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

CONSERVATION AND AMENITY
ADVISORY SERVICE

REPORT ON AREAS OF SCIENTIFIC INTEREST IN COUNTY LAOIS

L. Farrell,
Research Assistant,
An Foras Forbartha.

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Teach Mháirtín
Bóthar Waterloo
Áth Cliath 4
Telefón 64211
St. Martin's House
Waterloo Road
Dublin 4

PREFACE

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 scientific or educational grounds. The Conservation Advisory Service is attempting to identify a representative range of natural or 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 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.

However, it is true that scenically attractive areas which appeal because of the combination of hills, woodland and water, may introduce conflicts. They are naturally sought after by housing or recreation interests but, at the same time, they often contain communities of plants and animals, interesting because of their isolation from rural or urban development. To compromise between the opposing forces is always difficult, but it may be pointed out that large trees and especially the woodland community is an irreplaceable feature of the landscape on a timescale fo 10-20 years.

Conservation of natural communities may be important for amenity, scientific or educational reasons, or any combination of the three. Frequently the natural vegetation of an area gives to it a characteristic atmosphere, an indefinable value, but very real to those that 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 preserved for scientific research. Uncultivated areas are essential as reservoirs for organisms that may be useful for soil conditioning or pest control in the future. Quite apart from their inherent 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 decipher the natural breakdown processes? Or how can the great productivity of marshes 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 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 B

VULNERABILITY OF THE VARIOUS HABITATS

Areas of scientific interest can be damaged in many ways. They can be completely destroyed by scrub or tree clearance, by turf cutting or by arterial drainage, or they can suffer insidiously through pollution, fertilization, grazing or overuse for recreation.

Of these various instances the first poses the greatest threat because of the rapidity with which it can occur. In the absence of a fine large enough to be a sure deterrent, co-operation to maintain the county's deciduous woodlands at all levels of landowner, forester and the general public must be actively sought. It will seldom be sufficient to put a prevention order on an area which would lose its value immediately the trees are felled. The voluntary organisations have a role to play in this acting as observers throughout the county.

Turf cutting on a small, private scale is not occurring at either of the peatland sites included but Bord na Mona have plans to exploit one of them. It is suggested that the county council might take up this matter, if not to try to prevent such exploitation then at least to postpone it until the last possible moment. The demand for machine turf may fall as central heating becomes the standard form and thus save at least one eastern raised bog in the county. The marginal areas that are scheduled to remain uncut are of much less value than a deep bog and the most satisfactory agreement would be to cut them out completely and leave the latter untouched.

Burning of the vegetation related to turf-cutting causes undesirable modifications in the plant cover, so it should be discouraged if possible.

Drainage schemes of all sorts have serious consequences for the scientific interest of aquatic sites but the threat may not be as serious in Laois as elsewhere. Thus in some instances the areas are large lakes or the

marshes around them and when the water level is lowered the plant communities develop again at a lower level. No large marshy area exists that supports large numbers of wildfowl, but in the case of smaller lakes there is a danger that conditions suitable for the same plant community will not recur and important species will be lost. The particular example of the Scraw Bog, however, may be mentioned as it would never recover its present form after drainage.

Dredging of river beds with the resulting steepening of their banks has a damaging effect on fish life and also sometimes on wildfowl. On the Shannon large numbers of swans and dabbling duck occur in winter and they usually arrive before the river has flooded onto the surrounding fields. In this case, they feed at the sides of the channel on submerged or visible vegetation and a sufficient area must be preserved to maintain this autumn feeding.

As is well-known pollution of lakes changes their character to begin with, and if it is continued has bad effects on water quality and fish life. Aquatic communities of all sorts are the most vulnerable since the incoming matter cannot be localized but is transported everywhere in the water: they also require less nutrients than the land. For these reasons, development upstream of important areas must be carefully controlled, and alternative sites for domestic or agricultural developments, or drainage routes from them, must always be considered if such an area is involved. Where a greater distance of river or stream bed is available, it can be used within reason to deal with larger quantities of effluent. The lack of turbulence, and, therefore, oxygenation, does add considerably to waste disposal problems throughout the county, however.

Several farming operations are potentially destructive, apart from straightforward pollution by silage effluent or intensive livestock units. Excessive fertilization produces run-off of nutrients, especially nitrates and these are particularly bad for nutrient-poor ecosystems such as acid lakes and bogs. Introducing such run-off into any natural community will change the species composition.

Grazing has a similar effect. It selects out of the vegetation those species that are most resistant to constant cutting and allows them to multiply at the expense of others. This reduces the diversity of the flora and also often its interest.

Light grazing is seldom detrimental except that it prevents the natural colonisation of grassland by shrubs and trees, but as it is intensified such changes as those mentioned above occur and in extreme cases the vegetation may not be able to persist at all. Eskers are particularly vulnerable as their stony dry soils do not allow a fast recovery growth by grazed plants.

The last influence to be mentioned is that of recreation which probably deserves a place here at the moment only for its destructive aspect of flower or plant collecting. Opening up of areas with a rare noticeable plant may damage that species but in general enough individuals escape notice so that it persists from year to year. In future fragile ecosystems such as marshes, or unforested eskers may suffer excessive use such as sand dunes are at present receiving, but no problems of this exist in the county today.

SECTION C.

General Introduction

County Laois is a rough polygonal shape consisting of 424, 854 acres. It is bounded by the Slieve Bloom Mountains in the N.W. and by the Castlecomer range in the S.E.

It is drained by the rivers Nore and Barrow, the Nore flowing through the centre of the county from Borris-in-Ossory to Durrow, and the Barrow forming much of the eastern boundary, arising in the Slieve Blooms and flowing down through Portarlington, Monasterevin, Athy and Carlow.

The solid geology of the county consists entirely of Paleozoic rocks from the Lower Silurian to the Carboniferous Coal Measures. The Lower Silurian - Bala and Llandeilo beds-appear on the higher eastern slopes of the Slieve Blooms. The Old Red Sandstone has a far wider range than the Silurian rocks and extends along the upper ridges and lower eastern slopes of the Slieve Blooms. Carboniferous limestone is the most extensive base rock in the county. The Lower Avonian shale skirts the Old Red Sandstone. The Lower Carboniferous limestone is found running in a south west - north east direction through the centre of Laois. The Middle Limestone or Calp is not very extensive and runs in a narrow strip from the north of Abbeyleix to Portarlington. Magnesian limestone is found in a few isolated places but is is mainly a narrow strip running from south of Portlaoise southwestwards into Kilkenny. The Upper Limestone is fairly extensive, especially in the Stradbally district.

In the south of the county the Yoredale Carboniferous shales are presented in a narrow and irregular ambit bordering the super-imposed Millstone Grit, which also presents an irregular circuit, over which are the Coal Measures. The coal itself is found in seams of considerable depth and it is both hard and heavy when taken out in large blocks. It is difficult to ignite, but then burns with intense heat, without flame or smoke.

Minerals include iron ore or clay ironstone found throughout the county, and copper and manganese. In the Dysart district are iron and lead in Cullinagh, coal and clay ironstone, near Crettyard clay ironstone, at Coolbaun and Ballickmoyler lead, and at Wolf Hill, coal and clay ironstone.

Fossils in the Upper Carboniferous Limestone are mainly Zoophyta. To the south of a ruined church south east of Stradbally is a thick-bedded, pale and light bluish-grey limestone which contains Productae and Spirifers. Around Arles are fossilized cornel, cockle and oyster shells. The black shales in the Colliery district contain Goniatites and other genera. Whilst in the beds interstratified with the coal are fossil plants.

In 1845 a discovery of fossil reptiles, which yielded more genera than were known at that time from all the American coal fields, was made by Brownrigg. Two new species were found. Associated with the reptiles were numerous well-preserved fossil ferns and other plants, and some fish remains. The vertebrates are illustrated and described by Professors Huxley and Wright in a paper in the Transactions of the Royal Irish Academy.

It is, however, the drift deposits which provide the greater interest in the county. The numerous raised peat bogs scattered over the Plain have been cut away gradually so that there are relatively few extensive bogs now present. Over the 1300 feet contour of the Slieve Bloom Mountains there still remains a vast expanse of blanket bog, in a few areas encroached upon by the forestry plantations.

The drift ridges of the eskers, relics from the last Ice Age, criss-cross the county and can easily be followed across the flat Central Plain. In several areas they run through bogland which provides added interest in that it enables a direct comparison of the different habitats. Some of the ridges suppo hazel woodland - examples of climax vegetation.

A few areas of oak woodland, remnants of the vast oak forests that covered the Central Plain in earlier times, are scattered around Portlaoise and Stradbally.

There are very few areas of standing water in Laois. Annaghmore Lough, on the north boundary is the only natural sheet of water and is the most interesting scientifically. The others are in private estates at Emo, Woodbrook, Rathdare, Ballyfin, Abbeyleix, Heywood, Durrow and Grantstown.

The River Nore and the River Barrow are the two main rivers. Both have wide river valleys and are bounded by flat marshes. The Grand Canal runs parallel to the Barrow along most of the eastern boundary enclosing a narrow strip of land which yields many orchids in the month of June. Early records of some uncommon plant species are from along the river edges.

The Triogue and the Owenass drain the centre of the county northwards from around Portlaoise, whilst the River Erkina runs east from near Rathdowney to join the Nore east of Durrow. Many streams arise in the Slieve Blooms, the majority of them flowing northwards to join the Camcor, Silver or Clodiagh rivers, and eventually flowing into the Shannon.

Because of the relatively 'dry' nature of the county the ornithological interest is limited. The Abbeyleix lakes are cited as Grade A on the national list of sites of wildfowl wetlands, but do not appear to merit this rating. Further investigation is needed. Hen Harriers are reported from the Slieve Blooms.

Work on the atlas, recording species in 10 km squares is in progress and further information should be available later in the year.

Wildlife of the county includes Pine Martin in Ballyfin forest, badger, fox, stoat, red squirrel, rabbit, hare, mink and otter. 200 Fallow deer roam the Slieve Blooms and descend to the Birr estate in winter.

Areas of deciduous forest in State forests which may merit further investigation have been listed by the Department of Lands. Two of these sites have been visited and are recorded in the report. The remaining sites at Durrow and Ossory need further work.

1.	Durrow	8 acres of old oak woods, planted
2.	Ossary	3 acres of old oak wood
3.	Emo	5 acres oak-beech old woodland
4.	Portlaoise	6 acres old oak woodland

References

O'Hanlon Cannon J. and O'Leary Rev.	1907	History of the Queen's County. Dublin.
Huxley T.H. and Wright E.P.	1866	On a collection of fossil vertebrata from the Jarrow Colliery, County of Kilkenny, Ireland. Trans. R.I.A. Vol. XXIV. Pt. 1. SCIENEC.351-360

SECTION D

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.

AREA	MAP NO.	GRID REFERENCE	RATING	PRIORITY	INTEREST
1. Rock of Dunamase	1 16	S 525, 985	National	A	Archaeological Geological Botanical Limestone outcrop with the ruins of the Castle of Dunamase, a fairly interesting rock flora and surrounding hazel scrub.
2. Annaghmore Lough	2 20	N 31, 14	Regional	B	Botanical Geological Ecological Ornithological Archaeological Calcicole/calcifuge area
3. Derry Hills	3 24	N 265, 125	Regional	A	Botanical Ecological Geological Geomorphological Esker ridges, some wooded, some grassed bounded by raised bog
4. Ridge of Maryborough	4 27	N 47, 03 to ~~N. 49~~, 96 S 49 96	Regional	B	Geomorphological Botanical Superb esker ridge approx. 6 miles in length, wooded in parts with hazel scrub, some oaks and Scots Pine
5. The Cut	5 29	N 29,05	Regional	C	Botanical Ornithological, Ecological Extensive blanket bog
6. Timahoe parallel ridges	6 31	S 54, 92	Regional	A	Geomorphological Botanical Esker ridges with hazel scrub

AREA	MAP NO.	GRID REFERENCE	RATING	PRIORITY	INTEREST
7. The Curragh	7 32	S 35, 77	Local	C	Botanical Ecological Ornithological Calcareous peat
8. Ballaghmore Bog	8 34	S 18, 89	Local	C	Botanical Ecological Diversity of habitats ranging from wet grassland through to raised bog. (Continuous with Monaincha Bog in Tipperary)
9. Kilteale Hill	1 36	S 540, 985	Local	C	Botanical Ecological Hazel woodland
10. Wood near Dunamase Dot on map 1	1 37	S 520, 980	Local	C	Botanical Ecological Approx. 20 acres of Quercus robur woodland
11. Bog near Cloonaddoran	9 38	S 47, 92	Local	B	Botanical Ecological Extensive raised bog with isolated eskers
12. Lisbigney Bog	10 39	S 460, 790	Local	B	Botanical Ecological Ornithological Reeded area with Cladium mariscus
13. Rock of Cashel	9 40	S 480, 920	Local	B	Geological Limestone outcrop with fossils
14. Emo Court	11 41	N 54.07	Local	C	Botanical Ornithological Oak/beech woodland Collection of conifers

AREA	MAP NO.	GRID REFERENCE	RATING	PRIORITY	INTEREST
5. Abbeyleix lakes	12 44	S 42, 83	Local	C	Ornithological
6. Bog near Knockaroe	45	S 29, 87	Local	C	Botanical
7. Delour River near Lacca Manor	46	S 29, 98	Local	C	Botanical
8. The Great Heath of Maryborough	47	N 53, 02	Local	C	Botanical
9. Monavaw or 'Yellow' Bog	48	S 51 98	Local	C	Botanical
0. Monettia Bog	49	N 35, 15	Local	C	Botanical
1. Bush Bog	50	S 39, 95	Local	C	Botanical
2. Bog near Coolroe Castle	51	N 61, 04	Local	C	Botanical
3. River Nore south of Castletown	52	S 35, 92	Local	C	Botanical Ornithological
4. Rossnagad Bog	53	N 44, 04	Local	C	Botanical
5. Meadow near Ballylynam	54	S 67, 88	Local	C	Botanical
6. River Barrow at Tankardstown Bridge	55	S 70, 88	Local	C	Botanical Ornithological

AREA	MAP NO.	GRID REFERENCE	RATING	PRIORITY	INTEREST
27. Stradbally Hills	56	S 60, 95	Local	C	Botanical Geological
28. Glendine Gap	57	S 25, 99	Local	C	Botanical Ornithological

SITE 1

Name of area:	Rock of Dunamase	12 acres
Grid Reference:	S. 525. 985	
Scientific interest:	Archaeological	
	Geological	
	Botanical	
Rating:	A - National	
	G - Local	
	B - Local	
Priority:	A	

Description of the area: See map 1

The Rock of Dunamase or the 'Fort of the Plain' stands on a prominent limestone outcrop 5 miles east of Portlaoise. The original date of building is debated but it was rebuilt and enlarged in 1250. It remained a stronghold, the ownership changing hands several times, until 1650, when it was destroyed by the Cromwellians. The shell still remains.

Geologically, it is one in a string of small limestone outcrops in the area, most of which are covered with hazel scrub, or partly afforested. The long grassland surrounding the ruins presents an example of the type of plant community which has developed in the absence of invasion by scrub. The grass species include Agrostis stolonifera, Arrhenatherum elatius, Cynosurus cristatus, Lolium perenne, Dactylis glomerata, Festuca rubra and the locally frequent Helictolrichon pubescens. Few herbs are associated with the dense grasses.

The more interesting parts, from the botanical point of view, are the large limestone boulders, which have a fairly rich bryophyte flora. The grass species indicative of a shallow soil are Briza media, Catapodium rigidum and Sieglingia decumbens.

Herbaceous species indicative of this habitat include Chrysanthemum leucanthemum, Euphrasia nemorosa, Galium verum, Geranium pyrenacium, Hieracium pilosella, Plantago lanceolata, Sedum acre, Trifolium dubium. Nine species of moss were identified.

It is the areas of shorter turf on the very shallow limestone soil which provide the greater interest.

Around the west aspect is a pathway over a small scree at the base of a 30 ft. cliff. Sidetracks lead down into the dense hazel scrub which encircles the Rock. The understorey flora is fairly diverse considering the closeness of the trees. Other shrubs included Crataegus monogyna, Fagus sylvatica, Prunus spinosa, Hedera helix, Lonicera periclymenum and Rubus fruticosus. Some of the herbs typical of an open woodland are Asperula odorata (Sweet Woodruff), Geum urbanum (Wood Avens), Glechoma hederacea (Ground Ivy), Oxalis acetosella (Wood-sorrel), Sanicula eutopdea (Sanicle), Viola canina (Dog violet). Numerous puff-balls were scattered on the mossy banks.

Threats to the area:

The site is a local picnic spot and is visited by numerous people during the summer weekends. The pathways are well worn but no great influence on the rest of the grassland has been made. The density of the hazel scrub prevents much exploration and destruction. Until very recently there were no threats to the area, but in February it was reported that some of the castle stones had been removed from 3 places. Portlaoise Garda are investigating the matter.

Recommendations:

The Office of Public Works, National Monuments Branch, has recommended that a full Preservation Order be drawn up for the Rock. At present it is merely listed as a National Monument, which provides very little protection. As the monument is of considerable importance archaeologically and the grassland rock flora and hazel scrub are by no means uninteresting, it is suggested that a full Preservation Order be drawn up as soon as possible.

SECTION A

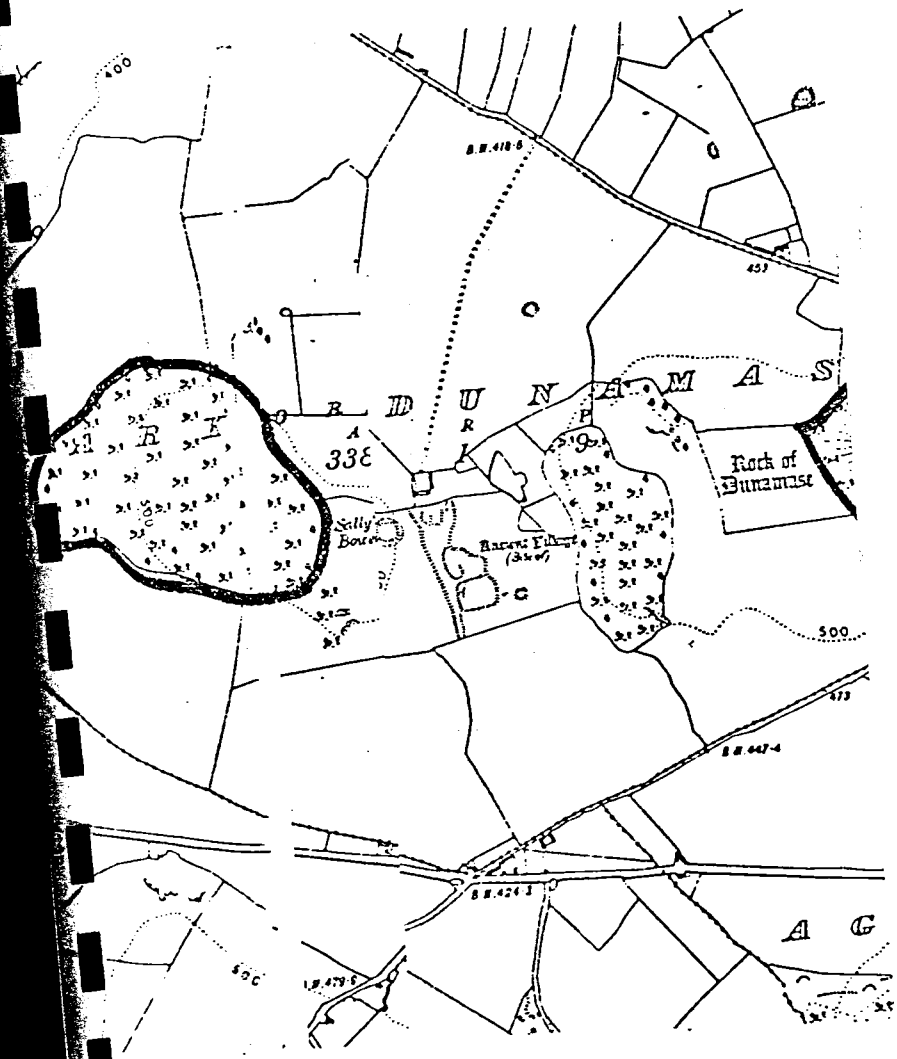
This report is based on data abstracted from the files of the Conservation Section, An Foras Forbartha, from the published literature, from local sources of information and a period of field work in August 1971 and January - February 1972. It is a provisional document subject to further research.

CONTENTS

The help of Mr. D. Scott of the Irish Wildbird Conservancy and of Mr. D. Synnott of the National Museum Herbarium is gratefully acknowledged.

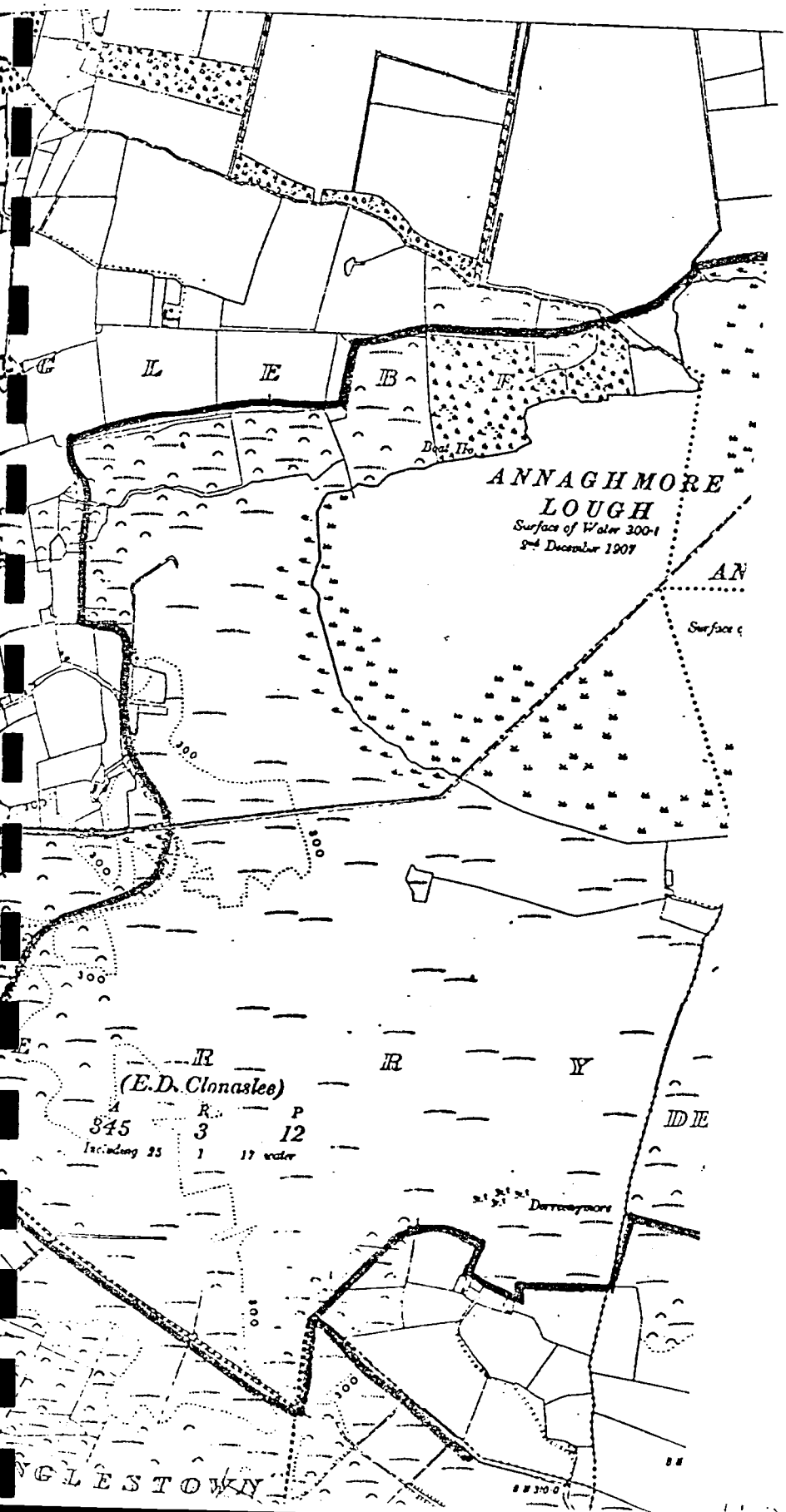
MAP SHOWING AREA OF SCIENTIFIC INTEREST — 1

Scale: 6 Inches to 1 Mile



MAP SHOWING AREA OF SCIENTIFIC INTEREST — 2

Scale: 6 Inches to 1 Mile



SITE 2

Name of area:	Annaghmore Lough	760 acres
Grid Reference:	N. 31, 14	
Scientific interest:	Botanical	
	Geological	
	Ornithological	
	Ecological	
	Archaeological	
Rating:	Regional	
Priority:	B	

Description of the area:

See Map 2

Annaghmore Lough is the only natural sheet of water in the county, and even then only part of it is included - the other part being in Offaly. In 1850 the lake had an area of 207 acres, 1 rood and 14 perches. It received the drainage of 4,000 acres of swamp and bogland.

When visited in January, about two acres of standing water were visible. There was a crannoge on an island. On the northern side of the island, over a hundred piles of timber were driven down in regular lines into the soft mud. Some of these found uprooted showed that the ends had been pointed by some sharp instruments - probably small iron hatchets found near the spot.

Ecologically, the lake can be described as half calcicole, half calcifuge. A stream runs into the lake from the north west and flows out at the north east corner down into the nearby Clodiagh River. The land to the north of the stream is gravel-based and the flora consists mainly of calcicole species. To the south a calcifuge swampy area exists. The whole lake basin is surrounded by bogland. It is the diversity of habitat and the different plant communities colonizing them, that is the most interesting aspect of this site.

The gravel floor of the basin is now colonized by a 'sedge carpet' about ½ inch high, made up of Carex flacca and Carex panicea. The grasses Briza media, Agrostis stolinfera and Festuca rubra are also interwoven into the carpet. Low-growing, rosette species are found - such as Samolus valerandi, Selaginella selaginoides, Scirpus setaceus, Bellis perennis, Hieracium pilosella, Hypochoeris radicata.

This community then grades into areas characterized by small hummocks about 9" in height. These have Bellis perennis, Cerastium vulgatum, Drosera rotundifolia, Lotus corniculatus, Sagina nodosa and Selaginella selaginoides growing on them. Grazed-down tufts of Schoenus nigricans are scattered throughout.

A small region to the north of the hummocks has been fenced off and is therefore not grazed. This is dominated by a stand of Phragmites communis with some Cladium mariscus, growing to a height of 6 feet. There is a little standing water here which has calcium deposits in it. Potamogeton natans and a Chara sp. grow in the shallows and numerous, large, thick-shelled specimens of the snail Lymnaea stagnalis are to be found.

On the south side of the stream is a Carex/Eriophorum dominated area with a few stunted Salix and Betula trees. The sedge growth is quite high and few herbs are associated with the community, generally the taller growing species like Filipendula ulmaria, Cirsium palustre, Caltha palustris and Lythrum salicaria. Bushes of Ulex europaeus and Myrica gale occur.

A small birch woodland is found to the north of the basin with a fair amount of holly and conifers dispersed in it. Then to the east of this is an extensive raised bog region with Erica tetralix, Trichophorum caespitosum, and Narthecium ossifragum as co-dominants.

Yet other parts to the east have a 'Fen carr' community with Myrica gale birch trees and scattered Calluna bushes.

A field dominated by lichens also contains Andromeda polifolia, Calluna vulgaris, Carex lepidocarpa, Digitalis purpurea, Erica tetralix, Sagnia nodosa, and Polytrichum commune.

Several fungi were found under the Ulex bushes. These included the Giant Puffball, Lycoperdon giganteum, a yellow fleshy basidiomycete, Tremella mesenterica, and an unidentified bracket fungus.

The basin is probably a collection place for birds. About 200 Curlew were sent during the visit and one Mute Swan. Further information is needed.

Information to be incorporated into the Atlas of Irish Birds is collected on a 10 km. square basis. The species in the square in which Annaghmore Lough is located include the following. Although not all these birds will be found in the area designated around the Lough, it is probably that most of them are resident in the district and occasional visitors to the Lough.

Heron	Hooded Crow	House Sparrow
Teal	Rook	Grey Wagtail
Tufted Duck	Jackdaw	
Pochard	Magpie	
Mute Swan	Great Tit	
Sparrowhawk	Blue Tit	
Hen Harrier	Coal Tit	
Kestrel	Long-tailed Tit	
Corncrake	Treecreeper	
Pheasant	Wren	
Moorhen	Dipper	
Coot	Mistle Thrush	
Lapwing	Song Thrush	
Ringed Plover	Blackbird	
Golden Plover	Stonechat	
Snipe	Whinchat	

Woodcock	Robin
Curlew	Blackcap
Redshank	Whitethroat
Dunlin	Willow Warbler
Black-headed Gull	Chiffchaff
Stock Dove	Goldcrest
Woodpigeon	Spotted Flycatcher
Cuckoo	Dunnock
Barn Owl	Meadow Pipit
Little Owl	Pied Wagtail
Nightjar	Starling
Swift	Greenfinch
Kingfisher	Goldfinch
Skylark	Linnet
Swallow	Bullfinch
House Martin	Chaffinch
Sand Martin	Yellowhammer

Threats to the area:

None apparent

Recommendations:

The whole basin and enclosing bog is of sufficient diversity as to recommend the site as a nature reserve. It would make an excellent educational area.

SITE 3 951 acres

		Grid Refs
Name of site:	Derry Hills	N. 265.125
	Ballinfilla Gravel ridges	N. 26.11
	Soldiers Hill eskers	N. 28.12
Scientific interest:	Geological	
	Geomorphological	
	Botanical	
	Ecological	
Rating:	Regional	
Priority:	A	

Description of area: See Map 3

Because of the proximity of these 3 sites and their geological connections - esker ridges - they are considered as a whole area, but described independently.

a) Derry Hills

Two conical,sand and gravel hills about 50 feet high, stand in the middle of a raised bog.

The northern hill is crowned by a few birch and hawthorn trees. The east part is being quarried, presumably by a local sand and gravel merchant. The exposed surface shows clearly the different bands of sand and gravel and the various inclusions.

The Western aspect is dominated by Festuca rubra grassland with small young bushes of Calluna vulgaris intermingled. Other grasses included Anthoxanthum odoratum,

Arrhenatherum elatius, Dactylis glomerata, Molinia caerulea and Sieglingia decumbens. 2 sedges, Carex caryophyllea and C. flacca, both indicative of a well-drained soil were found. Among the more interesting herbs was Antennaria dioica, which was frequent on the west - and south - facing slopes. Lathyrus montanus (Mountain Pea) was also fairly frequent. Dead inflorescence spikes of Solidago virgaurea (Golden Reed) was noticeable in the short turf, and the trailing Vaccinium oxycoccus (Cranberry) was an occasional.

The hill to the south west had a coarser grassland community with some Ulex scrub and a small copse of birch and oak. Calluna dominated the lower south and south west slopes.

An investigation of the bogland was not made, but the rare vetch, Vicia orobus, has been recorded here recently.

b) Ballinfilla Gravel ridges

½ mile to the east of the Derry Hills are a series of esker ridges which are fairly sparsely vegetated.

The north slope of the first ridge approached is thinly covered with the grasses Briza media, Festuca ovina and Sieglingia decumbens. The south slope is loose gravel with a few clumps of Sesleria caerulea and Chrysanthemum leucanthemum only. At the north base of this ridge is a small patch of a sedge-dominated community which then merges into the bogland proper.

An opposing ridge is the reverse, with the loose gravel on the north face; and together these two ridges enclose a flat gravel floor which has dwarfed vegetation.

Numerous large boulders are located at the base of the ridges, some of which contain fossils, long ago replaced by quartzite.

Some of the higher ridges have a more established grassland community with Ulex scrub in patches.

A total of 7 grasses, 2 sedges, 33 herbs, 5 mosses and 1 lichen were recorded from the 2 small ridges and the gravel floor.

c) Soldier's Hill esker ridges

The series of esker ridges to the south of Derry Hills are mainly wooded. Mature hazel woodland covers the ridge with gorze scrub on the lower slopes and Scots Pine topping the ridge. Other tree species include Crataegus, Rubus, Betula, Ilex, Larix, Fraxinus, Acer and Pinus.

Threats to the areas

Derry Hills - one of the hills is being quarried for the sand and gravel and about 1/6th of the hillside has already been removed.

Ballinfilla gravel ridges - part of one or two ridges has already been removed and as the site is just across the road from Derry Hills, it is likely that they will be further exploited.

Soldier's Hill - the surrounding land is used for grazing and the ridges themselves do not appear to be threatened.

Recommendations

Both Derry Hills and Ballinfilla are good examples of esker ridges and together with their botanical interest, they are worthy of protection by a Conservation Order.

Soldier's Hill ridges do not appear to be in any immediate danger, but it is recommended that the Order include this area.

SITE 4

Name of site:	RIDGE OF MARYBOROUGH
Grid Reference:	N. 47, 03 - S. 49, 96
Scientific interest:	Geomorphological
	Botanical
Rating:	Regional
Priority:	B

Description of the area: See Map 4

This esker ridge is approximately 6 miles in length and runs in a SSE - NNW direction.

The secondary road from Portlaoise to Mountmellick runs along the top of the ridge. Hazel scrub covers the banks and there are a few old oaks just to the north of Portlaoise.

South of the town the hazel woodlands cover the banks entirely and a line of Scots Pine trees marks the pathway along the spine.

Many of the smaller, associated mounds have been quarried. One of these, lying at N. 48, 03 about 1/4 ml. east of the main ridge was visited. Part had been removed and it was seen to be of a very sandy nature. In the early morning sun it had a yellow sheen owing to the dominance of the shiny moss Camptothecium lutescens and the light coloured grass Festuca ovina. The vegetation was very short, $\frac{1}{2}$", and from the presence of numerous burrows it was obvious that it was heavily grazed by rabbits. On the western aspect were some small clumps of Calluna, but these were very brown and degenerate. The flora was fairly diverse with 10 grasses, 1 sedge, 23 herbs, 6 mosses and 1 lichen.

Threats to the area:

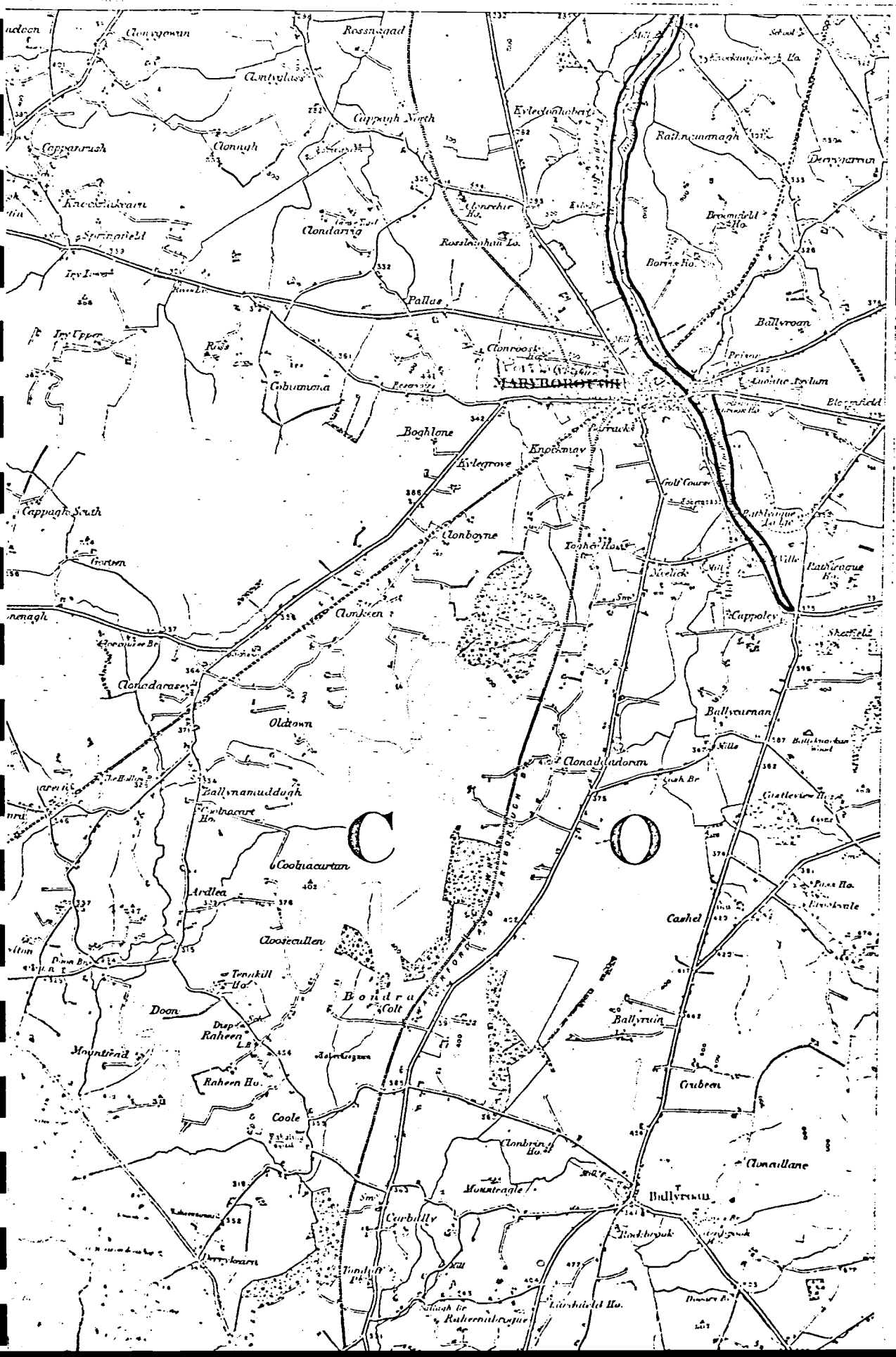
The ready availability and the demand for sand and gravel account for the gradual removal of most of the esker mounds in this district.

Recommendations:

Although it would be in conflict with local building contractors, it is recommended that a few of the more important esker ridges in the county be preserved. The Ridge of Maryborough, Timahoe parallel ridges, and those near Derry Hills (Site 6) are thought to be the best examples.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 4

Scale: 1 Inch to 1 Mile



SITE 5

Name of site:	THE CUT
Grid Reference:	N. 29, 05
Scientific interest:	Botanical, ornithological, ecological
Rating:	Regional
Priority:	C

Description of the area: See Map 5

Above the 1300 ft. contour most of the Slieve Bloom Mountain range is blanket bog. However the Department of Lands, Forestry Department, owns much of the area and the greater proportion of the mountain range is afforested.

The Cut is near the summit of the range at a height of 1500 feet where a road running across the mountains from north to south has been cut through the sandstone. To the east and west stretch acres of blanket bog. As the Midland Region of Ireland is comparatively flat, this area is perhaps the best representative of the blanket bog community. Calluna vulgaris to a height of 4 feet is the dominant species, with clumps of Juncus effusus and patches of Narthecium ossifragum scattered throughout. Towards the summit Calluna and Trichophorum caespitosum are practically the only two species in the sward.

On the wet rock surface of the Cut itself are numerous mosses and liverworts. Nothing uncommon is found among the bryophytes but the richness of species is of some interest. Lycopodium selago (Fir clubmoss), a frequent but local species in Ireland, grows on the ledges and Empetrum nigrum (Crowberry) which is commoner in places over 1,000 feet, are the only two noteworthy species. Several pairs of Hen Harriers are known to nest in the young plantations nearby.

Threats to the area:

The only possible threat is from afforestation, but as the tree growth is stunted above the 1300 ft. contour, this danger can be ruled out.

Recommendations:

As there is no danger to the area, a protection order is not required and the area can just be designated as a site of scientific interest.

Some pockets of young conifers might be retained so that the nesting habitat of Hen Harriers might be preserved.

SITE 6

Name of site:	Timahoe parallel ridges	
Grid Reference:	S 54, 92	91 acres
Scientific interest:	Geomorphological	
	Botanical	
Rating:	Regional	
Priority:	A	

Description of area: See Map 6

These ridges form one of the best examples of eskers in Co. Laois.

Unfortunately, half of the western ridge has been quarried and the sand and gravel are still being removed by Laois County Council. The remainder supports hazel woodland with some oak, beech and holly. The eastern ridge has partially been planted with Western Hemlock, Japanese Larch and a few spruces, particularly on the lower slopes. The rest of the woodland is mainly hazel with some oak and a few ash trees.

A flattened esker is found to the north of these parallel ridges. It is entirely grassland with some bracken cover.

Threats to the area:
Continued removal by sand and gravel merchants.

Recommendations:
That an immediate Conservation Order be drawn up for this area and that Laois County Council be approached about discontinuing the quarrying.

The cut channels showed the calcareous substratum. Approximately 12" of peat covered the limestone base. The sides of the channels were colonized by numerous mosses and liverworts, mainly calcicole species. In the shallower channels a Chara sp. was found.

The succession then graded into a fairly large area of raised bog. It was not possible to compile a species list here, because of the deeper drainage channels surrounding it, making access difficult.

Threats to the area:

There is a small belt of land nearby which has just been planted with conifers and it may be that the Department of Lands owns this whole area. Afforestation should be prevented.

Drainage would also adversely affect the area.
The wetter, more interesting areas are not grazed at present, but grazing on any part would not be harmful.

Recommendation:

Drainage and afforestation should be prevented

SITE 7

Name of Area:	THE CURRAGH	937 acres
Grid Reference:	S. 35, 77	
Scientific Interest:	Botanical, ecological, ornithological	
Rating:	Local	
Priority:	C	

Description of Area

See Map 7

Between the towns of Rathdowney and Durrow is a $2\frac{1}{2}$ mile stretch of flat, wet meadowland through which flows the River Erkina. The land is used for sheep and cattle grazing. The overall visual impression is one of a rough meadow with clumps of Juncus effusus (Soft rush), dominating the scene. On closer inspection there are areas which have more interesting plant communities and it is the diversity of these which recommend the site.

The particular area which was investigated closely was south of the river at S. 351. 772. A network of drainage channels crossed the area and conveniently divided it into different communities. They showed the substratum to be a calcareous peat. Nearest to the road Schoenus nigricans (Black Bog-rush) was the dominant species. This was the most diverse area having 45 recorded species. Small pools between the Schoenus clumps are colonized by sedges and Triglochin palustre, Mentha aquatica, Parnassia palustris, Filipendula ulmaria, Ranunculus flammula, Samolus valerandi, Anagallis tenella and Potentilla palustris, were among the herbaceous species indicative of this type of habitat.

Further into the area Molinia caerulea became the dominant and the grassland was of a coarser nature with fewer herbs. Drainage channels separated this community from a 'fen' area, with Myrica gale, Cladium mariscus and Phragmites communis being the most noticeable species.

Trichophorum caespitosum and the mosses Pleurozium schreberi, Sphagnum palustre and Sphagnum acutifolium var. rubellium in a balanced community.

The raised bog beyond this was almost completely covered by waist-high Calluna vulgaris. Very few other species were present - Eriophorum angustifolium, Molinia caerulea, Narthecium ossifragum, Cladonia impexa and Pteridium aquilinum. A small birch wood nearby was ringed with Ilex scrub, restricting entry, and the dense understorey of Rubus and Rosa impeded progress.

Old peat cuttings were filled with water in which the only vegetation appeared to be Sphagnum species.

The abundance of lichens throughout the area was noted - trees were often profusely colonized by them.

Several fungi were noticed also, including some superb specimens of Polyporus betulinus

Threats to the area:

None apparent

Recommendations:

This area in Laois and its continuation with Monaincha Bog in Tipperary are worthy of preservation

SITE 9

Name of area:	Kilteale Hill 64 acres
Grid Reference:	S. 540. 985
Scientific interest	Botanical, ecological
Rating:	Local
Priority	C

Description: See Map 1

This is a small limestone outcrop in the Rock of Dunamase group. The southern and western slopes are covered with dense hazel scrub with a few scattered ash trees near the summit.

The east and eastern aspects are mainly Ulex scrub.
This hazel wood serves as an example of former woodlands all over the Midland Region hillocks and can be said to be indicative of a climax vegetation for basic soils.

The other hills nearby are mixtures of rough grassland, hazel scrub, bracken patches and young conifer plantations. Kilteale supports the best example of the hazel scrub.

Threats to the area:
The hill is surrounded by agricultural land, mainly grassland for cattle grazing. A rough stone wall separates the woodland from the meadows and it does not appear to be in any danger of being removed.

Recommendations:
That the woodland be preserved by a Tree Protection Order

SITE 10

Name of site:	Wood near Dunamase 22 acres
Grid Reference:	S. 520, 980
Scientific interest:	Botanical, ecological
Rating:	Local
Priority:	C

Description of area: See Map 1

Approximately 3 acres of Quercus robur woodland on a small hill about ½ ml. due west of the Rock of Dunamase. Sycamore, Sweet Chestnut and Horse Chestnut are occasionals between the 50 foot oak trees. There is a very poor ground flora - a thick carpet of oak litter covers the ground - but a few shoots of Endymion non-scriptus were seen peeping through the dead leaves.

On top of the mound are the ruins of an old building - whether a castle or a cottage is not known because of the state of dereliction. A few hundred yards to the east however, is the site of an ancient village.

Threats to the area:

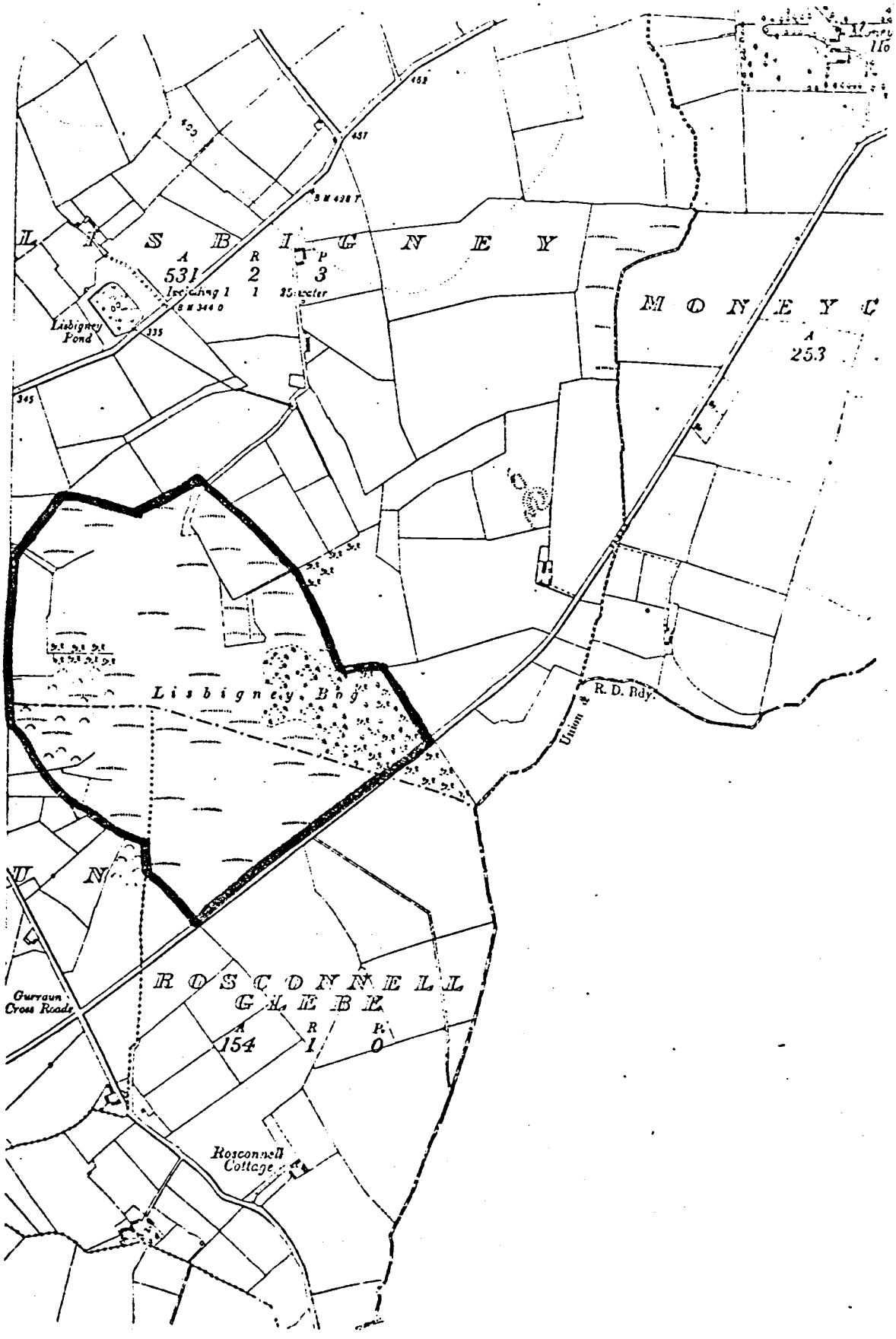
Agricultural land surrounds the woodland and although sheep and cattle stray into the trees, it is not likely to be threatened from any other sources.

Recommendations:

Although this is not an extensive woodland it is one of the few Quercus robur woods in the county. As it is near to Dunamase it could be included in the general area of scientific importance. A Tree Preservation Order is hence recommended.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 10

Scale: 6 Inches to 1 Mile



SITE 12

Name of site:	Lisbigney Bog
	103.8 acres
Grid Reference:	S 460, 790
Scientific interest:	Botanical,
	Ecological,
	Ornithological
Rating:	Local
Priority:	C

Description of site: See Map 10

Although called Lisbigney Bog, this area is really a fen. It was presumably a lake in former times. Now Molinia grassland surrounds the fen which is bounded by 3 minor roads between Durrow and Ballinakill. A dense stand of Phragmites communis colonized the south west corner, whilst there are circles of Cladium mariscus towards the north east part.

Areas of sedge-dominated communities with Filipendula ulmaria, Ranunculus flammula and Myrica gale divide the Phragmites from the Cladium portions. In the centre of the Phragmites is a small area of standing water with an abundance of Potentilla palustris and Marchantia polymorpha. The mosses Acrocladium giganteum and Bryum pseudotriquetrum are also frequent in this community.
Small streams criss-cross the basin. Many Snipe were observed during the visit and it is possible that this is also an area of ornithological interest. Further investigation is needed on this aspect. Jays and Blackcaps are recorded.

Threats to the area:
None apparent
Drainage would adversely affect the area

Recommendations:

Drainage should be prevented

SITE 13

Name of site:	Rock of Cashel	8 acres
Grid reference:	S. 480, 920	
Scientific interest:	Geological	
Rating:	Local	
Priority:	B	

Description of the area: See Map 9

This is a small rock outcrop near the Pass of the Plumes and just to the east of the large bog at Cloonaddadoran (Site 11). It is also $1\frac{1}{2}$ miles south of the Ridge of Maryborough.

The northern side has been quarried, so that a cresenct-shaped mound now exists. At the foot are large limestone boulders in which numerous Crinoids are embedded. These fossils do not exhibit parallelism, indicating that the limestone was laid down under turbid conditions. Brachiopods are also included.

The limestone at the top of the mound is a bluish grey and is bedded in planes at an angle of about 45° to the east.

Threats to the area:

It is possible that further quarrying may take place, but there was no activity at the present time.

Recommendations:

Further removal of stone should be prevented.

SITE 14

Name of site:	EMO COURT
Grid reference:	N. 54, 07
Scientific interest:	Botanical
	Ornithological
Rating:	Local
Priority:	C

Description of the area: See Map 11

A private estate owned by Major Chumley-Harrison
There is a collection of conifers from different parts of the world around the house. Cedars, cypresses, spruces and firs are scattered in oak beech woodland and by the lake at the back. Some of these are magnificent specimens obtaining heights of 100 feet.
On the eastern side of the lake are approximately 5 acres of old Oak/beech woodland. The young beech reach a height of about 30 feet whilst a few ancient trees attain 120 feet. The oaks are about 70 feet high.
The understorey flora consists of carpets of Rubus fruticosus, Thuidium tamariscinum, and Oxalis acetosella. Numerous dots of the bright red Peziza coccinea are scattered over the carpets.
The lake itself is fringed with Phragmites and does not appear to have a particularly interesting aquatic flora. Several ducks were disturbed and it is likely, although this is only a small lake, that it could be of ornithological interest.

A list of birds from the 10 km square in which Emo is centered, is provided below. This gives some indication as to the species found in the area, although specific information about Emo Court itself is needed.

Heron	Dipper
Mallard	Mistle Thrush
Mute Swan	Song Thrush

Sparrowhawk
Kestrel
Pheasant
Corncrake
Moorhen
Coot
Lapwing
Snipe
Curlew
Common Sandpiper
Stock Dove
Woodpigeon
Collared Dove
Cuckoo
Barn Owl
Swift
Kingfisher
Skylark
Swallow
House Martin
Sand Martin
Hooded Crow
Rook
Jackdaw
Magpie
Jay
Great Tit
Blue Tit
Coal Tit
Long-tailed Tit
Treecreeper
Wren

Blackbird
Stonechat
Robin
Blackcap
Willow Warbler
Chiffehaff
Goldcrest
Spotted Flycatcher
Dunnock
Meadow Pipit
Pied Wagtail
Starling
Greenfinch
Goldfinch
Linnet
Bullfinch
Chaffinch
Reed Bunting
House Sparrow
Grey Wagtail

Threats to the area:

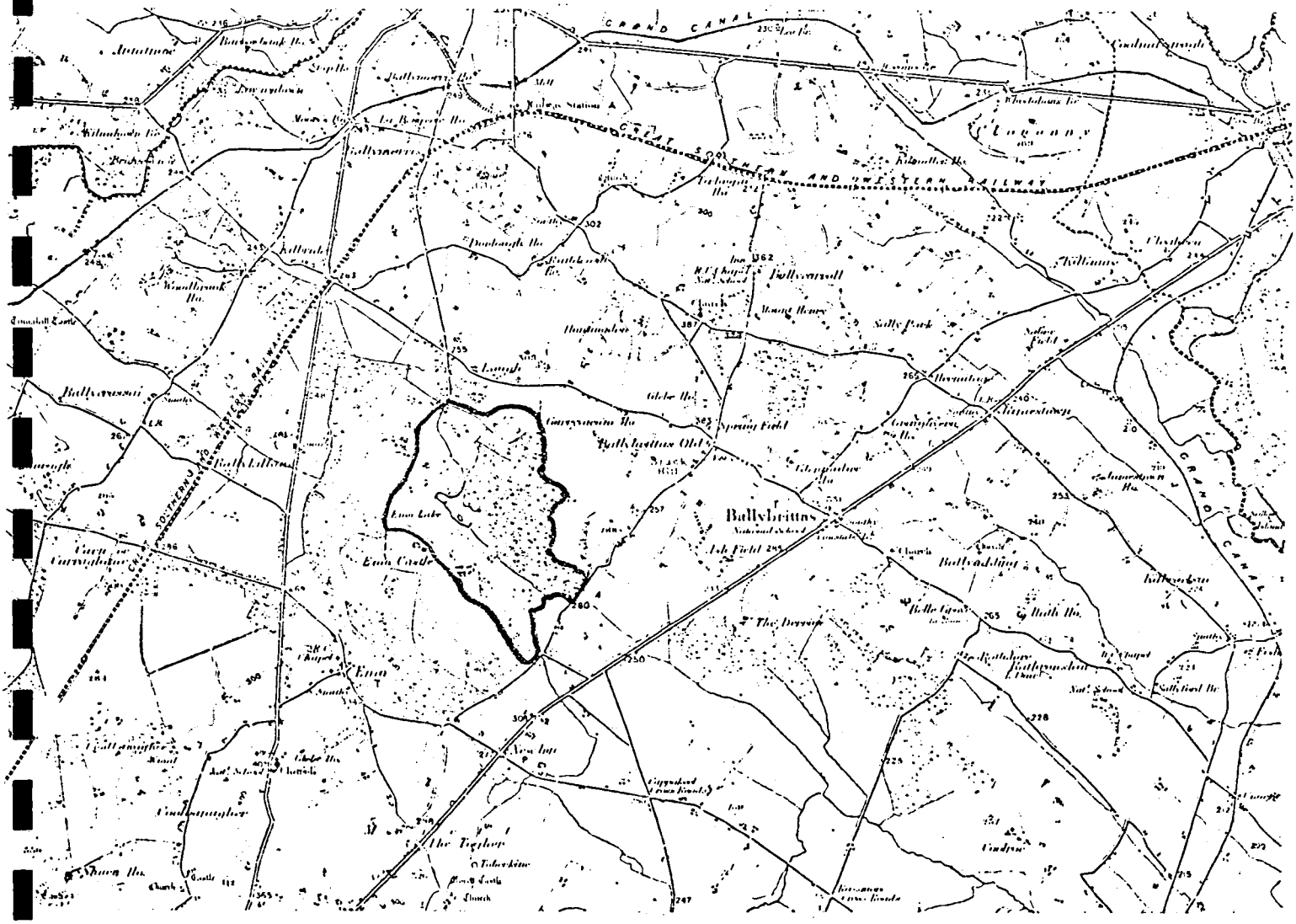
None apparent. Unlikely to be affected except by a change of management by the owner.

Recommendations:

A Tree Preservation Order for the Oak/beech woodland might be drawn up. The Major is generally interested in trees and natural history and would probably be agreeable.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 11

Scale: 1 Inch to 1 Mile



SITE 15

Name of site:	Abbeyleix lakes
Grid Reference:	S 52, 83
Scientific interest:	Ornithological
Rating:	Regional
Priority:	C

Description of area: See Map 12

A series of small, reeded lakes on the de Vesci estate. Although cited as Grade A on the Wildfowl Wetlands list no specific information is available to corroborate this.

The ornithological atlas of Ireland is at present under compilation and this will provide more detailed information.

A heronry of approximately a dozen nests exists on the estate but the number of birds is controlled by the gamekeeper.

Threats to the area:
Artificial population control by the gamekeeper will probably force the herons to move elsewhere and may also disturb the rest of the bird population in the area.

Recommendations:
If the area is worthy of its grading then Lady de Vesci may be persuaded to declare it a nature reserve and also to cease the shooting of the 'surplus' herons.

SITE 16

Name of area:	Bog near Knockaroe	130.2 acres
Grid reference:	S 29, 87	
Scientific interest:	Botanical	
Rating:	Local	
Priority:	C	

Description of area: Map 13

A small bog surrounded by grassland and patches of Ulex scrub. It is fairly wet and dominated by Molinia caerulea with many bushes of Myrica gale. Small open pools contain Mentha aquatica and Apium nodiflorum. Others were colonized by Cladium mariscus and several species of sedges.

A few birch trees grew near a raised pathway and near the bank along the roadside. On the south side of the road Molinia and Schoenus areas continued for about 100 yards.

Although the size of the area is limited there was a fairly rich species list recorded including 8 grasses, 7 sedges, 1 rush, 32 herbs and 6 mosses.

Threats to the area:

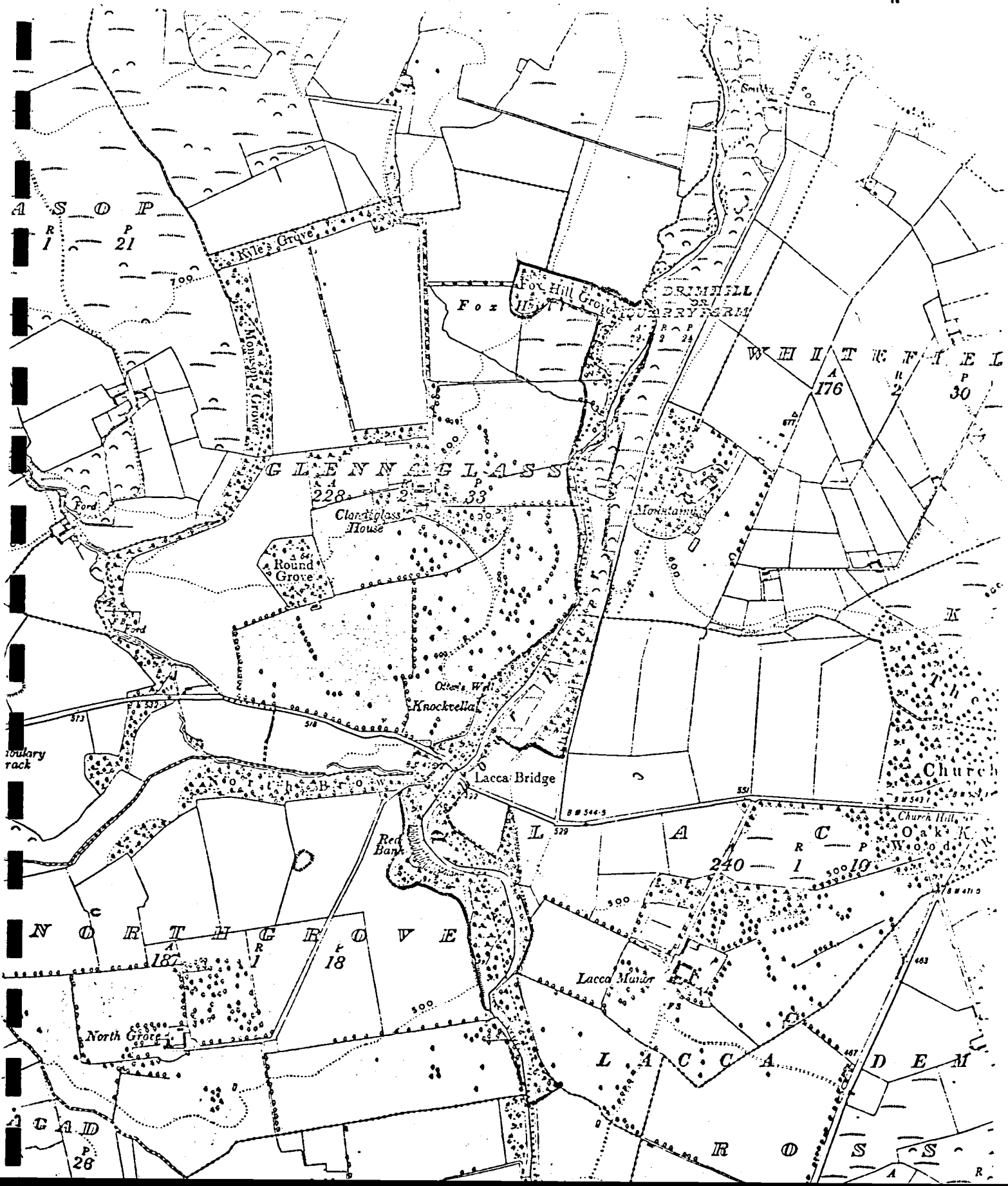
None apparent

Recommendations:

No action necessary except to list it as an area of local interest

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 14

Scale: 6 Inches to 1 Mile



SITE 17

Name of area:	Delour River near Lacca Manor	48 acres
Grid reference:	S 29, 98	
Scientific interest:	Botanical	
Rating:	Local	
Priority:	C	

Description of the area: See Map 14

A narrow valley with pasture along the western bank containing clumps of Juncus effusus, and an oak woodland on the eastern bank continuing up to the school, about 1/4 mile upstream. Many of trees are encrusted with lichens.

Nothing of particular botanical note was observed but a visit later in the year may yield more information.

To the south of the bridge is a small sandstone cliff, about 50 ft. high, following the meander of the river. There are numerous holes in the soft stone - probably Sand Martins' nests.

Threats to the area:
None apparent

Recommendations:
No action needed

SITE 18

Name of area: The Great Heath of Maryborough--
369 acres

Grid reference: N 53, 02

Scientific interest: Botanical

Rating: Local

Priority: C

Description of area: See Map 15

This area is no longer as extensive as its name suggests. It is interesting partly because of its low species diversity. Some parts are colonized by Ulex scrub, others dominated by Calluna vulgaris and Festuca rubra, and others completely grass dominated. Some patches have been ploughed up and small haystacks are scattered over the area. A golf course covers part of the site and yet other areas are used as pitches for tents and caravans by itinerants. Along the western roadside are two small ponds, fringed with Phragmites and other reed vegetation. No further investigation was made.

Threats to the area:

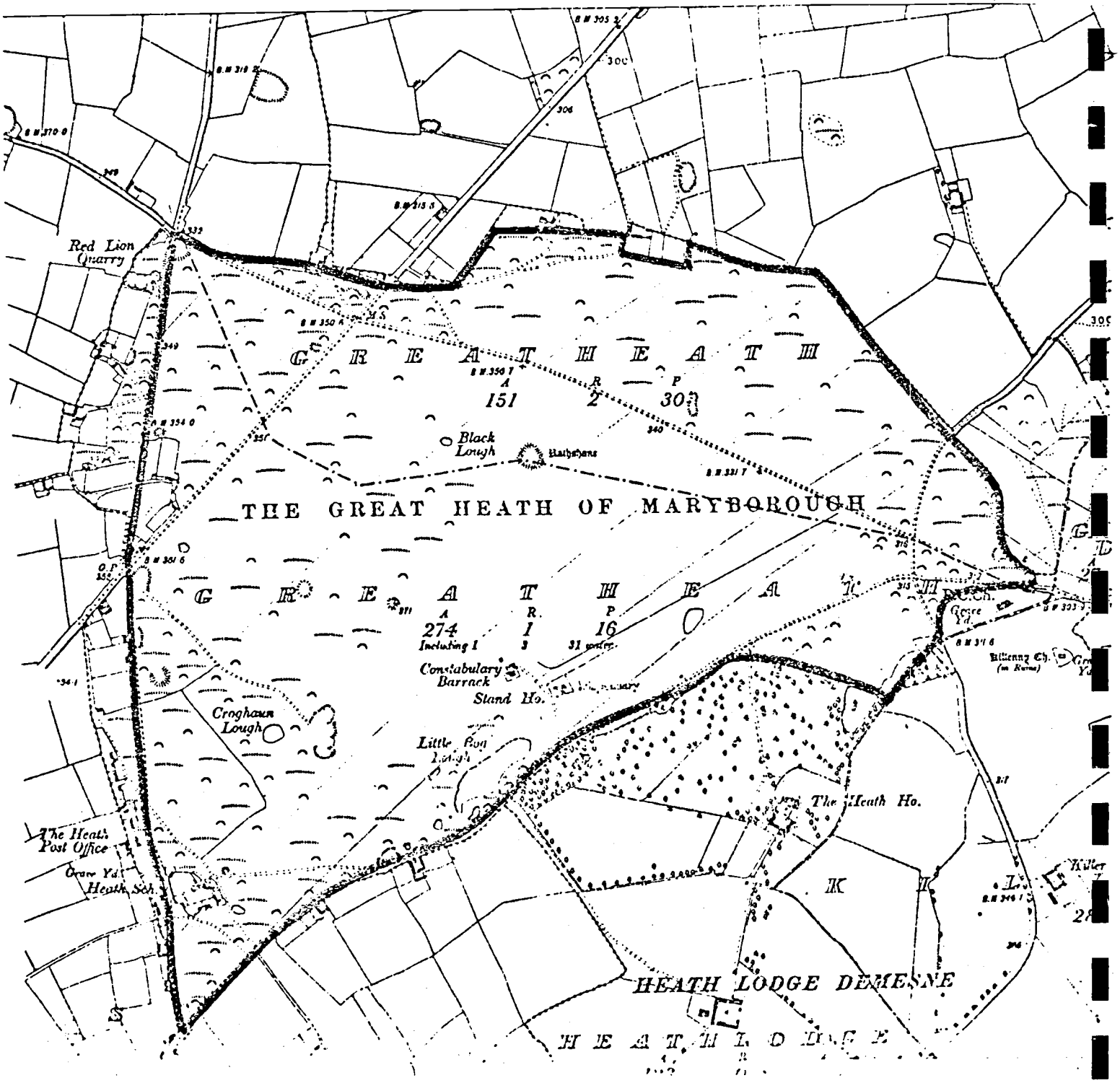
It is used extensively as a picnic site and camping ground, but because of the coarse nature of the turf, no great damage is done. The ploughing up of patches, however, destroys the natural vegetation.

Recommendations:

No action needed

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 15

Scale: 6 Inches to 1 Mile



SITE 19

Name of area:	MOANAVAW OR 'YELLOW BOG'	62.4 acres
Grid reference:	S 51, 98	
Scientific interest:	Botanical	
Rating:	Local	
Priority:	C	

Description of area: See Map 16

A small area of bog flanked by the main Stradbally - Portlaoise road on its southern side. A stream runs alongside the road but is separated from the main bog by a.3-foot dyke. For about 100 yards into the bog is a swampy area with much Potentilla palustris. Further back Sphagnum plumulosum comes into the community together with a little Calluna, and scattered birch trees. Next is the raised bog area dominated by Calluna vulgaris, Sphagnum plumulosum and Trichophorum caespitosum.

One noticeable fact is that very few grass species were recorded - Agrostis stolonifera, Holcus lanatus and Molinia caerulea - and that these gave only a small percentage cover.

Threats to the area:

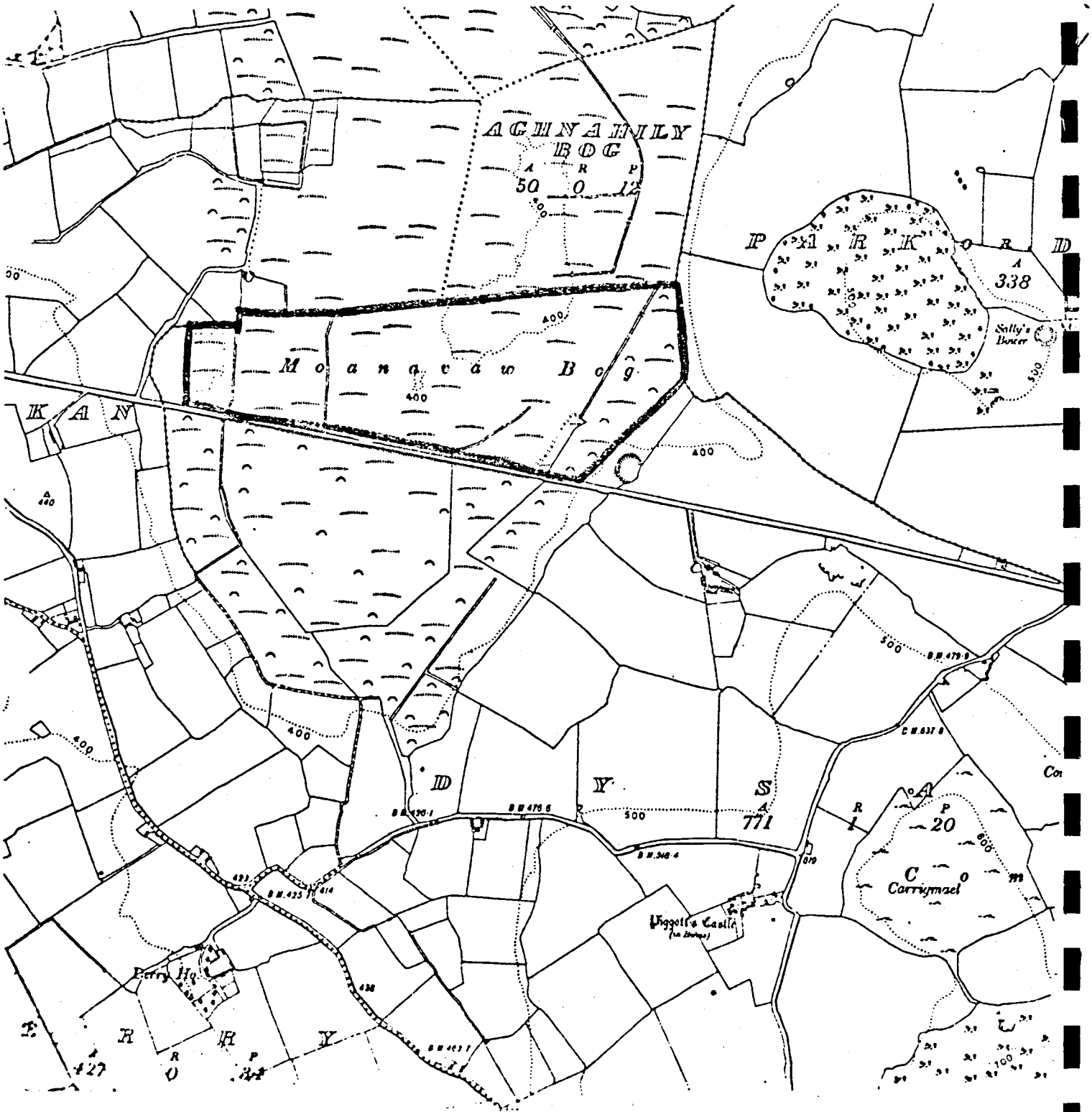
None apparent

Recommendations:

This site is adjacent to the oak woodland near Dunamase and could be included in the general area of scientific interest.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 16

Scale: 6 Inches to 1 Mile



SITE 20

Name of area:	MONETTIA BOG 1,754 acres
Grid reference:	N 35, 15
Scientific interest:	Botanical
Rating:	Local
Priority:	C

Description of area: See Map 17

A large stretch of raised bog cut for turf around the edges. It is surrounded by Moninia caerulea, Myrica gale communities.

Of interest probably because of its extent, but nothing unusual was recorded, although only a relatively small area was walked.

Threats to the area:

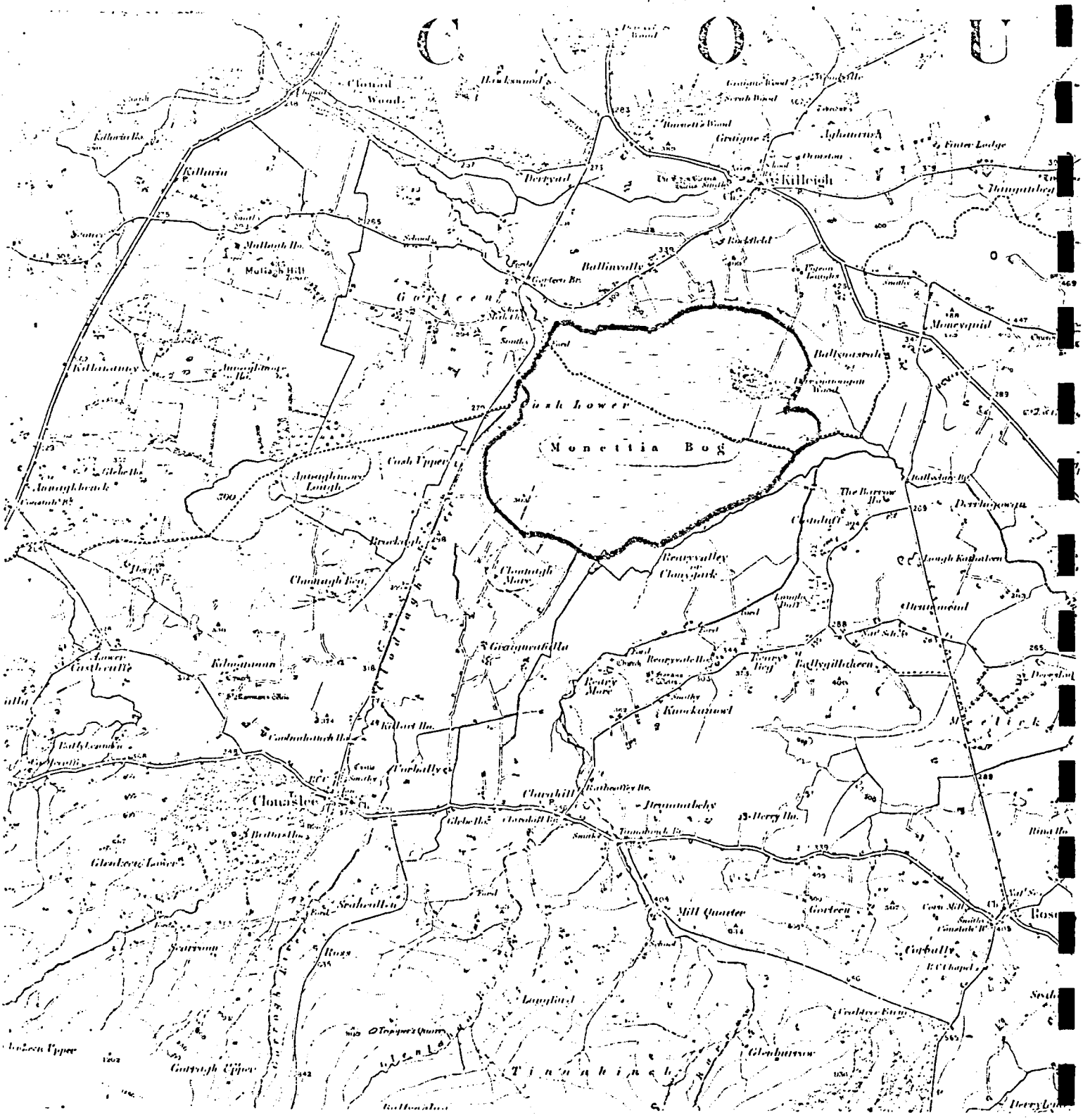
Continual peat cutting

Recommendations:

No action needed, as it is not one of the best examples of bog in the county, but probably one of the largest bogs.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 17

Scale: 1 Inch to 1 Mile



SITE 21

Name of area:	BUSH BOG
	284.6 acres
Grid Reference:	S 39, 95
Scientific interest:	Botanical
Rating:	Local
Priority:	C

Description of area: See Map 18

Raised bog with a Trichophorum/Calluna / Erica tetralix / Sphagnum acutifolium community.

The most noteworthy features were the abundance of Narthecium ossifragum inflorescences and the variety of lichen species, Cladonia foerkiana being the most frequent.

Ulex/calluna scrubland surrounded the bog with small open areas of grassland. There was a forestry plantation along the eastern margin.

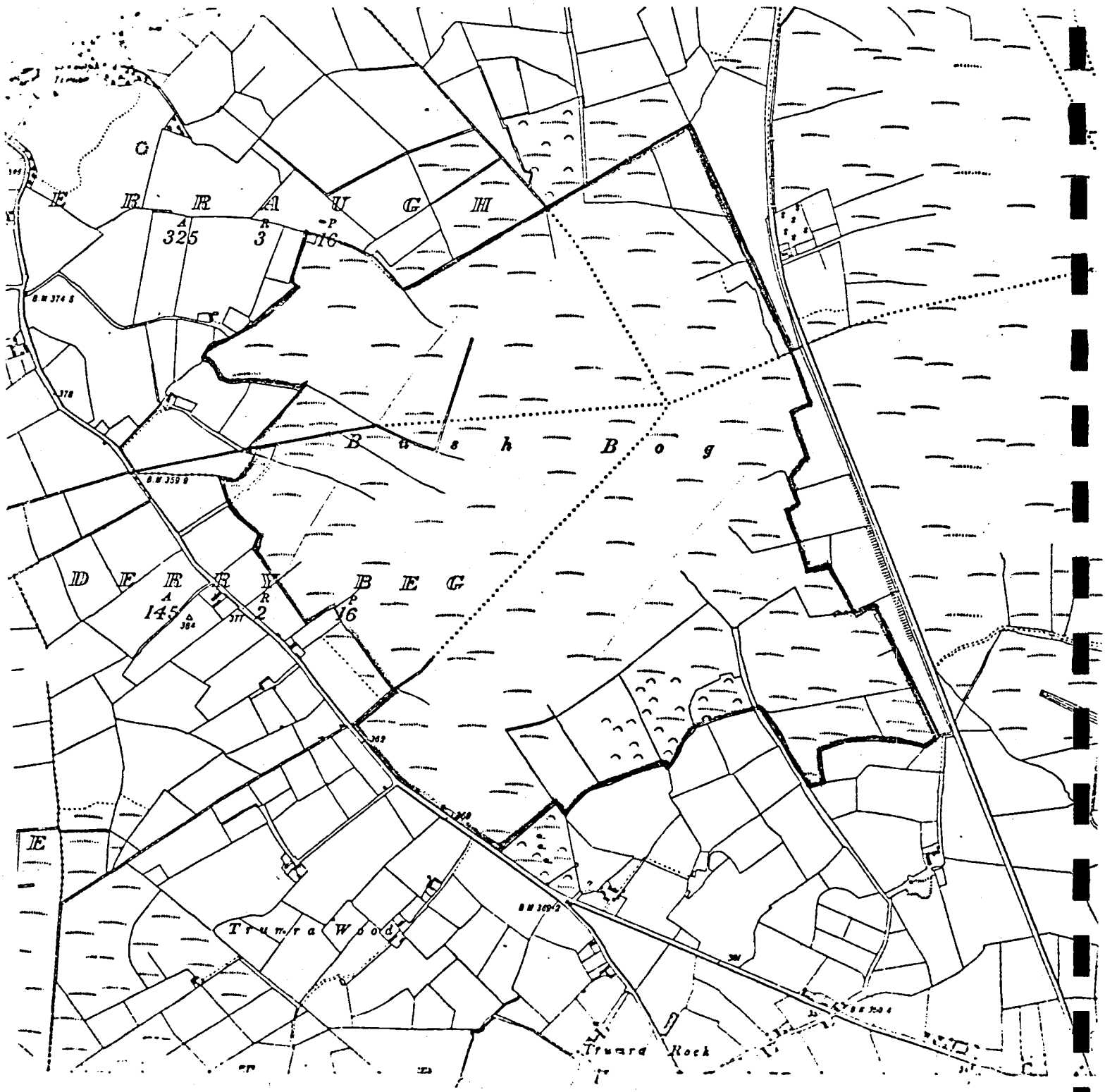
Rubbish dumping along the roadside is common and turf cutting is obviously carried out.

Recommendations:

No immediate action needed, but the area should be designated as a site of scientific interest.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 18

Scale: 6 Inches to 1 Mile



SITE 22

Name of area:	BOG NEAR COOLROE CASTLE 22 acres
Grid reference:	N 61, 04
Scientific interest:	Botanical
Rating:	Local
Priority:	C

Description of area: See Map 19

A marshland with wetter, sedge-dominated areas and patches of Schoenus nigricans. Seven species of Carex were recorded - C. binervis, C. disticha, C. flacca, C. hostiana, C. lepidocarpa, C. nigra, C. panicea.

Small, shallow streams running through the area contained much Potamogeton coloratus (Fen Pondweed) and Carex panicea Moninia caerulea grassland covered the higher ground and then merged into Ulex scrub.

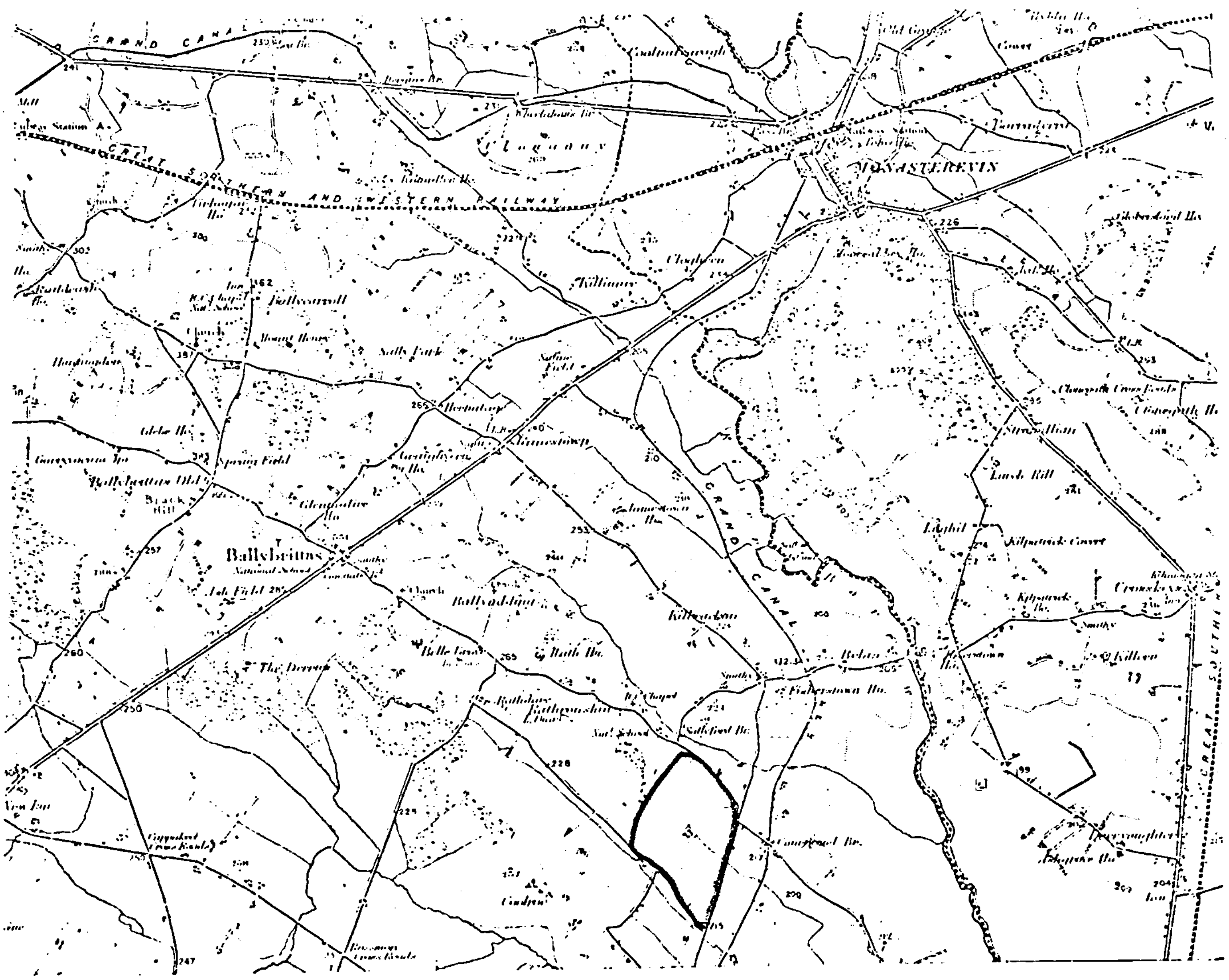
A poor species list was compiled but the communities consisted mainly of aquatic or semi-aquatic species and in this respect it differs from many of the other areas described in the report.

Threats to the area:
None apparent

Recommendations:
No action needed

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 19

Scale: 1 Inch to 1 Mile



SITE 23

Name of area:	RIVER NORE SOUTH OF CASTLETOWN 182 acres
Grid reference:	S 35, 92
Scientific interest:	Botanical Ornithological
Rating:	Local
Priority:	C

Description of area: See Map 20

No composite species list was made as the area walked over was mainly pastureland. A small bank of hazel scrub on the right bank graded into a copse containing holly, beech, birch and oak. Both the Soft and the Hard Shield fern were found here. The occurrence of the bright orange Peziza aurantia (Orange Peel) growing on the broken twigs in the moss carpet was striking.

On the left bank, near the confluence of the Nore and the Mountrath River, was a small marshy area dominated by Juncus effusus. This area needs further investigation. A few conifers aligned the bank backed by a small copse of deciduous species from the mill to the marsh. Notable occurrence of lichens, mainly the genus Ramalina, encrusting the birch trees. The area is probably of ornithological interest. Dipper, Great Tit, Moorhen, Wren, Bullfinch, Song Thrush were recorded during the short visit.

Threats to the area:

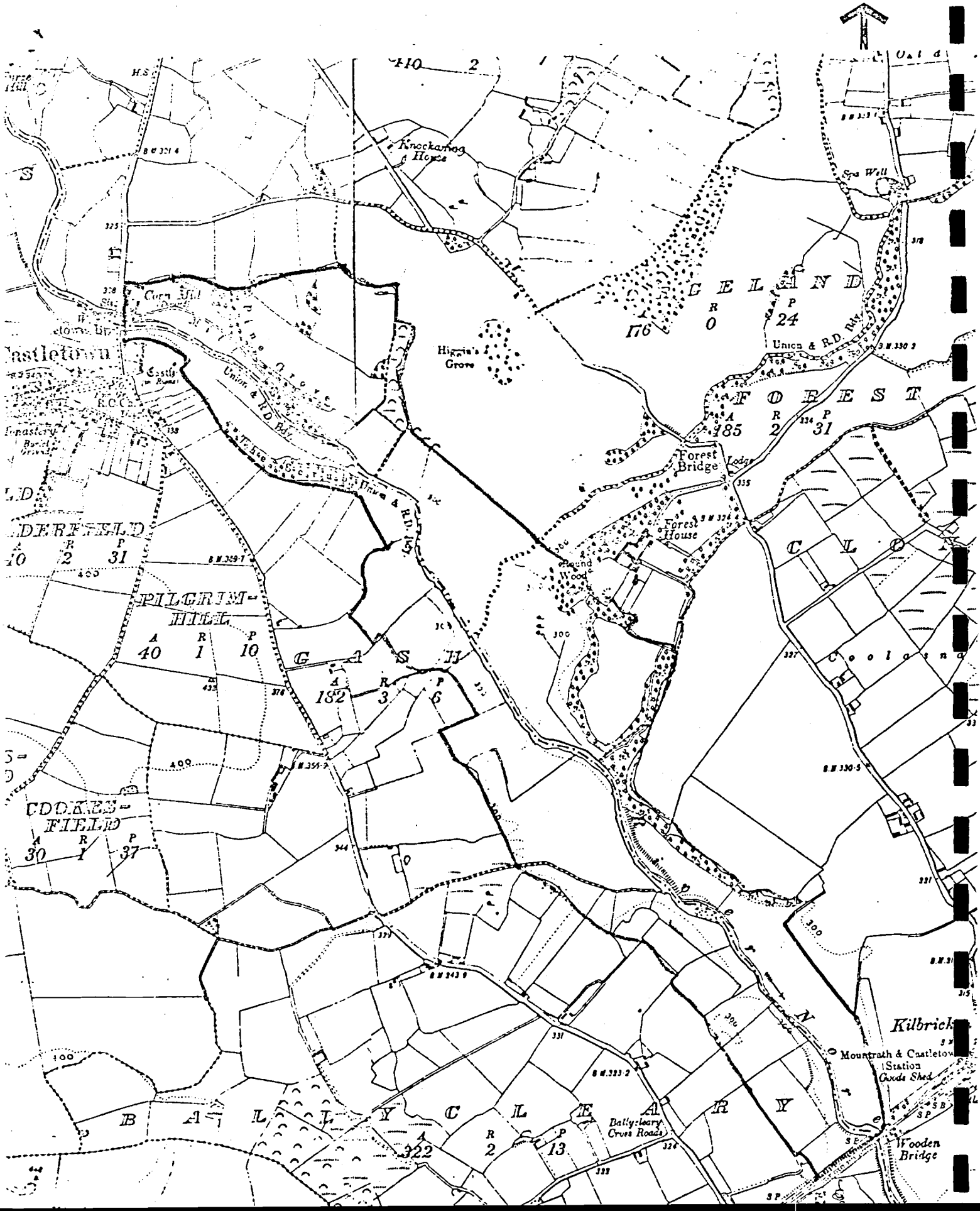
Used for grazing and also as a local amenity area but under no great pressure.

Recommendations:

No action needed

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 20

Scale: 6 Inches to 1 Mile



SITE 24

Name of area:	Rossnagad Bog 401 acres
Grid reference:	N 44, 04
Scientific interest:	Botanical
Rating:	Local
Priority:	C

Description of area: See Map 21

An extensive raised bog bounded on the southern side by a rubbish dump. Areas of Molinia grassland with ridges of Calluna bordered the raised peat.

There was a vegetational strip dominated by Calluna and Narthecium around the edge of the raised peat. The central area was of a very short turf which had probably been burnt recently and supported Sphagnum plumulosum, Cladonia impexa, Erica tetralix, Calluna vulgaris with occasional sprigs of Andromeda polifolia. Very few species were recorded.

Threats to the area:

The low-lying land surrounding the bog is being covered by the Portlaoise refuse, but there is no immediate threat to the bog itself.

Recommendations:

No action required

SITE 25

Name of area:	MEADOW NEAR BALLYLYNAN 246.6 acres
Grid reference:	S 67, 88
Scientific interest:	Botanical
Rating:	Local
Priority:	C

Description of the area: See Map 22

This was a calcareous meadow made up of a patchwork of wheat fields, fallow land, recently planted conifers and the natural grassland community. Drainage dykes dissect the whole area at regular intervals. The area serves as an example of the type of grassland found along the middle part of the Barrow valley.

The grassland itself was long and constituted of coarse grasses such as Agrostis stolonifera, Cynosurus cristatus, Festuca pratensis, Molinia caerulea, Poa pratensis and Phleum pratense. Centaurea nigra (Black Knapweed) grew in abundance. The dykes are being colonized by Callitriche intermedia, Ranunculus sp. and Veronica beccabunga.

The area is not of great botanical interest, but the diversity of the communities and the different types of land use serve as a miniature representation of the various agricultural and natural grassland types to be found in the vicinity.

Threats to the area:

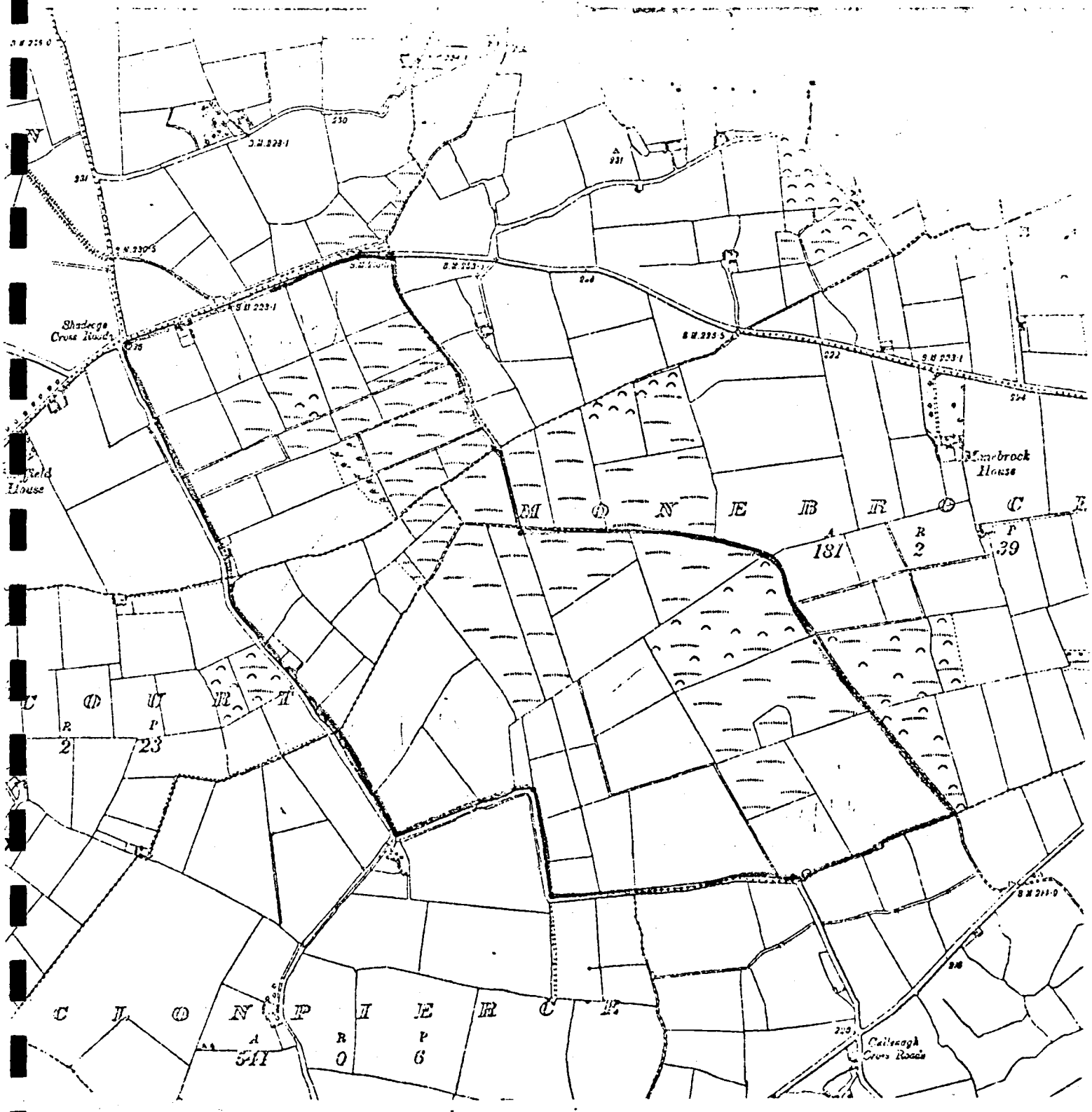
Although this area is interesting, the loss of it to agriculture would not be disastrous as there are probably areas of greater scientific value in this region. Further investigation of the meadows along the Barrow valley is needed. The grassland community will probably be ploughed up and sown in the near future and the forestry planting may be expanded.

Recommendations:

No action needed for this particular site

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 22

Scale: 6 Inches to 1 Mile



SITE 26

Name of area: RIVER BARROW AT TANKARDSTOWN BRIDGE

Grid reference: S 70, 88

Scientific interest: Botanical
Ornithological

Rating: Local

Priority: C

Description of area: See Map 23

This area was visited in February and this did not allow a very good assessment to be made of the marshland, as most of the marshland species are late flowering.

All along the River Barrow are meadows which are often inundated by floods and which may prove interesting. The Grand Canal runs parallel to the river for much of its length between Monasterevin and Carlow and the meadows enclosed by the two water channels are possibly worth investigation. Around Tankardstown Bridge Glyceria maxima grows en masse with some Phragmites and Iris beds. Very few herbaceous species were recorded.

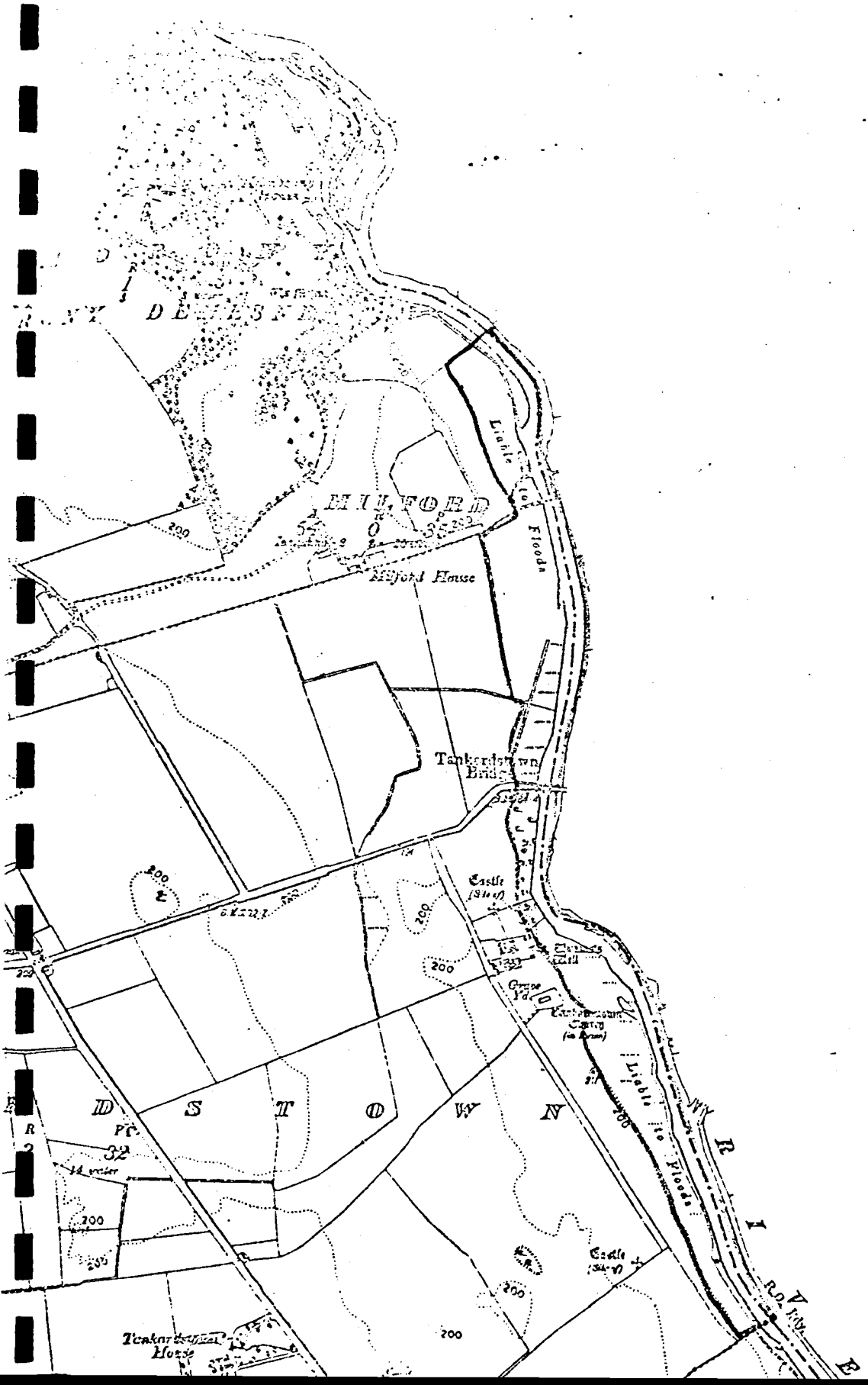
The Fly Orchid was recorded here in 1940, but no up-to-date information is available. Other orchid species are said to grow in abundance in the meadows but a visit in June is needed to corroborate this information. The area is probably of ornithological interest - further work on this aspect is also needed.

Threats to the area:
None apparent

Recommendations:
No action needed apart from further investigation

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 23

Scale: 6 Inches to 1 Mile



SITE 27

Name of area:	Stradbally Hills
	360 acres
Grid reference:	S 60, 95
Scientific interest:	Botanical
	Geological
	Ecological
Rating:	Local
Priority:	C

Description of area: See Map 24

A close inspection of the different hills and their woodland types was not made and further work is needed.

The woods around Ballintlea, however, were seen to be a mixture of planted conifers and natural hazel woodland. Those near Ballyduff house were mainly Quercus robur.

Many of the smaller hills supported coniferous plantations.

Most of the hills in the chain are limestone.

Several caves are found

Threats to the area:

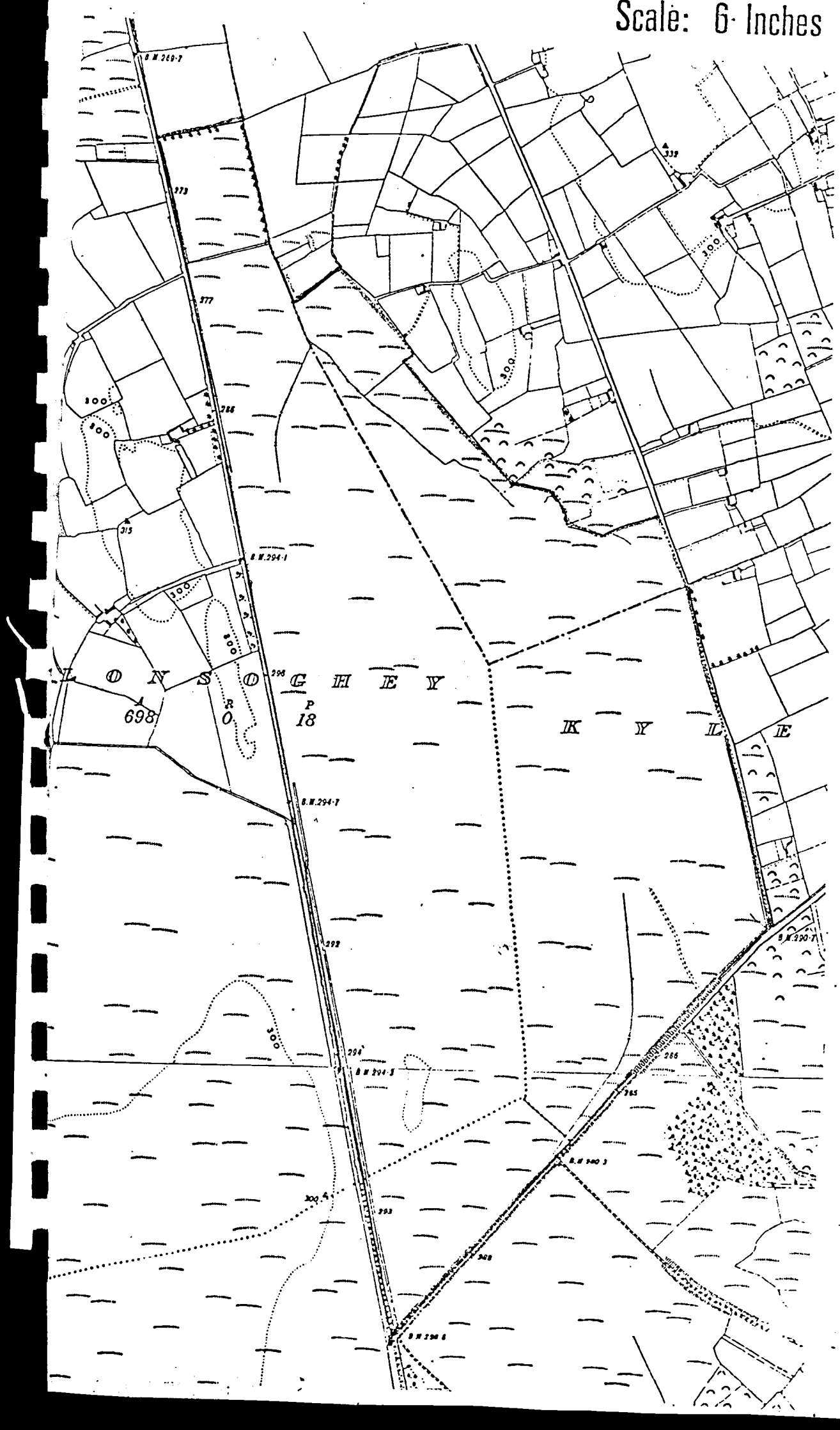
None apparent

Recommendations:

Further investigation of the woodland types should be made and the more interesting ones issued with a Tree Preservation Order.

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 21

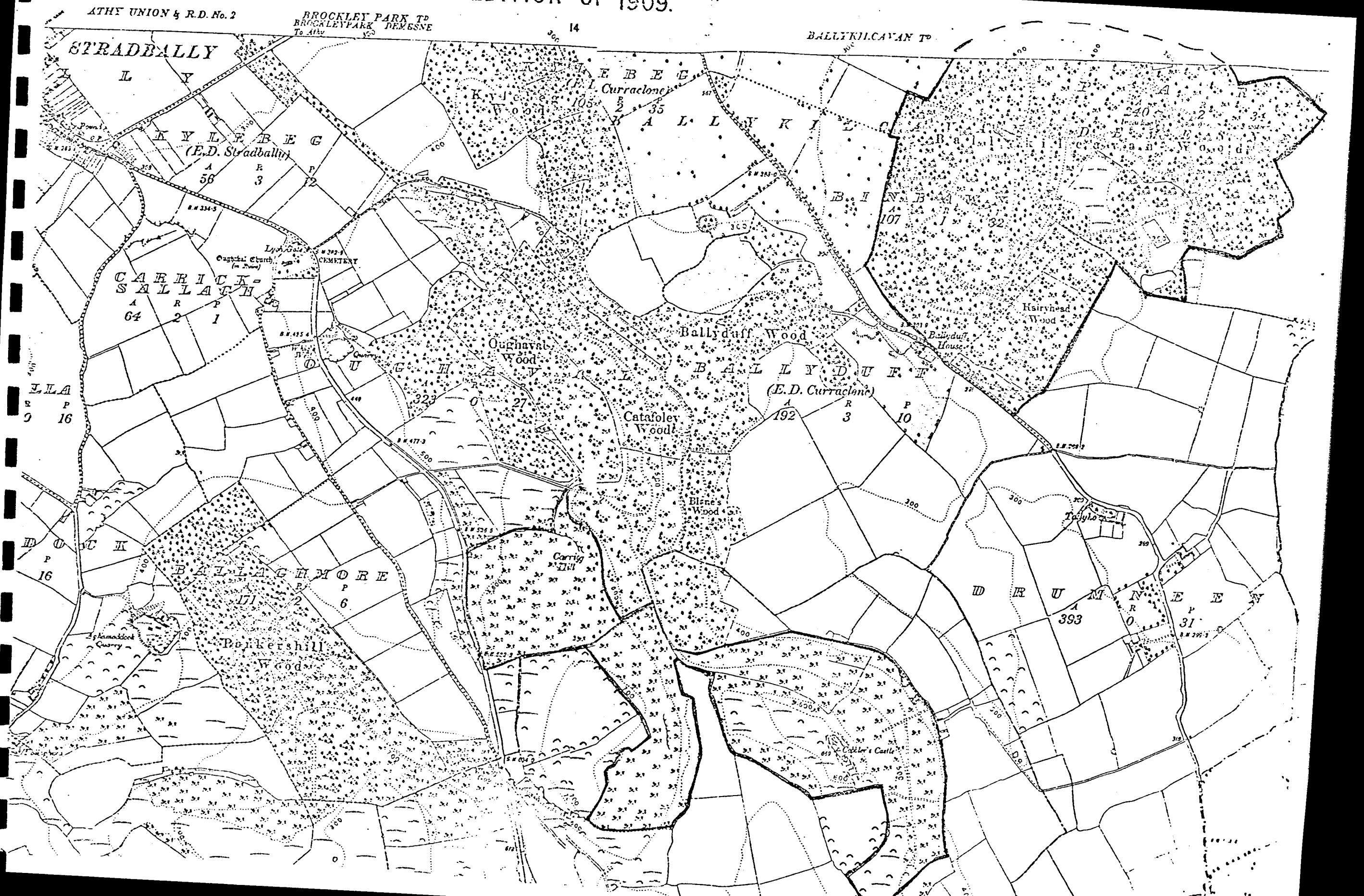
Scale: 6 Inches to 1 Mile



MAP SHOWING AREA OF SCIENTIFIC INTEREST — 24 .

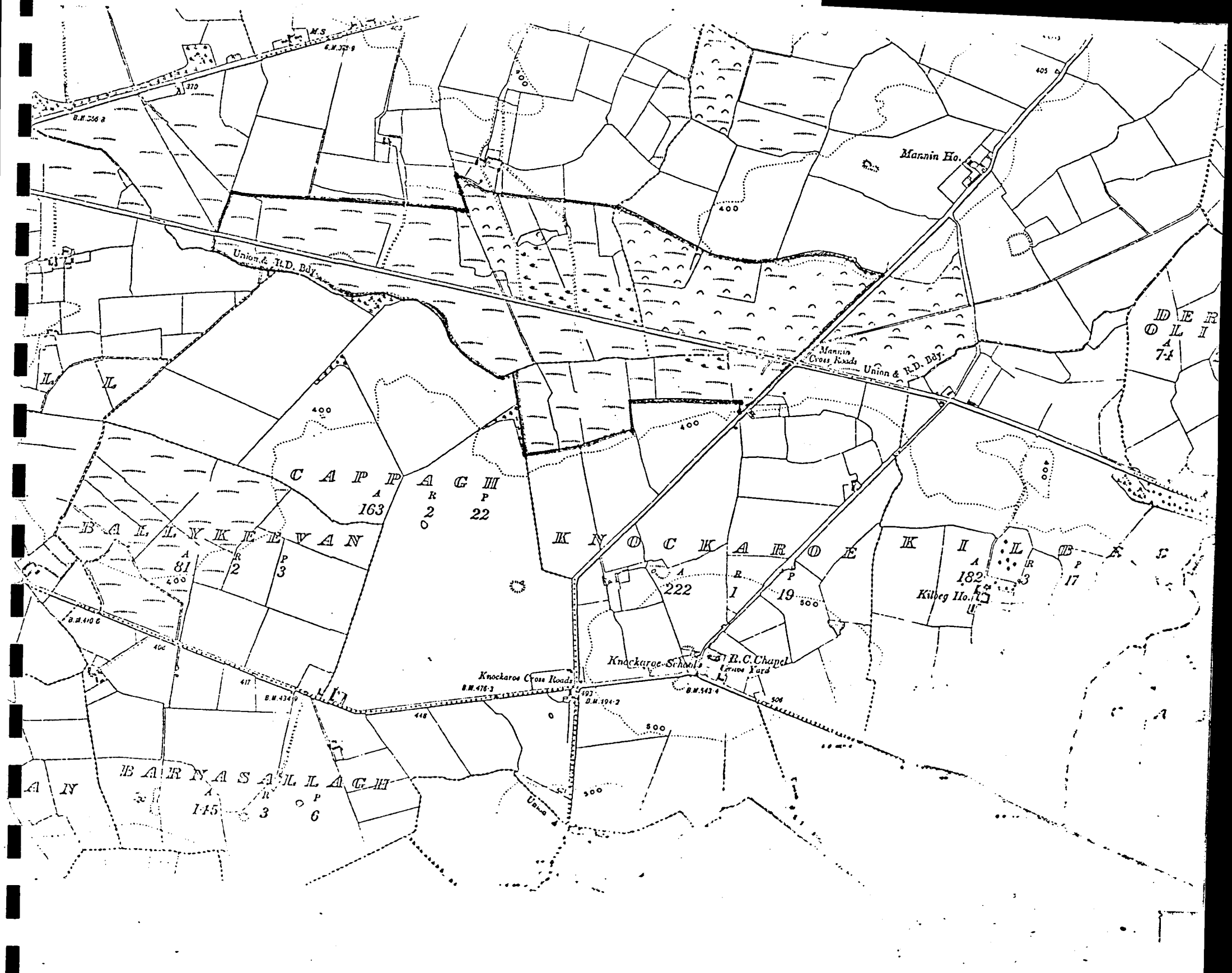
Scale: 6 Inches to 1 Mile

EDITION OF 1909.



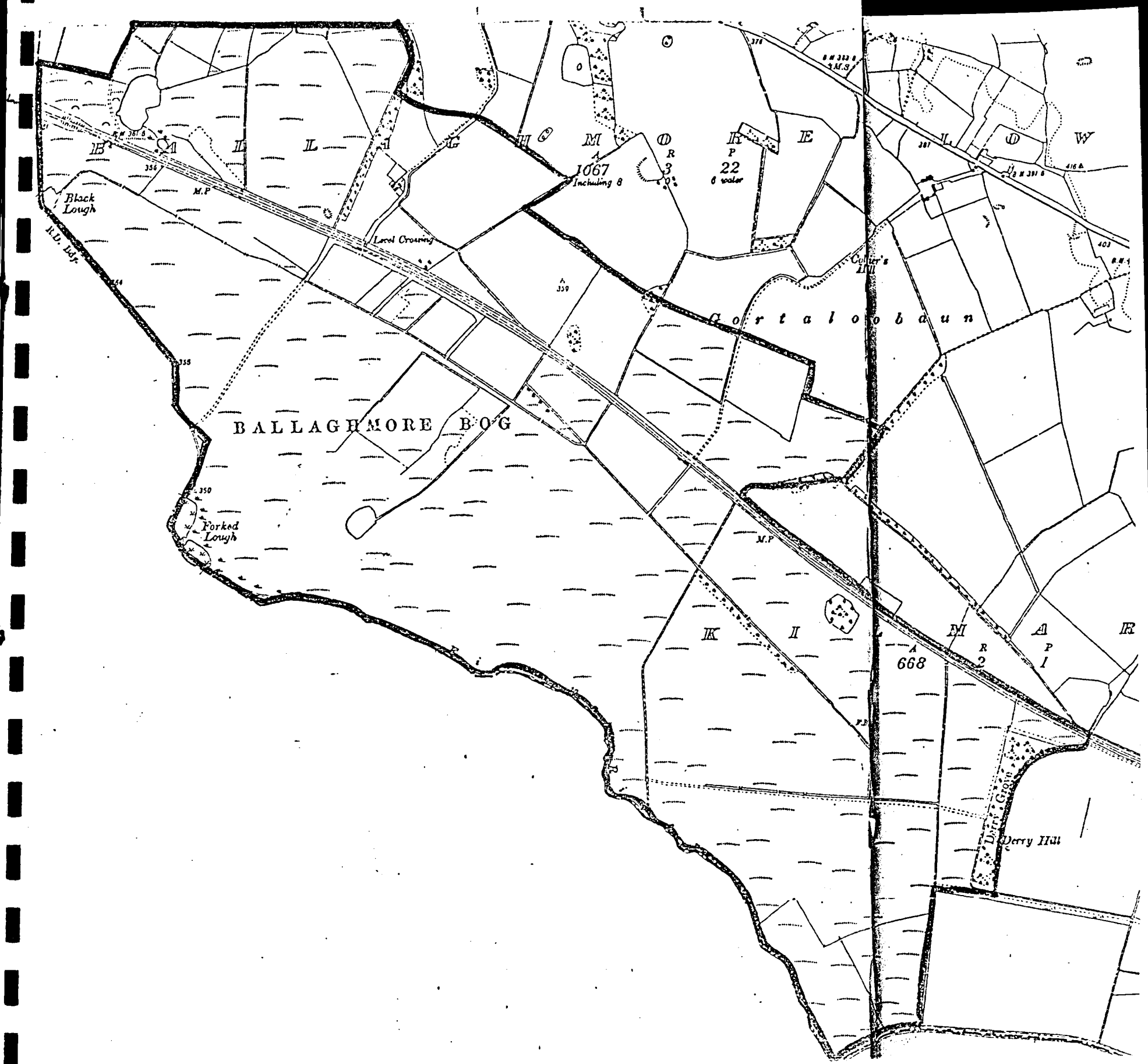
MAP SHOWING AREA OF SCIENTIFIC INTEREST — 13

Scale: 6 Inches to 1 Mile



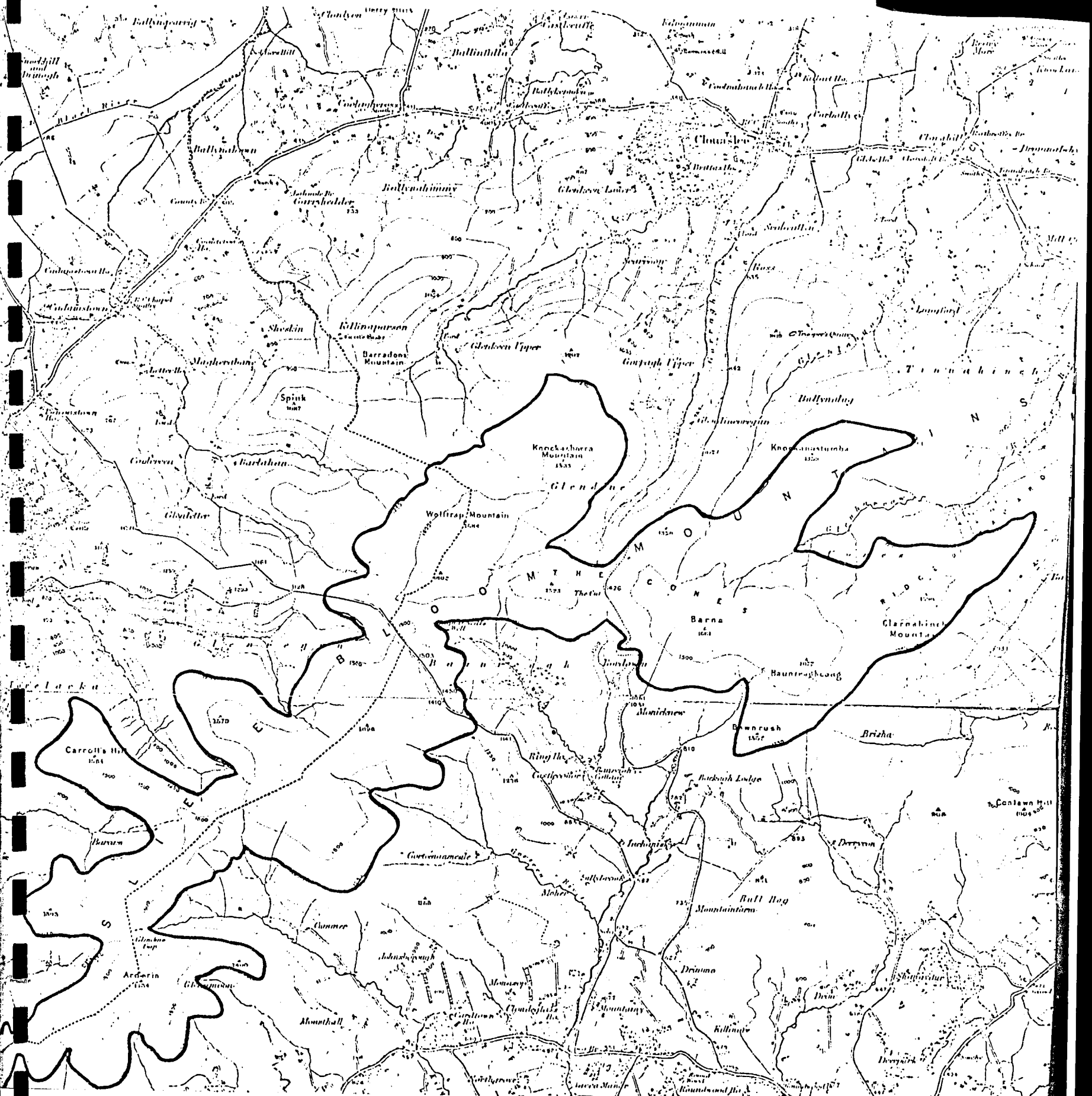
MAP SHOWING AREA OF SCIENTIFIC INTEREST — 8

Scale: 6 Inches to 1 Mile



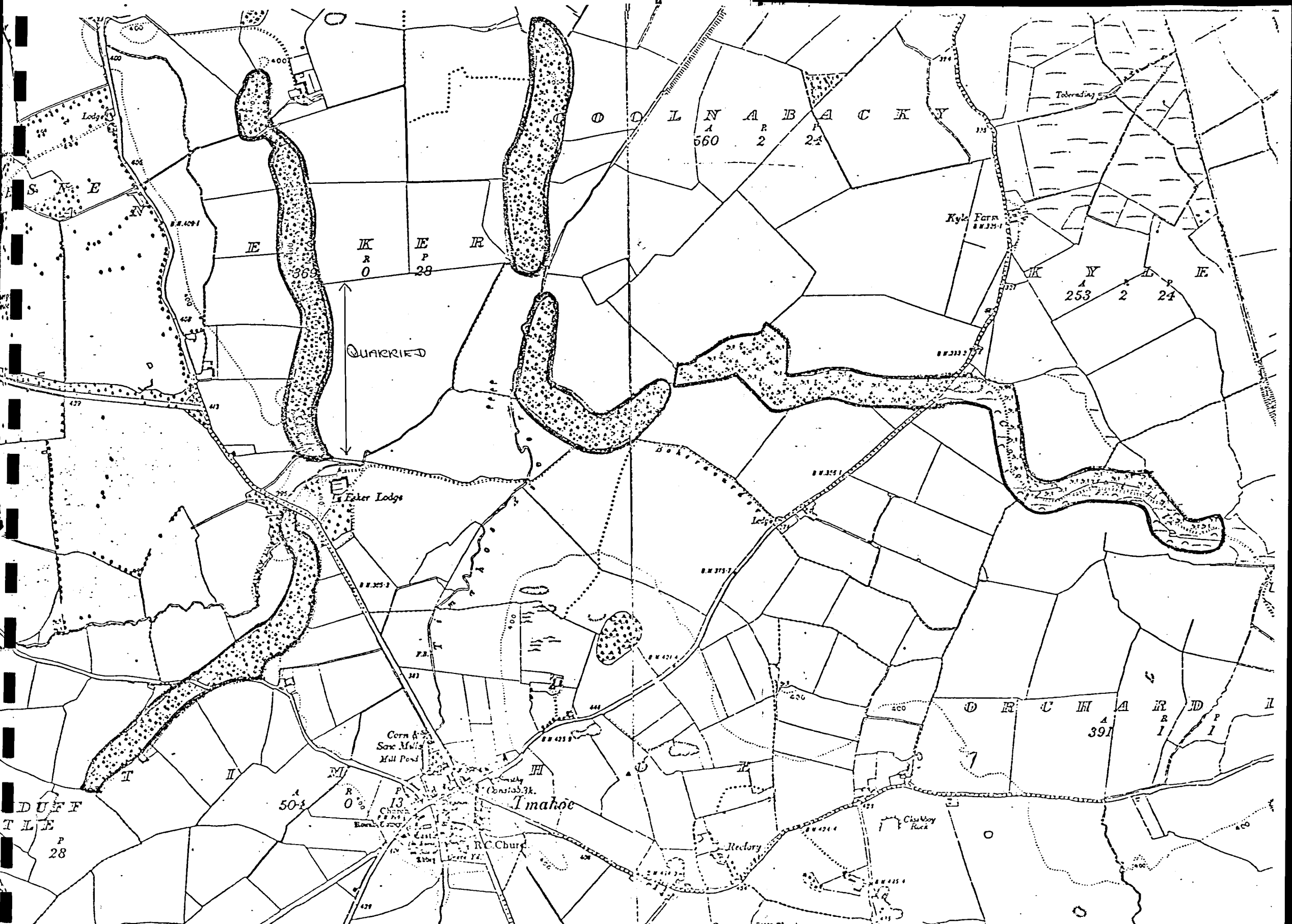
MAP SHOWING AREA OF SCIENTIFIC INTEREST — 5

Scale: 1 Inch to 1 Mile



MAP SHOWING AREA OF SCIENTIFIC INTEREST — 6

Scale: 6 Inches to 1 Mile



ADDITIONAL LACIS SITES (geol)

Name of Area	Rossmore - Widow Malone's Quarry
Grid Reference	S 667 744
Size	0.1 ha
Scientific Interest	Geological
Rating	Local Importance

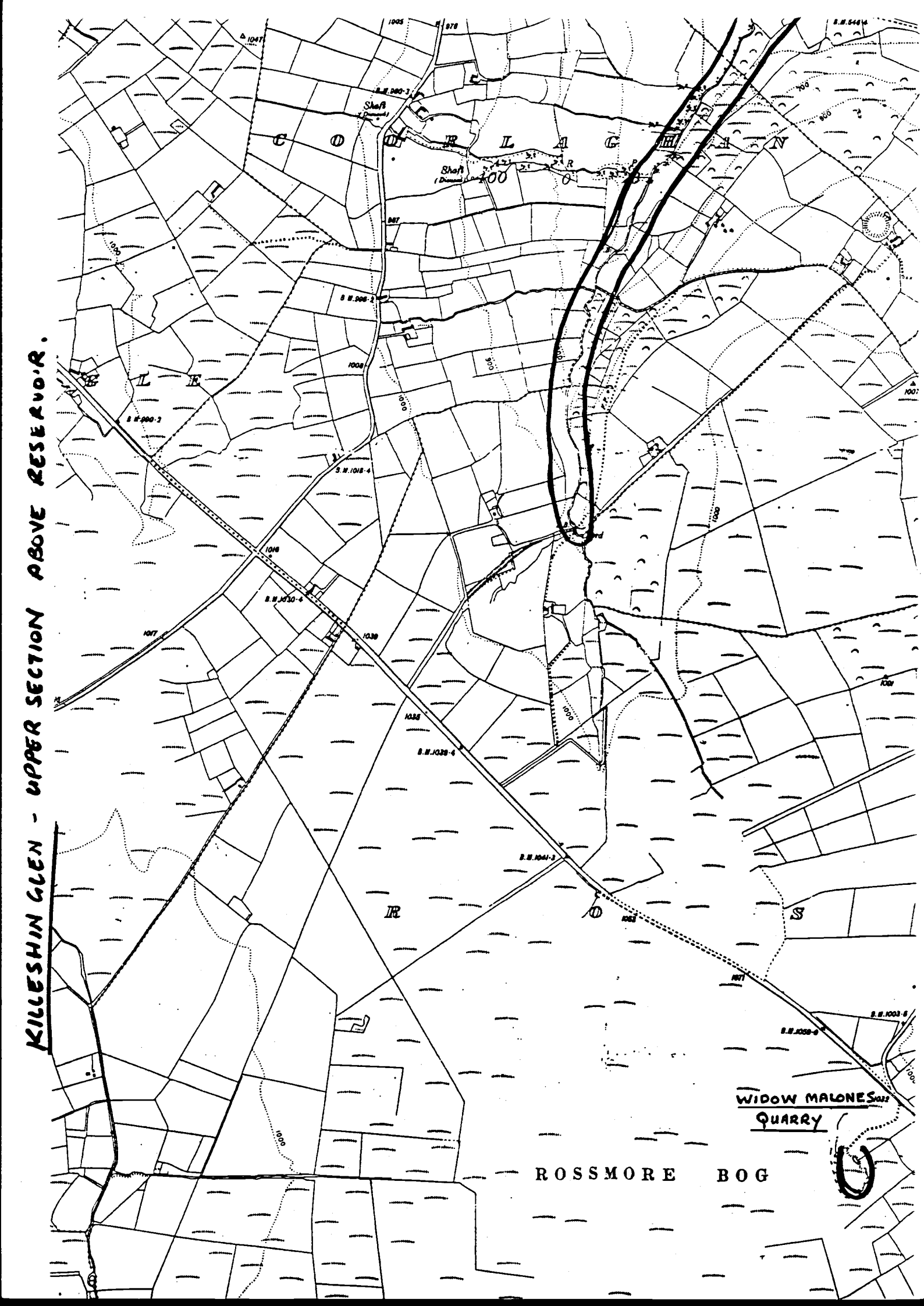
Description of Area

The area is outlined on the 6" map overleaf. This is a small quarry located on the eastern side of Rossmore Bog 150 m south of the Rossmore Road and the Killeshin Road junction.

This small quarry is of special interest because it gives probably the only natural exposure of the No. 2 coal seam in the coalfield. The coal seam is overlain by the distinctive Clay Gall Sandstone which forms the main part of the quarry. The presence of the sandstone directly upon the coal at this locality is of particular interest because further north in the coalfield the sandstone occurs at a much higher stratigraphic level.

Recommendation

That the quarry should be preserved and not infilled or reworked.


KILLESHIN GLEN - UPPER SECTION ABOVE RESERVOIR.
COOLAGH
ROSS
WIDOW MALONES
QUARRY
ROSSMORE BOG

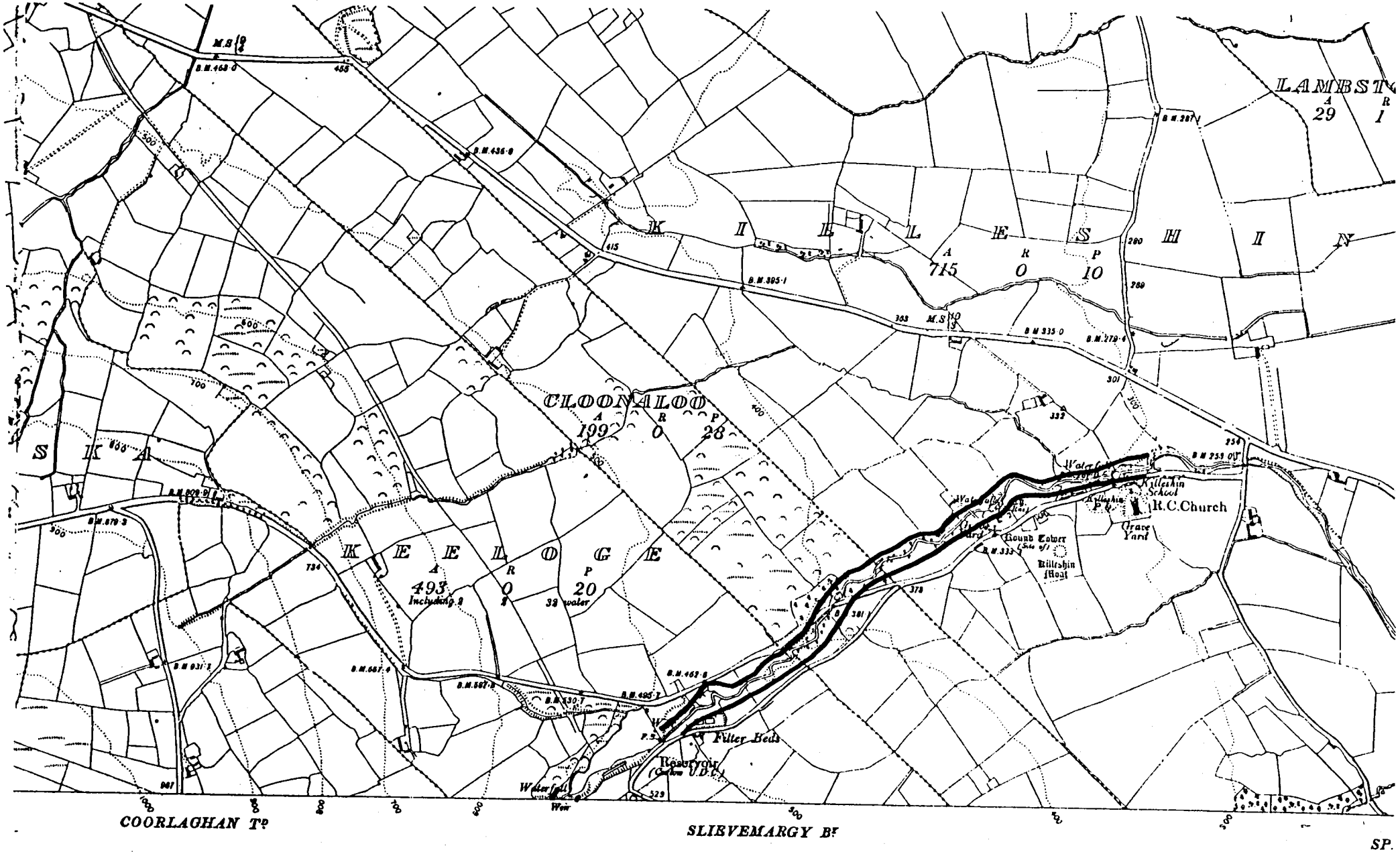
Name of Area	Killeshin Glen
Grid Reference	S 664 770
Size	A 2.5 km section
Scientific Interest	Geological
Rating	Regional Importance

Description of Area

The area is outlined on the 6" map overleaf. This is a stream section extending from the 300' to the 900' contour; approximately 2.5 km. The area of geological interest is from Killeshin Church to the Reservoir, and then from a point upstream of the Reservoir to a ford at the level of the 900' contour.

The stream section exposes the most complete sequence through the upper part of the Namurian succession in the Castlecomer Coalfield. The section is considered by the Geological Survey to be the type section for their Killeshin Formation. The contact with the lower beds of the Coal Measures (Westphalian) is exposed in the upper reaches of the section.

From a palaeontological point of view, the section is of particular interest as it contains excellent exposures of several goniatite marine bands (R_2 to G_2 zones).


KILLESHIN
A R P
715 0 10
CLOONALOO
A R P
199 0 28
KEELOGE
A R P
493 0 20
Including 2 A 32 R 0 P water
LAMBST
A R
29 1
Killeshin School
R.C.Church
Grave Yard
Round Tower (Site of)
Killeshin Moat
Filter Beds
Reservoir
Weir
COORLAGHAN Tp
SLIEVEMARGY Br
SP.

Name of Area	Luggacurren
Grid Reference	S 587 880
Size	A 1 km section
Scientific Interest	Geological
Rating	Regional Importance

Description of Area

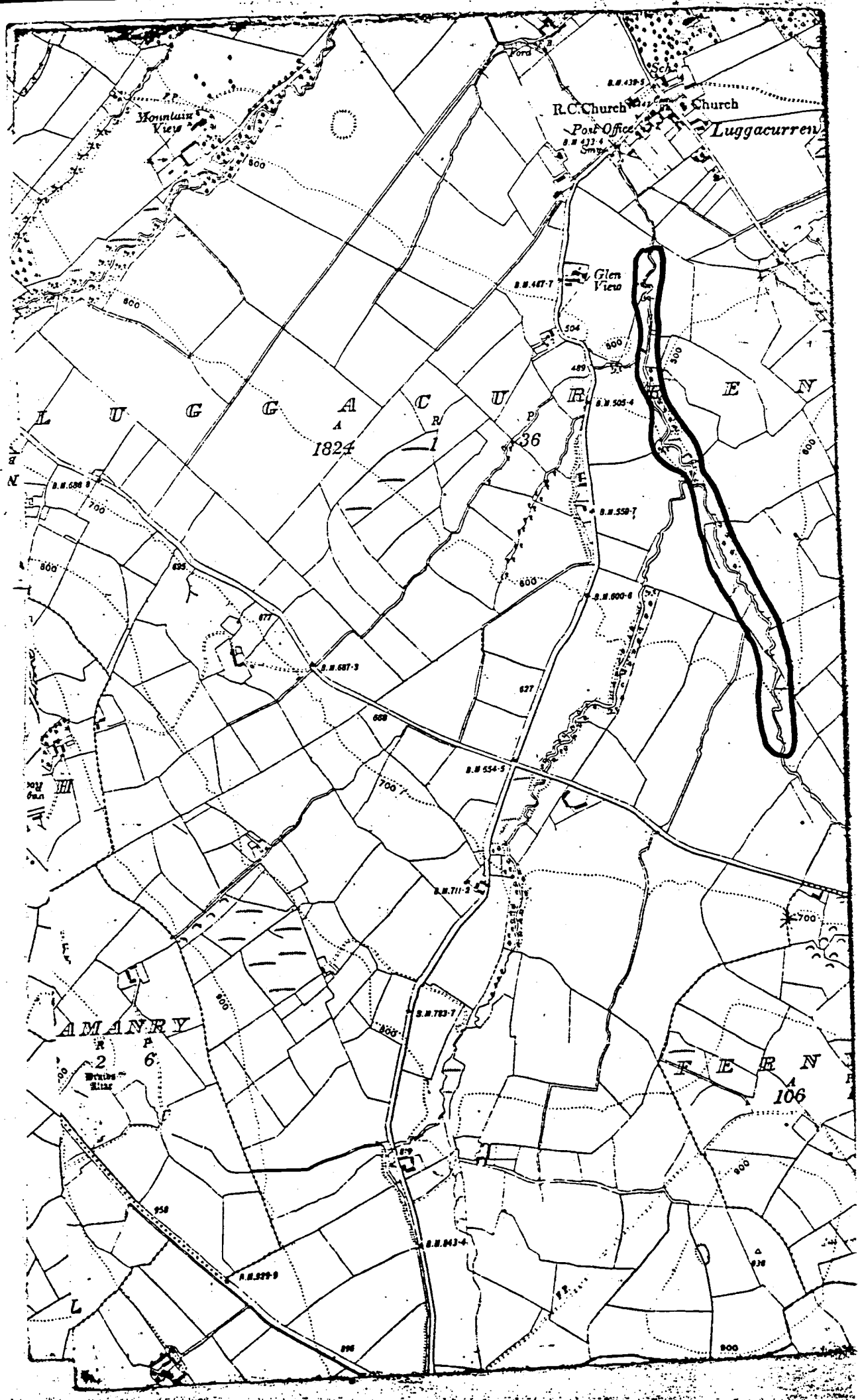
The area is outlined in the 6" map overleaf. This is a stream section immediately south of Luggacurren village starting from a point 150 m east of Glen View Farm and then extending upstream (southwards) for approximately 1 km to the 600' contour.

The stream section exposes the most complete sequence of the lower part of the Namurian succession in the Castlecomer Coalfield.

The section is considered by the Geological Survey of Ireland to be the type section for the Luggacurren Formation.

The section is of special palaeontological interest as it contains excellent exposures of the lower/middle Namurian goniatite bands (E2-R2 zones).

LUGGACURREN



Name of Area	Moyadd
Grid Reference	S 565 832
Size	A 2 km section
Scientific Interest	Geological
Rating	Regional Importance

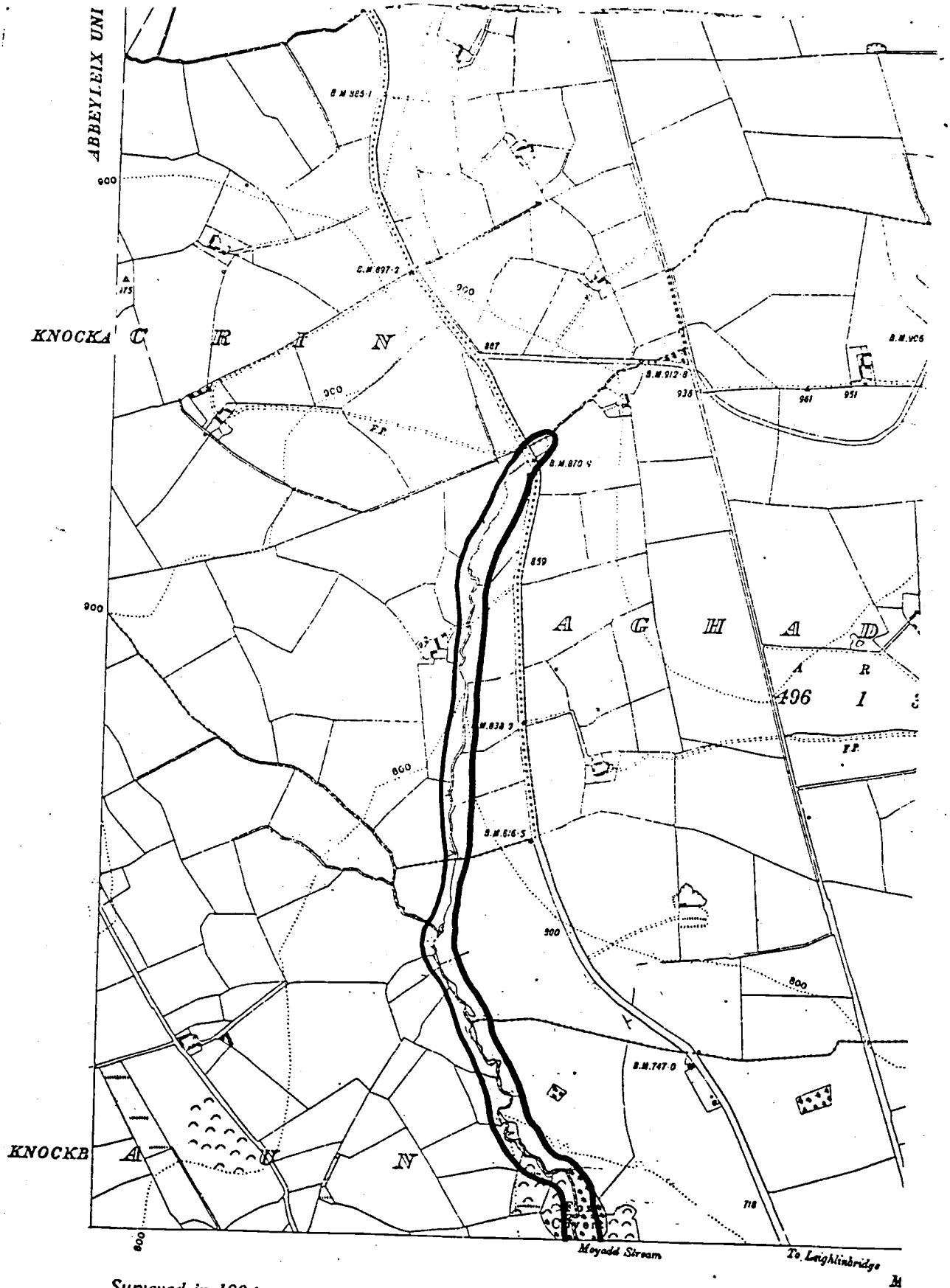
Description of Area

This area is outlined on the 6" map overleaf. The section is located approximately 3 km north-west of the village of Swan. The stream extends from a point where the stream passes under the Swan-Timahoe road (just above the 800' contour) to a point just beyond the Fox's Covert; (approximately 2 km in total length).

This stream section provides the best section through the lower part of the Coal Measures (Westphalian) succession in the Castlecomer Coalfield. It is particularly important as natural exposures such as this section are very scarce in the Coalfield.

All of the distinctive lithological units between the base of the Coal Measures (the Fleck Rock) to a level just above Ward's Seam are well exposed in this section.

The section is important from a palaeontological point of view as it contains excellent exposures of the two Westphalian goniatite marine bands together with a non-marine lamelli branch horizon.



Surveyed in 1906.

MOYADD STREAM

possible ASI

SITE 27

Name of area:	Stradbally Hills 360 acres
Grid reference:	S 60, 95
Scientific interest:	Botanical Geological Ecological
Rating:	Local
Priority:	C

Description of area: See Map 24

A close inspection of the different hills and their woodland types was not made and further work is needed.

The woods around Ballintlea, however, were seen to be a mixture of planted conifers and natural hazel woodland. Those near Ballyduff house were mainly Quercus robur.

Many of the smaller hills supported coniferous plantations.

Most of the hills in the chain are limestone.

Several caves are found

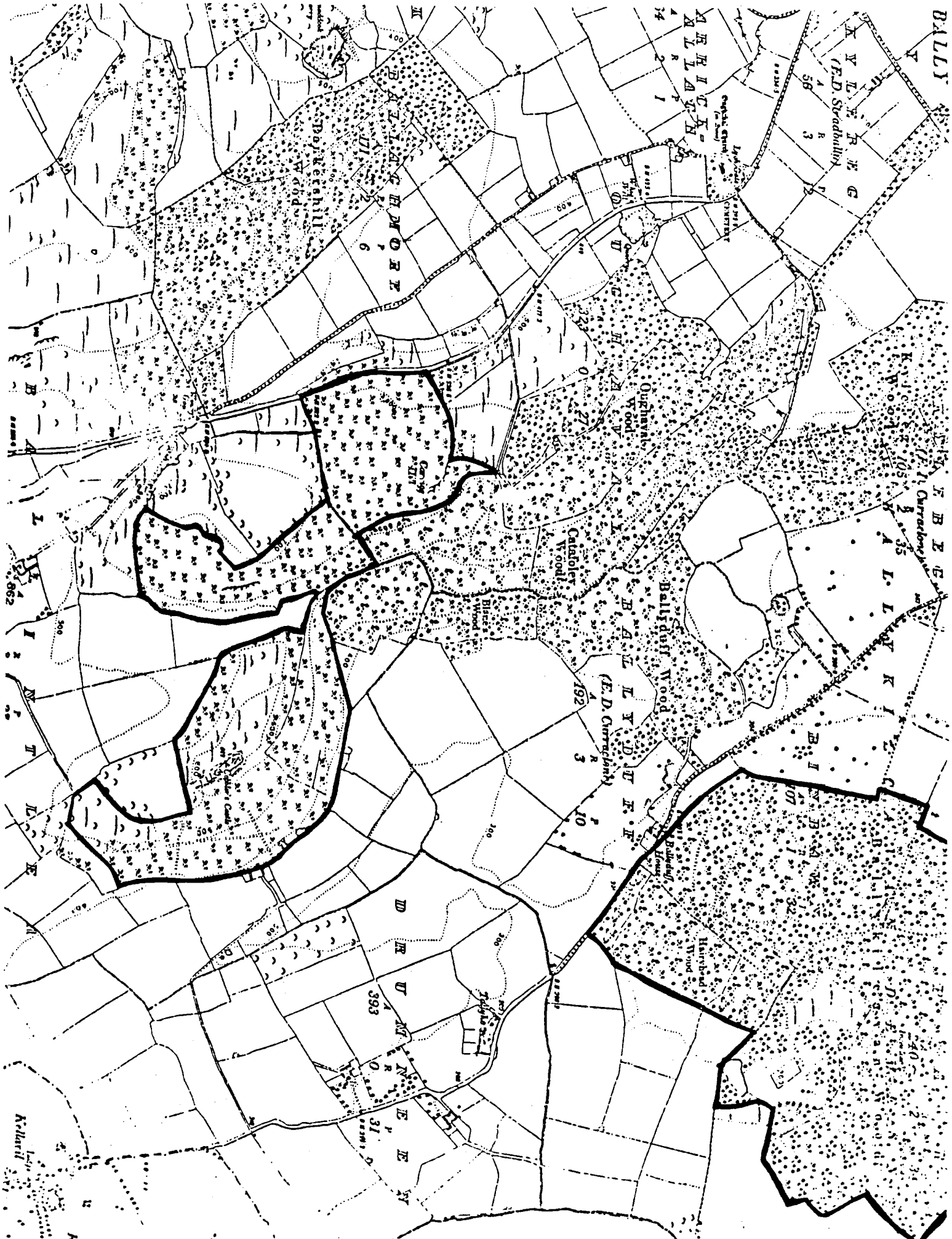
Threats to the area:

None apparent

Recommendations:

Further investigation of the woodland types should be made and the more interesting ones issued with a Tree Preservation Order.

MAP SHOWING AREA OF - 24
SCIENTIFIC INTEREST Scale: 5 inches to 1 mile



LAOIS

Name of Area	Luggacurren
Grid Reference	S 587 880
Size	A 1 km section
Scientific Interest	Geological
Rating	Regional Importance

Description of Area

The area is outlined in the 6" map overleaf. This is a stream section immediately south of Luggacurren village starting from a point 150 m east of Glen View Farm and then extending upstream (southwards) for approximately 1 km to the 600' contour.

The stream section exposes the most complete sequence of the lower part of the Namurian succession in the Castlecomer Coalfield.

The section is considered by the Geological Survey of Ireland to be the type section for the Luggacurren Formation.

The section is of special palaeontological interest as it contains excellent exposures of the lower/middle Namurian goniatite bands (E2-R2 zones).

Name of Area	Killeshin Glen
Grid Reference	S 664 770
Size	A 2.5 km section
Scientific Interest	Geological
Rating	Regional Importance

Description of Area

The area is outlined on the 6" map overleaf. This is a stream section extending from the 300' to the 900' contour; approximately 2.5 km. The area of geological interest is from Killeshin Church to the Reservoir, and then from a point upstream of the Reservoir to a ford at the level of the 900' contour.

The stream section exposes the most complete sequence through the upper part of the Namurian succession in the Castlecomer Coalfield. The section is considered by the Geological Survey to be the type section for their Killeshin Formation. The contact with the lower beds of the Coal Measures (Westphalian) is exposed in the upper reaches of the section.

From a palaeontological point of view, the section is of particular interest as it contains excellent exposures of several goniatite marine bands (R_2 to G_2 zones).

Name of Area	Rossmore - Widow Malone's Quarry
Grid Reference	S 667 744
Size	0.1 ha
Scientific Interest	Geological
Rating	Local Importance

Description of Area

The area is outlined on the 6" map overleaf. This is a small quarry located on the eastern side of Rossmore Bog 150 m south of the Rossmore Road and the Killeshin Road junction.

This small quarry is of special interest because it gives probably the only natural exposure of the No. 2 coal seam in the coalfield. The coal seam is overlain by the distinctive Clay Gall Sandstone which forms the main part of the quarry. The presence of the sandstone directly upon the coal at this locality is of particular interest because further north in the coalfield the sandstone occurs at a much higher stratigraphic level.

Recommendation

That the quarry should be preserved and not infilled or reworked.

Name of Area	Moyadd
Grid Reference	S 565 832
Size	A 2 km section
Scientific Interest	Geological
Rating	Regional Importance

Description of Area

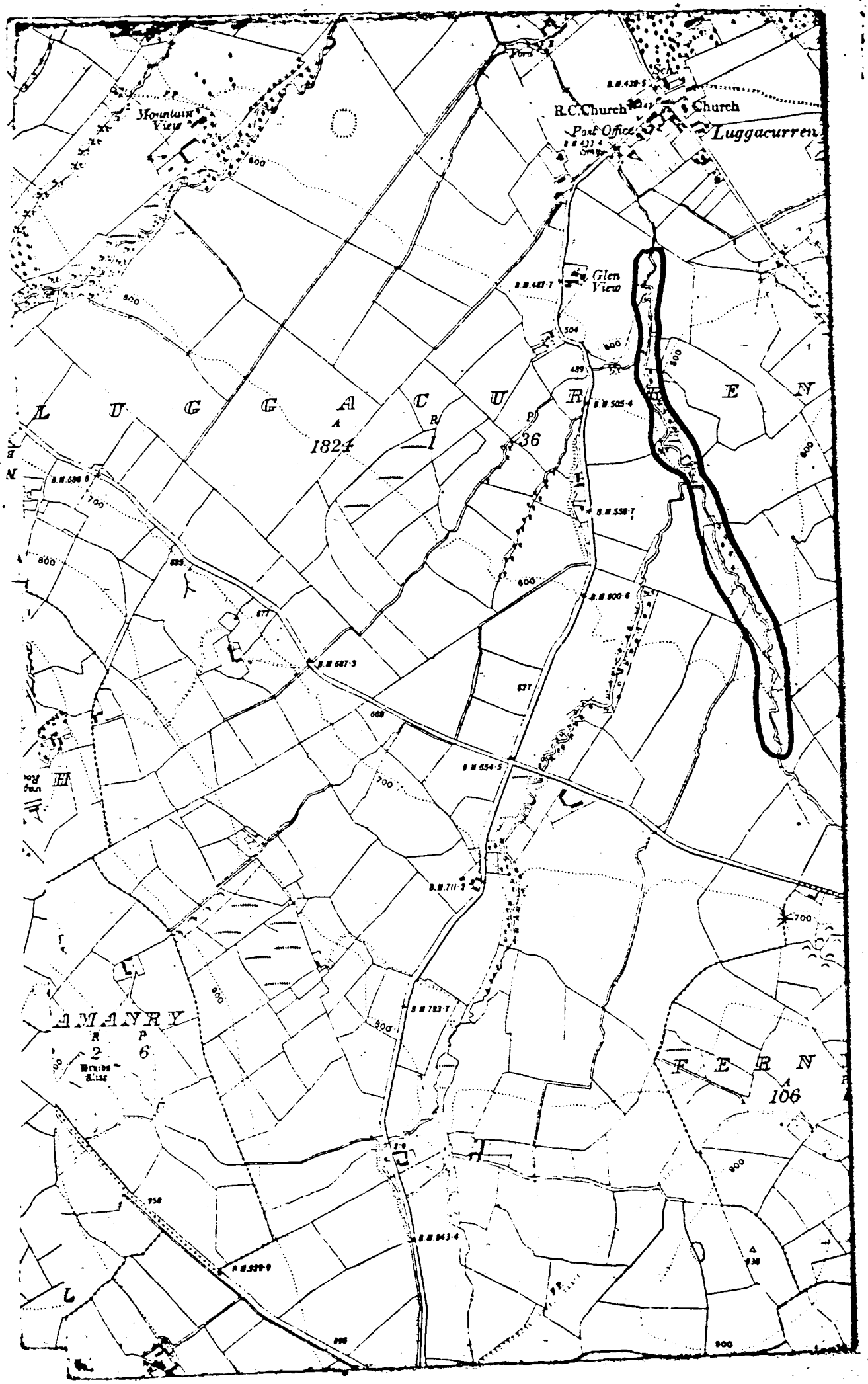
This area is outlined on the 6" map overleaf. The section is located approximately 3 km north-west of the village of Swan. The stream extends from a point where the stream passes under the Swan-Timahoe road (just above the 800' contour) to a point just beyond the Fox's Covert; (approximately 2 km in total length).

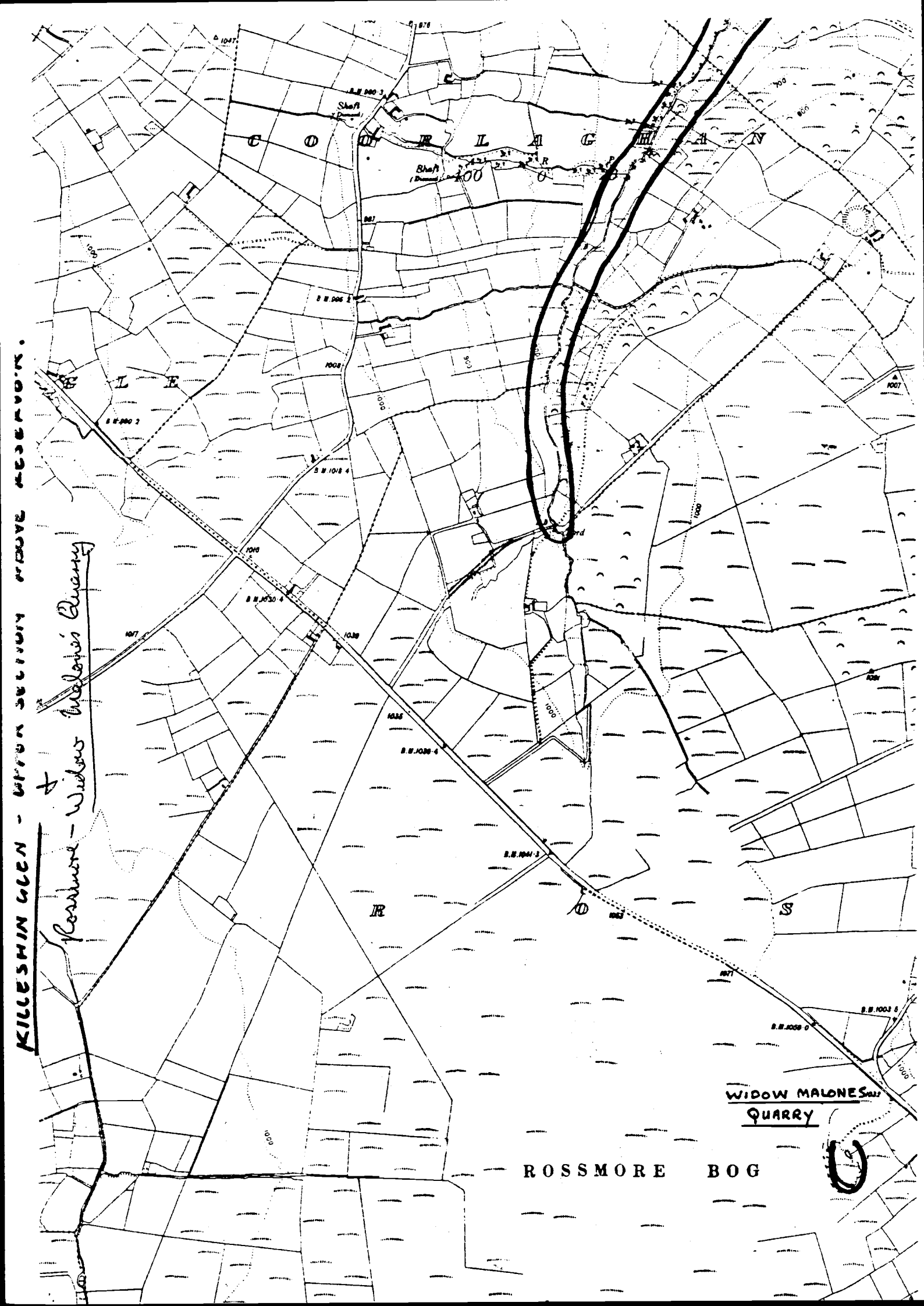
This stream section provides the best section through the lower part of the Coal Measures (Westphalian) succession in the Castlecomer Coalfield. It is particularly important as natural exposures such as this section are very scarce in the Coalfield.

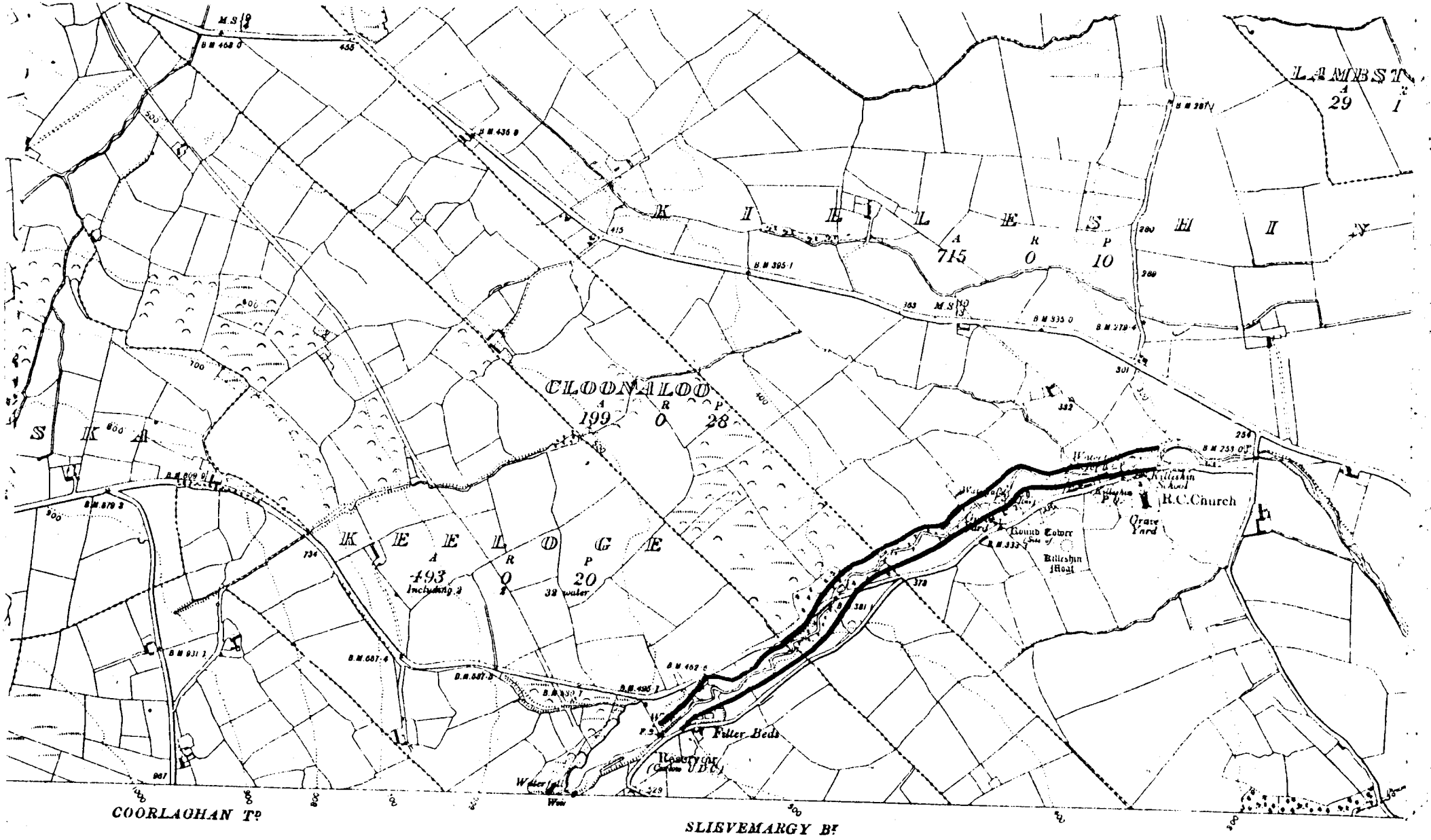
All of the distinctive lithological units between the base of the Coal Measures (the Fleck Rock) to a level just above Ward's Seam are well exposed in this section.

The section is important from a palaeontological point of view as it contains excellent exposures of the two Westphalian goniatite marine bands together with a non-marine lamelli branch horizon.

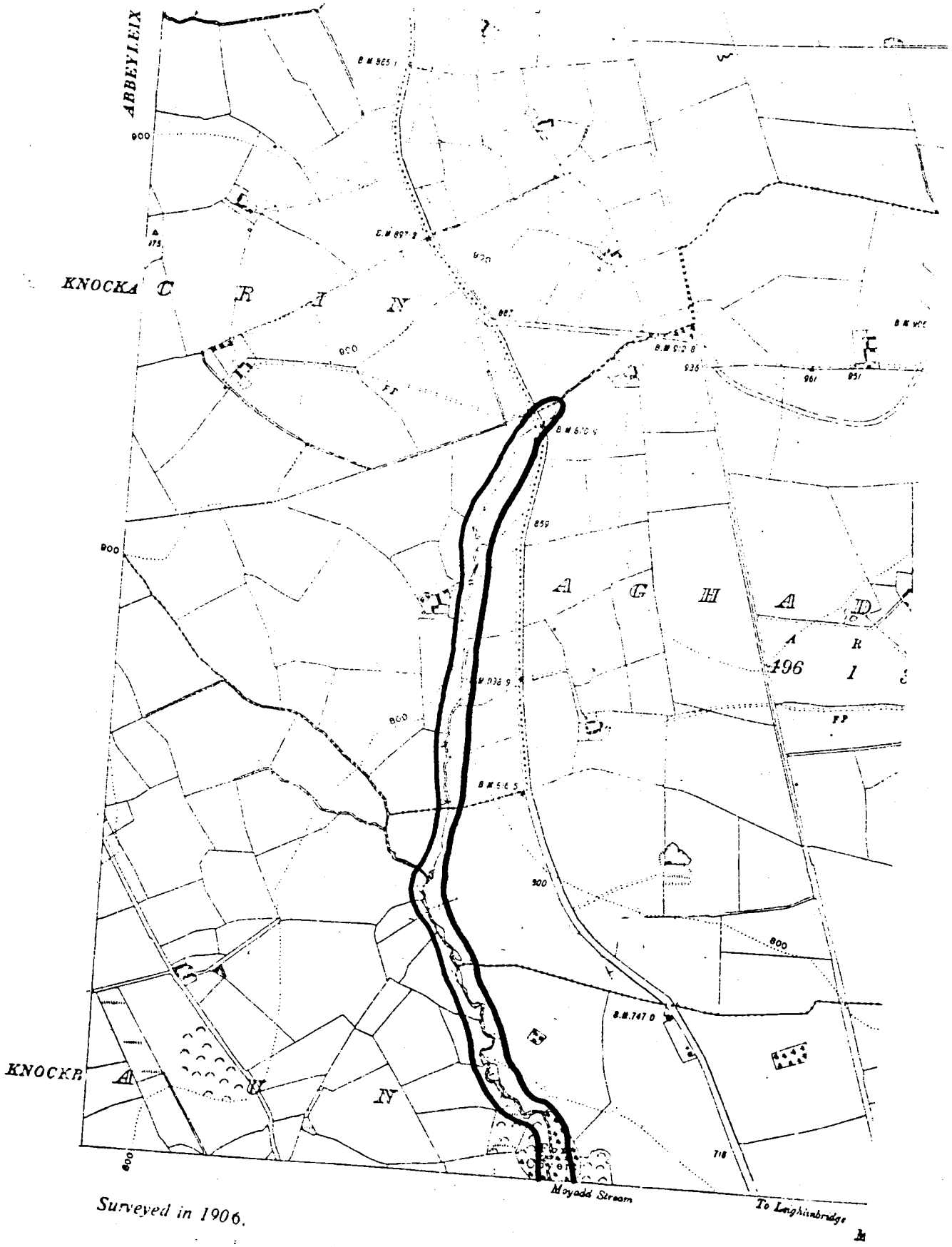
LUGGACURREN




KILLESHIN GLEN - UPPER SECTION ABOVE RESERVOIR.
+ Pleasure - Widows Walking Quarry
COOLEGHAN
WIDOW MALONES
QUARRY
ROSSMORE BOG



KILLESHIN GLEN — LOWER SECTION BELOW RESERVOIR

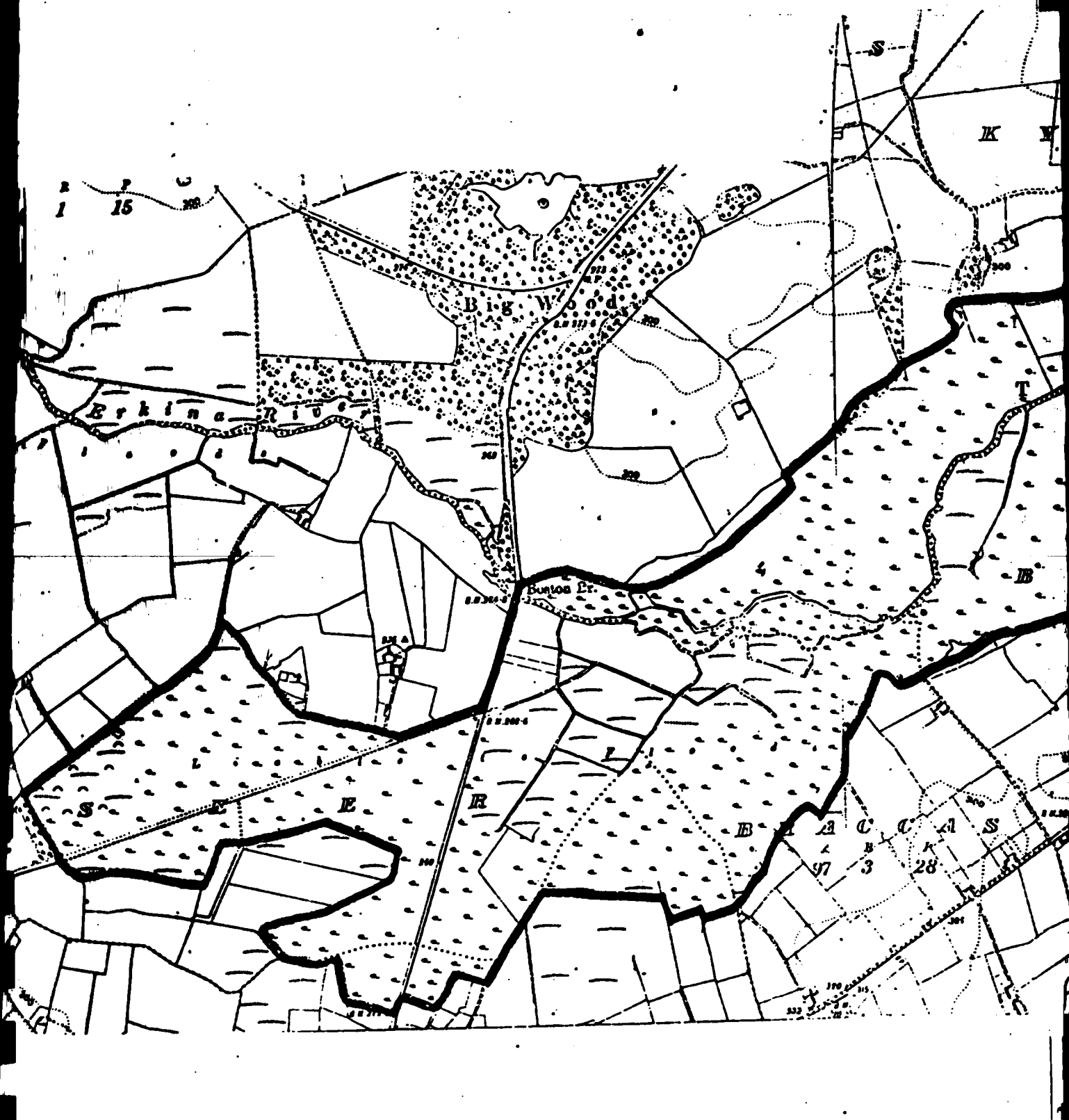


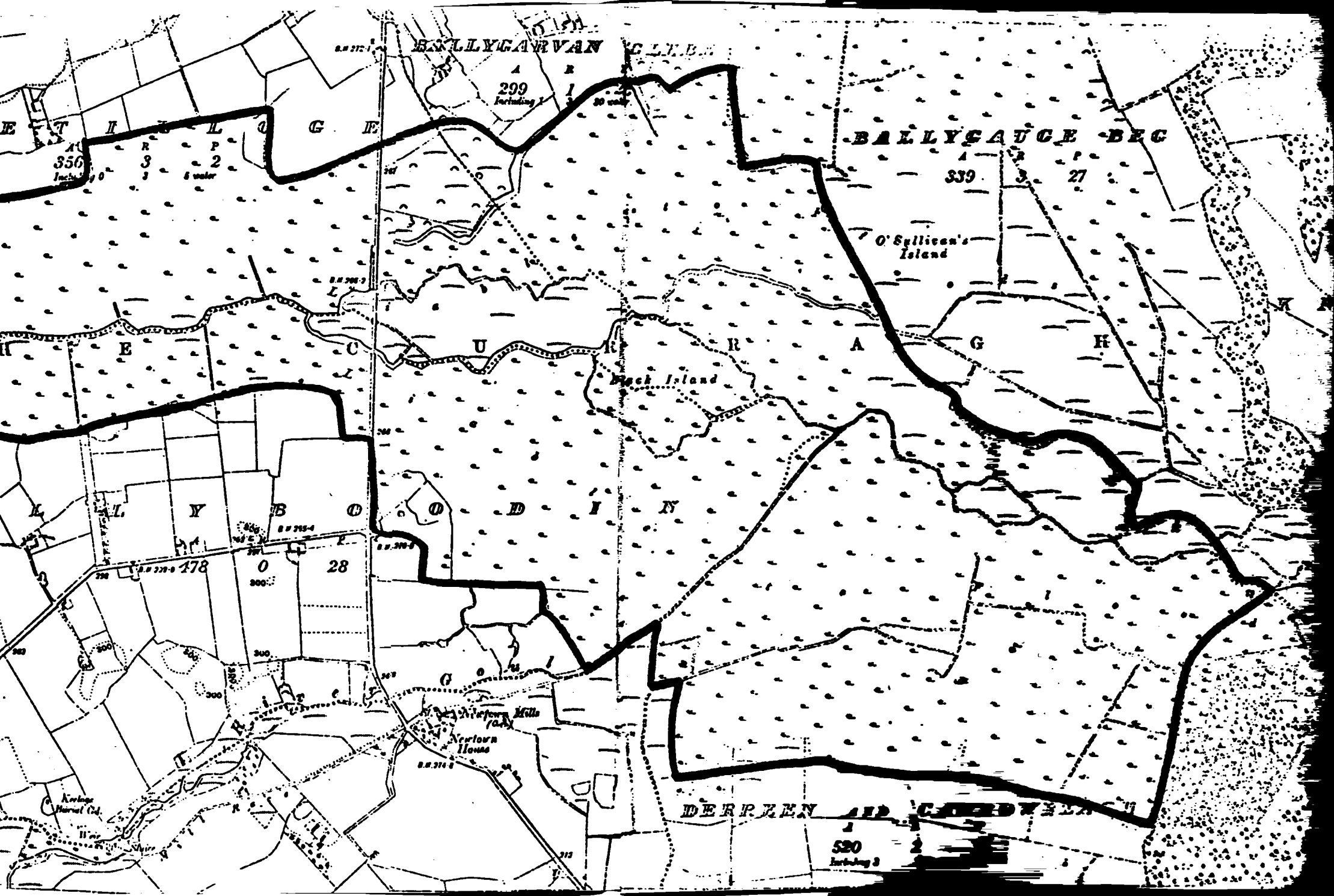
Surveyed in 1906.

MOYADD STREAM

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 7.

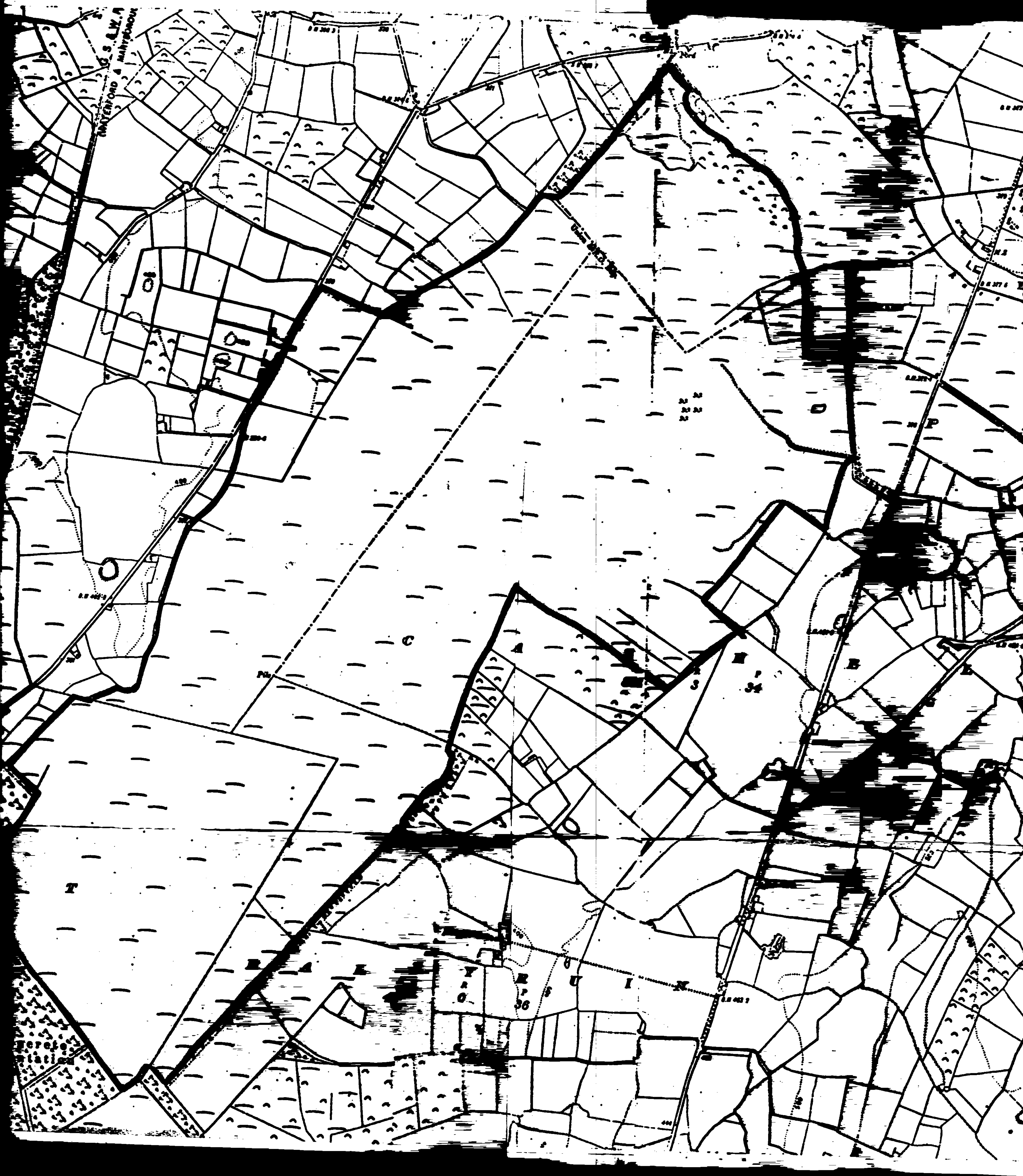
Scale: 6 Inches to 1 Mile




BALLYGARVAN
299
BALLYGAUGE BEG
339
27
O'Sullivan's Island
Black Island
178
0
28
Newtown Mills
Newtown House
DERREEN
520

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 9

Scale: 6 Inches to 1 Mile



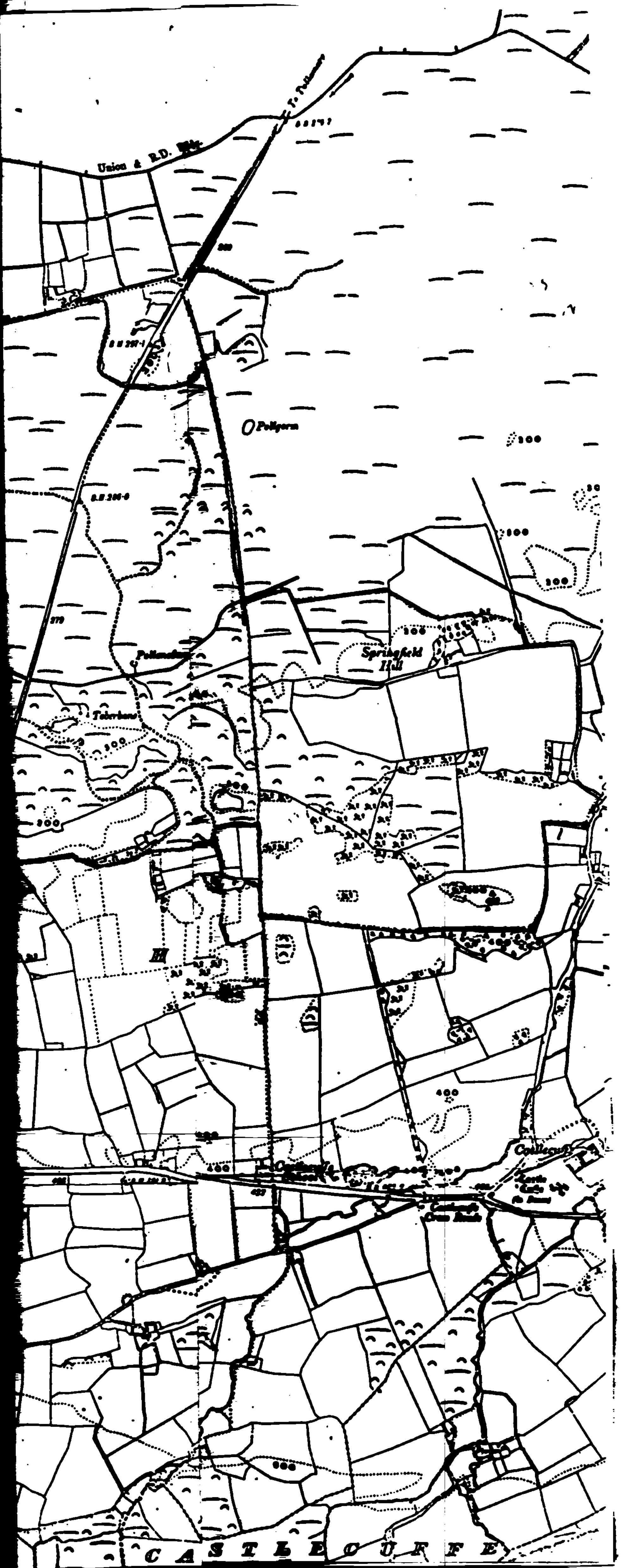
MAP SHOWING AREA OF SCIENTIFIC INTEREST — 12

Scale: 6 Inches to 1 Mi

The Warren
Sandy Mount
Norefields
Floods
Corn Mill (Disused)
Lodge
Icehouse (Disused)
Sluice
Church
Park Hill
Knapton Wood
Weeden Bridge
165
2158
GRACESWOOD
200
115
74 0

MAP SHOWING AREA OF SCIENTIFIC INTEREST — 3

Scale: 6 Inches to 1 Mile



To Pollamore
Union & R.D. Bdy.
Pollgorm
Springfield Hill
Toberbane
Coolleague
Castlecuffe Cross Roads
C A S T L E C U F F E