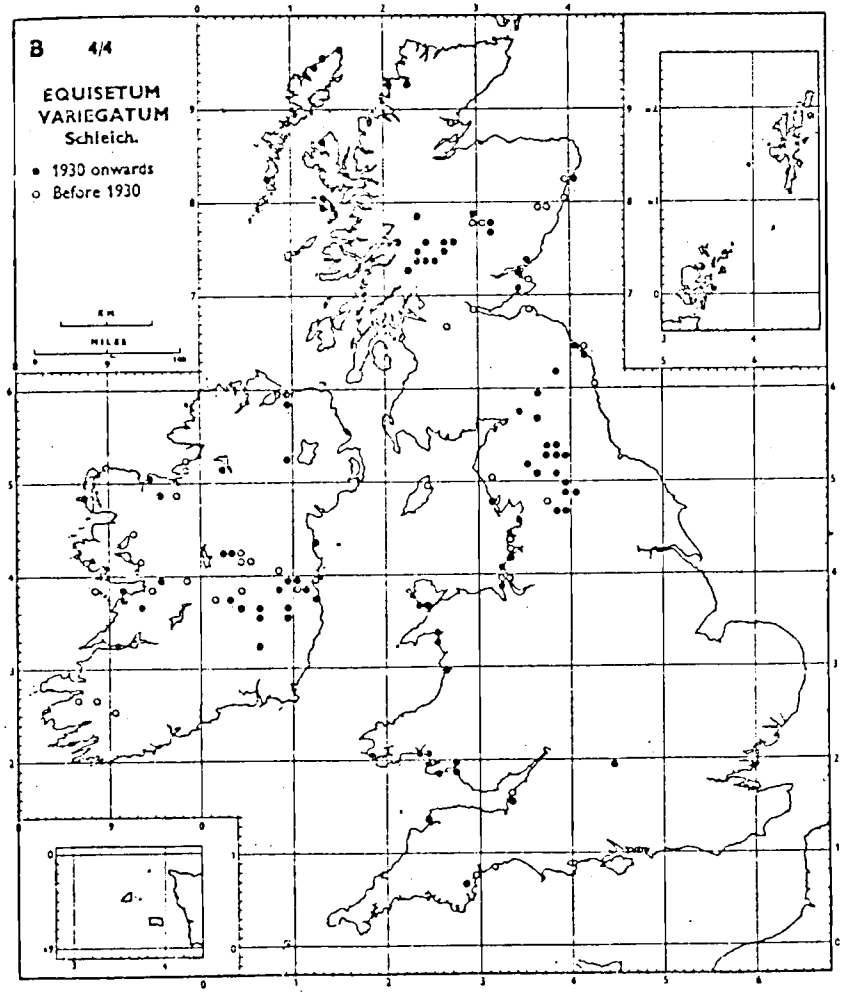
SECTION J A LIST OF RECOMMENDATIONS FOR SITES LISTED IN SECTION E
SPECIFIED ACTION NEED NOT BE IMMEDIATELY TAKEN

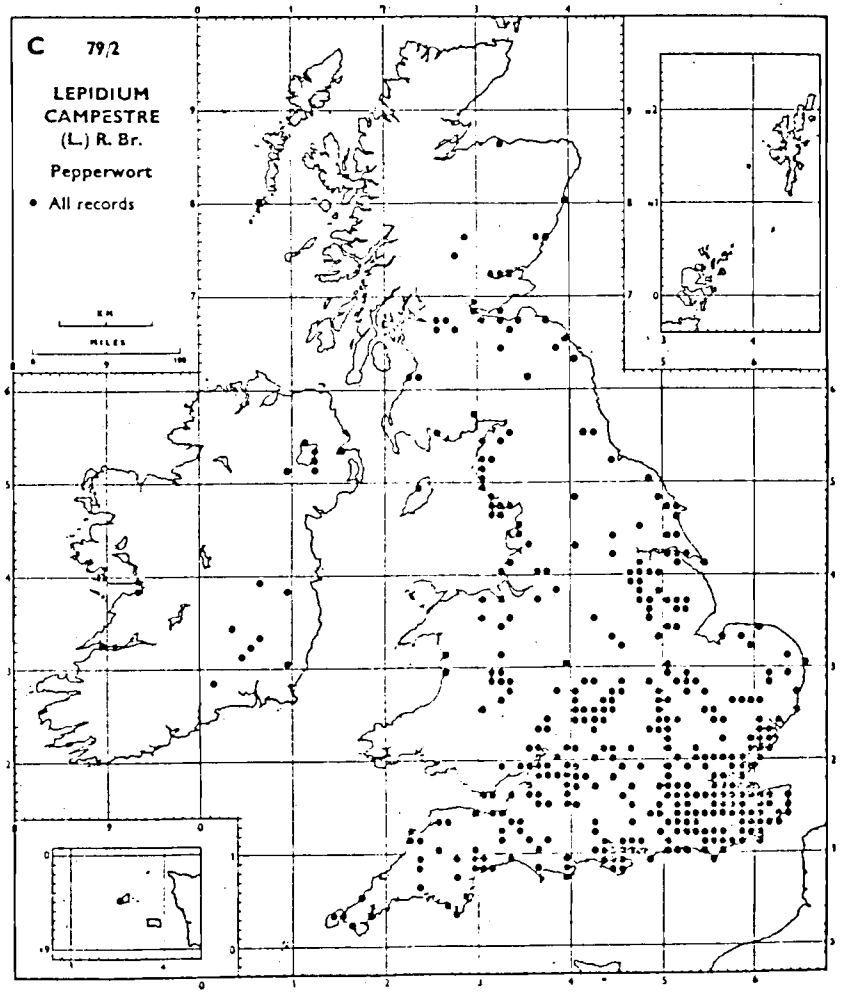
	No attention required	General Planning Control	Conservation Order	Tree Preservation Order	Action more comple refer to site description
Oak woods at Bunclody		*	* , or	*	
Bagenalstown Esker		*	or		*
Ardristan Marsh		* or	*		
Oak park pond	*				
Baggot's wood				* or	*
Borris Estate				*	
Pollmounty valley					*
Deciduous woods in Barrow valley					*
Red Bog, St. Mullin's					*
Scrubland south of Borris					*
Mount Leinster Mountains			*	or	*

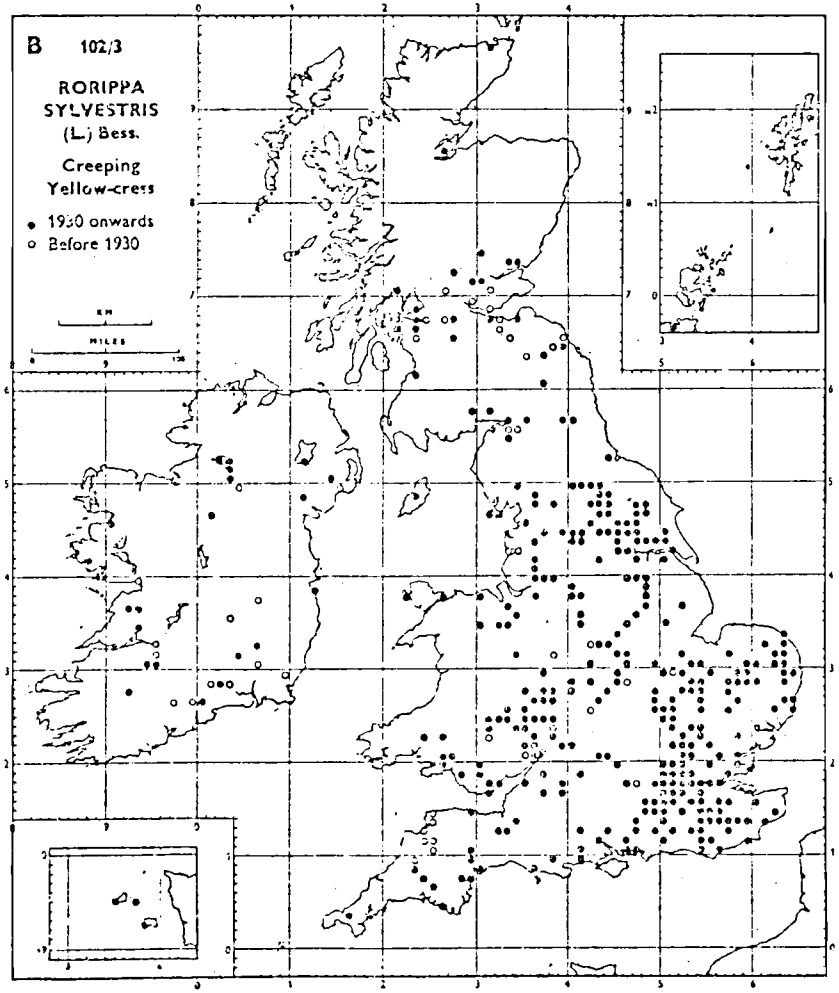
	No attention required	General Planning Control	Conservation Order	Tree Preservation Order	Action more comp refer to site description
Birch scrub at Clongarran		*	or	* (?)	
Slaney valley at Ardattin		*			
Tullow ponds					*
Cloughristick's wood					*
Bahana wood					*
Hazel scrub in River Slaney valley	*				
Ballynakill Marsh	*				

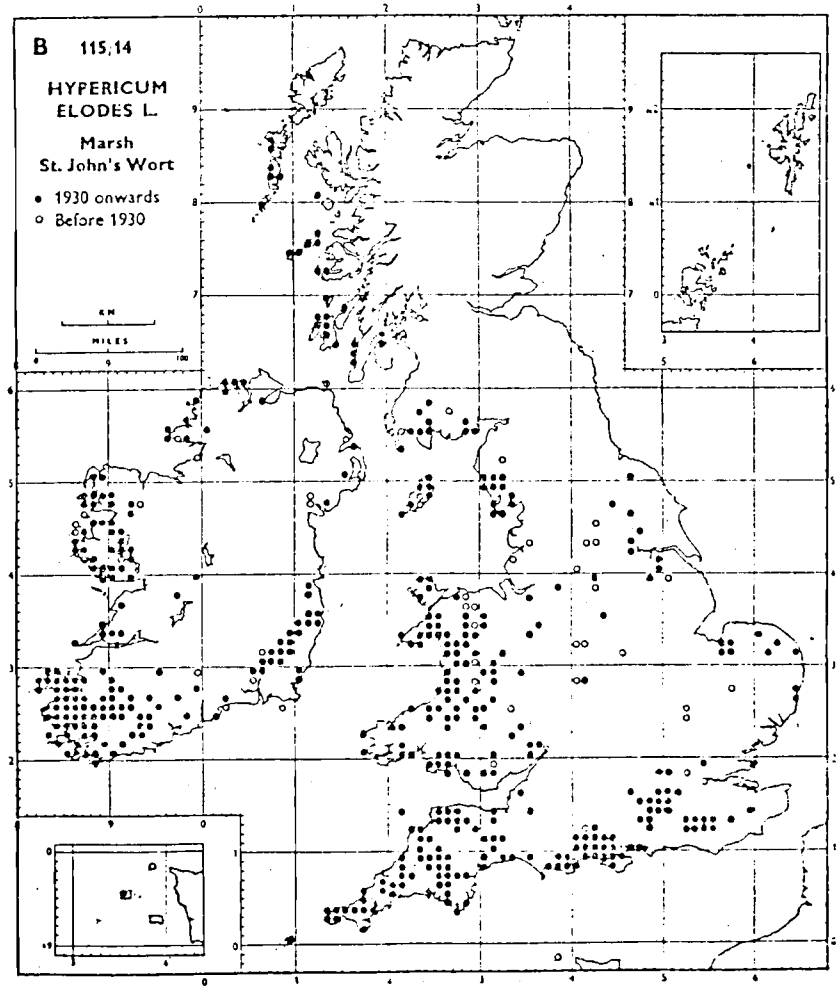
Section K:

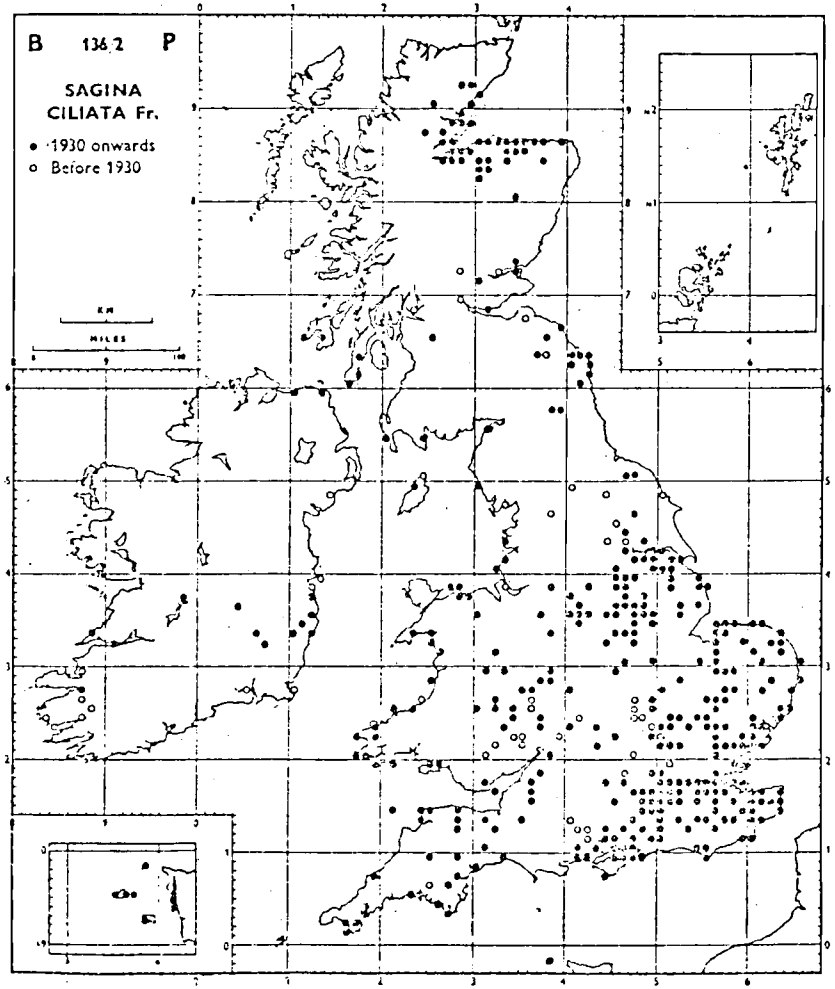
The distribution in Ireland and Britain of certain plants occurring in Co. Carlow. The species are those which were listed in the report (see also Fig. 5) or where referred to in earlier survey work on the country (see Section L. Bibliography).

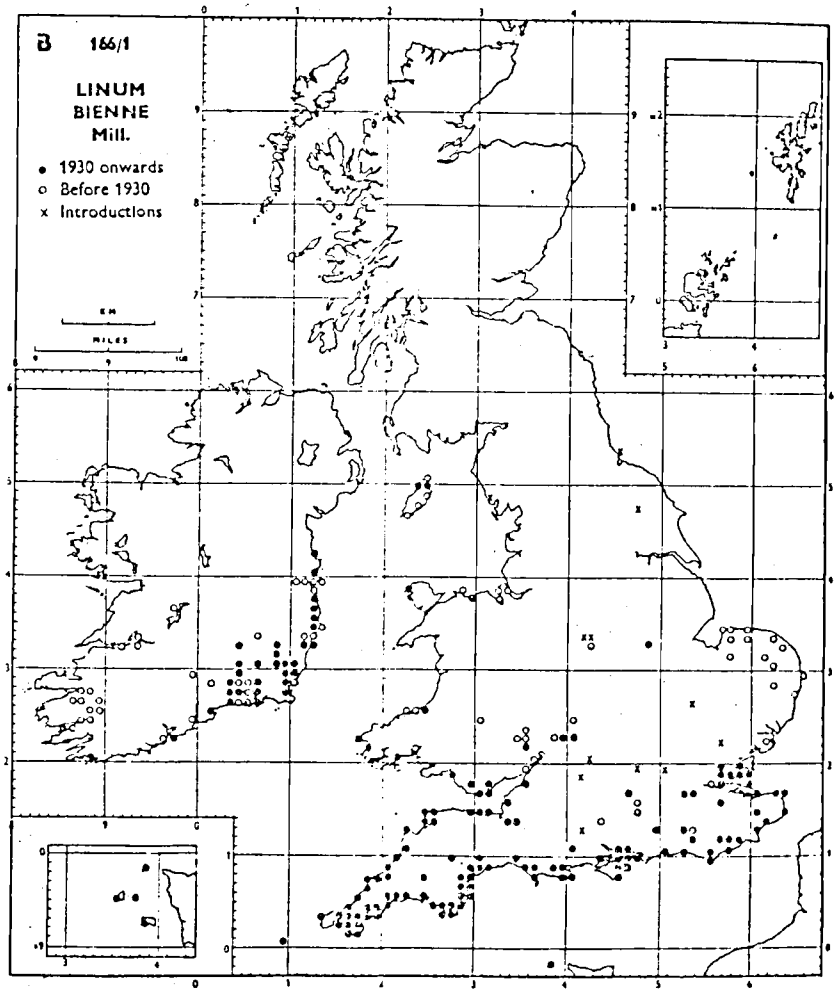

B 4/4
EQUISETUM VARIEGATUM
Schleich.
• 1930 onwards
○ Before 1930
KM
MILES

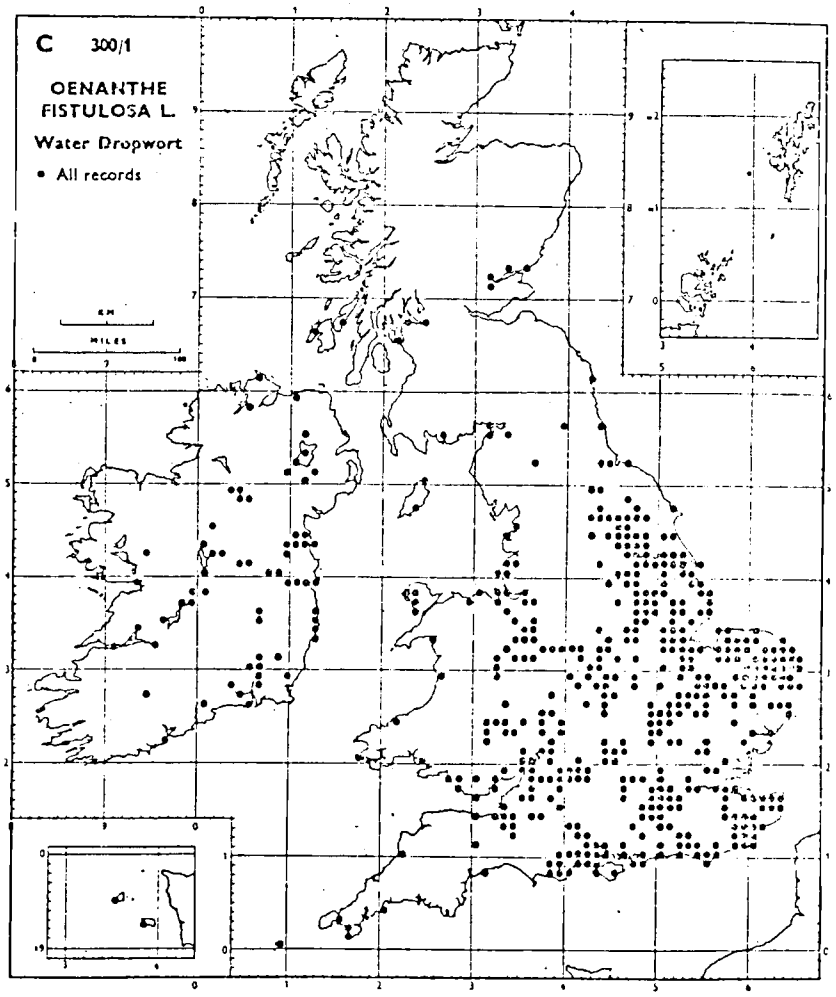

C 79/2
LEPIDIUM CAMPESTRE
(L.) R. Br.
Pepperwort
• All records
KM
MILES

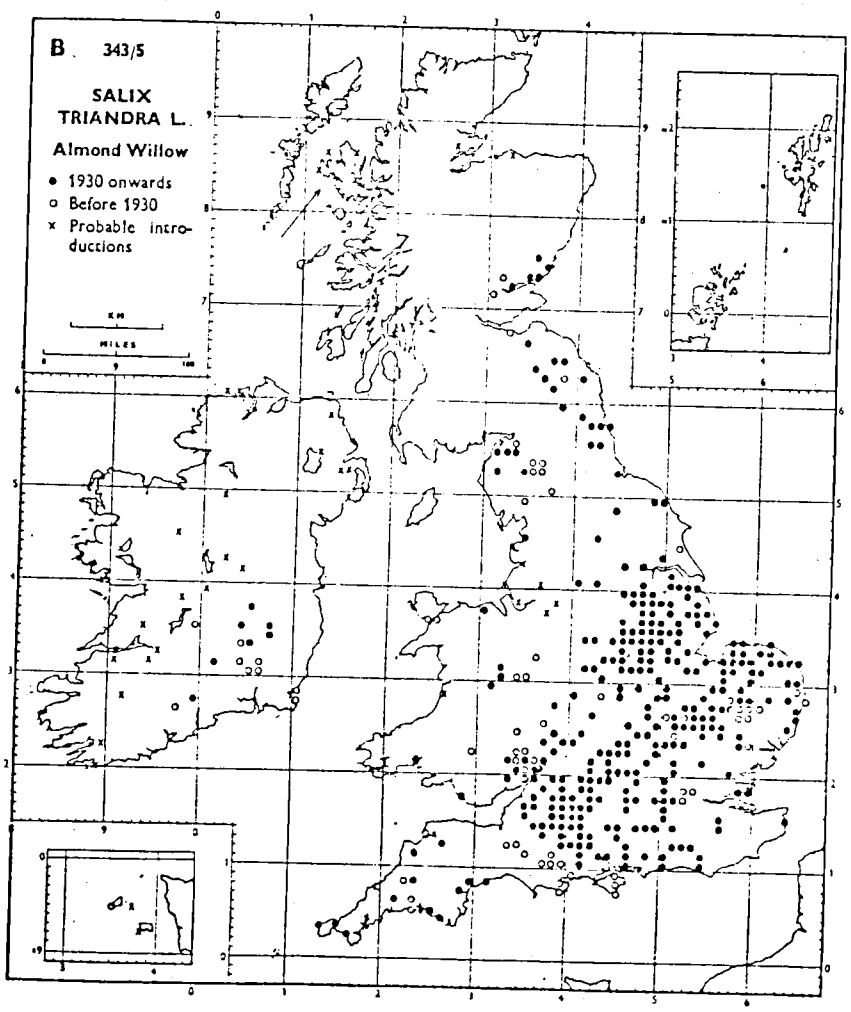

B 102/3
RORIPPA SYLVESTRIS (L.) Bess.
Creeping Yellow-cress
• 1930 onwards
○ Before 1930
KM
MILES

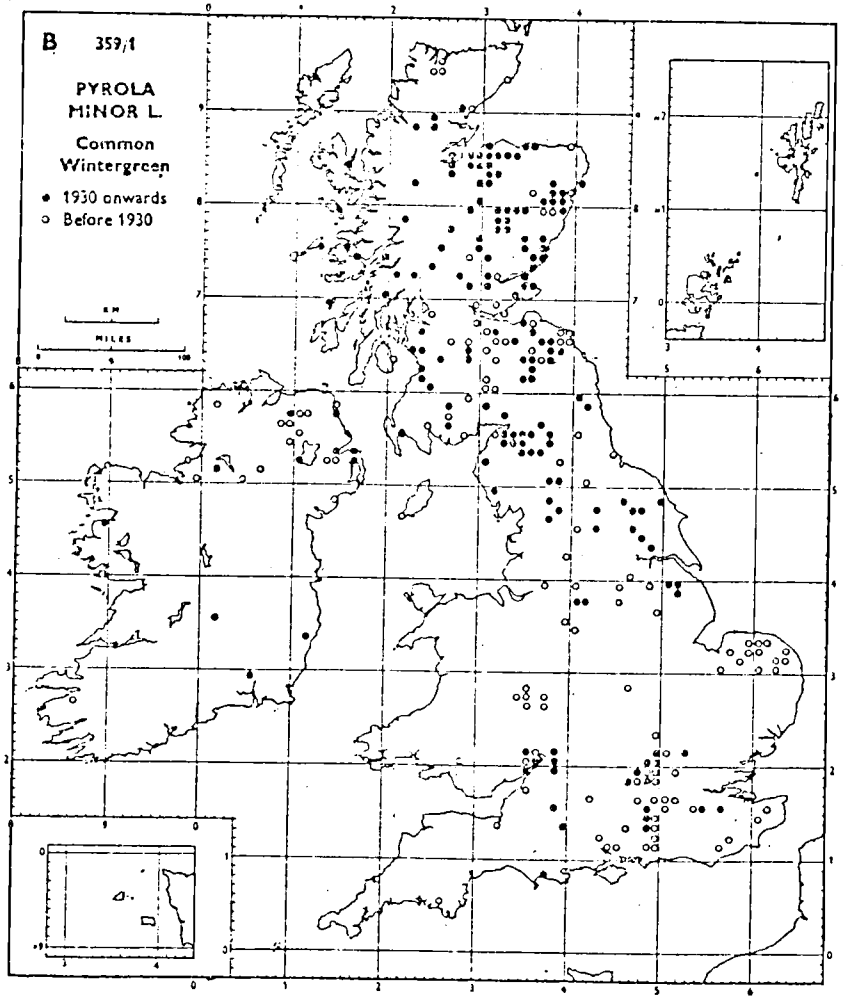

B 115,14
HYPERICUM ELODES L.
Marsh St. John's Wort
• 1930 onwards
○ Before 1930
KM
MILES

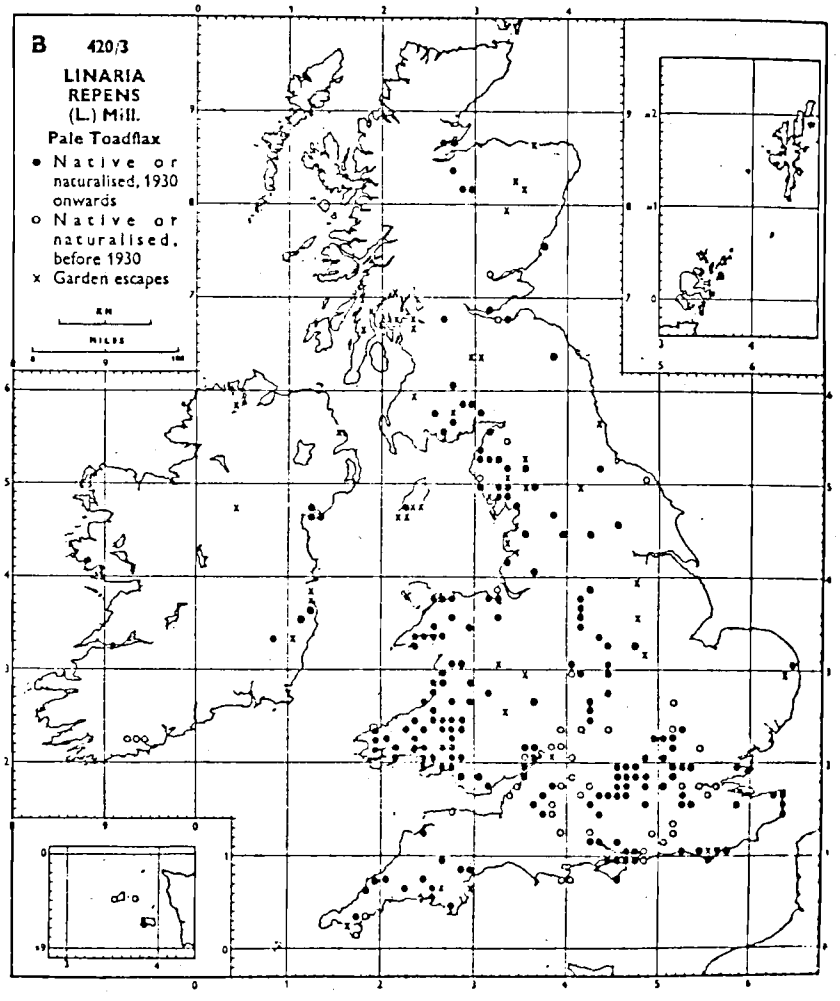

B 136.2 P
SAGINA
CILIATA Fr.
• 1930 onwards
o Before 1930
KM
MILES

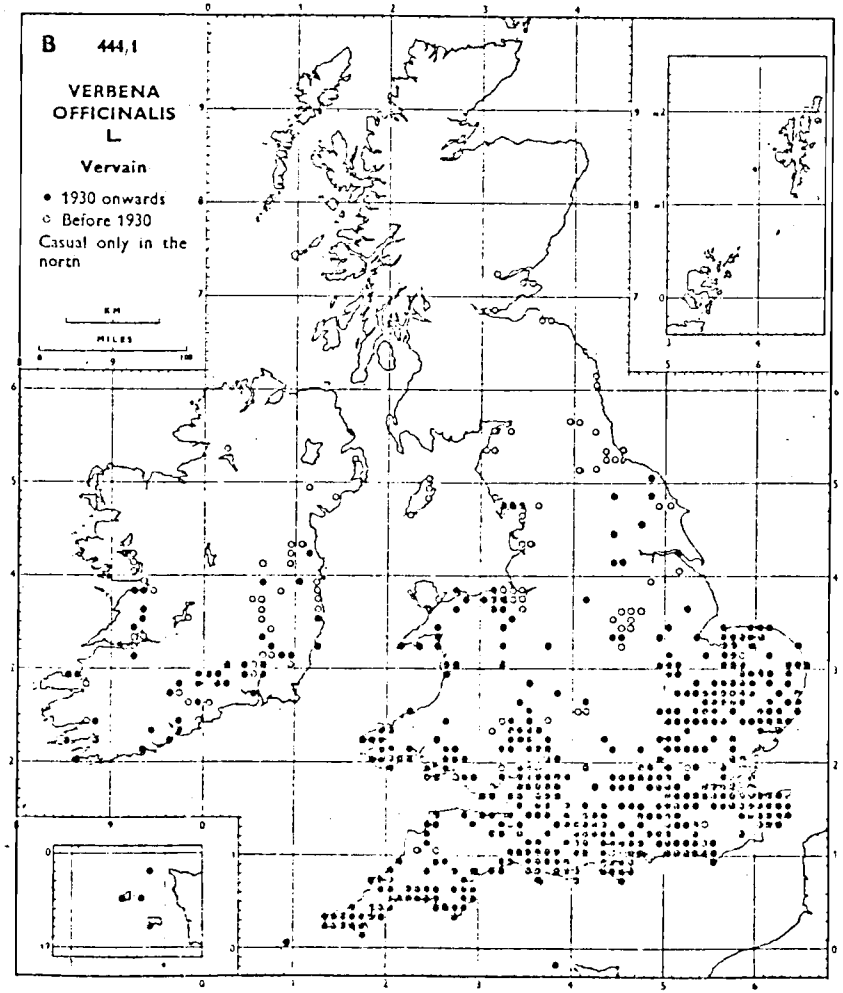

B 166/1
LINUM
BIENNE
Mill.
• 1930 onwards
o Before 1930
x Introductions
KM
MILES

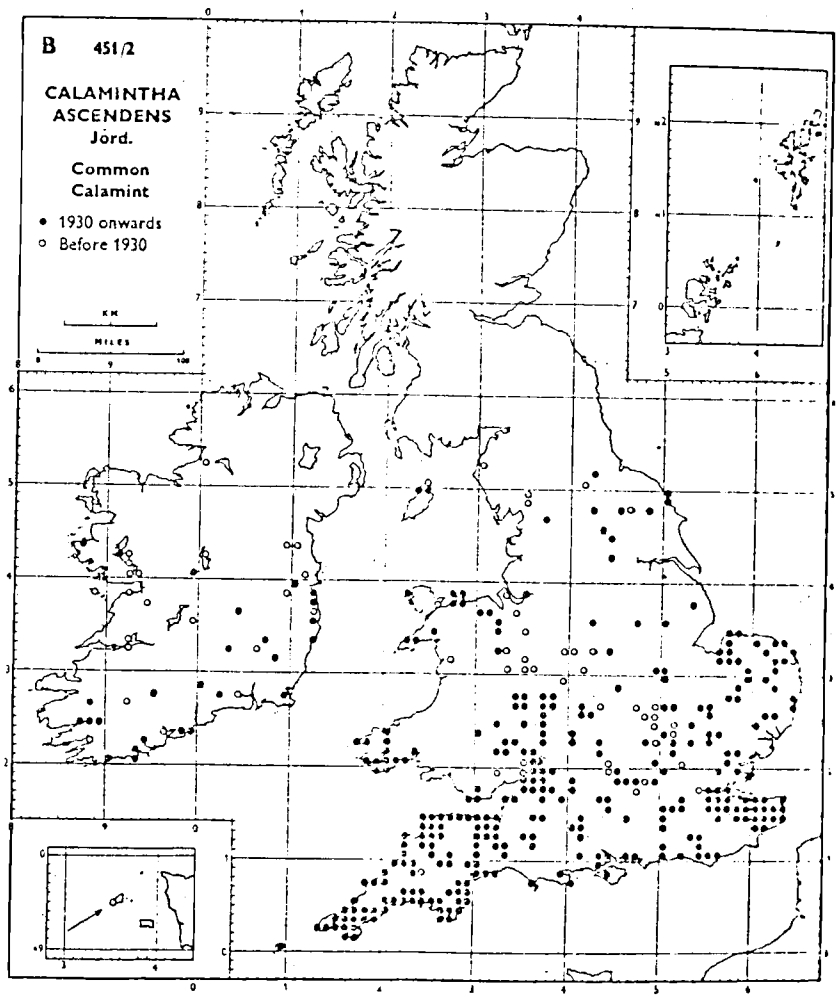

C 300/1
OENANTHE FISTULOSA L.
Water Dropwort
• All records
KM
MILES

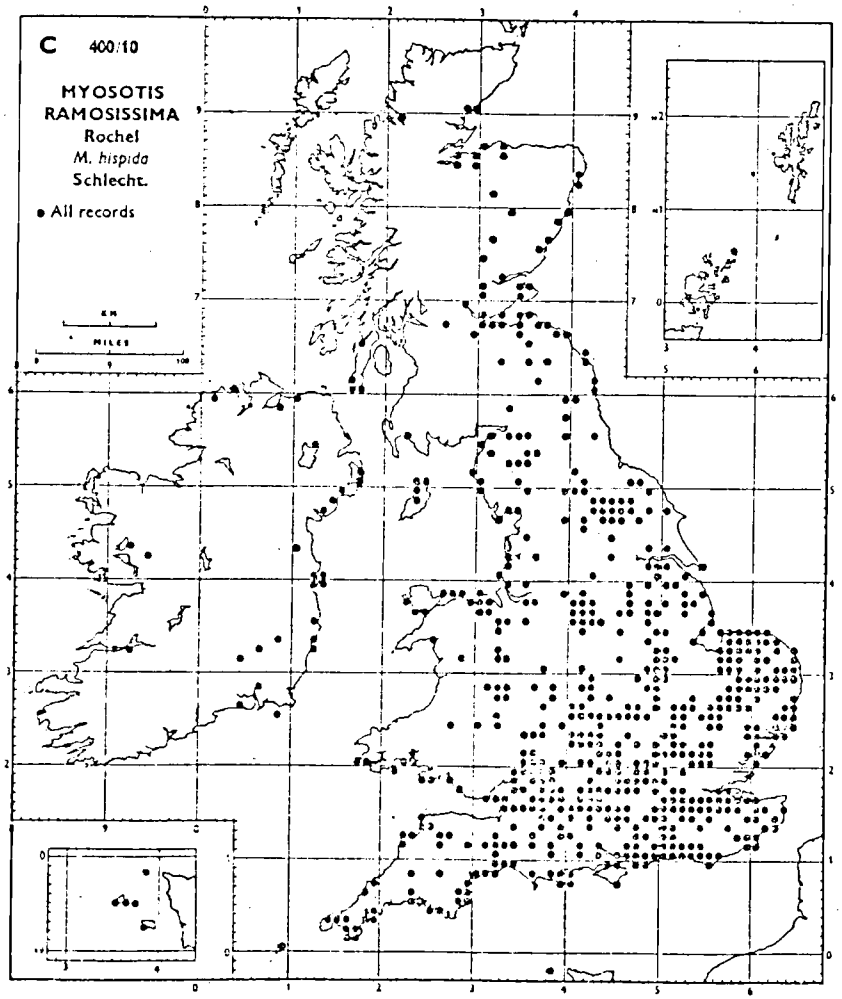

B 343/5
SALIX TRIANDRA L.
Almond Willow
• 1930 onwards
o Before 1930
x Probable introductions
KM
MILES

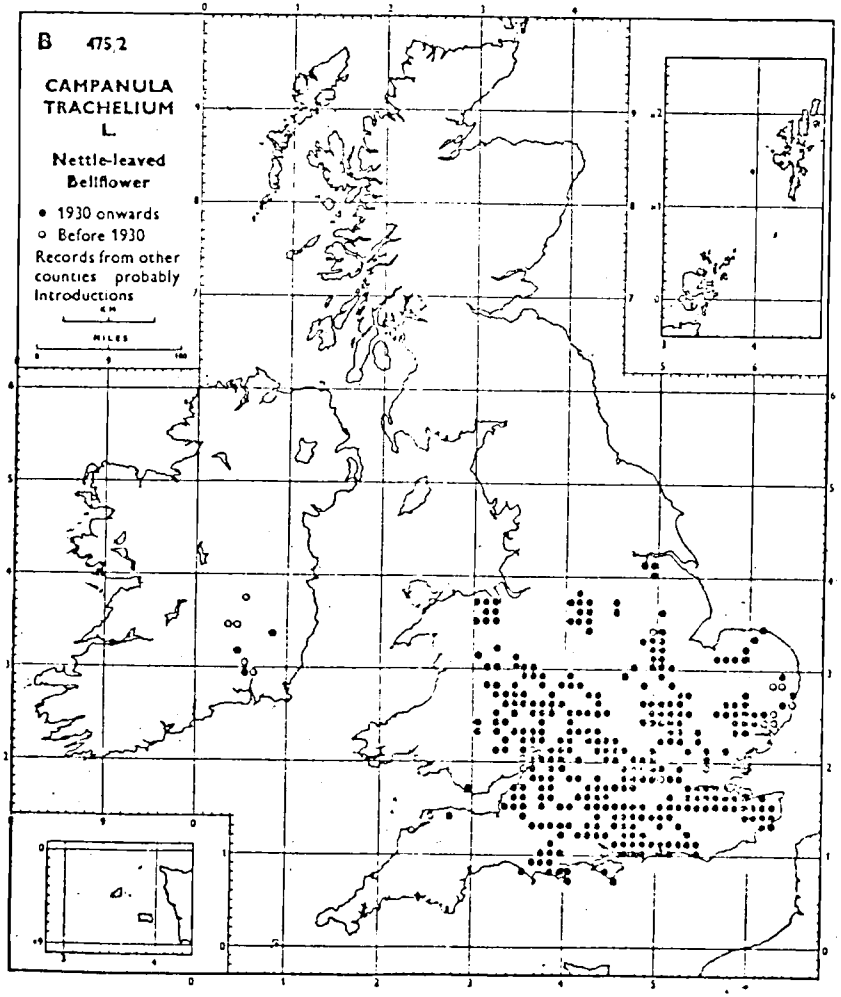

B 359/1
PYROLA MINOR L.
Common Wintergreen
• 1930 onwards
○ Before 1930
KM
MILES

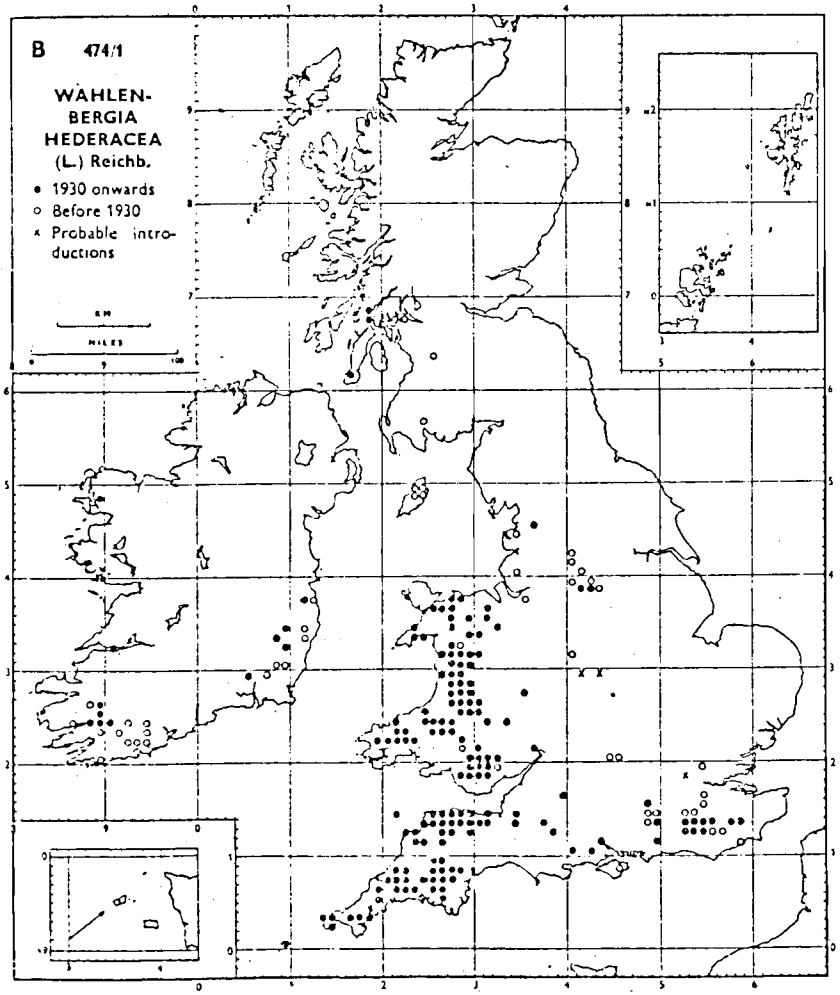

B 420/3
LINARIA REPENS (L.) Mill.
Pale Toadflax
• Native or naturalised, 1930 onwards
○ Native or naturalised, before 1930
× Garden escapes
KM
MILES

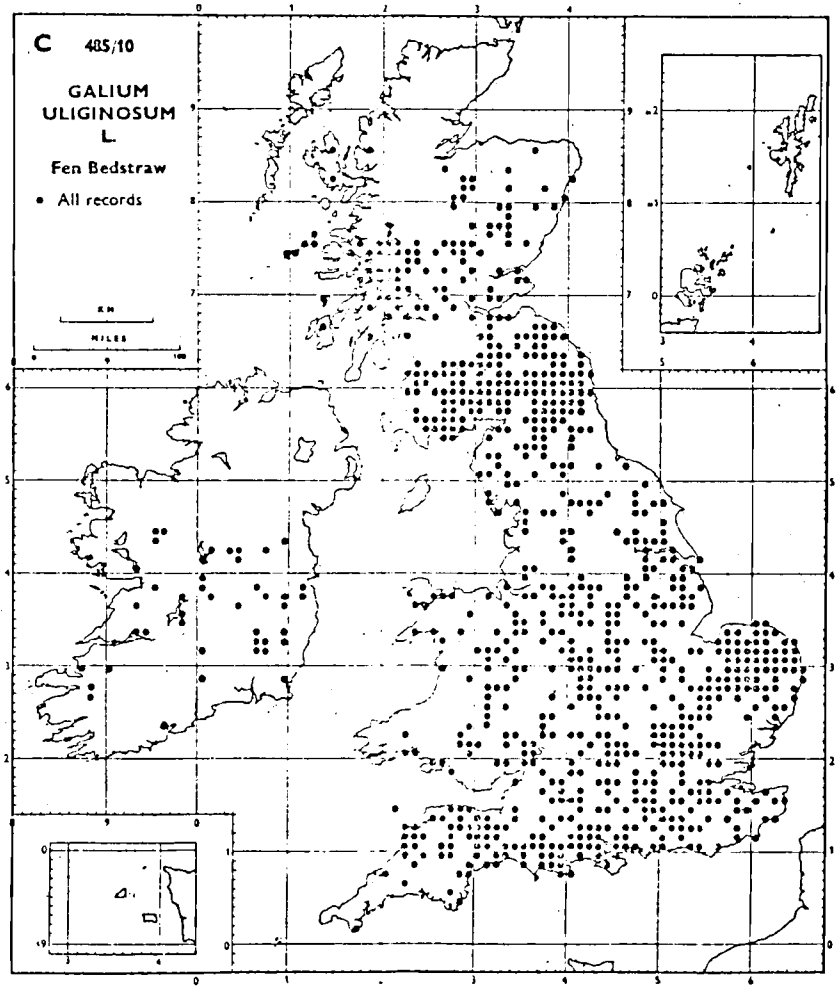

B 444,1
VERBENA OFFICINALIS L.
Vervain
• 1930 onwards
○ Before 1930
Casual only in the north
KM
MILES

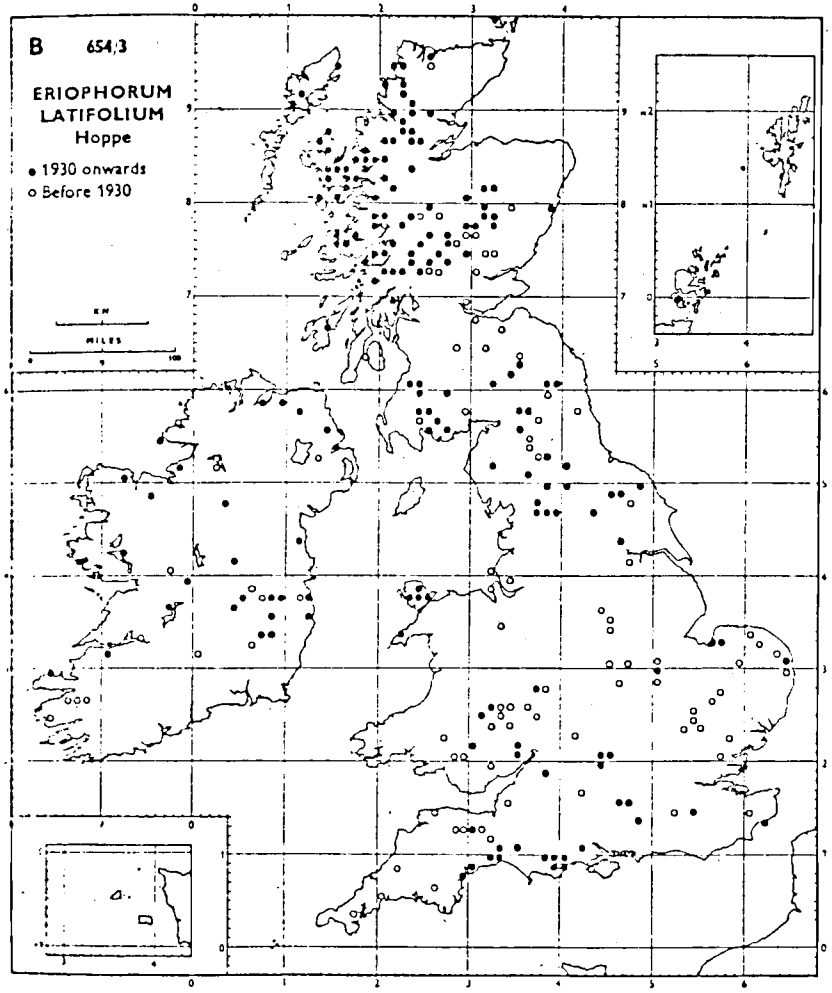

B 451/2
CALAMINTHA ASCENDENS Jord.
Common Calamint
• 1930 onwards
○ Before 1930
KM
MILES

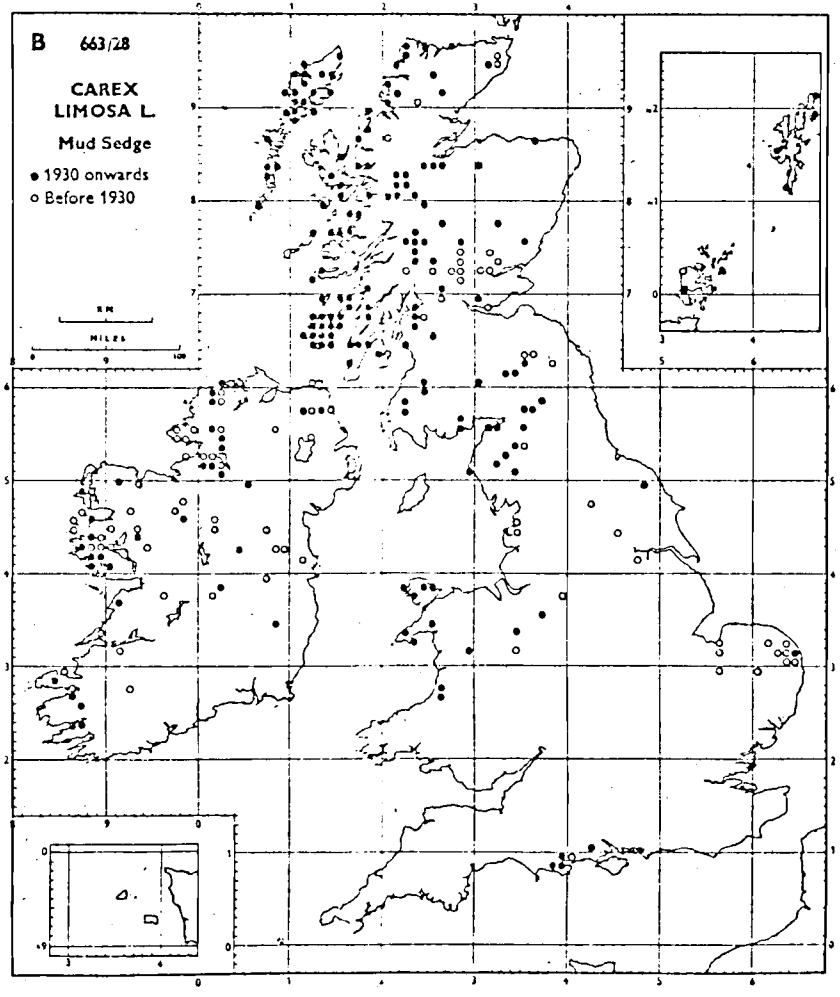

C 400/10
MYOSOTIS RAMOSISSIMA
Rochel
M. hispida
Schlecht.
• All records
KM
MILES

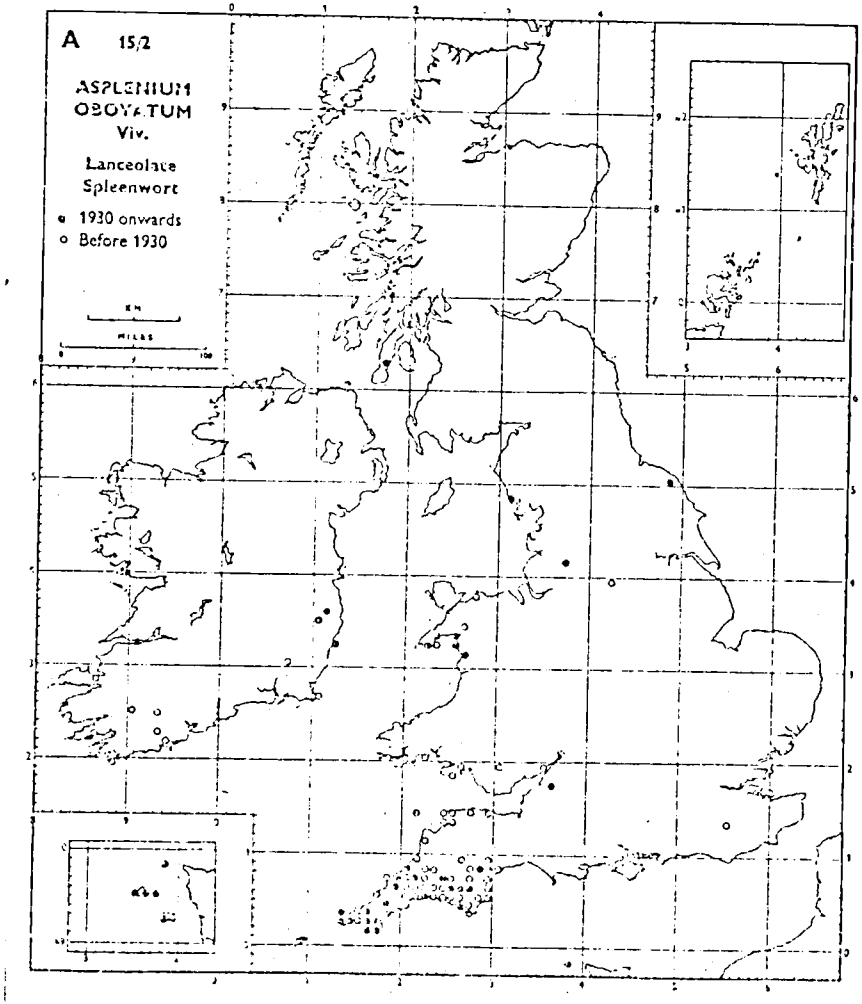

B 475.2
CAMPANULA TRACHELIUM
L.
Nettle-leaved Bellflower
• 1930 onwards
○ Before 1930
Records from other counties probably Introductions
KM
MILES

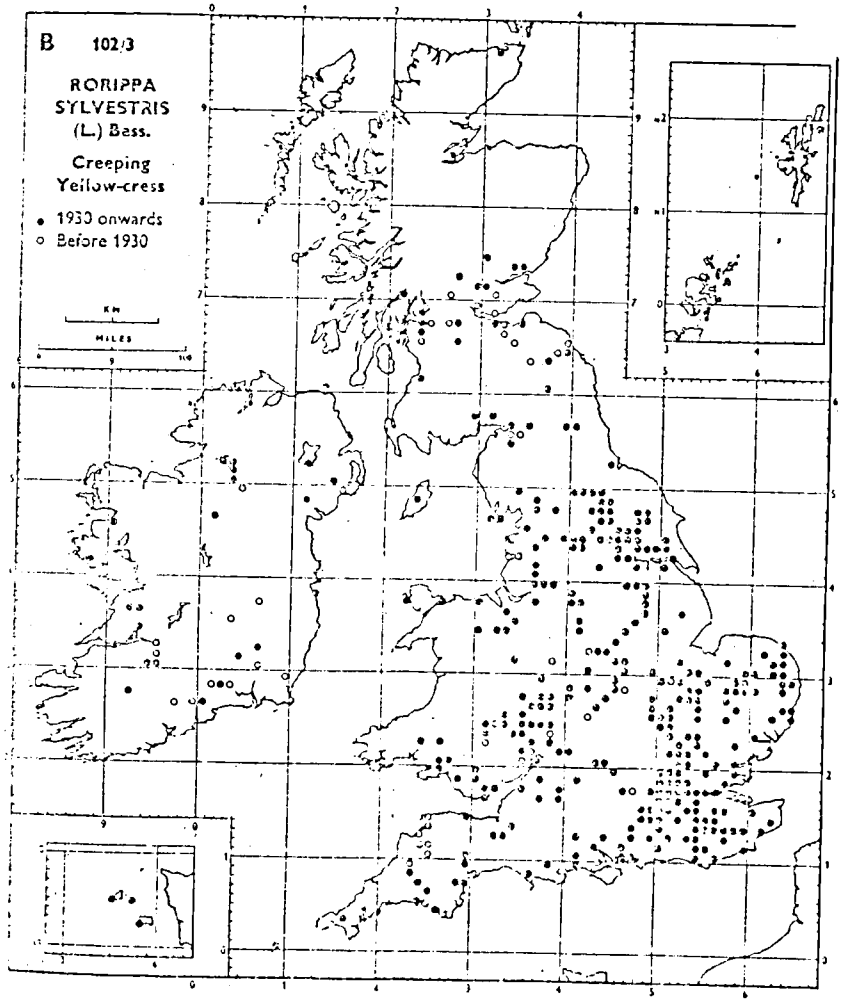

B 474/1
WAHLEN-
BERGIA
HEDERACEA
(L.) Reichb.
• 1930 onwards
○ Before 1930
× Probable intro-
ductions
KM
MILES

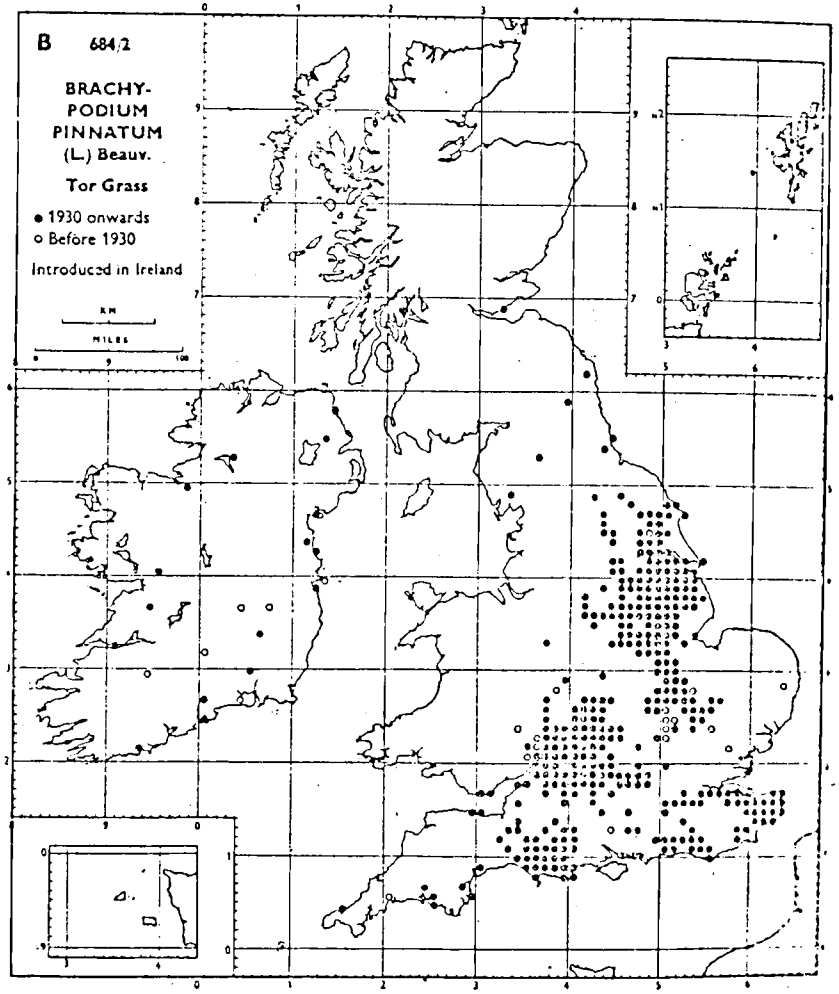

C 485/10
GALIUM
ULIGINOSUM
L.
Fen Bedstraw
• All records
KM
MILES

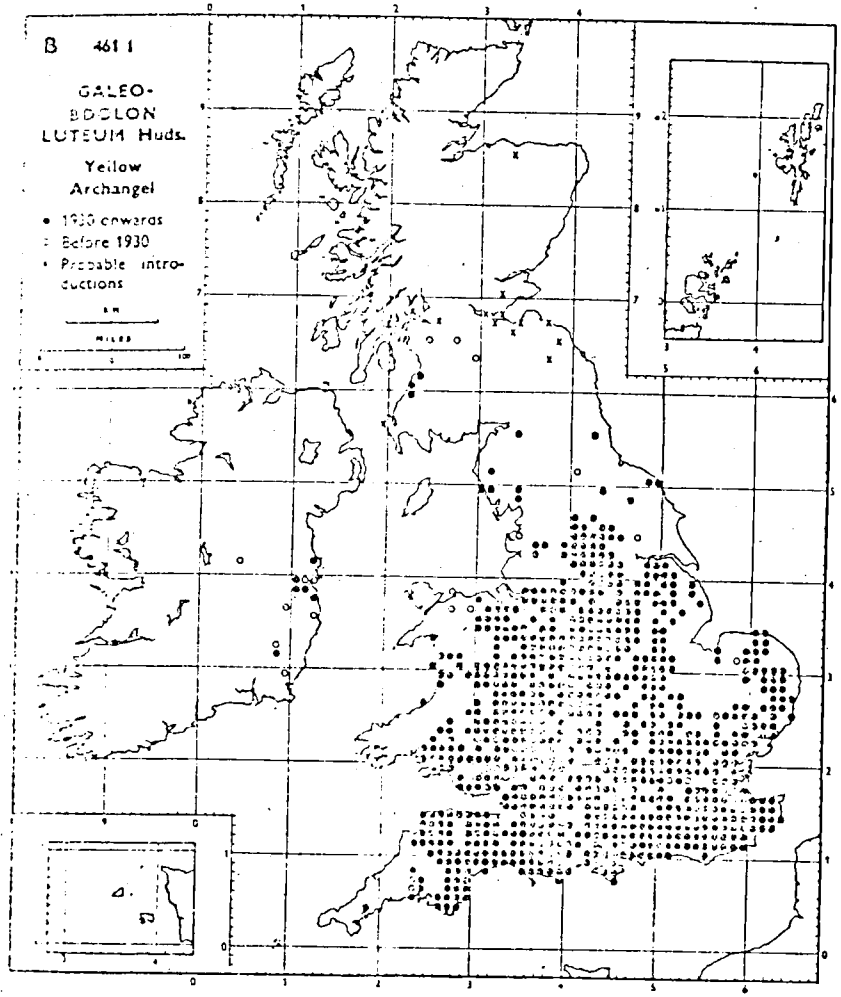

B 654/3
ERIOPHORUM LATIFOLIUM
Hoppe
• 1930 onwards
o Before 1930
KM
MILES


B 663/28
CAREX LIMOSA L.
Mud Sedge
• 1930 onwards
o Before 1930
KM
MILES


A 15/2
ASPLENIUM OBOVATUM Viv.
Lanceolate Spleenwort
• 1930 onwards
○ Before 1930
KM
MILES


B 102/3
RORIPPA SYLVESTRIS (L.) Bess.
Creeping Yellow-cress
• 1930 onwards
○ Before 1930
KM
MILES


B 684/2
BRACHY-
PODIUM
PINNATUM
(L.) Beauv.
Tor Grass
• 1930 onwards
○ Before 1930
Introduced in Ireland
KM
MILES


B 461 1
GALEO-
BDOLON
LUTEUM Huds.
Yellow
Archangel
• 1930 onwards
○ Before 1930
• Probable intro-
ductions
KM
MILES

SECTION L BIBLIOGRAPHY

CONRY, M.J. & P. RYAN (1967) Soils of Co. Carlow
National Soil Survey of Ireland (No. 17)
An Foras Taluntais

CO. CARLOW COUNTY COUNCIL (1967) County Plan

FLANAGAN, P.J. & P.F. TONER (1972) The National Survey of Irish Rivers : A Report on Water Quality An Foras Forbartha

HART, H.C. (1885) The Botany of the Barrow
Journ. Bot. (1885) : 9 -18

O'LEARY, M. (1934) Epilobium nummularifolium on the Blackstairs Mountains. Ir. Nat.J. 5 : 20

PERRING, F.H. & S.M. WALTERS (1962) Atlas of the British Flora

PHILLIPS, R.A. (1915) Trichomanes speciosum & Asplenium lanceolatum in Co. Carlow
Ir. Nat. 24 :170

PRAEGER, R.L. (1889) A Botanist in the Central Plain
Ir. Nat. J. 8 : 87

STELFOX, A.W. (1927) Galeobdolon luteum in Co. Carlow
Ir. Nat. J. 1 :203

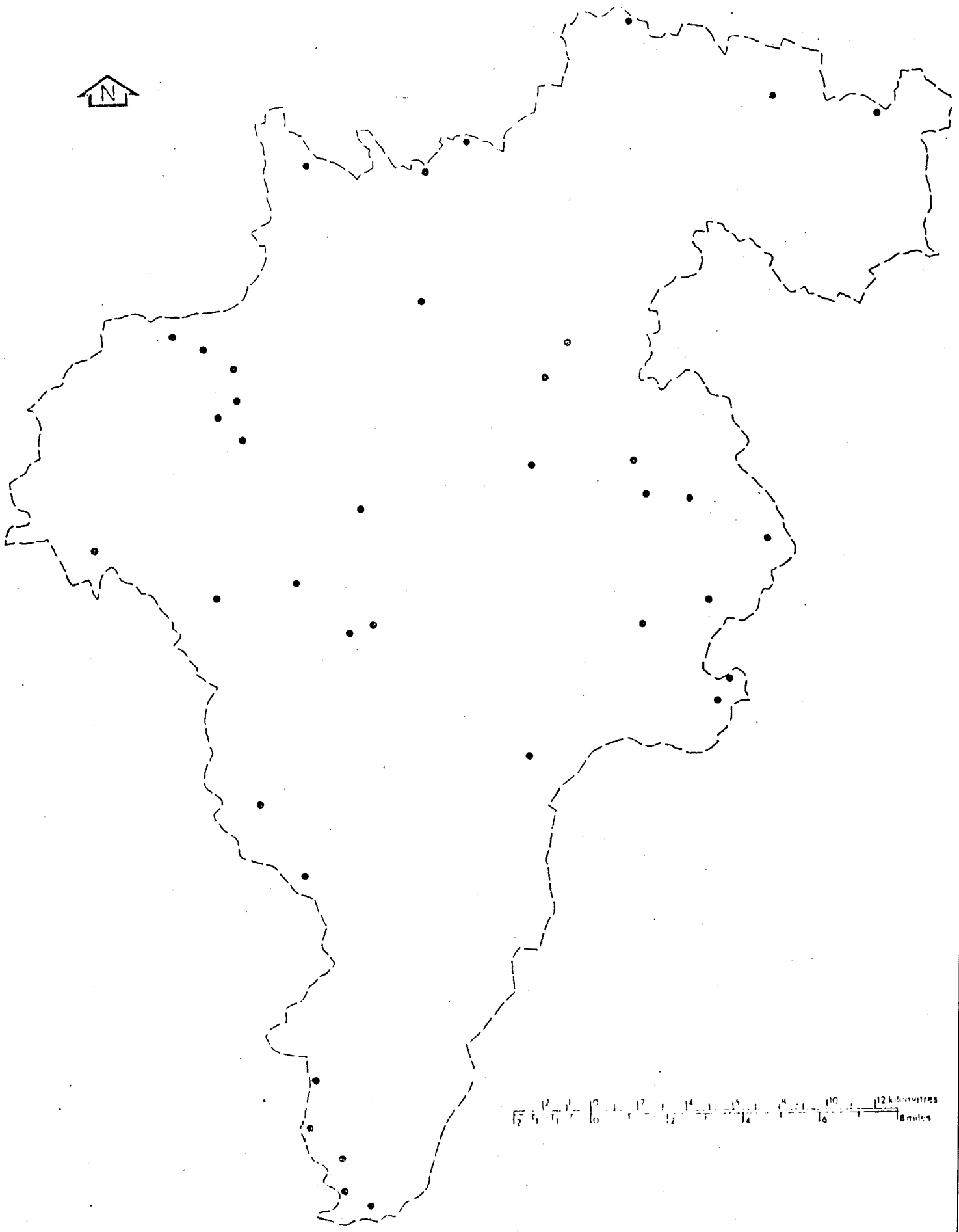
WEBB, D.A. (1943) Rorippa sylestris in Co. Carlow
Ir. Nat. J. 8 : 115

WEBB, D.A. (1958) Pyrola minor in Co. Carlow
Ir. Nat. J. 12 : 249

SECTION M

Map of County Carlow showing the areas visited in the course of the field survey associated with this report. Each dot represents a site or the part of a large site inspected.

COVERAGE MAP OF CO. CARLOW.



SECTION N

RATING OF AREAS OF SCIENTIFIC IMPORTANCE

This is a measure of the relative importance of areas of scientific importance.

The importance of each area is indicated in terms of the following categories:-

International Importance

1. Only area of its type in Europe.
2. One of a few such localities in Europe.
3. One of a natural series in Europe.
4. Recognised international importance.
5. Specialised educational importance.

National Importance

1. Only area of its type in Ireland.
2. One of a few such localities in Ireland.
3. One of a natural series in Ireland.
4. Recognised national importance.
5. General or specialised educational importance.

Regional Importance

1. Only area of its type in province.
2. One of a few localities in Ireland.
3. One of a natural series in region.
4. Fine example of its kind.
5. General or specialised educational importance.

Local Importance

1. Only area of its type in county.
2. One of a few localities in province.
3. Fine example of its kind.
4. General educational importance.

PRIORITY OF AREAS OF SCIENTIFIC INTEREST

This is a measure of the relative urgency necessary for protection of the areas of scientific importance.

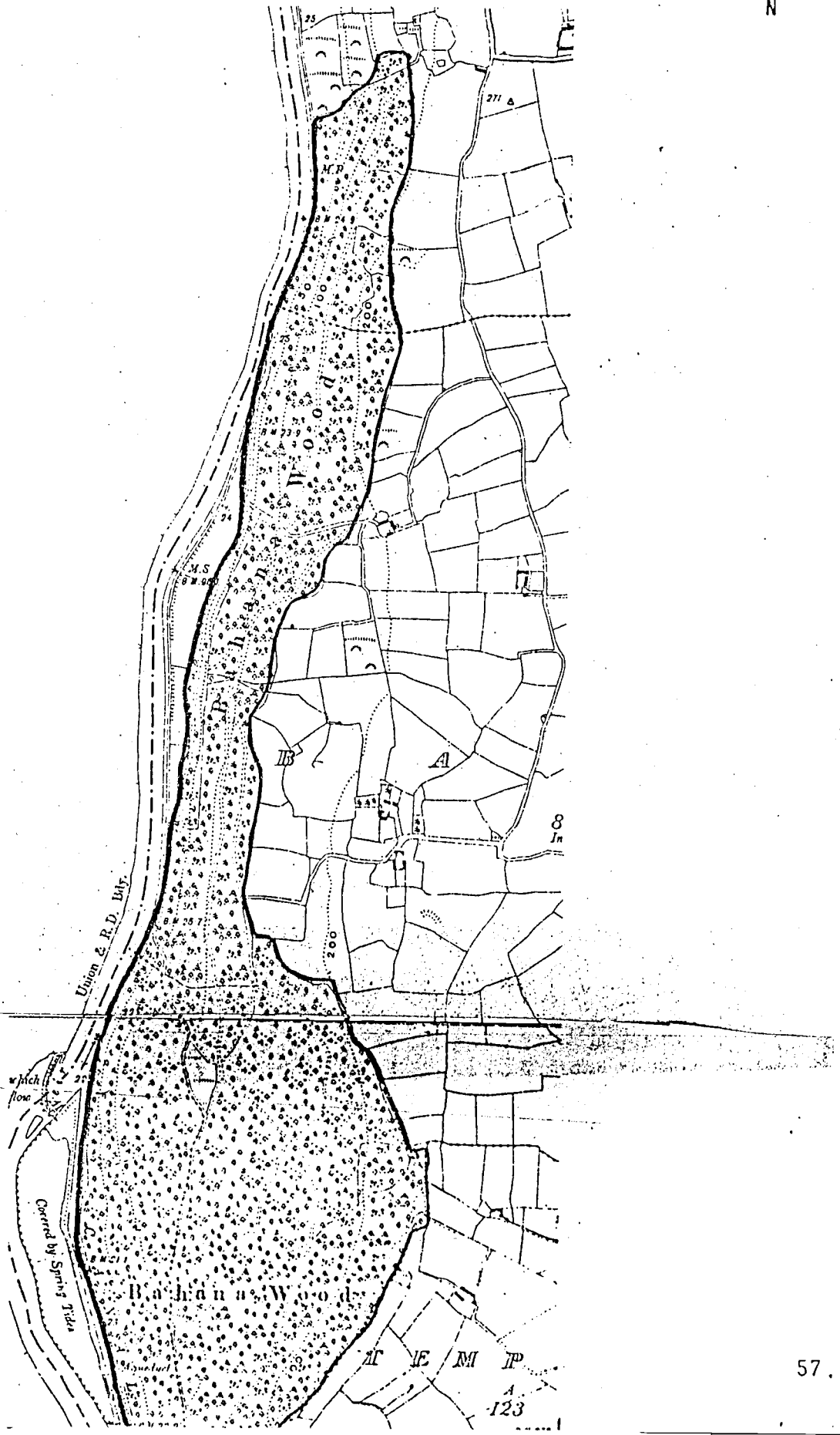
Each site is given a priority rating of A, B or C.

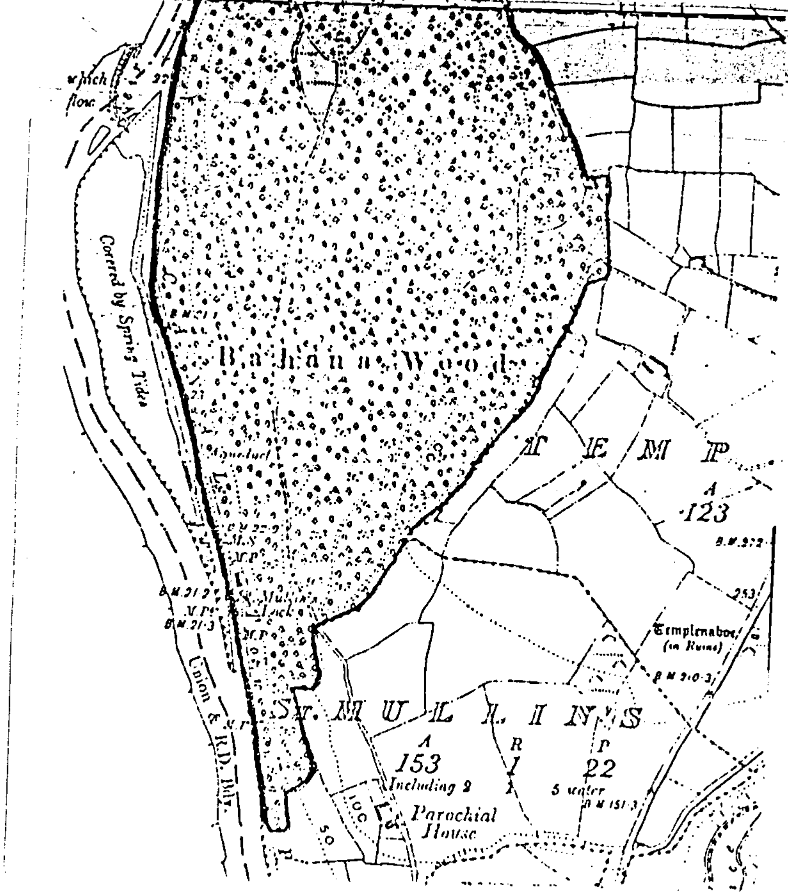
The rating of any area is based on a combination of the following criteria:-

a) the importance of the area
b) the vulnerability of the area
c) the nature and imminence of any threats to the area.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile





Covered by Spring Tides
Bahana Wood
TEMP
A
123
Templenaboe
(in Ruins)
ST. MULLINS
A
153
R
1
P
22
Parochial
House
Union & R.D. Bdy

57.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile