

# ATHENE

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*Headquarters:*

*Werneth Park Study Centre and Natural History Museum,  
Oldham*

*President: A. HUMPHREYS, Esq.*

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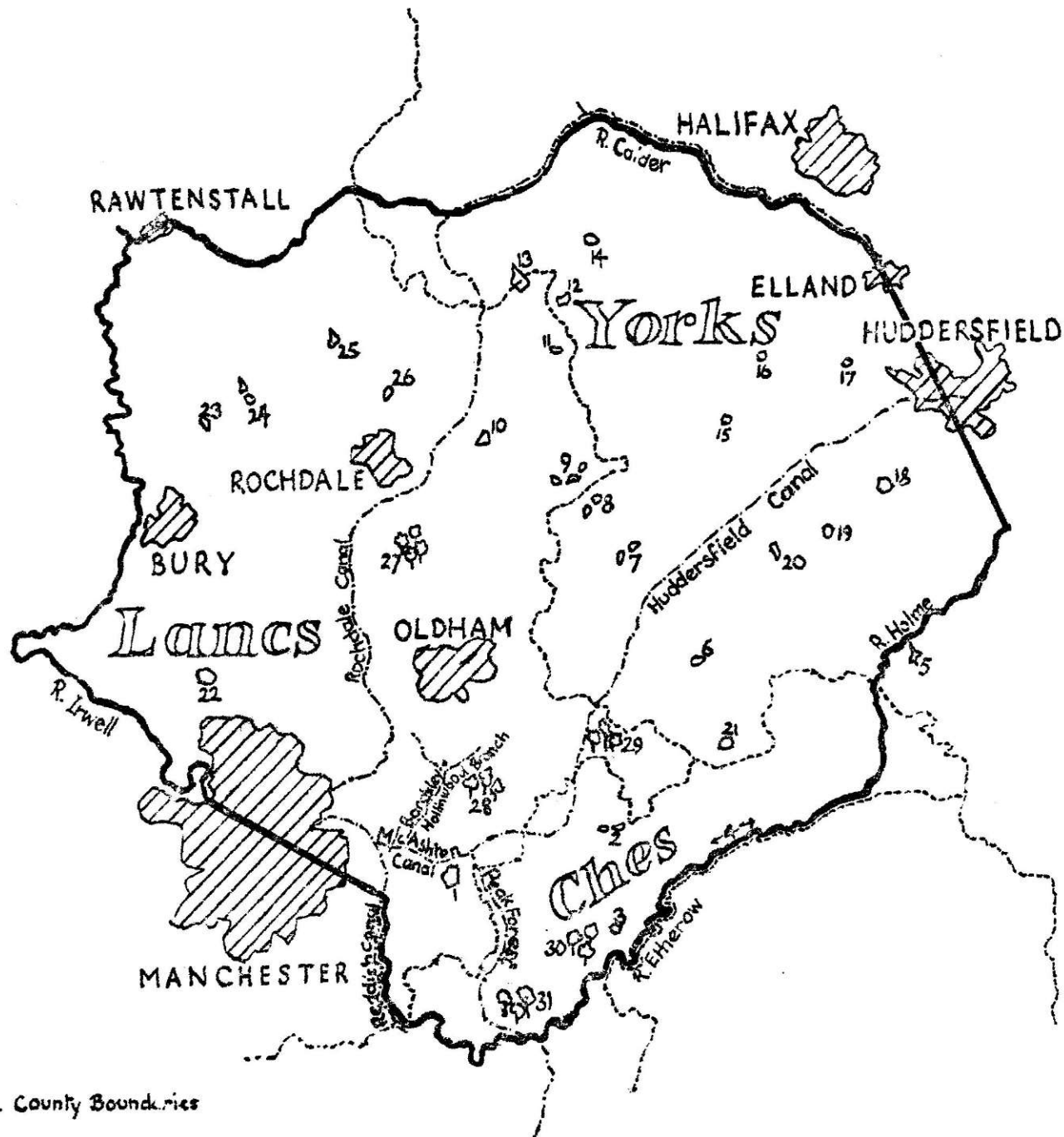
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----- County Boundaries

----- Canals.

### Reservoirs

- 1 - Audenshaw
- 2 - Walkerwood, Brushes, Swineshaw (3)
- 3 - Arnfield, Hollingworth
- 4 - Longdedale Valley (5)
- 5 - Yateholme, Brownhill, Riding Wood
- 6 - Yeoman Hey, Greenfield.
- 7 - Castleshaw (2)
- 8 - New Year's Bridge, Dowry, Readycon Dean
- 9 - Ogden, Pletthorne, Norman Hill, Rooden
- 10 - Hollingworth Lake
- 11 - Blackstone Edge
- 12 - White Holme
- 13 - Light Hazzels, Warland
- 14 - Withens
- 15 - Green Withens
- 16 - Ryburn, Baitings
- 17 - Ringstone Edge
- 18 - Blackmoorfoot
- 19 - Deer Hill
- 20 - Butterley
- 21 - Chew
- 22 - Heaton Park
- 23 - Ashworth Moor
- 24 - Naden (4)
- 25 - Whitworth (2)
- 26 - Watergreen

### Main Wooded Areas

- 27 - Tandle Hill Park
- 28 - Holdenclough
- 29 - Staley Big Wood
- 30 - Broadbottom and Compstall
- 31 - Marple Dale



## A Note On The Adjoining Map

This being the second number of 'Athene' I should like in a few words to thank all those who have subscribed so readily to our new journal, either as readers, or by submitting articles and records for publication.

It is hoped that anyone who has records or notes on the local fauna and flora will submit them to the Editor at Werneth Park Museum. Even if these are not published in 'Athene' they will be of use to the museum, where a file is being kept of all plants and animals which occur within the area.

Many readers will already know that the museum is hoping in due course to issue a series of handbooks on the fauna and flora, and in order that naturalists shall know whether their records come within the boundaries of the area, the museum authorities have kindly provided the accompanying map. Further copies of this map can be obtained from Werneth Park.

Some publications on the fauna or flora of an area include those species occurring within a radius of a certain number of miles. Such boundaries are often hard to follow and it has been decided in the present instance to cover an area, which, whilst being fairly extensive, is in the main marked by river courses or other recognisable limits. In the north the area reaches the Rossendale Valley, Bacup, and Todmorden, where the boundary follows the river Calder as far as Elland. From here it turns south passing west of Huddersfield, and follows the valley of the river Holme through Holmfirth, including the reservoirs adjacent to Holme. It then follows the A6024 road to Woodhead and continues along the Longdendale Valley to Tintwistle, after which it follows the river Ethrow through Broadbottom and eventually joins the river Goyt. Following the Goyt it passes through Marple Dale into Stockport. From here the line taken is north along the canal through Reddish to Clayton, and then on to the river Irwell, the meanderings of which it follows back to Rossendale.

## OBITUARY

DR. W. D. HINCKS, D.SC., M.P.S., F.R.E.S., F.M.A.

Dr. W. D. Hincks died at his home in Heaton Norris on July 12, aged 54 years.

I wish to pay here a short tribute to one who was well known to most members of this Society. First of all let me mention Dr. Hincks' work as a specialist on the group of beetles known as the Passalidae. Little was known about these tropical social beetles until he and J. R. Dibb began to describe a number of species new to science. The minute insects of the hymenopterous family Mymaridae, popularly known as Fairy Flies also received his attention and here again he was responsible for describing species new to science. His monumental work was however on the earwigs, and at the time of his death he had already completed two volumes of a Systematic Monograph of the Dermaptera of the World and was at work on a third. He studied all groups of British insects and together with Mr. G. S. Kloet was responsible for that indispensable reference work—'A Check List of British Insects' which appeared in 1945.

He did much work in conjunction with national societies in this country. Elected a Fellow of the Royal Entomological Society in 1930, he was vice-President in 1953, served on the Council from 1952-1954, and was delegate of this society to the Yorkshire Naturalists' Trust Ltd. He held office in the British Trust for Entomology and served on the editorial committee of the Society for British Entomology.

He was very closely connected with many natural history bodies in Lancashire and Yorkshire, for whom he had a special affection, and in addition to his entomological studies took a keen interest in Mycology.

Members of our own society will long remember Dr. Hincks' visits to us as a lecturer, and the lucid way in which he was able to present the many subjects on which he was so well informed. We shall not forget also that he was one of the people responsible for the negotiations resulting in Holden Clough becoming a Nature Reserve.

Above all else, we shall remember him for his delightful personality, the sympathetic understanding which he always displayed for other people's difficulties, his unlimited kindness, his humour which invariably enlivened the proceedings of many meetings, and his ability to say just the right word at the right time, thus preventing those awkward situations which sometimes arise in the course of society activities.

This was indeed a man to whom the epithet 'great' could be justly applied.

L.N.K.

# OUR SMALL BRITISH MAMMALS

BY A. FAULKNER TAYLOR, F.I.B.P., F.R.P.S.

Some of the most delightful of Nature's creatures elude our view when we make our weekend excursions into the countryside. We see the birds, the flowers, the insects, but what do we see of the mammals? Perhaps we see an occasional hare or a rabbit, or maybe a squirrel if our path takes us through the woodlands, but this is nothing compared with the wealth of life which lurks beneath our feet.

Apart from the fact that most of our mammals are nocturnal in habit, we miss seeing their daytime emergence because we are their enemies—sharp ears hear our approach and they stay under cover.

If we sit quietly whilst having our picnic we are more likely to hear, rather than see, evidence of these small creatures. A shrill high-pitched squeak is the most likely sign and we may think the noise comes from a mouse. In this conjecture we would be wrong because the most active of all mammals during the daytime, making its way beneath the grasses in constant search of insect food, is the common shrew.

In order to learn something about the distribution and numbers of these animals which are loosely, but incorrectly termed "mice" we must systematically trap in selected areas. As an instance, I live in a suburb of Sheffield, on the Manchester side, and my trapping ground extends to the Yorkshire/Derbyshire border. My house overlooks the Rivelin Valley which is devoted partly to dairy farming and partly to the catchment of water—Rivelin Dams being fringed by woods of conifer, birch, rowan and oak which extend upwards to the grouse moors. There are outcrops of gritstone flanking both sides of the valley. I selected four typical areas in which to place my traps: the edge of allotment gardens a mere 200 yards from home; a farm orchard surrounded by elm and oak trees; a "no-man's land" beneath a gritstone edge—marshy in parts and covered with coarse grasses, bracken and brambles; finally the side of a small dam used to store compensation water for the Rivelin which runs down to Sheffield.

Trapping at each site has been over a period of several months, my entire campaign being in its third year. I usually have three traps in position, two being the commercially-made "Kindheart." This is 18in. long x 5in. wide x 5in. high, the body being made from expanded steel. There is a door at either end which swings downwards, enclosing the animal, when the food platform is moved. In practice I have found that there is too



much friction with both doors open and many creatures can enter, eat the bait, then depart without tripping the mechanism. My modifications include complete removal of one door and the substitution of a wooden box at this end; this is partly filled with dry grasses or wood wool otherwise cold or wet weather will bring about death to the inmate. Another alteration is needed to prevent shrews escaping after capture. The swinging door is not a very good fit with the side of the cage, resulting in a gap of  $\frac{1}{4}$  in. or more in some places. I overcome this by wiring a piece of hard-board to the cage inside edge, shaped to the contour of the door when in the closed position.

Although it is essential to visit the traps at least once a day, I always take the precaution of providing shrews with food otherwise they quickly die. I place a small meat paste jar inside the trap with about a quarter of an inch of maggots in the bottom. As actual bait I have found nothing to beat cheese, preferably of the solid variety with the outer crust reinforced by muslin—namely Cheddar or Double Gloucester.

I also use a larger trap, home-made, which measures 24 x 7 x 7 in. but the only large creature caught in it has been a farmyard cat! Otherwise it catches the same species as my smaller cages—these accepting mammals as large as a fully-grown hedgehog.

The placing of the traps is quite important. The ground should be examined carefully for surface runs or entrances to underground tunnels. Ideally the trap should be set on a run amongst grasses or other types of undergrowth, then completely covered. Alongside dry stone walls is a profitable situation, or even better the inside of an old and decrepit wall where further disturbance will not be frowned upon by the farmer. The sides and top of the trap must always be covered, not only as an encouragement to enter, but to avoid the risk of interference from inquisitive gangs of boys.

Sometimes I try and increase interest in the trap by laying trails of maize outwards for six or seven feet. For the first week after re-siting I always keep the trap permanently open with plenty of food inside, also doing the same when I know that it will be impossible to re-visit within 24 hours.

At the allotment site, placing the traps in a broken-down dry stone wall, resulted in the following captures:—long-tailed field mouse, common shrew and bank vole. Field mouse would head the list numerically, with sometimes as many as three adults caught together—proving that their communal habits extend to their search for food and not just their sleeping and breeding quarters. In this same site I also caught a weasel, in all probability attracted by a trapped mouse. After the mouse had been released and the trap re-set, it would have entered itself to investi-

gate. With the traps placed in a tangle of grasses and weeds only a few yards from the same wall in a disused garden I added short-tailed vole to the list, also one pygmy shrew.

At several sites, particularly hedge bottoms, I have found shrews heading the list numerically. Of course it is difficult, during the breeding season, to identify the pygmy shrew—a small individual might so easily be a part-grown common shrew. After a while one learns to recognize the difference without actually handling. This is in the length of the tail relative to the body: the pygmy shrew having the longer tail. At a very rough estimate I would place the occurrence of common and pygmy shrews in my district as 20 to 1, being based on at least 60 trappings.

Alongside the dam, amongst horsetails, grasses and sallows, I caught two water shrews in three days. But after this exciting episode I had no further success over many months and after re-siting the traps on many occasions. The water shrew is larger than the common and its fur is almost black on the back and sides, with underparts a very light grey. It is a delightful creature and its smooth velvet-like coat compares with that of its close relative—the mole.

Although water voles are exceedingly plentiful in the banks of a conduit close to the dam I found them rather wary of the traps, or perhaps they were not particularly interested in a change of diet. I only caught three in traps during a six-month spell. In this wet situation common shrews were by far the most regular visitors, with the occasional field mouse and a single brown rat and a hedgehog. Bank voles and short-tailed voles appear to shun wet ground.

I expected to find plenty of short-tailed voles in the rough ground below the gritstone rocks, but this was not so. Again the common shrew predominated, closely followed by field mouse and rather less bank voles. I took one weasel from here. This distribution was supported by my experience in photography of a pair of barn owls which covered the same area. Before dark they brought shrews and bank voles, then after dark mainly long-tailed field mice.

Moving to the farmer's orchard I took shrews, bank voles, field mice and house mice. Of course, it is known that house mice live and feed away from houses, particularly during the warmer times of the year.

For keeping mice, voles (excluding the water vole), and shrews in captivity, I have found fish tanks to be ideal. A sheet of glass is used to cover the top, one edge being tilted to provide ventilation by bending a small piece of lead over the two back corners. The "vivarium" floor is covered with a sod of natural grasses complete with 3in. of soil; this absorbs the excreta and

it will keep in satisfactory condition for several weeks without need of attention. When first introducing a creature to a vivarium, also with every change of lining, I always provide a wooden nesting box—partly filled with dry grasses or newspaper. The inside measures 4 x 3 x 2in. high and one end swivels about a screw at one corner; this end is normally left open. Some individuals will continue to use a nesting box; some will construct surface nests—using grasses and dead leaves; others will burrow and build an underground nest.

A floor space of 18 x 12in. is adequate for three of four house mice and this number will live peacefully together. In the case of field mice, however, it is safer to keep only one male and one female together; two males sharing the same quarters with one female will often lead to a fight to the death.

Two short-tailed voles keep on good terms with one another. Bank voles, however, are particularly quarrelsome and unless there is plenty of soil and grasses for cover the death of a new arrival would be quite likely. No more than two should be kept together and the safest plan is to synchronize the introduction of a second vole with a complete change of lining, with two nesting boxes provided.

Mice and voles thrive on a mixture of wheat, barley and oats and I normally rub in wheat germ oil and cod liver oil. Variety is provided by the addition of small pieces of cheese and peanuts. Water is kept in a small meat paste pot. Short-tails should also be given clumps of grasses and small weeds. Bank voles will eat various soft fruits, also hips and haws. Voles should be given small twigs to chew on—they need something hard to keep wearing their teeth down.

Shrews must never be kept together and in any case it is problem enough to feed one alone. Any small living creature is suitable—beetles, caterpillars, spiders, earthworms. Maggots and mealworms can be bought to boost up the supply of natural foods which one must dig up from the garden. We always empty our teapot in the corner of the garden nearest the kitchen door and the damp leaves provide ideal conditions for the breeding of earthworms—but these alone in a patch 3ft. square would be grossly inadequate to keep one shrew alive.

A water shrew must be provided with water, a depth of two inches being adequate—but it is imperative that it should be changed once per day. A wooden platform, 8 x 6in. being a suitable size, should be placed in one corner of the tank, its top approximately  $\frac{1}{4}$ in. above the water level. A nesting box should be fixed to the platform and live food kept in a shallow glass pot.

Water voles cannot be kept successfully in a confined space. As an instance I have tried a wire-bottomed cage measuring 3 x 2ft.



and death has sometimes been as soon as four days in spite of a twice-daily change of a large water dish. They eat prodigious quantities of vegetation and clumps of horsetails, water mint and other water-side plants; although these appear to satisfy, death is probably caused by contamination of the food by the animal's droppings. I learnt recently, from a friend, that he attributes his success with water voles to a diet of turkey pellets. I have had good success, using a natural diet, by keeping one only in a big vivarium measuring 6 x 4ft. It is built in the garden and the sides are formed by sheets of second-hand 3/8in. plate glass 2ft. 9in. deep. These are sunk 9in. into the ground and the entire bottom is sealed with concrete and rubble. The concrete is covered with about 6in. of soil in which grows a selection of wild grasses and other plants. There is a small concrete pool, approximately an 18in. circle and 3in. deep in the middle. Let into the ground at one corner there is a small tree stump which adds to the pictorial effect.

In addition to one water vole I have introduced 2 or 3 field mice and one common shrew into this vivarium—all at the same time. One warning, however, must be observed regarding the introduction of one mouse into an outside vivarium, particularly during cold weather. Two will keep each other warm but almost certainly one alone will perish.

The large vivarium has been successful for hedgehogs and weasles but with the observation goes another warning—*both* will catch and eat mice, shrews and the small voles.

A glass-sided vivarium in the garden can be quite decorative and from my point of view—for photography—it has proved to be ideal. A simple alternative for a large outdoor cage is a wooden framework covered with 1/2in. mesh wire netting for hedgehogs, weasels, stoats, rats or rabbits. This should be placed on a lawn and moved at frequent intervals. Naturally it must be provided with a nesting box.

In conclusion I should remark that I have never set out to try and get these creatures to breed in captivity. The occasions when a litter has occurred have been discovered accidentally. In the case of finding a litter of house mice, possibly a week old, they were killed two days later. Five house mice shared the same vivarium and possibly this may have been the cause rather than my discovery. Once I found the remains of a litter of field mice when changing the earth and grass lining of the vivarium and here three mice had been sharing the same quarters. I feel that success might be achieved by keeping one male and one female together, then avoiding disturbance—particularly guarding against probing into the nest.

## AN INTRODUCTION TO THE MOSSES—Part 2

By F. B. DYSON

In this article, I shall attempt to describe a few mosses and indicate where to look for them. As I have already mentioned in my previous article, the environment of a moss is usually a very good guide in looking for any particular species. So true is this that it can be made use of in the artificial keys which are often used in floras for the determination of species. The study of the relation of plants to their surroundings is known as *ecology*, and perhaps nowhere is it more useful than when studying the mosses.

For example, an artificial key using ecology as a guide might read something like this (after certain introductions and separations):—

SUBSECTION (A) Growing on rocks (including walls, boulders and rock clefts) where only a small amount of soil has accumulated.

SUBSECTION (B) Growing on soil (including sand, clay, loam, peaty humus and gravelly detritus) on the banks of ponds and streams, etc.

SUBSECTION (C) Growing on trees, decaying tree stumps, wooden palings and on logs.

For example, although occasionally found on peat or rich humus under trees, a certain moss called *Tetraphis pellucida* is most often found on rotting trees, especially when the trees are lying on the ground. When you notice, whilst walking in the woods, a rotting tree which is covered with delicate plants so small that they resemble the pile on velvet, you may have *Tetraphis*.

To make almost certain of identification, look for the *gemmae-cups*. What these gemmae-cups are had better be explained at this point.

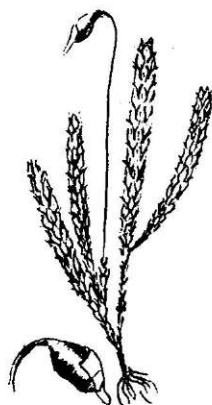
If you remember, when dealing with the reproduction of the mosses in the previous issue of this journal, I mentioned only sexual reproduction. But there is another form of reproduction which occurs commonly in mosses and their allies, the liverworts. The plants bear small bud-like bodies called *gemmae* capable of reproducing the plant asexually. The gemmae are released during rain and, as they are buds, they grow immediately into fresh plants. In *Tetraphis* the gemmae are borne in cups, which occur at the tips of the fronds, and resemble miniature birds' nests containing many eggs (the gemmae). You can see the gemmae easily with a pocket-lens. In passing, it is as well to mention that seldom do we find this particular moss in 'fruit'—i.e., reproducing sexually.



CAVERN MOSS.  
Showing barren, and  
fertile fronds.



Gemma cup of Tetraphis  
containing gemmae



SILVER THREAD MOSS.  
Plant with fruit—  
also fruit with  
calyptra attached.

Again, using this artificial key based on ecology, when attempting to find Cavern Moss you should look in caves, crevices in the rocks, holes in clay or shaly banks, or even in rabbit burrows *which face north*. Perhaps it does occur in crevices facing south, but I have not found it doing so myself. The most probable reason for this preference for a northern aspect is that dampness and deep shade are essential for the moss to flourish.

When you find Cavern Moss in caves or crevices, you are not likely to mistake it for any other moss, for the place will be glowing with a strong 'fluorescent light' of a beautiful pale green colour. The moss is not luminous in the true sense, but the effect is produced by the small amount of light received being reflected and intensified by cells of the plant in the same manner as the cat's eyes in the middle of the roadway reflect the light from the headlights of a car.

This is especially the case in the *protonema*, the thread-like portion of the plant that covers the surface of the soil or stone, and from which the leafy portion of the moss plant grows. This reflection of light by the moss can be demonstrated by obtaining a small portion of the moss along with the soil or other medium on which the plant is growing and putting this in a box something the size of a biscuit tin or slightly larger. Light should be excluded except through a hole 1½ in. to 2 in. in diameter in the side of the box. By arrangement of the light by trial and error, the



luminescent effect can be seen. I can remember this being demonstrated many years ago in the Oldham Art Gallery by the late Mr. F. Stubbs.

One of the places where you can find this moss is just over a mile beyond Denshaw, on the Huddersfield road, where the Dowry Reservoir ends. Look on the right hand side of the road (opposite the reservoir) and where the bank rises steeply to the moorland you will find a deep crevice. Following this to the top, you will encounter a hole from which water flows during the wet season. In the hole, providing it has not collapsed during the last few months, you can see the moss.

Another place where it can be found sometimes is below the Moorcock Inn on the Denshaw to New Hey road, about  $\frac{1}{4}$  mile beyond the Moorcock Inn in the direction of New Hey. On the left hand side of the road, outcrop coal has been dug in the past, and you have a very good chance of finding Cavern Moss in a hole that has not been filled in.

In the Rochdale area, on the moors behind Whitworth Church and near Wardle, again in outcrop holes, the moss may also be found.

Swan's-neck Moss, *Mnium hornum* is so called because the young capsules, with the calyptras attached, are gracefully curved like the neck of a swan. This moss is found growing on shady banks of streams and in beech woods and forms extensive carpets. It is a lover of acid soils, and when found on limestone is actually growing on rotted vegetation or decaying wood.

It can be found growing abundantly in our moorland valleys. For instance, on the right hand side of the private road that leads from the Clarence Inn at Greenfield to the farm at the foot of Chew Valley, and almost opposite the paper mill, it forms dense patches at the foot of the trees and on the bank of the stream.

If you examine this moss, you will notice that the stems are matted together with reddish-brown thread-like hairs. Through a pocket-lens it will be seen that the leaves are long and lance-shaped and the minute teeth on the reddish coloured border are set in pairs. The prominent nerve of the leaf does not quite reach the tip.

In spring, the upper leaves of Swan's-neck Moss are larger than the rest and form a rosette with a dark centre containing the *antheridia*, or male organs, of the moss. The female organs occur on separate plants. Where male and female organs are found on separate plants, the plants are called *dioecius*.

Silver Thread Moss, *Bryum argenteum*, is, as its name implies, a silvery-looking moss and must have been noticed by most people at some time or other because it is so common near the habitations of men.

If you have a garden, you will probably find it growing on your pathway; you will also find it growing between the paving stones in side streets and at the foot of walls, and if you search a waste cinder tip you will almost certainly notice the silvery patches. They are usually in the company of the Purple Heath Moss, and indeed these are most often the mosses that people mean when they say that they have moss growing on the garden path.

The silver tint of the Silver Thread Moss is due to the extreme thinness of the leaf, the upper part usually lacking chlorophyll, and the lower part being only faintly coloured. Each shoot has a smooth, cylindrical form and the leaves appear to be plaited round the stem. Late in the year, the 'fruits' are very noticeable with the arched setae and capsules hanging close to the stems.

If you possess a microscope or a powerful pocket lens you will find that the peristome teeth present a very beautiful object.

The next time you have a moment to spare, look at the lowly mosses. I am sure that you will be amply repaid and that you will have a pleasant surprise.

## MICROSCOPICAL NOTES

BY R. J. STANTON

On the shelves of the library of the Oldham Microscopical Society and Field Club are many books on Microscopy. Most of them have chapters on lighting, but much of the apparatus described is beyond the reach of the amateur in price and complexity. Nearly all of our readers use the microscope in their spare time and cannot afford long in setting up their equipment each time it is brought out for use. They want to know how to get results without having to make endless adjustments, and it is for them that these notes, based on practical experience, are intended.

Most microscopical preparations, being thin and more-or-less transparent, are examined by *transmitted light*—that is, the light passes through the object from beneath and then through the various lenses of the microscope to the eye. Microscopes are provided with a *sub-stage mirror* (which is usually plane on one side and concave on the other) which reflects light on to the slide being examined. All but the simplest instruments have in addition a *condenser*, which is essential for the higher powers. The function of the mirror and the condenser is to accept rays of light from some source, and bring them to a focus on the object. The concave mirror is arranged so that its focus is in the plane of the object; without a condenser, therefore, it can be used to illuminate the object, and gives quite good results for low power work.

The condenser, in conjunction with the *plane* mirror, is adjusted until the light beam is brought to a focus at the object, and gives better illumination than the mirror alone. With higher magnifications, more light is needed, and the condenser has to concentrate as much light as possible into a smaller area; thus a shorter focal length condenser is required, because the shorter the focal length of a lens or system of lenses, the smaller the image it forms. (Conversely, the more it magnifies an object placed at its focus when it is looked through). This can be proved by experiment; a pocket lens of 3x magnification will cast on a sheet of paper a much larger image of a window than a lens of 10x magnification. The more powerful lens has a shorter focal length than the other as it has to be held nearer to the paper to form a sharp image.

Most condensers are so made that the focal length can be changed by removing the top lens—without this lens, a bigger area of the object is illuminated at a lower intensity, and this is suitable for the lower powers of the microscope.

Before going any further, the first pitfall of the inexperienced user must be mentioned. It is impossible to get good results if a concave mirror is used with a condenser. *The plane mirror must always be used.* Why? Simply because in any spherical mirror, only the rays of light striking the centre of the reflecting surface are brought to a true focus. As the condenser therefore has to deal with rays travelling in various directions, it cannot focus them all exactly on the object, and the definition suffers.

Condensers are usually provided with a device for holding filters, and also a *diaphragm*. The filter-holder can be used for coloured filters, which are useful for many purposes, or for 'stops' to give special effects such as dark-ground illumination. The diaphragm is used to restrict the aperture of the condenser, and may be a series of holes of various sizes in a metal plate, or more usually, an iris diaphragm like that fitted in a camera. Closing the diaphragm increases the apparent definition, but here we come to the second pitfall. *Too small a diaphragm opening will introduce diffraction effects.* This is sometimes done intentionally to see certain features, but the beginner should approach this problem with caution, as diffraction rings round small objects can be very misleading, and it is often difficult to recognise exactly what one is looking at. The correct aperture setting depends on the aperture of the microscope objective lens being used, but fortunately, as will be described later, it is simple to find the best position for the diaphragm.

A lot of money can be spent on a special microscope lamp, but for everyday work simple equipment gives adequate results, and anyone can make an effective light source easily for about five shillings. A 'batten' lamp holder (that is, the sort that has

a base which can be fastened to a flat surface with screws) is mounted on a piece of wood about 6in. x 3in. x  $\frac{3}{4}$ in. thick. A baby-food or similar tin has lid and bottom removed using a tin opener, preferably the kind which leaves the rim of the tin smooth. The resultant open cylinder has a hole about 2ins. diameter cut in its side. This is easier to do than one would expect. A circle is marked on the tin, a hole is made inside this circle with a nail, and the hole enlarged until the point of an old pair of scissors can enter. Using only the points of the scissors, the metal is nibbled away round the circle. It does not matter if the hole does not look very neat at this stage. After flattening the jagged edge with pliers, a piece of stiff paper with a hole cut in it slightly smaller than the hole in the tin is glued on the outside to hide the rough edges. The inside and outside of the tin, and the wooden base are now painted black. The crackle-finish paint sold by some model shops is very good for this as it hides the edges of the paper and blemishes in the tin, and gives a professional look. In use, a lamp is placed in the holder, and the tin placed upright over it so that the hole comes opposite the microscope. As the tin is open at top and bottom, the lamp keeps cool. Make sure that the wooden base is narrower than the diameter of the tin so that the air can circulate freely.

We are now ready to go to work. Place the lamp about one foot away from the microscope. If the instrument is used in a tilted position, it will be necessary to stand the lamp on a box or similar object to raise it to the proper height. Adjust the sub-stage mirror, using the plane side, so that light is thrown up into the condenser. Place a slide on the stage of the microscope, and focus using a  $\frac{3}{4}$ in. lens. Then move the slide so that a clear portion of the mount is in the field of view, being careful not to alter the focus. Fully open the condenser diaphragm, and, looking through the microscope, adjust the focus of the condenser until the surface of the lamp bulb is sharp. It will help if a small ink mark is made on the bulb. This spot may be obtrusive when using the microscope, but the definition is not greatly affected if the condenser is moved a trifle so that the spot is just out of focus. The condenser is now set as far as focus is concerned, and need not again be moved.

Now to set the diaphragm to suit the objective in use, as mentioned above. Remove the eyepiece and look down the microscope tube. The back lens of the objective will appear flooded with light. Incidentally, any dust on the lens will be seen, and it will be apparent when the lens needs cleaning. Now if the diaphragm is closed, the actual aperture will be seen. Adjust the setting until the spot of light is slightly smaller than the back lens. Replace the eyepiece and the microscope is ready for use. This adjustment of the diaphragm can easily and quickly be carried out for any objective selected.

One other point should be watched. It is important, particularly with higher powers, that the rays of light reflected by the mirror enter the condenser parallel to its axis—in other words, they should not enter obliquely. It may appear to be difficult to achieve this, and many books on the subject contain complicated directions on how to line up the light source. But actually, it can be a very simple adjustment. Select a small spot in the field and focus backwards and forwards. If the light enters obliquely, the spot will appear to move from side to side or up and down. Keep focusing backwards and forwards with one hand and move the sub-stage mirror about with the other. A position will be found where the spot moves in and out of focus without changing its position. This method is quickly learnt and will give good results for all ordinary work.

We now come to yet another pitfall. Never be tempted to use too bright a light. Unnecessary eyestrain will be caused, and excess light confuses the image because of internal reflections in the glass of the slide and in the microscope lenses themselves. For most work, a 40 watt bulb gives ample light. By the way, a pearl bulb is recommended as the image of the filament in a clear bulb gives undesirable effects. The best distance from the microscope is soon found by experience. Do not reduce the brightness by closing the condenser diaphragm; as explained above, the diaphragm should be set at the proper aperture for best definition. The brightness can be reduced by moving the lamp farther away (but remember to re-focus the condenser), by reducing the wattage of the lamp, or by putting a neutral-tinted filter in front of the lamp.

Remember that we are not dealing with critical work. With the highest powers and when the finest definition is essential, special techniques are needed. But the methods just described should serve to help the beginner to find his way through the maze of contradictory instructions found in books of reference. In time, he will evolve his own ways of using his instrument to suit the work he is doing, but with a little advice will be enabled to do effective work from the start with the minimum of effort.

## More Interesting Plants Of Our Local Canals

BY W. F. EDWARDS

In my article of the previous issue, I mentioned how plants in and around water may be divided into groups, e.g., marsh plants of shallow water, plants with floating leaves, totally submerged plants, and free-floating plants. Many plants however, can be included in more than one of these groups. For instance, Water Starwort *Callitriche stagnalis*, may be found in a variety

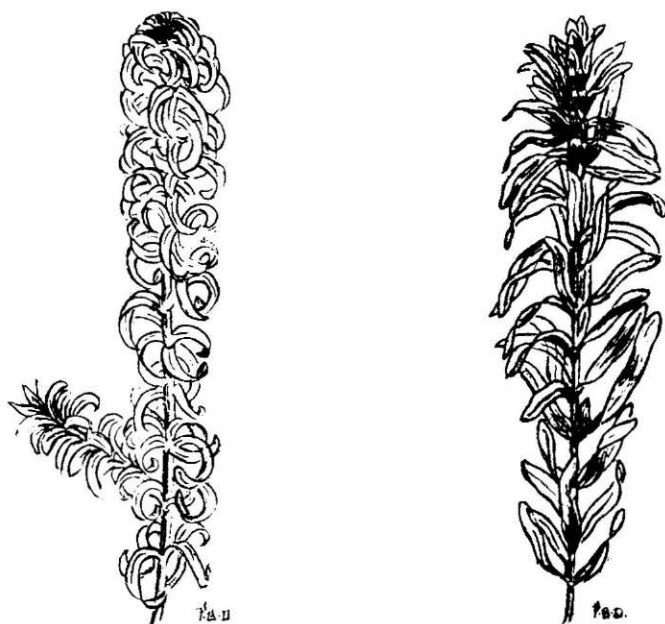


of situations ranging from deep water to wet mud. This is a bright green delicate looking plant with many small rosettes of floating leaves. The flowers are small and insignificant and of separate sexes, i.e., either wholly male or wholly female. Another plant which may overlap two groups is Fool's Watercress *Apium nodiflorum*, so called because of its resemblance to Watercress. This plant has leaves which may be more or less erect if the water is very shallow but which float and spread if the water is deeper. It does not belong to the same family as Watercress but is actually another near relative of our garden Celery, and has small white umbellate flowers. In the Hollinwood stretch of the Rochdale canal, the commonest plant is the Floating-leaved Water Plantain *Luronium natans*, which has two kinds of leaves. The submerged leaves are long, thin, and grasslike whilst the floating ones are elliptical, up to about 1 inch in length. It bears small white flowers with a yellow centre which also float on the surface of the water.

Another peculiar plant is the Water Soldier *Stratiotes aloides*, which stays submerged for most of the year, but floats to the surface to flower. This is a handsome plant and consists of a large rosette of olive-green leaves with saw-toothed edges and may be more than 1 foot across. The flowers in this country are white, about 1 inch in diameter and are female, whereas further South, the flowers are usually male. The plant reproduces itself vegetatively by offsets formed in autumn.

For those people who are interested in fish-keeping, many of the plants found in our local canals are very often used in aquaria. One of these is *Vallisneria spiralis* which has no generally accepted common name and consists of many ribbon-shaped leaves which look very attractive massed together in a tank with fishes playing hide-and-seek amongst them. The specific name *spiralis* is derived from the spiral contraction of the stalked female flower after it has been fertilised. Two others often used are very much like larger varieties of Canadian Pondweed *Elodea canadensis* which is itself common in our area. The first of these is *Lagarosiphon major* (see illustration), which has dark green curly leaves arranged spirally around the stem. It is a good oxygenator but does not always flourish in heated water under artificial light which is very strange since it hails from Africa where it grows in bright sunshine at temperatures between 75 deg F. and 85 deg. F. The other plant is *Egeria densa* (see illustration) which is very similar to *L. major* except that it has olive-green leaves in whorls of 4 (rarely 6) and the leaves are not so curly. This plant too is a good oxygenator and flourishes in heated water if provided with a good illumination, so that it is very suitable in aquaria for tropical fish. *E. densa* is a native of South America and though it normally has male and female flowers, only male flowers have been found in this country.

Both these plants are now present in some stretches of our canals and were first recorded in Droylsden in 1953 in warm waste water from cotton mills. They have obviously been planted by aquarists and I myself have seen them being harvested by pet-store dealers in a similarly heated length of canal water near a local cotton mill. Like the Canadian Pondweed (i.e., given suitable conditions), these plants grow extremely rapidly, and any broken fragment of a stem will produce a new plant, so that this stretch became almost solid with the two alien plants and *E. densa* flowered nearly all the year round. Recently the mill has turned over to electricity as its source of power and the canal water is no longer used, so that it will be very interesting to see if either of these plants survive in cold water or whether they will be ousted by Reed-grass. One result so far is that the *E. densa* has ceased to flower.



Left : *Lagarosiphon major*; Right : *Egeria densa*.

Another unusual occurrence of an aquarium plant being found in our canals is that of *Ludwigia palustris*, a plant having oval leaves about 1 inch long in opposite pairs on much branched stems, the whole plant very often having a reddish tinge. In the "Flora of the British Isles" (Clapham, Tutin, and Warburg) this plant is said to be native only in pools in the New Forest and Jersey.

The last remaining group of plants are those which are free-floating and these include Frogbit *Hydrocharis morsus-ranae* and species of Duckweed *Lemna*. Frogbit has almost circular leaves up to about 2 inches in diameter which are like miniature Water-Lily leaves. The small flowers are white with 3 petals and a yellow centre but the plant normally reproduces itself by turions or winter buds. These are formed at the end of the stolons in autumn and sink to the bottom of the water in winter when the plant dies. These buds are egg-shaped and always rest with the pointed end upwards. In spring, the bud-scales open, the young leaves develop air-filled spaces, and the plant floats to the surface. Ordinary Duckweed *Lemna minor* can nearly always be found floating on stagnant water and in some places is so thick as to form a green carpet on the water's surface. Each plant consists of a number of bright green discs up to about a quarter of an inch in diameter, each disc with a single root suspended in the water below, and since there is no stem, botanists hesitate to call the disc a leaf, so use the term *thallus*. This plant also produces one of the smallest flowers in the British Isles but I have only seen it in flower in the heated conservatory at the Study Centre. There are three other species of Duckweed, the first being Ivy-leaved Duckweed *L. trisulca*, which is fairly common in our canals. The other two are Great Duckweed *L. polyrrhiza*, and Gibbous Duckweed *L. gibba*, and although neither are very common, they have both been recorded in canals in our area.

## IN MY OPINION

BY STENTOR

I agree with no men's opinions: I have some of my own.—Turgenev

It should be made much less easy for irresponsible people to carry guns. Any weekend one can see lads carrying airguns, rifles and shotguns to the danger of the public. In recent years, in this area, there have been complaints of shots breaking windows, pellets injuring children, and one case at least of a dangerous attempt to frighten two women in Holden Clough by firing shots close to them. And earlier this year a 17-year-old youth accidentally killed himself with a shotgun belonging to his friend when they were out on a bird hunting expedition. It is surprising that there have not been more accidents, but it is not generally known how greatly the accident rate is increasing year by year. For example, the number of people killed or injured by shotguns and airguns rose from 828 in 1931-34 to 3,322 in 1956-58.

All too often, when wrongdoers with guns are caught, they plead ignorance of the law. Many boys carry guns without knowing that licences are necessary, and parents who think twice about

allowing their sons to ride a bicycle in the streets show a surprising indifference to their safety by allowing them to carry dangerous weapons.

Before I can drive a car without close supervision, I have to satisfy the authorities that I am competent to handle it, and have at least a superficial knowledge of the Law as it applies to road traffic. But I can get a gun licence at any post office without any formality. The only qualification seems to be needed by the man behind the counter—he has to be able to write.

The lack of basic skill in handling guns shown by their owners astonishes me. During the past two years I have noticed, within five miles' radius of the centre of Oldham, loaded guns being pointed at others in a casual way, a gun being dragged through a hedge muzzle-first, shots being fired into a canal without thought for someone on the tow-path in the line of fire, and shot spattering across a lawn where a few moments before had been sitting a party of young people. No one was injured—but someone could easily have been killed. I need not mention the wanton killing of birds and small mammals which goes on every weekend and summer evening.

The Police in Oldham have recently taken a strong line, and are to be congratulated on their efforts. But they would be greatly helped if it were not so easy for a schoolboy to walk into a shop and buy lethal weapons. A sign that the wishes of naturalists and responsible people are not being neglected is the fact that Mr. Brian Harrison, M.P., introduced a Private Member's Bill in March which sought to restrict the use of firearms by young persons. This Bill was, unfortunately, never given its final reading because of the amount of other Parliamentary business. Mr. Tony Leavey, M.P., for Heywood and Royton has also taken the matter up with the Home Office. Let us hope that support will be given to any action aimed at protecting the public from trigger-happy bearers of arms.

Great numbers of deaths amongst birds and mammals have been reported from all parts of the country as a result of the use by farmers of poisonous seed dressings. By the beginning of May this year, nearly 250 incidents from 39 counties had been reported, in one case alone, thousands of dead birds being found. And domestic animals have been involved, as cats and dogs which have eaten dead birds have also been poisoned.

Modern farmers rely greatly on the chemist, and insecticides, weedkillers and other toxic materials are expended by the ton, often with unexpected results.

Some insects have evolved strains resistant to the effects of D.D.T., and this valuable material has lost much of its effectiveness as a result. This may be because of its indiscriminate use where

other insecticides might have been more appropriate. The spraying of hedge-bottoms not only kills roadside growth, but at the same time destroys a 'reservoir' of valuable predators to the detriment of neighbouring crops, amongst which harmful species flourish uncontrolled. The programme of roadside spraying is carried out by many Authorities without proper research, and, indeed, without reference to advice given by the Ministry of Transport. Recent work seems to show that the cost of spraying and the labour involved is greater than that of weed control by other methods and clearly further investigations are needed before spraying continues on a large scale. The disastrous results of spraying fruit trees at the wrong time and killing pollinating insects is well known, but such spraying is often still done. Much harm can be caused because of lack of information about the use of chemicals, and more research should be undertaken before products are put into the hands of the users. It is encouraging that responsible bodies have shown such an interest in this problem and some manufacturers appear to be beginning to realise the need for proper labelling and instructions. Perhaps we are nearing the time when the farmer and local authorities seek expert advice before using sprays and dressings which may have unforeseen results.

The Council for Nature and other bodies have worked hard for the banning of dangerous seed dressings, and have given much publicity to the problem. At last these efforts have met with a measure of success. The Ministry of Agriculture has announced restrictions on the use of dressed seed which, if successful, should help to reduce the number of deaths. But it must be remembered that compliance with the recommendations is purely voluntary. Even if we are unmoved at the thought of animals dying in agony—and the victims undoubtedly suffer greatly—must we wait until people die from eating pigeon pie containing a bird already poisoned when shot, before the use of dressings is controlled by legislation?

Never before has there been such an interest in natural history. Television and radio programmes dealing with wild life attract large audiences. One would expect a general rise in the membership of natural history societies, but some are complaining of a decline. Why is this? Perhaps people think that in this age of specialization, the day of the amateur naturalist is over, and no useful purpose would be served in joining a society. Nothing could be further from the truth.

Investigation into the breeding habits of the grey seals on the Farne Islands, the conservation work and bird distribution records of the Royal Society for the Protection of Birds and the British Trust for Ornithology, the vast plant survey of the Botanical Society of the British Isles—to mention only a few projects—would not have been possible without the help of



amateurs. In field work, the spare-time naturalist comes into his own. Direct his activities, suggest lines of research, and he responds with invaluable observations. There is certainly a place for the local natural history society in the scheme of biological research. Specialists, carrying out work with the aid of expensive equipment and drawing on the resources of universities and research foundations rely greatly on field observations. Each year at the British Association meetings, papers are read by part-time enthusiasts, often school children, which deserve the respect they are given by eminent authorities.

It may be that some societies are their own worst enemies, and discourage would-be members because they have become merely 'get-togethers' where the winter syllabus consists of a series of lectures of varying quality and the summer syllabus of a few outings. A society must have an object; it should encourage and train young naturalists, and it should offer opportunities for original work, to those of its members who want to contribute to science in a small but useful way. Unless it has at least one project—it may be conservation, the keeping of accurate records or the survey of a particular area—it is wasting the time of its members. We need to stimulate young people and not frighten them off by dreary meetings given up to the discussion of second-hand information. They would rightly think that they would be better employed in watching television.

## The Marbled Coronet *Hadena conspersa* (Schiff.)

BY S. CHARLSON

The Marbled Coronet *Hadena conspersa* (Schiff.) is a moth whose capture in our northern counties has always been a noteworthy event. The records, though spread over more than a hundred years, are few, mostly from coastal areas and in the main of single specimens. Mansbridge (1940) gives the following records for Lancashire taken from the 'Ellis List' of 1890:—Bedford Leigh, Bickerstaffe, Chorley 1853, and Preston, and since no remarks as to numbers are given, they presumably refer to single specimens. To these by 1940 he can add only two records—Lostock, one in 1888 and Ainsdale 1912, fairly common. This latter seems to be the first indication of the discovery of a colony in Lancashire. For Cheshire he gives only three records—Tranmere, West Kirby and Marple, all from the 'Ellis List,' the latter record being the only one within our faunal area. S. Gordon Smith (1948 et seq.) adds four specimens to the 'Ellis' records; they are, Thurstaston 1935, Burton, Wirral 1947 and Chester 1949 and 1951. This completes the list for the two counties except for a note in Horsfall and Windle (1914) which, is I think, of sufficient

interest to be quoted in full. Though *conspersa* is not on their list as having been taken in the area the following note appears at the foot of p.37 following the list of '*Plusias*'—"There is reason to believe that *P. bractea* The Gold Spangle must at one time have been abundant. Mr. Taylor tells us that it was a prominent insect in the numerous entomological 'elephants' 'castles' 'ships' and what not, which, I daresay, 'ornamented' the walls of the cottage homes of a bygone generation. In purchasing some of these wall cases from a Mr. Kenyon of Daisy Nook, Mr. Taylor found that *P. bractea* was used in abundance, as was also *Dianthæcia conspersa*." Though by no means proof, this note could mean that the strong colony of *conspersa* recently discovered, together perhaps with others yet to be found, have been here for a great number of years.

In early June, 1954, I took two specimens of *conspersa* within a hundred yards of each other on a dry stone wall at Stalybridge. The next day two more were found on the same length of wall and two more single specimens were taken before the flight period was over. Meanwhile a search of the neighbourhood had soon revealed the large patch of Bladder Campion *Silene cucubalus* Wibel which was evidently their breeding ground. Searching this I was delighted to find eggs attached singly to the flower stalks just below the 'bladder' from which the plant derives its name. These were successfully reared and proved to be *conspersa*. Continued observation of the Campion showed it to be well populated with larvae and I am sure I could, had I wished, have taken hundreds that year. Pleased at having taken three stages in so short a time I determined to find the pupa. This was more difficult. The ground beneath the Campion was gravelly and damp and maybe unsuitable for pupation, whilst the neighbouring grass clumps were tough and difficult to separate. I had almost given up hope, but each time I went to look at the now diminishing number of full fed larvae I spent a little time grubbing round the edges of the grass clumps. At last I was rewarded with a single pupa which I kept carefully separate to prove it was the right species. In one season *conspersa* could be included in the few Lepidoptera which I had taken in all four stages.

Each year since this I have kept the colony under observation to the best of my ability. Larvae have been present in good numbers every year though they have never seemed quite so plentiful as the first year. Eggs can be found quite easily if you look at the right time and place as mentioned above. The moths rest on the convenient low wall and I have seen anything up to five there on almost every suitable day I have visited it during the flight period, which is about the whole of June. By suitable day I mean one in which the sun is not too hot on the wall. In 1955 I walked the length of the wall often, but did not see a single moth. They were out, for a search of the food plant showed eggs in the usual

numbers. Then after a dull rainy day I found two, and realized that my previous visits that year had been after hot sunny days and that these conditions must drive the moths into shade, most likely within the dry stone wall. Observations during the following years confirmed this.

In 1960 one specimen was taken by L. N. Kidd at mercury vapour lamp in his garden at Greenfield, Yorks., and this year two more have been taken at the same light. As Bladder Campion is known nearby the moth may also be breeding in this area. Although officially Yorkshire, these records must be linked to the Stalybridge colony and not to the other known Yorkshire localities which are given in Porritt (1904) as York and Scarborough.

During the observations on *conspersa* two other moths of the same genus have been bred from larvae taken on the Bladder Campion. One, The Campion *Hadena cucubali* (Schiff.), a widely distributed and not uncommon moth in our area, is usually associated with Red Campion *Melandrium rubrum* (Weig.) Garcke but will feed on other species. Only one larva was found. The other species, The Tawny Shears *Hadena lepida* (Esp.) is a moth of which we have fewer records than *conspersa*. The moth itself I have never found, therefore, if it rests on the wall it must be well hidden, and so far it has eluded my search. I took one larva in 1954 which I thought was this species but which I failed to rear. Diligent searching in 1955 yielded four amongst the much larger number of *conspersa* and all of these emerged safely. Since then I have seen the larvae a number of times but never in the same numbers as *conspersa* from which it is easily distinguished. It is either comparatively scarce or some difference of habit makes it appear so.

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## NOTES AND RECORDS

The names of recorders are abbreviated as follows:—

A.C.C.=A. C. Chadderton.	L.N.K.=L. N. Kidd.
A.W.T.=A. W. Taylor.	M.H.=M. Holtby.
C.E.S.=C. E. Shaw.	P.S.=P. Skidmore.
C.J.=C. Johnson.	R.L.S.=R. L. Selby.
D.B.=D. Buckley.	S.C.=S. Charlson.
E.S.=E. Soothill.	S.W.=S. Whitlock.
F.F.=F. Faulkner.	T.B.M.=T. B. Morris.
F.M.=F. Meadowcroft.	T.P.=T. Payne.
F.Md.=F. Murgatroyd.	T.W.=T. Wilkinson.
F.S.=F. Slater.	W.E.T.=W. E. Thomas.
H.W.=H. Walker.	W.F.E.=W. F. Edwards.
I.E.W.=I. E. Whitehead.	W.J.=W. Jaques.
J.C.=J. Clarke.	W.P.B.S.=W. P. B. Stonehouse.
J.M.=J. Millward.	

## PLANTS

Royal Fern *Osmunda regalis* L. By the side of Bacup Road, Todmorden, September, 1961 (C.E.S.).

Maidenhair Spleenwort *Asplenium trichomanes* L. Found amongst rocks at Sail Bark, Greenfield, in June, 1961 (F.Md.), a locality from which it was first recorded over a century ago.

Brittle Bladder-fern *Cystopteris fragilis* (L.) Bernh. Amongst rocks at Sail Bark, Greenfield, June, 1961 (F.Md.). First recorded here about a century ago.

Moonwort *Botrychium lunaria* (L.). Sw. Found on Blackstone Edge in 1960 (F.Md.).

Eastern Rocket *Sisymbrium orientale* L. Increasing on waste ground about the Miller Street and Rochdale Road areas of Manchester (F.S.). This plant frequently appeared on bombed areas during the last war, especially in S. England.

Thyme-leaved Sandwort *Arenaria serpyllifolia* L. Roadside near Upperwood House, Greenfield, September, 1961 (F.Md.). Apparently the first record for the area.

Bloody Cranesbill *Geranium sanguineum* L. Found growing at Denshaw on 6.7.1961, by Rev. C. E. Shaw who hailed me with its discovery on waste ground. Its origin is probably from some local garden.



"HI ! BLOODY CRANE'S BILL".

Dyer's Greenweed *Genista tinctoria* L. Plentiful in several old pastures near Hollingworth Lake. Seen there by various observers.

Great Burnet *Sanguisorba officinalis* L. Found at Delph 6.7.1961, (F.Md., C.E.S., L.N.K.). Also recorded from Holden Clough in 1960 and 1961 (J.M.).

Burnet Saxifrage *Pimpinella saxifraga* L. Seen near Lower Castleshaw Reservoir, 6.7.1961, (F.Md., C.E.S., L.N.K.).



Common Centaury *Centaureum erythraea* Rafn. Two good colonies at Riversvale this year in the area of the old mansion (C.E.S.). Also in Holden Clough, 18.9.1961, (J.M.). Mr. Hitchon of Accrington reports that Centaury has been particularly plentiful this year.

Musk *Mimulus moschatus* Lindl. Naturalized at Hopwood, near Middleton, where masses of it were seen in flower in the area of the 'lake' on 22.7.1961, by members of the Society.

Yellow-rattle *Rhinanthus* sp. Near Lower Castleshaw Reservoir, 6.7.1961 (F.Md., C.E.S., L.N.K.).

Red Bartsia *Odontites verna* (Bell.) Dum. A number of plants by roadside at Burnedge Bent, between Grasscroft and Dobcross, 21.9.1961, (W.J.), 23.9.1961, (W.F.E.). These were probably ssp. *serotina* (Wettst.) E. F. Warburg.

Field Woundwort *Stachys arvensis* L. Found at Failsworth, September, 1961 (W.F.E.), on site formerly occupied by hen pens. There are not many records of this species for the area.

Shore Weed *Littorella uniflora* (L.) Aschers. Plenty in Lower Castleshaw Reservoir, 6.7.1961, (F.M., C.E.S., L.N.K.).

Ivy Campanula *Wahlenbergia hederacea* (L.) Rchb. Discovered in a clough near Meltham, 18.8.1961 (F.Md., and others).

Fen Bedstraw *Galium uliginosum* L. Near Longden End Brook, on moors some 2½ miles from Denshaw, 21.6.1961 (F.Md., C.E.S.).

Wormwood *Artemisia absinthium* L. The dominant plant at the edges of some car parks in the Miller Street and Rochdale Road areas of Manchester (F.S.). It is also well established in Clayton Vale and the Street Bridge area of Chadderton among other places.

Shining Pondweed *Potamogeton lucens* L. Material taken from Hollinwood Canal, 1961 (C.E.S.) determined as this species by J. E. Dandy.

Grass-wrack Pondweed *Potamogeton compressus* L. Hollinwood Canal, 1961 (C.E.S.), det. J. E. Dandy. Apparently the first record for the area.

Slender Spike-rush *Eleocharis acicularis* (L.) Roem. & Schult. Plenty by Rochdale Canal at Belfield, September 1961 (C.E.S.)

Dioecious Sedge *Carex dioica* L. Found near Longden End Brook, on moors above Denshaw, 21.6.1961, (F.Md., C.E.S.). Apparently new to the area.

Twayblade *Listera ovata* (L.) R.Br. A single plant noted some weeks previously growing by a pile of coke in Werneth Park, Oldham, was in flower 12.6.1961 (L.N.K.). There are no recent records of this species for the area.

## BUTTERFLIES AND MOTHS

Wall Brown *Pararge megera* (L.). Several in a garden at New Moston 27.8.61 (R.L.S.) and a butterfly seen at Street Bridge Chadderton about the same time (W.J.) was almost certainly this species. One seen about 8-30 a.m. in a lane at Hollinwood, 18.9.61 (T.B.M.).

Red Admiral *Vanessa atalanta* (L.) Seen in Belgrave Road, Oldham, 19.9.61, (T.P.), Holden Clough, 30.9.61, (T.W.), and others about this latter date at Werneth (D.B.) and Hollinwood (W.F.E.).

Peacock *Nymphalis io* (L.) One in a garden at Royton, 28.8.61, (F.M.), and others in a garden at New Moston on 23.9.61 and 27.9.61, (R.L.S.).

The Muslin *Cynia mendica* (Clerck). One taken in Dukinfield, 1.6.57 (C.J.). This is the first record for the area.

The Miller *Apatele leporina* (L.) One at m.v. lamp, Greenfield, 29.6.61 (L.N.K.). Only the second record for the area.

Wormwood Shark *Cucullia absinthii* (L.) Larvae collected at Street Bridge, Chadderton last October pupated and in early July, 1961, three moths emerged. This species seems to be more widespread than was formerly supposed. Larvae were seen on *Artemisia absinthium* L. in Clayton Vale, 16.9.61 (C.E.S., P.S.) and at Waterhead, Oldham 26.9.61 (C.E.S.).

The Shark *Cucullia umbratica* (L.) A specimen of this rather uncommon species was taken at m.v. lamp at Greenfield on 8.7.61 (S.C., L.N.K.).

The Golden Plusia *Polychrisia moneta* (F.) Larvae were first noted about twenty years ago feeding on delphiniums in a garden at Smithy Bridge, near Littleborough. The plants were subsequently thinned out but the moth still comes to light in good condition, although it is not common (I.E.W.). This is the only record we have of a species which has increased its range considerably during recent years, and which is well worth looking for by anyone with delphiniums in the garden.

The Plain Golden Y *Plusia iota* (L.) One at m.v. lamp, Greenfield, 8.7.61 (S.C., L.N.K.). Apparently much less common than the other species of *Plusia* occurring in my garden (L.N.K.).

Green Pug *Chloroclystis rectangulata* (L.) Specimens at m.v. lamp, Greenfield, 29/30.6.61 (L.N.K.). There appear to be no other captures on record for the area. The caterpillars feed in flowers of apples and pears in April and May, and should be looked for by anyone with these trees in their orchard or garden.

Bordered Pug *Eupithecia succenturiata* (L.) One in a shop window at Stalybridge, 20.7.60 (S.C.), and another indoors at Greenfield, 2.8.61, (L.N.K.), are the first records we have had for the area.

Bordered White *Bupalus piniarius* (L.) Three females were taken at m.v. lamp, Greenfield, 29.6.61 (L.N.K.).

The Poplar Lutestring *Tethea or* (Schiff.) One taken at Audenshaw, 29.6.57 (C.J.) was the first record for the area.

Elephant Hawk-moth *Deilephila elpenor* (L.) It has apparently been a very good year for this species. Specimens were taken at m.v. lamp, Greenfield, on June 30th, whilst others from Hollinwood and the Crime Lake area were brought to the museum on June 18th and 29th respectively. Late specimens were from Chadderton on July 21st and New Moston on August 2nd. Numerous larvae have been reported from various parts of the area, one, a full-grown specimen, being green in colour.

Bedstraw Hawk-moth *Celerio galii* (von Rott.) One taken at light, New Moston, 2.8.61. Another was seen the following night at roses in a nearby garden but an attempt to take it was unsuccessful (R.L.S.).

Garden Elder Pearl *Phlyctaenia sambucalis* (Schiff.) One at m.v. lamp, Greenfield, 29.6.61 (L.N.K.).

Garden Pebble *Mesographe forficalis* (L.) One at m.v. lamp, Greenfield, 29.6.61 (L.N.K.).

Conway's Button *Argyrotoza conwayana* (F.) Taken at m.v. lamp, Greenfield, 29.6.61 (L.N.K.). The larvae of this species, which is apparently new to the area, feed on the seeds of Ash and Privet.

Hoary Sealed Bell *Eucosma cana* (Haw.) One at m.v. lamp, Greenfield, 30.6.61 (L.N.K.). Apparently not recorded previously for the area.

Codlin Piercer *Ernarmonia pomonella* (L.) A specimen taken at m.v. lamp, Greenfield, 30.6.61, (L.N.K.) was apparently the first record for the area. The larvae feed on the core of Apples, Pears, and the fruits of White Beam.

Grey-streaked Smudge *Plutella porrectella* (L.) One at m.v. lamp, Greenfield, 30.6.61, (L.N.K.). This is the first record for our area of a species which is stated by most authors to feed in its larval stage on Dame's Violet *Hesperis matronalis* L. It is possible however, that it may feed on other *Cruciferae* if given the opportunity.

## CADDIS FLIES (Trichoptera)

*Limnephilus xanthodes* McLach. One male at m.v. lamp, Greenfield, 30.6.61 (L.N.K.). A rather uncommon species which appears to have been taken only twice previously in Yorkshire—at Castle Howard in 1896 and at Askham Bog in 1934. The following species were all taken at Slackcote, near Delph by Mr. P. Skidmore:—*Phryganea obsoleta* Hagan, 9.8.61; *Stenophylax latipennis* (Curtis) 29.9.61; *Halesus radiatus* (Curtis), 29.9.61; *Drusus annulatus* (Steph.), 29.9.61; *Rhyacophila oblitterata* McLach. 29.9.61.

## TRUE FLIES (Diptera)

The following Crane Flies are new to the area—*Cylindrotoma distinctissima* (Mg.) taken at Slackcote in late summer, 1961, (P.S.). The larvae are said to feed openly like caterpillars on the leaves of plants. *Molophilus ater* (Mg.) Seen in plenty around a small pool on peaty ground near Brushes Reservoir, Crompton Moor, 17.5.61 (P.S.). A very tiny crane-fly with short, useless wings.

The following Fungus Gnats have been recorded—*Speolepta leptogaster* (Winn.) which was again found dead, indoors, at Greenfield, 18.4.61, (L.N.K.); *Docosia gilvipes* (Walker) Yeoman Hey Plantation, Greenfield, 26.8.61, (L.N.K.); *Exechia nigroscutellata* Landr. also taken in Yeoman Hey Plantation, 26.8.61 (L.N.K.); *Cordyla fasciata* Mg. an apparently uncommon species in Britain was taken in the conifer plantation above Yeoman Hey Reservoir on 10.9.60, and again on 26.8.61, (L.N.K.); *Trichonta stereana* Edw. and *Trichonta falcata* Lund. taken in Staley Brushes on the county boundary, 9.3.61, (L.N.K.) were new to Lancashire and Cheshire; *Mycetophila formosa* Lund. taken at the same time and place as the previous two species was new to vice-county 59.

The two following Muscids have been recorded—*Phaonia laeta* (Fln.) a rare species, of which two specimens were taken in Wicken Hall Clough, between Denshaw and Newhey, in June, 1961, (P.S.) and *Mycophaga fungorum* (Deg.) taken on a tree trunk at Slackcote in early July, (P.S.). The carnivorous larvae of this latter species are found in fungi.

## BETTER FLIES (Coleoptera)

Most of the following records are the first received for the area. A few have been included from the Glossop district which is just outside our area.

Common or Green Tiger Beetles *Cicindela campestris* L. were found in fair numbers at Hyde in May, 1961, (C.J.). There are

no recent records of this species for the area although it has occurred in the past at Kersal Moor. A number of Ground Beetles have been taken in various parts of the area. *Clivina collaris* (Herbst) which occurs in damp places was taken in the Etherow Valley, 29.5.61, (C.J.). *Miscodera arctica* (Payk.) a local species, found mainly in mountainous regions, occurred at Hollingworth-hall Moor, 11.3.61 and 5.8.61, (C.J.). The first records for our area were from a stony plateau on the summit of Crompton Moor, 30.6.57, (P.S.). Three species of *Bembidion* are worthy of mention—*B. atrocoeruleum* Steph. which was fairly common in the Ethrow Valley, 29.5.61, and was very common at Torside in the Longendale Valley, (C.J.). Also recorded from Glossop (C.J.). *B. [andreae (F.)] v. bualei* du Val was fairly common at Torside Reservoir (C.J.) and *B. unicolor* Chaud. was also taken here in 1960, and again on 16.5.61, (C.J.). *Amara famelica* Zimm. a very local ground beetle, was taken on Hollingworthhall Moor, 11.3.61. This is stated to occur in sandy places in early spring. Another local species *Agonum thoreyi* Dej. was found in the Etherow Valley, 29.5.61, (C.J.).

Two uncommon Water Beetles have been found in the area—*Agabus arcticus* (Payk.) which was first found on Crompton Moor in May, 1957, (P.S.) and *Dytiscus circumcinctus* Ahr. taken at Dukinfield, 29.3.57, (C.J.).

The Silphid *Xylodrepa quadrimaculata* (L.) was plentiful in a wood by Piethorne Reservoir, Ogden Valley, in May, 1961, (P.S., C.J., L.N.K.). This beetle which was first seen here some years ago by Mr. P. Skidmore has not been recorded from any other localities in the area. It feeds on the caterpillars infesting various trees.

Two Clerids of the genus *Necrobia* have been recorded. *N. ruficollis* (F.) was taken at Ashton in 1959, (C.J.) and also at Hyde in October of the same year (C.J.). It is found in dry skins, carcasses and old bones. *N. violacea* (L.) was abundant on dead sheep in the Glossop area (C.J.).

The Click Beetle *Melanotus rufipes* (Herbst) was common at Broadbottom (C.J.) and two other species *Corymbites pectinicornis* (L.) and *C. incanus* (Gyll.) were taken in the Etherow Valley on 29.5.61, (C.J.), the former being very common.

The Serropalpid *Tetratoma fungorum* F. which occurs in fungi and rotten wood was found at Broadbottom on 27.12.60, (C.J.).

Several interesting Dung Beetles have been taken, the most notable being *Typhaeus typhoeus* (L.) of which several specimens were taken at Glossop on 5.3.61, (C.J.). This uncommon species frequents dry sandy soil and is said to occur about rabbit dung. *Aphodius lapponum* Gyll. a northern and mountain species was



common at Hollingworthhall Moor and also occurred at Glossop as did the following:—*A. tenellus* Say and *A. rufescens* F., the latter being taken there on 21.8.60 (C.J.).

Larvae of the Longhorn Beetle *Asemum striatum* (L.) which occur in coniferous stumps, were taken at Glossop (C.J.), and the species was also found at Bredbury (P.S.).

Two Leaf Beetles of the genus *Donacia* have been recorded. *D. semicuprea* Panz. which occurs on Reed-grass *Glyceria maxima* (Hartm.) Holmb. was abundant along the canal at Hyde and Dukinfield (C.J.) and *D. vulgaris* Zsch. which occurs on Bur-reed *Sparganium* spp. was also taken at Hyde. Other Leaf Beetles taken in the Etherow Valley were *Prasocuris phellandrii* (L.), 29.5.61, (C.J.), and *Phyllobrotica quadrimaculata* (L.) a distinctively marked beetle which is found on Skull-cap *Scutellaria galericulata* L.

Finally there are records of two local Weevils. *Sitona suturalis* Steph. which occurs on Meadow Vetchling *Lathyrus pratensis* L. among other plants, was taken at Hyde on 21.5.59, (C.J.) and *Phytobius comari* (Herbst) which is found on Marsh Cinquefoil *Potentilla palustris* (L.) Scop. occurred at Torside Reservoir in April, 1960, (C.J.).

## BIRDS

Great Crested Grebe *Podiceps cristatus* (L.) One seen at Lower Castleshaw Reservoir, 22.3.61, and two there on 29.3.61 (W.P.B.S.). Two at this reservoir on 31.3.61, and one on the Upper Castleshaw Reservoir the same day (L.N.K.).

Canada Goose *Branta canadensis* (L.) Eighteen were seen on the C.P.A. works reservoir at Carrbrook, near Mossley, on 30.5.61, (S.W.).

Wood-Pigeon *Columba palumbus* L. This species has been more numerous this year in the plantations at Ashway Gap (H.W.).

Short-eared Owl *Asio flammeus* (Pontopp). One seen near White Holme Reservoir, Blackstone Edge, 20.6.61, (E.S., L.N.K.).

Nightjar *Caprimulgus europæus* L. Heard by various people in the Ashway Gap area of Greenfield this summer, and a recording was made of its "churring" on 1.7.61. A bird was seen at very close quarters here on 7.9.61 (R.L.S., A.W.T.). The species was also heard very plainly at Staley Brushes on 19.8.61 (L.N.K., S.C.).

Green Woodpecker *Picus viridis* Hart. One seen at Broad Oak Clough, near Ashton-u-Lyne, 16.4.61, (W.E.T.) and another seen and heard a number of times in the same neighbourhood at Holden Clough during the week ending 8.10.61, (J.M.).

Great Spotted Woodpecker *Dendrocopus major* (Hart.) This species was seen in Holden Clough, 2.10.61, (J.M.), and another seen in Snipe Clough, near Alexandra Park, Oldham, about 4.10.61, (F.F.).

Carrion-Crow *Corvus corone* L. The species bred this year in the Ashway Gap area of Greenfield. Birds were seen early in the year (H.W.) and were later noted with young (H.W., W.P.B.S.). A pair of carrion-crows were reported nesting at Slattocks, near Chadderton, 15.4.61 (W.E.T.).

Jay *Garrulus glandarius* Hart. Five birds were seen in the Snipe Clough, Alexandra Park area of Oldham on 6.10.61, (F.F.).

Coal-Tit *Parus ater* Sharpe and Dress. In a garden at Werneth, Oldham, where it was first seen on 30.9.61, taking nuts at a feeding cone. It was joined by a second bird on 7.10.61, and the two were still visiting this garden on 23.10.61, (W.J.). This species is an irregular autumn and winter visitor to the Oldham district, the only other recent records we have being from Holden Clough in October and November, 1957, (J.M.).

Stonechat *Saxicola torquata* (Hart.) One near the canal at Greenfield, 20.4.61, (A.C.C.).

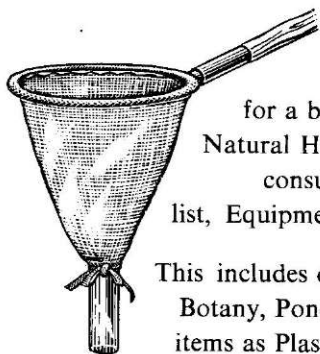
Redstart *Phoenicurus phoenicurus* (L.) Mr. Mumford reported on 10.7.61, that he had recently seen two pairs of redstarts near Chew Wood, Greenfield. One was seen in Kinders Crescent, Greenfield, 13.8.61, (M.H.).

Chiffchaff *Phylloscopus collybita* (Vieill.) Heard in Crows i' th Wood, Stalybridge, 3.4.61, (L.N.K., S.C.). This species is a passage migrant in our area.

Goldfinch *Carduelis carduelis* (Hart.) Seen feeding on thistles at Denshaw, about 21.9.61, (W.J.). Small numbers occur fairly regularly in our area during the autumn and winter months.

Bullfinch *Pyrrhula pyrrhula* Math & Ired. Seen in the Ashway Gap area of Greenfield in 1960, (H.W.) and reported in the same area by another observer during March, 1961. A pair seen on Wharmton, Greenfield, about June, 1960, were mentioned in *Athene* No. 1, p. 30.

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1961

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| Oct. 23—Living or Dead? Plant or Animal?         | Mr. R. Stanton   |
| Nov. 13—Films :—"On Safari" and "Horizons Below" |                  |
| Nov. 20—A Visit to the Canary Islands            | Mr. A. Humphreys |
| Dec. 4—Birds of the Isle of Man                  | Mr. A. Travis    |
| Dec. 18—Exhibition Evening                       | Members          |

1962

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|--|-------------------------|
| Jan. 8—Local Birds   | Dr. W. P. B. Stonehouse |
| Jan. 22—British Flies  | Mr. L. N. Kidd          |
| Feb. 5—Films :—"Coral Wonderland" and<br>"High Over The Border".             |                         |
| Feb. 19—Local Lepidoptera—a discussion of<br>recent captures.                | Members                 |
| Mar. 3—Sat.—Lancashire & Cheshire Fauna<br>Committee Meeting at Werneth Park |                         |
| Mar. 5—Alien Plants  | Rev. C. E. Shaw         |
| Mar. 19—Pond Life through the Microscope<br>a Micro-projector evening.       |                         |
| Apr. 12—Film :—"The Living Desert" at the<br>Public Library Lecture Hall.    |                         |
| <i>Visitors Welcome</i>  |                         |