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CONSERVATION AND AMENITY
ADVISORY SERVICE

A PRELIMINARY REPORT ON AREAS OF SCIENTIFIC INTEREST IN COUNTY TIPPERARY (N.R.)

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CONTENTS

In the succeeding site-descriptions certain key areas are dealt with. It should not be overlooked, however, that often these are the best, though not necessarily the only examples of a particular ecotype.* This applies particularly to the region north of Cloghjordan (enclosed by the Shannon and Brosna) which has great amenity and scientific value. A more detailed examination of this area in the future would be most desirable. For the moment, particular care should be taken in the siting of buildings around the A.S.Is and this applies especially to the Lough Derg shoreline. Because North Tipperary is flat, the scenery cannot absorb housing as easily as could a more hilly district.

As has been stated above, the Northern end of the North Riding is particularly rich in plant material. Some of the sites are of importance because they support a single rare species. Most are of additional value as representative ecotypes and in these, a secondary, ecological interest is present in addition to the primarily botanical nature of the A.S.Is.

The northern limestones are especially important because on them grow plant species which are best known on the limestone pavements of County Clare, for example the grass Seslaeria. Section E of this report is an appendix to show the significance of some of these species on a geographical scale. The rare species whose survival might be endangered by being collected (see below) are not included.

While it is desirable to give as many details as possible of the sites listed, some sites are described in vague terms. Plants which are susceptible to being collected are referred to as "a rare species" only. Secrecy of this kind is generally regarded as a form of protection. More precise details of the species concerned will however be kept by An Foras and will be available to the County Council on request.

The northern part of the North Riding of County Tipperary has a substratum of limestone, the southern part having a Devonian and Silurian sandstone and shale bedrock. A moderate-heavy rainfall and mild winter temperature combine

to permit many Western plant species to extend their ranges well into the county.

The limestone bedrock and high precipitation interact to give the wetlands which occur at all stages in the succession from open water through fen and marsh to raised bog. Scientifically, these areas are of value because of their possibilities as invertebrate habitats and because of the plant associations occurring there.

Ireland is of special significance as an overwintering area for wildfowl and a large percentage of the world's geese pass the colder months here. There has been an increase in some dabbling duck (notably mallard) in recent years in this country and scaup, teal and wigeon have increased. On the other hand Grey Lag Geese have declined considerably and the Whitefronted Goose has disappeared from some western regions as a result of drainage. Most duck and swans favour shallow water and it is desirable that remaining wetlands be left untouched for this reason.

Turloughs are believed to occur in North Tipperary and a number of possibilities are listed in the Report. At this point, observations on these features are tentative and they require more detailed investigation. Turloughs are best known in neighbouring County Clare and their recognition in the field is difficult. Their definition is also complex but they are best described as ephemeral (temporary) lakes having a subterranean cavernicolous drainage system: they are filled with water in winter and dry in summer. (Williams, P.W. 1964 Aspects of the Limestone Physiography of Cos. Clare and Galway, Western Ireland. Unpublished Ph.D. Thesis. University of Cambridge). Precise definition of a turlough therefore necessitates establishing that such a drainage system is present and this can be accomplished only when the basin is empty. Recognition of turloughs on botanical features is also feasible, though not conclusive. The flora of these areas listed as turloughs in the succeeding pages conforms to the botanical features of typical examples elsewhere.

The majority of sites listed in this report are easily conservable (see Section E) and preventative measures are all that is required, e.g. no building, no drainage. The indiscriminate dumping of domestic rubbish is probably the most widespread despoiling influence in the county at the moment, excluding the unknown impact of pesticides and fertilizers. Existing powers to deal with rubbish dumping should be invoked where feasible.

In Section G an effort is made to assess the effects of human activities on the North Riding. Broadly speaking there are two types of habitat alterations. The first, the gradual despoiling of an area by pollution has been referred to briefly above. The second is the clearance of an area as, for example, for building with the consequent removal of an ecotype. The ever-increasing shortage of land, together with the rise in importance of industry and the demand for housing combine to exert considerable pressure on available space. In the absence of a fine sufficiently large enough to be a deterrent the co-operation of all interested parties should be sought in planning for the best interests of the entire community.

Finally, the preliminary nature of this report must be stressed. Priorities are likely to change in the future, as are ratings, as more information becomes available and conditions change. The destruction of a site of national importance could, for example, result in the elevation of another of equal value to international rating. Further sites must be sought, either as places which have not yet been discovered or sites which are being developed at present. Examples of the latter are quarries which are exposing stratigraphic phenomena and coniferous forests which, when mature, may develop a peculiar or scientifically noteworthy community.

In conclusion, the following are gratefully acknowledged for their help in the compilation of the Report:

Mr. David Scott, I.W.C.

and Mr. Richard McMullan who generously made available the results of his botanical investigations prior to their publication.

Name of Area & Map Number (where available)	Grid Ref.	Rating	Priority	Scientific Interest
Three Sites Close to Slevoir Bay, L.Derg. (1) 12	M. 889, 030 M. 841, 007 M. 852, 008	International	C	Botanical; site for a rare plant species.
Cornalack, L.Derg. (2) 13	R. 842, 999	International	A	Botanical, ecological and zoological; site of a rare plant association.
Fiagh Bog (3) 15	R. 960, 970	National	A	Zoological, ecological; site of a rare animal species. A good example of a fen.
Wetland, bog and esker complex along the Little Brosna (4) 16	N. 000, 885	National	B	Ornithological, ecological and botanical; a wildfowl overwintering area and site of a rare plant species.
Cameron Island, Luska Bay (5) 21	R. 320, 910	National	B	Botanical, ornithological and ecological; a shallow bay in Lough Derg having an abundant bird population and a varied flora.
Roscrea Sandhills (6) 25	S. 153, 870	National	B	Botanical, site of an unusual plant assemblage.
Templemore, Roadside (7) 26	S. 102, 721	National	A	Botanical, site of a rare plant species.

Name of Area & Map Number page no	Grid Ref.	Rating	Priority	Scientific Interest
Templemore Park (8) 27	S. 109, 718	Regional	B	Ecological, ornithological and botanical; This is a wet woodland containing a representative selection of Midland flora and fauna.
Birch Scrub by Slevoir Bay 29 (9)	M. 890, 012	Regional	B	Botanical, ecological; This is a good stand of birch wood with a varied ground flora.
Bellevue House (10) 31	R. 805, 945	Regional	C	Botanical, ecological and ornithological; the area contains good oak stands with a representative range of flora and fauna.
Lough Ourna (11) 34	R. 880, 855	Regional	C	Botanical, ornithological and ecological; Site of a rare plant species. Has moderate wildfowl populations in winter, is a breeding ground in summer.
Newchapel Turlough 36 (12)	R. 654, 925	Regional	C	Botanical, ecological; site of a rare plant species.
Slevoir Bay and environs (13) 38	M. 895, 025	Regional	B	Ornithological, ecological; An important overwintering and breeding area for birds.

Name of Area & Map Number	Grid Ref.	Rating	Priority	Scientific Interest
Keeper Hill	R. 820, 695	Regional or National	?	Botanical; an unusual plant assemblage occurs at the site.
Lismacrory House (14)	R. 965, 997	Regional	C	Botanical; a site of a rare plant species: Geological; is possibly a turlough.
Scohoboy Bog (15)	R. 970, 910	Regional	A	Ecological, botanical; a young bog having an unusual flora.
Derrygareen (16)	R. 768, 606	Regional	B	Botanical, ecological; site of a rare plant species.
Mount Butler (17)	S. 175, 897	Regional	?	Botanical; site of a rare plant species.
Kilavalla Wood (18)	R. 950, 717	Local	B	Ecological, botanical; the area is a mixed deciduous woodland.
Esker Ridge (19)	R. 890, 880	Local	B	Ecological, botanical; the plant assemblage is typical of an esker community.
Lough Nahinch (20)	R. 995, 936	Local	B	Ecological, botanical; the area is a drained raised bog with a typical flora.
Bogs in the Nore Valley (21)	S. 180, 875	Local	A	Ecological; there is a good succession to scrub.

Name of Area & Map Number page no	Grid Ref.	Rating	Priority	Scientific Interest
Deep gorge on the Nenagh River (22) 54	R. 910, 670	Local	C	Ecological, botanical; the area has a wide range in altitude having a typical flora.
Monainsha Bog and surroundings (23) 56	S. 180, 880	Local	A	Ecological; this is a good example of a raised bog and there is some birch scrub in the surrounding drained land.
Tobervahee (24) 56	M. 883, 012	Local	B	Botanical, ecological; a good example of hazel scrubland.
Claree Lough and associated wetlands (25) 59	R. 849, 882 & R. 850, 940	Local	B	Ecological; a good example of a marsh habitat.
Clare Glens (26) 60	R. 741, 591	Local	B	Ecological and geological; the area is a picturesque glen having mixed forest which is used as a nature trial.
Birch Woodland not in report 63	M. 918, 656	Requires further investigation.		
Wetlands north of Borrisokane (27) 63	R. 909, 983	Local	B	Ornithological, ecological and botanical; the site supports large numbers of over-wintering birds.

SECTION C

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.

SECTION D

Name of area	THREE SITES CLOSE TO SLEVOIR BAY :	Acreage 73
Grid reference	M. 889, 030 Ballyreigh Bridge	
	M. 841, 007	
	M. 852, 008	
Scientific interest	Botanical	
Rating	International importance	
Priority	C	

Description of the area See map 1

The sites are of marshy ground at the edge of Lough Derg. Rocky outcrops are frequent. The majority of the plant species listed for site 5 (Luska Bay foreshore) are present

Evaluation

Within the areas outlined a rare plant species is known to occur. Its occurrence by Lough Derg is its only station in the British Isles. The precise limits of its distribution within the areas listed are not known and further sites containing it in the same area may be found in the future.

Threats to the area

Building could physically destroy any one of the sites. Intense recreational pressures might also be detrimental.

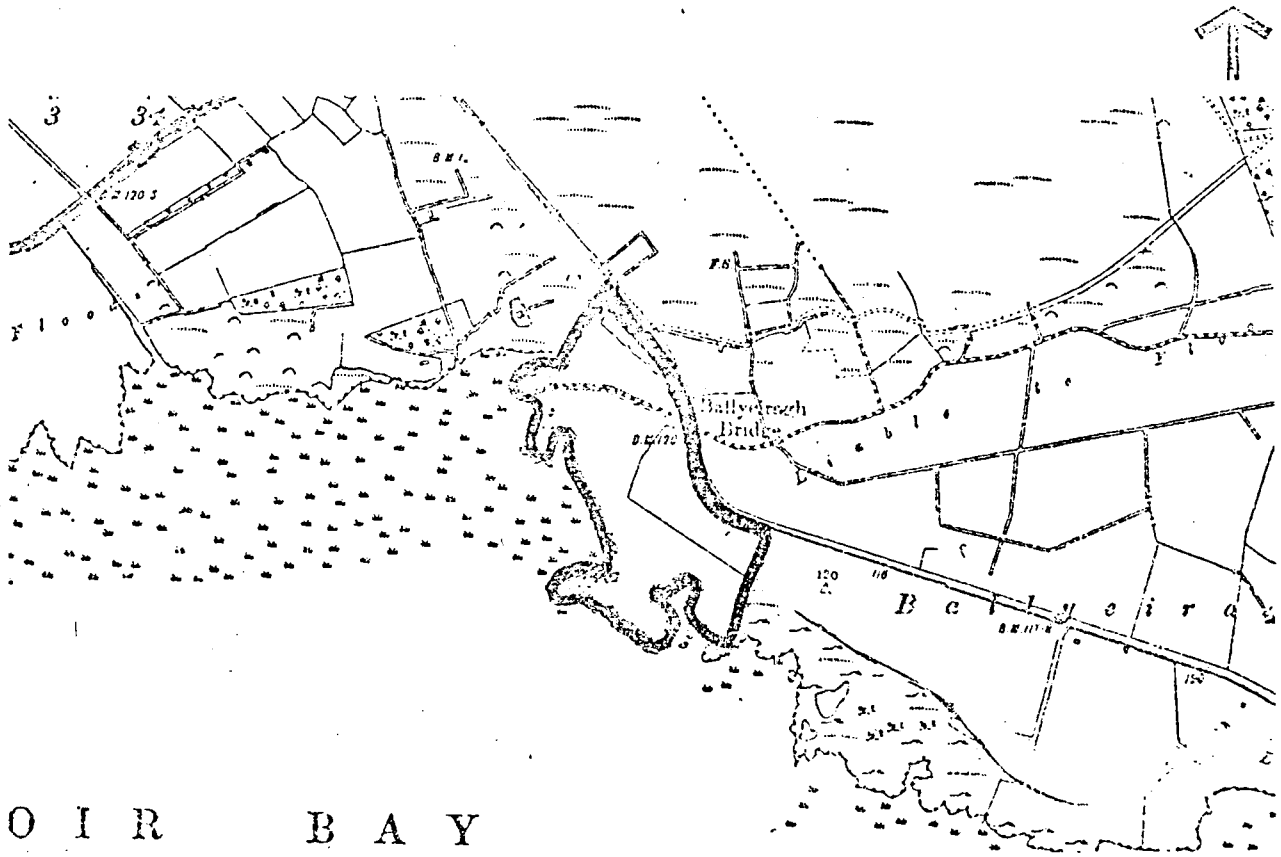
Recommendations

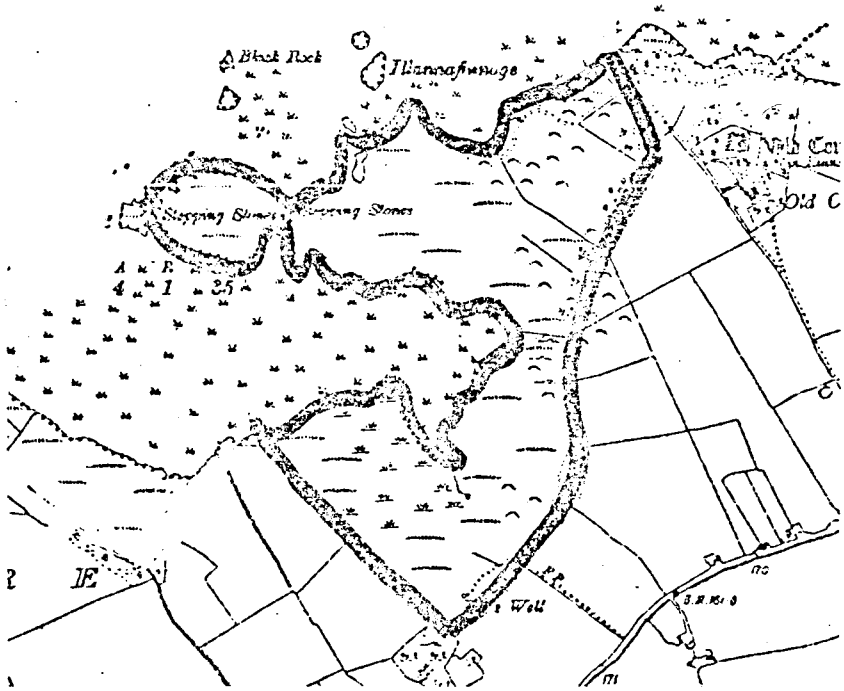
The precise limits of the species should be investigated and the area boundaries redrawn. In the meantime development within the areas designated should be prevented.

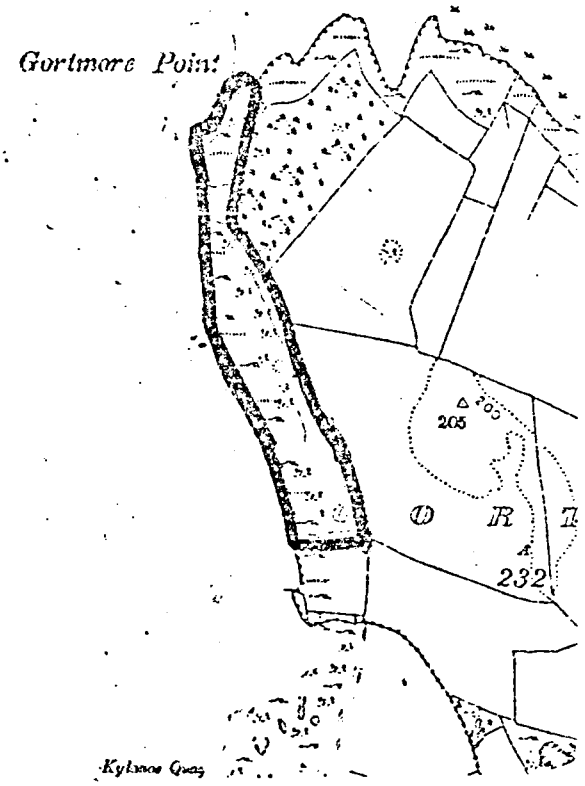
In the longer term general planning control should be exercised to maintain the scientific values of the areas within the redrawn boundaries.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 1

Scale: 6 Inches to 1 Mile







Name of Area	CORNALACK : Acreage 29
Grid Reference	R. 842, 999
Scientific Interest	Botanical, Ecological and Zoological
Rating	International Importance
Priority	A

Description of the Area See Map 2

The northern end of the site is a quarry in which the dominant shrubs are

Taxus baccata	yew
Juniperus communis	juniper
Cotoneaster microphyllus	

Pools are frequent in the bare rock and in these occurs Chara sp, stonewort.

There are occasional grass swards in which the following species are found:

Agrostis stolonifera	creeping bent
Succisa pratensis	devil's bit scabious
Centaurea nigra	knapweed
Sieglingia decumbens	heath grass
Glechoma hederacea	ground ivy
Achillea millefolium	yarrow
Senecio jacobea	ragwort
Cynosurus cristatus	crested dog's tail
Festuca arundinacea	tall fescue
Carlina vulgaris	carline thistle

On the bare limestone the fern Ceterach officinarum (rusty-back) is growing.

At one point a small plantation of Norwegian spruce has been invaded by the yew scrub. At the scuth of the site there is less juniper and the yew is accompanied by

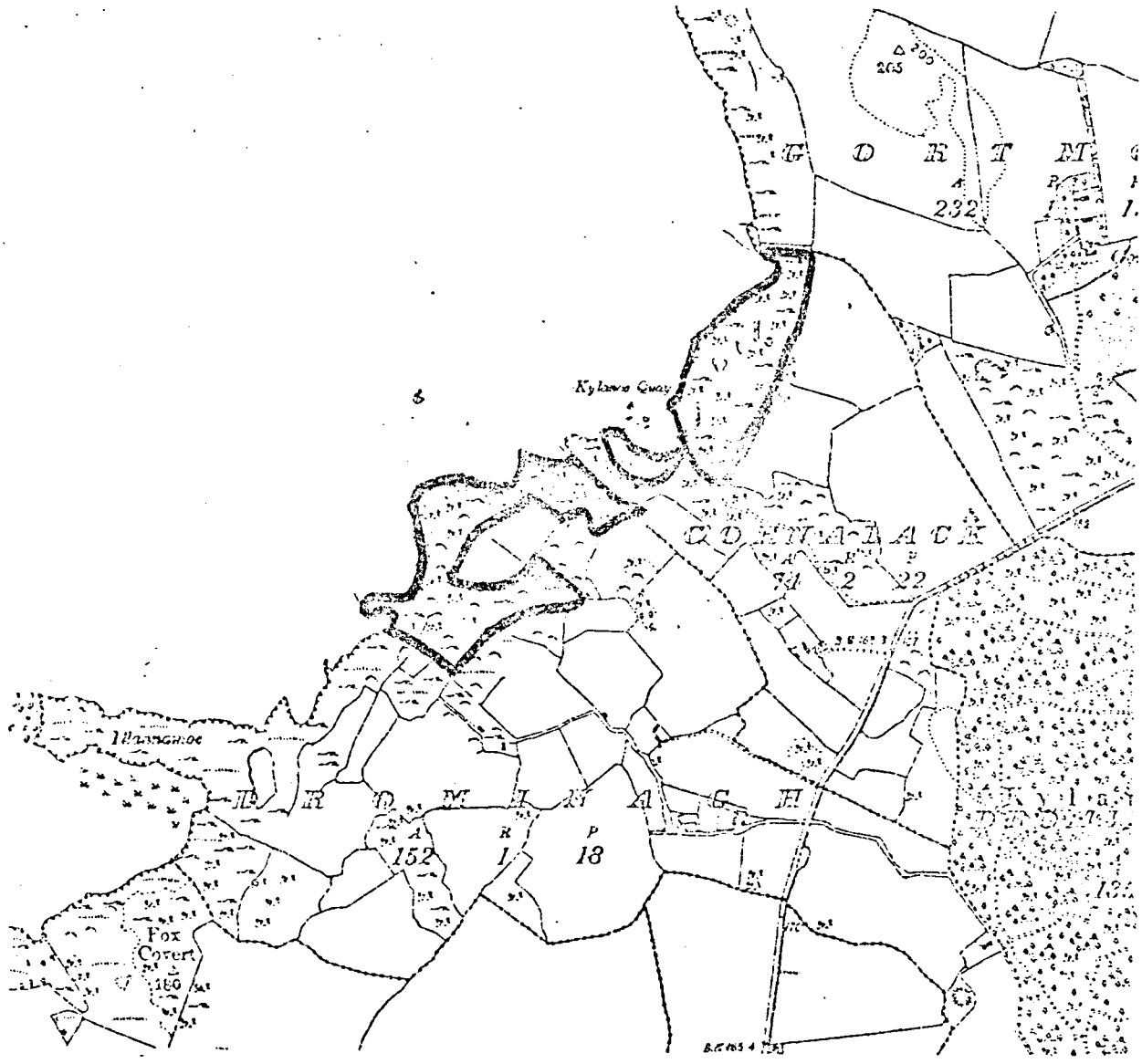
Crataegus monogyna	common hawthorn
Ilex aquifolium	holly

The soil cover is more complete in this area and the following plants occur:

Hedera helix	ivy
Fragaria vesca	wild strawberry
Rubus agg.	bramble
Oxalis acetosella	wood sorrel

MAP SHOWING AREA OF SCIENTIFIC INTEREST 2

Scale: 6 inches to 1 mile



On the lake boundary of the site the following occur:

Carex disticha	creeping brown sedge
Filipendula ulmaria	meadowsweet
Scirpus lacustris	common bullrush
Schoenus nigricans	black bog-rush

Members of this group are also found at the southern end of the site.

Evaluation

Yew woods are best known in the British Isles in southern England. As a general rule they are not extensive and yew woods in Ireland are confined to the west of the country. In southern England Yew is associated with Juniper which forms protection against grazing for the young yew. This is the association which occurs at Cornalack. Characteristically juniper which is intolerant of poor light is comparatively sparse at the southern end of the site where the largest yew trees occur.

In the introduction the importance of an ecotype as a habitat for invertebrates was mentioned. The juniper is known to be the specific host of two species of Hemiptera:

Pitedia juniperina

Dichrooscytus valesianus

The status of both in this country is unknown. A number of other species, like the Hemipteran Dichrooscytus rufipennis however, occur on the plant, as well as on other conifers, so that the yew-juniper scrub should be preserved as an example of an invertebrate refuge.

Threats to the Area

Clearing the area for agriculture or building is an obvious danger.

Recommendations

It is understood that planning permission has been granted for the southern end of the site but the plants northern quarry should be maintained by use of a conservation order.

Name of Area	FIAGH BOG : Acreage 704
Grid Reference	R.960, 970.
Scientific Interest	Zoological, ecological
Rating	National Importance
Priority	A

Description of Area

See map 3.

This is a marsh site containing large areas of Phragmites communis. Schoenus nigricans is also common, as is the moss Campylium stellatum.

Publication

Janus, H. (1965) Land and freshwater molluscs. Burke. London.

Evaluation

Fiagh Bog has been described as a fen, rather than a bog. The profuse mollusc (snail) fauna occurring there is indicative of a rich calcium supply. The rarity in question is the Round-mouthed whorl snail, Vertigo genesii Gredler, which is known in three Irish bogs and elsewhere in Northern Europe. It does not occur in Britain.

Threats to the Area

Drainage is the most likely. Pollution by toxic on eutrophicating substances is also a likely threat. The former is likely to be the more detrimental in this case. Pesticides used for agricultural purposes - especially sheep dips are most probably the chief danger.

Recommendations

For scientific reasons preservation of this site is most desirable. This will involve avoiding drainage of adjoining wetlands which might affect the water level in Fiagh Bog proper. A more detailed conservation study would be desirable.

Name of Area	WETLAND, BOG AND ESKER COMPLEX ALONG THE LITTLE BROSNA RIVER : Acreage 6,884
Grid Reference	N 000, 085
Scientific Interest	Ornithological, ecological, botanical
Rating	National Importance
Priority	B

Description of the Area See Map 4

The area consists of a wetland-esker complex. The following four area types were listed at the eastern end of the site.

1. An area having a shallow water cover in which were growing:

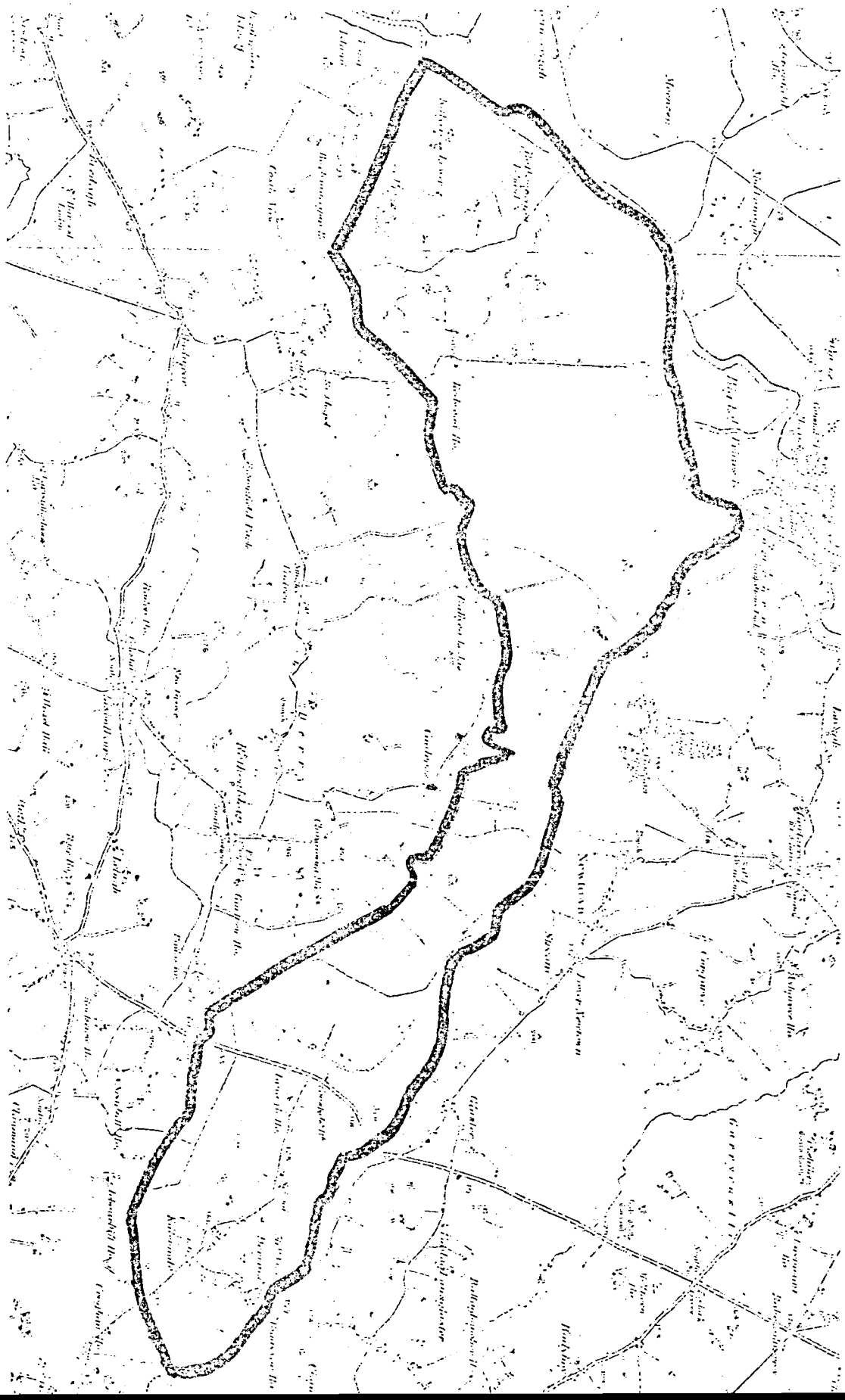
Mentha aquatica	water mint
Juncus effusus	soft rush
Galium palustre	marsh bedstraw
Potentilla palustris	marsh cinquefoil
Rumex conglomeratus	sharp dock
Alisma plantago-aquatica	water plantain
Ranunculus repens	creeping buttercup
Agrostis stolonifera	creeping bent
Apium nodiflorum	procumbent marsh-wort
Batrachium sp.	
Triglochin palustris	marsh arrow-grass
Senecio fluviatilis	broad leaved ragwort
Equisetum fluviatile	horsetail
Hippuris vulgaris	mare's tail
Carex disticha	creeping brown sedge

2. Marshy ground - not covered with water, having the following flora:

Mentha aquatica	water mint
Filipendula ulmaria	meadow sweet
Equisetum fluviatile	horsetail
Juncus inflexus	hard rush
Lycopus europaeus	gipsy wort

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 4

Scale: 1 Inch to 1 Mile



Carex paniculata	greater tussock sedge
Juncus acutiflorus	sharp flowered rush
Sparganium erectum	branched bur-weed
Potentilla erecta	common tormentil
Lythrum salicaria	purple loosestrife
Rorippa sp.	watercress
Dactylorhiza fuchsii	orchid

3. The area contains a large number of eskers, none of great elevation. The floral cover of these is made up of the following species:

Hypericum perforatum	perforate St John's wort
Prunella vulgaris	self-heal
Conopodium majus	pignut
Plantago vulgaris	ribwort plantain
Succisa pratensis	devil's bit scabious
Hypericum sp.	
Juncus effusus	soft rush
Ulex europaeus	gorse
Ranunculus bulbosus	bulbous buttercup
Veronica chamaedrys	germander speedwell
Cerastium sp.	chickweed
Cirsium palustre	marsh thistle
Bellis perennis	daisy
Cynosurus cristatus	crested dog's tail
Cirsium vulgare	spear thistle
Pteridium aquilinum	bracken
Mnium undulatum	
Festuca rubra	red fescue
Rhytidiadelphus squarrosus	
Hylocomium sp.	
Thuidium sp.	
Pseudoscleropodium purum	
Trifolium repens	clover
Brachythecium rutabulum	
Polytrichum formosum	

Achiilea millefolium	yarrow
Sesleria caerulea	
Torilis japonica	hedge parsley
Primula veris	cowslip
Senecio jacobea	ragwort
Hypochoeris sp.	

4. Streams flow through the area. In and close to them grow the following spec

Hypericum tetrapterum	square stemmed St. John's wort
Veronica chamaedrys	germander speedwell
Filipendula ulmaria	meadowsweet
Lythrum salicaria	purple loosestrife
Crataegus monogyna	hawthorn
Veronica beccabunga	brooklime
Cerastium glomeratum	clustered mouse-ear
Apium inundatum	floating marsh wort
Lemna minor	duckweed
Ranunculus hederaceous	ivy leaved crowfoot
Succisa pratensis	devil's bit scabious
Plantago lanceolata	ribwort plantain
Festuca rubra	red fescue
Juncus inflexus	hard rush
Callitriche platycarpa	
Galium saxatile	heath bedstraw
Leontondon autumnalis	smooth hawkbit
Rumex sp	
Agrostis stonolifera	creeping bent
Mnium undulatum	
Carex sp.	

The bogs to the west of the site have been cut and some show drainage effects : lichen heath etc. - as for Lough Nahinch, Upper Bog (site 20). Some of the larger bogs however retain water centrally and Sphagnum growth occurs.

Between the bogs there are marginal areas of Phragmites and Typha sp. swamp. Grassland also occurs and the following species are listed from the latter:

Agrostis stolonifera	creeping bent
Succisa pratensis	devil's bit scabious
Ranunculus repens	creeping buttercup
Climacium dendroides	
Mnium sp. (longirostrum ?)	
Plantago lanceolata	ribwort plantain
Holcus lanatus	yorkshire fog
Juncus effusus	soft rush
Narthecium ossifragum	bog asphodel
Marhantia sp.	liverwort
Senecio jacobea	ragwort
Cardamine pratensis	
Polysticus versicolor	
Acrocladium sp.	
Lophocolea bidentata	

In addition to these species there are large areas of Phragmites and others which are dominated by Crataegus, Betula and Ulex scrub.

The eastern area contains several bird species including snipe, pheasant, mallard and grey crow.

Evaluation

The area is important as it contains several types of wetland. The eastern side of the area is of botanical value as a site for Seslaeria. The area is an important wintering place for wildfowl. Recent counts for the latter give:

256 white front and 1 greylag goose

200 swans

up to 3,000 duck almost all wigeon (Cabot, D. 1971 Results of an aerial survey of Irish wildfowl and their wetlands An Foras Forbartha, internal publication). Casual observations have verified that all three species of swans overwinter there.

Threats to the area

Drainage has already occurred by marginal cutting of certain of the raised bogs and trench-digging on some of the marshes. Some land suitable for building occurs even in the most inaccesible parts of the sites and building would alter the wild character of the region. Shooting is occurring at present and could be undesirable if uncontrolled.

Recommendations

Because the area is a large one further study will be required to ensure its conservation. Maintaining the wetland nature of the region will be a prerequisite to this and further drainage should be stopped. It would be most desirable to maintain some of the larger raised bogs intact, without further turf cutting. Likewise siting of buildings within the A.S.I. should be carefully considered and, as a general rule, buildings not sited too close to the wetlands. In the future the development of a policy of controlled shooting of the wildfowl populations would be most desirable.

As this is a border resource consultation with local authorities sharing the site should be undertaken and a joint policy developed.

Name of Area	CAMERON ISLAND - LUSKA BAY	:	Acreage 351
Grid Reference	R. 820, 910		
Scientific Interest	Botanical, ornithological and ecological		
Rating	National Importance		
Priority	B		

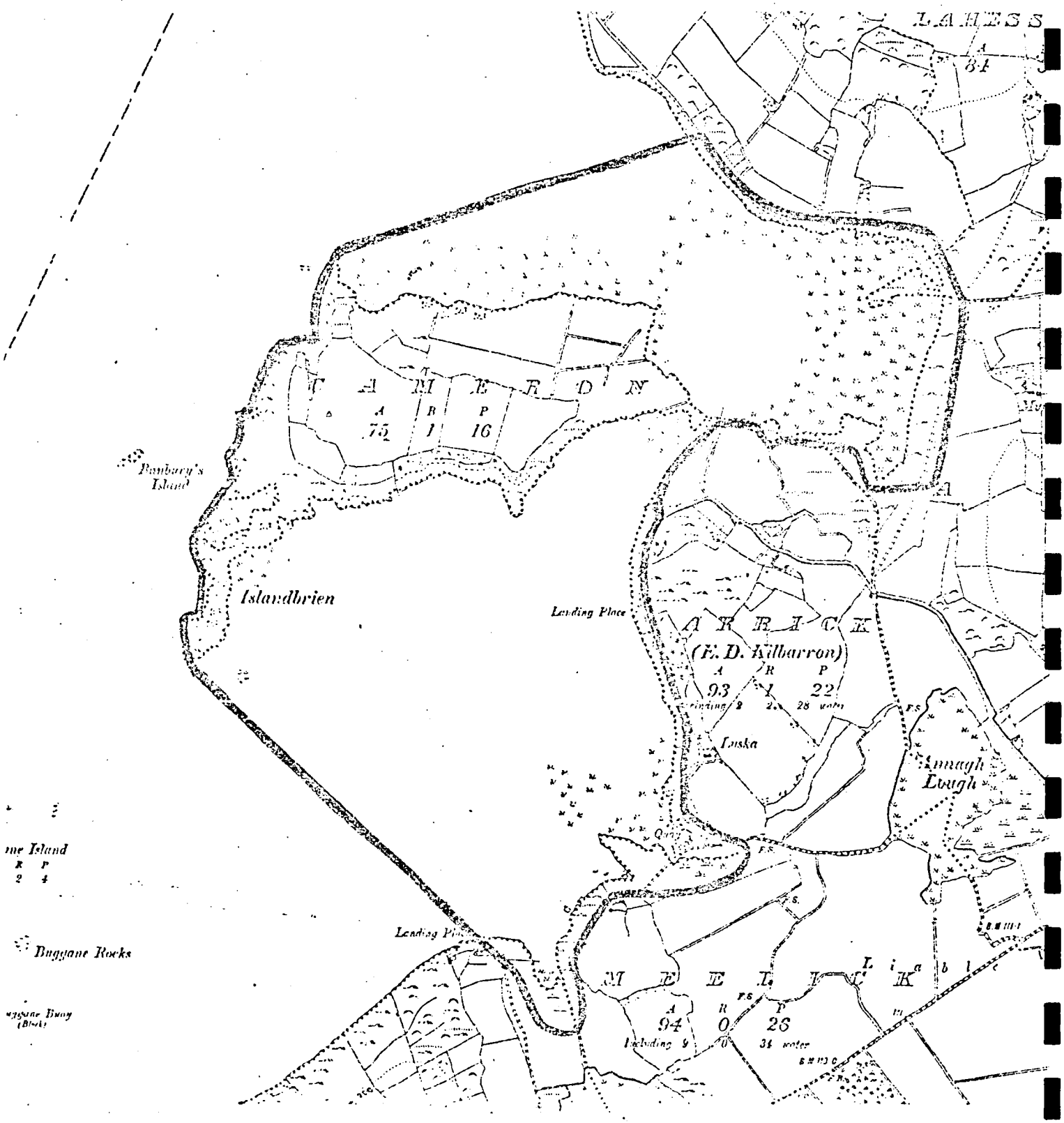
Description of Area See Map 5

This section of the Lough Derg shore is damp ground with limestone outcrops. The South shore of Cameron Island is said to have a good limestone flora although this was not visited. The plant species on the mainland shore include the following:

Verbascum thapsus	common mullein
Rosa agrestis	narrow leaved sweet briar
Hypericum pulchrum	beautiful St. John's wort
Mentha aquatica	water mint
Origanum vulgare	majoram
Agropyron repens	couch
Arrhenathrum elatius	oat grass
Carlina vulgaris	carline thistle
Angelica sylvestris	wild angelica
Molinia caerulea	purple moor grass
Schoenus nigricans	black bog rush
Succisa pratensis	devil's bit scabious
Centaurea nigra	knapweed
Vicia sepium	bush vetch
Eupatorium cannabinm	hemp agrimony
Epilobium hirsutum	great willow herb
E. obscurum	thin-runner willow herb
Deschampsia caespitosa	bog hair grass
Plantago lanceolata	ribwort plantain
Dactylis glomerata	cocksfoot
Galium verum	ladies bedstraw
Hypericum tetrapterum	square stalked St. John's wort
H. perforatum	perforate St. John's wort
Crisium arvense	creeping thistle

MAP SHOWING AREA OF SCIENTIFIC INTEREST

Scale: 6 inches to 1 m



C. vulgare	spear thistle
Dactylorhiza fuchsii	orchid
Rhinanthus minor	yellow rattle
Juncus subnodulosus	blunt flowered rush
Cynosurus cristatus	crested dog's tail

All of these plants occur within a band of 5 - 20 m of the water's edge. Shrubs which occur as bushes of variable size include:

Betula pubescens	birch
Ilex aquifolium	holly
Ulex europaeus	gorse
Juniperus communis	juniper
Alnus glutinosa	alder
Ligustrum vulgare	privet
Corylus avellana	hazel

The last is the most common species which occasionally occurs on the other side of the shore-path as a well developed scrub.

The southern shore of Cameron Island is known to contain a similar flora with the addition of:

Lathyrus palustris	marsh pea, having four other post-1930 sites in Ireland.
Spiranthes spiralis	lady's tresses (orchid), infrequent in southern Ireland.
Orobanche hederae	ivy broomrape, infrequent in southern Ireland
Rhamnus catharticus	buchthorn, infrequent in southern Ireland.
Hydrocharis morsus-ranae	frogbit, infrequent in southern Ireland.

Luska Bay itself is occupied by large areas of Phragmites (reeds).

Evaluation

The above area is of botanical interest as an example of limestone floral communit The fact that several rarities grow there gives the site a National importance rating. The Bay itself has large populations of dabbling and diving ducks. The reedswamp is an important breeding site for various bird species. The following is a list of species reported to be breeding in the bay and environs.

Confirmed	Possible and Probable
Great crested grebe	Cormorant
Little grebe	Heron
Mallard	Partridge
Tufted duck	Water rail
Red breasted merganser	Lapwing
Mute swan	Snipe
Sparrow hawk	Curlew
Pheasant	Redshank
Moorhen	Collared dove
Coot	Cuckoo
Wood pigeon	Swift
Swallow	Skylark
House martin	Hooded crow
Rook	Jay
Jackdaw	Coal tit
Magpie	Longtailed tit
Crested tit	Sedge warbler
Blue tit	Chiffchaff
Treecreeper	Meadow pipit
Wren	Yellow wagtail
Mistle thrush	Greenfinch
Song thrush	Goldfinch
Blackbird	Redpole
Robin	Bullfinch
Goldcrest	Chaffinch
Spotted flycatcher	Yellowhammer
Dunnock	Reed bunting
Starling	Teal
Sparrow	Pochard
Grey wagtail	Corncrake
	Common sandpiper
	Black headed gull
	Common tern
	Barn owl.

Threats to the Area

Dumping of rubbish is occurring along the mainland shore and ground has been cleared, apparently for building.

Recommendations

Both dumping of rubbish and building should be prevented to maintain the natural beauty of the area and minimise disturbance of the wild bird populations. A ban on shooting might also be considered in order to provide a refuge for wildfowl. Certain other sports (e.g. water skiing and speedboating) should be curtailed during the nesting season.

Name of Area	ROSCREA SANDHILLS	:	Acreage 47
Grid Reference	S. 153, 870		
Scientific Interest	Botanical, ecological		
Rating	National Importance		
Priority	B		

Description of Area See Map 6

The flora of the area, which is a number of sand hills, is similar to that on the eskers at site 25. The following additional species also occur here however:

Geranium sanguineum	bloody cranesbill
Carex pseudocyprus	cyperus sedge
Rhamnus catharticus	buckthorn
Rhynchospora fusca	brown beak sedge

Evaluation

The site is of importance as an area containing rare plants.

Threats to the Area

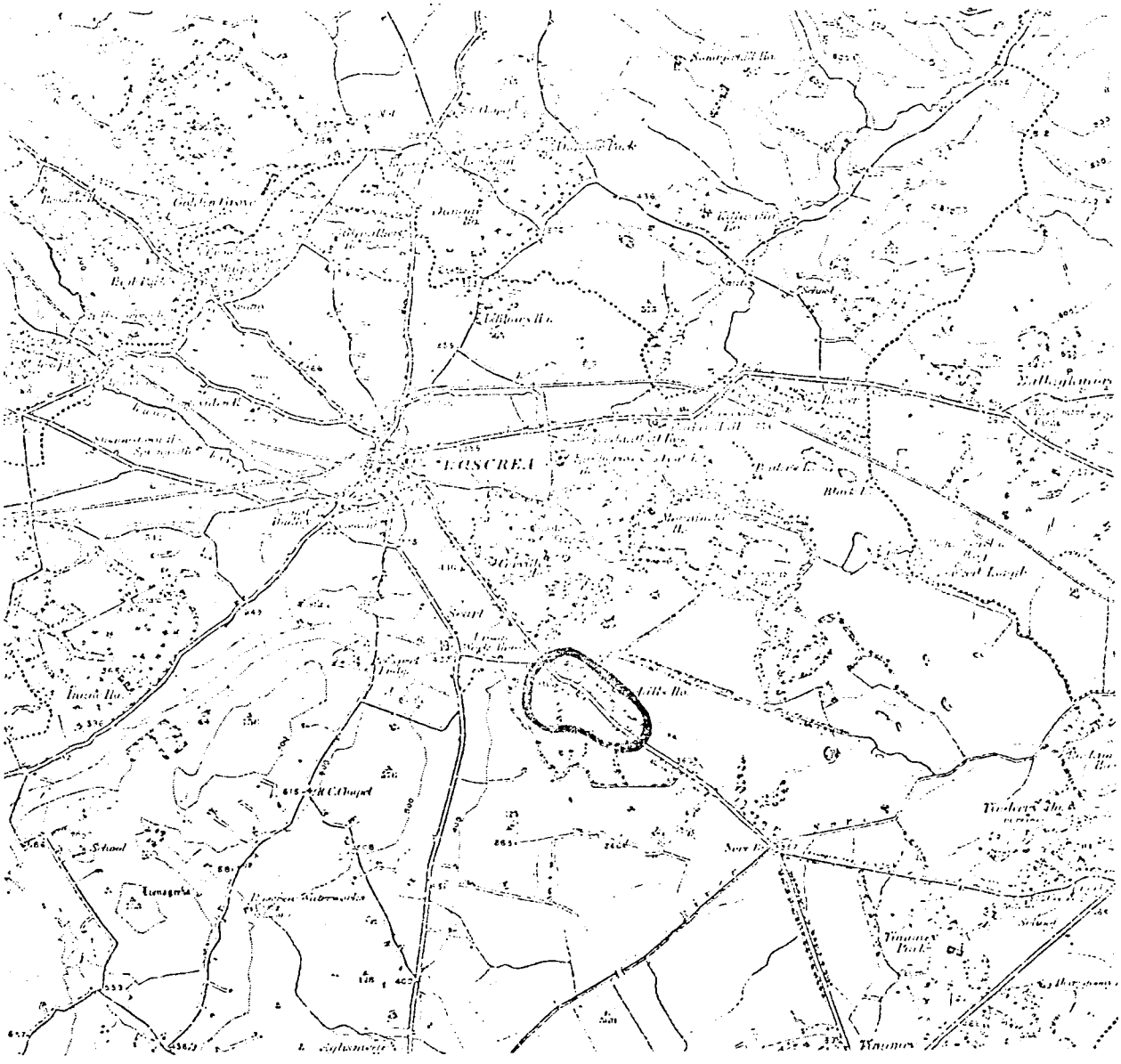
Removal of the substratum for building purposes.

Recommendations

Some of the sand-hills should be preserved.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 6

Scale: 1 Inch to 1 Mile



Name of Area	TEMPLEMORE	:	Acreage 4
Grid Reference	S. 102, 721		
Scientific Interest	Botanical		
Rating	National Importance		
Priority	A		

Description of Area — See map 7

This site is a short strip of roadside verge.

Evaluation

A plant species occurring here is found only at this site in Ireland

Threats to the Area

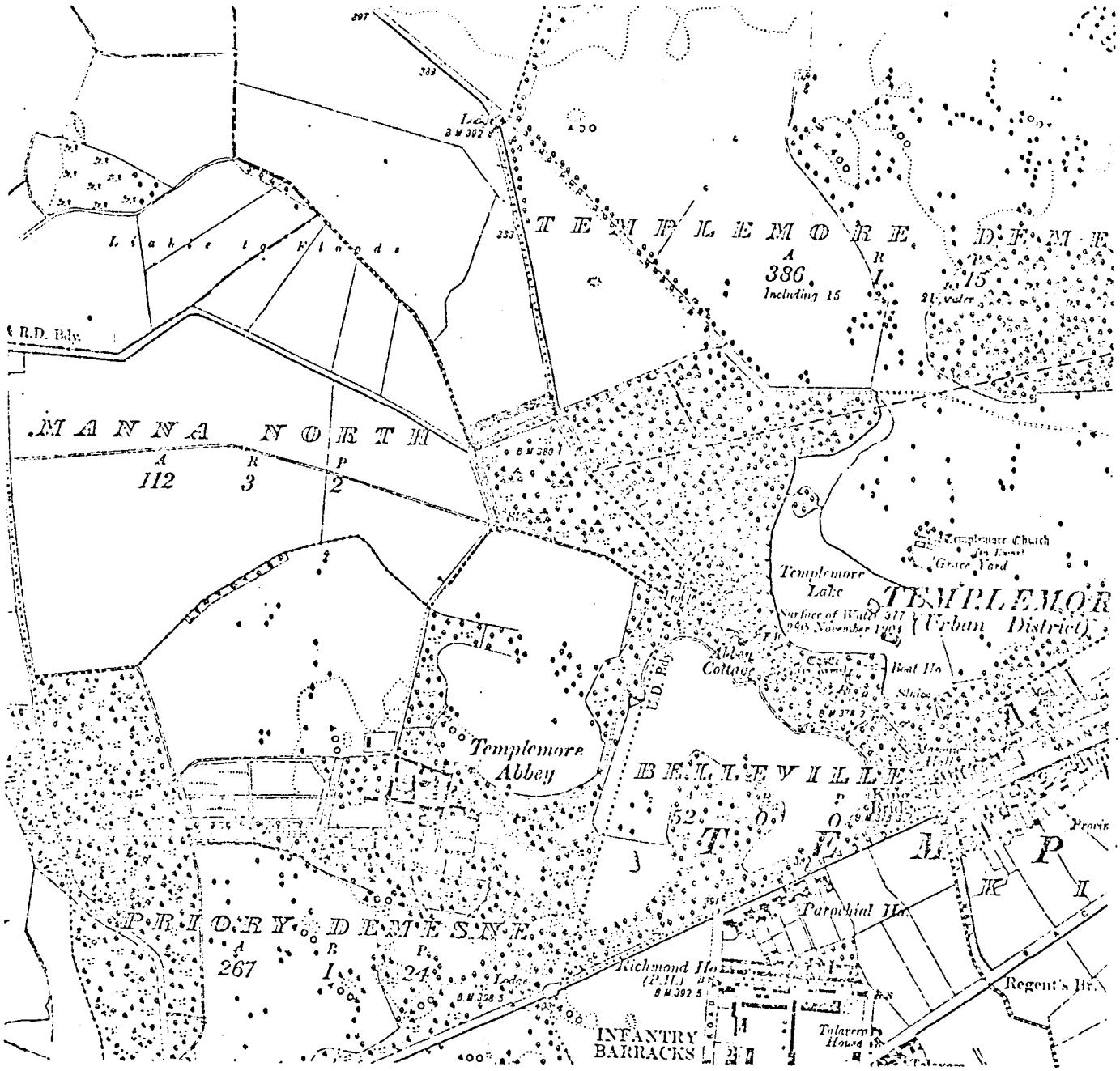
Roadside dumping is occurring.

Recommendations

The area should be kept clear of garbage and any further development of the site should take into account its scientific value.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 7

Scale: 6 Inches to 1 Mile



Name of area	TEMPLEMORE : Acreage 51
Grid Reference	S. 109, 718
Scientific Interest	Ecological, ornithological and botanical
Rating	Regional Importance
Priority	B

Description of the Area See Map 8

The A.S.I. is a small lake and woodland which are used for recreational purposes. The trees which dominate the area are beech with a lower canopy of hazel and oak. There is some rhododendron. The herb layer is composed of the following:

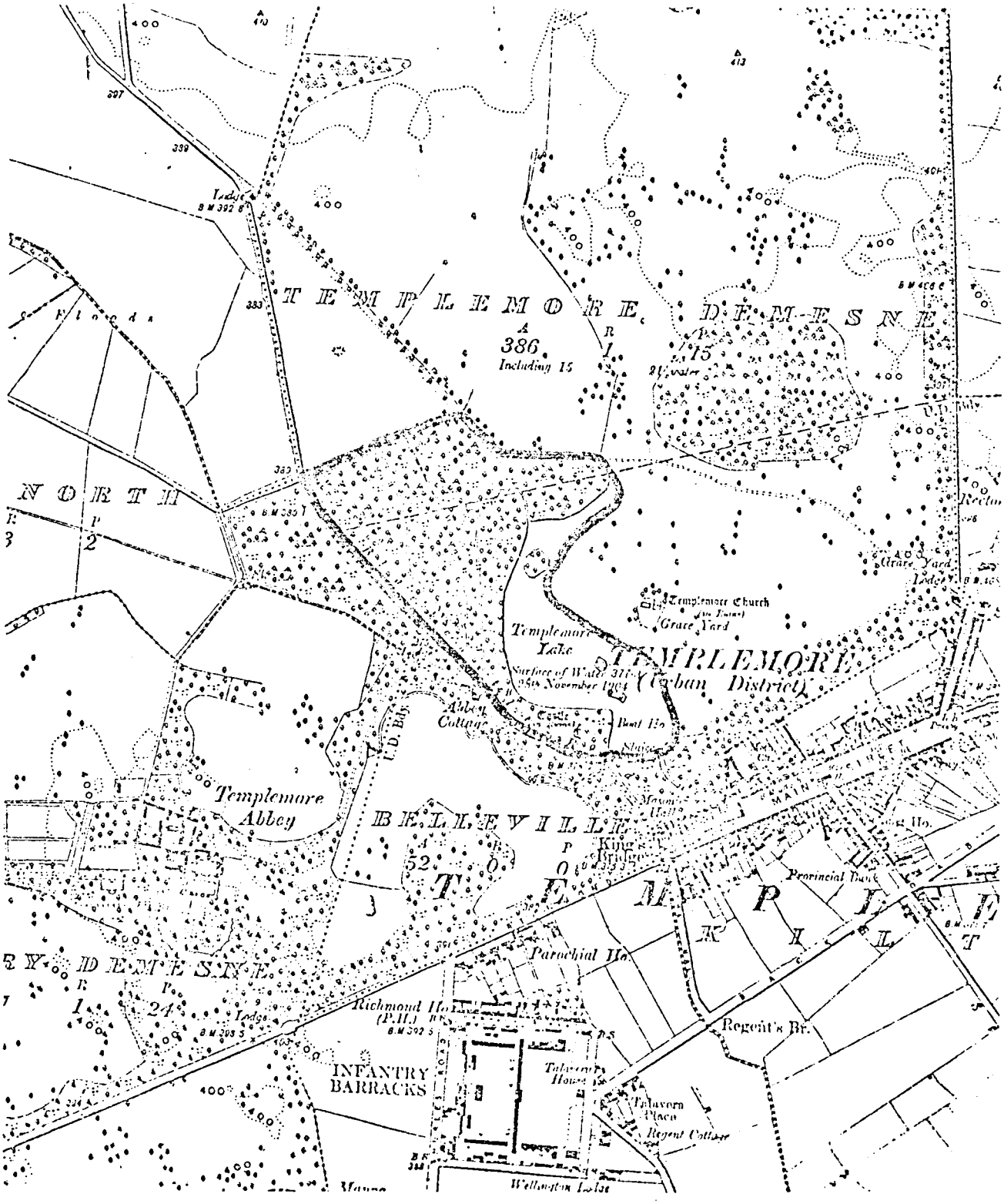
Plagiochila asplenioides	moss
Rubia peregrina	madder
Rhytidiadelphus triquetrus	moss
Vaccinium myrtillus	bilberry
Dryopteris dilitata	fern
Theuidium sp.	moss
Hedera helix	ivy
Luzula sylvatica	woodrush
Geranium robertianum	herb robert
Ajuga reptans	bugle
Viola riviniana	common violet
Eurhynchium sp.	moss
Oxalis acetosella	wood sorrel
Acrocladium sp.	moss
Potentilla sterilis	barren strawberry

A feature of the area is the drainage trenches which have been cut at regular intervals throughout the woodland. The area was visited only once and the permanance of water in the trenches is not known. However the profuse growth of ferns and mosses suggests that the area is generally wet.

The waterbody is shallow and contains much Phragmites.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 8

Scale: 6 Inches to 1 Mile



Evaluation

The area is of interest as a wet woodland. It was visited in Spring: presumably at other times of the year there is a profuse floral growth. The Rubia sp. is rare in central Ireland. The bird life of the parkland is of interest and Blackcaps and Garden Warblers are reported there. Other woodland species include sparrow hawks and the lake contained about 50 duck (mostly mallard) when visited. The flora includes Carex strisosa which is rare elsewhere.

Threats to the Area

Dumping of rubbish is occurring along the woodland boundaries. The woodlands and lake are not in good condition: the latter is filling up due to deposition of plant remains and the former contains some mature trees which should be felled and replanted. Rhododendron also poses a threat.

Recommendations

The area should be protected and dumping of rubbish prohibited. A management policy for the woods and lake would be desirable.

Name of Area	BIRCH SCRUB BY SLEVOIR BAY	:	Acreage 35
Grid Reference	M. 890, 012		
Scientific Interest	Botanical, ecological		
Rating	Regional Importance		
Priority	B		

Description of the Area See Map 9

This site is occupied by Birch scrub and includes some open areas. The southern end of the site is situated on a slope and the tree flora includes some Fagus, Crataegus and Quercus. Nine out of every 10 trees are Betula. Large shrubs present at this end of the site include Ulex europaeus, Ilex aquifolium and Rubus agg. The ground layer in the dryer parts of the southern end of the site contains the following species:

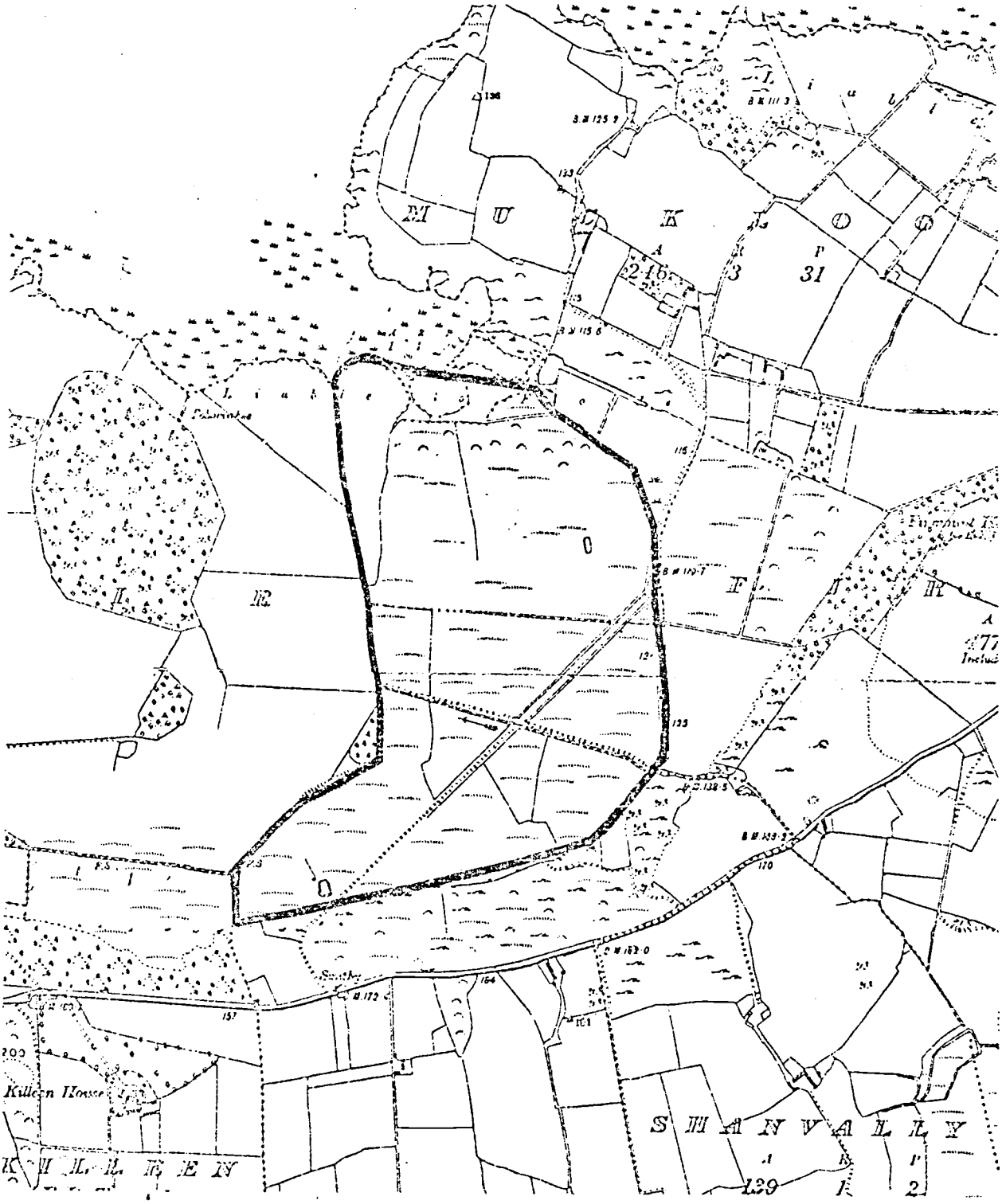
Hedera helix	ivy
Viola sp.	violet
Fragaria vesca	wild strawberry

In the wet areas of the upper site the following species were recorded:

Erica tetralix	cross leaved heath
Calluna vulgaris	ling
Succisa pratensis	devil's bit scabious
Plantago lanceolata	ribwort plantain
Juncus articulatus	jointed rush
Molina caerulea	purple moor grass
Briza media	common quaking grass
Juncus conglomeratus	common rush
Anthoxanthum odoratum	scented vernal grass
Galium palustre	marsh bedstraw
Prunella vulgaris	self-heal
Potentilla erecta	common tormentil
Juncus effusus	soft rush
Triglochin palustris	marsh arrow grass (indicative of a 'good' marsh)

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 9

Scale: 6 Inches to 1 Mile



At the northern end of the site - closer to the lake shore, an acid woodland flora has developed and includes the Angiosperms:

Calluna vulgaris	ling
Vaccinium myrtillus	bilberry
Lonicera periclymenum	honeysuckle
Hedera helix	ivy

the Fern, Dryopteris dilata and the following Bryophytes:

Hypnum cupressiforme

Thuidium tamariscinum

Polytricum sp.

Hylocomium splendens

The tree-cover does not persist at the northern end of the site and, where open ground occurs, it is dominated by clumps of the species listed below:

Pteridium aquilinum	bracken
Ulex europaeus	gorse
Molinia caerulea	purple moor grass
Cladium mariscus	
Schoenus nigricans	black bog rush
Calluna vulgaris	ling
Myrica gale	bog myrtle
Erica tetralix	cross leaved heath
Brachypodium sylvaticum	wood false brome

Evaluation

The birch is the first coloniser of heath and an intermediate in the transition from heath to oak. In Ireland, although birch is common in mixed and oak forests and in small numbers on heaths, such an area of the species, as occurs at this site, is rare.

Threats to the area

Clearance of the land for agricultural utilization, forestry purposes or building.

Recommendations

This site should be protected by use of a conservation order.

Name of Area	BELLEVUE HOUSE : Acreage 39
Grid Reference	R. 805, 945
Scientific Interest	Botanical, ecolcgical, ornithological
Rating	Regional Importance
Priority	C

Description of the area See Map 10

The deciduous tree area on the map is occupied by oak (Quercus sp.) and hazel scrub (Corylus avellana), the former as large trees. The oak are overgrown by

Polypodium vulgare	polypody

and Hedera helix ivy

Oak regeneration is occurring

The herbs and shrubs of the ground layer include:

Oxalis acetosella	wood sorrel
Viola sp.	violet
Hedera helix	ivy
Primula vulgaris	primrose

The remainder of the site is divisible into several community types:

Foreshore:

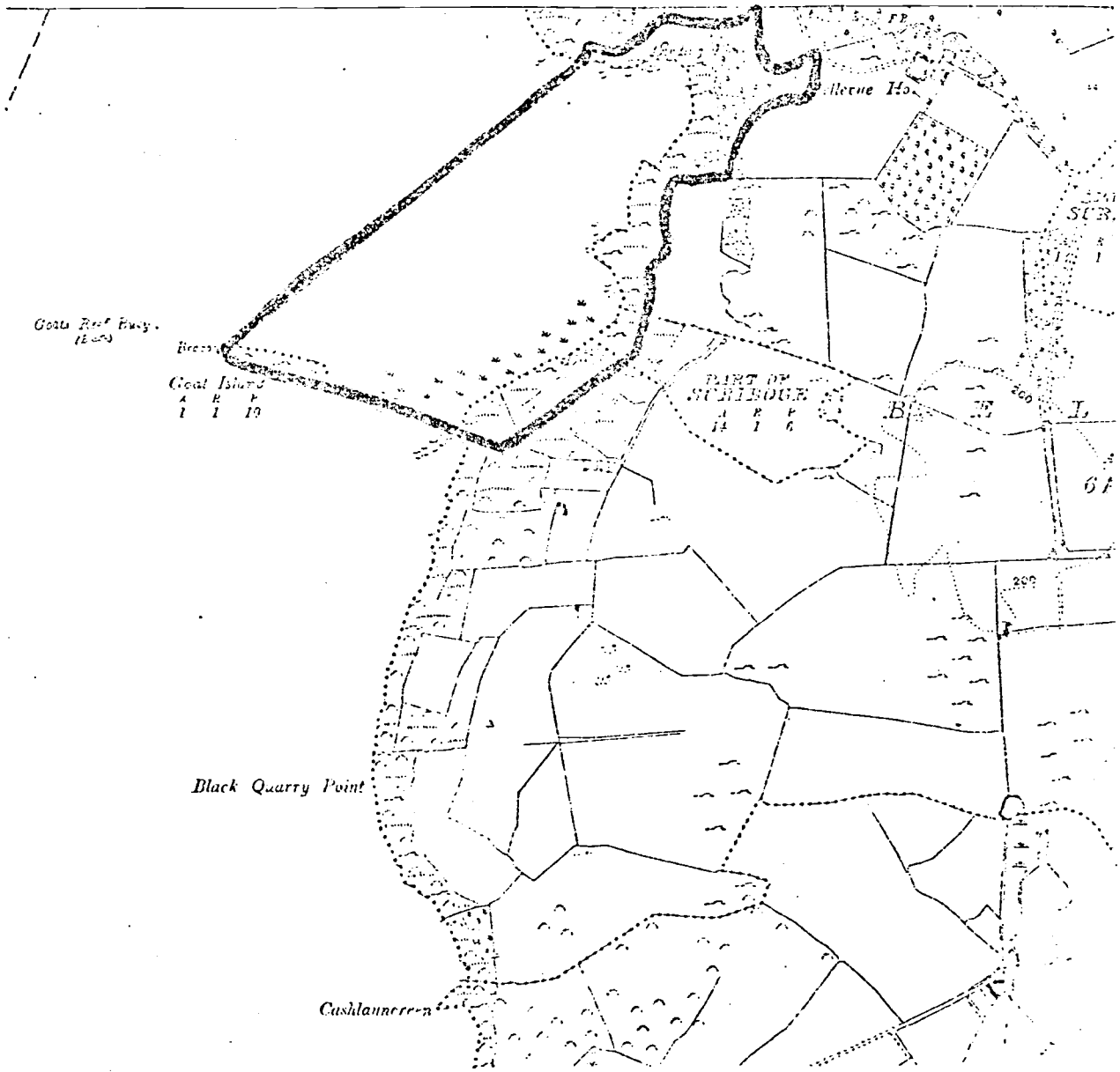
Mentha aquatica	watermint
Juncus acutiflorus	sharp-flowered rush
J. articulatus	hard rush
Galium plaustre	marsh bedstraw
Potentilla anserina	silverweed
Lythrum salicaria	purple loosestrife
Carex disticha	creeping brown sedge
Agrostis stolonifera	creeping bent
Ranunculus repens	creeping buttercup
R. flammula	lesser spearwort

The lake-side area of the site is largely occupied by Phragmites reeds and the remainder by open water.

The remainder of the site could be described as wet grazing. Plants recorded

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 10.

Scale: 6 Inches to 1 Mile



there included :

Lysimachia nemorum	yellow pimpernel
Senecio jacobea	ragwort
Primula vulgaris	primrose
Hypericum pulchrum	beautiful St. John's wort
Verbascum thapsus	common mullein
Trifolium pratense	red clover
Cerastium vulgare	mouse eared chickweed
Hypericum tetrapterum	square stemmed St. John's wort
Lolium perenne	Italian rye grass
Rumex sanguineus	red-veined dock
Hypericum androsaemum	
Fragaria vesca	wild strawberry
Polytrichum formosum	

The margins of the woodland and grazing areas were occupied by the following :

Lapsana communis	nipple-wort
Dactylis glomerata	cocksfoot
Brachypodium sylvaticum	
Hypericum perforatum	perforate St. John's Wort
Prunella vulgaris	self-heal
Scrophularia nodosa	figwort
Juncus effusus	soft rush
Ranunculus repens	creeping buttercup
Agrostis stolonifera	creeping bent
Rosa agrestis	narrow-leaved sweet briar
Cirsium vulgare	spear thistle
Arctium minus	lesser burdock
Urtica dioica	nettle
Sonchus oleraceous	common sowthistle
Carex lepidocarpa	
Plantago major	great plantain

Hypericum androsaemum	
Succisa pratensis	devil's bit scabious
Filipendula ulmaria	meadow sweet
Rumex sanguineus	red-veined dock

On the foreshore are a number of small pools containing:

Menyanthes trifoliata	bogbean

and populations of Corixids (Hemiptera).

The passerine bird populations of the woods are relatively large and include blackbirds, thrushes, wrens and tree creepers.

Evaluation

The area is unique in North Tipperary as a well established stand of natural oak. The occurrence of a number of habitat types within a small area is also noteworthy. The area is likely to be a source of many invertebrate species.

Threats to the Area

Removal of the oak woods would deprive the site of its most important habitat. Building on the foreshore would also interfere with the rough grazing. Dumping of domestic rubbish is a possibility.

Recommendations

Disruption of any of the habitats listed would be undesirable. Removal of the oak woods either for replanting or clearance should be avoided and the trees should be preserved by use of a tree preservation order. The foreshore should be maintained as at present: any dumping of rubbish (of which there is at present no evidence) should be prevented and building should not be allowed.

Name of Area	LOUGH OURNA : Acreage 69
Grid Reference	R. 880, 855
Scientific Interest	Botanical, Ornithological and Ecological
Rating	Regional Importance
Priority	C

Description of the Area See Map 11

The area is of open water and Phragmites beds. At the time of observation (5/1/72) the water was low and the lake bed was covered in dense growth of

Apium inundatum	floating marsh wort
Fontinalis antipyretica	

and Rorippa sp., occasional

Among these plants, shells of the Mollusca

Pisidium amnicum	

and Lymnaea stagnalis

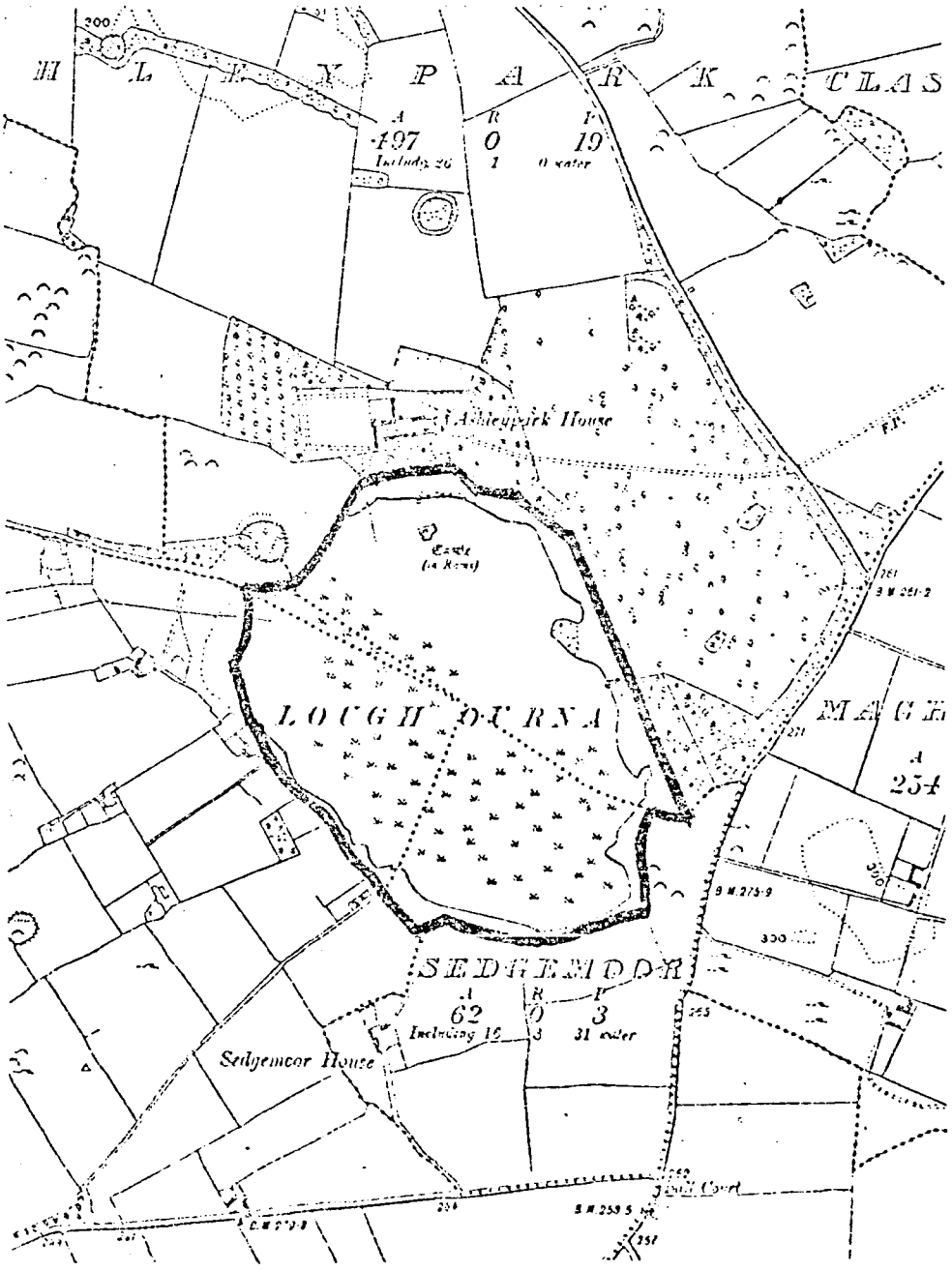
were collected.

The following plant species were also taken close to the wetland-margin:

Rumex conglomeratus	sharp dock
Schoenoplectus lacustris	common bulrush
Stellaria graminea	lesser stichwort
Stellaria media	chickweed
Alisma plantago-aquatica	water plantain
Cirsium palustre	marsh thistle
Galium palustre	marsh bedstraw
Polygola vulgaris	milkwort
Agrostis stolonifera	creeping bent
Myosotis caespitosa	lesser water forget-me-not
Rumex maritimus	golden dock
Aquilegia vulgaris	columbine
Hypericum tetrapterum	square stemmed St. John's Wort
Dactylorhiza fuchsii	(orchid)
Carex echinata	star sedge
Sieglingia decumbens	heath grass

MAP SHOWING AREA OF SCIENTIFIC INTEREST

Scale: 6 inches to 1 mile



The following bird species were recorded in the area:

Mallard
Wigeon
Teal
Pheasant
Coot

Evaluation

This site is noteworthy as one of the three post-1930 stations for Rumex maritimus in Ireland. It is also a permanent wetland and has been recorded as a building site for the Great Crested Grebe. The area is important in winter having moderately large populations of migratory wildfowl. The area is also of significance as a breeding ground in summer. Species recorded breeding there include:

Little Grebe
Heron
Mallard
Mute Swan
Moorhen
Lapwing
Snipe and possibly
Redshank

Threats to the Area

Some dumping of rubbish is taking place. Drainage is another possibility.

Recommendations

The area should be maintained in its present condition and general planning control exercised to this end.

Name of Area	NEWCHAPEL	: Acreage 15
Grid Reference	R. 854, 925	
Scientific Interest	Botanical, ecological	
Rating	Regional Importance	
Priority	C	

Description of the Area See Map 12.

This small site is occupied by two small pools at the southern end and a permanent water body at the northen end. In the vicinity of the two pools the following plants were collected:

Mentha aquatica	water mint
Juncus acutiflorus	sharp flowered rush
Potentilla anserina	silverweed
Oenanthe aquatica	fine leaved water dropwort
Succisa pratensis	devil's bit scabious
Acrocladium cuspidatum	
Ranunculus repens	creeping buttercup
Agrostis stolonifera	creeping bent
Carex nigra	common sedge
Hydrocotyle vulgaris	marsh pennywort
Teucrium scordium	water germander

The more permanent wetland was occupied by:

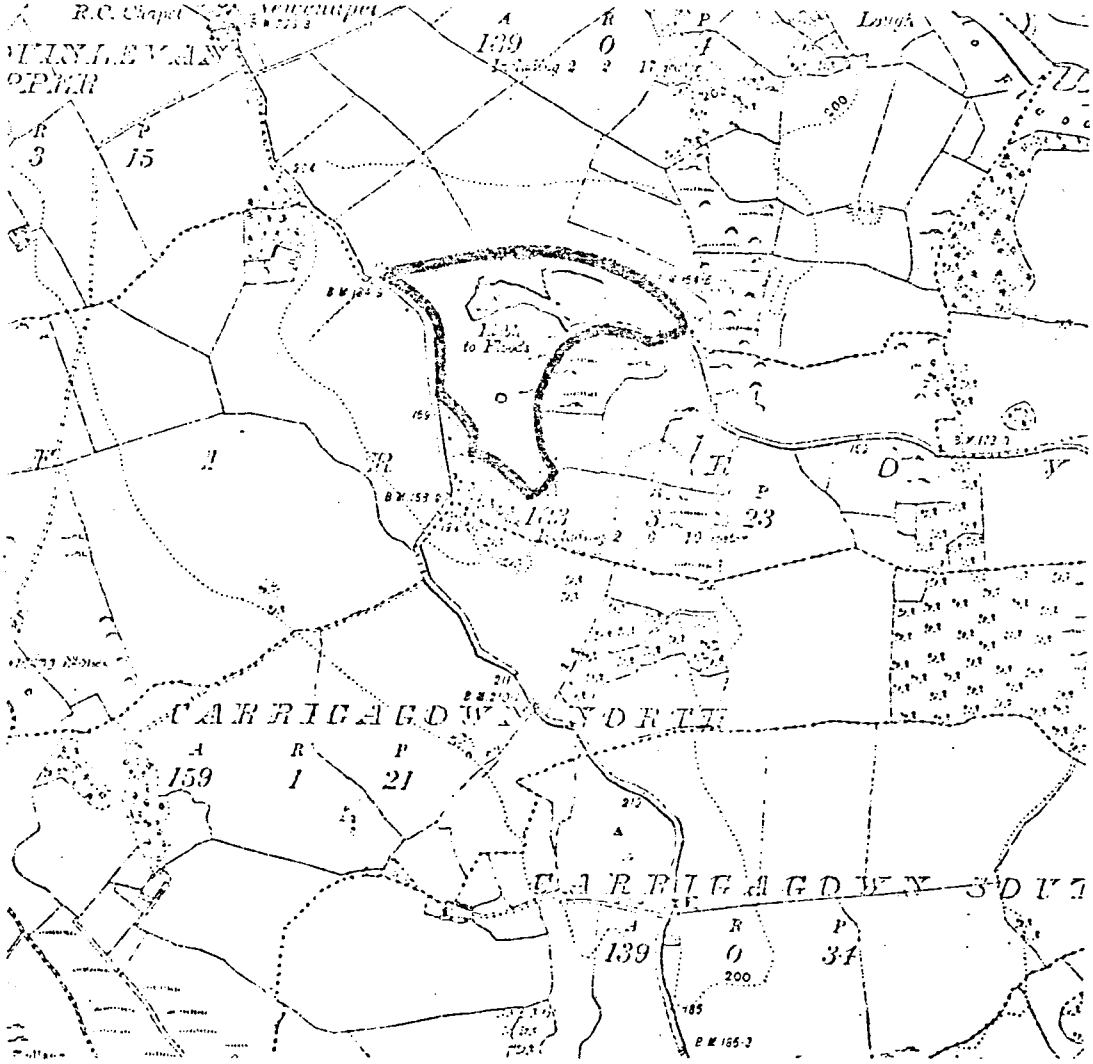
	Equisetum fluviatile	horse-tail
and	Phragmites communis	common reed

Growing in the vicinity of these were the following:

Mentha aquatica	water mint
Fontinalis antipyretica	
Anthoxanthum odoratum	scented vernal grass
Apium inundatum	floating marsh wort
Scirpus lacustris	common bulrush
Juncus articulatus	jointed rush
Ranunculus flammula	lesser spearwort

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 12

Scale: 6 Inches to 1 Mile



Evaluation

The area is important as a site for Teucrium scordium which occurs in the midlands only. The fact that the water surface fluctuates considerably may indicate that the water body is a turlough.

Threats to the area

Drainage of the wetland might occur. Likewise run-off from a septic tank could alter the chemical constitution of the water and thus affect the flora.

Recommendations

Drainage should be prevented and general planning control exercised to prevent eutrophication.

Name of Area	SLEVOIR BAY AND ENVIRONS	: Acreage 931
Grid Reference	M. 895, 025	
Scientific Interest	Ornithological, Ecological	
Rating	Regional Importance	
Priority	B	

Description of the Area See Map 13

The greater part of this site consists of open water. In addition, there are marginal Phragmites (reed) beds with some Typha latifolia (reedmace). The marginal land which is included is of several types:

(a) Rocky outcrops having a flora similar to that on the freeshore at Luska Bay

(b) There are patches of deciduous (beech and hazel) scrub and woodland.

(c) Damp foreshore similar to that described at Site 10 (Bellevue House).

These areas are important roosting sites while the marginal woodlands give cover for various passerine bird species.

Evaluation

Bird species listed as breeding in the vicinity of Slevoir include the following:

Possible and Probable	Confirmed
Great crested Grebe	Heron
Little Grebe	Pheasant
Mallard	Water-rail
Tufted Duck	Moorhen
Sparrow Hawk	Coot
Kestrel	Black headed Gull
Corncrake	Woodpigeon
Lapwing	Swallow
Snipe	Magpie

Possible and Probable	Confirmed
Woodcock	Wren
Curlew	Mistle Thrush
Sandpiper	Song Thrush
Cuckoo	Blackbird
Swift	Robin
Kingfisher	Pied Wagtail
Jay	Yellowhammer
Great Tit	House Sparrow
Blue Tit	Grey Wagtail
Coal Tit	Red breasted Merganser
Chiffchaff	
Long tailed Tit	
Treecreeper	
Goldcrest	
Flycatcher	
Greenfinch	
Linnet	
Bullfinch	
Reed bunting	
Wheatear	
Starling	

A visit to the area during the winter months enabled listing the following: Tufted Duck, Little Grebe, Mallard, Heron and Brent Goose in addition to various passerines and land dwelling birds. Precise counts of winter wildfowl have not yet been obtained.

Threats to the Area

Although undisturbed at the moment, there are a number of potential threats. Removal of the marginal woodland and drainage of the wetland would affect to some extent the existing migratory and/or breeding populations. Building in the vicinity of the reed cover would be undesirable. Shooting is affecting the present stocks of indigenous birds. A potential threat is water-skiing and speed-boating during the Spring months.

Recommendations

Within the A.S.I. development should be prevented and the existing woodlands and wet lake margins left unaltered. It would be desirable to maintain the bay as a reserve for wildfowl and a restriction of shooting would contribute to this end. A restriction on certain water sports during the spring months would also be desirable. In addition to these restrictions, general planning control should serve to preserve the area.

Name of Area	KEEPER HILL
Grid Reference	R. 820, 695
Scientific Interest	Botanical
Rating	Regional - possibly National
Priority	- Requires further investigation

Description of Area

An area dominated by heath vegetation, at a comparatively high altitude.

Evaluation

Several species of unusual plants occur at the site

Threats to the Area

Forestry planting

Recommendations

A detailed assessment of the site should be carried out as soon as possible and the present status of the plants evaluated.

Specific recommendations must await this.

Name of Area	LISMACRORY HOUSE TURLOUGH	:	Acreage 129
Grid Reference	R. 965, 997		
Scientific Interest	Botanical, ecological		
Rating	Regional Importance		
Priority	C		

Description of Area See Map 14.

The area is like the turlough part of site 18 (Wetlands north of Borrisokane) in its flora.

Evaluation

This is a site for Tecrium scordium and possibly of geological interest as a turlough.

Threats to the Area

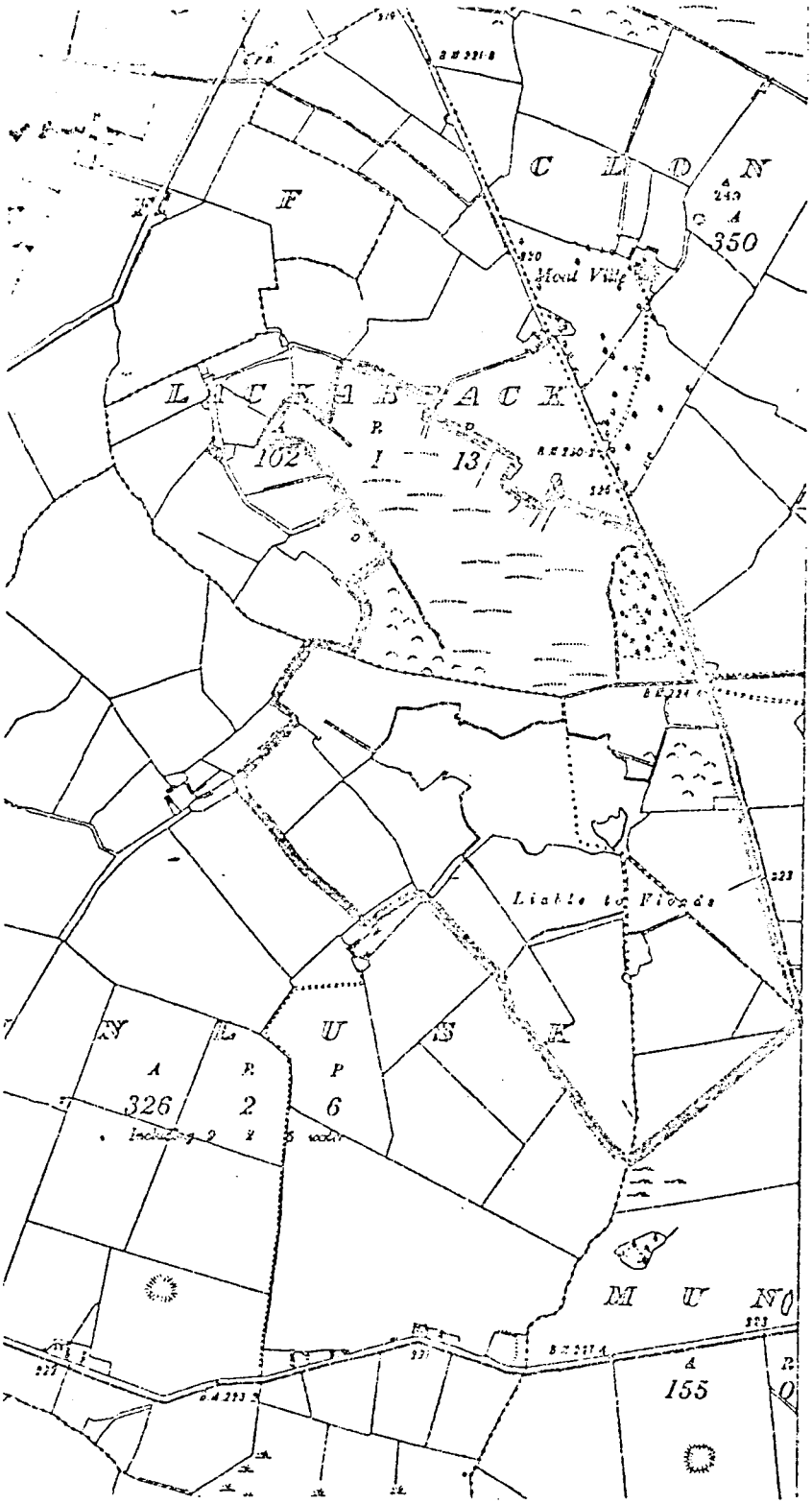
None obvious

Recommendations

Development of this site should be in keeping with its scientific value.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 14

Scale: 6 Inches to 1 Mile



Name of Area	~~SCONOBOY~~ SCOHABOY BOG	:	Acreage 385
Grid Reference	R. 970, 910		
Scientific Interest	Ecological, Botanical		
Rating	Regional Importance		
Priority	A		

Description of Area See Map 15

The area of scientific interest is part of a large bog. It is 'young' with much Sphagnum growth. The occurrence of the following plant species is also noteworthy.

Prunus padus	bird cherry, is rare elsewhere
Lysimachia vulgaris	yellow loosestrife
Thalictrum flavum	meadow-rue, is rare
Drosera anglica	sundew
D. intermedium	
Utricularia vulgaris	bladder wort, an occasional species

Evaluation

This was the wettest bog encountered in the course of the work and the best example of a young bog. The above list contains some uncommon plant species indicating an unusual association of species. A very rare plant species is also recorded from the site.

Threats to the Area

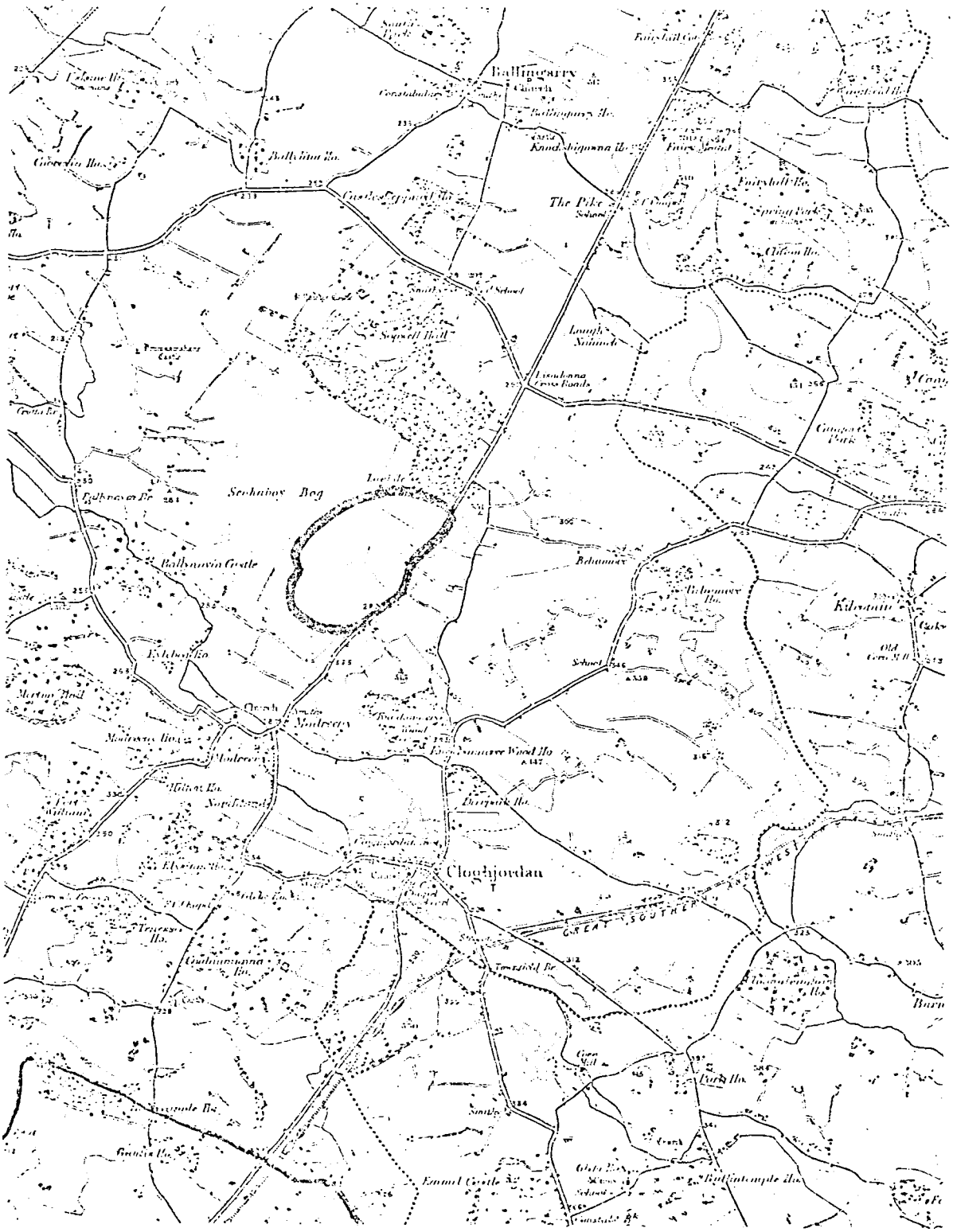
Drainage of this or a nearby bog of less interest.

Recommendations

Preservation of the bog in its present condition would be desirable.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 15

Scale: 1 Inch to 1 Mile



Name of Area	DERRYGAREEN	:	Acreage 89
Grid Reference	R. 768, 606		
Scientific Interest	Botanical, ecological		
Rating	Regional Importance		
Priority	B		

Description of Area See Map 16

The site is occupied by a typical heath vegetation in which the plants Calluna and Erica were important, and backed by a cliff. The vegetation is dominated by Salix aureta scrub.

Evaluation

A rare plant species occurs at the site.

Threats to the Area

Drainage which would alter the existing area could have undesirable effects on the rare plant species. The most likely threat is forestry planting of the site.

Recommendations

Every effort should be made to preserve the site in its present state.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 16

Scale: 6 Inches to 1 Mile

Name of Area	MOUNT BUTLER : Acreage 6
Grid Reference	S. 175, 897
Scientific Interest	Botanical, site of a rare plant species
Rating	Regional Importance
Priority	Unknown - requires further investigation

Description of Area See map 17

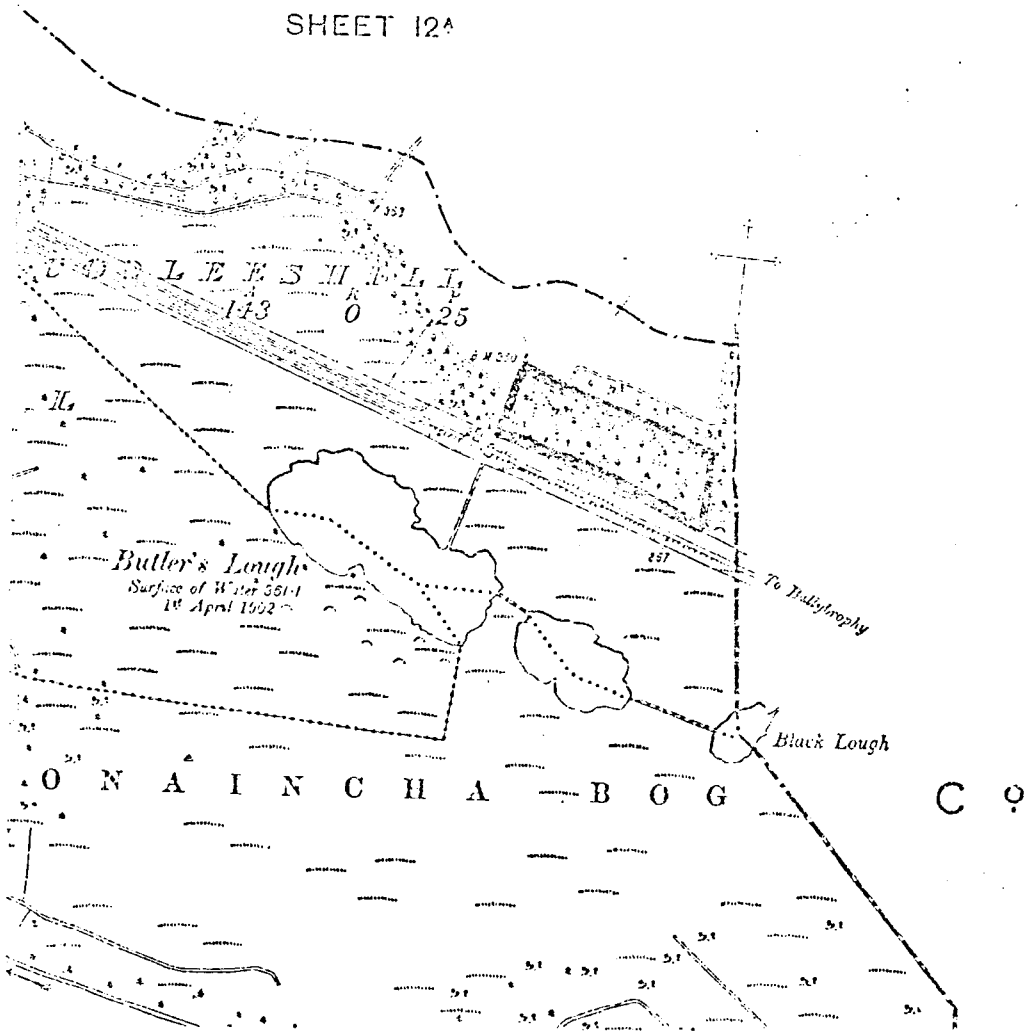
The area is occupied by coniferous forest. It was not visited during the present work and a future evaluation is required to assess the survival and status of the species in question.

Recommendations

A survey of the site should be undertaken in the near future.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 17

Scale: 6 Inches to 1 Mile



Name of Area	KILAVALLA WOOD	:	Acreage 89
Grid Reference	R. 950, 717		
Scientific Interest	Ecological, Botanical		
Rating	Local Importance		
Priority	B		

Description of Area See Map 18

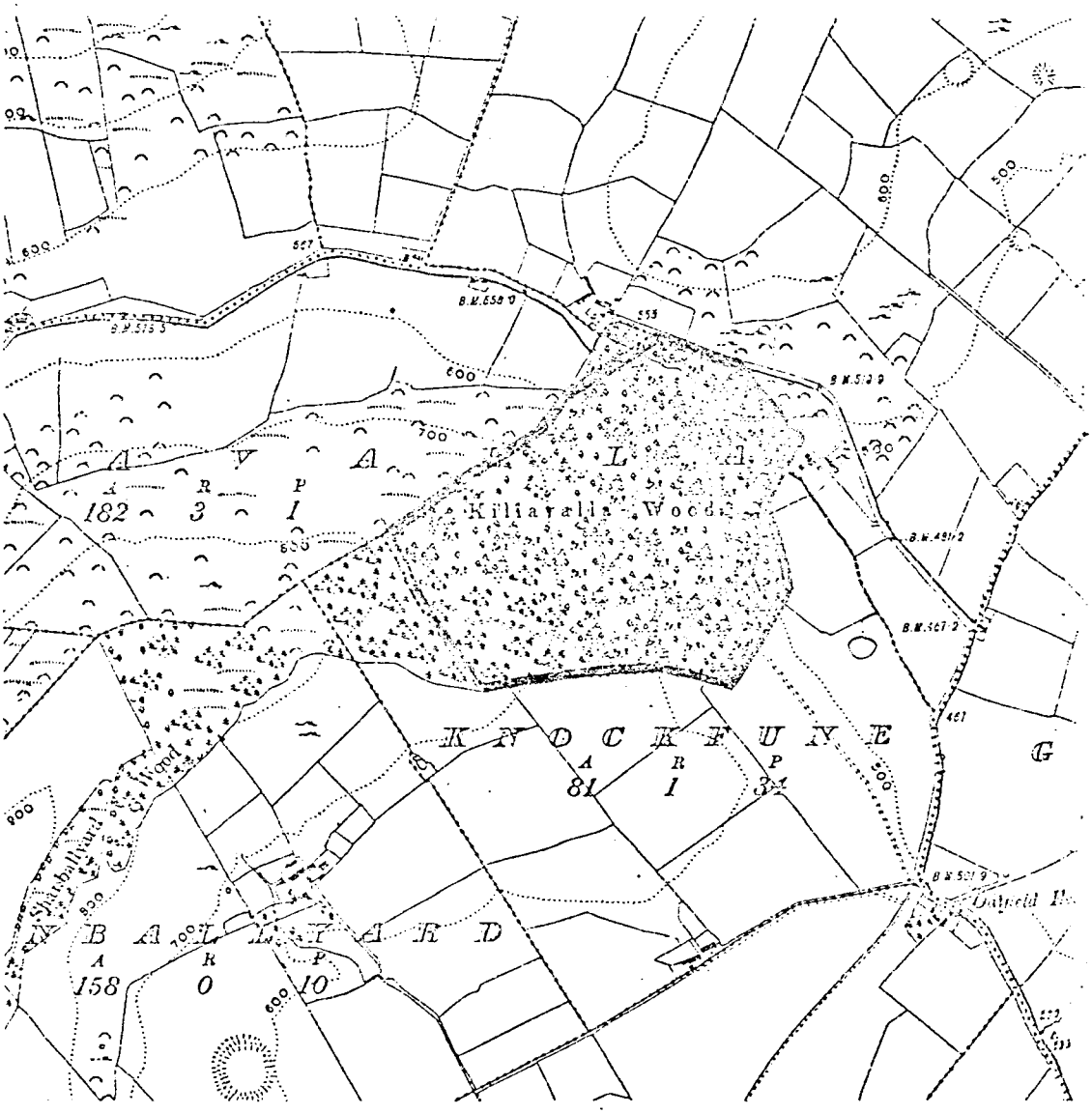
A small area of woodland situated on a hill-slope. The majority of the large trees are Beech.

There is an extensive shrub layer of hazel scrub, oak and rhododendron (occasional). The herb layer consists of the following species:

Polystichum setiferum	fern
Dryopteris felix-mas	male fern
Veronica montana	wood speedwell
Ranunculus ficaria	lesser celandine
Hedera helix	ivy
Vicia sepium	bush vetch
Conocephalum sp.	riverworth
Rumex obtusifolius	broad-leaved dock
Phyllitis scolopendrium	hart's tongue fern
Eurhynchium striatum	moss
Chrysosplenium oppositifolium	golden saxifrage
Peltigera horizonta	lichen
Brachypodium sp.	moss
Geranium robertianum	herb robert
Deschampsia flexuosa	wavy hair grass
Carex pendula	pendulous sedge
Salix fragilis	crack willow

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 18

Scale: 6 Inches to 1 Mile



Evaluation

The woodland is a good example of a semi-natural forest - scrubland.

Threats to the Area

Tree felling is taking place at present

Recommendations

The woodland should be maintained. Systematic felling and replanting of the larger trees should be encouraged.

Name of Area	ESKER RIDGE
Grid Reference	R. 890, 880
Scientific Interest	Ecological, Botanical
Rating	Local Importance
Priority	B

Description of the Area See Map 19

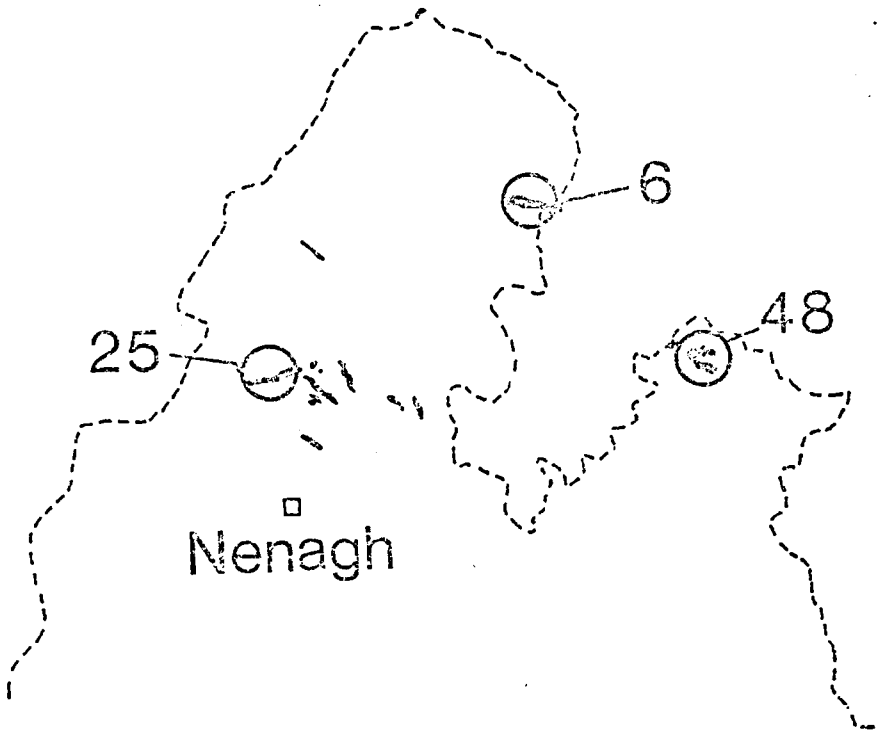
A chain of low sand hills runs across the county from West to East. The height of individual hills varies between 2 and 6 metres. The following plant assemblage has been recorded:

Fragaria vesca	wild strawberry
Senecio jacobea	ragwort
Plantago lanceolata	ribwort plantain
Chrysanthemum leucanthemum	ox-eye daisy
Cirsium palustre	marsh thistle
Origanum vulgare	majoram
Orobanche minor	lesser brownrape
Primula veris	cowslip
Leontodon sp.	
Glecoma hederacea	ground ivy
Prunella vulgaris	selfheal
Rumex acetosa	common sorrel
Centaurea nigra	knapweed
Sonchus oleraceous	sow thistle
Ranunculus bulbosus	bulbous buttercup
Trifolium pratense	clover
Hypericum perforatum	perforate st. john's wort
Dactylis glomerata	cock's-foot
Blackstonia perfoliata	yellow wort

MAP 19

Diagram showing the distribution of esker ridges in Co. Tipperary (N.R.) from W. J. Sollas, Transactions of the Royal Dublin Society, N.S. Vol. 5, Plate 69.

The location of sites 6 and 4 are included.



Arrhenathrum elatius	oat grass
Plantago major	great plantain
Agrostis sp.	
Veronica agrestis	field speedwell
Carlina vulgaris	carline thistle
Bellis perennis	daisy
Theuidium sp.	moss
Galium sp.	
Festuca ovina	sheep's fescue
Pseudoscleropodium sp.	moss
Brachythecium sp.	moss
Barbula sp.	moss
Weissia sp.	moss

This species-grouping is typical of esker ridges.

Evaluation

The habitat is of interest as a typical example of an esker ridge community.

Threats to the Area

Removal of the sand hills to provide building materials.

Recommendations

Some of the sand hills should be left as examples of the habitat-type. An Foras would make more specific recommendations on the choice of the best examples of the ecotype for preservation.

Name of Area	LOUGH NAHINCH	:	Acreage 64
Grid Reference	R. 995, 936		
Scientific Interest	Ecological, Botanical		
Rating	Local Importance		
Priority	B		

Description of the Area See Map 20.

Lough Nahinch is an open water body with marginal bulrushes forming a sparse cover. The remainder of the site consists of raised bog which has been drained.

A long strip of raised bog runs from West to East - because this results from removal of turf in either side the drained area is dry and supports a profuse lichen cover. Species identified there include:

Cladonia floerkiana

C. impexa

and C. maculenta

The moss Hypnum compressiforme also occurs and the Angiosperms present are the heathers

Erica tetralix	bell heather
and Calluna vulgaris	ling

In the surrounding lower bog there is a greater abundance and diversity of plant species. The following moss species occur:

Dicranium scoparium

Campylopus sp.

Pseudoscleropodium purum

Sphagnum rubellum

S. cuspidatum

Mylia anomala

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 20

Scale: 6 Inches to 1 Mile

The lichens present include:

Cladonia bacillaris

C. floerkiana

Ramalina fastigiata

The angiosperms occurring on the upper bog are also found in the wetter areas with the addition of the following species:

Succisa pratensis	devil's bit scabious
Pedicularis sylvestris	lousewort
Potentilla erecta	common tormentil
Hypericum pulchrum	beautiful St. John's Wort
Myrica gale	bog myrtle
Carex panicea	carnation grass
Narthecium ossifragum	bog asphodel
Scirpus caespitosa	deer grass
Molinia caerulea	purple moor grass

Carex lasidcarpa is very common and Rhamnus is profuse

Evaluation

The area is ecologically important by virtue of its being a wetland. Duck are said to occur there in large numbers during the winter months and Teucrium scordia grows at the site. Breeding birds includs Redshank, Tufted duck, Mallard, Moorhen, Lapwing, Snipe and Water rail.

Threats to the Area

Dumping of rubbish is taking place on the site.

Recommendations

Dumping should be prevented and general planning control exercised to maintain the scientific value of the area. As part of the area is in a neighbouring county, consultation with that County Council and joint action would be desirable.

Name of Area	BOGS IN THE NORE VALLEY	:	Acreage 2,340
Grid Reference	S. 180, 875		
Scientific Interest	Ecological		
Rating	Local Interest		
Priority	A		

Description of the Area See Map 21

Raised bogs in the Nore Valley occur on either side of the River. On the northern side other wetlands occur having marsh plant species and areas of Phragmites.

The marsh regions contain the following plant species:

Potentilla palustris	march cinquefoil
Ranunculus flammula	lesser spearwort
Galium palustre	marsh bedstraw
Bellis perennis	daisy
Pedicularis palustris	lousewort
Dactylorhiza fuchsii	orchid
Succisa pratensis	devil's bit scabicus
Agrostis sp.	
Juncus articulatus	jointed rush
Acrocladium sp.	
Juncus effusus	soft rush
Triglochin palustris	marsh arrow-grass

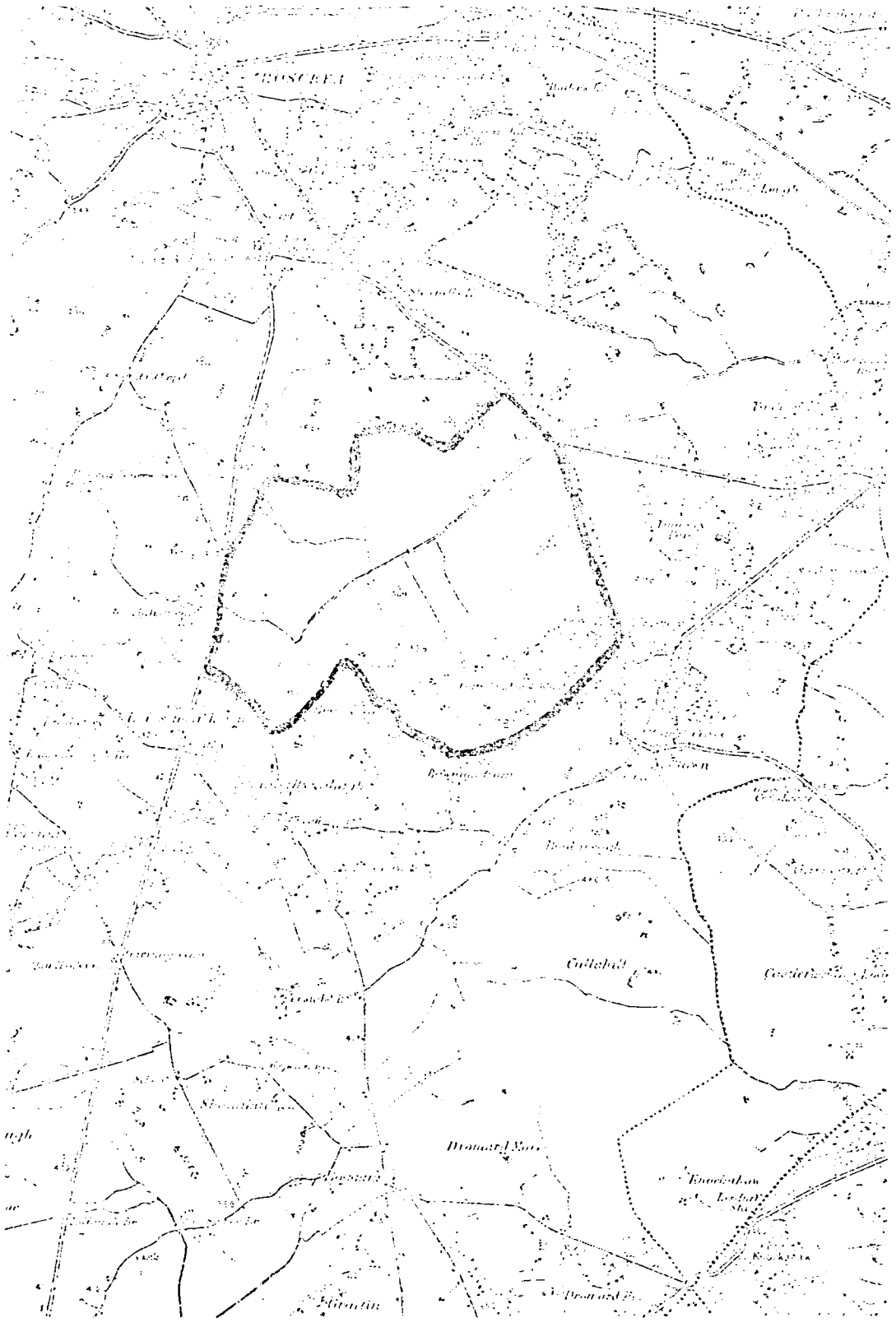
The tress Prunus sp. and Rhamnus sp. also occur in addition to Betula pubscens.

On the southern side of the river the bog has been drained and heather (Erica and Calluna) is profuse. On some bare patches this vegetation is replaced by :

Galium saxatile	heath bedstraw
Rumex acetosella	sheep's sorrel
Polytrichum sp.	moss

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 21

Scale: 1 Inch to 1 Mile



Evaluation

The area contains good examples of raised bog and marsh. Ecologically, it is of interest for its floral composition and as an invertebrate habitat.

Threats to the Area

Further drainage.

Recommendations

Ideally, further drainage of this area should cease. A more detailed assessment of the area may enable a smaller area than that shown in Map 28 to be demarcated for preservation.

Name of Area	DEEP GORGE ON THE NENAGH RIVER	: Acreage
Grid Reference	R. 910, 670	
Scientific Interest	Ecological, botanical	
Rating	Local Importance	
Priority	C	

Description of the Area See Map 22

This site is a steep gorge on either side of the headwaters of the Nenagh River. The upper end of the site is colonised by:

Juncus spp.	
Agrostis stolonifera	common bent

On the steep slopes of the valley the following species occur:

Vaccinium myrtillis	bilberry
Salix aureta	eared willow
Pteridium aquilinum	bracken
Teucrium scorodonia	wood sage
Hypericum pulchrum	beautiful St. John's wort.
Lonicera periclymenum	honey suckle
Fragaria vesca	wild strawberry
Rubus fruticosus agg.	bramble
Calluna vulgaris	ling
Rhytidiadelphus sp.	moss
Crataegus monogyna	common hawthorn
Lathyrus montanus	bitter vetch
Agrostis stolonifera	common bent
Pleurozia schreberi	moss
Anthoxanthum odoratum	sweet vernal grass
Galium saxatile	heath bedstraw.

The margins of streams which flow down the slope are colonised by the additional species:

Polypodium sp.	moss
Vicia sepium	bush vetch
Veronica chamaedrys	germander speedwell
Stellaria holostea	greater stichwort

Evaluation

The area is of interest because there is wide change of altitude over a short distance. In the predominantly flat terrain of North Tipperary this is unusual.

Threats to the Area

None obvious.

Recommendations

Future development of this site should be in keeping with its scientific value.

Name of Area	MONAINCHA BOG AND SURROUNDINGS : Acreage 3,230
Grid Reference	S. 180, 880
Scientific Interest	Ecological
Rating	Local Interest
Priority	A.

Description of the Area See Map 23

This area consists of bogland, some of which is sufficiently large to be unaltered by cutting. Monaincha raised bog is wet centrally and supports a poor growth of lichens. This is a relatively undisturbed raised bog and may for this reason be preservable.

The surrounding area is of cut bog and the hummocks above the channels support plant species which are typical of marsh wet pasture:

Centaurea nigra	knapweed
Pseudoscleropodium purem	moss
Polytrichum commune	moss
Cynosurus cristatus	crested dog's tail
Molina caerulea	purple moor grass
Vicia sepium	bush vetch
Dactylis glomerata	cocks-foot
Filipendula ulmaria	meadowsweet
Succisa pratensis	devil's bit scabious
Juncus effusus	soft rush
Agrostis sp.	
Epilobium angustifolium	rose bay

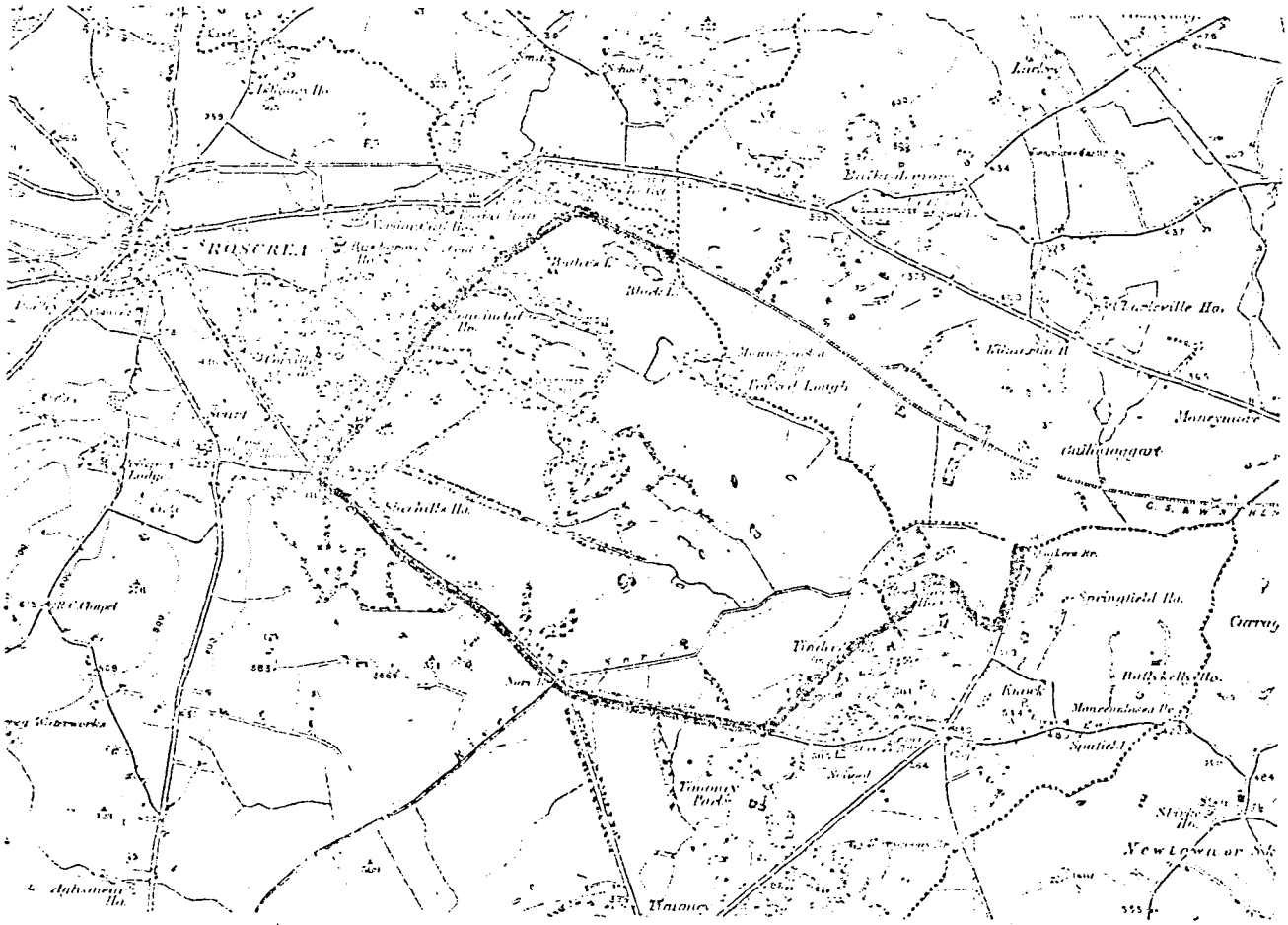
Birch trees are common in the areas surrounding the raised bog. Some Phragmites occurs in small numbers.

Evaluation

The area is of importance as containing a good example of a raised bog. The surrounding marginal wetland is likely to be an interesting invertebrate habitat.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 23

Scale: 1 Inch to 1 Mile



Threats to the Area

Further cutting would endanger the remaining intact bog. Dumping of rubbish.

Recommendations

Preservation of at least part of this area in its present condition would be desirable.

Name of Area	TOBERVAHEE	: Acreage 22
Grid Reference	M. 883, 012	
Scientific Interest	Botanical, Ecological	
Rating	Local Importance	
Priority	B	

Description of Area See Map 24

The area is of Corylus avellana scrub. The individual (hazel) bushes appear to be natural rather than coppiced and the ground layer vegetation is composed of the following species:

Festuca gigantea	giant fescue
Carex sylvatica	wood sedge
Helictotrichon pubescens	hairy oat grass
Geum urbanum	wood aven

Evaluation

Hazel is a common tree species on soils that are not too dry or too acid. The species is a forerunner of various types of woodland in which it later forms a shrub layer. Hazel is frequent along the shores of Lough Derg although isolated stands of the extent of this are uncommon. In the absence of field data the stand is assumed to be of value as a habitat for invertebrates associated with hazel.

Threats to the Area

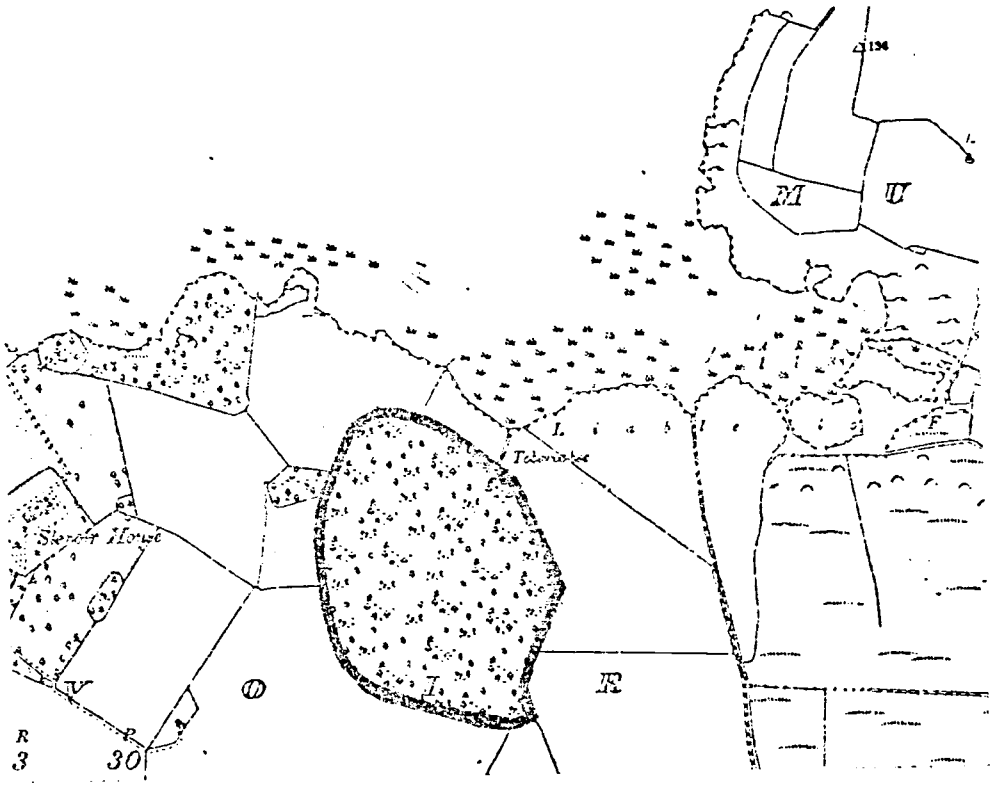
Clearance of the scrub in connection with agriculture or forestry replanting.

Recommendation

The area should be preserved by use of a conservation order or a tree preservation order.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 24

Scale: 6 Inches to 1 Mile



Name of Area	CLAREE LOUGH and associated wetlands : Acreage 1,660
Grid Reference	R. 849, 882 and R. 850, 940
Scientific Interest	Ecological
Rating	Local Importance
Priority	B

Description of Area See Map 25

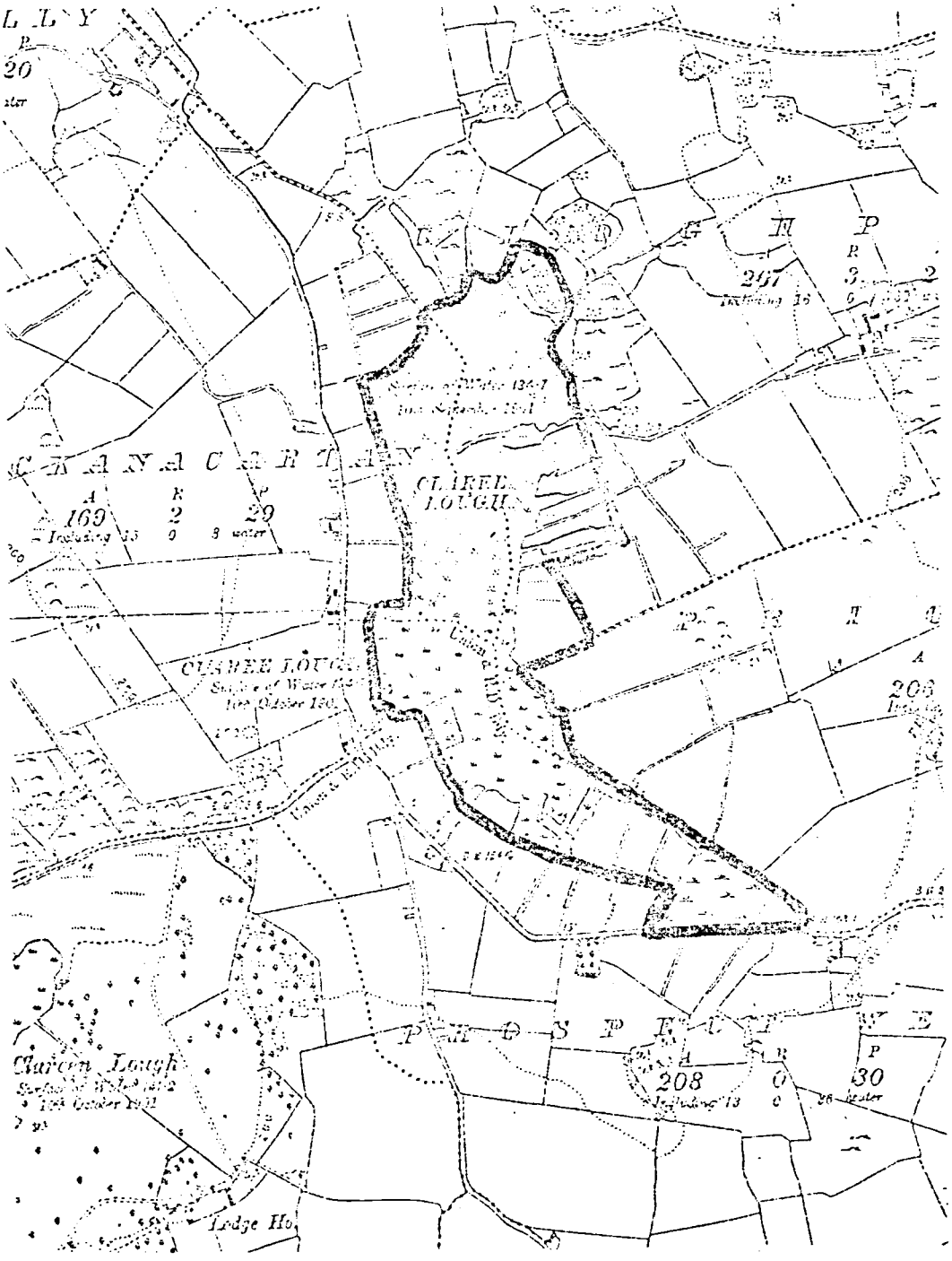
Map 23a refers specifically to Claree Lough which is typical of other wetlands in the areas.

Around the open water body marshlands are extensive and the following plant species occur there:

Lychnis flos-cuculi	ragged robin
Mentha aquatica	water mint
Acrocladium sp.	moss
Parnassia palustris	grass of parnassus
Juncus subnodulosus	blunt-flowered rush
Angelica sylvestris	wild angelica
Schoenus nigricans	black bog rush
Filipendula ulmaria	meadowsweet
Epilobium obscurum	thin runner willow herb
Cirsium palustre	marsh thistle
Cladium mariscus	fen sedge
Pedicularis palustris	red rattle
Carex paniculata	greater tussock sedge
Scorpidium scorpioides	moss
Campylium stellatum	moss
Bruetelia sp.	moss
Carex lepidocarpa	
Phleum pratense	timothy grass
Succisa pratensis	devil's-bit scabious
Hypercium tetrapterum	square stemmed st. john's wort
Molinia caerulea	purple moor grass
Senecio jacobea	ragwort

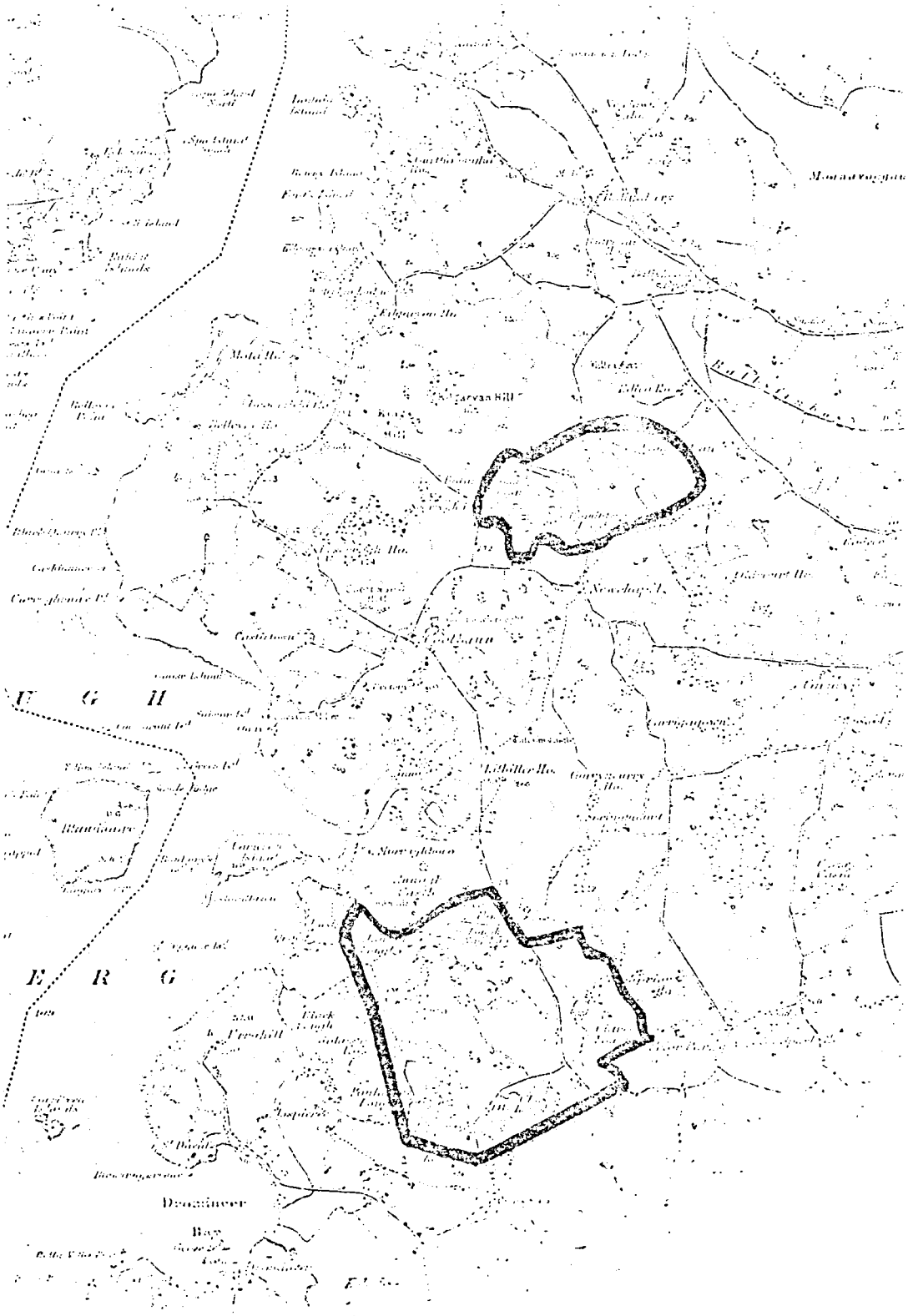
MAP SHOWING AREA OF SCIENTIFIC INTEREST – 25a

Scale: 6 Inches to 1 Mile



MAP SHOWING AREA OF SCIENTIFIC INTEREST — 25b

Scale: 1 Inch to 1 Mile



Rumex obtusifolius	broad-leaved dock
Lythrum salicaria	purple loosestrife
Dactylorhiza fuchsii	orchid

Additional species listed from the drier parts of the marsh included:

Dactylis glomerata	cock's foot
Rhamnus catharticus	buckthorn
Agrostis tenuis	common bent
Carex disticha	creeping brown sedge
Centaurea nigra	knapweed
Prunella vulgaris	self-heal
Festuca arundinacea	tall fescue
Ulex europaeus	gorse

In addition there are large areas of Phragmites communis.

Plants occurring in the water included Potamogeton spp. and Nymphar sp.

The above plant assemblage is typical of calcareous marshland in Ireland.

Evaluation

The wetlands making up the two areas are of ecological interest by virtue of their flora and their potential as invertebrate habitats. They are also valuable feeding areas for overwintering wildfowl.

Threats to the Area

Drainage is the chief danger. Casual rubbish dumping is also occurring in places

Recommendations

The areas should be maintained as at present and some conservation might also be given to managing the sites for shooting purposes.

Name of Area	CLARE GLENS : Acreage 34
Grid Reference	R. 741, 591
Scientific Interest	Ecological and Geological
Rating	Local Importance
Priority	B

Description of Area See Map 26

The area is a mixed deciduous and coniferous forest, the tree species include:

Quercus spp.	oak
Fagus sylvatica	beech
Crataegus monogyna	hawthorn
Salix sp.	willow
Sorbus aucuparia	rowan
Fraxinus excelsior	ash

The coniferous species include

Abies, Picea and Pinus spp.

The shrub layer is composed of

Hedera helix	ivy
Ilex aquifolium	holly
Rhodedendron ponticum	rhododendron
and Corylus avellana	hazel

The herb layer is dominated by Lonicera periclymena, Oxalis acetocella and Hedera helix.

The most common ferns are:

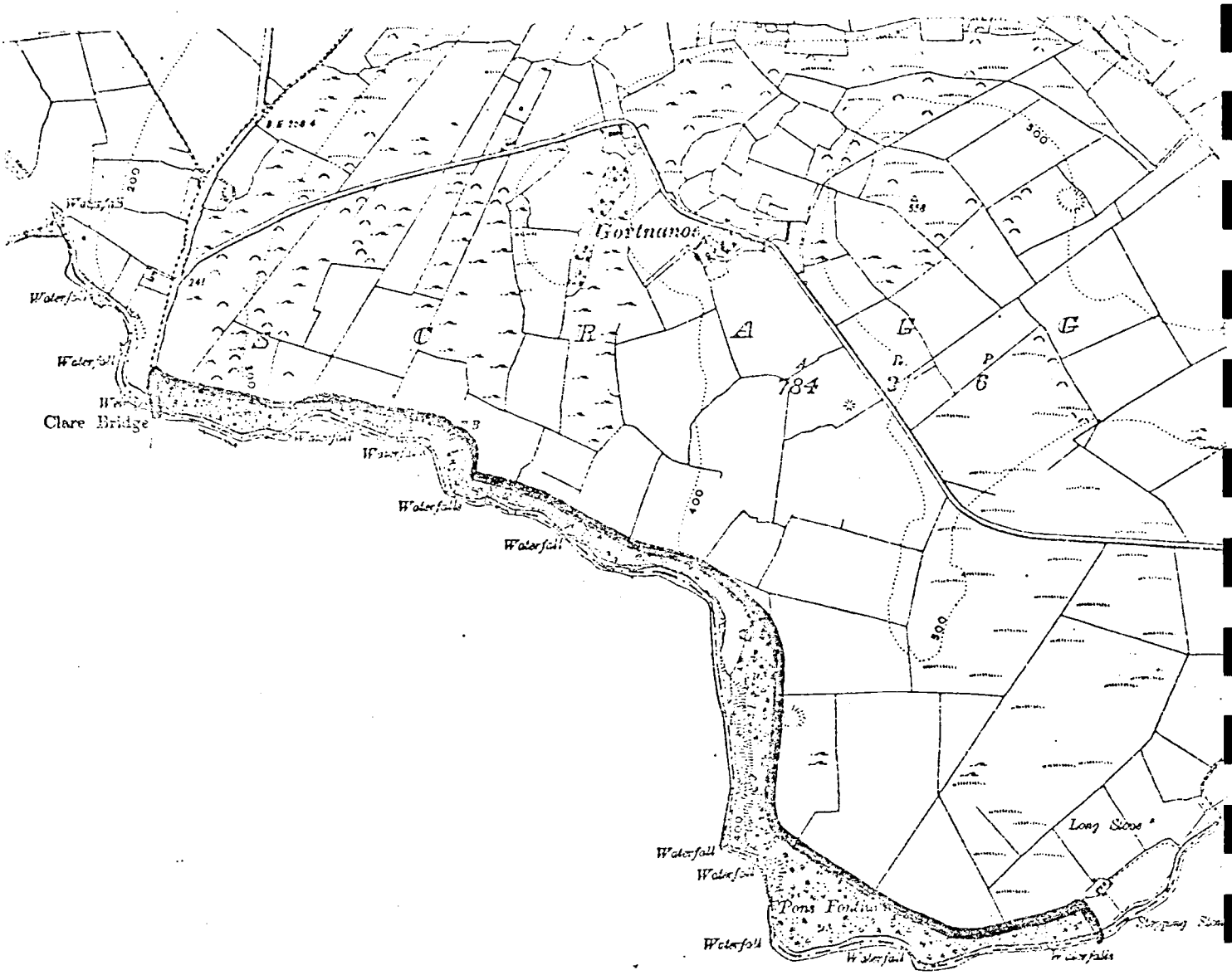
Polypodium vulgare	epiphytic
and Blechnum spicant	hard fern

Polytrichum spp. (mosses) are common as is the Liverwort Marchantia polymorpha close to the river's edge.

Geologically, the area is of interest for the stratigraphy of the Old Red Sandstone. A feature of interest is the occurrence of fossil ripple marks

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 26

Scale: 6 Inches to 1 Mile



at point 7 on the Nature Trail. (Incidentally, these are being worn away by pressure of people passing back and forth. It would be desirable to add a sign saying "No step here" which would afford protection).

Publication

"The Clare Glens" published by the Shannonside Tourist Organisation.

Evaluation

The Glens are of general ecological value but their chief worth lies in the fact that they are a picturesque setting in which the fauna and flora may be observed.

Threats to the Area

Fire would destroy the vegetation. The area requires management, periodic planting, thinning etc. to obviate the necessity of eventual clear-felling and re-planting. The spread of Rhododendron could prove a threat.

Recommendations

Precautions against the above dangers should be taken. For instance, the provision of fire beaters near the road would be useful.

In view of the fact that the area is used for recreation a more detailed survey should be undertaken and a management procedure developed and implemented.

Finally, the guide book and nature trail signs should be re-written with spelling mistakes rectified. An Foras Forbartha would give advice here.

Name of Area	WETLANDS NORTH OF BORRISOKANE : Acreage 93
Grid Reference	R.909, 983
Scientific Interest	Ornithological, ecological and botanical
Rating	Local Importance
Priority	B

Description of the Area See Map 27

The wetlands form a contrast on either side of the North-South road through Borrisokane. The westerly area is composed of extensive Phragmites beds.

In and bordering the water were the following plant species:

Mentha aquatica	water mint
Apium sp.	
Juncus articulatus	articulated rush
J. inflexus	hard rush
Rorippa sp.	water cress
Lythrum salicaria	purple loosestrife
Ranunculus sp.	
Myosotis caespitosa	lesser water forget-me-not
Myosotis scorpoiodes	water forget-me-not
Trifolium repens	clover
Galium palustre	marsh bedstraw
Potentilla anserina	silverweed
Cardamine pratensis	lady's smock
Agrostis stolonifera	common bent
Acrocladium sp.	moss

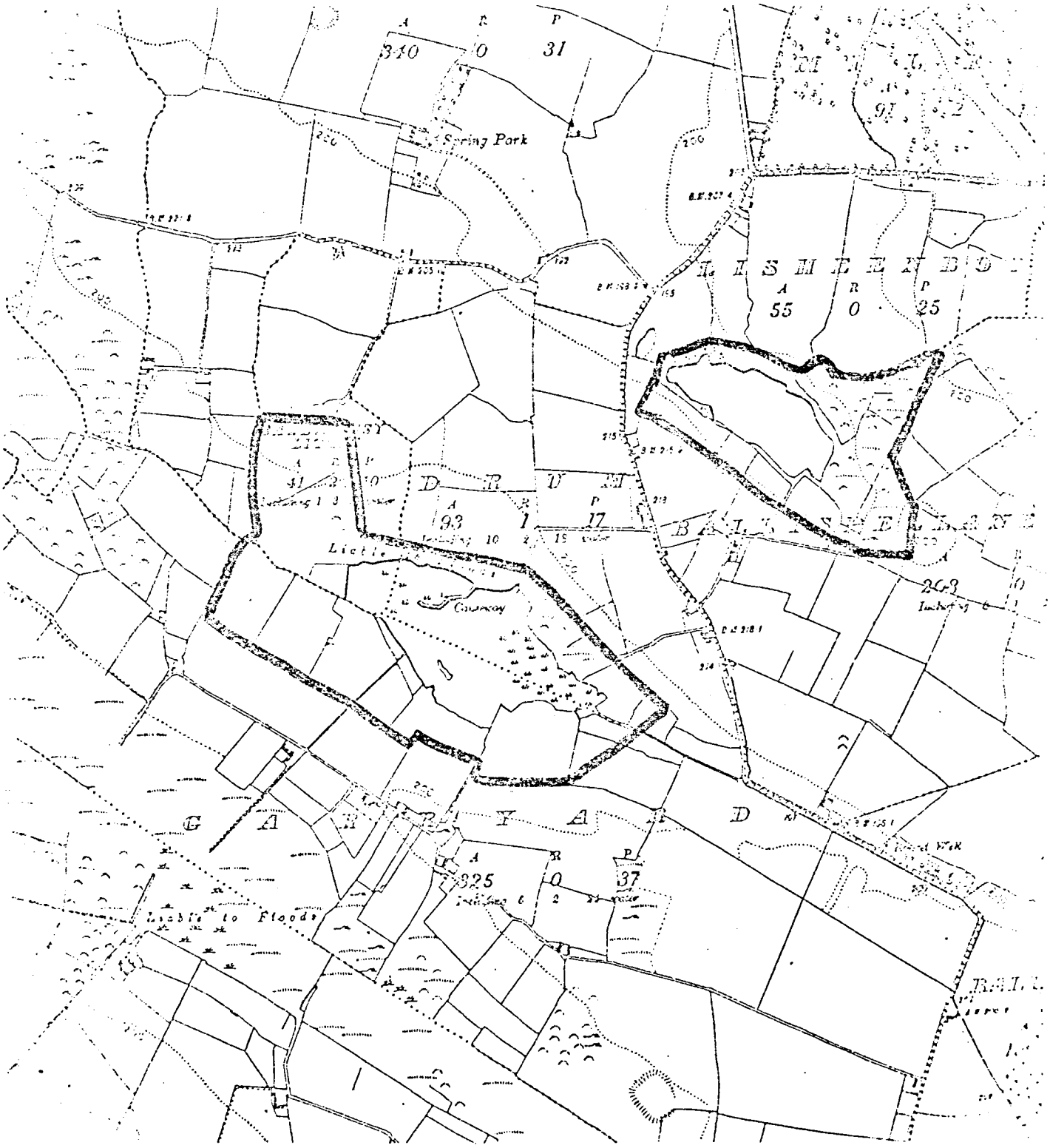
The eastern side of the site is occupied by a turlough -like water body. There is no emergent vegetation. The water surface was covered with Litorella lacustris which had broken free from the lake floor. The emergent rocks were covered with a crust formed by blue-green algae. The snail Lymnaea stagnalis occurred in large numbers.

Evaluation

Both wetlands together support a large wildfowl population. Species seen there in winter included: Snipe, Heron, Duck (C 90), Mute swans (2),

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 27

Scale: 6 Inches to 1 Mile



Whooper Swans (25), Moorhen, Kestrel and Lapwing (c. 300). The fact that one may be a turlough (see introduction) and the other a marsh is an interesting contrast of educational value. The eastern side of the area is a site for Teucrium scordium.

Threats to the Area

Drainage.

Recommendations

Efforts should be made to preserve this site as it is at present.

A summation of action required for the conservation of sites of scientific interest

Site	No Protection Necessary	General Planning Control	Special Amenity Area Order	Conservation Order	Tree Preservation Order
Three sites close to Slevoir Bay (44)				*	
Cornalack				*	
Fiagh Bog (9)		*			
Wetland complex (6)		*			
Cameron Island - Luska Bay (26)		*			
Roscrea sandhills (48)		*			
Templemore, Roadside (37)		*			
Templemore Park (45)			*		
Birch scrub by Slevoir Bay (39)				*	
Bellevue House (26)					*
Lough Ourna		*			

Site	No Protection Necessary	General Planning Control	Special Amenity Area Order	Conservation Order	Tree Preservation Order
Newchapel Turlough (21)		*			
Slevoir Bay and environs (7)		*			
Derrygareen (33)		*	or possibly	*	
Keeper Hill		*			
Lismacrory House (19)		*			
Scohoboy Bog (24)		*	or possibly	*	
Mount Butler (31)	Requires further investigation				
Kilavalla Wood (36)				* or *	
Esker Ridge (25)	* at present				
Lough Nahinch (20)		*			
Bogs in the Nore Valley (28)		*			
Deep gorge on the Nenagh River (34)		*			
Monainsha Bog and surroundings (30)		*			

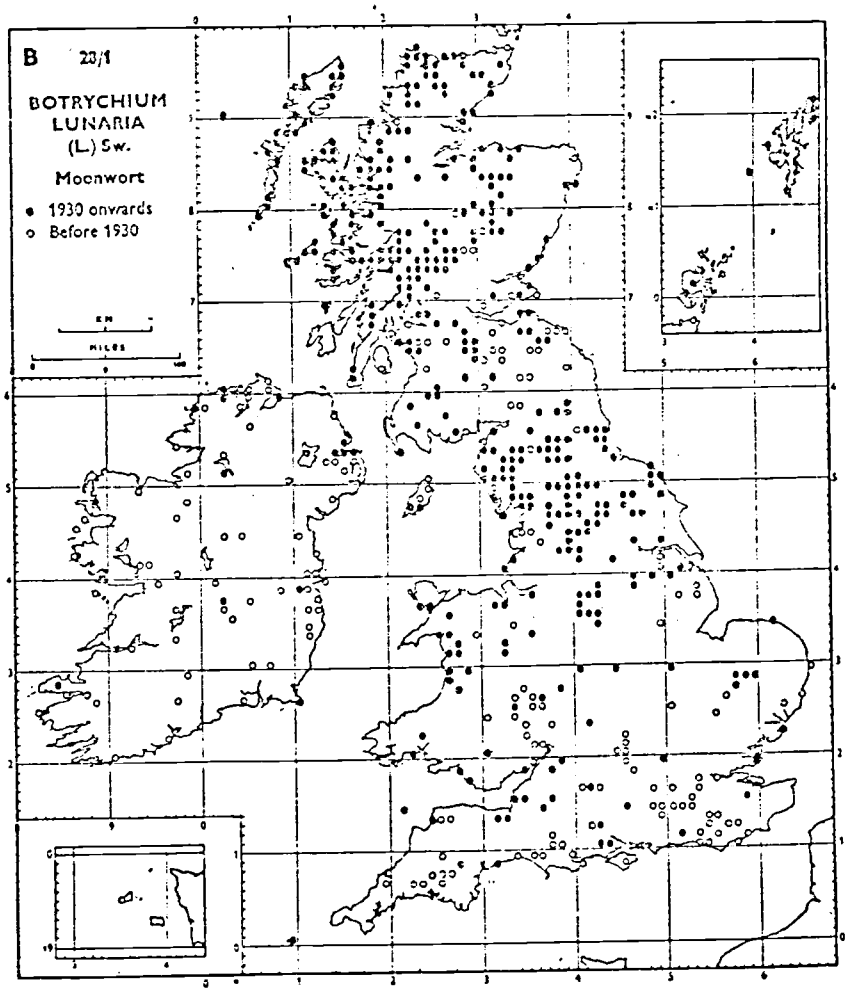
Site	No Protection Necessary	General Planning Control	Special Amenity Area Order	Conservation Order	Tree Preservation Order
Tobervahee (41)				* or	*
Claree Lough and associated wetlands (23)		*			
Clare Glens (8)		*			
Birch Woodland				* or	*
Wetlands north of Borrisokane (18)		*			

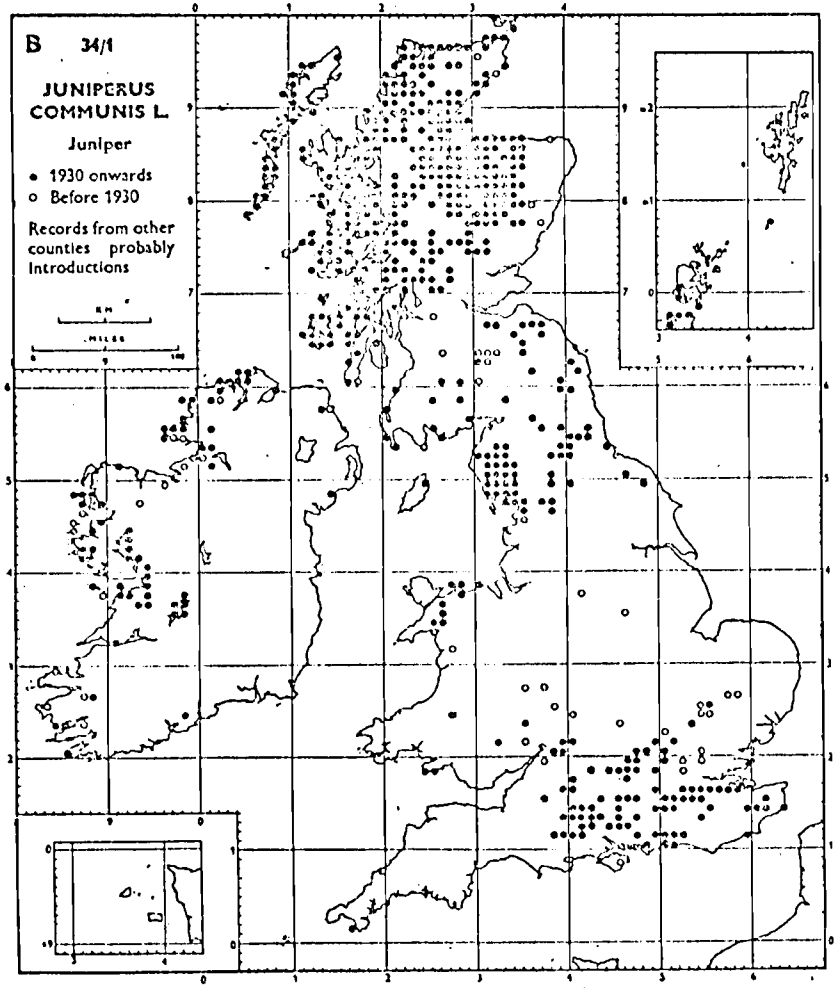
SECTION F

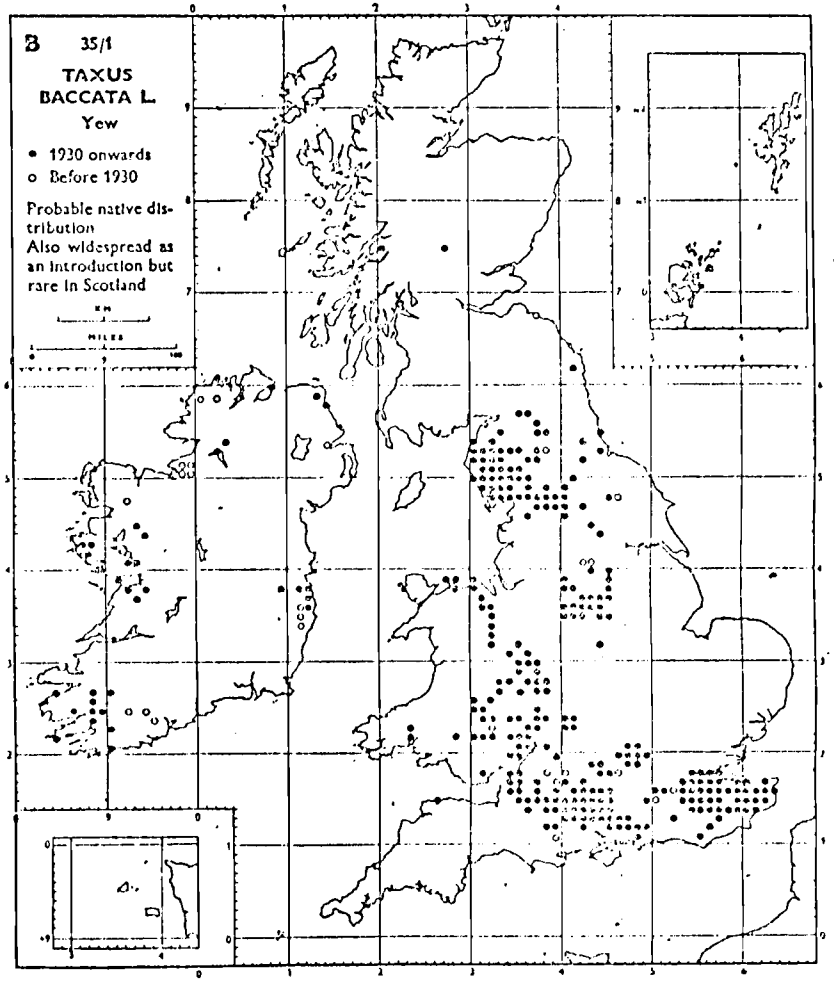
Maps showing the distribution in the British Isles of certain plant species occurring in County Tipperary (N.R.). The maps show the significance of North Tipperary as a region of botanical interest.

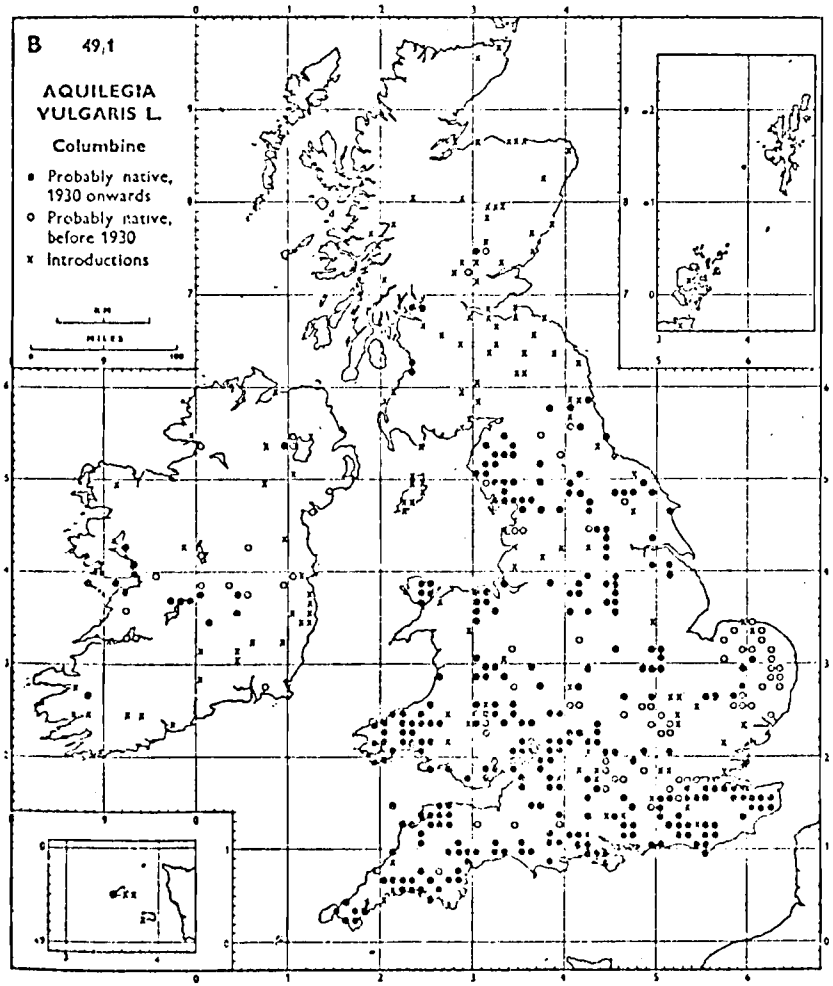
The maps are taken from "Atlas of the British Flora", prepared by the Botanical Society of the British Isles.

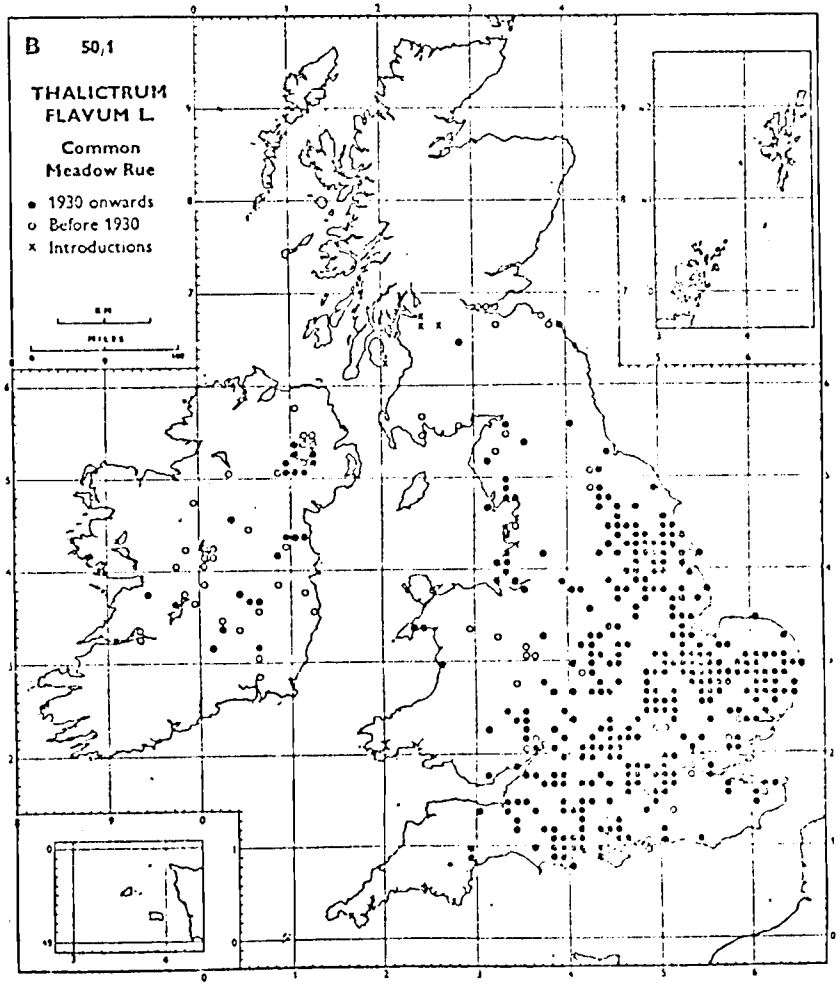
Each symbol on the map records the presence of this species in a 10-kilometre square of the Ordnance Survey National Gird, which was extended to cover Ireland for the purpose of this survey.

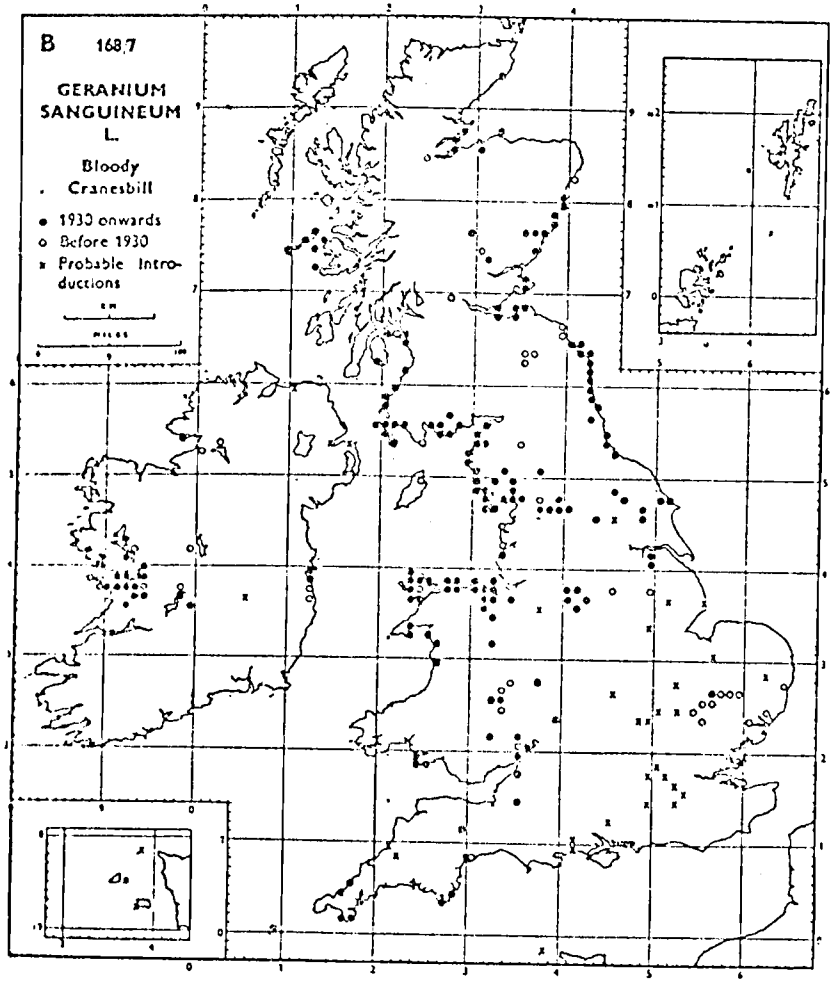


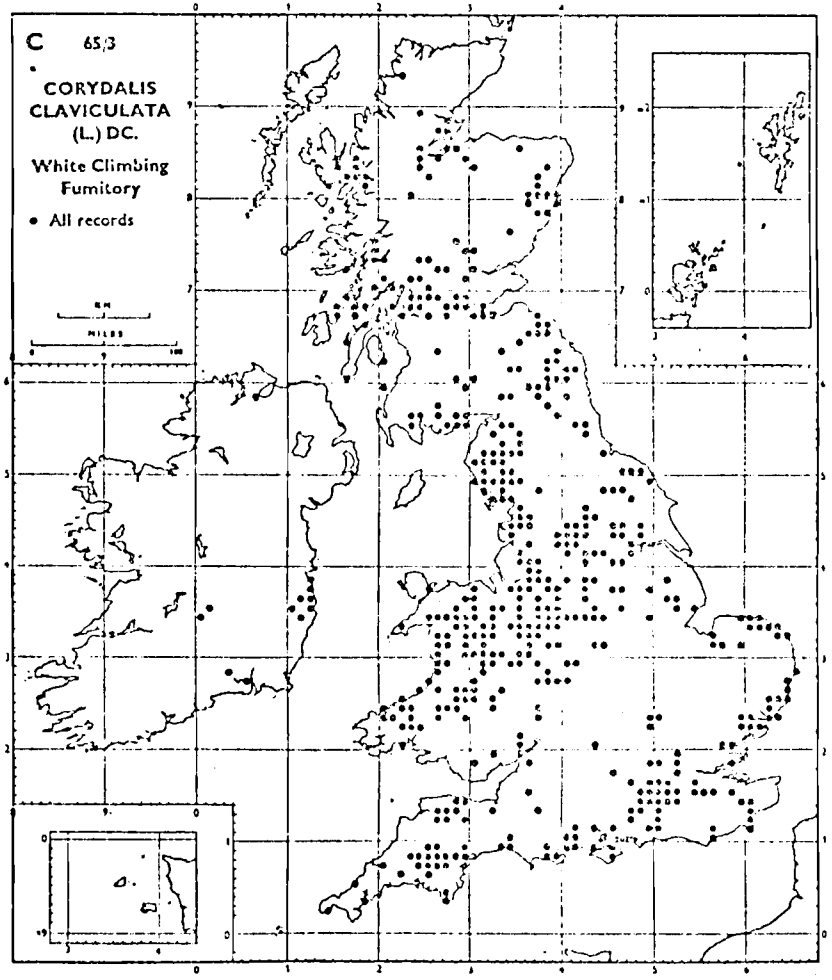

B 34/1
JUNIPERUS COMMUNIS L.
Juniper
• 1930 onwards
o Before 1930
Records from other counties probably introductions

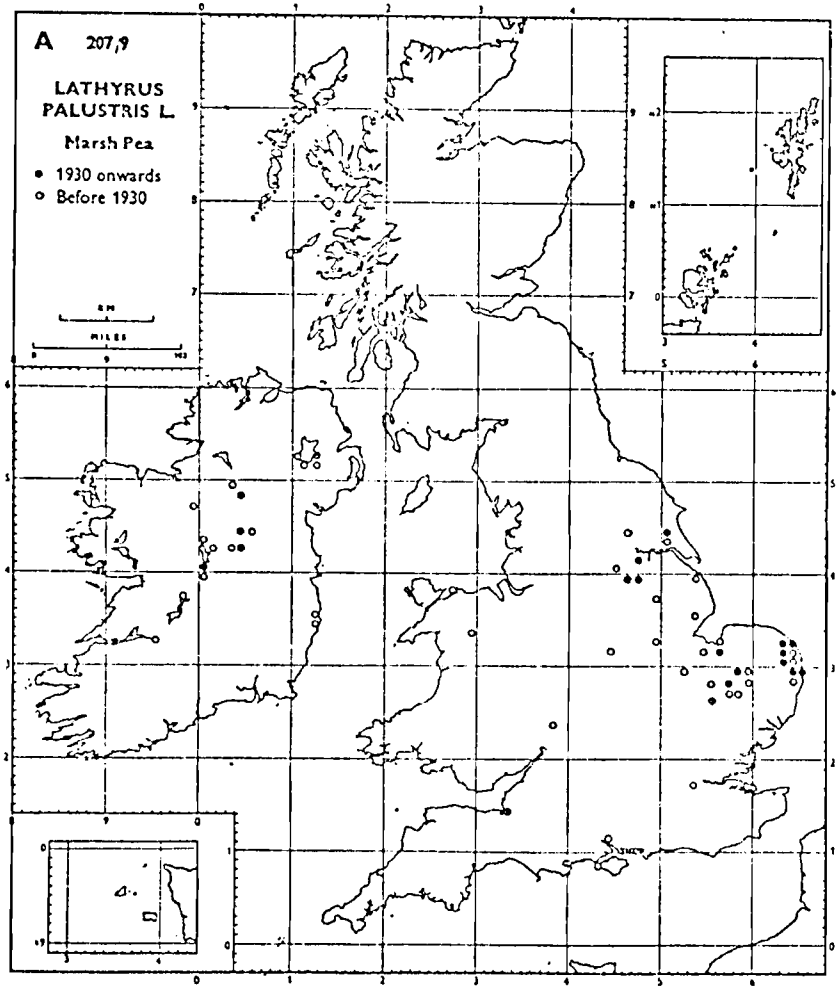

B 35/1
TAXUS BACCATA L.
Yew
• 1930 onwards
o Before 1930
Probable native distribution
Also widespread as an introduction but rare in Scotland

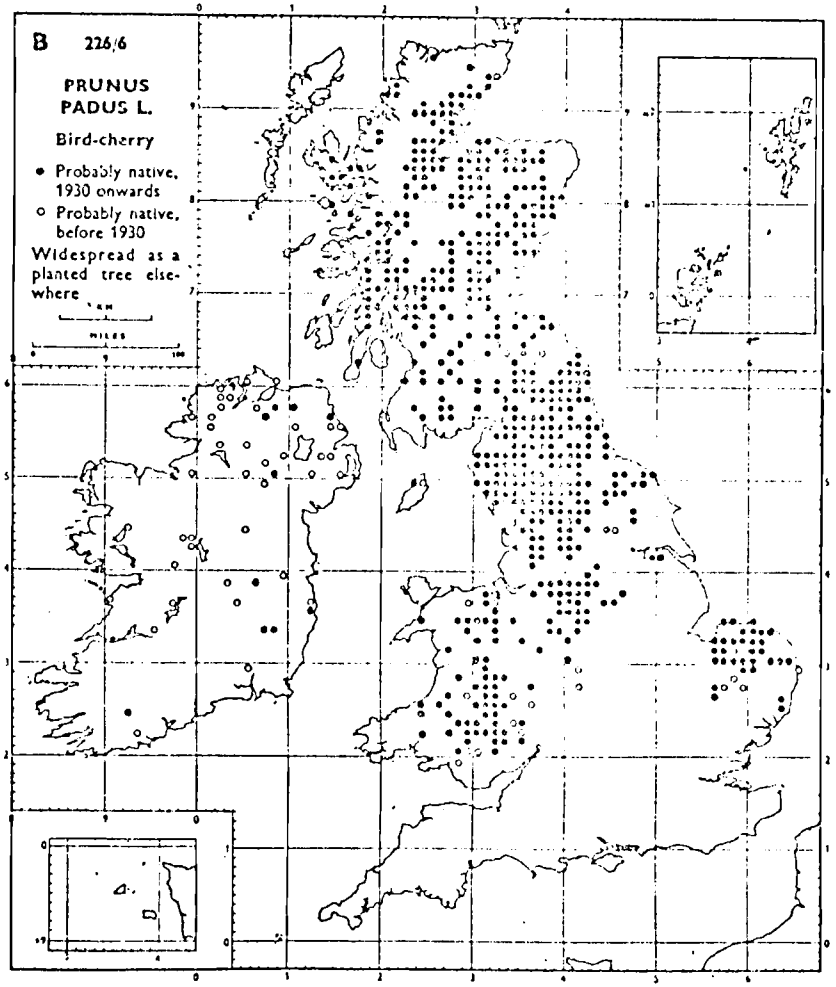

B 49,1
AQUILEGIA VULGARIS L.
Columbine
• Probably native, 1930 onwards
o Probably native, before 1930
x Introductions
KM
MILES

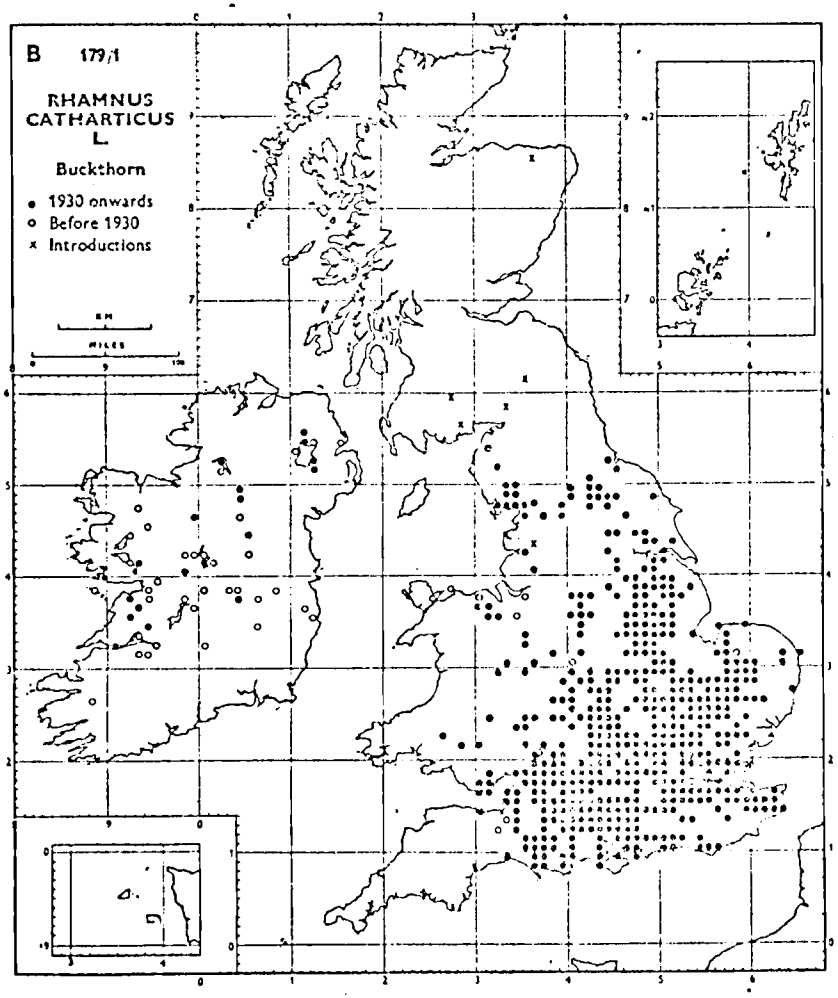

B 50,1
THALICTRUM FLAVUM L.
Common Meadow Rue
• 1930 onwards
o Before 1930
x Introductions
KM
MILES

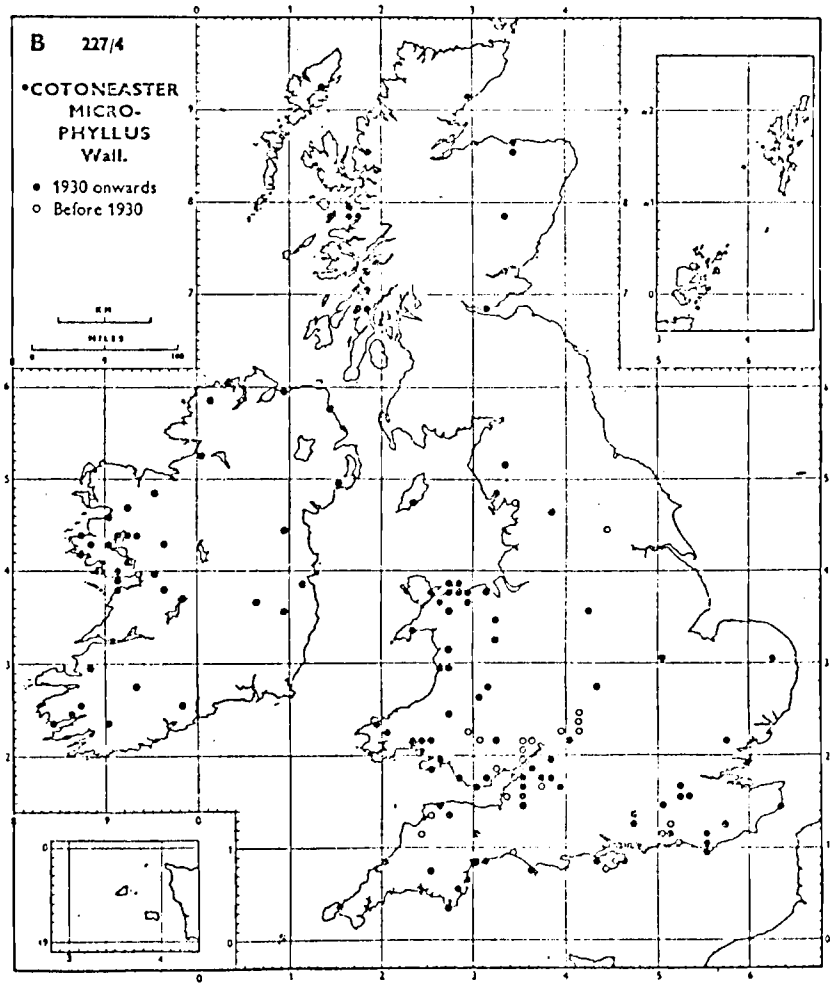

B 168/7
GERANIUM SANGUINEUM L.
Bloody Cranesbill
1930 onwards
Before 1930
Probable Introductions
KM
MILES

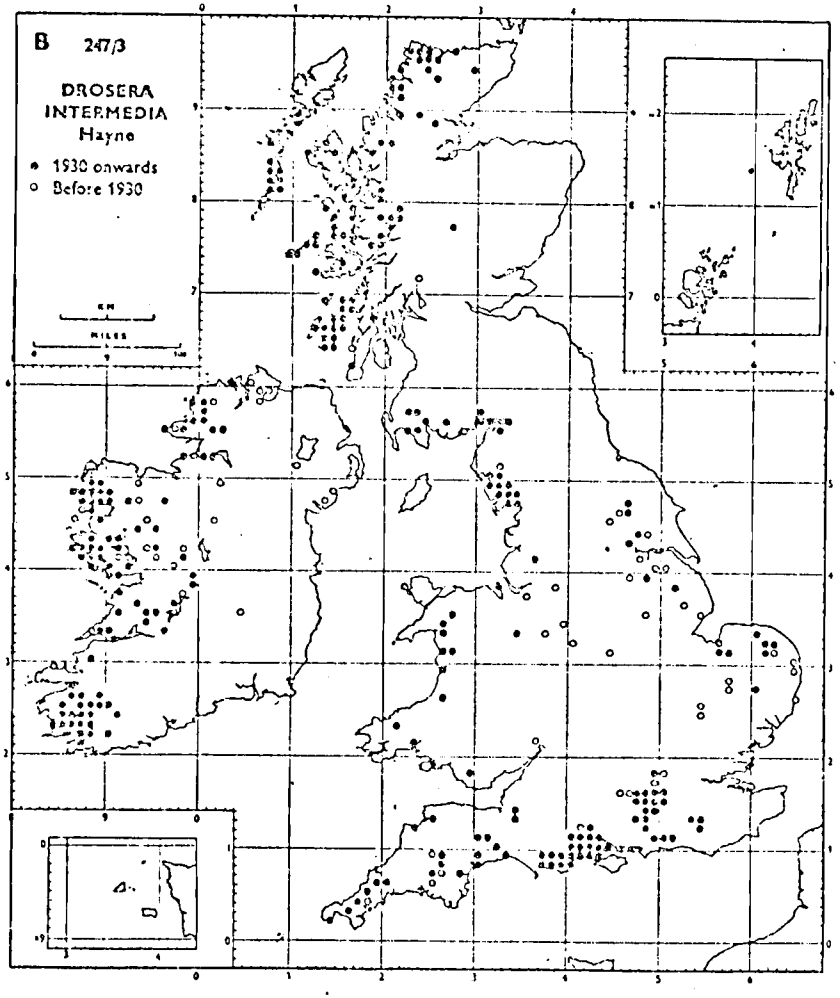

C 65/3
CORYDALIS CLAVICULATA (L.) DC.
White Climbing Fumitory
All records
KM
MILES

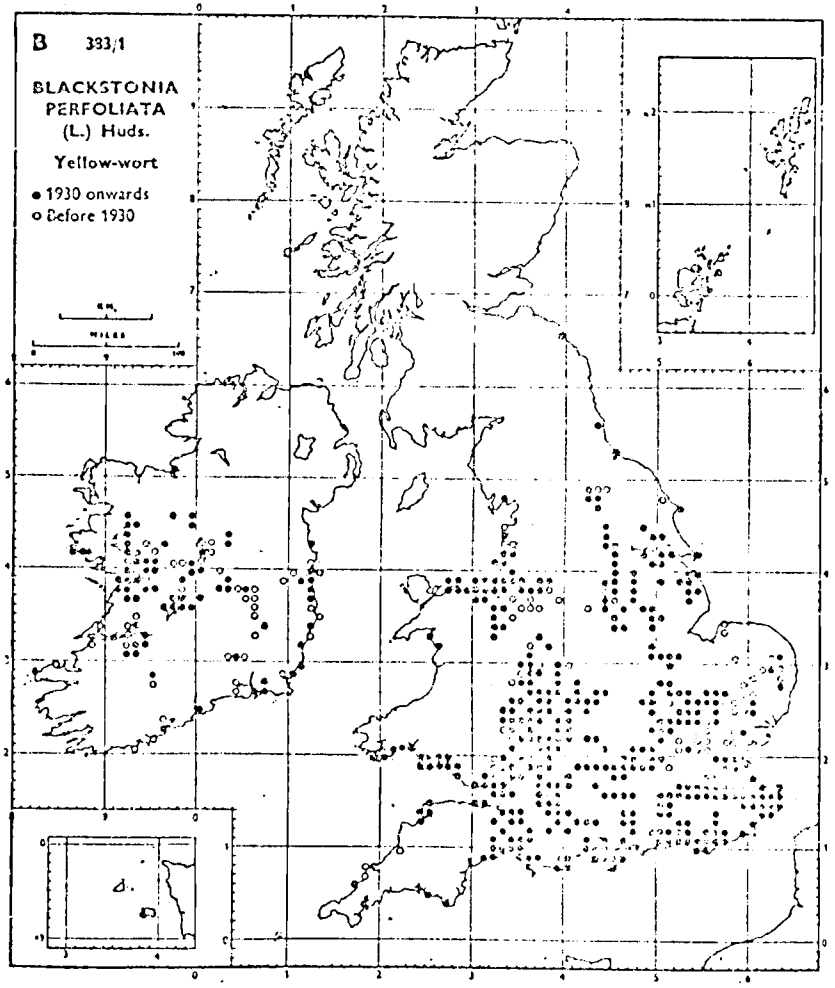

A 207/9
LATHYRUS PALUSTRIS L.
Marsh Pea
• 1930 onwards
○ Before 1930

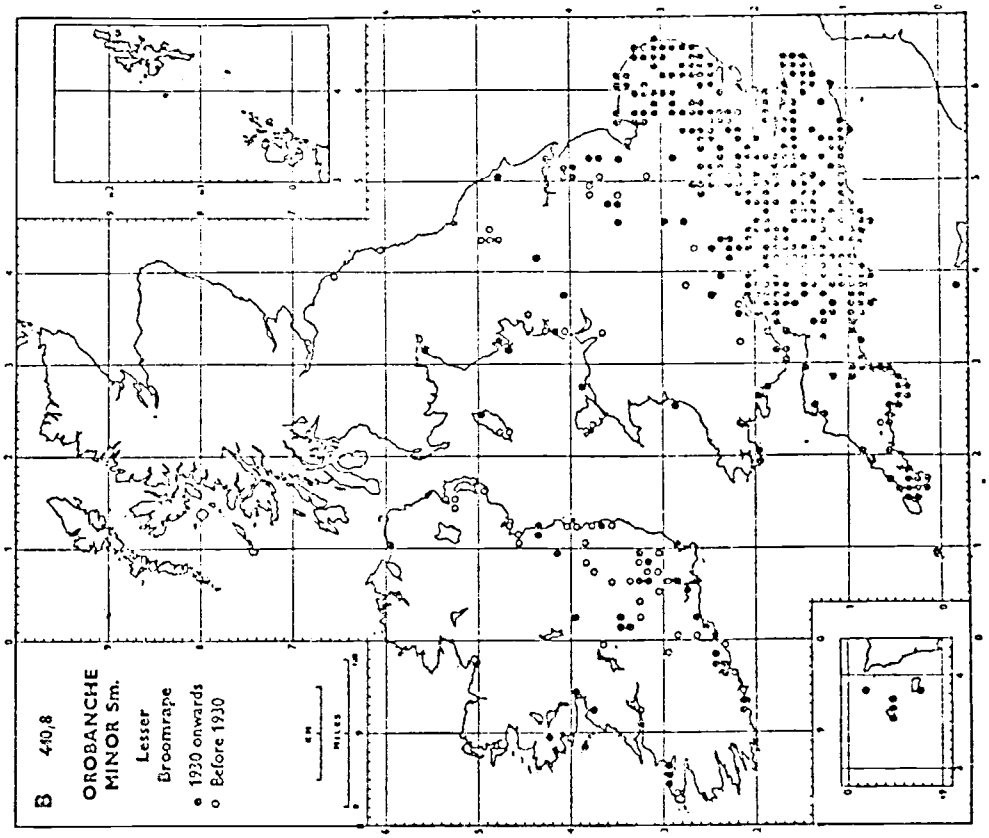

B 226/6
PRUNUS PADUS L.
Bird-cherry
• Probably native, 1930 onwards
○ Probably native, before 1930
Widespread as a planted tree elsewhere

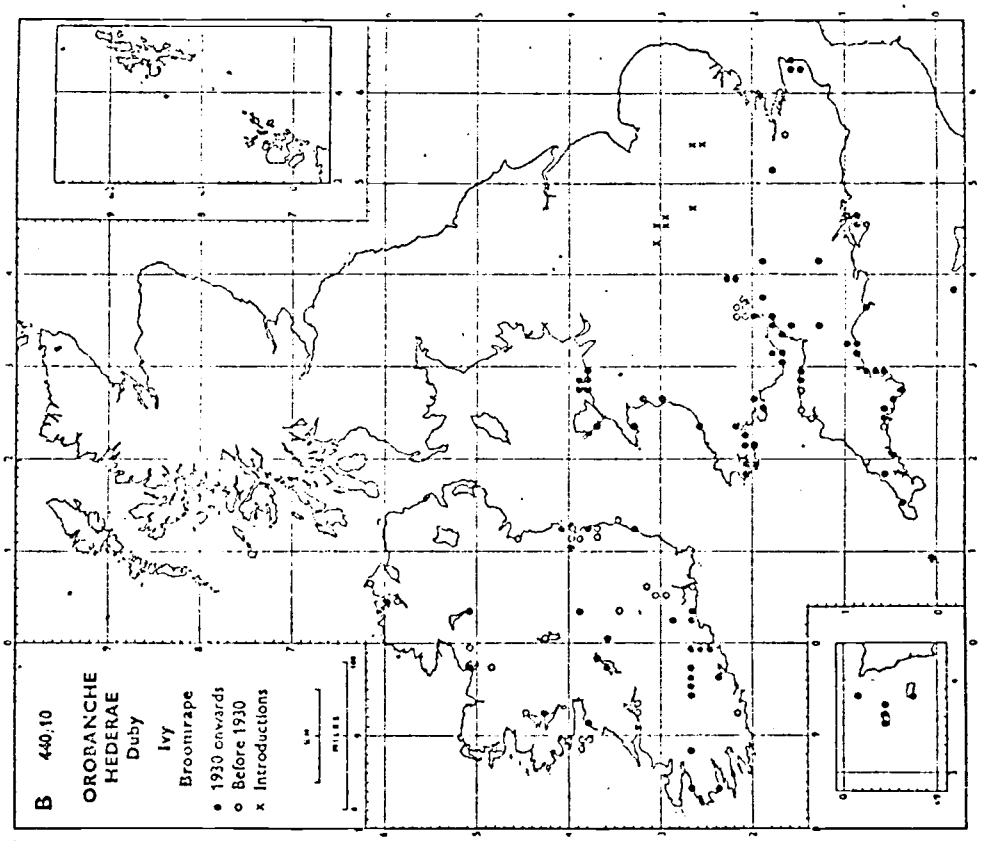

B 179/1
RHAMNUS CATHARTICUS L.
Buckthorn
• 1930 onwards
o Before 1930
x Introductions
KM
MILES

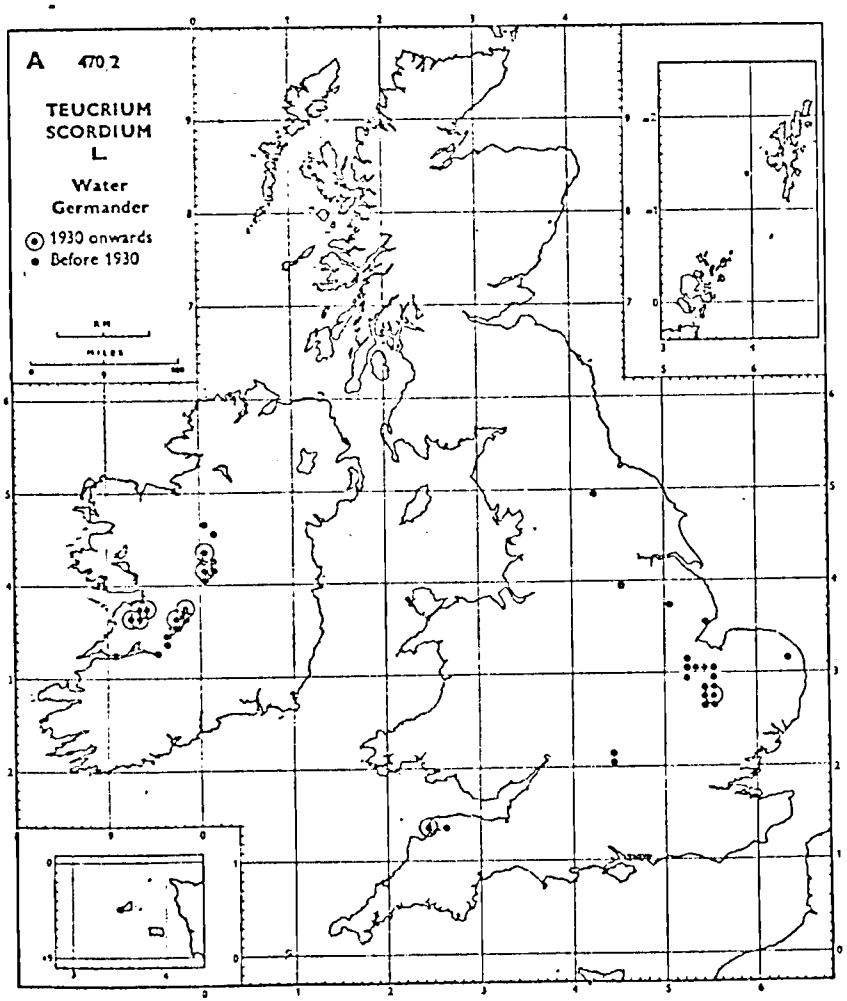

B 227/4
•COTONEASTER MICRO-PHYLLUS Wall.
• 1930 onwards
o Before 1930
KM
MILES

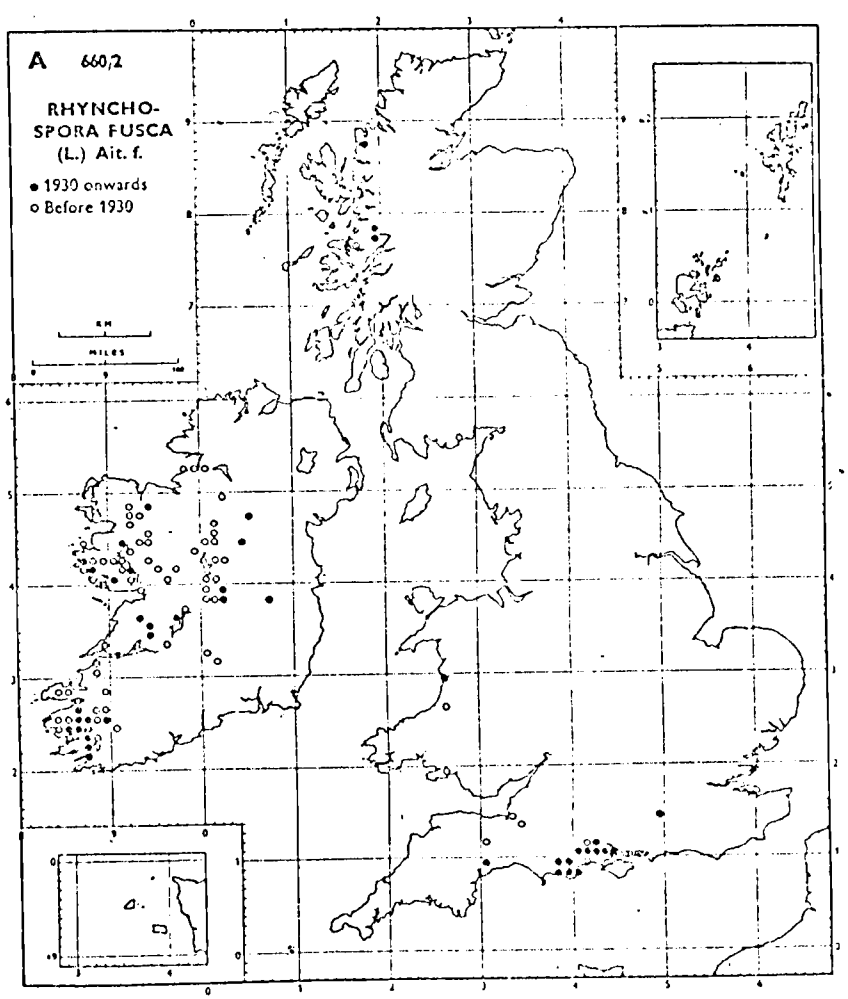

B 247/3
DROSERA INTERMEDIA
Hayne
• 1930 onwards
○ Before 1930
KM
MILES

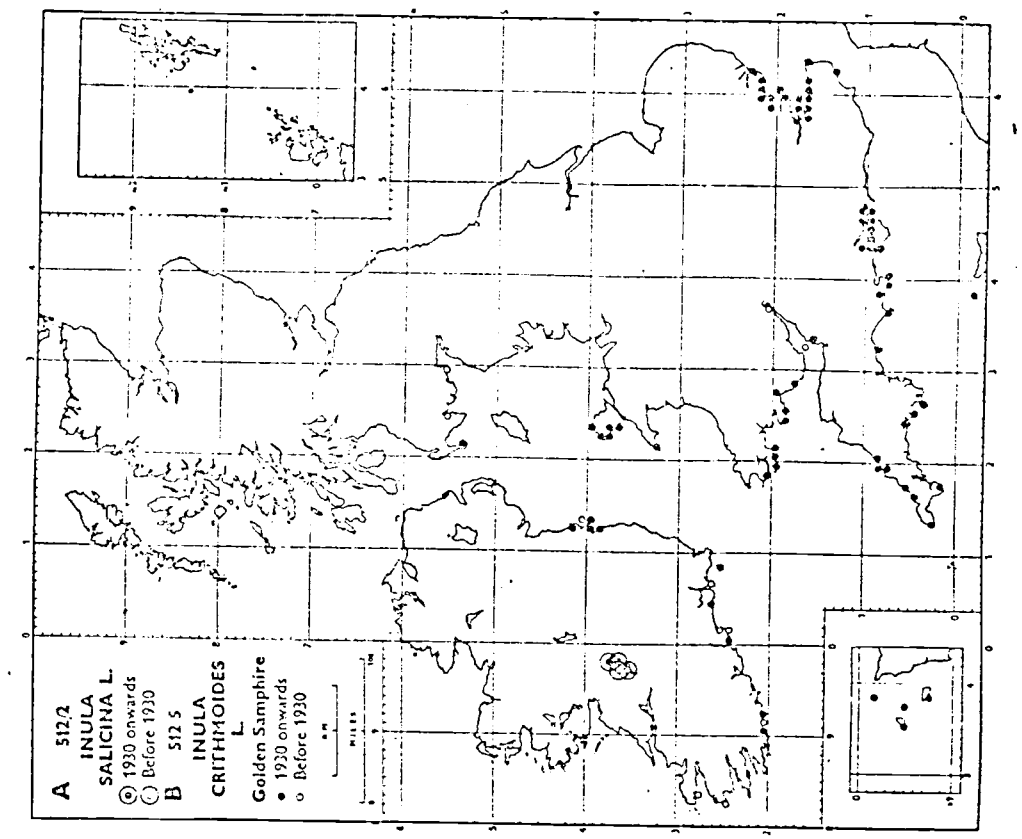

B 333/1
BLACKSTONIA PERFOLIATA
(L.) Huds.
Yellow-wort
• 1930 onwards
○ Before 1930
KM
MILES

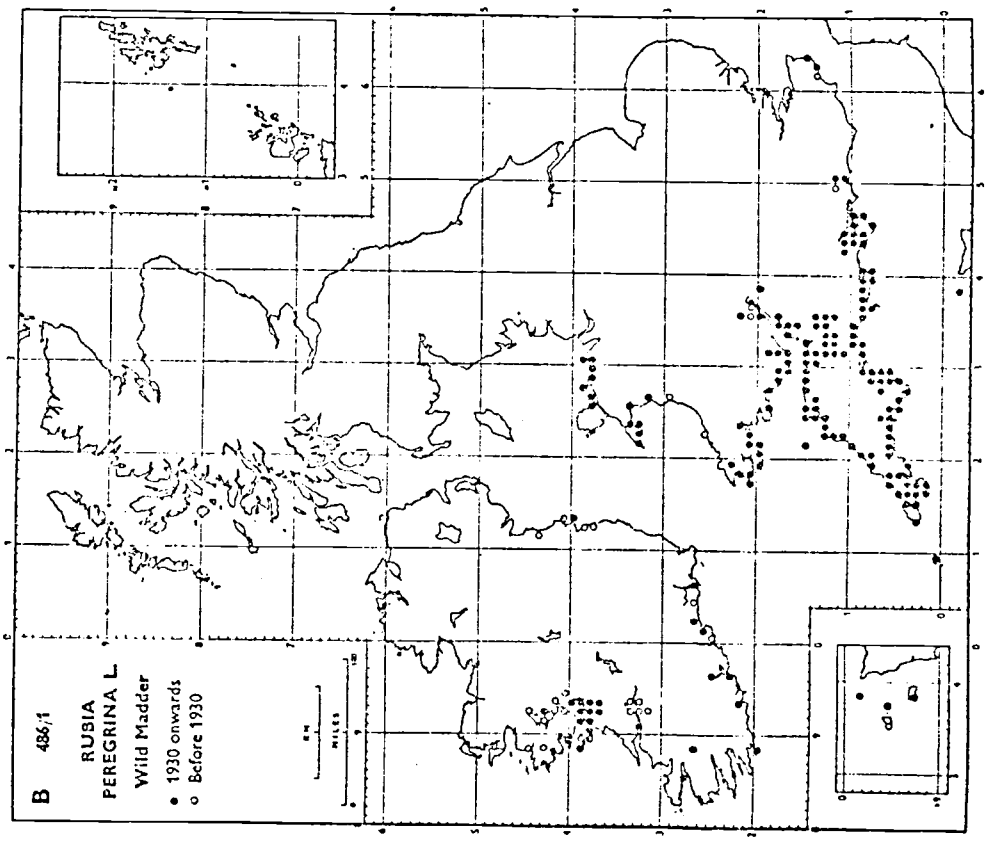

B 440.8
OROBANCHE MINOR Sm.
Lesser Broomrape
• 1930 onwards
o Before 1930
MILES

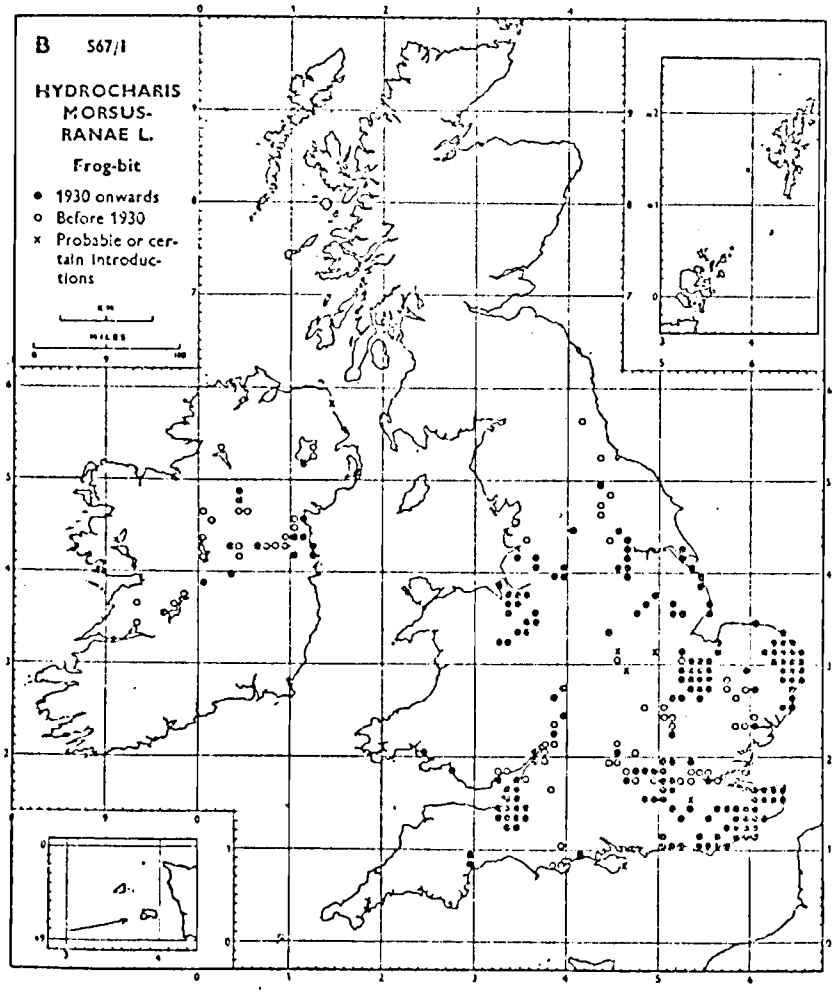

B 440.10
OROBANCHE HEDERAE Duby
Ivy Broomrape
• 1930 onwards
o Before 1930
x Introductions
MILES

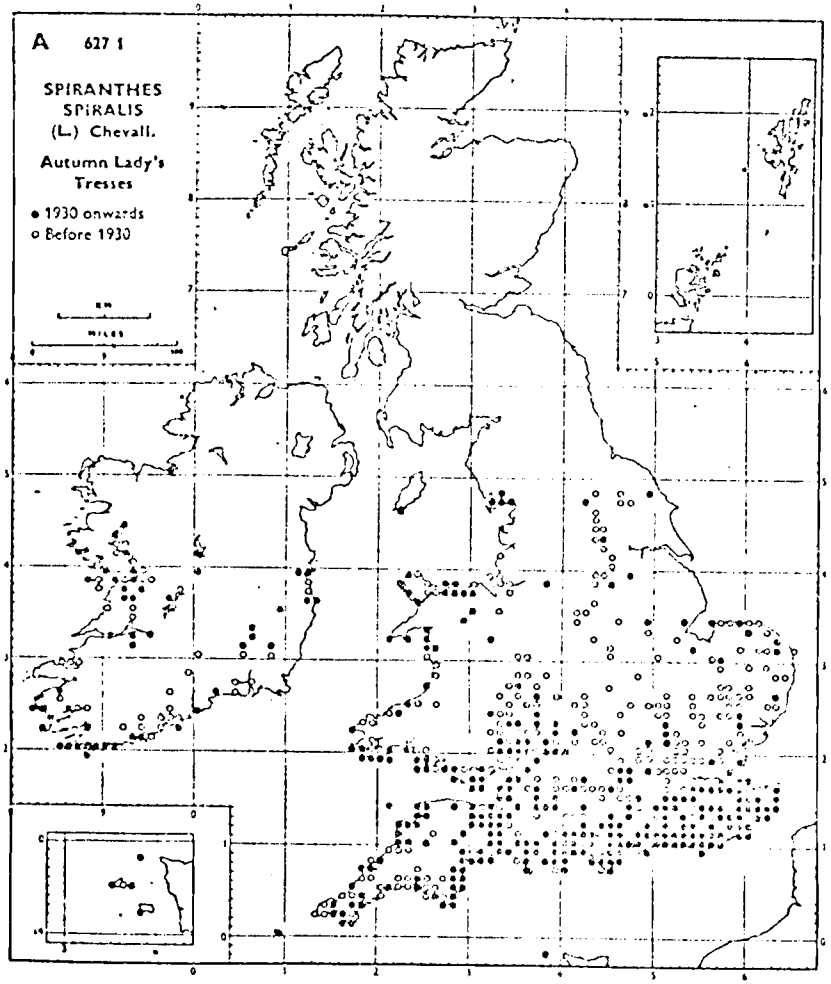

A 470.2
TEUCRIUM SCORDIUM L.
Water Germander
1930 onwards
Before 1930
KM
MILES

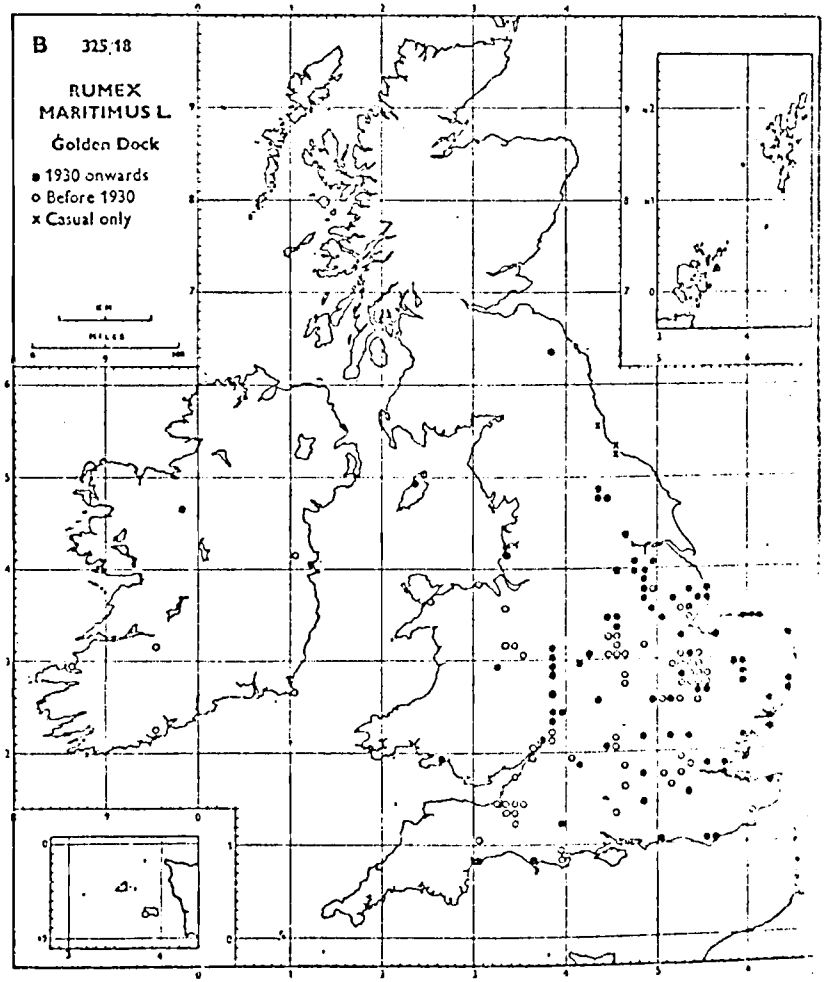

A 660.2
RHYNCHO-SPORA FUSCA (L.) Ait. f.
1930 onwards
o Before 1930
KM
MILES

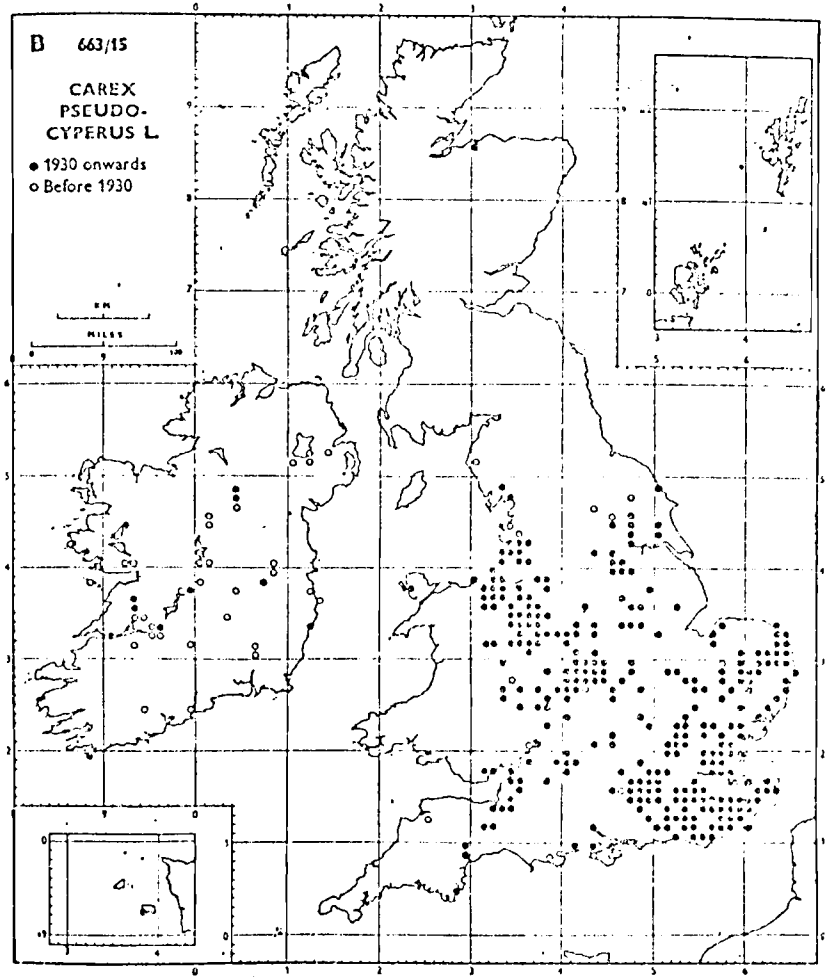

A 512/2
INULA
SALICINA L.
1930 onwards
Before 1930
B 512/5
INULA
CRITHMOIDES
L
Golden Samphire
1930 onwards
Before 1930
MILES

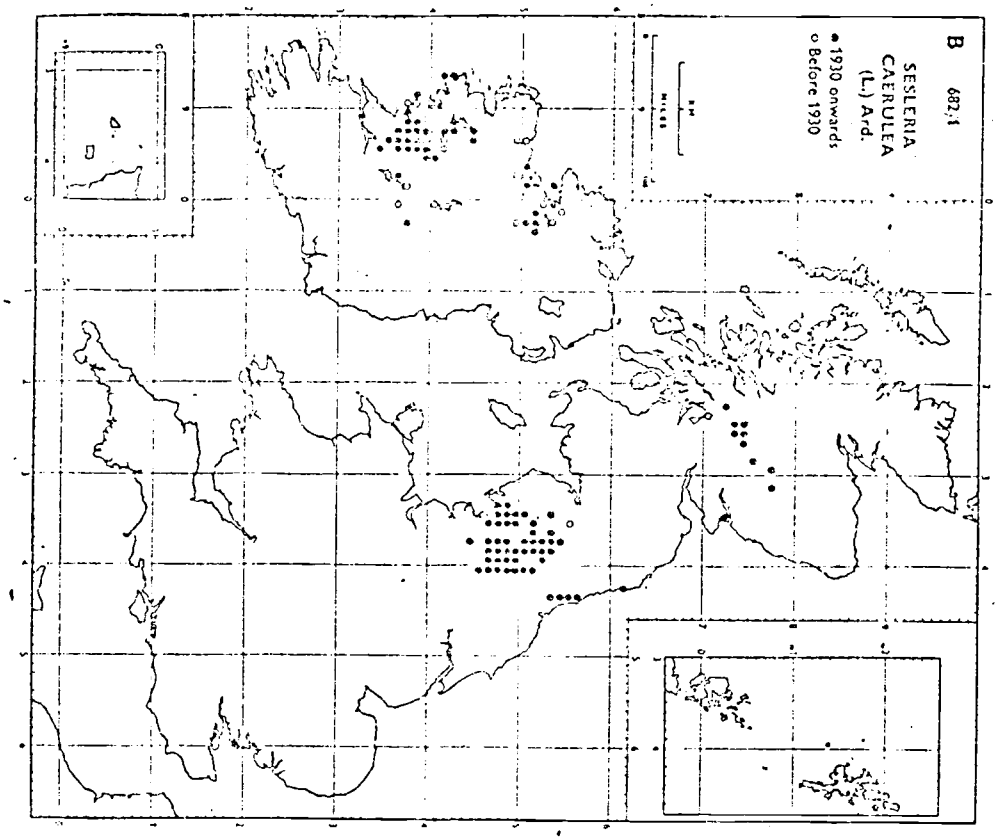

B 486/1
RUBIA
PEREGRINA L.
Wild Madder
1930 onwards
Before 1930
MILES


B 567/1
HYDROCHARIS MORSUS-RANAE L.
Frog-bit
• 1930 onwards
o Before 1930
× Probable or certain introductions
KM
MILES


A 627 1
SPIRANTHES SPIRALIS (L.) Chevall.
Autumn Lady's Tresses
• 1930 onwards
o Before 1930
KM
MILES


B 325/18
RUMEX MARITIMUS L.
Golden Dock
• 1930 onwards
o Before 1930
x Casual only


B 663/15
CAREX PSEUDO-CYPERUS L.
• 1930 onwards
o Before 1930


B 682.1
SESLERIA CAERULEA (L.) Ard.
• 1930 onwards
○ Before 1930

SECTION

Simplified table showing the most significant causes of habitat alteration in County Tipperary (N.R.). The methods used, general impact on the scientific heritage and community or species affected are also listed. Account is not taken of the despoiling influence on amenity of any of the procedures. The relative importance of each activity is not indicated.

Activity	Effect	Impact on Scientific heritage	Species, community or area affected
Peat harvesting (turf cutting)	Marginal drainage	Loss of certain plant and animal communities; loss of diversity	Wetlands generally
Land improvement Works (agricultural)	Arterial drainage	"	" "
Domestic effluent disposal	Eutrophication	"	Aquatic communities
Industrial effluent disposal	Toxic effluent	"	Soil and aquatic communities
Mining			
Building	Clearance	Ecotype removal	Woodlands
	Esker removal	" "	Sand hill communities
Grazing	Plant (then animal) community alteration	Loss in diversity	Pastures, heaths
Recreation	"	" "	Sand dunes, possibly others.