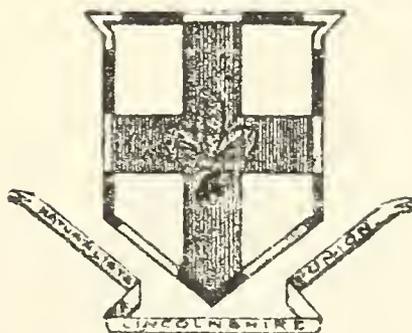


LINCOLNSHIRE
NATURALISTS' UNION.

TRANSACTIONS, 1939 -1942.

VOLUME TEN.

EDITED BY F. T. BAKER, F.R.E.S. & A. ROEBUCK, N D.A., F.R.E.S.



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NATURALISTS UNION

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TRANSACTIONS

Edited by

F. T. BAKER, A.L.A., F.S.A., F.R.E.S. and A. ROEBUCK, N.D.A., F.R.E.S.

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DECEMBER, 1947

LINCOLN
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WOODCOCK AT NEST—*Flash-light photographs by R. H. Hallam.*



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STATEMENT OF ACCOUNT from January 1st to December 31st, 1946.

GENERAL FUND.

RECEIPTS.	£	s	d	PAYMENTS.	£	s	d
Balance in Bank, 1st January, 1946	39	15	1	Postages and small payments	27	3	5
Members' Subscriptions	64	11	0	Notices of Meetings	9	11	4
From Bus Fares	17	0	9	Hire of Buses	17	2	6
				Membership Cards	1	2	9
				Credited to Nature Reserves and Wild Life			
				Conservation Committee	10	0	0
				Grant to Publication Fund	6	13	11
				Balance in Bank, 31st December, 1946	49	12	11
	£121	6	10		£121	6	10

PUBLICATION FUND.

Donations to Publication Fund	22	13	0	Printer's Account for "Transactions"	36	5	0
Sale of Transactions	12	0	1	Reprints of Presidential Address	2	2	0
Grant from General Fund	6	13	11	Binding of "Transactions"	3	0	0
	£41	7	0		£41	7	0

SEPARATE ACCOUNT.

Amount shown on Balance Sheet, 1945	148	3	8	Income Tax, 1946-7	1	7	0
Interest for 1946	3	16	3	Balance on 31st December, 1946	160	17	11
Life Members' Subscriptions	10	5	0		£162	4	11
	£162	4	11		£162	4	11

Lincolnshire Naturalists' Union.

PRESIDENTIAL ADDRESS

DELIVERED AT LINCOLN, 15TH MARCH, 1947

BY

F. L. KIRK, B.SC., N.D.A. (HONS.), N.D.D.

ENTOMOLOGY AS A HOBBY.*

Many of you are specialists who have often helped me in various branches of Natural History and you will no doubt realise that it has been difficult for me to choose a suitable subject for a Presidential Address. I propose to give a talk on the lighter side of entomology, using simple language, in the hope that members who study other branches may find something of interest. To our entomologists I must confess that my working life as a teacher has been spent in making the obvious intelligible and to err on the side of simplicity has become automatic.

Entomology taken seriously demands a wide knowledge of many other sciences and bristles with technicalities ; by avoiding the latter I hope to make the title of the address appropriate.

If you are sensitive to public opinion do not take up entomology. It is still one of the least respected sciences. You can be an ornithologist or a botanist without concealing your tastes from your fellow men, but an entomologist is beyond popular comprehension.

We will now run through some of the sections into which entomology is divided. Let us first glance at the history of insects. There are fossils of highly developed insects dating back to carboniferous times, say 200 million years before man appeared on earth. Some of these creatures were huge compared with modern kinds, but excessive size may be a handicap, as many animal types have found to their cost ; the insects of today are compact and efficient, making up in numbers and variety of species for their diminutive size.

Anatomy may next claim our attention. Insects have a hard outside skeleton which protects them well but necessitates the casting of this part at intervals during growth. In the mature insect the head and thorax are often rigid, but flexibility of the abdomen is secured by an arrangement of rings or segments with soft parts between them. This enables the Wasp to sting and the Rove Beetle to fold up its wings. The jaws show much variety. Originally they were of the biting type, though very different from ours. Our lower jaw moves up and down but an insect has two pairs of movable jaws which work transversely. Mouths may be modified for piercing, sucking or may even be almost suppressed.

*The address, when delivered, was fully illustrated by lantern slides and sketches prepared by the President—*Eds.*

The eyes are in striking contrast to our own. A wasp has two compound eyes made up of many six-sided lenses, each with appropriate parts for forming an image, and also three simple eyes on top of the head. The lenses of these simple eyes curve strongly and these eyes may be used for seeing near objects in poor light. Another suggestion is that they simply increase the insect's response to light without enabling it to see objects. Various theories are put forward to explain the use of compound eyes. The most popular idea is the mosaic theory, that these eyes build up a composite image made of dots in the same way that a newspaper photograph is formed. In nocturnal insects each portion of the compound eye forms an image, but finally all these images are blended, giving one well illuminated result.

For contact with the outside world insects depend largely on sensitive hairs. The Large White Butterfly recognises suitable plants for egg laying by using special hairs on its feet.

Some insects have ears which are queerly situated according to our ideas. The Cricket has ears on its front legs. It might improve the efficiency of our ears if they were on our arms so that we could extend them in various directions, increase the distance between them or vary the angle at which they are set.

The antennae of insects are sense organs which naturalists have described as organs of smell, touch, hearing and even short-wave wireless transmitters and receivers. We do not really know their exact function. In the Cockchafer their surface is relatively enormous on account of the large end plates edged with many hairs. Even the antennae are penetrated by the breathing tubes. Although our knowledge of the function of the antennae is vague, we can make use of these organs in identifying insects because their structure is remarkably constant for each species. The sexes can often be distinguished by the antennae. The male Cockchafer has seven plates, the female is content with six. A male Gnat has more ornamental antennae than those of his dowdy mate.

The thorax has three main parts each bearing a pair of legs, and normally the second and third segment each support a pair of wings. In flies the second pair of wings is replaced by balancers, so called for the unsatisfactory reason that the insect cannot direct its flight if these organs are cut off. I rather think that if my arms were amputated I could not finish this address but this would not prove that the function of my arms is to lecture to the L.N.U. Internally the thorax has powerful muscles to assist locomotion.

We will just mention that the abdomen contains important organs connected with digestion and reproduction, then pass on to consider the breathing of insects. Along the sides are spiracles for the intake of air and discharge of respired air. The air is filtered by a fine grating and the aperture can be controlled to prevent excessive loss

of moisture. The air is taken to all parts of the body by branched tubes called tracheae kept open by spirals of the same substance as that composing the skeleton. Unlike ourselves, the insect does not depend to a great extent on the blood to carry oxygen to the living cells, probably on account of its poor circulatory system. The air has to penetrate the finer breathing tubes by diffusion and this limits the width of insects. The Goliath Beetle has attained the maximum width possible in an insect.

Many water insects come to the top to breathe. Some of these carry down supplies of air when they dive. The Great Water Beetle can store air under its wing cases. Some insects have gills and can use dissolved oxygen.

Parasites inside insects appear to make use of the air present in the tracheae of their hosts.

Insects have almost lost the power of regeneration. If a worm is cut into two it is possible for both parts to replace the missing portions. A crab can replace a lost limb. In insects this regeneration is almost confined to the young stages at the time of casting the skin. Mature insects, although very liable to lose a limb, cannot as a rule make good the loss. Since adult insects commonly have a short life it is unnecessary to patch up the cripples.

Life histories of insects have received so much attention that we can be brief in dealing with them. A moth has a complete life history, that is to say there are four easily distinguished stages, egg, larva, pupa and perfect insect, the pupa being a resting stage which does not feed. A grasshopper lays eggs giving rise to larvae rather like the perfect insect but without wings. The last stage before the perfect insect is an active nymph in which the wings are beginning to appear. This is an incomplete life history.

Insects commonly go through their life history in one year, an improvement on man's scheme of spending about twenty years preparing to live, forty years living and twenty years dying. A curious case occurred of prolongation of life in an insect which normally lives only a few hours in the perfect state. Its head was accidentally cut off and it lived for two days. The record for long life is held by a Cicada which takes seventeen years over its various changes.

The rate of growth of a caterpillar is startling. It has been shown that a full grown hawk moth caterpillar weighs ten thousand times its weight when first hatched. I estimate that if we increased in the same proportion, when fully grown we should turn the scale at thirty tons.

The eggs hatch in a variety of ways. Some insects eat their way through the side, but there is often a thin place in the shell to facilitate escape. The Horse Bot Fly larva pushes up a lid to emerge and Gnat larvae escape from the bottom of the egg raft directly into the water.

The next main section, Classification, is the most important, for species are so numerous that without it our studies would be chaotic. It will form the basis of most of the rest of my remarks. Modern classification groups insects into 23 Orders, but an older system of 13 Orders will suffice for our purpose today. I ask the specialists, who will condemn this, to temper justice with mercy. I have constructed a key which gives the main distinctions in a small space.

Classification of Insects

(according to Westwood).

Hymenoptera	M b	W linked	L c.
Strepsiptera	Bee parasites. Omitted.		
Coleoptera	M b	W sheathed	L c.
Euplexoptera	M b	W folded, short sheaths	L i.
Orthoptera	M b	W straight	L i.
Thysanoptera	M b	W fringed	L i.
Neuroptera	M b	W netted	L i.
Trichoptera	M b	W hairy	L c.
Diptera	M s	W 2, balancers	L c.
Aphaniptera	Fleas. Omitted.		
Heteroptera	M p, s	W differ	L i.
Homoptera	M p, s	W same	L i.
Lepidoptera	M s	W scaly	L c.

M—mouth, W—wings, L—life history, b—biting, s—sucking, p.s.—piercing and sucking, i—incomplete, c—complete.

We will deal with Coleoptera more fully than the others, then select a few points of interest from the remainder.

Coleoptera. Beetles have a biting mouth, wings with the upper pair converted into wing-cases and the lower pair membranous or else much reduced. The life history is complete, the larvae being grubs with three pairs of legs, but if, as with Weevil grubs, they live in their food, they may be legless.

Some beetles have more than one generation a season. Flea Beetles are said to have one generation annually in England but more than one in Russia. Others may take longer to complete their changes, click beetles about five years and cockchafers three years.

I hope some of our junior members will study beetles and so provide us with specialists in the future. There are about 4,000 British species and a beginner should not trouble too much about species, but learn to recognise the group to which a beetle belongs and plan his collection accordingly at first. Visits to museums, advice from collectors and similar sources of information will gradually make his knowledge more exact, but there is no easy way of naming beetles.

What does the study of beetles offer? Some people delight in beauty of form and colour. Many are curious to discover how other

creatures live in this many-faceted world. A detailed study of structure gives satisfaction to some minds, combined with a legitimate pride in the skill needed for dissection. Young naturalists enjoy the activity resulting in a collection, whilst their more prosaic elders may prefer a study leading to the destruction of pests and the preservation of allies. Beetles can satisfy all these demands.

The Musk Beetle is a most beautiful insect ; its wing-cases have metallic lustre and the powerful and pleasant scent is remarkable. The Green Tiger Beetle earns its name "Green Sparkler" when it flies in the sun and the Rose Chafer offers a wonderful contrast when resting on a rose. Many Weevils are jewelled gems under the microscope.

The habits of beetles form an inexhaustible field of interest. Ground Beetles are well armed and active ; they parallel the beasts of prey among mammals. At one L.N.U. meeting a Tiger Beetle, caught with an ant in its jaws, still held its victim after inspection by the members, followed by a forty mile car journey. Ground Beetles which hunt under bark are flattened to suit the conditions. A few weak Ground Beetles survive by employing artillery. The Bombardier Beetle can fire up to twenty shots at a pursuing enemy.

Water Beetles are also voracious and I have caught the grub of the Great Water Beetle with its jaws firmly fixed in a Stickleback larger than itself. In his lecture on "*The Story of the Eye*," Dr. A. H. Briggs mentioned a fish with divided eyes to enable it to see clearly above and below water. The little Whirligigs which circle on the surface of water show the same feature in their compound eyes.

Burying Beetles are well fitted for disposal of corpses in the orthodox way. They have broad heads and shoulders for digging. The female lays the number of eggs suited to the efficient consumption of the particular body by the grubs.

If we admire courage, a Rove Beetle, the Devil's Coachhorse, seldom retreats from danger. If threatened, up come the jaws and tail. The latter has glands secreting a protective fluid.

Stag Beetles show some response to training and a film has been made showing their skill as actors, but doubt has been expressed by a naturalist about the methods by which the effects were obtained. He himself, however, trained the males to draw miniature carts.

The Chafers are stoutly built and have fan-like antennae. They swarm in huge numbers in some seasons. In one district of France an organised drive to reduce Cockchafers slaughtered 500,000,000 in six years, sufficient to fill 46 railway trucks.

Longhorn Beetles are my favourites. They are narrow in build, have long antennae and kidney-shaped eyes. They include the Wasp Beetle, a fine example of mimicry, the Musk Beetle already mentioned and the Poplar Longhorn which can squeak. Many attack timber when in the grub stage.

We finish with beetles by mentioning Click Beetles which can leap up when on their backs—they are the parents of Wireworms ; Weevils with their long snouts ; Tortoise Beetles which are invisible on nettles and the helpful Ladybirds which check Greenfly.

The **Euplexoptera** or Earwigs resemble Rove Beetles in their biting jaws and short wing-cases but their life history is incomplete.

The parent earwig lays eggs in spring in the soil or under a stone and keeps guard over them. She even broods over her young when hatched. At first they are white wingless miniature earwigs with straight forceps.

The hind wings of an earwig are folded in a complex manner and this justifies separating this group from the Orthoptera. These wings are beautiful objects and test the patience of anyone wishing to set them for display.

There are several explanations of the word "earwig." It may be a corruption of "earwing" from the shape of the hind wings. Possibly the idea is that the insect gives people's ears a wiggling according to the superstition that earwigs enter the ear and pierce their way to the brain. This is physically impossible but the idea may have arisen in the days when our ancestors slept on rushes on the floor. Earwigs would be plentiful there and they are inquisitive insects which might frequently investigate such a desirable residence as the external ear. A third interpretation depends on the likeness between the earwig's pincers and the old instrument used to pierce ladies' ears for earrings. It is curious that the French name is "Perce-oreille"—"ear-piercer" and the German "Ohr-wurm"—"ear-worm." Philologists tell us that the word is really the Anglo-Saxon *éarwicga*.

The pincers are used as weapons, they may wound plants to release sap and they are said to help to fold up the wings, but there are few reliable records of the common Earwig being seen in flight.

There are seven British species of earwigs but I can only trace Lincolnshire records of two of these.

The **Orthoptera** or straight-winged insects include Grasshoppers, Crickets, Locusts and the curious Mole Cricket. The last-named provides an example of analogy ; the front legs are similar in shape to those of a Mole, but the resemblance is due to similar burrowing habits, the structure being essentially different. There is a record of a Mole Cricket being found near Grimsby.

The habits of Locusts are familiar so that we will turn to the picturesque language of ancient descriptions which contrast sharply with our formal modern style. Pliny declared that Indian locusts were three feet long and had legs so strong that women used them as saws. The Arabs described the locust as having the head of a horse, the eyes of an elephant, the neck of a bull, the horns of a stag, the chest of a lion, the belly of a scorpion, the wings of an eagle, the thighs

of a camel, the legs of an ostrich and the tail of a serpent. They were so impressed with the destructive powers of these insects that they made a locust say to Mahomet "We are the army of Allah ; we produce 99 eggs ; if the hundred were completed we should consume the whole earth." Now for a report of a plague of locusts :—" In the year of the world 3800 (? 200 B.C.) Africa was infested with such myriads that, having devoured every green thing, after flying off to sea they were drowned and being cast upon the shore they emitted a stench greater than would have been produced by the carcasses of 100,000 men."

Thysanoptera. Thrips, Thunderfly or Bladderfoot are minute insects which, if winged, have narrow wings fringed with hairs. The name "Bladderfoot" indicates good eyesight of the people who bestowed it, for the foot is like a microscopic bladder. The mouth illustrates the difficulty of combining accuracy with simplicity. We have roughly classed it as a biting mouth, but the mandibles or biting jaws are almost reduced to the left one, which, with other parts forms a rasp to set free sap and this is then sucked up.

I am not competent to deal with this order but will mention two personal experiences showing the enormous numbers of these tiny insects. When motor cycling in Yorkshire I ran into such a cloud of them that I had to dismount and walk. On the machine it was impossible to see, hear and I nearly said breathe. The second occasion was during thundery weather and I was forced to abandon a fascinating lesson in mathematics because the room was invaded by hosts of Thrips which covered the blackboard till writing was impossible ; both class and teacher spent the remainder of the period fidgetting and pretending to read.

Trichoptera. Even entomologists may be surprised to hear that there are over 180 species of British Caddis Flies. The insects are rather like moths but the wings are clothed with hairs, not scales, and the mouth lacks a long tongue. The mouth of a Caddis Fly is much reduced and it used to be thought that it could not feed, but this is not correct.

The eggs may be laid on plants but some caddis flies enter the water to lay them and then die. The eggs are surrounded by jelly which absorbs water and swells.

The aquatic larvae or Caddis worms have the well-known habit of forming cases to protect their soft bodies. These cases have a silk foundation covered with sand, bits of wood, lengths of plant stalks or shells of snails. The shells may still contain the snails. Caddis worms in running water weight the cases with stone but in ponds lighter materials are employed. Some Caddis worms do not make cases but hide among plants or stones ; they may trap their food in silk nets, for these free Caddis worms are carnivorous whilst the case-making kinds eat plants.

The cases are closed by a silk grating when the insect pupates. The pupa has special jaws to cut its way out of the case when it emerges to swim away. The wings are fully formed when the perfect insect leaves the pupa and do not develop slowly as with moths. The pupal jaws are left behind on the pupal skin.

Although living in water, caddis worms are attacked by ichneumon flies which dive to them surrounded by a bubble of air and oviposit in the case. The ichneumon grub eats the caddis worm and the resulting ichneumon hibernates inside the case still enclosed in air, the origin of which is unknown. The ichneumon leaves the water the next spring.

Neuroptera. In our system of classification this group includes Dragonflies though they now form a separate order. Anyone wishing to turn from well-trodden paths could profitably study these insects. There are more than 40 British species of Dragonflies of which at least 15 occur in Lincolnshire. The larger kinds are capable of very extensive flights and mass migrations have been observed. These appear to be the only insects which can fly backwards. Unfortunately many of them lose their colours after death, but this effect is less pronounced if they are caught early in the day before they have fed.

Some dragonflies scatter their eggs in water but others descend below the surface to pierce plants and cover the eggs. The larvae and nymphs are active and voracious ; they have a mask which can be flashed out to capture their prey. They are pioneers of jet propulsion. Water is taken in at the end of the abdomen, the dissolved oxygen extracted and the water gently expelled. If in danger they force out this water and dart forward with great speed.

The Lacewing fly is a member of the Neuroptera with green lacy wings and golden eyes. When picking plums I have often found their curious stalked eggs and have taken the larva when sweeping for beetles. This larva will suck a greenfly dry then impale the skin on its bristly body and by continuing this process will effectually camouflage itself. Unlike the Dragonflies the Lacewing pupa is not active and does not feed.

Mention may be made of the Snakeflies which are uncommon both in occurrence and build.

Hymenoptera.—The Ants, Bees, Wasps, Sawflies, Ichneumons and Gallflies form such a large order that we can only state that they have biting mouths, wings linked in flight by hooks, and a complete life history, then pass on to consider just one aspect of their fascinating story. Willingly or unwillingly ants entertain over 5000 kinds of other creatures as guests in their nests. Ants make use of the secretions of certain caterpillars and our rare Large Blue Butterfly spends part of its larval stage in an ant's nest. A beetle secretes a substance so attractive to ants that they neglect the care of their own larvae to obtain this drink and thus ruin the whole ant colony, so that you will observe

that insects have their Colonel Chinstraps. Some ants are dairy farmers keeping Greenfly in their nests and milking them. A certain bug allows an ant to feed on its secretion and this liquid paralyses the ant, which is then killed by the bug and eaten.

Many guests of ants tidy up the nests and some appear to act as barbers, browsing on hairs on the bodies of the ants.

Rove beetles lurk in the nests and murder their hosts. If attacked by the ants they eject from the tips of their bodies a vapour powerful enough to drive off their enemies.

Silver-fish insects wait till they see one ant feeding another by regurgitation, then rush in and drink some of the liquid passing between the ants.

If the ants are infested by mites some beetle guests will free the ants from these pests by feeding on them.

Lepidoptera. Butterflies and moths have sucking mouths, scaly wings and a complete life history. Butterflies have been the subject of a recent Presidential Address and there is abundant popular literature on moths, so that we will just deal with one or two points.

Protective Coloration. Some butterflies and moths are conspicuous in flight but vanish when they settle and close their wings. This method fails when the background is unsuitable. Red Underwings often rest on telegraph poles and are obvious from a distance. Some insects escape detection by resembling other objects. This phenomenon dates back to remote times ; the first fossil cockroach ever discovered was described as a fossil fern leaf. The Buff Tip moth is like a twig cleanly cut at one end and broken at the other, but this is not an object which would occur naturally. Clearwing moths mimic stinging insects whilst many caterpillars resemble twigs. Please note that *we* see these likenesses but experiments show that the colour sense of insects is very different from ours, so that such resemblances may not appeal to them. Stick caterpillars are readily found by parasitic ichneumon flies.

The strange attraction *light* has for insects has been ingeniously explained by a theory that insects normally guide themselves by the distant light of the sun or moon. When they try to use a near light the effect is to cause them to spiral round the light and approach it. I feel that this idea is open to criticism because moths are most active on dark nights, and it is my experience that few moths are on the wing in brilliant moonlight.

Perhaps I can mention another unsatisfactory idea about light, but this time connected with beetles. The female Glowworm's light is supposed to be for the purpose of attracting the male, but the larvae and even the eggs shine, so that the luminosity cannot be explained in this way.

Hemiptera. This double order is composed of insects with a piercing and sucking mouth and an incomplete life history. Nowadays Heteroptera and Homoptera are placed in the one order. The *Heteroptera* or Bugs have the front wings partly leathery and partly clear, whilst the *Homoptera* have wings clear throughout apart, of course, from veins. Some Bugs such as the Skaters, live on the surface of water, some in water, for example the Boatman and the Water Scorpion, but many infest plants causing distortion of fruits, spreading disease and doing much damage. It is a pity that the popular name for an entomologist, "Bughunter," is so inaccurate, for this order has been much neglected. The order *Homoptera* includes the Froghoppers whose larvae produce Cuckoo-spit, but the Greenfly or Aphides are more familiar. A well protected form of the latter is the Woolly Aphis hidden beneath a waxy covering like cotton wool. Aphides give us an example of parthenogenesis, *i.e.*, the females commonly give rise to living young without fertilisation.

Diptera or Two-winged Flies bring me to the end of my long catalogue. They have a sucking mouth, two wings and two balancers, and a complete life history. Their anatomy is worth close study, *e.g.*, the foot of a fly has sticky pads to negotiate smooth surfaces and claws to climb rough ones.

Unfortunately many flies are bloodsuckers. The female Cleg needs a meal of blood before she can lay a full batch of fertile eggs.

Diptera force their attentions on mankind in many ways. They are found in most diverse situations, do good by destroying rubbish and pests, damage our crops, livestock and food, and spread disease, but provide naturalists with material varying from mimicry to the study of heredity in Fruit Flies. They are a most difficult order for the identification of species, but I hope some of our future entomologists will specialise in this group.

Literature. Here is a brief reference to entomological books. Some very old ones have delightful illustrations. Donovan's "*British Insects*" published in 1802 is a work of art and its old-fashioned descriptions are most amusing. Kirby and Spence's "*Introduction to Entomology*" published in 1828 is a mine of information. A good introduction for general interest is Wood's "*Insects at Home*," not always accurate but even this address of mine may contain errors. Secondhand copies of the above books are sometimes obtainable. A modern book for the student is Imms's "*Outlines of Entomology*". The Wayside and Woodland Books are excellent for Lepidoptera, Hymenoptera and Dragonflies. Hofmann and Kirby's "*Beetle Collector's Handbook*" and Joy's "*Habits of Beetles*" are useful. I have made free use of Mosely's work on Caddis Flies, a book for specialists. Eltringham on "*The Senses of Insects*" is an interesting monograph. "*The Biology of Insects*" by Carpenter is most helpful.

I close this section on literature and also my address by quoting a passage which I call the Entomologist's Creed :—

“ When God had finished the stars and whirl of coloured suns,
He turned His mind from big things to fashion little ones,
Beautiful tiny things, like daisies, He made ; and then
He made the comical ones, in case the minds of men
Should stiffen and become
Dull, humourless and glum.”

THE ROOK SURVEY OF LINCOLNSHIRE, 1944-45.

J. H. WHITE, B.Sc.

NATIONAL AGRICULTURAL ADVISORY SERVICE, EAST MIDLAND PROVINCE.

The first survey of rooks in the county was made in 1929-30 by Mr. A. Roebuck (1), Advisory Entomologist of the Midland Agricultural College in the course of a study of the economic position of the rook in agriculture. The county survey was part of a wider one covering the East Midland counties. He repeated the survey in 1933, and found no significant change during the four years interval.

Although there is still considerable controversy over the food of rooks, various workers drawing different deductions from their work, as to whether they do more harm than good or vice versa, close observation of the rook's feeding habits and examination of crop contents suggests that it is predominantly an insect feeder. This applies particularly during the critical months of spring and early summer when breeding and rearing, as the young are fed solely upon a diet of insects, larvae, etc. Furthermore, it is considered to be principally a bird of grassland—good grassland. Research has shown that grass provides considerably more insect food per acre than does arable land, and particularly in the top inch and a half, this depth being the maximum to which the rook's beak can be inserted.

In view of these facts, and the realisation that during the course of the war years a large acreage of grassland had been ploughed out, Mr. Roebuck suggested that the survey might be repeated. The object was to find out whether or not the rook population was increasing or decreasing to any serious extent. It was thought that any information obtained concerning this great change in the type of farming, and its effects on the rook population, would throw further light upon its true economic position.

A further survey in the county was carried out therefore in 1944—by Messrs. F. T. Baker, J. H. White and F. V. Mills, Miss E. Pepperdine and Mrs. M. Mason, of the Midland Agricultural College staff stationed in the county. During 1944, an area was covered in the centre of the county, the margin being roughly the perimeter of a circle with Lincoln as centre and of thirty miles radius. The remainder of the county—the extreme north, the coastal belt and Holland was completed in 1945. The counts were begun during the last week of

LOCATION OF ROOKERIES IN LINCOLNSHIRE—1944-5

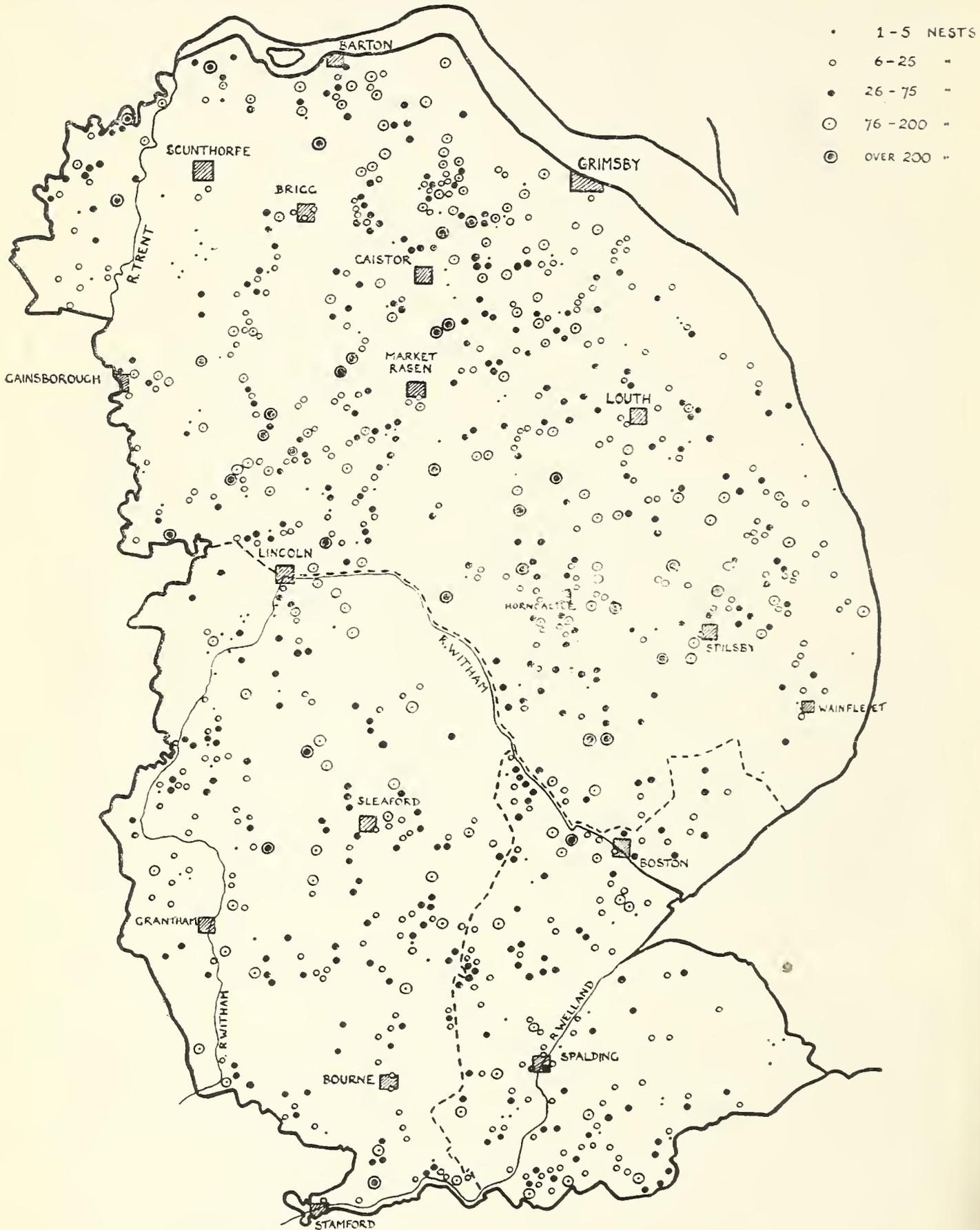


Fig. 1

March or first week of April, according to the state of the rookeries. By April most nests are completed and the trees are as yet not in leaf, so that month makes for most accurate observation, and in this survey most counts were made in April. The number of birds in any rookery was estimated by counting the number of nests and multiplying by

TABLE 1. (*Estimated Density—Part Rectangle).

Area	Nests	Area	Nests	Area	Nests	Area	Nests
*B 1	914	*A 6	208	C 10	437	E 14	580
*C 1	298	B 6	486	D 10	199	F 14	172
*D 1	676	C 6	486	E 10	67	*G 14	424
*E 1	156	D 6	773	F 10	601	*B 15	152
*A 2	880	E 6	523	G 10	545	C 15	576
B 2	229	F 6	257	H 10	250	D 15	398
C 2	647	G 6	331	*I 10	64	E 15	348
D 2	580	*H 6	168	*B 11	121	F 15	368
*E 2	504	B 7	203	C 11	201	*G 15	178
*F 2	—	C 7	1316	D 11	288	*H 15	—
*A 3	992	D 7	753	E 11	258	*B 16	176
B 3	72	E 7	632	F 11	831	C 16	—
C 3	272	F 7	597	G 11	227	D 16	247
D 3	238	G 7	432	H 11	99	E 16	137
E 3	1754	H 7	162	*I 11	48	F 16	200
		*I 7	29			G 16	82
*F 3	328	B 8	398	*B 12	544	*H 16	25
*G 3	—	C 8	628	C 12	274	*B 17	—
A 4	83	D 8	613	D 12	477	*C 17	560
B 4	19	E 8	58	E 12	5	D 17	51
C 4	181	F 8	919	F 12	577	E 17	429
D 4	462	G 8	400	G 12	188	F 17	350
E 4	978	H 8	651	*H 12	97	G 17	191
F 4	445	*I 8	51	B 13	84	*H 17	45
*G 4	210	*B 9	99	C 13	451	D 18	552
*A 5	56	C 9	356	D 13	535	E 18	418
B 5	130	D 9	304	E 13	392	F 18	560
C 5	314	E 9	338	F 13	687	*G 18	440
D 5	637	F 9	1033	G 13	333	*D 19	64
E 5	697	G 9	614	*H 13	296	*E 19	—
F 5	919	H 9	737	B 14	158	*F 19	790
G 5	104	*I 9	180	C 14	359	*G 19	360
*H 5	40	*B 10	162	D 14	202		

two. This ignored the non-breeding birds, but included structures built by one-year old birds, attempting to build in imitation of the breeding rooks. These two causes of error tend to cancel each other. In addition to the above observers, reports were also kindly received from Mr. G. R. Porter, of Long Benington (principally from the south of the county), and from Mr. Kenneth Fox, who surveyed Grimsby and the countryside within a radius of five miles.

The sites of all observed rookeries in the 1944-5 survey are given in Fig. 1. Several noticeable points emerge, but are probably emphasis-

ed more fully and so can be seen more easily in Fig. 2. In this, the total number of nests has been obtained for each area of 24 square miles. These rectangles are the divisions of the Ordnance Survey map of the county, and measure six miles by four. The totals for these areas have been grouped into grades, so making Fig. 2 a density map, indicating those areas where rooks are abundant or scarce in the county. Incomplete rectangles on the borders of the county have been estimated, *e.g.*, half a rectangle containing 200 nests has been placed in the appropriate grouping and indicated on the map as though it were a full rectangle and contained 400 nests.

As space does not allow of listing separately every rookery in the county, Table 1 gives the number of nests for each of these rectangles.

From Fig. 2, and the data from which this density map is obtained, it is seen that the areas of highest concentrations of rooks are :—

- (i) The Wolds, stretching from near the Humber to below Horncastle. This belt of high population seems to pass beyond the southern end of the Wold ridge on to the plain towards Midville, Stickville and Carrington.
- (ii) The area south west of Market Rasen, towards Lincoln.

The areas of low concentrations of rooks appear to be :—

- (i) The Blown Sand area stretching from Gainsborough north to Scunthorpe. This area also includes the lower half (the peat deposits) of the Isle of Axholme.
- (ii) The Fen land south-east from Lincoln along the Witham.
- (iii) A coastal belt—the eastern part of the Marsh, from the Humber to the Wash.
- (iv) The Wash itself, including most of Holland.

Factors affecting Distribution.

E. M. and B. D. Nicholson (3) in 1930, and Wynne (4) in 1932 suggested that three factors were of prime importance when attempting to account for the distribution of rooks over any area. They were :—

(a) **Proximity to rivers and streams.** In the surveys carried out by the above workers, it was found that the greatest density of rookeries occurred along river valleys and the banks of large streams, particularly where there were flood meadows.

(b) **Altitude.** There appeared to be a definite preference for lowland sites. The density in areas over 500 ft. was less than that of areas below that height.

(c) **Geological formation.** From the limited area surveyed by the Nicholsons, although no definite conclusions were reached, it was suggested that the geological formations had some effect on distribution, *e.g.*, the rooks appeared to dislike heavy clay land.

W. B. Alexander (5) however, surveying in the same district, but a larger area, in 1933 was unable to substantiate the suggestions put forward by E. M. and B. D. Nicholson, except to suggest once more that the geological formation might show some correlation with the numbers of rooks. He obtained, in the Oxford area, the greatest densities on chalk and Oxford clay. It is worth while to see whether these suggested factors have any bearing on the distribution of rooks in Lincolnshire.

THE DENSITY OF ROOKS IN LINCOLNSHIRE—1944-5

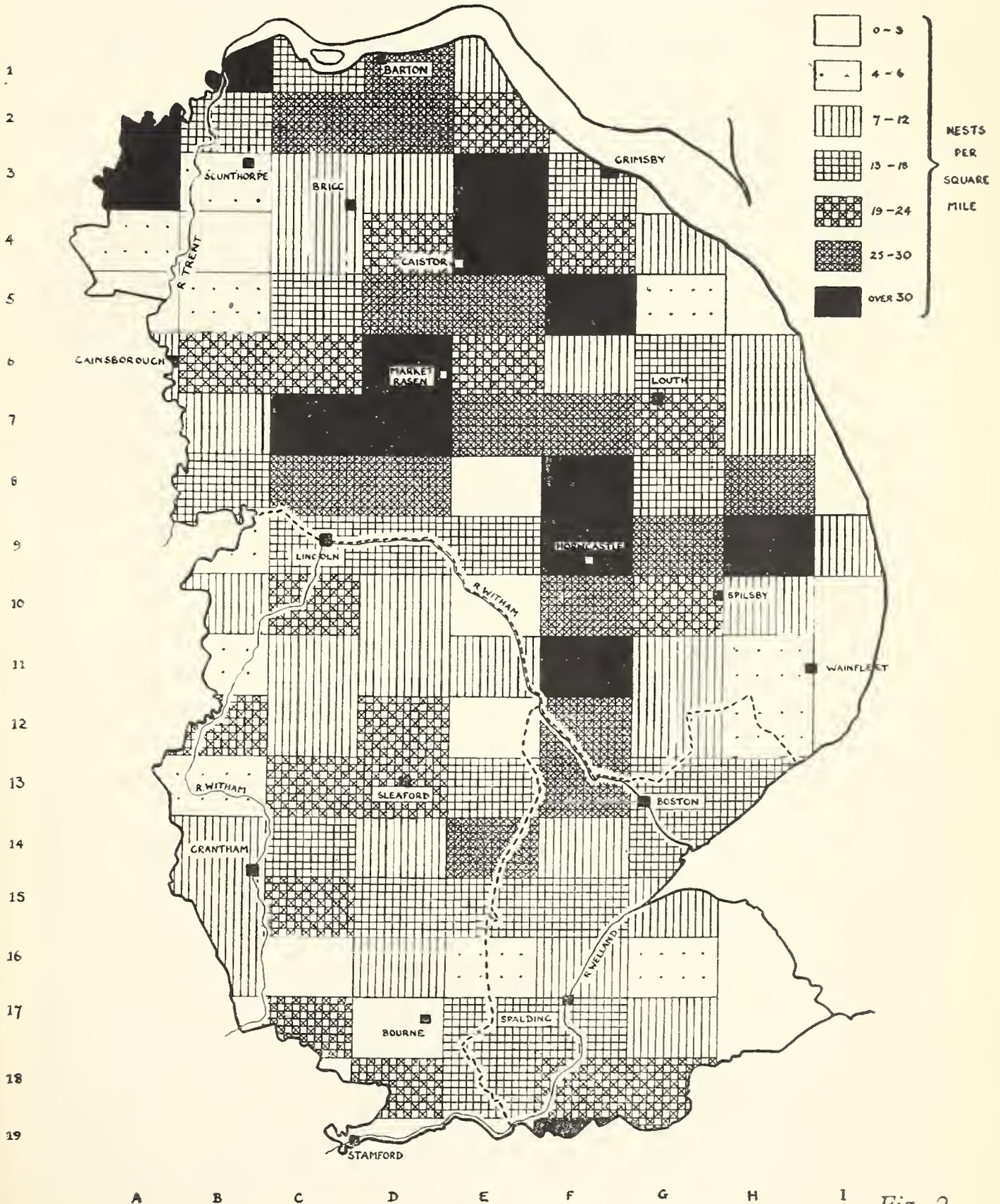


Fig. 2

There seems to be no close connection between the larger rivers and streams of the county and the number of rookeries located along them. Neither the Trent valley, the Ancholme, nor the Witham have a particularly large number of rookeries in close proximity to them. It must be borne in mind, however, that these areas are all intensely cultivated. Grass is not abundant, as the soil formations along these rivers are such as to encourage intensive arable farming. They are chiefly light soils, and what grass there is, is usually poor and thin. Furthermore, the areas which show highest populations are those where there are few streams of appreciable size—as the Wolds. It appears then that in this county, proximity to water is not one of the major factors governing distribution, or at least that it is concealed by some other over-riding factor.

The effect of altitude on rooks can be virtually disregarded in Lincolnshire. As there are no areas of any appreciable height above sea-level, it would be folly to attempt to draw any conclusions. Even the highest part of the Wolds has but a limited area above 400 ft.

An analysis of the distribution in Lincolnshire leads to the suggestion that there is considerable correlation between the density of rooks and the geological formation. This correlation is not necessarily a direct one, but soil type affects the countryside in so many and varied ways. The topographical features which constitute the county are but an outcome of the varying geological strata. The soil type affects the numbers and types of plants and animals in a community. Furthermore, it materially influences the type of farming. It decides whether the land is dominantly arable or not, whether there is an abundance of good grassland, and indirectly whether copses and small woods for nesting are common or scarce.

It is noticeable that the greatest density of rooks occurs where the land is rather heavy—as on the Wolds, the western side of the Marsh and the Lincoln-Market Rasen area. At the other extreme, the light sands and peat deposits show few rookeries. The basic factor concerning the numbers of rooks must surely be the amount of available food, particularly in spring, as without an abundant supply at this time breeding and rearing cannot be successfully carried out. It is worthy of consideration then that the grassland on heavy soil has a far higher faunal population than grassland on light soil. Taking one insect only as an illustration, the wireworm survey carried out during the war years showed that the heavy land in the county usually had a population of over a million wireworms to the acre, whilst the grass on light sand and peat had less than half that number. The wireworm is but an index of the faunal population of grassland, other insects are correspondingly more abundant on heavy land. The Wold area, where rooks are most numerous, has a very high wireworm population, and is incidentally one of two areas where these insects are most persistent and damaging in old arable fields. The other area

(also with many large rookeries) is on the plain south of the Wolds on the black peat land of Lindsey, south of Horncastle and Spilsby.

In Holland, where rooks are less numerous than the other two divisions of the county, the wireworm population was found to be consistently low. Whilst not over-emphasising the above points it does tend to suggest that the geological formation, by governing the soil faunal population directly and indirectly, does materially influence the density of rooks in any given area.

Changes in Population during Recent Years.

The surveys of 1929 and 1933 indicated that there had been little real change in the four years between, although there had been considerable movement of actual sites. A. Roebuck (2) found that during these four years, 14 per cent of the sites were altered.

During the 1944-5 survey it was again apparent that there was appreciable variation in nesting sites. Many of the 1933 rookeries were apparently non-existent, whilst many seemingly new ones appeared on slightly different sites. Table 2 gives the figures of rookeries and nests for these three surveys.

TABLE 2.

	1929			1933			1944-5		
	Rookeries	Nests	Av. Nests per Rookery	Rookeries	Nests	Av. Nests per Rookery	Rookeries	Nests	Av. Nests per Rookery
Lindsey	442	22447	50.8	447	22303	46.8	589	30791	52.3
Kesteven	160	8432	52.7	172	8509	49.5	217	8657	39.9
Holland	118	4412	37.4	136	4512	33.2	171	5662	33.3
TOTAL	720	35291	—	785	35324	—	977	45110	—
County Average		49.0			45.0			46.2	

There appears to be an increase of 192 rookeries since 1933. This may well be misleading. Where nesting sites are close together it is far from easy to establish whether the whole group consists of one, two or more colonies having separate entities. During the 1944-5 count, where there was a gap of 100 yards between nests or groups of nests, they were treated as separate rookeries, irrespective of more important biological factors such as communal feeding grounds, belonging to the same or different winter roosts, etc.

The number of nests recorded shows an increase of 9786 or 27.7 per cent over the second survey. Some of this increase is undoubtedly due to some rookeries having been missed by the single observer in 1929 and 1933. Table 3, giving the comparative figures for the separation of the rookeries into their groups illustrates this point.

TABLE 3.

	Lindsey			Kesteven			Holland		
	1929	1933	1944-5	1929	1933	1944-5	1929	1933	1944-5
0— 5	20	38	62	10	9	25	4	12	21
6—25	120	142	214	42	60	84	47	70	73
26—75	216	217	195	75	73	78	54	40	62
76— 200	79	74	92	31	26	27	13	13	14
Over 200	7	6	26	2	4	3	—	1	1
TOTAL	442	477	589	160	172	217	118	136	171

In Lindsey in 1944-5 there seemed a considerable increase in the number of rookeries with over 75 nests. Some of these were in completely new sites, and it suggests that these had been present many years, having been missed previously.

It is most difficult, however, to establish how far this discrepancy will account for the increase. It is unlikely that it accounts for it entirely. It is logical to suggest that the rookeries missed would in all probability, be small ones. The average of nests per rookery, however, in 1944-5 is higher than in 1933, indicating that these additional 192 rookeries have an average size of over 46 nests. This rather suggests that there has been an increase in the population since 1933.

From the terrain of the three divisions, it would seem most likely that Holland, being completely on the flat, and ideal for observational work of this type, would have been most correctly counted in the earlier surveys. Yet the figures show an increase in Holland of 27.7 per cent, as compared with 38.05 per cent in Lindsey and 1.74 per cent in Kesteven. It is very improbable that such a thorough observer would miss a quarter of the rookeries in Holland.

One further point must be borne in mind when considering these comparative figures. The increase noted is not necessarily an increase taking place during the war years and due to the great changes in wartime practices. There is no means of knowing the 1939 figures,

so any conclusions reached concerning the effect of the changes in agricultural methods from these surveys makes an assumption that the 1933 figures apply equally well for 1939.

Despite the lack of data, the available evidence suggests that there has been some increase in the numbers of rooks in Lincolnshire—the increase appearing to be particularly in Lindsey and Holland. Why the population of Kesteven has remained constant is a problem for speculation at the moment, for no relevant data is at hand to help in its elucidation.

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- (4) Wynne, J. F., The Rookeries of the Isle of Wight, *Journal of Animal Ecology*, Vol. 1. 1932.
- (5) Alexander, W. B., The Rook Population of the Upper Thames Region, *Journal of Animal Ecology*, Vol. 2. 1933.

A PRELIMINARY LIST OF THE LINCOLNSHIRE DIPTERA.

J. H. WHITE, B.SC.

The two-winged flies have been sadly neglected by entomologists of the Lincolnshire Naturalists' Union. Mr. Guy Mason made a small collection from the Alford district during 1886-8, and ten years later the Rev. A. Thornley collected from the county. These two lists were incorporated in 'A Preliminary List' by Mr. Grimshaw published in *The Naturalist* in 1898. That publication has been used as the basis for the present list, but no great weight should be given to these old records as the specimens are no longer available for confirmation, although most of them have been confirmed during recent years. Later, Miss S. C. Stow, making a list of the British Galls found in the county, provided the bulk of information concerning the Cecidomyidae.

The list makes no attempt to indicate the distribution of flies throughout the county, each species being recorded only for its first capture—the place, year, and collector being given.

The nomenclature used throughout is that of Kloet and Hincks 1945. Thanks are due to Dr. H. F. Barnes for his kind help with the Cecidomyidae.

KEY.

G.M.	Guy Mason.	S.C.S.	Miss S. C. Stow.
A.T.	Rev. A. Thornley.	E.C.R.	E. C. Riggall.
A.E.G.	A. E. Gibbs.	R.W.G.	R. W. Goulding.
A.R.	A. Roebuck.	H.W.B.	H. W. Burchnall.
J.H.W.	J. H. White.	J.W.C.	J. W. Carr.
A.E.W.P.	Rev. A. E. Woodruffe-Peacock.	J.W.K.	J. Wallis Kew.
W.W.	Dr. W. Wallace.	D.G.	Dr. George.
D.C.	Dr. Cassell.	C.M.	Claude Morley.
M.de V.G.	M. de V. Graham.		
A.S.	A. Smith.		
F.W.E.	Dr. F. W. Edwards.		
H.W.M.	Dr. H. W. Miles.		

Order : DIPTERA.

NEMATOCERA.

TIPULIDAE.

Tipulinae.

<i>Tipula fulvipennis</i> Deg.	Alford	G.M.	'88
<i>T. maxima</i> Poda	widely distributed		
<i>T. nigra</i> L.	Freshney Bogs	A.T.	'98
<i>T. scripta</i> Mg.	Theddlethorpe	A.E.G.	
<i>T. oleracea</i> Mg.	common		
<i>T. paludosa</i> Mg.	common		
<i>T. vernalis</i> Mg.	common		
<i>T. flavolineata</i> Mg.	Stapleford	A.R.	'34
<i>T. fascipennis</i> Mg.	Lincoln	J.H.W.	'45
<i>T. lunata</i> L.	common		
<i>Nephrotoma crocata</i> L.	Haxey	A.E.W.P.	'96
<i>N. scurra</i> Mg.	Scotton Common	A.T.	'98
<i>N. maculata</i> Mg.	common		
<i>N. quadrifaria</i> Mg.	Alford	G.M.	'88
<i>N. flavescens</i> L.	Gt. Coates	A.T.	'98
<i>N. guestfalica</i> Westh.	Lincoln	J.H.W.	'45
<i>Prionocera turcica</i> F.	Freshney Bogs	W.W.	'21
Limoniini.			
<i>Limonia nubeculosa</i> Mg.	Ashby	D.C.	
<i>L. flavipes</i> F.	Greenfield	G.M.	'87
<i>L. tripunctata</i> F.	Well	G.M.	'88
<i>L. ornata</i> Mg.	Freshney Bogs	W.W.	'21
Pediciini.			
<i>Pedicia rivosa</i> L.	Freshney Bogs	A.T.	'98
<i>Dicranota bimaculata</i> Schm.	Old Bolingbroke	M. de V.G.	'42
Hexatomini.			
<i>Limnophila lineola</i> Mg.	Scotton Common	A.T.	'98
<i>L. fulvonervosa</i> Schm.	Epworth	A.E.W.P.	'98
<i>L. ferruginea</i> Mg.	Scotton Common	A.T.	'98
Eriopterini.			
<i>Erioptera lutea</i> Mg.	Old Bolingbroke	M. de V.G.	'42
<i>Ormosia lineata</i> Macq.	Alford	G.M.	'96
<i>Molophilus bifidus</i> Goet.	Grimsby	W.W.	'21

TRICHO CERIDAE.

<i>Trichocera annulata</i> Mg.	Salmonby	M. de V.G.	'46
<i>T. regelationis</i> L.	common		
<i>T. saltator</i> Harris	Old Bolingbroke	M. de V.G.	'41
<i>T. hiemalis</i> Deg.	common		

ANISOPODIDAE.

<i>Anisopus fenestralis</i> Scop.	common		
<i>A. punctatus</i> F.	common		

PTYCHOPTERIDAE.

<i>Ptychoptera contaminata</i> L.	Brocklesby	A.S.	'00
<i>P. albimana</i> F.	Well	G.M.	'88
<i>P. lacustris</i> Mg.	Rigsby	G.M.	'87

CULICIDAE.

Dixinae.

<i>Dixa dilatata</i> Strobl.	Old Bolingbroke	M. de V.G.	'42
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Chaoborinae.

<i>Chaoborus pallidus</i> F.	Fiskerton	J.H.W.	'44
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Culicinae.

<i>Anopheles claviger</i> Mg.	widely distributed		
<i>A. maculipennis</i> Mg.	common		
<i>Theobaldia annulata</i> Schrk.	common		
<i>T. morsitans</i> Theob.	Grimsby	W.W.	'21
<i>Aedes punctor</i> Kirby	common		
<i>A. rusticus</i> Rossi	Grimsby	W.W.	'21
<i>A. gemiculatus</i> Oliv.	Grimsby	W.W.	'21
<i>Culex pipiens</i> L.	common		

CHIRONOMIDAE.

Tanypodinae.

<i>Pentaneura nigropunctata</i> Staeg.	Lincoln	J.H.W.	'45
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Orthocladiinae.

<i>Metriocnemus hygropetricus</i> Kieff.	Old Bolingbroke	M. de V.G.	'42
<i>M. impenus</i> Walk.	Old Bolingbroke	M. de V.G.	'42
<i>Hydrobaenus rufiventris</i> Mg.	Old Bolingbroke	M. de V.G.	'42
<i>H. oblidens</i> Walk.	Old Bolingbroke	M. de V.G.	'42
<i>H. contingens</i> Walk.	Old Bolingbroke	M. de V.G.	'42
<i>H. pratorum</i> Goet.	Old Bolingborke	M. de V.G.	'42

Chironominae.

<i>Chironomus plumosus</i> L.	common		
<i>C. viridis</i> Macq.	Washingborough	J.H.W.	'45
<i>Tanytarsus brunnipes</i> Zett.	Old Bolingbroke	M. de V.G.	'42

CERATOPOGONIDAE.

<i>Forcipomyia ciliata</i> Winn.	Old Bolingbroke	M. de V.G.	'42
<i>F. bipunctata</i> L.	Mablethorpe	G.M.	'88
<i>F. murina</i> Winn.	Old Bolingbroke	M. de V.G.	'40
<i>Culicoides pictipennis</i> Staeg.	Old Bolingbroke	M. de V.G.	'40
<i>C. maritimus</i> Kieff.	Holbeach	F.W.E.	'39
<i>C. chiopterus</i> Mg.	Old Bolingbroke	M. de V.G.	'40
<i>C. obsoletus</i> Mg.	Old Bolingbroke	M. de V.G.	'40
<i>C. pulicaris</i> L.	Old Bolingbroke	M. de V.G.	'40
<i>Serromyia femorata</i> Mg.	Lincoln	M. de V.G.	'41

SIMULIIDAE.

<i>Simulium ornatum</i> Mg.	Old Bolingbroke	M. de V.G.	'40
<i>S. reptans</i> L.	Ashby	D.C.	'98

BIBIONIDAE.

<i>Bibio venosus</i> Mg.	Linwood	A.E.W.P.	'98
<i>B. pomonae</i> F.	Brigg.	J.H.W.	'45
<i>B. marci</i> L.	common		
<i>B. hortulanus</i> L.	Holbeach	H.W.M.	'25
<i>B. johannis</i> L.	common		
<i>B. laniger</i> Mg.	common		
<i>Dilophus febrilis</i> L.	common		
<i>D. femoratus</i> Mg.	common		

MYCETOPHILIDAE.

<i>Macrocera fasciata</i> Mg.	Well	G.M.	'88
<i>Sciara praecox</i> Mg.	Caistor	A.R.	'21
<i>S. varians</i> John.	Holbeach	H.W.M.	'25

CECIDOMYIIDAE.

Dasyneurini.

<i>Rhabdophaga marginemtorquens</i> Winn.	Bottesford	S.C.S.	'06
<i>R. rosaria</i> Loew. H.	Brandon	S.C.S.	'06
<i>R. terminalis</i> Loew H.	Bardney	A.R.	'38
<i>Dasyneura acrophila</i> Winn.	Court Leys	A.C.S.	'03
<i>D. alopecuri</i> Reuter	Caistor	A.R.	'27
<i>D. aparines</i> Kieff.	Stubton	S.C.S.	'03
<i>D. brassicae</i> Winn.	Saltersford	S.C.S.	'09
<i>D. galiicola</i> Loew F.	Little Ponton	S.C.S.	'04
<i>D. cardaminis</i> Winn.	Harrowby	S.C.S.	'06
<i>D. crataegi</i> Winn.	common		
<i>D. inchbaldiana</i> Mik.	Gt. Ponton	S.C.S.	'05
<i>D. muricatae</i> Meade	Claypole	S.C.S.	'03
<i>D. ranunculi</i> Bremi.	common		
<i>D. sisymbrii</i> Schrk.	Cadney	A.E.W.P.	'05
<i>D. ulmariae</i> Bremi.	widely distributed		
<i>D. urticae</i> Perris	widely distributed		
<i>D. violae</i> Loew F.	Sapperton	S.C.S.	'03
<i>Taxomyia taxi</i> Inch.	Belton	S.C.S.	'06
<i>Jaapiella thalictri</i> Rueb.	Court Leys	S.C.S.	'01
<i>J. veronicae</i> Vallot	widely distributed		
<i>Wachtliella persicariae</i> L.	Court Leys	S.C.S.	'05
<i>W. rosarum</i> Hardy	Brandon	S.C.S.	'06
<i>W. stachydis</i> Bremi.	common		

Oligotrophini.

<i>Hartigiola annulipes</i> Hartig	Belton	S.C.S.	'05
<i>Mikiola fagi</i> Hartig	Bottesford	A.E.W.P.	'05
<i>Rondaniola bursaria</i> Bremi.	Court Leys	S.C.S.	'04
<i>Iteomyia capreae</i> Winn.	Gt. Ponton	S.C.S.	'05

Asphondyliini.

<i>Kiefferia pimpermellae</i> Loew F.	Kirton Lindsey	A.E.W.P.	'02
<i>Asphondylia genestae</i> Loew F.	Rauceby	S.C.S.	'03

Cecidomyiini.

<i>Contarinia corylina</i> Loew F.	Potterhanworth	A.R.	'36
<i>C. jacobaea</i> Lowe H.	Skirbeck	S.C.S.	'09
<i>C. lathyri</i> Kieff.	Sapperton	S.C.S.	'03
<i>C. merceri</i> Barnes	Caistor	A.R.	'27
<i>C. loti</i> Deg.	common		
<i>C. nasturtii</i> Kieff.	locally abundant		
<i>C. pilosellae</i> Kieff.	Harrowby	S.C.S.	'09
<i>C. pisi</i> Winn.	widely distributed		
<i>C. pyrivora</i> Riley	widely distributed		
<i>C. tritici</i> Kirby	locally abundant		
<i>Sitodiplosis mosellana</i> Gehin	locally abundant		
<i>Stenodiplosis geniculati</i> Reuter	Caistor	A.R.	'27
<i>Harmandia tremulae</i> Winn.	Cranwell	S.C.S.	'10
<i>Clinodiplosis botularia</i> Winn.	Brandon	S.C.S.	'06
<i>Atrichosema aceris</i> Kieff.	Pickworth	S.C.S.	'06
<i>Pseudhormonyia granifex</i> Kieff.	Grantham	S.C.S.	'04

BRACHYCERA.

STRATIOMYIDAE.

Beridinae.

<i>Beris vallata</i> Forst.	Freshney Bogs	A.T.	'98
<i>B. fuscipes</i> Mg.	Ludborough	A.S.	'01
<i>B. morrisii</i> Dale	Aylesby	A.S.	'01
<i>Chorisop tibialis</i> Mg.	Alford	G.M.	88

Geosarginae.			
<i>Microchrysa polita</i> L.	common		
<i>M. flavicornis</i> Mg.	Louth	E.C.R.	'19
<i>Geosargus cuprarius</i> L. (var. <i>nubeculosus</i> Zett.)	frequent		
<i>G. irridatus</i> Scop.	Old Bolingbroke	M. de V.G.	'40
<i>G. flavipes</i> Mg.	Louth	R.W.G.	'15
<i>Chloromyia formosa</i> Scop.	common		
Stratiomyinae.			
<i>Stratiomys chamaeleon</i> L.	Skegness	J.W.C.	'00
<i>S. potamida</i> Mg.	Tathwell	H.W.B.	
Clitellariinae.			
<i>Nemoletus pantherinus</i> L.	Freshney Bogs	A.T.	'98
<i>N. uliginosus</i> L.	Saltfleet	A.T.	'98
<i>N. nigrinus</i> Fln.	Freshney Bogs	A.T.	'98
<i>Oxycera trilineata</i> F.	Grimsby	A.T.	'98
<i>O. formosa</i> Mg.	Salmonby	M. de V.G.	'46
Pachygastrinae.			
<i>Pachygaster ater</i> Panz.	Salmonby	M. de V.G.	'46
RHAGIONIDAE.			
Rhagioninae.			
<i>Rhagio scolopacea</i> L.	common		
<i>R. tringaria</i> L.	Well	G.M.	'88
<i>R. lineola</i> F.	Scotton Common	A.T.	'96
Chrysopilinae.			
<i>Chrysopilus cristatus</i> F.	Salmonby	M. de V.G.	'46
<i>C. aureus</i> Mg.	common		
TABANIDAE.			
<i>Chrysops caecutiens</i> L.	common		
<i>C. relictus</i> Mg.	Trusthorpe	A.T.	'97
<i>Haematopota pluvialis</i> L.	common		
<i>H. crassicornis</i> Whlbg.	Theddlethorpe	A.E.G.	
<i>Tabanus tropicus</i> Mg.	Little Bytham	A.T.	'00
CYRTIDAE.			
<i>Acrocer a globulus</i> Panz.	Scotton	A.T.	'98
BOMBYLIDAE.			
<i>Bombylius major</i> L.	Old Bolingbroke	M. de V.G.	'38
<i>B. minor</i> L.	Louth	J.W.K.	
THEREVIDAE.			
<i>Thereva annulata</i> F.	common		
<i>T. bipunctata</i> Mg.	Epworth	A.E.W.P.	'98
<i>T. nobilitata</i> F.	common		
<i>T. fulva</i> Mg.	Theddlethorpe	A.T.	'96
ASILIDAE.			
<i>Leptogaster cylindrica</i> Deg.	Newton-on-Trent	A.T.	'97
<i>Dioctria atricapilla</i> Mg.	Epworth	A.E.W.P.	'97
<i>D. rufipes</i> Deg.	common		
<i>Philonicus albiceps</i> Mg.	Mumby	G.M.	'88
<i>Asilus crabroniformis</i> L.	Manton	D.G.	
<i>Dysmachus trigonus</i> Mg.	Scunthorpe	A.T.	'96
<i>Eutolmus rufibarbis</i> Mg.	Mumby	G.M.	'86
<i>Machimus atricapillus</i> Fln.	Mablethorpe	A.T.	'00

EMPIDIDAE.

Tachydromiinae.

<i>Tachypeza nubila</i> Mg.	Mumby	G.M.	'98
<i>Tachydromia arrogans</i> L.	Mumby	G.M.	'88
<i>T. annulimana</i> Mg.	Salmonby	M. de V.G.	'46
<i>Platypalpus curtisans</i> F.	common		

Hybotinae.

<i>Hybos grossipes</i> L.	Linwood	E.C.R.	'19
<i>H. femoratus</i> Mull.	Scotter	J.H.W.	'45

Ocydromiinae.

<i>Ocydromia glabricula</i> Flin.	Corringham	J.H.W.	'45
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Empidinae.

<i>Ragas unica</i> Walk.	Navenby	J.H.W.	'45
<i>Hilara quadrivittata</i> Mg.	Gate Burton	A.T.	'98
<i>H. maura</i> F.	common		
<i>H. pilosa</i> Zett.	Corringham	J.H.W.	'45
<i>Empis stercorea</i> L.	Well	G.M.	'88
<i>E. trigramma</i> Mg.	common		
<i>E. digramma</i> Mg.	Scotter	J.H.W.	'45
<i>E. lutea</i> Mg.	Louth	J.W.K.	'86
<i>E. borealis</i> L.	Well	G.M.	'85
<i>E. livida</i> L.	common		
<i>E. opaca</i> Mg.	Cadney	A.E.W.P.	'98
<i>E. tessellata</i> F.	common		
<i>E. pennaria</i> Flin.	common		
<i>E. chioptera</i> Mg.	Authorpe	E.C.R.	'20
<i>Rhamphomyia flava</i> Flin.	Salmonby	M. de V.G.	'46
<i>R. geniculata</i> Mg.	Scotton Common	A.E.W.P.	'98
<i>R. tarsata</i> Mg.	Authorpe	E.C.R.	'17
<i>R. sulcata</i> Mg.	common		

DOLICHOPIDAE.

Dolichopodinae.

<i>Dolichopus picipes</i> Mg.	Freshney Bogs	A.T.	'98
<i>D. plumipes</i> Scop.	Mablethorpe	A.T.	'97
<i>D. popularis</i> Wied.	Freshney Bogs	A.T.	'98
<i>D. urbanus</i> Mg.	Freshney Bogs	A.S.	'00
<i>D. griseipennis</i> Stan.	Gate Burton	A.T.	'96
<i>D. festivus</i> Hal.	Salmonby	M. de V.G.	'46
<i>D. trivialis</i> Hal.	Well	G.M.	'88
<i>D. longicornis</i> Stan.	Scotter	J.H.W.	'45
<i>D. brevipennis</i> Mg.	common		
<i>D. unguatus</i> L.	common		
<i>Gymnopterus cupreus</i> Flin.	Scotton Common	A.E.W.P.	'98
<i>Poecilobothrus nobilitatus</i> L.	common		

Hydrophorinae.

<i>Scellus notatus</i> F.	Cadney	A.E.W.P.	'98
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Medeterinae.

<i>Medeterus jaculus</i> Flin.	Salmonby	M. de V.G.	'46
<i>M. truncorum</i> Mg.	Salmonby	M. de V.G.	'46

Rhaphiinae.

<i>Porphyrops elegantula</i> Mg.	Scotton Common	A.E.W.P.	'98
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Diaphorinae.

<i>Chrysotus gramineus</i> Flin.	Salmonby	M. de V.G.	'46
<i>Argyra diaphana</i> F.	Gautby	J.H.W.	'45
<i>A. argentina</i> Mg.	Salmonby	M. de V.G.	'46
<i>A. argyria</i> Mg.	Mumby	G.M.	'88
<i>A. leucocephala</i> Mg.	Salmonby	M. de V.G.	'46

Campsicneminae.			
<i>Xanthochlorus tenellus</i> Wied.	Salmonby	M. de V.G.	'46
Chrysosomatinae.			
<i>Sciopus platypterus</i> F.	Louth	J.W.K.	'86
<i>S. loewii</i> Wied.	Linwood	E.C.R.	'19
LONCHOPTERIDAE.			
<i>Lonchoptera lutea</i> Panz.	Old Bolingbroke	M. de V.G.	'40
PHORIDAE.			
<i>Triphleba opaca</i> Mg.	Gt. Coates	A.E.W.P.	'98
<i>Spiniphora bergenstammi</i> Mik.	Scunthorpe	A.R.	'43
<i>Phora aterrima</i> F.	frequent		
<i>Megaselia rufipes</i> Mg.	common		
ASCHIZA.			
CLYTHIIDAE.			
<i>Clythia infumata</i> Hal.	Grimsby	W.W.	'21
DORILAIIDAE.			
<i>Chalarus spurius</i> Fln.	Salmonby	M. de V.G.	'46
<i>Dorilas sylvaticus</i> Mg.	Mablethorpe	A.T.	'97
<i>D. geniculatus</i> Mg.	Newton-on-Trent	A.T.	'98
<i>D. haemorrhoidalis</i> Zett.	Salmonby	M. de V.G.	'46
<i>D. terminalis</i> Thoms.	Salmonby	M. de V.G.	'46
<i>D. ater</i> Mg.	Salmonby	M. de V.G.	'46
SYRPHIDAE.			
<i>Lampetia equestris</i> F.	Locally abundant in south		
<i>Paragopsis strigatus</i> Fln.	Locally abundant in south		
<i>Myathropa florea</i> L.	Torksey	A.T.	'98
<i>Eristalinus sepulchralis</i> L.	Theddlethorpe	A.T.	'96
<i>Tubifera tenax</i> L.	common		
<i>T. intricaria</i> L.	common		
<i>T. arbustorum</i> L.	common		
<i>T. horticola</i> Deg.	common		
<i>T. pertinax</i> Scop.	common		
<i>T. nemorum</i> L.	common		
<i>Parhelophilus fruteorum</i> F.	Theddlethorpe	A.T.	'96
<i>Helophilus parallelus</i> Harr.	Theddlethorpe	A.E.G.	'96
<i>H. hybridus</i> Loew.	Theddlethorpe	A.T.	'96
<i>H. pendulus</i> L.	common		
<i>Ferdinandea cuprea</i> Scop.	Burwell	E.C.R.	'19
<i>Zelima segnis</i> L.	Greenfield	G.M.	'87
<i>Z. sylvarum</i> L.	Burwell	A.T.	'97
<i>Penthesilea floccosa</i> Mg.	Lincoln	J.H.W.	'45
<i>Cinxia silentis</i> Harr.	Scotton Common	A.T.	'96
<i>Tropidia scita</i> Harr.	Mablethorpe	A.T.	'97
<i>Syrirta pipiens</i> L.	common		
<i>Rhingia rostrata</i> L.	Skellingthorpe	A.T.	'97
<i>R. macrocephala</i> Harr.	common		
<i>Volucella pellucens</i> L.	Louth	J.W.K.	'86
<i>V. bombylans</i> L.			
Var. <i>plumata</i> Deg.	Louth	A.T.	'96
Var. <i>bombylans</i> L.	Authorpe	E.C.R.	'19
Var. <i>haemorrhoidalis</i> Zett.	Linwood	E.C.R.	'19
<i>Neoascia podagrica</i> F.	widely distributed		
<i>N. dispar</i> Mg.	Salmonby	M. de V.G.	'46
<i>Sphegina clunipes</i> Fln.	Freshney Bogs	A.S.	'20
<i>Baccha obscuripennis</i> Mg.	Rigsby	G.M.	'86
<i>B. elongata</i> F.	Old Bolingbroke	M. de V.G.	'38

<i>Callicera aenea</i> F.	Little Bytham	A.T.	'00
<i>Chilomyia illustrata</i> Harr.	Mumby	G.M.	'88
<i>C. corydon</i> Harr.	Salmonby	M. de V.G.	'46
<i>C. nebulosa</i> Verr.	Salmonby	M. de V.G.	'46
<i>C. fraterna</i> Mg.	Freshney Bogs	A.T.	'98
<i>C. albitarsis</i> Mg.	common		
<i>C. proxima</i> Zett.	Cadney	A.E.W.P.	'98
<i>Cartosyrphus paganus</i> Mg.	Scotton	J.H.W.	'45
<i>Orthoneura splendens</i> Mg.	Theddlethorpe	A.E.G.	
<i>Chrysogaster hirtella</i> Loew.	frequent on coast		
<i>Sulcatella tarsata</i> Mg.	Scotter	J.H.W.	'45
<i>S. metallina</i> F.	Theddlethorpe	A.T.	'96
<i>Cheilosia granditarsa</i> Forst.	Gedney Marsh	C.M.	
<i>Melanostoma ambiguum</i> Fln.	Salmonby	M. de V.G.	'46
<i>M. mellinum</i> L.	common		
<i>Platycheirus manicatus</i> Mg.	common		
<i>P. timeo</i> Harr.	Mablethorpe	A.T.	'96
<i>P. scutatus</i> Mg.	Theddlethorpe	A.T.	'96
<i>P. albimanus</i> F.	Mablethorpe	A.T.	'98
<i>P. scambus</i> Staeg.	Widely distributed		
<i>P. fulviventris</i> Mcq.	Mablethorpe	A.T.	'96
<i>P. clypeatus</i> Mg.	widely distributed		
<i>P. angustatus</i> Zett.	Mablethorpe	A.T.	'96
<i>Melangyna quadrimaculata</i> Verr.	Ashby	D.C.	
<i>Stenosyrphus umbellatarum</i> F.	Torksey	A.T.	'96
<i>Sphaerophoria scripta</i> L.	fairly generally distributed		
Var. <i>dispar</i> Loew.			
<i>S. menthastri</i> L.	fairly generally distributed		
Var. <i>picta</i> Mcq.			
<i>Episyrphus auricollis</i> Mg.	Ashby	D.C.	'98
Var. <i>maculicornis</i> Zett.			
<i>E. balteatus</i> Deg.	common		
<i>Ischyrosyrphus laternarius</i> Mull.	Theddlethorpe	A.E.G.	
<i>Epistrophe eligans</i> Harr.	Ashby	A.T.	'96
<i>Pipiza noctiluca</i> L.	common		
<i>Chrysotoxum cautum</i> Harr.	Manton	D.G.	
<i>C. arctuatatum</i> L.	Cadney	A.E.W.P.	'98
<i>C. bicinctum</i> L.	Freshney Bogs	A.T.	'98
<i>Scaeva pyrastris</i> L.	common		
<i>Metasyrphus latifasciatus</i> Mcq.	Newton-on-Trent	A.T.	'96
<i>M. consisto</i> Harr.	common		
<i>M. luniger</i> Mg.	common		
<i>Syrphella albostrigata</i> Fln.	Salmonby	M. de V.G.	'46
<i>S. lunulata</i> Mg.	Hibaldstow	A.E.W.P.	'98
<i>Syrphus lucorum</i> L.	common		
<i>Syrphidis torvus</i> O.S.	Old Bolingbroke	M. de V.G.	'42
<i>S. ribesii</i> L.	common		
<i>S. vitripennis</i> Mg.	Old Bolingbroke	M. de V.G.	'42
<i>S. nitidicollis</i> Mg.	Mablethorpe	A.T.	'97

ACALYPTERAE.

CONOPIDAE.

Conopinæ.

Conops quadrifasciata Deg.

Old Bolingbroke M. de V.G. '46

C. flavipes L.

Scotton Common A.T. '97

Myopinæ.

Sicus ferrugineus L.

Ashby D.C. '98

Myopa buccata L.

Manton S.C.S. '16

PLATYSTOMATIDAE.

Platystoma seminationis L.

common

OTITIDAE.

<i>Otites guttata</i> Mg.	Well	G.M.	'88
<i>Tetanops myopina</i> Fln.	Theddlethorpe	A.E.G.	
<i>Meliera crassipennis</i> F.	Freshney Bogs	A.T.	'98
<i>M. omissa</i> Mg.	Mablethorpe	A.T.	'97
<i>M. picta</i> Mg.	Gedney	C.M.	
<i>Herina frondescentiae</i> L.	Freshney Bogs	A.T.	'97
<i>H. germinationis</i> Rossi	Cadney	A.E.W.P.	'97
<i>Seioptera vibrans</i> L.	Alford	G.M.	'88

PALLOPTERIDAE.

<i>Palloptera ustulata</i> Fln.	Salmonby	M. de V.G.	'46
<i>P. umbellatarum</i> F.	Mablethorpe	A.T.	'97
<i>P. arcuata</i> Fln.	fairly common		
<i>P. trimacula</i> Mg.	Louth	J.W.K.	'86
<i>Toxoneura muliebris</i> Harris	Kirton Lindsey	D.G.	

PIOPHILIDAE.

<i>Piophilila casei</i> L.	locally abundant		
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DRYOMYZIDAE.

<i>Dryomyza flaveola</i> F.	Scunthorpe	A.T.	'97
<i>Neuroctena anilis</i> Fln.	Salmonby	M. de V.G.	'46
<i>Helcomyza ustulata</i> Curt.	Mablethorpe	A.T.	'98

TRYPETIDAE.

Myopitinae.

<i>Urophora cardui</i> L.	Cadney	A.E.W.P.	'98
<i>U. solstitialis</i> L.	Hibaldstow	A.E.W.P.	'98
<i>U. macrura</i> Loew.	Ropsley	S.C.S.	'08
<i>Vidalia cornuta</i> Scop.	Alford	G.M.	'88
<i>Rhagoletis alternata</i> Fln.	Lincoln	J.H.W.	'44
<i>Euribia zoe</i> Mg.	common		
<i>Philophylla heraclei</i> L.	locally abundant		

Trypetinae.

<i>Trypeta falcata</i> Scop.	Mablethorpe	A.T.	'97
<i>T. tussilaginis</i> F.	Burwell	A.E.G.	
<i>Xyphosia miliaria</i> Schrk.	Gate Burton	A.T.	'97
<i>Paroxyna plantaginis</i> Hal.	Gedney	C.M.	
<i>Tephritis bardanae</i> Schrk.	Cadney	A.E.W.P.	'98
<i>T. vespertina</i> Loew.	Washingborough	J.H.W.	'44

LONCHAEIDAE.

<i>Lonchaea chorea</i> F.	Aylesby	A.S.	'00
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LAUXANIIDAE.

<i>Calliopum aeneum</i> Fln.	Cadney	A.T.	'97
<i>Tricholauxania praeusta</i> Fln.	Louth	J.W.K.	'86
<i>Homoneura notata</i> Fln.	Salmonby	M. de V.G.	'46
<i>Minettia lupulina</i> F.	Mablethorpe	A.T.	'97
<i>Cnemacantha rorida</i> Fln.	Alford	G.M.	'88
<i>C. pallidiventris</i> Fln.	Salmonby	M. de V.G.	'46
<i>C. sordida</i> Hal.	Salmonby	M. de V.G.	'46
<i>C. decempunctata</i> Fln.	Salmonby	M. de V.G.	'46
<i>Sapromyza sexpunctata</i> Mg.	Salmonby	M. de V.G.	'46
<i>S. apicalis</i> Loew.	common		

TYLIDAE.

<i>Trepidaria cibaria</i> L.	Ashby	D.C.	'98
<i>Tylos corrigeolatus</i> L.	Well	G.M.	'85

PSILIDAE.

<i>Loxocera aristata</i> Panz.	Salmonby	M. de V.G.	'46
<i>Psila fimetaria</i> L.	widely distributed		
<i>P. gracilis</i> Mg.	Mablethorpe	A.T.	'97
<i>P. rosae</i> F.	locally abundant		
<i>P. nigricornis</i> Mg.	Cadney	A.E.W.P.	'98
<i>P. atra</i> Mg.	Mablethorpe	A.T.	'97

SEPSIDAE.

<i>Enicta annulipes</i> Mg.	Salmonby	M. de V.G.	'46
<i>Themira putris</i> L.	Well	G.M.	'87
<i>Nemopoda nitidula</i> Fln.	frequent		
<i>Sepsis fulgens</i> Mg.	Ailby	G.M.	'88
<i>S. punctum</i> F.	Louth	J.W.K.	'86
<i>S. violacea</i> Mg.	Salmonby	M. de V.G.	'46
<i>S. cymipsea</i> L.	common		

SCIOMYZIDAE.

Sciomyzinae.

<i>Pelidnoptera nigripennis</i> F.	Ashby	D.C.	'98
<i>Sciomyza albocostata</i> Fln.	Well	G.M.	'88
<i>S. dorsata</i> Zett.	Salmonby	M. de V.G.	'46

Ditaeniidae.

<i>Ditaenia cinerella</i> Fln.	Mablethorpe	A.T.	'97
<i>Pherbellia schoenherri</i> Fln.	Gt. Coates	A.E.W.P.	'98

Tetanocerinae.

<i>Tetanocera hyalipennis</i> von Ros.	Scunthorpe	A.E.W.P.	'98
<i>T. silvatica</i> Mg.	Theddlethorpe	A.T.	'96
<i>T. elata</i> F.	Louth	G.M.	'88
<i>T. ferruginea</i> Fln.	Louth	J.W.K.	'86
<i>Lunigera chaerophylla</i> F.	widely distributed		
<i>Trypetoptera punctulata</i> Scop.	Well	G.M.	'88
<i>Elgiva sundewalli</i> Fries.	Newton-on-Trent	A.T.	'97
<i>E. cucularia</i> L.	Louth	J.W.K.	'86
<i>Ilione albisetata</i> Scop.	Ashby	A.T.	'97
<i>Hydromya dorsalis</i> F.	Gt. Coates	A.E.W.P.	'98
<i>Limnia unguicornis</i> Scop.	Mablethorpe	A.T.	'97
<i>L. fumigata</i> F.	Scotton	A.T.	'98
<i>Statinia marginata</i> F.	Mumby	G.M.	'86
<i>Sepedon sphaeus</i> F.	Mablethorpe	A.E.W.P.	'00
<i>S. spinipes</i> Scop.	Hartsholme	A.T.	'98
<i>Dichaetoptera obliterated</i> F.	Scotter	J.H.W.	'44

HELOMYZIDAE.

<i>Helomyza ustulata</i> Mg.	Salmonby	M. de V.G.	'46
<i>Allophylla atricornis</i> Mg.	Scotter	J.H.W.	'45
<i>Tephrochlamys rufiventris</i> Mg.	widely distributed		

OPOMYZIDAE.

<i>Opomyza germinationis</i> L.	common		
<i>Geomyza venusta</i> Mg.	Mablethorpe	A.T.	'97
<i>G. combinata</i> L.	Mablethorpe	A.T.	'97
<i>G. tripunctata</i> Fln.	Mablethorpe	A.T.	'97

EPHYDRIDAE.

<i>Coenia palustris</i> F.	Gt. Coates	A.E.W.P.	'98
<i>Linnellia quadrata</i> Fln.	Old Bolingbroke	M. de V.G.	'40

SPHAEROCERIDAE.

<i>Sphaerocera curvipes</i> Latr.	Fillingham	J.H.W.	'45
<i>Borborus ater</i> Mg.	Kirton Marsh	A.T.	'98
<i>Trichiapsis equina</i> Fln.	common		

DROSOPHILIDAE.

Drosophila buscki Coqu. Grimsby A.R. '43

AGROMYZIDAE.

Domomyza ambigua Fln. common
Liriomyza pusilla Mg. Lincoln A.R. '42
Phytomyza atricornis Mg. Spalding H.W.M. '26
P. albiceps Mg. Scotter J.H.W. '45
P. ilicis Curt. widely distributed

CHLOROPIDAE.

Oscinellinae.

Elachiptera brevipennis Mg. Leamlands C.M.
E. cornuta Fln. common
Conioscellina cinctella Zett. Salmonby M. de V.G. '46
Oscinella frit L. locally abundant

Chloropinae.

Meromyza pratorum Mg. Mablethorpe A.T. '97
Chlorops pumilionis Bjerk. frequent
C. brunnipes Zett. Lincoln J.H.W. '45
C. speciosa Mg. Salmonby M. de V.G. '46
Thaumatomyia notata Mg. Holton-le-Moor J.H.W. '44
T. trifasciata Zett. Salmonby M. de V.G. '46

CALYPTERAE.**CORDILURIDAE.**

Cordilurinae.

Cordilura pudica Mg. Mablethorpe A.T. '96
Amaurosoma armillatum Zett. Caistor A.R. '36

Scatomyzinae.

Scopeuma lutarium F. Mablethorpe A.T. '97
S. stercorarium L. common
S. squalidum Mg. Manton J.H.W. '46
Scatomyza litorea Fln. Saltfleet A.T. '97
Ceratinostoma ostiorum Hal. Mablethorpe A.T. '97

Norelliinae.

Norellisoma spinimanum Fln. Marton A.T. '97

Hydromyzinae.

Hydromyza livens F. Mablethorpe A.T. '97

LARVAEVORIDAE.

Salmaciinae.

Pseudoperichaeta insidiosa Rob-Des. Kirton H.W.M. '25
Phryxe vulgaris Fln. Cadney A.E.W.P. '98
Masicera silvatica Fln. Ashby D.C. '98
Brachicheta strigata Mg. Salmonby M. de V.G. '46
Carcelia comata Rnd. Ashby D.C. '96
Nemorilla floralis Fln. Wainfleet A.R. '36
Salmacia sicala Rob-Des. Linwood E.C.R. '14
S. capitata Deg. Manton A.T. '96

Phorocerinae.

Exorista simulans Mg. Somerby A.E.W.P. '97
Bessa selecta Mg. Kirton H.W.M. '25
Meigenia mutabilis Fln. Kirton Marsh A.T. '97
Compsilura concinnata Mg. Kirton H.W.M. '25
Crocota geniculata Deg. common
C. cristata F. Old Bolingbroke M. de V.G. '42

Larvaevorinae.

<i>Ernestia rudis</i> Fln.	Linwood	A.E.W.P.	'98
<i>Varichaeta radicum</i> F.	Torksey	A.T.	'97
<i>Meriania puparum</i> F.	Gainsborough	A.T.	97
<i>Lypha dubia</i> Fln.	Manton	J.H.W.	'46
<i>Gymnocheta viridis</i> Fln.	Manton	J.H.W.	'46
<i>Linnaemya vulpina</i> Fln.	Scotton	A.T.	'97
<i>Eriothrix rufomaculatus</i> Deg.	frequent		
<i>Larvaevora grossa</i> L.	Linwood	E.C.R.	'46
<i>Thelaira leucozona</i> Panz.	widely distributed		
<i>Pelatachina tibialis</i> Fln.	Old Bolingbroke	M. de V.G.	'46

Dexiinae.

<i>Trixa oestroidea</i> Rob-Des.	Theddlethorpe	A.T.	'96
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CALLIPHORIDAE.

Rhinophorinae.

<i>Phyto melanocephala</i> Mg.	Mablethorpe	A.T.	'97
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Sarcophaginae.

<i>Sarcophaga melanura</i> Mg.	Theddlethorpe	A.T.	'96
<i>S. clathrata</i> Mg.	Salmonby	M. de V.G.	'46
<i>S. nigriventris</i> Mg.	Mablethorpe	A.T.	'97
<i>S. carnaria</i> L.	common		
<i>S. similis</i> Meade	Mablethorpe	A.T.	'97
<i>S. haemorrhoidalis</i> Fln.	Mablethorpe	A.T.	'97
<i>S. haemorrhoea</i> Mg.	Theddlethorpe	A.T.	'97
<i>Metopia argyrocephala</i> Mg.	Scunthorpe	A.T.	'97
<i>Miltogramma punctatum</i> Mg.	Manton	D.C.	

Calliphorinae.

<i>Protophormia terrae-novae</i>			
	Rob-Des.	Gainsborough	A.T.
		common	'97
<i>Calliphora erythrocephala</i> Mg.		common	
<i>C. vomitoria</i> L.		common	
<i>Onesia biseta</i> Ville.		common	
<i>Melinda caerulea</i> Mg.		Old Bolingbroke	M. de V.G.
		common	'46
<i>Lucilia caesar</i> L.		common	
<i>L. silvarum</i> Mg.		Mablethorpe	A.T.
		frequent	'97
<i>L. sericata</i> Mg.		frequent	
<i>Pollenia rudis</i> F.		common	

MUSCIDAE.

Muscinae.

<i>Musca domestica</i> L.	common		
<i>M. autumnalis</i> Deg.	common		
<i>Orthellia cornicina</i> F.	common		
<i>Dasyphora cyanella</i> Mg.	frequent		
<i>Pyrellia cyanicolor</i> Zett.	Brant Broughton	J.H.W.	'45
<i>Graphomyia maculata</i> Scop.	frequent		
<i>G. picta</i> Ztt. (see E.M.M. 1889, p. 281)			
<i>Myiospila meditabunda</i> F.	Cadney	A.T.	'95
<i>Mesembrina meridiana</i> L.	frequent		
<i>Muscina stabulans</i> Fln.	frequent		
<i>Morellia hortorum</i> Fln.	common		
<i>Stomoxys calcitrans</i> L.	common		
<i>Haematobia stimulans</i> Mg.	Old Bolingbroke	M. de V.G.	'46

Gasterophilinae.

<i>Gasterophilus intestinalis</i> Deg.	Manton	A.T.	'97
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Phaoniinae.

<i>Drymeia hamata</i> Fln.	Cadney	A.E.W.P.	'98
<i>Ophyra leucostoma</i> Weid.	widely distributed		
<i>Alloeostylus diaphanus</i> Weid.	Well	G.M.	'87
<i>Polietes lardaria</i> F.	common		
<i>Pseudomorellia albinolineata</i> Fln.	Ashby	D.C.	
<i>Phaonia perdita</i> Mg.	Mablethorpe	A.T.	'97
<i>P. basilis</i> Zett.	frequent		
<i>P. incana</i> Weid.	widely distributed		
<i>Hydrotaea irritans</i> Fln.	frequent		
<i>H. dentipes</i> F.	Scotter	J.H.W.	'45
<i>Fannia hamata</i> Mcq.	Cadney	A.E.W.P.	'98
<i>F. canicularis</i> L.	common		
<i>F. armata</i> Mg.	Mablethorpe	A.T.	'97
<i>F. scalaris</i> F.	common		

Lispinae.

<i>Lispe caesia</i> Mg.	Theddlethorpe	A.T.	'96
<i>L. tentaculata</i> Deg.	Mumby	G.M.	'88

Mydaeinae.

<i>Hebecnema umbricata</i> Mg.	Mablethorpe	A.T.	'97
<i>Mydaea urbana</i> Mg.	frequent		
<i>Helina setiventris</i> Ring.	Scotter	J.H.W.	'46
<i>H. duplicata</i> Mg.	Mablethorpe	A.T.	'97
<i>H. lucorum</i> Fln.	frequent		
<i>H. impuncta</i> Fln.	common		
<i>H. quadrum</i> F.	Louth	J.W.K.	'86
<i>H. protuberans</i> Zett.	common along coast		

Anthomyiinae.

<i>Hydrophoria conica</i> Weid.	Ashby	D.C.	'98
<i>Pegomya bicolor</i> Weid.	Scotter	J.H.W.	'45
<i>P. betae</i> Curt.	locally abundant		
<i>Hylemya strenua</i> Rob-Des.	frequent		
<i>H. variata</i> Fln.	frequent		
<i>H. coarctata</i> Fln.	locally abundant		
<i>Delia cilicrura</i> Rond.	locally abundant		
<i>D. cepetorum</i> Meade	locally abundant		
<i>Erioischia brassicae</i> Bouché	common		
<i>Anthomyia pluvialis</i> Mg.	Gate Burton	A.T.	'97

Coenosiinae.

<i>Caricea tigrina</i> F.	Mablethorpe	A.T.	'97
<i>Coenosia rufipalpis</i> Mg.	Epworth	A.T.	'98

PUPIPARA.

HIPPOBOSCIDAE.

<i>Hippobosca equina</i> L.	Well	J.W.K.	'86
<i>Melophagus ovinus</i> L.	frequent		
<i>Stenopteryx hirundinis</i> L.	Lincoln	A.R.	'30

REPORT OF THE HON. SECRETARY AND TREASURER, 1946.

The outstanding event of this year has been the formation of a permanent committee of the Lincolnshire Naturalists' Union to deal with nature conservation and reserves in the County. Nature conservation is a vital part of our work that has been carefully watched over a number of years by your officers, but which under present conditions, involving extensive planning and development in the County, requires a vigorous policy and special machinery of administration to meet the many problems that will occur in the next ten years. It can no longer be considered of secondary importance, but must take an increasingly prominent part in our programme. The constitution of "*The Nature Reserves and Wild Life Conservation Committee of the Lincolnshire Naturalists' Union*" is the most progressive step taken in the recent history of the Union and this development will be further strengthened and increased in scope under the leadership of its Chairman, Mr. T. H. Court, of Market Rasen, and in the capable hands of its Secretary, Mr. A. E. Smith, of Alford. Further details are given later in my report and the first report of the Committee will be presented later in this meeting.

The position of the Union has been further consolidated during the year, and interest in all its activities continues unabated. Financially, the response of members has been most encouraging and generous donations to the Publication Fund have this year amounted to two-thirds of the cost of publishing the *Transactions*. This, with a substantial amount from sale of back numbers of the *Transactions*, allowed a very satisfactory balance for general administrative expenses. Subscriptions amounted to £64 11s.—a record for the Union—and donations to the Publication Fund of £22 13s. exceeded the highest figures of last year. A grant of £10 was made to the Nature Reserves, etc., Committee. The balance on 31st December, 1946, is the highest we have so far recorded—£49 12s. 11d. Invested Life Members' subscriptions now stand at £160 17s. 11d., making a total balance in hand of £210 10s. 10d. This satisfactory amount demands that we should now consider the best use that can be made of it and you will be asked to consider the publication of County Brochures on Natural History later in the agenda of this meeting.

Field Meetings.

Seven meetings have been held in the field. The 216th meeting at Limber, near Brocklesby, under the able leadership of Mr. R. May, and Mr. S. A. Cox, revived an attractive pre-war fixture. Centre of interest was the bird-life and the members were shown a varied and interesting range of species, many of them nesting. The Earl of Yarborough kindly granted leave for the meeting to be held and tea was arranged at the New Inn, Limber. Reports were received after tea. The 217th meeting was by invitation of the President at Well

Vale, near Alford. Major R. Rawnsley granted permission for the Vale to be worked and Mr. F. L. Kirk was guide for the meeting. Interesting birds and plants were recorded, but rain spoiled the day for the entomologists. The President and Mrs. Kirk entertained the members to tea at the White Horse Hotel, Alford. Reports were presented at the meeting following the tea.

Stoke Rochford, visited on 20th July for the 218th meeting, has always been an attractive meeting. The Park, visited by courtesy of Major H. B. Turnor, provided a wide variety of plants and the ornithologists also had a good day. The party was under the direction of Mr. I. E. Ketteringham, of Harrowby Hall. It was regretted that owing to serious illness Mr. A. E. C. Chambers was not able to act as another guide on this occasion. Tea was taken at the Stoke Rochford Road House and reports on the day's work were presented. The 219th meeting was at Woodhall Spa, under the leadership of Mr. G. R. C. Keep and Mr. Beverley, Junr., on August 15th. Miss E. J. Gibbons conducted a party of botanists who were fortunate to make many interesting notes. The extensive plantations, visited by permission of the Forestry Commission, provided much of interest. The damage of the Pine-shoot moth to the young trees was most noticeable—up to 50 per cent of the trees were affected. Col. S. V. Hotchkin granted leave for the woods on the north side of Woodhall to be worked. Tea was taken at "The Tea House in the Woods" and reports received afterwards. For the 220th meeting at Boston on 21st September, the members were met by Miss M. M. Haslam, Capt. J. C. Wallace and Mr. G. R. Porter. The party first visited the Frieston Shore where the marsh flora was of interest. Afterwards, the North Sea Camp reclamation scheme was described by Capt. Wallace and the members were interested to see natural reclamation by planting *Spartina townsendii*, in progress. This method has been successfully used in Holland to reclaim large areas. The party was afterwards entertained to tea by the Boston members at the Peacock and Royal Hotel. Reports on the day's observations were given at the meeting following the tea. The Fungus Foray (221st meeting) this year was held at Fiskerton, near Lincoln. Local arrangements were made by Mr. E. E. Steele and the party was under the guidance of the mycological secretary, Miss G. M. Waterhouse. Permission to enter the woods and pits was granted by Mr. F. Butt, of Reepham. A full account of this meeting is published later in the *Transactions*. The 222nd meeting was a revival of another attractive pre-war feature—the Bird Migration meeting. This year it was held at Cleethorpes and a large party spent an interesting time on the dunes and foreshore towards Tetney Haven. The party was under the leadership of Mr. S. A. Cox, ornithological secretary and Mr. Reg. May. Mr. A. Gordon of Binbrook kindly provided light refreshment at his bungalow on the Humberston Fitties. Tea was taken at the Devonia Hotel, Cleethorpes.

Lecture-Demonstrations.

On 5th January an exhibition of natural history films was given by Dr. G. Morey, F.R.G.S., F.Z.S., in the City School, Lincoln. The quality of the films, which were from German sources, was outstanding and the members greatly appreciated the opportunity to see them. The subjects included "The life history of the Cabbage White butterfly," "Ant Life" and the "Life cycle of the onion." On 6th April, Dr. Allan Briggs gave a fascinating illustrated account of "The story of the eye," demonstrating its development and adaptation in nature. On 14th December at a geological symposium in the Lincoln Technical College, Professor H. H. Swinnerton of Nottingham University gave an account of his researches in the Lower Cretaceous deposits of Lincolnshire. His work was largely based on unique evidence obtained from the cores of the Alford water-bore in 1932 and from subsequent field investigation. Dr. P. E. Kent of the D'Arcy Exploration Company, showed diagrams of evidence obtained in geo-physical surveys in Lincolnshire. These included a section across the east midland area down to the carboniferous rocks with evidence of the new coalfield to the S.E. of Lincoln. Mr. C. F. B. Shillito described the glacial gravels in pits in the N.E. of the County exposed during the war. His excellent photographs were much admired by the members (*see frontispiece*).

Sectional Officers' Reports.

The meeting to receive reports from officers was again extremely well attended. It was held on 16th November at the Lincoln Technical College. Reports were presented for the sections as follows: Miss E. J. Gibbons (Botany), Miss G. M. Waterhouse (Mycology), Mr. S. A. Cox (Ornithology), Mr. T. H. Court (Entomology), Mr. E. C. Riggall (Coleoptera), Mr. A. Roebuck (Applied Zoology). The Photographic Section put on another excellent display of prints and slides—Mr. E. E. Steele, Mr. R. J. Batters and Mr. R. H. Hallam contributed. Mr. Hallam's flash-light photographs of the Woodcock were greatly admired.

Annual Meeting.

This was held at the Lincoln Technical College on 16th March. Mr. F. L. Kirk, B.Sc., N.D.A., N.D.D., was elected President for 1946-7 and Mr. S. H. Robinson, M.Sc., F.R.M.S., President-elect. The following alterations and additions were made to the Sectional Officers: Mr. J. H. White, B.Sc., Secretary for Diptera; Mr. S. A. Cox, was re-designated Ornithological Secretary and Mr. S. H. Robinson was elected President of the Microscopy Section with Mr. E. Wainwright as Secretary. Miss E. J. Gibbons was appointed to represent the Union on the Wild Plant Conservation Board and Mr. F. T. Baker as representative on the Lindsey and Holland Rural Community Council. The President delivered his address—"Change in Nature." Mr. F. L. Kirk thanked him for his address and referred to the excellent work

Dr. Hull had accomplished as president during the two past years. Dr. and Mrs. Hull entertained the members to tea at the conclusion of the meeting.

The Nature Reserves and Wild Life Conservation Committee of the Lincolnshire Naturalists' Union.

Your Executive Committee met in April to give consideration to the question of strengthening the existing emergency Nature Reserves Sub-Committee with a view to promoting action locally in nature conservation. It was clear that in the "Report of the Nature Reserves Investigation Committee" local action was now necessary, and the Union had been urged at least to keep in being the Nature Reserves Sub-Committee until the Government plans for National Parks and Nature Reserves were known and implemented. Your Executive Committee felt that stronger action was necessary and that the scope of the sub-committee should be extended to the whole field of nature conservation. It was, therefore, decided to form immediately "The Nature Reserves and Wild Life Conservation Committee of the Lincolnshire Naturalists' Union" with authority to pursue the question of nature reserves, of wild life conservation by various means and in every way seek to protect the County's heritage in its flora and fauna. Mr. T. H. Court of Market Rasen was appointed Chairman and Mr. A. E. Smith, M.A., of Alford was elected its secretary. A preliminary report on its plans and work is presented to this meeting by the Secretary.

Transactions.

Messrs. J. W. Goulding and Son of Louth, who have rendered notable service as printers for Lincolnshire Naturalists' Union publications since 1909, were obliged to sever their association with the Union during the year. We cannot let this occasion pass without referring to the great help of the firm and particularly to the late Richard W. Goulding and Miss G. Goulding and their staff. Their patient care to ensure accuracy in our publications has always been appreciated by the editors. Now, we transfer to Messrs. Keyworth and Sons of Lincoln. Opportunity has been taken to bring our publication into line with modern standards of printing and further new features will be introduced as conditions become easier. Care has been taken to ensure that the parts will bind-in with the earlier issues.

Membership.

The total membership shows an increase of 15 on last year. The details are as follows :

Hon. Life Members	..	1	
Life Members	..	10	
Ordinary Members	..	240	285
Junior Members	..	34	

Two Life Members, 27 Ordinary Members and 8 Junior Members were elected during the year. There have been losses by death, resignation and lapsed subscriptions.

The following members have been elected during 1946 :—

GROUP MEMBERS :

Lincoln Training College Nature Club.

LIFE MEMBERS :

Mr. P. E. Kent, PH.D., F.G.S., 30 Crosby Road, West Bridgford, Nottingham.

Miss D. Kingan, 99 Longdales Road Lincoln.

ORDINARY MEMBERS :

Miss N. E. Abbott, 210 Grimsby Road, Cleethorpes.

Mr. J. S. Adams, 12 Legbourne Road, Louth.

Miss E. Armitage, 87 Houghton Road, Grantham.

Mr. E. Beastall, c/o 9 Grantham Road, Bracebridge Heath.

Mr. F. Brasier, 30 Burringham Road, Scunthorpe.

Miss H. Burton, 364 Burton Road, Lincoln.

Mr. C. H. Colebrook, 57 Spring Bank, Grimsby.

Miss D. Collis, 35 Nelthorpe Street, Lincoln.

Mr. J. E. Cooper, 70 Queens Parade, Cleethorpes.

Mrs. B. Dow, 5 Yarborough Crescent, Lincoln.

Miss M. C. P. Farrow, The Training College, Lincoln.

Mr. A. Gordon, School House, Binbrook, Lincoln.

Miss W. Heath, Nettleham, Lincoln.

Mrs. M. M. Heyworth, B.Sc., 3 Westlands Avenue, Grimsby.

Miss A. Holderness, 65 Convamore Road, Grimsby.

Mr. G. T. Hutchinson, L.D.S., 24 Yarborough Road, Lincoln.

Mr. Richard Hutchinson, Willoughton.

Miss A. J. Knibb, 42 Hawthorn Avenue, Gainsborough.

Mr. G. A. Morris, The Grammar School, Brigg.

Mrs. H. K. M. Neale, 3 The Grove, Lincoln.

Miss M. Parker, Burton Pedwardine School, Sleaford.

Miss E. Redfern, 364 Burton Road, Lincoln.

Mr. B. J. Robinson, c/o Mrs. Steel, Hope House, Metherringham.

Mr. J. Stead, 4 Casgrove Street, Cleethorpes.

Miss M. E. Steane, 210 Grimsby Road, Cleethorpes.

Miss J. Sutherland, 46 Etherington Street, Gainsborough.

Mrs. H. Williamson, The Training College, Lincoln.

JUNIOR MEMBERS :

Angela M. Adams, Ronehurst, Yarborough Crescent, Lincoln.

John Adams, Ronehurst, Yarborough Crescent, Lincoln.

Rosalind J. Adams, Ronehurst, Yarborough Crescent, Lincoln.

John L. Dew, 5 Yarborough Crescent, Lincoln.

Peter F. Baker, 28 Yarborough Road, Lincoln.

Marjorie Fraser, 11 Charles Street, Cleethorpes.

Pamela Hughes, 62 Doddington Road, Lincoln.

Bertha Rushby, 2 Nicholson Street, Cleethorpes.

Dennis Wingad, 32 Prial Avenue, Lincoln.

The Union has lost three members by death during the year. Mr. J. Peacock Rayner of Lincoln died in March ; Mr. J. Whiteley Wilkin of Barnoldby-le-Beck, who had been a subscriber since 1916, died in April and Mr. Donald Sinclair, a keen member of the recently reorganised microscopy section, died in October.

In conclusion, it is my pleasure to express the thanks of the Union to all who have contributed to the success of the meetings during the year. We are particularly grateful to the President for his unfailing encouragement and help in all our activities and for his unbroken record of attendance despite many long journeys. To owners of estates who have granted permission for the meetings to be held and to those members who have undertaken the local arrangements, we are peculiarly grateful. To the Principal of the Lincoln Technical College (Dr. E. R. Walter) and his staff we express our thanks for excellent accommodation for our indoor activities.

REPORT OF THE NATURE RESERVES AND WILD LIFE CONSERVATION COMMITTEE.

(Delivered at the Annual General Meeting of the Lincolnshire Naturalists' Union, March, 1947).

A. E. SMITH, M.A.

As members of the Lincolnshire Naturalists' Union were informed at the time, the Lincolnshire Nature Reserves Sub-Committee completed its investigation in 1944, and submitted its report and recommendations to the Nature Reserves Investigation Committee. This Report specified certain areas in the County which, in the Sub-Committee's opinion, merited conservation as Nature Reserves.

The Memorandum of the Nature Reserves' Investigation Committee, "*National Nature Reserves and Conservation Areas in England and Wales*," published in December, 1945, contains a list of Reserves and Conservation Areas considered by the Committee to be "of such importance as to require safeguarding as national possessions." Unfortunately no area in Lincolnshire, recommended by our Sub-Committee, finds a place in this list. The Memorandum recognises, however, that in addition to the National Reserves which it lists, "there are throughout the country many hundreds of sites, both small and large, the protection of which is of the highest importance, not only to those who live near them, but also to a wider public. In the Committee's view," continues the Memorandum, "the conservation of these further sites should be entrusted to the energies and local patriotism of those who may be expected to derive the greatest benefit from them ; but every encouragement possible should be given towards the achievement of this end."

It was with this recommendation in mind that the Executive Committee of the Lincolnshire Naturalists' Union met on April 27th, 1946, to consider, among other items, the question of strengthening the Nature Reserves Sub-Committee with a view to promoting local action in nature conservation. After careful consideration it was resolved :—

(i) That, subject to ratification by the Annual General Meeting, the Nature Reserves Sub-Committee should be constituted as a permanent Committee and should be strengthened by the appointment of a separate Secretary and by the co-option of members from Planning Committees, the County Councils and other interested bodies.

(ii) That the new Committee should undertake whatever action might be within its power to safeguard those areas recommended by the Nature Reserves Sub-Committee and any others that might be considered valuable. That wild life conservation in general should also come within its scope.

(iii) That the new Committee should be designated *The Nature Reserves and Wild Life Conservation Committee of the Lincolnshire Naturalists' Union.*

(iv) That Mr. T. H. Court should be the Chairman of the Committee and that Mr. A. E. Smith should be appointed its Honorary Secretary-Treasurer.

(v) That a grant of £10 should be made from the Union's funds to start the work of the Committee.

(vi) That the whole of the above recommendations should be put into operation immediately, but should be referred to the Annual General Meeting for ratification.

The present members of the Committee are as follows : Mr. T. H. Court (Chairman), Dr. R. Hull (Vice-Chairman), Miss E. J. Gibbons, Mr. F. T. Baker, Alderman S. V. Hotchkin (representing the Lindsey County Council), Mr. F. L. Kirk, Mr. J. R. McKnight, Mr. R. Wood Powell, Captain J. S. Reeve (representing the Kesteven County Council), Mr. A. Roebuck, Mr. C. F. B. Shillito, Dr. H. B. Willoughby Smith, Professor H. H. Swinnerton, and Mr. A. E. Smith (Hon. Secretary-Treasurer).

I would like to pay a very sincere tribute to Mr. Court for his work as Chairman of both this Committee and the Nature Reserves Sub-Committee and to Mr. Baker for the vast amount of work he accomplished as Secretary of the Sub-Committee. One can only realise fully how much Mr. Baker has achieved as one succeeds him in an office such as this.

I am quite sure that all members of the Lincolnshire Naturalists' Union, realising the vital necessity for preserving areas of countryside rich in wild life, will welcome the formation of this most important Committee. After a year of purely preliminary work it is already evident that much can be achieved by local action.

I do not wish to anticipate the report I have still to make to the Committee on my work during the past year. It is of interest, however, to note that the Planning Officers in Lincolnshire are giving us very valuable assistance in safeguarding our proposed reserves, and I would like to thank them for their interest and co-operation. Furthermore, we are considering appropriate action to be taken to protect a most important and seriously threatened reserve—Gibraltar Point.

In the field of Wild Life Conservation the scope is enormous. We are considering various schemes of propaganda and education, and we shall almost certainly appeal to L.N.U. members for their help and co-operation in putting some of these schemes into effect.

The new Lindsey Bird Protection Order came into force on December 1st, 1946. It is an immense improvement on any previous Lindsey Order, only ten species being entirely unprotected. Much of the credit for this very satisfactory Order must go to Mr. Baker and Mr. Wood Powell who exercised much influence in its preparation. The Council hopes to persuade Holland and Kesteven to bring their Bird Protection Orders into line with that of Lindsey.

The problem of bird protection is very serious and very urgent, so I hope you will pardon me if I seem to devote a disproportionate amount of my report to it. Everyone here will be well aware of the immense economic importance of birds, as of their scientific and aesthetic value. The past winter has had a devastating effect upon the bird-population—some valuable species must have been reduced by as much as 40 per cent, and perhaps even 50 per cent of their numbers. The most stringent measures of protection must be taken this year to meet the critical situation. Mr. Baker and I, on behalf of the Committee, intend to send letters to the local press and posters to the schools, to consult the police with a view to making the Wild Birds' Protection Acts more effective, and to take every step to bring to the public notice the urgent importance of protecting and encouraging all beneficial species of birds. I appeal to all to do everything possible to ensure that birds and their nests are unmolested during the coming spring and summer.

That, for the moment, is all I can say about the Nature Reserves and Wild Life Conservation Committee. After the forthcoming meeting I hope to have further information to give concerning its constitution, aims and objects. I feel certain that any decisions that may then be taken will command your wholehearted support, for it is a vital task that the Committee has set itself to perform, this preservation of our heritage of wild nature.

SECTIONAL OFFICERS' REPORTS.

BOTANY.

MISS E. J. GIBBONS.

Most of the places visited this year had been well worked previously and apart from a few records sent in by members there is not a great deal to report.

The field meeting at Limber was not intended to be botanical though a few interesting plants were noticed. The ground was hard and dry after early warmth but flowers seemed held back by the cold winds and drought. Some patches of bluebells and cowslips were pleasing, but otherwise nothing much outstanding.

I was pleased to have the opportunity to visit the Isle of Axholme early in May and found eighteen district records during the afternoon, due to the small number of localities mentioned in the county Flora. Some other investigations nearer home gave me the chance of a few fresh plants for Divs. 3 and 4.

The weather was most trying for the meeting at Well Vale in June but we were more fortunate at the later meetings. At Stoke Rochford the best finds were Hairy Rockcress (*Arabis hirsuta*), Wall Lettuce (*Lactuca muralis*), Nettle-leaved Bellflower (*Campanula Trachelium*) and *Orchis pyramidalis*.

The best field meeting botanically was held at Woodhall Spa, where we had one of the finest days in August and found many interesting plants. Sundew (*Drosera rotundifolia*) was growing well and among it the tiny Flax-leaved All-seed (*Radiola Linoides*). Climbing Corydalis (*C. claviculata*), Blue Fleabane (*Erigeron acre*), Yellow Loosestrife (*Lysimachia vulgaris*) and Field Woundwort (*Stachys arvensis*) were also noteworthy. The rough fields along Kirkby Lane produced Small Catchfly (*Silene anglica*), Smooth Cat's Ear (*Hypochaeris glabra*), three Cudweeds (*Filago minima* and *germanica*, *Gnaphalium sylvaticum*) and Basil Thyme (*Calamintha Acinos*). Bog Myrtle (*Myrica Gale*) was also found, and the Heather everywhere was a sight worth coming to see.

New District Records, 1946 :—

	Division.	
<i>Alchemilla vulgaris</i>	10	Miss M. E. Gibbons.
<i>Carex echinata</i>	4	Miss E. J. Gibbons.
<i>Carex flava</i>	3	Miss E. J. Gibbons.
<i>Erigeron canadensis</i>	12	Mr. R. Wells.
	13	Miss E. J. Gibbons.
<i>Hypericum hirsutum</i>	3	L.N.U.
<i>Luzula pilosa</i>	3	L.N.U.
<i>Nardus stricta</i>	10	L.N.U.
<i>Ranunculus auricomus</i>	1	Miss E. J. Gibbons.

New District Records, 1946—cont.

<i>Sisymbrium orientale</i>	6	Miss E. J. Gibbons.
<i>Spartina Townsendii</i>	4	Mr. S. A. Cox.
<i>Trifolium scabrum</i>	13	Miss E. J. Gibbons.
<i>Triglochin palustris</i>	4	Miss E. J. Gibbons.
<i>Vicia sepium</i>	1	Miss E. J. Gibbons.

ENTOMOLOGY.

THOS. H. COURT, F.R.E.S.

An interesting season this, which has been somewhat spoiled by inclement weather, the kind of English summer we had rather hoped to be a thing of the past. Perhaps the most striking fact is the appearance in considerable numbers in many parts of the county—in fact all parts from which entomological records have been received—of the Holly Blue Butterfly (*C. argiolus*). The spring brood was plentiful from about March 16th, and many specimens of the autumn brood have also been noticed, one as late as September 29th.

The White Admiral (*L. camilla*) has become definitely established in the localities where it has been seen for the past year or two, and is spreading steadily northwards and eastwards, specimens having been seen in Bleasby and Lynwode Woods for the first time. The Comma (*P.c.album*) has been plentiful. The Rev. G. Houlden reported hibernated specimens at Doddington in March as well as var. *hutchinsoni* in July.

September 29th, an oasis of sunshine for an hour or two in a desert of cloud, in Lynwode Woods, saw a large collection of butterflies on Scabious blossoms, including half a dozen Commas, an equal number of Red Admirals, one Painted Lady, several Peacocks, a dozen Small Tortoiseshells and, commonest of all, many Brimstones, females predominating, together with the aforementioned Holly Blue.

Mr. G. R. Else reports that the Orange Tip (*E. cardamines*) was less common than usual in the Barton-on-Humber area. He expressed his pleasure at seeing large numbers of Holly Blues in April, and again in August. He agrees with other observers that the Peacock butterfly (*N. io*) has been more than usually common. I, personally, do not remember having seen the larvae so plentiful. It was pleasant to see specimens of that insect and of the Small Tortoiseshell flying in the sunshine on that extraordinarily warm Monday, November 4th.

Among Mr. Else's other records are several Humming-bird Hawk moths (*M. stellatarum*), one Lime Hawk (*D. tiliae*) bred from larvae taken in Grantham in August of last year, and the following moths taken by him for the first time at Barton—the Lime-speck Pug (*E. centaureata*), Light Emerald (*C. margaritata*), Swallow Prominent (*P. tremula*), Feathered Gothic (*T. popularis*), Toad-flax Pug (*E. linariata*), Flame (*E. rubidata*), September Thorn (*D. erosaria*), and the Sprawler (*B. sphinx*).

Mr. T. C. Taylor speaks with regret of the limited time he has had to spend on his hobby. He records the White Admiral plentiful at Newball, but says that the Greasy Fritillary (*E. aurinia*) was in only small numbers in its restricted haunts at Skellingthorpe. He found the Holly Blue plentiful on May 12th, and saw specimens of the second brood in July and August. Among his other captures we notice the Orange Moth (*A. prunaria*), Oak Eggar (*L. quercus*), Orange Underwing (*B. parthenias*), Green Silver Lines (*Bena prasinana*), Streak (*C. legatella*), and Humming-bird Hawk moth. He was struck by the way in which Birch Trees were smothered by aphids on June 9th.

Mr. Houlden reports the Holly Blue, the Chequered Skipper (*C. palaemon*), the Dingy Skipper (*E. tages*) and the Pearl-bordered Fritillary (*A. euphrosyne*) at Skellingthorpe as well as a few Greasy Fritillaries. He obtained the Chequered Skipper in Newball Woods also, together with larvae of the Brown Hairstreak (*T. betulae*). The scarcity of Purple Hairstreaks (*T. quercus*) he attributes to the damage done by late frosts to the foliage of the oak trees. Among Mr. Houlden's other captures are Small Pearl-bordered Fritillary (*A. selene*) in Bleasby Woods, Grayling (*E. semele*) at Scotton, White Letter Hairstreak (*S. w album*) at North Rauceby, and the Speckled Wood (*P. aegeria*) in Mareham Lane.

Mr. Kirk's list includes the Holly Blue, the Orange Underwing Moth (*B. parthenias*), Pale Tussock (*D. pudibunda*), Comma, Painted Lady, Poplar Hawk, Clouded Silver (*B. punctata*), Large Skipper (*Augiades venata*), White Letter Hairstreak, Red Underwing (*C. nupta*) and Large Ranunculus (*A. flavicineta*) from the Alford district, the Birch Sawfly (*C. femorata*), larvae of the Broom Moth (*C. pisi*) and the Wood Tiger Moth (*P. plantaginis*) from Woodhall Spa and Chequered Skipper, Green Hairstreak (*Callophrys rubi*), Pearl-bordered Fritillary, Dingy and Grizzled Skippers (*E. tages* and *S. malvae*), and Burnet Companion Moth (*E. glyphica*) from Holywell.

Mr. Pilkington's list from the Sleaford district includes the Brown Argus (*A. agestis*), Chalk Hill Blue (*L. coridon*), Large Tortoiseshell (*N. polychloros*) at Holdingham, Humming-bird Hawk and a grey variety of the Brindled Beauty Moth (*L. hirtaria*).

Mr. F. T. Baker records very fresh specimens of the Painted Lady (*V. cardui*) at the Freiston meeting of the Union, on the shore on sea-aster. The Holly Blue was seen at Market Rasen and at Tealby. A fine variety of the Small Tortoiseshell, taken at Scunthorpe last autumn by Mr. George E. Hyde, F.R.E.S., was figured in a number of *The Field* early in the year.

Mr. H. Small reports the occurrence of many of the aforementioned insects in the Doddington and Skellingthorpe areas. Special mention might be made of the Holly Blue and Greasy Fritillary Butterflies, and the moths, Green Forester (*P. statice*), Broad-bordered Bee Hawk

(*H. fuciformis*), Rosy Footman (*M. miniata*), Miller (*A. leporina*) and Swallow Prominent (*P. tremula*). A welcome feature in his report is the inclusion of several dragon-flies *Pyrrhosoma nymphula*, *Ischnura elegans*, *Enallagma cyathigerum*, *Libellula depressa*, *Lestes sponsa*, *Aeshna grandis*, *Sympetrum striolatum*.

In conclusion I have a record from Mr. J. H. White of a larva of the Star-wort moth (*C. asteris*) which he found on the fore-shore at Freiston. It was of the purple variety. He reports that it finished feeding on the flowers of golden rod and has since pupated. This insect has been recorded only once or twice before in the county at Wyberton and Gainsborough. It is distinctly a southern species.

COLEOPTERA.

E. C. RIGGALL.

On November 27th, 1945, I was motoring past a wood near Baumber when my daughter noticed some fungi on the trunk of a growing tree and suggested we should obtain specimens to send to Miss Waterhouse. We found the fungi swarming with minute beetles of several species. The species which was in preponderance had a male in which the front margin of the thorax and front of head were produced into two upright plates. I identified the species as *Cis bilamellatus*. In Fowler's work I was very interested to read the following in regard to the locality of this species: "taken in profusion at West Wickham Wood, near London, by Mr. T. Wood in 1884; it has not, however, been recorded from any other locality, either British or foreign. . . ."

On April 13th, 1946, I examined the trunk of a decaying tree in North Wood, Legsby. The tree was clothed in masses of decaying fungi, and among the latter I found further specimens of *Cis bilamellatus*. The species appears to be a new county record and it seems of interest that this tiny beetle once confined to West Wickham has now reached our own area.

In the following May I obtained a Longicorn beetle which also seems new to the County. On May 29th and 30th I found four specimens of *Molorchus minor* on May blossom, and lost about as many more before I realised that this species is hardy and very apt at escaping from the killing bottle when you are in the act of inserting a more recent capture. Fowler describes this species as very rare. It appears to be extremely local in our county but occurs on the outskirts of Legsby Wood at a point where two hawthorn hedges meet at right angles. All the specimens seen or collected were near the intersection of the hawthorn hedges and within an area of about ten yards. Although there was abundance of hawthorn over a wide area the species seemed confined to this limited zone. Beating the blossom into a tray seemed rather like destroying the goose with the golden eggs. The best method of collecting this little Longicorn is to search the blossom and pick off the specimens by hand. The area is damp and infested by mosquitoes.

Another Longicorn collected in the Linwood area during the same month was *Alosterna tabacicolor*. It was quite frequent for a few days on the flowers of Mountain Ash.

The scarce and beautiful *Agapanthia villosoviridescens* appeared on the south verge of the Lincoln-Wragby Road opposite Stainton and Rand Wood. I found it at mid-day and in the early evening creeping upon the leaves of Hog-weed, but never upon the flowers. It is a courageous insect and rarely allows itself to fall into the undergrowth when approached, preferring to seek shelter on the underside of a lower leaf, and if persistently followed up, turns to bay and makes menacing movements of its long antennae. Mr. T. C. Taylor recorded the species from Newball Wood and very kindly undertook to show me over the locality. Despite very poor weather we succeeded in finding two specimens. I hope that if this insect is finally ousted from Stainton and Rand by tree-felling operations it will find a lasting sanctuary in Newball. Whilst observing *Agapanthia* at Stainton I took a solitary specimen of *Anaclyptus mysticus*. I have never previously seen this beetle and do not think it can be common in this county.

Stenocorus meridianus was unusually common on Hog-weed at Hainton, Stainton, and Haugham, and several interesting varieties were taken. Longicorns seem very weather wise. Days which commenced with bright sunshine and produced few longicorns on the Hog-weed, invariably terminated in showers. If longicorns were present in fair numbers, several hours of good weather could be anticipated. On a still, calm day when the flowers of umbellifers are comparatively still *Stenocorus* is very apt to leave go and allow itself to fall into the undergrowth at the approach of a collector. When the flower heads are tossed wildly about by a stiff breeze it is often impossible to see if there are any beetle tenants until the flower head is first captured in the hand and held steady. The longicorns seem bewildered by the sudden cessation of motion and under these circumstances can be bottled with ease.

It has apparently been a good year for Longicorns. Mr. F. L. Kirk records a specimen of *Saperda carcharias* from the coast at Chapel St. Leonards.

A surprising find on Hog-weed was a lively specimen of a water beetle, *Haliphus obliquus*. During June a beautiful chafer beetle appeared on Hog-weed at Hainton, the June Bug, *Phyllopertha horticola*. This species is stated to be common, but I have always found it scarce and local in our county. I also took one specimen on a hawthorn hedge at Woodhall Spa. On the 28th of the month I found one specimen of *Dascillus cervinus* on Hog-weed.

Members will remember the unkind weather during our Field Meeting at Claxby and Well Vale. In the quarry at Claxby I came upon a specimen of *Phosphuga atrata* sheltering beneath a brick

while it devoured a snail. On being exposed to light and startled by vibration the beetle ceased to eat, but resumed its interrupted meal when subjected to the darkness of a covered box. When the cover was gently removed it did not discontinue its repast and I was able to make a sketch which enabled me to set up a specimen in its natural feeding attitude.

The only beetle braving the elements on that day was the Figwort Beetle, *Cionus scrophulariae*. A member pointed out several specimens clinging to the stem of the food plant.

On the 20th of July I was on the pullover at Saltfleet when a large beetle passed in flight. In the sunshine it had a beautiful greenish hue. It ultimately collided with the windscreen of a parked car. Probably the shining glass and reflections on the polished cellulose misled the insect into the impression that it was over water and it attempted to change elements. It was captured and identified as *Dytiscus semisulcatus*. After death the beetle lost all trace of the greenish colour so noticeable when it was air borne. The greenish effect seen in the living *Dytiscus* can be induced to return momentarily by washing the specimen in benzole. I have not seen *Dytiscus* come down on to water. They are said to close their wings and drop like a stone. There seems little doubt that these fine insects are becoming scarcer in the county.

In the evening of the 28th of July I found a specimen of *Cryptcephalus coryli* on a grass stem near North Wood, Legsby. This species is new to the county and described by Fowler as rare. I have previously beaten a live specimen from young birch and found a dead specimen in a spider's web on gorse in the same locality.

During August my other daughter captured a specimen of *Phaleria cadaverina* beneath seaweed on the shore at Saltfleet. This species is said to be locally common but I cannot find any previous record for the county.

To my sorrow I have only been able to attend two Field Meetings during this year, but the weather was kind on the August Meeting in Boston area and at Freiston and North Camp beetles were abundant. In fact after we had halted for a picnic lunch Mr. F. L. Kirk collected a fine specimen of the ground beetle, *Carabus nemoralis* on his trousers. I had not previously seen this fine insect on the coast although it occurs in sandy localities inland. Other species noted from Frieston and North Camp were *Staphylinus ater*, a coastal species, very rare inland, *Calathus mollis*, *Amara convexiuscula*, in pairs on grass stems, *Dicheirotrichus gustavii*, and *Pogonus chalceus*. Both the last mentioned were very plentiful. It seems certain that the beetle fauna of Lincolnshire is in a constant state of flux. Species once common tend to become scarce or extinct while other species appear as new records and sometimes become common. As I have just said one of the commonest species at North Camp was *Pogonus chalceus*, but speaking of this beetle in his *Coleoptera of the British Islands*, 1887, Canon Fowler says: "I have never taken a specimen on the Lincolnshire coast."

MYCOLOGY.

MISS G. M. WATERHOUSE, M.SC.

The activities of the Mycological section have extended this year somewhat beyond the foray and the autumn season, mainly owing to the efforts of one or two enthusiasts. It is pleasing to report that specimens were received during nine months of the year. The only blank spots, strangely enough, were the summer field meetings which should surely yield some records. From the Boston meeting Mr. F. T. Baker sent a report of one fungus, and from Stoke Rochford Miss M. N. Tyson reported five ; two of these were new divisional records. I feel sure that among all the eager naturalists present at these meetings there must be one or two who would be willing at least to collect a few specimens to send for identification and to report on their frequency.

The foray held on October 20th attracted a large party to Fiskerton Wood in spite of the drizzle which maintained its continuity throughout the day. Members were well rewarded for their journeys as the wood provided a rich variety of picturesque and interesting fungi ; of the 51 species named, six proved new records for the county and 32 for division 6.

The wood is on a clay soil and is a mixture of oak, ash, and lime with an undergrowth of saplings, bramble, hazel and honeysuckle. On entering, the party was conducted by Mr. Steele to see the two show pieces, viz., the beefsteak fungus (*Fistulina hepatica*) and the urchin of the woods (*Hydnum repandum*), a pale apricot coloured toadstool with spore-bearing spines on the underside of the cap. It grew in conspicuous lines following the roots of the trees. The dominant species were the black *Russula nigricans*, growing pretty nearly everywhere, and the great white woolly lactar (*Lactarius vellereus*), a large milk cap also following the roots of trees. Growing on the old inky-black specimens of *R. nigricans* was a white toadstool (*Nyctalis asterophora*). Another common species, although not so conspicuous on account of its minute size, was *Marasmius ramealis* growing on almost every dead and some living stems lying on the ground. Fairy clubs, viz., the whitish *Clavaria cristata*, the grey *C. cinerea* and the yellow tufted *C. inaequalis* made attractive patches. On nearly every tree stump we encountered the honey agaric (*Armillaria mellea*). Other attractive finds were the horn of plenty (*Craterellus cornucopioides*) and its smaller relative *C. sinuosus*. Those of more interest to the mycologist were the comparatively rare species *Collybia rancida* and *Sistotrema confluens*.

This wood, small though it is, has a fungus flora which would repay further study. Is it equally rich and varied earlier and later in the autumn ? Are the same species dominant in mid-October every year ? What is the connection between the distribution of the fungi and the trees ? Does the honey agaric appear on the same stumps year after year ? How far are the time of appearance and quantity of

the fungi influenced by previous weather conditions? It would be interesting to have these questions answered for this and other woods.

Apart from the foray, five new county records and 64 new divisional records have been contributed and are listed below. In this list, except where otherwise stated, all the records for divisions 5, 6 and 11 were made by Dr. H. B. Willoughby Smith, those for divisions 2, 4, 15 and 8, and 17 by Mr. C. F. B. Shillito, Mrs. M. M. Heyworth and her pupils, Miss N. M. Tyson, and Miss M. M. Haslam respectively, those for 13 by Miss B. J. Bows and her pupils who collected 62 specimens, and those for 14 by the Kesteven teachers in conjunction with myself. I should like to thank all contributors for their efforts which have brought our total of records for this year up to 11 for the county and 106 for the divisions. I am indebted too to Miss E. M. Wakefield of the Kew Herbarium (and some other members of the Staff) who identified many of the specimens and confirmed some of my identifications.

FUNGUS FORAY. FISKERTON, OCTOBER, 1946.

New records for Lincolnshire.

- **Russula virescens* (Schaeff.) Fr.
- **Clitocybe flaccida* (Sow.) Fr.
- **Clitocybe vibecina* (Quél.) Fr.
- **Sistotrema confluens* (Pers.) Fr.
- **Macropodia macropus* Pers.
- || *Diatrypella quercina* (Pers.) Nits.

New records for Division 6.

- Russula nigricans* (Bull.) Fr.
- Russula nigricans* with *Nyctalis asterophora* Fr.
- Russula ochroleuca* (Pers.) Fr.
- Lactarius glyciosmus* Fr.
- **Lactarius fuliginosus* Fr.
- Lactarius subdulcis* (Pers.) Fr.
- **Lactarius mitissimus* Fr.
- Lactarius vietus* Fr.
- Daedalea quercina* (Linn.) Fr.
- Hydnum repandum* (Linn.) Fr.
- Tricholoma terreum* (Schaeff.) Fr.
- Tricholoma nudum* (Bull.) Fr.
- **Amanita spissa* Fr.
- Marasmius ramealis* (Bull.) Fr.
- Mycena galericulata* (Scop.) Fr.
- **Mycena polygramma* (Bull.) Fr.
- **Mycena inclinata* Fr.
- **Inocybe geophylla* (Sow.) Fr.
- **Collybia rancida* Fr.

- **Cortinarius hemitrichus* Fr.
Psathyrella disseminata (Pers.) Fr.
 **Scleroderma verrucosum* (Vaill.) Pers.
Fistulina hepatica (Huds.) Fr.
Boletus chrysenteron (Bull.) Fr.
 **Polyporus nidulans* Fr.
 **Merulius corium* (Pers.) Fr.
 **Phylacteria* (*Thelephora*) *anthocephala* (Bull.) Pat.
Craterellus cornucopioides (Linn.) Fr.
 **Craterellus sinuosus* Fr.
Clavaria cristata (Holmsk.) Fr.
 **Ombrophila clavus* Phil.
Phragmidium mucronatum (Pers.) Schlecht.

Other identifications—not new records.

- Lycoperdon pyriforme* (Schaeff.) Pers.
Armillaria mellea (Vahl.) Fr.
Stropharia aeruginosa (Curt.) Fr.
Hypholoma fasciculare (Huds.) Fr.
Laccaria laccata (Scop.) B. & Br.
Laccaria laccata var. *amethystina* (Vaill.) B. & Br.
Lactarius vellereus Fr.
Coprinus micaceus (Bull.) Fr.
Polystictus versicolor (Linn.) Fr.
Clavaria cinerea (Bull.) Fr.
Clavaria inaequalis (Müller) Quél.
Xylaria hypoxylon (Linn.) Grev.
Hypoxylon fuscum (Pers.) Fr.

LINCOLNSHIRE FUNGUS RECORD, 1946.

New records for the county.

- | | |
|---|---|
| * <i>Lepiota haematosperma</i> (Bull.) Boud. | 5 |
| * <i>Polyporus brumalis</i> (Pers.) Fr. | 5 |
| * <i>Corticium niveocremeum</i> von Hoehn. & Litsch | 5 |
| * <i>Otidea leporina</i> (Batsch) | 5 |

New divisional records.

- | | |
|--|-----------------|
| ‡ <i>Lycoperdon giganteum</i> (Batsch) Pers. | 11 |
| <i>Lycoperdon echinatum</i> Pers. | 14 |
| <i>Lycoperdon perlatum</i> Pers. | 14 |
| ‡ <i>Lycoperdon pyriforme</i> (Schaeff.) Pers. | 11 |
| ‡ <i>Scleroderma aurantium</i> Pers. | 11 |
| ‡ <i>Amanita muscaria</i> (Linn.) Fr. | 11 (Miss Tyson) |
| <i>Lepiota rhacodes</i> (Vitt.) Fr. | 14 |
| <i>Tricholoma nudum</i> (Bull.) Fr. | 5 & 6 |
| <i>Entoloma porphyrophaeum</i> Fr. | 14 |
| <i>Hypholoma fasciculare</i> (Huds.) Fr. | 14 |

<i>Clitocybe nebularis</i> (Batsch) Fr.	5 & 6
* <i>Clitocybe vibecina</i> (Quél.) Fr.	5
<i>Hygrophorus virgineus</i> (Wulf.) Fr.	14
<i>Hygrophorus miniatus</i> (Fr.	14
<i>Hygrophorus psittacinus</i> (Schaeff.) Fr.	14
* <i>Flammula carbonaria</i> Fr.	5
* <i>Flammula flavida</i> (Schaeff.) Fr.	5
* <i>Flammula sapinea</i> Fr.	5
<i>Collybia radicata</i> (Relh.) Berk.	13 & 14
‡ <i>Collybia velutipes</i> (Curt.) Fr.	2 (Miss Tyson)
<i>Panaeolus papilionaceus</i> (Bull.) Fr.	6
<i>Mycena galericulata</i> var. <i>calopus</i> Fr.	13
<i>Galera mycenopsis</i> Fr.	14
* <i>Tubaria furfuracea</i> (Pers.) W. G. Sm.	5
<i>Pleurotus palmatus</i> (Bull.) Fr.	14
<i>Lactarius subdulcis</i> (Pers.) Fr.	5
‡ <i>Lactarius rufus</i> (Scop.) Fr.	2 (Miss Tyson)
‡ <i>Coprinus comatus</i> (Fl. Dan.) Fr.	4, 5 & 17 (F. T. Baker)
<i>Coprinus atramentarius</i> (Bull.) Fr.	5
‡ <i>Coprinus radiatus</i> (Bolt.) Fr.	8
* <i>Panus stipticus</i> (Bull.) Fr.	13
† <i>Lentinus lepideus</i> Fr.	2
<i>Boletus chrysenteron</i> (Bull.) Fr.	5
‡ <i>Polyporus squamosus</i> (Huds.) Fr.	5
<i>Polyporus adustus</i> (Wild.) Fr.	13
<i>Fomes fomentarius</i> (Linn.) Fr.	8 & 13
<i>Fomes annosus</i> Fr.	5
<i>Poria vaporaria</i> (Pers.) Fr.	5
<i>Polystictus versicolor</i> (Linn.) Fr.	12 & 4
* <i>Lenzites betulina</i> (Linn.) Fr.	5
<i>Daedalia quercina</i> (Linn.) Fr.	5
<i>Merulius lacrymans</i> (Wulf.) Fr.	14
<i>Auricularia mesenterica</i> (Dicks.) Fr.	13
‡ <i>Auricularia auricula-judae</i> (Linn.) Schroet	4, 5 & 11
<i>Dacryomyces deliquescens</i> (Bull.) Duby	14 & 3 (Miss Tyson)
‡ <i>Clavaria inaequalis</i> (Müller) Quél.	8
‡ <i>Clavaria fusiformis</i> (Sow.) Fr.	8
‡ <i>Clavaria cinerea</i> (Bull.) Fr.	8
‡ <i>Cantharellus cibarius</i> Fr.	8

Ascomycetes.

<i>Helvella crispa</i> Fr.	13
<i>Peziza vesiculosa</i> Bull.	14
<i>Chlorosplenium aeruginosum</i> de Not.	14
<i>Sclerotinia fructigena</i> Aderh. & Ruhl.	14
<i>Nectria cinnabarina</i> Fr.	4, 14 & 17

<i>Daldinia concentrica</i> (Fr.) Ces. & de Not.	14 & 15 (Miss Tyson)
‡ <i>Claviceps purpurea</i> (Fr.) Tul.	11 (F. L. Kirk)
Myxomycetes	
<i>Arcyria denudata</i> Wett.	13

IDENTIFICATIONS.

‡ by the finders.

* by Miss E. M. Wakefield and Kew Staff.

† by Dr. Cartwright, Forest Products Laboratory.

|| by Imperial Mycological Institute.

the rest by Miss Waterhouse.

NOTES ON THE ECONOMIC ZOOLOGY OF LINCOLNSHIRE DURING 1946.

A. ROEBUCK, N.D.A., F.R.E.S.

General Pests.

Wireworms (*Agriotes spp.*) have not been too destructive this season. There have been fewer grass fields ploughed up and the populations have steadily fallen in those already ploughed. The most serious case was a six acre field of sugar beet destroyed at Winteringham.

Leatherjackets (*Tipula spp.*). In spite of a good swarming of adults at egg-laying time the damage done was not great. The worst attacks were on sugar beet crops at Fenton-by-Stubton, Skegness Marsh and Minting.

Millepedes (*Blanjulus guttulatus*). These did considerable damage to potato crops both in gardens and on some fields. A 15 acre field of sugar beet was attacked at Binbrook and 11 acres of it had to be redrilled.

Slugs, chiefly *Agriolimax reticulatus* and *Arion circumscriptus*, caused much damage to winter cereals all over the county.

Cereals.

Wheat Bulb Fly (*Leptohylemyia coarctata*) was again abundant and widespread. In company with it were other fly larvae, chiefly a species of *Opomyza*.

Spring corn crops did not suffer much from the attacks of pests but a crop of barley near Gainsborough suffered appreciable loss from the caterpillars of the Common Rustic Moth (*Celaena secalis*) which tunnel the shoots at the base.

Pulse Crops.

Attacks by *Sitona lineatus* were slight in striking contrast to last year.

Laria (Bruchus) rufimanus was abundant again. At one farm at Toft-by-Newton putting the bean crop at the other side of the farm did not protect it from attack.

Pea Moth (*Ernarmonia nigricana*). This was about normal in numbers, which is more than desirable. This had been regarded as scarce except in the south of the county, but Mr. J. H. White studied its distribution and found it to be uniform over the whole county.

Black Aphis (*Aphis fabae*) had a good emergence from the eggs on *Euonymus* in spring, but the colonies on beans and later mangolds and sugar beet never developed so that no damage was done.

Stem Eelworm (*Anguillulina dipsaci*) caused a serious attack of eelworm sickness on clover near Burringham. This was the worst in the county for many years.

Potatoes.

The Root Eelworm (*Heterodera rostochiensis*) and the Stem Eelworm (*Anguillulina dipsaci*) both caused damage; the former to the growing crops and the latter chiefly during storage.

A survey, field by field, of the areas infected with *Heterodera* is in progress. So far 20,000 acres have been sampled.

Aphides have not been numerous but when the potato setts were sprouting in the chitting houses there was alarm about one species which seemed to turn up everywhere. It was *Rhopalosiphoninus latysiphon*, and therefore a casual visitant presumably quite harmless.

Again much local damage was done by the caterpillars of the Rosy Rustic Moth (*Hydraecia micacea*). To a less extent the Frosted Orange (*Gortyna flavago*) also accompanied it.

Sugar Beet and Mangolds.

Mangold Fly (*Pegomyia betae*). The first generation was much in evidence in early June. The young plants were severely attacked on the western side of the county. In the south up to 90 per cent of the leaves were blistered by the larvae. The second generation was not so abundant and the attacks faded away.

Aphides (*Myzus persicae* and *Aphis fabae*) were scarce. Colonies appeared but did not develop. Sufficient of the latter were reared to move to the *Euonymus* bushes for a normal egg laying in the autumn.

Cockchafer (*Melolontha vulgaris*). The grubs attacked a field of sugar beet at Tattershall Thorpe.

Tortoise Beetle (*Cassida vittata*). Half the plants in a 12 acre field at Blankney Dales were attacked by the larvae and adults.

The Carrion Beetle (*Aclypea opaca*) did slight damage to crops along Trent side.

The Silver Y Moth (*Plusia gamma*) was widespread but in small numbers.

Brassica Crops.

Cabbage White Butterflies, especially *Pieris brassicae*, were remarkably scarce.

The Diamond Back Moth (*Plutella maculipennis*) was unusually common. In places the caterpillars riddled the foliage.

Cabbage Stem Weevil (*Ceuthorrhynchus quadridens*) was abundant on seed crops, especially in Kesteven. Small numbers of *C. contractus* were associated with it.

Cabbage Stem Flea Beetle (*Psylliodes chrysocephala*) was abundant and did much damage especially in Kesteven.

The Pollen Beetle (*Meligethes aeneus*), and to a less extent the Pod Weevil (*Ceuthorrhynchus assimilis*) seriously reduced the yields on some of the crops grown for seed.

The Mustard Beetle (*Phaedon cochleariae*) did harm to the foliage on crops in Lindsey and Kesteven.

Cabbage Gall Weevil (*Ceuthorrhynchus pleurostigma*) was more abundant than usual and reduced the yields of some of the swede and turnip crops.

Miscellaneous Pests.

Apple Blossom Weevil (*Anthonomus pomorum*) has appeared in extraordinary large numbers, and was destructive in an orchard near Lincoln.

Apple Leaf Skeletoniser (*Anthophila pariana*). This moth was exceptionally abundant and harmful to the foliage both in Lindsey and Kesteven.

A small attack of the Twig Cutting Beetle (*Rhynchites germanicus*) occurred on strawberries at Scotter.

Carrot Aphis (*Cavariella* sp.) attacked some field crops severely in the north of the county.

Angle Shades Moth (*Phlogophora meticulosa*) attacked chrysanthemums on a nursery in Lincoln.

The Root Knot Eelworm (*Heterodera marioni*) occurred attacking tomatoes severely in one nursery in Lincoln.

The wood boring beetle *Nacerdes melanura* occurred in a yard stored with railway sleepers in Lincoln. The larvae were present in large numbers and had riddled the sleepers.

ORNITHOLOGY.

S. A. Cox.

My own notes for the first seven months of the year are not numerous, as I was serving with the Royal Air Force until August.

I have recently received a most interesting report from a Mr. J. Sidney Ash, also an airman, whose home is in Northumberland. He was stationed at Dunholme Lodge for five months this year, and most of his records are from an area bounded by Welton, Scothern and Langworth. Here are his notes :—

Corn Bunting. Scattered pairs around Welton. Small colonies tend to frequent one particular field.

Yellow Wagtail. A south-westerly autumnal passage noted in September, odd birds and small parties appearing in localities where they had not been observed earlier in the summer.

Meadow Pipit. A passage similar to that of the Yellow Wagtail observed.

Willow Titmouse. A pair nested on several occasions at the following places—Langworth, Cranwell and Scothern—a brood of young being observed at the latter locality in August. A pair was watched one day in September at Welton.

Chiff-Chaff. Two heard singing near Scothern on May 12th. On June 1st a nest containing one egg was found. A further five eggs were laid, from which four young were successfully fledged. A single bird was heard in song at Welton on September 12th, and another at Dunholme Lodge on the following day.

Willow Warbler. One singing on August 18th in a small garden in the heart of Lincoln.

Song Thrush. Nest on ground in a large wood amongst garlic near Langworth on May 11th, with five eggs.

Cuckoo. Exceedingly numerous. Nests containing eggs and young found. Many young appear to have fledged.

Barn Owl. Seven pairs located in the Welton-Langworth district. A nestling ringed at Welton on June 25th was recovered at Owston Ferry on September 23rd.

Kestrel. Uncommon in the Welton-Langworth area.

Sparrow-Hawk. Uncommon. Only noted from Langworth and Spridlington.

Common Snipe. Scarce. Odd birds at Langworth gravel pits.

Green Sandpiper. One on July 9th at Langworth gravel pits.

Greenshank. A pair were watched at Langworth gravel pits on May 12th. One bird was observed in display flight, and was heard to utter its spring trilling.

Golden Plover. Thirty-three waders flew overhead on August 18th near Welton, which were probably of this species.

Moorhen. Several pairs found nesting in trees near Spridlington during May. (1) A nest containing three eggs twelve feet high in a hawthorn and two hundred yards from the nearest water. (2) A nest containing three eggs nine feet high in a thick hedge one hundred yards from water. (3) A nest containing hatched egg-shells four hundred yards from water, eight feet high in an elder. (4) A single bird at roost three hundred yards from a pond, in a tree.

The occurrence of the Willow Titmouse is of special interest, and I shall in future pay special attention to all Marsh Titmice, lest any should prove to be Willow Tits. Do both species share the rather harsh, repeated, chiding call, and is it only the Willow Titmouse which excavates a nest hole? Both these points need clearing up.

Writing early in January, Miss M. E. Baines said that she had seen a pair of Nuthatches on four separate occasions at Fulbeck. What I missed, perhaps, most of all during the last four years have been the skeins of Wild Geese, but on January 28th, at Swallow, during a spell of leave, I saw about twenty crossing the Wolds in the familiar chevron formation. My first nest was that of a Long-tailed Titmouse—in a yew at Croxby Pond on March 31st. Miss Baines again saw the Nuthatch at Fulbeck on the same day.

Spring migrants appeared much earlier than usual, the Chiff-Chaff being reported from Fulbeck on March 31st and the Willow Warbler two days later. On April 2nd I saw the Great Crested Grebe at Croxby Pond, and learned later that it had again safely reared a brood. I also flushed a Barn Owl from an ancient hollow beech, which has been frequented by the species for at least seventeen years.

The village of Fulbeck seems to be the official headquarters of the Nuthatch in Lincolnshire, for it was again seen on April 14th, though I never saw it during my visits there. Nor did I see it at Stoke Rochford, a likely spot, though July is not a good season.

I was home for a few days at Easter, and was very surprised to hear the silvery titter of a Wood Warbler in the churchyard at Old Clee on April 20th. Even more remarkable, perhaps, was the presence of a Brambling in the same spot, its harsh winter call seeming very out of place.

It was not until April 21st that I saw Swallows in Lincolnshire, at Croxby Pond. The first House Martin was seen at Swallow on May 4th, and Swifts at Grantham on May 11th. There were Spotted Flycatchers at Fulbeck on May 12th, and Sand Martins and a Common Sandpiper were seen at Frieston Ponds. The Great Crested Grebe, which was first noted in 1943, was still there, and the cries of the Dabchick were heard.

Writing from Scopwick on July 23rd, Mrs. A. M. E. Wright reported that a Lesser Spotted Woodpecker had been found dead in her grounds, having, apparently, flown into the wire surround of the lawn tennis court. She believes it to be the first record of the species for the immediate vicinity.

Writing from Alford on August 19th, Mr. L. Ottaway reported on two recent visits to Gibraltar Point. He described it as teeming with waders, with plenty of Turnstones, Dunlins, Curlews and Common Sandpipers. There were also lots of Common Scoter far out to sea, moving northwards. He recorded four Kittiwakes—an uncommon gull in this county. Terns were assembling, and were being preyed upon by Arctic Skuas.

We had a good day together at Cleethorpes on August 21st, where we both saw our first Ruffs or Reeves, a party of four, which were feeding by a brackish pool on the landward side of the sea-wall, and were as easy to approach as Dotterel. Quite a few Sanderlings were seen; there was a single Grey Plover and Common Sandpipers were numerous. We saw twelve of the latter at the same time. Four Cormorants were seen on Tetney High Sands. Whimbrel were still present and a single Bar-tailed Godwit was seen.

There was a small gathering of bird enthusiasts at Gibraltar Point on August 27th, the best sight of the day being several Greenshanks which were seen at close quarters, when the longer legs, white rump and absence of white edges to the wings, which distinguish it from the Redshank, were easily noted.

Throughout August and September, Turnstones were more numerous than ever I have known, and I saw some with Sanderlings on the Humberston foreshore on September 3rd, a score or so of the former, and about a dozen of the latter. It was interesting to contrast their respective ways of searching for food. The Sanderlings were always very dainty in their movements, but the Turnstones unhesitatingly moved large clumps of *Zostera* as big as themselves. When disturbed the two species separated on the wing. Movement was also seen amongst the Oystercatchers, Wheatears, Whinchats and Common Sandpipers. A Little Tern was seen to hand a silvery tit-bit to another tern, presumably a young one, which was resting on the sands.

Most of the Swifts took their departure as usual in mid-August, but I saw six flying low at Old Clee on the evening of September 7th. These proved to be the last. Wheatears were especially numerous along the seawall at Cleethorpes on September 19th. Yellow Wagtails were seen for the last time on September 21st, at Frieston Fen, on the occasion of the Union's meeting there. I saw the Willow Warbler for the last time on September 26th in my garden at Old Clee.

The first Redwings were passing over Grimsby after dark on September 30th, whilst by day Goldcrests were arriving in quantity for the first time. The first Geese were reported from Swallow on October 5th, but it was not until November 2nd that I heard the old familiar cry and presently watched some two hundred passing north over Old Clee.

House Martins left our parish on October 5th, Swallows eight days later. The first Brambling arrived on October 9th.

When the Union met at Cleethorpes on October 19th the most interesting sight was a party of Godwits. Even Bar-tailed Godwits are always worthy of note, but when the eleven birds seen on this occasion proved to be Black-tailed, enthusiasm was rife. Some members saw the Hooded Crow, which is less numerous than it was twenty years ago. The first Rock Pipit was also recorded.

I saw the first Fieldfare on October 23rd. It was eating haws in my garden at Old Clee, and woke me at daybreak with its wild chatter.

Mr. G. R. Porter sends a most interesting report of birds seen at Benington during the present year. A Green Sandpiper was seen and closely watched on the evening of September 14th, near Benington Sea Bank. Four days later a dead Greenshank was picked up in the same locality. The Redwing and Fieldfare appeared at Benington on October 15th, the Hooded Crow four days later. A Kingfisher was seen near the dykes and delphs at the sea bank on October 13th. Herons were seen on many occasions during the late summer and autumn on and near Butterwick Marsh. A Rook which was a pure albino was seen at Haverholme on May 30th. A dead Whimbrel was examined at Benington Marsh on October 2nd, and a Grey Plover and a belated Common Sandpiper were watched at Butterwick on October 5th.

Mr. R. May sends a most interesting report from Limber. The water level at Newsham Lake was the lowest ever recorded, and consequently suitable only for surface-feeding ducks. On November 25th, 1945, there was the largest number of Pintails ever recorded—at least thirty, of which half were males in full plumage. A fortnight later all were gone. In their place on December 9th were nine Gadwalls, as many Wigeons and a single Shoveler. On December 16th there were three hundred Mallards, a few Teals, six Tufted Ducks, a Goldeneye and two Pochards at Newsham Lake. A Water Rail could always be seen at this season by watching a certain muddy patch about sunset.

On December 27th, whilst cycling at Habrough at dawn, Mr. May heard the calls of two separate parties of Dunlins. They are not often heard so far from the coast. A Golden Plover was heard passing over Brocklesby on the same day.

Newsham Lake harboured four Gadwalls, two Wigeons and six Goldeneyes on January 1st. On January 10th Mr. May watched thirty-five Goldfinches feeding on Creeping Thistle. Four hundred ducks appeared on Newsham Lake on January 12th, the most interesting being five Pintails, a Wigeon and three Tufted Ducks. Mr. May paid a visit to Broughton on January 27th to see a Great Grey Shrike in captivity. It had been taken alive and unharmed in a hawk-trap.

The crown of a male Wigeon seen on Newsham Lake on March 3rd was definitely white. It is not known whether such a variation has been recorded before, nor could a sufficiently close approach be made to see if it was perhaps an American Wigeon.

Soon after dawn on March 19th Mr. May saw twelve wild Swans flying in a south-easterly direction. From their calls he felt fairly confident that they were Bewick's Swans.

The Chiff-Chaff appeared at Limber on March 28th, and the Willow Warbler at Scawby three days later. It is seldom that the latter is recorded before the first week of April. A Lesser Spotted Woodpecker was also heard drumming at Scawby. The Blackcap appeared at Limber on April 5th, an early record that will stand for many years to come. Six Golden Plovers halted on the Wolds on April 11th. The Cuckoo appeared at Limber on April 14th, the Sand Martin on April 16th, the Whitethroat on April 18th and the Lesser Whitethroat on April 20th. The last Fieldfares were seen on April 24th. The Turtle Dove and Wheatear were first seen on April 29th. The latter bird is only a straggler at Limber, as also is the Sedge Warbler, which was heard, together with the Garden Warbler, on May 1st. Two Grasshopper Warblers were heard in Mausoleum Wood on May 2nd.

Once again Mr. May saw the nests of many Lincolnshire birds, amongst them two of the Ringed Plover, which, as reported in 1945, still nests at Humberston. The nest of a Whinchat with six eggs was also seen at Humberston. Some strange birds were reported from Greetwell, and five, which proved without doubt to be Wood-Larks, were seen, the first record for many years for the county. It was in approximately the same spot where Max Peacock recorded them last about sixty years ago. In my opinion this is the most interesting record for the whole year. No nest was found nor suspected, but Mr. May had the unexpected pleasure of listening to the song of the Wood-Lark in Lincolnshire.

Several Nightjars were heard in the Greetwell area, too, and, after several attempts, a "nest" was found, containing two young. Other nests found in the area included those of the Grasshopper Warbler, Pochard and Curlew.

On May 25th, after many attempts, Mr. May was successful in finding a Grasshopper Warbler's nest in Mausoleum Wood. Nightingales sang at Hatcliffe and in Walesby Wood, where young were seen on the wing on June 30th.

It was considered a good Cuckoo year in North Lincolnshire, and five Cuckoo eggs were seen in Limber parish. In each case the foster parent was a Hedge Sparrow. Goldfinches continue to increase. In a garden at Brocklesby, Goldfinches have nested in a small apple tree four times during the last five years. There were two nests in 1945, a second pair starting to build on the same day that an earlier brood vacated their nursery. It was at Barrow-on-Humber that a pair of Red-backed Shrikes nested in 1945, not Goxhill, as stated erroneously in my previous report, but they did not appear in 1946.

Signs of return migration began in July when a Whimbrel was heard passing over Limber on the 21st, and a Curlew seven days later. A Wheatear was seen at Habrough on July 29th. A belated Corn Bunting's nest contained its first egg on August 5th.

Mr. May was very surprised to see a Water Rail at Newsham Lake on August 11th, almost three months ahead of normal schedule, and disturbed it twice just to make sure. The Green and Common Sandpipers were also both halting there on passage. Three Green Sandpipers were again seen on August 25th. Four Whimbrel passed over Limber on August 27th, and a solitary Whinchat was seen on the following day.

A Wheatear was seen at Limber on September 14th. Three Shovelers appeared at Newsham Lake on the following day, and three Green Sandpipers were bathing at the edge of the lake at sunset. September 27th was like a summer day, and both the Willow Warbler and Chiff-Chaff were heard singing. Mr. May heard that a Bittern had been seen in a brick pit at Goxhill during September, but when he paid a visit on the 28th it had passed on its way. He did, however, watch six Godwits feeding at the edge of the tide.

At dawn on September 29th, Mr. May saw the first Pink-footed Geese, and a fine sight they made—a dark V against a background of low, stormy clouds, the light from the rising sun lighting up their undersides to appear almost white.

The first Fieldfare was recorded at Limber on October 14th. Swallows lingered at Brocklesby in small numbers throughout the month, the last being seen on November 1st.

A solitary Shoveler was seen at Newsham Lake on October 27th, and again a week later. In the previous winter Pink-footed Geese were more numerous than in the war years, when low-flying aircraft appear to have had a disturbing effect on them. So far this year (beginning of November, 1946) they have not appeared in large numbers.

Perhaps the most remarkable event during the late autumn has been the invasion of Waxwings, on a much bigger scale than on any recent occasion. They were seen first at Limber on November 23rd, and by myself at Old Clee on the following day. Subsequently they were seen on several occasions by us both, and also by Mr. C. Colebrook, who found them especially plentiful in the neighbourhood of Immingham. Mr. F. Brewster also met with them on the outskirts of Grimsby. Flocks up to as many as forty have been seen, sometimes alone, at other times consorting with Starlings, Redwings or Fieldfares. Further inland, one was seen at Lincoln on December 7th by Dr. E. R. Walter; a male was picked up dead by Dr. H. B. Willoughby Smith in his garden at Gainsborough and several birds were noted in the Hackthorn, Welton, Dunholme area in the first week of the New Year by Dr. Raymond Hull. They were still numerous at the end of the year.

I have seen more Geese than for many years, perhaps because I am now more favourably placed for seeing them, but Mr. May also agrees that they are more numerous, now that there is less aerial activity in these parts.

Mr. May saw a single Swallow at Limber as late as December 1st, but it was in a very bad way. More remarkable still was the bird he saw at Little Brocklesby. Cycling alongside a hornbeam hedge on December 24th, he saw what he at first took to be a Marsh Tit, but realised that there was something wrong, for it lacked the white cheeks! Judge his surprise on disturbing it to note its typical warbler flight. It was nothing less than a Blackcap. Wintering in Cornwall is not unknown, but we doubted the feasibility of its doing so in Lincolnshire, nor has it been seen again.

Mr. May saw a Peregrine in Mausoleum Wood on December 8th, and on the same day there were hundreds of Wigeons at Tetney Haven.

BIRD NOTES. N.E. LINCOLNSHIRE, 1946.

BERNARD A. PYE.

Dotterel.

Two, near Bishopthorpe on April 15th.

As usual these birds were very tame, and permitted approach within ten yards before taking flight. The white eye-stripe, white throat, white breast-band and white under tail-coverts were very conspicuous at close range. An early date—they usually occur in May.

Wind S.E. Warm and sunny.

Garganey.

At "dawn flight" on August 16th I shot a male. On the 19th I saw one associating with some Teal, and on the 21st, two more, again in the company of Teal.

Greenland Wheatear.

Fairly numerous during September. I have seen it stated that this form can only be distinguished from the Common Wheatear by measurement, but, to my eyes, its larger size is sufficiently obvious, and I have never stained my hands with its blood. However, on September 19th, one, which had been shot, was brought to me for identification, and I was interested to find the wing measurement was 4.3 inches.

Hen-Harrier.

A large female at Humberston on September 30th. By a coincidence Mr. J. H. Stubbs saw this bird about ten minutes earlier at Tetney Lock, and Mr. G. Davison saw it a few minutes later at Cleethorpes.

Black Redstart.

One in Mr. G. Davison's garden at Cleethorpes on October 19th.

Swallow.

Two at Cleethorpes from November 8th to November 11th.

Corn Bunting.

On December 13th a flock of forty to fifty at Cleethorpes. Some were present throughout the month, and on the morning of the 29th, which was bright and sunny, I both saw and heard one singing. Normally the Corn Bunting vanishes from the marsh district at the end of November and is not seen again until March.

Wood-Lark.

December 24th. Thawing, after severe frost. Many small birds—larks, buntings—feeding greedily after cold spell. I had been scanning a mixed flock on Cleethorpes Fitties for a possible Lapland Bunting when I caught sight of a Wood-Lark crouching within five or six yards of me. I was able to note the broad, pale eye-stripe before the bird rose, uttering a musical double note, and as it flew directly from me, to note the absence of white outer tail-feathers. Following it up I was able to get some good views. The short tail was very noticeable when the bird was on the wing.

Glaucous Gull.

Mr. J. H. Stubbs reported seeing one near Tetney Lock on December 30th. A few days later I examined a fine specimen which was shot near Saltfleet on December 31st. As large or slightly larger than a Great Black-back, faintly mottled with pale sandy brown, otherwise wholly white. It appeared to be a bird in its third year.



PRESENTED

14 JAN 1948

