

THE VASCULUM

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Edited by
T. C. DUNN, B.Sc.
THE POPLARS, CHESTER-LE-STREET

BY THE WAY

Secretaries of Societies and other contributors to "The Vasculum" are invited to send their notes to the Editor before 15th June. 1969

DERELICT PIT HEAPS.

As a result of extensive closures of coal mines in the NorthEast, many pit heaps are no longer in use. Many of these are at present just being forgotten, whilst others are being carried away to be used as filling during road works and building operations. Although experiments have been tried in connection with covering derelict heaps by planting trees, there seems to be no organised policy for doing so.

The early stages of colonisation of a derelict heap can make a very useful educational project. Some of the plants which find their way into the habitat are quite uncommon and sometimes require a good deal of careful investigation to explain their arrival. Some of the heaps also provide splendid places for insects. Although the plants have been investigated by one or two specially interested workers, we know of no research into the animal succession that must occur alongside the plants. The insect fauna, in particular, would form a very interesting and useful study. Here is a suggestion for one of the school groups or just a small group of interested naturalists.

PESTICIDES AND PARASITES.

Since many birds literally fell out of the sky some 10 years ago in this country and Rachel Carson highlighted the same situation in the U.S.A., what has happened as far as the use of organochlorine pesticides is concerned? It is true that the worst of them have been banned, but there are still many to be bought in any garden shop. DDT is still used and frequently mixed with a number of other frightening preparations. Such stuff is terribly persistent and therefore continues to be circulated through the food-chains

long after the original application. The birds of prey still continue to decline in numbers. It is some time since the Nature Conservancy workers found that organochlorines interfere with a bird's calcium metabolism, to such an extent that egg shells become thinner and more easily broken, even by the parent birds. The study has been taken up in the U.S.A. by the Audubon Society. Its findings are exactly the same and the results on the decline of birds of prey are even more disastrous than here. What is more, the Society puts the blame fairly and squarely on the Government Administration. Since the banning of certain pesticides and the restrictions put on the use of others, not a single prosecution has been made in 13 years. Although the laws are there, they are just not being enforced. We suspect that the same state of affairs exists in the U.K.

A little glimmer of hope comes from recent horticultural research in this country, into the control of greenhouse pests. Biological methods are being adopted, not for the first time, with some success. Pests like the White Fly and certain species of Aphids, which have been found difficult to control in the past, even by the most potent pesticides, are now being held in check naturally, by predatory wasps, lacewings and similar animals. The number of eggs produced by breeding these organisms in captivity is so enormous that they can be given away. A new method of packaging the eggs in the form of tablets, is being developed. Already, the results of distributing these products have proved very encouraging. The beauty of it all is that not one drop or grain of pesticide is necessary. It is, of course, a far cry from biological control under glass, to similar methods out of doors on a vast agricultural scale. But this is a step in the right direction. How marvellous it would be if the method were eventually to be extended to agriculture. Or are we already too late?

THE SOCIETIES

NORTHERN NATURALIST'S UNION

The 45th Annual Meeting of the Union was held in the Percy Building of the University of Newcastle upon Tyne, on March 15th, 1969.

The President, the Rev. G. G. Graham, after welcoming all those present, asked for a few minutes silence in memory of Dr. K. B. Blackburn who had been Secretary of the Union, and Mr. R. Mulliner, a Vice-President, both of whom had died during the past year. Mrs. Gibby then read the minutes of the last Annual Meeting. Dr. W.A. Clark was then asked to say a few words about Dr. Blackburn. This was followed by reports from the Secretary, the Field Secretary and the Treasurer. The Field Secretary notified members of two changes in the places for proposed field meetings, due to the refusal of Dr. Bradshaw to allow outings in the reserves

of the Naturalists' Trust. There was also a proposed change in the previous years' arrangements for junior meetings. The usual meeting at Waldrige Fell in June was dropped because of the poor attendance, due to G.C.E. examinations, during the last few years.

Dr. J. L. Crosby was elected President for 1969-70 and took the chair at this point. The other officers were all re-elected.

The Rev. G. G. Graham then gave his lecture entitled "A Flora for Durham " First of all he justified the necessity for writing and publishing floras, showing how previously local lists had provided the stimulus for further study with the eventual production of vice-county floras and so to larger floras of units like the British Isles. He detailed some of the techniques of mapping plants and then went on to show a number of slides giving the distribution in the British Isles of certain plants, with photographs of them. Since records are now required with information about habitat, his next series of slides were of habitats, accompanied by typical plants for each one.

After a vote of thanks ably spoken by Mr. Lowe, we adjourned to an adjacent room for tea, which was served, as usual, by Miss Vincent and the girls of Chester-le-Street Grammar School. Here the various exhibits of members were laid out for inspection. The main exhibit was again Mr. Cooke's spring flowers. Even though these are on view each year there is always something new, Mr. Graham had put out a number of floras, illustrating the way they had developed over the years, Mrs. Gibby exhibited the publications of the Field Studies Council and a number of postage stamps of botanical interest, and Mr. Dunn showed a number of pressed plants from Inishmore, one of the Isles of Aran.

DARLINGTON AND TEESDALE NATURALISTS' FIELD CLUB

The Annual Report for 1968 was received in February. Again this admirable booklet is a mine of information, not only of what goes on in the Darlington Club but also about the natural history of the Club's area.

A new effort has been made to record the flowering plants of the district to help the Rev. G. G. Graham with his projected Durham County Flora. Over twenty new records were made for square NZ 21, amongst which were such plants as **Allium vineale** L., **Cirsium heterophyllum** (L.) Hill and **Erophila spathulata** Lang., the last one a specially good discovery.

Amongst the animals, a group which seems to have been very active is the one which has been studying the marine and freshwater organisms. The catch of the season was at Redcar when the beautiful little fish, the Dragonet, **Callionymus lyra**, was seen and handled before being returned to its pool once more. The birds have been thoroughly covered by a junior group as well as older

members, but a disappointing note from D. M. Jenkinson showed how much ignorance still exists amongst gamekeepers, men who should know better. On one gibbet appeared five Tawny owls and a Barn Owl. This must have been a dreadful sight for the ornithologists. Although there was no new record of mammals, there is still plenty of evidence that all the usual species are still about and some even on the increase like the Roe Deer. The report on the insects shows that in the Darlington district too, there is a general downward trend in the numbers of the ordinary common species. Gone are the days when the Large White, Small White, Green-veined White and Meadow Brown Butterflies were in clouds. Now they are rare enough to be counted on one hand during a full day's searching on a hot sunny day in the right season. This tendency is everywhere in our two counties. It has happened quite suddenly during the past 10 years. The reason is undoubtedly the increase in the use of pesticides in agriculture. If the present decline continues we are soon going to be without many of our insects altogether.

NOTES AND RECORDS

NOTES

Grey Wagtail in Newcastle. On 17th February 1969, during very cold weather, a grey wagtail was seen scavenging for scraps in the backyards of houses just off Osborne Road in Jesmond. Surely this is an unusual sighting for the centre of a completely built up area. Judith Dunn.

Caddisflies in 1968. During 1968, the Caddisflies caught in my light trap at Chester-le-Street have been collected as in the previous year, for the purpose of a national survey. After submitting them to Dr. I. Crichton of Reading University for identification and recording the following facts have emerged.

There were fewer individuals (69 as against 110 for 1967), but more species than in 1967. Several of the new species are represented by single specimens, which is the normal pattern in lists of this kind. The new ones are listed in the records section of this issue. *Glossosoma boltoni* Curtis and *Hydropsyche instabilis* Curt. were common in both years, but *Athripsodes dissimilis* Steph. failed to turn up in 1968, although several were caught in 1967. There is no significance in these differences and all the species are common and widely distributed.

Although it is an unexciting and small list, as far as these go, it is of value nevertheless, because it helps to confirm the widespread distribution of the common species. T.C.D.

The Vapourer Moth. The Common Vapourer, *Orgyia antiqua* L., has been mentioned before in issues of this journal (Vase. XLIX: 26-27), particularly with respect to its gradual disappearance from our two counties. It is very gratifying, therefore, to have a report from the Darlington and Teesdale Field Club of the discovery of larvae of this moth at Low Dinsdale on 15th August 1968. T.C.D.

Bird Reports from Darlington, 1968. The Darlington and Teesdale Field Club has a very active Ornithological Section which endeavours to compile a bird report each month. I must emphasize that this is a team effort in every sense of the word, there being many contributors. At the same time all sightings are rigidly checked before committing them to paper.

Many unusual species are seen every month at Teesmouth and reports of these are included in our records. These are amply reported in other journals so I shall say no more about them here. Several of our more inland records have also been of some interest and deserve some special comment.

On 24th March 1968, a huge flock of Widgeon were seen resting on the Hurworth Burn. A count showed a maximum of 153 birds. At Dyance Wood, a site recently visited during a N.N.U. meeting, there were at least 7 Heron's nests in use and possibly 8. From these, young hatched on 19th April. A single Water Rail was sighted at Witton-le-Wear on March 2nd. The Little Ringed Plover provided quite a bit of excitement and then later some disappointment. A pair was noticed at Ricknall Carrs, Aycliffe on May 20th and a single bird, possibly one of this pair, was seen again on 30th. During the evening of June 13th, the same area was again checked specially for this bird. To our delight we found a breeding pair with two chicks. On the same evening one pair with two chicks and another pair with one chick were seen at Cleasby. Unfortunately both areas were bulldozed shortly afterwards, but there was just a chance that the chicks may have got off. Odd birds were noted at Cleasby throughout June and 3 were seen there on 30th. A Kingfisher was seen flying in the Piercebridge—Gainford area by the Tees on May 4th.

Later in the season one of the best records was the presence of the Short Eared Owl. Two were seen on Burtree Marsh on September 7th and another, or possibly one of the two birds previously seen, was in Yarm Road, Darlington on October 18th. A Great Grey Shrike was seen at Castle Eden Dene Mouth on 10th October. At Derwent Reservoir on November 24th, a number of unusual records were made. A maximum of 65 Pochard were present together with 3 Goldeneyes, 3 Goosanders and 2 Whooper Swans. V. Brown.

Early Tortoiseshell Butterfly. The first *Aglais urticae* L., Small Tortoiseshell Butterfly, of the year was seen on 2nd April 1969 at Chester-le-Street. This is an unusually late date but, the weather having been colder than usual in the North-East, it is no surprise. Such a late spring as we are experiencing, will undoubtedly do much harm to the spring insects.

E. M. Burns.

RECORDS

MOLLUSCA

Valvata piscinalis Mull.	68
Haggerston Castle Lake.	
Potamopyrgus jenkinsi Smith.	68
Haggerston Castle Lake. Pond near East Ancroft. Stream near Rothbury Racecourse.	
Limnaea truncatula Mull.	68
Haggerston Castle Lake.	
Limnaea stagnalis L.	67
Bradley Hall Lake, Wylam.	
Limnaea pereger Mull.	67
Gosforth Park lake.	
Planorbis planorbis L.	67
Old reservoir, Langley.	
Planorbis albus Mull.	67
Bradley Hall lake, Wylam.	
Planorbis contortus L.	67, 68
Haggerston Castle Lake (68). Old reservoir, Langley. Ditch near GosforthPark lake (67).	

Planorbis crista L.	68
Haggerston Castle Lake.	
Ancylastrum fluviatile Mull.	67
R. Coquet near Alwinton. R. West Alien, Whitfield.	
Physa fontinalis L.	67
Gosforth Park Lake.	
Anodonta cygnea L.	68
Haggerston Castle Lake.	
Sphaerium corneum L.	67, 68
Haggerston Castle lake (68). Old reservoir, Langley (67).	
Sphaerium lacustre Mull.	67
Gosforth Park Lake.	
Pisidium milium Held.	67, 68
Bradley Hall pond (67). Haggerston Castle lake (68).	
Pisidium subtruncatum Malm.	67, 68
Bradley Hall pond (67). Haggerston Castle lake (68).	
Pisidium hiljeborgii Cleesin.	67
Old reservoir, Langley.	
Pisidium nitidum Jenyns.	67, 68
Bradley Hall pond (67). Haggerston Castle lake (68). R. H. Lowe	

INSECTS

TRICHOPTERA—CADDISFLIES.

Rhyacophila dorsalis Curtis.	66
Chester-le-Street.	
Tinodes wacneri L.	66
Chester-le-Street.	
Hydropsyche pellucidula Curtis.	66
Chester-le-Street.	
Limnephilus lunatus Curtis.	66
Chester-le-Street.	
Limnephilus affinis Curtis.	66
Chester-le-Street.	
Limnephilus sparsus Curtis.	66
Chester-le-Street.	
Stenophylax pennistus McLachlan.	66
Chester-le-Street.	
Athripsodes annulicornis Stephens.	66
Chester-le-Street. T.C.D.	

LEPIDOPTERA—BUTTERFLIES AND MOTHS

Orgyia antiqua L. Common Vapourer Moth.	66
Larvae at Low Dinsdale, 15th August 1968. Miss S. Burnip.	
Epiblema farfarae Fletch.	66
Fairly common in waste places. Chester-le-Street, Waldrige. Aycliffe quarry. Also taken on Tunstall Hill by R. N. Lowe.	
Epiblema turbidana Treits.	66
Alongside streams and rivers where Butterbur grows. Lumley. Chesterle-Street. Butterby.	
Cacochroea grandaevana Zeil.	66
Rare, only one specimen ever taken, Waldrige.	
Pardia cynosbatella L.	66
Common everywhere. Upper Teesdale, Chester-le-Street, Waldrige, Sunderland, Cassop, Beamish.	

Notocelia suffusana Dup	66
Common. Chester-le-Street, Waldridge.	
Notocelia rosaecolana Doubl.	66
Uncommon. Chester-le-Street.	
Notocelia aquana Hubn.	66
Bred from spun up shoot ends of wild rose. Chester-le-Street, Waldridge, Cassop, Beamish, Hilton.	
Notocelia incarnatana Hubn.	66
Bred from <i>Rosa pimpinellifolia</i> L. from Hart.	
Gypsonoma sociana Haw.	66
Not common Chester-le-Street.	
Gypsonoma dealbana Frol.	66
Much more common than the last. Bred from <i>Salix</i> . Chester-le-Street, Waldridge.	
Griscida myrtulana Westw.	66
Very common on bilberry on Waldridge Fell. Easily bred from spun shoots gathered in early spring.	
Rhopobata naevana Hubn.	66
Also very common Chester-le-Street, Waldridge.	
Epinotia stroemiana F.	66
Easily bred and later beaten from birch, Chester-le-Street, Waskerley, Healeyfield, Waldridge.	
Epinotia caprana F.	66
Not common Waldridge.	
Epinotia solandriana L.	66
Very common on birch, Hisehope Burn, Chester-le-Street, Waldridge, Salter's Gate, Shull. Also noted from Waldridge Fell by R. N. Lowe.	
Epinotia trimaculana Don.	66
Not common on oak, Chester-le-Street.	
Epinotia bilunana Haw.	66
Very common Chester-le-Street.	
Epinotia immundana F.R.	66
Not common, Waldridge.	
Epinotia tetraquetra Haw.	66
Quite common, Waldridge, Chester-le-Street.	
Epinotia tenerana Schiff.	66
Very common on hazel and alder, Waldridge, Hisehope Burn, Waskerley, Bollihope Burn, Eastgate.	
Epinotia paykulliana F.	66
Fairly common Waldridge, Chester-le-Street. Also noted on Waldridge Fell by R. N. Lowe. T.C.D.	

FLOWERING PLANTS AND FERNS

Origanum vulgare L. Marjoram,	67
By the Forest Burn near The Lee.	
Carex muricata L. Prickly Sedge.	67, 68
On the basalt near Colwell (67). Quarry near Harehope; on the basalt N. of Belford (68).	
Lycopodium clavatum L. Common Clubmoss.	67, 68, 80
By the side of a forestry road near Kate's House (Blackburn Burn) (67). Quarry near Denwick (68). Carter Quarry (80).	
Junipenis communis L. Juniper.	67, 68
Ravine of the Linn Burn, on Hexhamshire Common (67). Quarry near Harehope (68).	

Trientalis europaea L. Chickweed Wintergreen.	68
Near Harehope, under the Bracken.	
Parietaria diffusa Mert. & Koch. Pellitory-of-the-Wall.	68
On a wall near Harehope.	
Lepidium heterophyllum Benth. Smith's Cress.	68
By the Lilburn Burn, W. of Lilburn Towers.	
Spergularia rubra (L.) J. & C. Presl. Sand Spurrey.	68
Near Ildertonmoor; near Swinhoe Lakes; forestry road between Callaly and Thrunton; forestry road above Memmer Kirk.	
Gymnadenia conopsea (L.) R.Br. Fragrant Orchid.	67
By the railway, S. W. of Forestbunigate; by a small stream near Whiskershiel; by a small stream N. of Ninebanks, in W. Allendale.	
Sesleria caerulea (L.) Ard. Blue Sesleria.	67
By a small stream running down the limestone near Whiskershiel in the Eisdon area.	
Carex dioica L. Dioecious Sedge.	67
By the same stream as <i>Sesleria caerulea</i> .	
Eleocharis quinqueflora (F.X. Hartmann) Schwarz. Few-flowered Spike-Rush.	67
By the same stream as <i>Sesleria caerulea</i> .	
Eriophorum latifolium L. Broad-leaved Cotton-Grass.	67
By the same stream as <i>Sesleria caerulea</i> ; also near the Smales Burn.	
Thyklipsis phegopteris (L.) Slosson. Beech Fern.	67, 70
By the Warks Burn at Crookbank Kern; by the Black Burn, a tributary of the Tarsset Burn, at Gilhehill Clints: by the Target Burn near Pit Houses (67). In the ravine of the Black Burn, S.W. of Midgehoime (70).	
Polypodium interjectum Shivas.	68
On walls on Holy Island and at Waren Mill (Det. Dr. F. H. Perring).	
Arenaria leptoclades (Reichb.) Guss.	68
On walls on Holy Island (Det. Dr. F. H. Perring).	
Phleum bertolinii DC.	67
Near Sewingshields. (Det. Dr. F. H. Perring).	
Asplenium septentrionale (L.) Holtn. Forked Spleenwort.	67
Beldon Burn.	
Ceterach officinarum DC. Rusty-back Fern.	68
Hulne Park.	
Botrychium lunaria (L.) Sw. Moonwort.	67
Tipalt Burn, N.E. of Thirlwall Castle. E. bank of W. Alien near Nine-banks. Beldon Burn. W. bank of S. Tyne, N. of junction with Gilderdale Burn.	
Taxus baccata L. Yew.	67
Sneap.	
Trollius europaeus L. Globe Flower.	66, 67
Beldon Burn near Heathyburn. Whittle Dene (67). Derwent near Muggleswick (66).	
Cardaria draba (L.) Desv. Hoary Pepperwort.	68
N. side of Warkworth Harbour.	
Teesdalia midicaulis (L.) R.Br. Shepherd's Cress.	68
By forestry road in Thrunton Forest, presumably introduced with road material (porphyry).	
Arabis hirsuta (L.) Scop. Hairy Rock-cress.	68
Hulne Abbey.	
Rorippa sylvestris (L.) Bess. Creeping Yellow-cress.	67
Gravels near junction of E. and W. Alien.	
G. A. & M. Swan	

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PROTECTION OF OUR FLORA AND FAUNA.

Not many years ago the pages of this journal bristled with exhortations to rapacious collectors to reduce their activities. It was said that botanists and entomologists were by far the most dangerous culprits in the processes of extermination that went on. We think the position has changed considerably during the last decade. People and would be collectors in particular have been made very conscious of the need for conservation. For this we must give every credit to the propaganda disseminated by the Naturalists' Trust of Northumberland and Durham. Does this mean that we are satisfied that the reduction in collecting has done away with the danger to our plants and animals? Not so, the dangers are still there. They merely spring from different origins.

The march of 'civilization' is inexorable. Local authorities are always on the lookout for places where they can tip their waste. This means that wild places are often selected because they are not being used for growing crops. Pond after pond has been drained or filled in during the last few years. We must now concentrate on the problem of making the planners fully aware of the need for conservation.

Perhaps one of the most frightening aspects of modern times and one which we have discussed frequently in these pages, is the ever increasing use of pesticides on agricultural land. We do not wish to go over such familiar ground again, but recent events in Germany, where the Rhine became a dump for a poisonous chemical, is a glaring example of the thoughtless action that can lead to terrible destruction of life.

A GOOD BUTTERFLY YEAR

We have been considerably reassured this summer by the increased number of many of our common butterflies. The Large and Small White Butterflies have not shared in this general increase, however. The Green-veined White was in quite fair numbers in the spring and the Orange-tip much more widespread than usual. The most spectacular increases, however, have been shown by the Common Blue, **Polyommatus icarus** Rott. and the Meadow Brown, **Maniola jurtina** L. These have been seen in clouds in some of their more favoured haunts. We have been reminded of what they used to be 50 years ago.

The Large Skipper has been quite common as has also the Small Heath Butterfly. The Dingy Skipper has not yet reached the numbers it attained about 15 years ago, but it too has shown a slight increase. The more local insects like the three fritillaries (Dark green. Pearl-bordered and Small Pearl-bordered) and the Ringlet have increased in numbers in their restricted ranges but we have not noted any new colonies as yet. On the Northumberland dunes, the Grayling has been seen in swarms, certainly its most prolific year in our memory.

The question of the reasons for these increases immediately springs to mind. The possibility of a lean year for ichneumon parasites can be ruled out. Since each butterfly has its own specific parasite, it would be too much of a coincidence for all of them to be down at the same time. This leaves the weather as the probable cause, but whether it is the present fine spell that has caused a massive emergence, or the weather last autumn that was specially suitable for the growth of caterpillars, we would hesitate to say. Fluctuations of this sort have been known to entomologists for hundreds of years, but no satisfactory full explanation has ever been established.

THE SOCIETIES

NORTHERN NATURALISTS' UNION

The 122nd Field Meeting was held at White Kirkley on 17th May, 1969. Quite a large gathering of about 70 members and friends were met at White Kirkley village by the President, Dr. J. L. Crosby, who led the party up on to the moors above the village.

The route lay through an old pine wood and over rough pasture to the valley of the Fine Burn. This valley was followed, first upwards to an outcrop of shale with many fossil plant remains, then down to its junction with the Bollihope Burn, where a picnic tea was taken. Members then dispersed in various directions to return to White Kirkley.

Most of the walk was over moorland with some wooded areas along the two streams. Some fine examples of Juniper and Yew along the Fine Burn. Here, such plants as the Cat's-foot,

Antennaria dioica (L.) Gaertn., Primrose, **Primula vulgaris** Huds., Common Violet, **Viola riviniana** Rchb., Gorse, **Ulex europaeus** L., and Broom, **Sarothamnus scoparius** (L.) Wimmer ex Koch., were in full flower. A very fine group of Moonwort plants **Botrychium lunaria** (L) Sw., was found at the picnic spot by the Bollihope Burn. The entomologists had been assiduously beating every suitable tree, shrub and herb without much success. A single larva was knocked out of the pine branches at the beginning of the outing, and from this a fine dark specimen of the Barred-red Moth, **Ellopija fasciaria** L. was later obtained. Otherwise, the bushes by the streams produced only a few Grey Jenny Flies together with two very torpid queen wasps which were disturbed from their shelter in the Junipers.

Meanwhile Mr. Gent had more luck with the birds and Mr. Lowe did quite well in his search for Molluscs. Whilst the party was gathering at the meeting place, chaffinches and willow warblers were singing in the neighbouring pine plantation, and a cuckoo called as it flew past. Linnets and Redpolls were seen in the rough hill pastures, where lapwings were well distributed, an added egg of the latter and three fledglings being found near the track leading down to the ford over the Fine Burn. In this area the usual moorland birds were seen or heard, e.g. curlew, redshank, snipe, meadow pipit and skylark. Ring ouzels were observed at two points. Lower down, near the junction with the Bollihope Burn, where the valley became wooded, the redbreast, wren and song thrush were heard in song, and the swift, sand martin, wood pigeon, jackdaw, blackheaded gull and blue tit observed. Swallows were flying round the farm at White Kirkley and what looked like a completely white house sparrow (probably an albino), was seen to carry a large feather into a hole in the masonry of the cottages. Later, a duck mallard with nine newly hatched ducklings were seen on a small quarry pond.

In all, Mr. Lowe recorded 18 species of Mollusca, the full list appearing in the Records section.

Castle Eden Dene-mouth was the scene of the 123rd Field Meeting on July 12th. Mr. Lowe was the leader in this case and he gathered together about twenty members at Dene Holme for a preliminary talk before setting off. The route led round the foot of the cliffs out to the coast and then South towards Blackhall Colliery. Just before reaching this, a flight of steps cut in the cliff was taken to the top and the return journey made by the cliff path.

The plants typical of limestone were in full bloom and a really beautiful sight they were. Masses of Greater Knapweed, **Centaurea scabiosa** L. stood out everywhere, mixed with large areas of Birdsfoot Trefoil, **Lotus corniculatus** L. Also on the cliffs were Butterwort, **Pinguicula vulgaris** L., Grass of Parnassus, **Parnassis palustris** L., Common Spotted Orchid, **Dactylorhiza fuchsii** (Druce) Vermeui., Northern Fen Orchid, **Dactylorhiza purpurella**

(T & T.A. Steph.) Vermeui., Fragrant **Orchid**, **Gymnadenia conopsea** (L.) **R.Br.**, Twayblade, **Listera ovata** (L.) **R.Br.**, Restharrow, **Ononis repens** L., Wild Carrot, **Daucus carota** L., Saw-wort, **Serratula tinctoria** L., Dame's Violet, **Hesperis matronalis** L., and large areas of Hemp Agrimony, **Eupatorium cannabinum** L. Two rather puzzling plants of the wasteland near Dene Holme proved to be Hoary Cress, **Cardaria draba** (L.) Desv. and the non-prickly form of the Field Thistle, **Cirsium arvense** (L.) Scop.

On the marshy patches at Denemouth, Reed Buntings were in evidence and other species such as Linnets, Meadow Pipits, Redpolls and Sand Martins were seen over the cliffs during the course of the walk. The screaming of Sandwich Terns drew our attention to the sea where the birds were seen to be actively fishing. Here too a redshank was spotted.

One of the most notable features of the afternoon was the abundance of butterflies and moths. The Common Blue, **Polyommatus icarus** Rott, Small Heath, **Coenonympha pamphilus** L. and Large Skipper, **Ochlodes venata** Br. and Grey were all seen on the cliffs, the first mentioned being in clouds. The Meadow Brown, **Maniola jurtina** L. was abundant in Denemouth and a few Large Whites, **Pieris brassicae** L. and Small Whites, **Pieris rapae** L. were scattered about. The two Burnet Moths, **Zygaena filipendulae** L. and **Z. lonicerae** Scheven were just emerging with **lonicerae** preponderating. Other insects seen were the Wasp Beetle, Yellow Shell Moth, Latticed Heath and several micros.

The junior outing to St. Mary's Island was a great success. About 60 young people gathered at the causeway at 10 a.m. on May 17th, to be led across the island by Mr. J. Bradley. Armed with a little booklet containing classification details of the plants and animals, the children were introduced to the zonation shown on the rocks and invited to bring in and discuss the many organisms present. The weather was sunny for a change, though cool, so that enthusiasms were not dampened and much useful work was done.

BIRTLEY NATURAL HISTORY SOCIETY

So far this summer, two long-distance outings have been held, together with the usual first Sunday of the month expeditions at other times.

The first was to Rievaulx Abbey on June 8th, in brilliant sunshine. The spring flowers were in full bloom in the surrounding woodlands where we spent the afternoon. Outstanding plants seen were the Green Hellebore, **Helleborus viridis** L., Herb Christopher, **Actaea spicata** L., Early Purple Orchid, **Orchis mascula** (L.) L., Black Bryony, **Tamus communis** L., Columbine, **Aquilegia vulgaris** L. and Field Maple, **Acer campestre** L., the last plant being very plentiful everywhere and seeding itself as many young plants were found. The three butterflies Orange-tip, Green-veined White

and Small Heath were very common, the Orange-tip being in greater numbers than usual. Moths seen on the wing were **Epirrhoe alternata** Mull., **Lithina chlorosata** Scop. and the micro **Nemophora swammerdamella** L. A beautiful specimen of the Small Engrailed Moth, **Ectropis crepuscularia** Schiff. was found sitting on the trunk of an oak tree, where we also saw many specimens of a turret snail. Beating produced many larvae of **Oporinia dilutata** Schiff. but little else. The birds were in full song, those of the chiff-chaff and willow-warbler being particularly noticeable. A nest of the latter species, containing six eggs, was accidentally discovered when looking closely at a beautiful specimen of **Orchis mascula** L. Later, near Sutton Bank, we heard a woodpecker drumming away in the wooded area on the hillside.

On June 15th the venue was Winch Bridge in Upper Teesdale. The usual plants of the area were all discovered again, there being no apparent difference in their positions or numbers during the past few years, a rather surprising fact when one considers how the area has increased in popularity during that time. On this day in particular, crowds of people were enjoying the sunshine and the bathing. In spite of this, **Pinguicula vulgaris** L., the Butterwort, **Primula farinosa** L., Bird's-eye Primrose, **Antennaria dioica** (L.) Gaert, CaVs-foot, **Polygonum viviparum** L., Viviparous Bistort and **Trollius europaeus** L., Globeflower, were flowering away quite merrily without any obvious damage. Only the spring orchids were somewhat scarce but this did not seem to be due to overpicking. During the course of the afternoon we walked up the Yorkshire bank of the river. On the way, a Snipe's nest with four eggs was seen and photographed near Winch Bridge. Nearer High Force the Nature Conservancy's Warden very kindly took us along the path to avoid experimental apparatus and on the way pointed out grey wagtails, dippers and sandpipers. Just above High Force we were lucky enough to see a group of three fine specimens of **Listera cordata** (L.) **R.Br.**, the Lesser Twayblade, when again members engaged in much enthusiastic photography. The afternoon concluded with the fording of the Tees, with mixed results, some members providing quite a little unconscious entertainment in their efforts to avoid falling into the river.

NOTES AND RECORDS

NOTES

Some Bird Notes from Stanley. The following ornithological observations which I recently recorded, may be of some interest to readers.

Kittiwake: This year, the unusual kittiwake colony situated inland at the quayside in the built up area of Newcastle, consisted of 30 occupied nests on June 16th. The nests are all built on window ledges on the top storey of an old warehouse by the side of the river.

Curlew Sandpiper: Spring passage. A single bird was noted at the Tanfield Ponds, on June 8th, a late date. The White rump was clearly visible.

Rook: During May, the rookery situated in the Haymarket in the centre of Newcastle, consisted of 22 nests.

Collared Dove: Up to two different birds were frequently noted in Leazes Park, Newcastle, during May and June.

Kestrel: Single birds frequently seen during April and May in the grounds of Newcastle University. R. Marston Palmer.

Notes on the Cuckoo, *Cuculus canorus* L. In common with other observers it is my impression that during recent years cuckoos have not been so numerous as formerly. This year, however, I have heard birds calling at Wheeldale, Goathland (v.c. 62), near Frosterley (v.c. 66), Carrawburgh, Chesterhoime (v.c. 67), and Old Bewick (v.c. 68). C. J. Gent.

Blue-eyed Grass, *Sisyrinchium bennudiana* L. This plant was recently found in bloom on the banks of the River Eden at Appleby. In Clapham, Tutin and Warburg the following note occurs, "native in Western Ireland from Cork to Donegal; naturalised in at least 14 counties in Great Britain." In this instance seed may have been brought from Ireland by Irish cattle dealers, with fodder for horses and cattle attending Appleby Fair.

Miss R. Wade.

***Hieracium aurantiacum* L. new to Holy Island.** I was recently asked to look at an unusual plant on the Snook at Holy Island. It proved to be *Hieracium aurantiacum* L. There are about six plants in all and their identity has been confirmed. The Flora of the British Isles by Clapham, Tutin and Warburg, states that all the examples in this country are garden escapes which have become extensively naturalised. Its presence on the Snook is somewhat of a mystery since it has not been noted prior to this year and the garden at Snook House has not been cultivated for some considerable time.

W.W.

A rare visitor at Brasside. On a visit to Brasside Pond on 1st June 1969, I was most surprised to see a Black Tern flying over the water and occasionally resting on one of the islands. It was watched continuously for about half an hour, after which other areas of the nearby countryside were investigated. On returning after two hours, the Black Tern was still to be seen, this time resting continuously on an island. Other birds seen were Tufted Duck and Pochard. There was an interesting few minutes when we saw a Great Crested Grebe dive and then surface with quite a large fish in its beak. Presently the fish was duly swallowed.

R. Harris.

The Five-spot and Six-spot Burnet Moths. The Six-spot Burnet Moth, *Zygaena filipendulae* L., has been known in our counties for over a hundred years. It is mentioned in Robson's Catalogue as abundant in many localities and especially on the sea-banks and railway embankments. Of the Narrow-bordered Five-spot, *Zygaena lonicerae* Esp., he could only authenticate a record from Gibside which has long since become extinct. During the present season, I have been looking at our colonies with some detail once more. The Six-spot is indeed the commoner of the two insects. Good colonies have been investigated at Hart Golf Course, Black Hall Rocks and continuously along the coast to Castle Eden Denemouth, at Bishop Middleham quarries, Thrislington, Sherburn, Brasside, Chester-le-Street, Waldrige, Bamburgh and Holy Island. Only in a few cases has the Fivespot been seen but where it does occur it is the first to emerge and is usually the most abundant where the two live together. Thus at Bishop Middleham, Brasside and Embleton Golf Course, the Five-spots far outnumbered the Six-spots. At Brasside this is particularly so where the insect is especially abundant. Curiously enough, the coastal colonies from Black Hall Rocks to Castle Eden Denemouth are probably descendants of insects introduced by J. E. Robson himself in about 1890. He states in his catalogue that he put down nearly a thousand pupae at a suitable place near Black Hall Rocks. For two or three years afterwards specimens were taken near the spot, but then they appeared to die out. They are certainly well established now along much of the coast to either side of Black Hall Rocks, but a recent visit to Hart Golf Course failed to bring anything to light there other than Six-spots. The colony at Brasside is a most curious occurrence

for the insect, in my experience, appears to prefer mild places by the sea and sheltered limestone districts where there is an abundance of *Lotus corniculatus* L. and other trefoils and clovers, which are their foodplants. Brassica is neither particularly sheltered nor is it a limestone area, although foodplants are there in plenty. The colony has been known to me since 1949, when only a few insects were present. This year my estimate would be something like one million individuals. Yet I cannot help feeling that, like Robson's coastal colonies, it has been introduced by someone. Can any reader provide any further information about it?

The position in Northumberland is also rather curious. The Five-spot flourishes on Embleton Golf Course, but nowhere else that I have yet discovered. The Six-spot, however, is abundant all along the northern half of the county wherever there are sand dunes. About 10 years ago, I saw a few Five-spots at Seahouses but the colony soon died out and I have neither seen nor heard of any recently. T.C.D.

The Peach-Blossom Moth, *Thyatira batis* L.. This very beautiful and most striking species is well distributed throughout Durham, but never in very large numbers. In a way, this is rather puzzling since its foodplant, Bramble, *Rubus* spp. is abundant everywhere. There must be some other limiting factor, perhaps concerning egg-laying or perhaps to do with parasites which keep its numbers down. I have been trapping moths in my garden since 1951, but not once has the Peach Blossom turned up. I was, therefore, most surprised to find a specimen in my garden on 24th July this year. T.C.D.

The Wasp Beetle, *Clytus arctus* L. This insect, as its name suggests, imitates the Common Wasp, *Vespa vulgaris* L. The black and yellow markings are very similar and so is its jerky method of walking. It is, of course, perfectly harmless, without any semblance of a sting, but its mimicry is so clever that it must derive considerable survival value from it. We were very pleased and interested to find a fine specimen walking on Dr. Todd's jacket whilst taking our picnic tea at Dene Hoime during the Field Meeting on July 12th. T.C.D.

The Hawthorn pest, *Yponomeuta padella* L. This microlepidopteron, together with its cogenor, *Yponomeuta evonymella* L. forms extensive silken webs, called "nests", during the larval stage, when large numbers of gregarious caterpillars live together—all hatchlings from the same eggbatch, brothers and sisters. Any field naturalist cannot fail to have noticed those of *Y. evonymella* L. on Bird Cherry, *Prunus padus* L. since it is quite common, very conspicuous and widespread. Also it does not fluctuate in numbers very much like most insects. It is always there.

Y. padella L. on the contrary, is sporadic in its appearance and the "nests" are less conspicuous on hawthorn. In some years it can be found infesting whole lengths of hedgerow in dense numbers so stripping the plants clean. In other years it is completely missing.

I was very interested to observe the effects of this moth on the hedge surrounding the park on the opposite side of the main road running past the Forum in the centre of Billingham. The hedge is a mixed one of hawthorn and privet growing together, an odd kind of hedge to start with and this is what first drew my attention to it. It would appear that the hedge was originally formed by planting hawthorn on the outside and privet on the inside, that is the park side of the hedge. The result is what looks like a hybrid hawthorn privet hedge from a distance. On close inspection it was found that the hawthorn was infested with hundreds of nests of *Y. padella*. In places the face of the hedge looked as if it had been burnt and here the leaves had been completely stripped off, leaving only the reddish twigs to give a tawny appearance to the whole of the hedge. The privet was not touched. The hedge running parallel to the road was most badly affected, the part running at right angles to the first and facing the Technical College

having fewer webs and consequently looking much more healthy. Yet even the roadside hedge was not evenly infested. Parts of it were completely untouched. What is the explanation of such a patchy distribution? T. C. D.

The Marsh Helleborine, *Epipactis palustris* (L.) Crantz on Holy Island* During a visit to Holy Island on July 23rd to look for Burnet Moths, a very large colony of the Marsh Helleborine was seen in one of the dune slacks on the Snook. There must have been at least 500 plants growing in a mass, a fine sight. T. C. D.

RECORDS

MOLLUSCA

<i>Carychium minimum</i> Mull.	66
<i>Lymnaea truncatula</i> Mull.	66
<i>Ancylus fluviatilis</i> Mull.	66
<i>Lauria cylindracea</i> da Costa	66
<i>Hygromia striolata</i> Pfeiffer	66
<i>Hygromia bispida</i> L.	66
<i>Discus rotundatus</i> Mull.	66
<i>Arion intermedius</i> Normand	66
<i>Arion ater</i> L	66
<i>Oxychilus cellarius</i> Mull.	66
<i>Oxychilus alliarius</i> Mill.	66
<i>Retinella radiatula</i> Alder.	66
<i>Retinella nitidula</i> Drap.	66
<i>Zonitoides excavatus</i> Alder.	66
<i>Vitrina pellucida</i> Mull.	66
<i>Lebrmania marginata</i> Mull.	66
<i>Agriolimax reticulata</i> Mull.	66
<i>Pisidium casertanum</i> Poli.	66

All taken in the Fine Burn or Bollihope Burn on the N.N.U. outing of May 17th, 1969. R. H. Lowe.

LEPIDOPTERA—BUTTERFLIES AND MOTHS

<i>Vanessa atalanta</i> L. Red Admiral.	67
One seen at Gosforth on 31st May, 1969. C. J. Gent.	
<i>Vanessa cardui</i> L. Painted Lady.	68
One seen at Holy Island on 30th May, 1969. R. Harris.	
<i>Thyatira batis</i> L. Peach Blossom.	66
One taken in the garden at Chester-le-Street, the first, on 24th July, 1969. T. C. D.	

AVES—BIRDS

<i>Faico tinnunculus</i> L. Kestrel.	67
Single birds at Seghill on May 18th and at Gosforth on May 25th.	
<i>Dendrocopus major</i> L. Greater Spotted Woodpecker.	67
One drumming in the grounds of Wallington Hall on May 29th. C. J. Gent.	

FLOWERING PLANTS AND FERNS

<i>Orchis ustulata</i> L. Burnt Orchid.	66
Six plants in full bloom near Hart Station at the end of June, 1969. Miss Appleyard.	

THE VASCULUM

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THE POPLARS, CHESTER-LE-STREET

BY THE WAY

Societies and other contributors to "The Vasculum" send their notes to the Editor before 15th November.

THE IMPORTANCE OF LOCAL LISTS

On field meetings, the keen naturalist can often be seen making a careful note of everything he observes. His notebook and his camera are his most important possessions. Long afterwards, the records are still there for reference. Thus, there is no doubt that the prime importance of local lists and photographs is in compiling information. This habit is, of course, a great satisfaction in itself, but it can also be of great use in several studies.

Notes compiled over many years, with dates, can be used in tracing the history of changes that take place in local populations of plants and animals. It is a well known ecological fact that our natural communities are in a continual state of flux. Species both come and go. Some arrive in quite a spectacular way and then disappear just as quickly again, whilst many stay. Others infiltrate slowly but usually permanently. A few years ago, the moth called the Wormwood Shark, **Cucullia absinthii** L., began to spread like wildfire across the Midlands and the counties round London. Before that it had been a very local moth confined to a few southern and western coastal localities in this country. Its movements were carefully recorded by local collectors and we kept a sharp lookout, expecting to see it turn up in Durham or Northumberland at any time. But it never has done so and we wonder if its range has begun to shrink again, for no further spread has been reported for about the last 10 years.

Similar phenomena have occurred with plants like the Himalayan Balsam, Rosebay Willow-herb and the Oxford Ragwort, but in these the spread has continued. When such an influx of a new species occurs, it usually means that something else will suffer from the new competition, for our habitats are mostly full to start with and can support only a fixed biota.

Plotting geographical distribution over the country's a whole is another obvious result of collecting records. This leads to the elucidation of the origins of our flora and fauna. In this context, we are thinking in terms of tens of thousands of years and not just within living memory. The work of mapping species has, during the past few years, become one of the major projects of the B.S.B.I. in the case of the plants and the Nature Conservancy with respect to our fauna.

Ecological studies are now a well known part of the process of making lists. One always associates wild ducks and reeds with stretches of open water; rushes, frogs and midges with marshy places and stonecrops with very dry habitats. These interesting connections between plant and environment have been turned to some use in agriculture. With the increasing necessity for more intensive use of the land for the ever growing population, we can easily imagine such studies becoming more important within the next few years.

At present, the authorities are taking much more interest in the preservation, or of making the best use of, our natural environments, than ever before. To this end the County Planning Authorities are coming to rely more and more on information supplied to them by naturalists. The naturalists in their turn can only supply the information they have in their lists of local plants and animals. So you see, that scribbled list of birds and trees you made a little while ago may be of some importance. If you are not very good at keeping such things safely, then publish them in a journal such as this one.

INSECT MIGRATION IN EARLY AUGUST

Early in August, hordes of Painted Lady Butterflies and Silver-Y moths, descended upon us suddenly from overseas. In spite of heavy rain during the morning of August 3rd, we ventured forth into the Derwent Valley during the afternoon. Although it was steamy and dull, several butterflies like the Green-veined White, the Small White and the Meadow Brown were seen on the wing. There were no Painted Ladies. During the evening of the 4th, Mr. R. H. Lowe telephoned to say that he had seen at least six Painted Lady butterflies flying along a railway embankment near Washington that afternoon. He had been bird watching, not looking specifically for insects, so would probably have seen more if he had been looking out for them. Next day, on August 5th, we saw dozens during the course of two hours along the old railway track between Rowlands Gill and Lintz Green. This day was beautifully warm and sunny and at no time during the course of the afternoon were we out of sight of at least one of these beautiful butterflies. Mr. T. Jefferson writes for the same date, August 5th, ". . . along the southern bank overlooking the Hudeshope Burn, Middleton-in-Teesdale in warm sunny weather, there were dozens of the Painted Lady, *Vanessa cardui*, L., an unexpected and fascinating sight in these years of

butterfly scarcity. The Silver-Y Moth, **Pliisia gamma** L., was about in smaller numbers at the same time. Judging from these observations from three comparatively small areas, it is estimated that a swarm of many thousands of butterflies and moths of these two species must have descended upon our two counties during the night of August 3rd or the early morning of August 4th, for on one day there were none, while during the next: two days there were swarms.

THE SOCIETIES

NORTHERN NATURALISTS' UNION.

The 124th Field Meeting was held at Budle Bay and Ross Links on 13th September 1969. About 30 members and friends gathered along the sea front at Waren Mill to at 11 a.m. to be led on to the mud flats by Mr. E. Hinton-Clifton.

First of all the animals or their trails were looked at on the surface of the mud in the bay. Here we saw large clumps of the Cord Grass, **Spartina townsendii** H. & J. Groves, which have slowly increased in size and number over the last few years. The party then walked along the shore following the high tide line in a south easterly direction. Here, many shore plants like **Triglochin maritima** L., Sea Arrow-grass, **Puccinellia maritima** (Huds.) Parl., Sea Poa, **Glaux maritima** L., Sea Milkwort, **Salicornia** sp., Glasswort, were seen together with the seaweeds **Fucus spiralis**, Twisted Wrack, **Fucus vesiculosus**. Bladder Wrack, **Sphacelaria cirrhosa**, growing on a frond of **Fucus spiralis**, and the red seaweeds **Delesseria sanguinea** and **Cryptopleura ramosa**, Bits of the two Oar Weeds, **Laminaria saccharina** and **Laminaria digitata** were also found washed up by tides from deeper water further out in the bay. At one point a small party wearing gum boots ventured further out into the mud of the bay to see the bed of **Zostera noltii** Hornern., one of the Eel Grasses, recolonising the lower part of the mud. After a picnic lunch, the sand and mud of the foreshore were investigated by digging in promising places. In this way, burrowing animals such as the Sand Gaper, **Mya arenaria**, the Banded Wedge Shell, **Donax vittatus**, Common Cockle, **Cardium edule**, **Macoma balthica**, the Edible Periwinkle, **Littorina littorca**, Flat Periwinkle, **Littorina littoralis**, Rough Periwinkle, **Littorina saxatilis**. Spire Shell, **Hydrobia jenkinsi**, Lugworm, **Arenicola marina**, Ragworm, **Nereis diversicolor**, and **Tubulanus annulatus** were found. On the surface nearby were such things as the Common Mussel, **Mytilus edulis**, Limpet, **Patella vulgata**, with the common Acorn Barnacle, **Balanus balanoides** attached to its shell, the Shore Crab, **Carcinosmaenas**, the Shrimp, **Gammarus zaddacii**, Common eel, **Anguila anguila**, the two species of jellyfish, **Anrelia aurita** and **Chrysaora isosceles** together with the little Sea Fir, a Coelenterate called **Sertularella polyzomas** on a strand of red seaweed.

Later in the afternoon, a number of enthusiasts carried on the good work at Ross Links, whilst many set off for home because of the stormy weather. The only additional Mollusc found on the shore at Ross was the OYter Shell, **Lutraria lutraria**.

A note of the birds had been kept during the whole expedition. Immediately on arrival at Ross Links, we were interested in three birds some distance away in a field. They were watched for some time with great keenness in the hope that they were Pallas's Sand Grouse which had been reported from the area. They were really too far away to identify with certainty so Mr. Hinton-Clifton finally walked towards them and put them up. They proved to be Partridges! Other birds noted were Lesser Black-backed Gulls and Herring Gulls, several Black-headed Gulls looking rather mealy about the head. Sandwich Terns fishing just off shore with the rising tide, one Spotted Redshank, one Bar-tailed Godwit, several Redshanks, one Shelduck, Widgeon, Mallard, Turnstone, Oyster-catchers, Curlews and Carrion Crows.

BIRTLEY AND CHESTER-LE-STREET NATURAL HISTORY SOCIETY

The lecture season opened on September 2nd with a lecture on Plant Galls by Mr. F. B. Stubbs. He brought along with him many fresh examples and during the course of the evening dissected out a gall mite (*Enophyes* species), which he mounted under a microscope for all to see. Mr. E. Hinton-Clifton also brought along a large number of marine specimens commonly seen along the foreshore. Many of these had been seen in their natural habitat by the members who had been with the N.N.U. expedition three days before and reported above. We were most interested because of this to hear more about them. Mrs. Littlefield lectured on the natural history of Lapland on September 30th. Her slides were beautiful, and as a result it is quite a possibility that many members are now saving up for a trip to the north to see for themselves.

One outing has been held since the summer. This was to the old railway track south of Lintz Green station. The fruits were in abundance. Not for many years have we seen such crops of brambles, acorns, rowan berries and ash keys. The warm sunny weather during this summer has produced its expected harvest.

SUNDERLAND NATURAL HISTORY SOCIETY

The Annual Report for 1968 shows some changes from previous years. Originally, the purpose of the report was to publish lists of species new to the area or encountered (birds) during the year. The lists this year are not so extensive due principally to the loss of the Botany Section's records in the post. Instead there are accounts of the many field outings together with articles on Potholing and of Robert Dick of Thurso.

NOTES AND RECORDS

NOTES.

Bird Notes from Stanley. The following notes may be of interest to readers:—

Ruff: Autumn passage. From September 1st to 8th, a single bird was present at the Tanfield Ponds.

Ringed Plover: Inland. From July 20th to 27th, a single bird stayed at the Tanfield Ponds, an unusual sighting so far from the coast.

Common Sandpiper: Between July 20th and July 29th, one or two birds frequently noted at the Tanfield Ponds.

Green Sandpiper: Tanfield Ponds. A single bird seen on July 29th.

Golden Plover: On July 17th, a single bird was present in a pasture near Tanfield Village. Again on September 14th a party of 38 birds was noted at the same locality.

Grasshopper Warbler: From July 3rd to 29th, a single bird was seen and heard 'reeling' in the Tanfield Ponds area.

Chiffchaff: A single bird was seen and heard near Tanfield Ponds on July 2nd. R. Marston Palmer.

The Privet Hawk Moth, *Sphinx ligustri* L. A fully grown larva was brought into the Hancock Museum, on Friday August 15th, 1969. It was found by Mrs. Lightley of Rothbury Terrace, Heaton, Newcastle upon Tyne, on a pathway near to her home. It successfully pupated on August 25th. A. G. Long.

This interesting record poses an important question. Is the species established in the Heaton area, where the caterpillars could easily feed on privet undoubtedly common as a garden hedge plant? Robson could cite only one record for this moth and that was of such doubtful circumstance that he put it down to accident. What is more it was in Hartlepool and the date was in the 1890's. This looks like a new county record. Ed.

The Red Admiral Butterfly, *Vanessa atalanta* L. In addition to the quite spectacular invasion of the Painted Lady on August 3/4th, we have also had reports of the Red Admiral, another migratory insect which is rather more frequent in its arrival here. The first record for 1969 came from Mr. C. J. Gent who saw one in Gosforth on May 31st. There follows quite a gap until September 2nd when one was present in our garden at Chester-le-Street, although we had seen it on the Island of Inishmore, Aran, in the west of Ireland during August. Mr. E. M. Burns reported another single insect in his garden at Chester-le-Street on 22nd September. The best record, however, comes from Mr. Fred Wade for late September. He writes:—"Red Admiral butterflies quite common among large clumps of white flowered Yarrow growing in great profusion on the roadsides between Chew Green Camp and Makedon Farm, Upper Coquetdale. T.C.D.

The New Zealand Burweed, *Acaena anserinifolia* (J. R. & G. Forst.) Druce* This plant which is, of course, a comparatively recent introduction, is known to many naturalists who have visited the sand dunes at the northern end of Holy Island. Here it is a real pest. I have seen the fruits attached so thickly to people's ankles that they could not walk any further. Damage to birds and especially the young has often been reported and is especially serious.

Until recently it had not spread beyond the adjoining sand dunes across the causeway. On August 27th it was found growing on the north bank of the River Coquet below Linshiels, by Mr. J. S. Davison, the identification being confirmed by myself. This is such a long way from Holy Island that transportation by birds is the only possible way it can have arrived there, unless someone has deliberately planted it. The shore of Holy Island is such a well used place by waders that the explanation is a reasonable hypothesis. One need only imagine the passage backwards and forwards between moorland

and seashore of the curlew and the answer could be there. A. G. Long & T.C.D.

An encounter with a Roe Deer. Whilst collecting material for class work at Waldrige in May this year, I heard rustling in the undergrowth in the woodland nearby. The ground sloped upwards quite steeply, away from the stream alongside which I was gathering Marsh Marigolds. Curious as to who else could be in this lonely spot, I stood up and looked for the intruder. Not five yards away and looking down at me with great interest was a Roe Deer Stag. We stared at each other for several seconds, both quite still. Since I had one foot in a bog, I had at last to try to extract it and stand in a more comfortable position. The deer was not startled by my movement and continued to look at me. Eventually it decided that it had had enough of the view and moved off two or three steps. I thought that would be the last I would see of it, but no, it put its head down and began to crop the grass. This it continued to do as it moved slowly away until it became lost in the thick undergrowth. I retreated in the opposite direction, wondering where I had read that Roe Deer were extremely timid animals that dashed off out of sight as soon as they became aware of the presence of a human being anywhere near. T.C.D.

The *Cistus foresteri*, *Procris geryon*. Hubn. This very local moth, with the intriguing name, is bright green with a golden tinge along the front edge of its forewings, a most unusual colour. The caterpillar feeds on the Common Rockrose, *Helianthemum chamaecistus* Mill., so that it is an insect which is almost confined to limestone habitats. I have heard it said by other collectors and indeed it has been my own experience in the past, that it flies only during the morning in bright sunshine and is then quite quick on the wing. This was not my experience on 27th July at Blackhall Rocks. It was in the afternoon and quite sunny when I came upon the insect in considerable numbers in one of the many cliff hollows. Contrary to custom it was sitting about on the vegetation and when disturbed did not rise more than a foot above the herbage before settling down again. It was quite a simple process to examine the moth without disturbing it and I do believe I could have boxed any number by merely coaxing them off the leaves into a suitable receptacle. They were present only on the one south facing bank of one hollow. I saw no more after leaving that place. T.C.D.

RECORDS

LEPIDOPTERA—BUTTERFLIES AND MOTHS

<i>Sphinx ligustri</i> L. Privet Hawk.	67
A single larva on the pathway in Rothbury Terrace, Heaton, Newcastle upon Tyne on August 15th 1969. Mrs. Lightley.	
<i>Epmotia rubiginosana</i> H.-S.	66
Fairly common at light in the garden at Chester-le-Street.	
<i>Epinotia crucialis</i> L.	66
Bred freely from larvae feeding on <i>Salix atrocinerea</i> Brot. on Waldrige Fell and <i>Salix purpurea</i> L. at Wolsingham.	
<i>Epinotia augustana</i> Hubn. ;	66
Bred from <i>Salix</i> , Hart. Not common.	
<i>Epinotia mercuriana</i> Frol.	66
Fairly common in restricted areas on Bollhope heather moors and in Upper Teesdale.	
<i>Aicylis unguicella</i> L.	65,66
Not common flying near <i>Erica cinerea</i> L. on Cronkley Fell (65), Widdybank Fell and Waldrige Fell (66).	
<i>Ancyliis geminana</i> Don.	66
Fairly common, Forest-in-eesdale.	

Ancylis laetana F.	66
Rare Waldrige Fell.	
Ancylis badiana Schiff.	66
Very common, Chester-le-Street, Waldrige, Sherburn, Tanfield, Upper Teesdale.	
Ancylis myrtillana Treits.	66
Fairly common Chester-le-Street, Waldrige.	
Bactra lanceolana Hubn.	66
Very common around patches of Juncus , Chester-le-Street, and especially on Waldrige Fell.	
Lobesia littoralis Curt.	66
Very common at light in the garden at Chester-le-Street.	
Endothenia ericetana Westw.	66
Not common Chester-le-Street, Waldrige.	
Endothenia antiquana Hubn.	66
Common at light in the garden at Chester-le-Street.	
Apotomis turbidana Hubn.	66
Very common Chester-le-Street, Waldrige.	
Apotomis betuletana Haw.	66
Bred commonly from Birch, Chester-le-Street, Waldrige.	
Apotomis sauciana Frol.	66
Bred freely from Bilberry collected from Waldrige Fell.	
T.C.D.	

FLOWERING PLANTS AND FERNS

Acaena anserinifolia (J. R. & G. Forst.) Druce. New Zealand Burweed.	68
Growing on north bank of R. Coquet below Linshiels 27-8-69. Det. A. G.Long, J. S. Davison.	
Epilobium nerteriodes A. Cunn. New Zealand Willow Herb.	68
A small patch on the Chattlehope Burn, Catcleugh. C. J. Gent.	
Lycopodium alpinum L. Alpine Clubmoss.	67
Plashetts in the N. Tyne valley; growing on an old pit heap, 22nd August 1969.	
Thelypteris dryopteris (L.). Slossom. Oak Fern.	67
Growing at Wainhope Linn on the Plashetts Burn, N. Tyne valley, 22nd August 1969.	
Arctostaphylos uva-ursi (L.)Spreng. Bearberry.	67
In fruit at Wainhope Linn, Plashetts Burn, N. Tyne valley, 18th August 1969. A. M. Tynan. .	
Hypericum humifusum L.Trailing St.John's Wort.	68
On basalt at Spindlestone.	
Dianthus deltoids L. Maiden Pink.	68
On basalt at Spindlestone. Sand dunes W. of Warkworth Harbour.	
Stellaria pallida (Dumort) Pire. Lesser Chickweed.	68
Holy Island, near Emanuel Head. Glororum S. of Craster.	
Moenchia erecta (L.) Gaertn., Mey & Scherb. Upright Chickweed.	68
On basalt at Spindlestone.	
Scleranthus annus L. <i>sensu lato</i> .Annual Knawel.	68
On basalt at Spindlestone. By forestry road in Thrunton Forest.	
Montia fontana L. subsp. chondrosperma (Fenzl.) Walters.	67, 68
On basalt at Great Bavington (67). Walltown Crags (67), S. of Craster (68). Near Haughtrother Wood (S.W. of Bardon Mill) (67). All determined by Dr. F. H. Perring.	

Montia fontana L. subsp. intermedia (Beeby) Walters. Near Mohope (W. Allendale). Det. F. H. Perring.	67
Halmione portulacoides (L.) Aell. Sea Purslane. Mouth of Chevington Burn.	67
Geranium andressii Gay x versicolor L. Tweed bank near Norham.	68
Geranium pusillum L. Small-flowered Cranesbill. Roadside near Bondicarr (near Hauxley).	67
Genistra tinctoria L. Dyer's Greenweed. Hadston Links.	67
Trifolium arvense L. Hare's-foot. Hartley Links.	67
Filipendula vulgaris Moench. Dropwort. Still at Spindlestone.	68
Saxifrage stellaris L. Starry saxifrage. By Beldon Burn near Beldon Shields and near Riddlehamhope.	67
Epilobium nerterioides Cunn. Gilderdale. Near Broomlee Lough. By road in Slaley Forest near Embley Fell.	67
Circaca intermedia Ehrh. Intermediate Enchanter's Night-shade. Wood on W. bank of S. Tyne near Lambley viaduct.	67
Oenanthe lachenalii C. C. Gmel. Parsley Water-dropwort. Salt marsh S. of Alnmouth.	67
Aethusa cynaphim L. Fool's Parsley. Berwick. Near Birling Carrs (N. of Warkworth) (68). Hauxley. Hartley Links (67).	67, 68
Polygonum viviparum L. Near Heathery burn, on the Beldon Burn.	67
Polygonum bistorta L. Snake-root. Lower part of the Ayle Burn.	67
Andromeda polifolia L. Marsh Andromeda. Near Whitfield Lough. Peat-bog S. of Comb-rigg (near Kirkwhelpington).	67
Arctostaphylos uva-ursi (L.) Spreng. Bearberry. By the Darden Burn, and also to the N. of it, towards Sandy Crag.	67
Pyrola minor L. Common Wintergreen. Woods between Harbottle and Alwinton. Wood by Rothley Lake.	67
Primula farinosa L. Bird's-eye Primrose. Still in the neighbourhood of Whittle Dene.	67
Primula veris L. x vulgaris Huds. Common Oxlip. Near Thirlwall Quarry.	67
Anagallis tenella (L.) L. Bog Pimpernel. Embleton Links. Tittington Burn near E. Bolton. G. A. & M. Swan.	68

THE VASCULUM

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Edited by
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THE POPLARS, CHESTER-LE-STREET

BY THE WAY

Secretaries of Societies and other contributors to the "Vasculum" are invited to send their notes to the Editor before 15th March, 1970.

ALIENS

The hedges bounding old estates seem to repay close examination as they often contain interesting and unusual alien plants, almost always shrubs and trees planted by past owners.

Recently, near Cocken, while checking up on the Spindle tree and the Wayfaring tree (this latter is not strictly alien but is not regarded as native to our counties), we were delighted to find Hop, Teasel and Fly Honeysuckle firmly established in the same area.

It is interesting to note that within a few yards two other foreigners are flourishing, the Himalayan Balsam, which has made itself at home along most of our river banks, and the Giant Hogweed (a native of the Caucasus) which can also be found in a number of places along the River Wear. Both of these species, being mainly along river banks, have obviously arrived by a different method.

The boundaries of Lambton Park also contribute their quota. Alpine Currant appears in a number of places as does the Teasel. Near Bummoor one can find Turkey Oak and several fine stands of Dogwood. Although most of the fruits of the Dogwood were aborted, careful search produced about half a dozen that had matured. These were white and rather like a small mistletoe berry, indicating that we were not dealing with the "common" species, in fact further examination showed that it answered very closely to Clapham, Tutin and Warburg's description of *Cornus stolonifera* Michx.

Other shrubs one could mention as being planted in Lambton Park and other old estates round Chester-le-Street are Snowberry and, of course, Rhododendron and Azalea. The Rhododendrons are seeding themselves and forming quite a natural thicket in the Hermitage Estate. Here also, by the stream, are long stretches of **Polygonum cuspidatum** Sieb. & Zucc., sometimes commonly called Japanese Knot-grass.

Amongst herbaceous plants the spread of the Rosebay Willowherb has been phenomenal during the past 50 years and many competent botanists have argued that this is the American strain, although there is little or no morphological difference to be found between it and our native strain which still remains confined to rocky ledges on high ground. Another is the New Zealand Burweed, **Acaena ansermifolia** (J. R. & G. Forst.) Druce, which has more recently been making itself a nuisance on Holy Island.

These plants are all so well established and spreading in our counties, that one wonders whether, in some cases, it is not time to look upon them as part of our native flora. At what stage does a foreign plant become accepted as an integrated part of our wild vegetation ?

THE SOCIETIES

NORTHERN NATURALISTS' UNION

What should have been the second J. W. Heslop Harrison Memorial Lecture, but in fact was the first from an outside source, was given by Dr. M. Holdgate, Assistant Director of the Nature Conservancy, in the Appleby Theatre, Durham University Science Laboratories on October 25th 1969. Dr. Holdgate took as his title "Past and Present Floras and Faunas of Antarctica", a subject he is well qualified to speak upon, having explored in the region more than once. Just over 60 people turned up, not many considering the number of naturalists in the area and the importance of the occasion.

Dr. Holdgate began by giving us some idea of the vastness of the Arctic Continent, its weather and other characteristics. The geological history followed, showing that present day Antarctica was formed by a huge land mass having broken away from further north during late Mesozoic and Tertiary times. Fossils show that at that time beech trees similar to those at present growing in Tierra del Fuego, and monkey puzzle trees were to be found in the forests together with a herbaceous species of **Acaena** like the one growing on South Georgia and a relative of that species from New Zealand, recently established on Holy Island.

At one time there were 22 or 23 species of penguins, including a man-sized one about 5 ft. 4 ins. tall. These are still the most characteristic birds of the continent, represented now by such well known types as the Emperor, Adelie, Gentoo and Macaroni penguins. There are other birds, of course, like the Cape Pigeon and Snow Petrel.

The sea round about the ice shelf, where it is open for a short time each year, is much richer in surface life than anywhere else in the world due to the great amounts of nutrient salts dissolved in it. This results in a terrific growth of planktonic organisms based on many species of diatoms which in their turn support many species of crustaceans like Krill. It is on these planktonic crustaceans that many large mammals like the whales feed. The Weddell Seal is very characteristic, having a great capacity for diving and being able to stay under water for about 50 minutes, an adaptation that is very useful in a place where much hunting is done under the ice. Here too are the elephant seals, the largest members of this group.

On the continent itself, there are several places where the surface of the land is exposed. It is, as one would expect, extremely bare and rocky but not entirely devoid of life. Lichens are just about the only plants to find a footing but they manage to support a few soil animals like worms and springtails.

He then described some of the details of the vegetation on one of the islands of the South Orkney group where Dr. J. B. Cragg had set up a biological station. Here, he investigated a series of volcanic vents, giving off steam and a little sulphur which had warmed up the surface in small patches to as much as 10° C., and supporting mosses and liverworts. The grass, **Deschampsia arctica**, found by the sea is the southernmost vascular plant. Fungi and bacteria are also present in some numbers.

All through this fluent and racy lecture the various points were illustrated by slides taken on one or other of the many expeditions which have taken place during the last 12 years. The lecture closed with a vote of thanks from Mr. J. J. Robson, for a very pleasant afternoon.

After tea, members inspected the exhibits, which were rather less plentiful than usual. They included a series of our rarer butterflies by Mr. Dunn and beautiful colour transparencies of both plants and animals by Dr. Todd.

BIRTLEY AND CHESTER-LE-STREET NATURAL HISTORY SOCIETY

During October and November, four outstanding lectures have been enjoyed. On October 14th a record audience came to listen to Mr. Jock Tait talk authoritatively about recent archeological discoveries in Chester-le-Street. Since we were actually sitting over the foundations of the granary of the Roman Fort, this was especially interesting. James Alder followed a fortnight later with an account of a bird-watching expedition in Norway. Apart from his superb photographs, this was accompanied by anecdotes told in his own, inimitable manner. "Animal Parasites" on November 11th was given from the point of view of a veterinary surgeon, Mr. A. Lowe, complete with a real pair

of sheep's lungs infested with living lung worms. Mr. J. Thompson took as his title on November 25th, "Man meets Plant". His thesis was the historical tangle between plants and witchcraft. From this an absorbing discussion developed with everyone joining in.

One more outing has taken place, on November 2nd. This turned out to be almost our last warm day of the most unusual autumn for years. Again the venue was the old railway line in Derwent Valley. Again this was followed up from Lintz Green, but for a much greater distance. The fruits were still on the trees for all to see and the fungi sprouting everywhere. Along the track in front of us skipped a weasel for several hundred yards. The deep yellows and bronzes of the leaves were most impressive. It was on this afternoon that our first redwings of the winter season were spotted, a whole flock of them.

SUNDERLAND NATURAL HISTORY SOCIETY

The Sunderland Society has had a varied programme of activities throughout the summer, comprising some five whole day Sunday outings and six evening outings. Most were well attended.

Early in October, the society published its fifth annual report and it is hoped that a botanical supplement will be published later in the year. The society is co-operating with the R.S.P.B. in the holding of a show of films in November.

A winter programme of lectures has been arranged and is now under way. Lectures are held in the Museum and Art Gallery on alternate Tuesdays at 7.15 p.m. Members of other societies are welcome.

NOTES AND RECORDS

NOTES

The Death's Head Hawkmoth. An interesting specimen was brought into Sunderland Museum on 9th October 1969, a Death's Head Hawkmoth, *Acherontia atropos* L. It had been found in a garden at Ryhope and the specimen has been retained. C. A. B. Steel.

A Red Admiral Butterfly. We had a living Red Admiral butterfly, *Vanessa atalanta* L., brought into the Hancock Museum on Saturday 8th November 1969. It was caught out of doors on an attic window by a window cleaner in South Gosforth. I am keeping it alive in a cool outbuilding to see how long it survives. It is still moving about, that is on 22nd November. A. G. Long.

The Peacock Butterfly once more in the north. This butterfly used to be seen quite regularly in our counties about 15 years ago, but never in any great abundance. For that we must go back some 60 or more years. None has been reported in these pages for several years now. It is therefore quite an important event to have. A report from Miss M. Johnson of one visiting her garden in High Heaton, Newcastle upon Tyne, on October 1st 1969. C. J. Gent.

Notes from Holy Island. While on a few days' holiday from September 21st to 26th, I made the following observations. Some of the unusual flowers still blooming were the Common Fleabane, **Pulicaria dysenterica** (L.) Bernh., Scarlet Pimpernel, **Anagallis arvensis** L., and Grass of Parnassus, **Parnassia palustris** L. The birds were on autumn migration and in the turnip fields a different collection could be seen each morning. Those of note included the Pied Flycatcher, a few of which were seen every day, the Wheatear, which was very abundant, and the Redstart, which was everywhere. Flocks of about 30 Whinchats, about 50 Siskins and 6 Goldcrests came and went at different times. Perhaps the most overwhelming sight was of a huge flock of about 300 Linnets.

L. P. Hird.

Unusually late animal activity at Chester-le-Street. A Small White butterfly, **Pieris rapae** L., was captured whilst flying in one of the corridors of Highfield Hospital, Chester-le-Street, on 25th November 1969. It was boxed and exhibited at the meeting of the Birtley and Chester-le-Street Natural History Society that same evening. It was a little torpid at first but willingly crawled over many members' hands. Later in the evening, presumably after warming up and being in the presence of bright lights, it flew round the room for several minutes. It was eventually boxed once more and now resides in my greenhouse.

Two days before, on November 23rd, a hedgehog was quite busy in the grounds of the hospital and appeared to be unusually tame. It was moving about in the daylight and did not seem to be afraid of being handled.

On the same day my wife was stung by a wasp when putting on her gardening gloves. The gloves had been lying in the greenhouse where the young queen wasp had decided to hibernate. She most obviously and painfully was not yet quite comatose.

All three incidents are unusual in that under normal circumstances, the animals concerned ought to have been in hibernation at this late date.

R. Harris.

RECORDS

INSECTA, ODONTATA—DRAGONFLIES

Libellula depressa L. Broad-bodied Libellula. 66
Mr. John Ruddick described to me a dragonfly which he had observed flying over a small pool near Wolsingham on September 7th, which I had no hesitation in identifying as this species.
C. J. Gent.

LEPIDOPTERA—BUTTERFLIES AND MOTHS

Conistra ligula Esp. Dark Chestnut. 67
I took the Dark Chestnut on ivy bloom at Cheviot View, Ponteland on 18th October 1969; -last year I got it at the same place on 20th October 1968.
A. G. Long.
Orthotaenia undulana Schiff. 66
Fairly common on edge of birchwood, Waldrige Fell.
Hedya nubiferana Haw. (**variegana** Hubn.) 66
Common at light in the garden at Chester-le-Street.
Hedya atropunctana Zett. (**dimidiana** Sodof.) 66
An occasional specimen at light in the garden at Chester-le-Street. common on Waldrige Fell.
Hedya salicella L. 66
Although Meyrick states that this species is local and apparently reaching its northern limit in Durham, I find it quite common round **Salix** on the river banks at Chester-le-Street and in similar habitats on Waldrige Fell and on Broomyholme Marsh.
Olethreutes schuiziana F. 65,66
In Upper Teesdale on Cronkley Fell and on Widdybank.

Olethreutes olivana Treits.(micana Frol.)	66
Not common. Hart.	
Olethreutes lacunana Schiff.	66, 67
Very common everywhere on any low growing vegetation, bramble, willow, etc. Specimens collected Chester-le-Street, Durham, Darlington, Upper Teesdale, Derwent Valley, Upper Weardale, Lanchester (66); Riding Mill, Slaley, Devil's Water, Hexham, Morpeth (67).	
Hysterosia maculosana Haw.	66
Not common. Hart.	
Acornuta nana Haw.	66
Frequent Chester-le-Street, Waldridge.	
Eupoecilia angustana Hubn.	66
Common, Waldridge, Chester-le-Street, Blackhalls.	
Lozopera francillana F.	66
Uncommon at light, Chester-le-Street.	
Chlidonia hartmanniana Clerck.	66
Local, Hart, Upper Teesdale, Upper Weardale.	
Aethes smeathmanniana F.	66
One specimen only, at light, Chester-le-Street, July 1961.	
Phalonia cnicana Westw.	66
Fairly common, Waldridge, Chester-le-Street.	
Phalonia nihigana Treits.	66
Common at light, Chester-le-Street.	
Agapeta hamana L.	66
Common, Chester-le-Street.	
Agapeta zoegana L.	66
Common, Waldridge, Chester-le-Street.	
Cochylchroa atricapitana Steph.	66
Not common, Chester-le-Street.	
Falseuncaria nificilliana Haw.	66
Common, Forest-in-Teesdale.	
Cochylys dubitana Hubn.	66
Common, Chester-le-Street.	
Stenodes straminea aw.	66
Common at light, Chester-le-Street.	
CORRECTION	
Delete the record in Vol. LIV, No. 3. October 1969, which reads Ancylis apicella Schiff. On further examination this proved to be another specimen of Ancylis laetana F. T.C.D.	

FLOWERING PLANTS AND FERNS

Anagallis minima (L.) E. H. L. Krause. Chaffweed.	68
On basalt at Spindlestone.	
Gentianella campestris (L.) Borner	68
Spindlestone.	
Cynoglossum officinale L.Hound's-tongue.	68
N. end of Kyloe Crags.	
Symphytum tuberosum L. Tuberous Comfrey	67
N. bank of Tyne, S.E. of Corbridge.	
Echium vulgare L. Viper's Bugloss.	68
Hulne Abbey.	
Lathraea squamaria L.Toothwort.	67
Wooded bank of Tasset Burn near Redmire.	

Clinopodium vulgare L. Wild Basil.	68
Sand dunes N. of Warkworth Harbour and also S. of Airmouth.	
Littorella uniflora (L.) Aschers. Shore-weed.	67
Hallington Reservoir.	
Galium boreale L. Northern Bedstraw.	67
N. bank of Tyne, S.E. of Corbridge. W. bank of S. Tyne near Kirkhaugh.	
Galium mollugo L. subsp. erectum Syme. Erect Hedge Bedstraw.	67
W. bank of S. Tyne near Kirkhaugh and E. bank near Barhaugh.	
Dipsacus fullonum L. Teasel	68
Bank of Tweed at Boathouse (near Norham).	
Petasites hybridum (L.) Gaertn. Mey & Scherb. Butterbur, female.	67, 70
On both sides of the Gilderdale Burn near its junction with the S. Tyne.	
Erigeron acer L. Blue fleabane.	67, 68
Sand dunes N. of Warkworth Harbour (68). Chibburn Links and Druridge Links (67).	
Baldellia ranunculoides (L.) Parl. Lesser Water-Plantain.	68
Snook (Holy Island).	
Butomus umbellatus L. Flowering Rush.	68
Tweed at Boathouse (near Norham).	
The determinations of the following Potamogetons were confirmed by Mr. J. E. Dandy:—	
Potamogeton gramineus L. Various-leaved Pondweed.	67
Delf Bum (near Donkinrigg).	
Potamogeton alpinus Balb. Reddish Pondweed.	67
Delf Burn (near Donkinrigg).	
Potamogeton x olivaceus Baagoe ex. G. Fisch	68
Whiteadder near Gainslaw Bridge, where it had apparently been found in 1942 by J. E. Dandy and G. Taylor.	
Potamogeton perfoliatus L. Perfoliate pondweed	67
Bolam Lake and larger Sweethope Lough.	
Potamogeton obtusifolius Mert. & Koch. Grassy Pondweed.	67
Bolam Lake.	
Potamogeton Berchtoldii Fieb. Small Pondweed.	67, 68
Whiteadder; quarry pond near Oxford (68). Derwent opposite Muggleswick. Delf Burn (near Donkinrigg). Larger Sweethope Lough (67).	
Zanichellia palustris L. Horned Pondweed.	67
Stream near Bondicarr (Hauxley).	
Allium scorodoprasum L. Sand Leek.	68
Near Berwick Castle.	
Allium schoenoprasum L. Chives.	68
Basalt at Spindlestone.	
Epipactis palustris (L.) Crantz. Marsh Helleborine.	67
Hadston Links.	
Epipactis helleborine (L.) Crantz. Broad Helleborine.	67
N. bank of S. Tyne near Crow Hall.	
Coeloglossum viride (L.) Hartm. Frog Orchid.	67, 68
Holy Island, near old Lime kilns (68). Whittle Dene (67).	
Dactylorhiza incarnata (L.) Vermeu. subsp. incarnata .	67
Whittle Dene W. bank of Tarset Burn near Redmire. Near Broomlee Lough.	
Scirpus lacustris L. Bulrush.	67
W. bank of Rede, S. of Rede Bridge.	
Blasmus compressus (L.) Banz. ex Link. Blysmus.	67
W. bank of Rede, S. of Rede Bridge. E. bank of S. Tyne, N. of Lambley.	

Carex lepidocarpa Tausch.. 07	67
Near Broomlee Lough. W. bank of Target Burn near Redmire. Whittle Dene.	
Carex paniculata L. Panicked Sedge.	67
W. bank of Tarsset Burn near Redmire.	
Carex dioica L. Dioecious Sedge.	67, 68
Titlington Burn near E. Bolton (68). Near Broomlee Lough. Whittle Dene (67).	
Glyceria maxima (Hartm). Holmberg. Reed-grass.	68
Tweed at Boathouse (near Norham).	
Melica nutans L. Mountain Melick.	67
Beldon Burn opposite Gibraltar. Derwent near Crooked Oak. Rocky wood on E. bank of Rede, just N. of Rede Bridge.	
Phleum arenarium L. Sand Cats-tail.	68
Sand dunes S. of Alnmouth.	
Lycopodium selago L. Fir Clubmoss.	67
Ridge End Burn (Kielder); Highshield Crag, on the Knar Burn (S. Tyne).	
Lycopodium clavatum L. Common Clubmoss.	67
Milknock Quarry, N. of Birtley (N. Tyne); White Kielder; Cove Sike, nr. junction with Ousen Sike (S. of Selby's Cove).	
Lycopodium alpinum L. Alpine Clubmoss.	67, 68
On crags, nr. the stream in Hen Hole at 2,150' (68). Millknock Quarry, N. of Birtley (N. Tyne) (67).	
Selaginella selaginoides (L.) Link. Lesser Clubmoss.	67, 68
Holy Island Links (68). Nr. Sewing Shields; Ridge End Burn (Kielder); Beldon Burn, above Heatheryburn; limestone crags above Highshield Crag, on the Knar Burn (S. Tyne); White Kielder; small stream nr. Eastnook (E. of Eisdon) (67).	
Equisetum telmateia Ehrh. Great Horsetail.	67
Capon Cleugh; Dene below Aydon Castle; Kingswood Cleugh.	
Phyllitis scolopendrium (L.) Newm. Hart's-tongue Fern.	67, 68
Waren Burn, nr. Spindlestone Mill; railway viaduct over Coquet; wall at Holburn (68); Capon Cleugh (67).	
Asplenium adiantum-nigrum L. Black Spleenwort.	68
Walls at Belford.	
Asplenium marinum L. Sea Spleenwort.	68
Under the cliffs nr. Howick.	
Asplenium viride Huds. Green Spleenwort.	67
Limestone crags above Highshield Crag, nr. the Knar Burn.	
Thylopteris phegopteris (L.) Slosson. Beech Fern.	67
Ridge End Burn (Kielder).	
Thylopteris dryopteris (L.) Slosson. Oak Fern.	67, 68
Nr. Rugley (68). Ridge End Burn (Kielder); Thomhope Burn (S. Tyne); Sneap (67).	
Botrychium lunaria (L.) Sw. Moonwort.	67, 68
Golf course between Embleton and Newton (68). By track up Akenshaw Burn, above Willow Bog; hay meadow at Heatheryburn (Beldon Burn) (67).	
Juniperus communis L. Juniper.	67
Ray Demesne; Blaeberry Burn and Carr's Burn (Whitfield).	
Helleboris foetidus L. Stinking Hellebore.	67
Nr. Bridge End (Warden).	
Aconitum napellus L. sensu lato. Monkshood.	67, 68
Waren Burn, just below Bradford (68). W. side of N. Tyne, nr. Green (67).	
Thalictrum flavum L. Common Meadow Rue.	67
W. side of N. Tyne nr. Green. G. A. & M. Swan.	