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NATURALIST

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AND FIELD CLUB
FOR THE YEAR
1960

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BEDFORDSHIRE
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1961

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D. A. Reid, B.Sc., The Herbarium, Royal Botanical Gardens, Kew.

METEOROLOGY:

A. W. Guppy, B.Sc., 53 Grange Lane, Bromham.

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Hymenoptera: V. H. Chambers, Ph.D., 47 Westbourne Road, Luton.

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Odonata: K. E. West, 37 Cardington Road, Bedford.

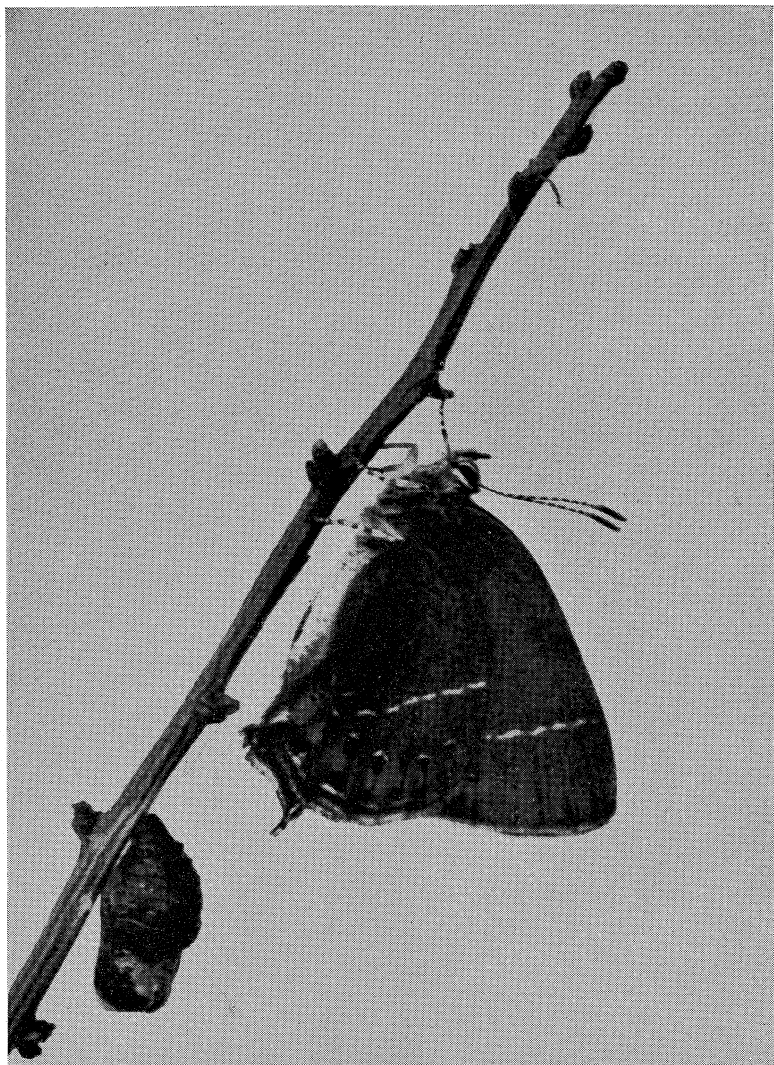
Vertebrates:

Amphibians, Fishes and Reptiles:

F. G. R. Soper, The Briars, Bromham Park, Bromham.

Birds: M. D. Wortley, 375 New Bedford Road, Luton.

Mammals: Henry A. S. Key, Priory House, Priory Street, Bedford.



BLACK HAIRSTREAK (*Strymonidia pruni*)
PARK WOOD, KEYSOE. JUNE, 1960

(*Photograph by Alexander Chrystal, Jr., A.R.I.B.A.*)

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 No. 15—1960

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Report of the Council

The Society has maintained its membership around the 300 mark. There have been resignations, but these have been offset by new members, the actual numbers being : resignations 11, new members 30, present membership 306. One feels that this number is small when one considers the present interest in Natural History, the county population, and the numbers that attend our big indoor meetings. If only half of these would join the Society our numbers would be more than doubled, but it is gratifying to know that each year there has been an increase in membership ; as an example it was 217 in 1953 and has risen each subsequent year.

The Bedfordshire and Huntingdonshire Naturalists' Trust, sponsored by the Society a year ago, has now become an established body with various members of the Council on the Select Committee of the Trust, these being the President, Dr J. G. Dony, the Chairman, Mr F. G. R. Soper, the Hon. Editor, Mr A. W. Guppy, Messrs H. A. S. Key, I. J. Ferguson-Lees, B. B. West, and the Hon. General Secretary, K. E. West ; Messrs B. B. West and H. A. S. Key being the joint Hon. Secretaries of the Trust.

Two changes took place during the year. The then Hon. General Secretary, Mr Key, asked to be relieved of his office due to pressure of business. This the Council agreed to most reluctantly and placed on record their gratitude to Mr Key for the splendid work he had done for fourteen years. At a special meeting your present Hon. Secretary was elected, and he takes this opportunity of asking for the same help and consideration shown to Mr Key.

The other change was that, at Bedford, advantage was taken of the newly opened Guildhouse as a centre for our activities, and in making this change our thanks and gratitude were given to the Principal of the Training College and Miss E. Proctor for their hospitality for a long number of years. It does not appear that our change of home has improved attendance, as this at times is woefully small, and we do ask for more members to turn up at these indoor meetings. At the Luton end, due to the splendid work of the Council members living in Luton, the good attendance is maintained. The Bird Bulletin has also maintained its popularity.

The Council asks all members to come forward with suggestions and ideas in the hope of furthering the aims and objects of the Society, and in creating a wide and more general interest.

KENNETH E. WEST,
Hon. General Secretary.

THE BEDFORDSHIRE NATURAL HISTORY SOCIETY AND FIELD CLUB

STATEMENT OF ACCOUNTS FOR THE YEAR ENDED 31st DECEMBER, 1960

STATEMENT OF ACCOUNTS

RECEIPTS			PAYMENTS				
	£	s. d.	£	s. d.			
Cash in Bank, 1st January, 1960 ...	121	7 8			Printing, Postage and Stationery ...	40	8 7
Cash in Hand, 1st January, 1960 ...	6	3 0			MEETING EXPENSES:		
	127	10 8			Hire of Hall, Luton	4	0 0
Donations and Subscriptions, 1960, and arrears	118	16 2			Hire of Guildhouse, Bedford (for 1961 Meetings)	4	10 0
Subscriptions, 1961, 1962 and 1963	13	15 0				92	11 5
	132	11 2			Subscriptions to other Societies ...		3 1 0
JAMES FISHER'S LECTURE:					Cost of Printing Journal, 1959 ...	94	19 9
Receipts	101	6 2			Less: Sales	2	8 4
Less: Expenses	76	9 0				116	4 4
	24	17 2			Sundry Expenses		2 13 8
					Deficits on Coach Trips		14 5 0
					Advertising		7 5 0
					Cash at Bank, 31st December, 1960	104	3 0
					Cash in Hand, 31st December, 1960	12	1 4
						£284	19 0
						£284	19 0

We have examined the above Account with the books and vouchers of the Society and certify the same to be correct in accordance therewith.

BEDFORD.
25th January, 1961.

THORNTON BAKER & CO.,
Chartered Accountants, Hon. Auditors. 3

PROCEEDINGS 1960

Indoor Meetings

135TH ORDINARY MEETING, 14th January, 1960, Luton. 'The Lone Isles and other Wanderings,' by Eric Meadows. Attendance 14. *Chairman*: R. G. O. Stephenson.

136TH ORDINARY MEETING, 28th January, 1960, Bedford. 'Weather Rhythms and Cycles,' by A. W. Guppy. Attendance 31. *Chairman*: F. G. R. Soper.

137TH ORDINARY MEETING, 18th February, 1960, Luton. 'The Birds of Finland,' by I. J. Ferguson-Lees. Attendance 131. *Chairman*: R. G. O. Stephenson.

13TH ANNUAL GENERAL MEETING, 25th February, 1960, Bedford. Details as printed in last issue, No. 14, 1959, page 11.

138TH ORDINARY MEETING, 10th March, 1960, Luton. 'Nature Magazine,' by G. Harper, E. Meadows, S. Rodell and M. Wortley. Attendance 20 + speakers. *Chairman*: R. G. O. Stephenson.

139TH ORDINARY MEETING, 24th March, 1960, Bedford. Society's Recorders answering questions upon their particular subjects. Attendance 33. *Chairman*: F. G. R. Soper.

140TH ORDINARY MEETING, 20th October, 1960, Luton. 'In search of Birds,' by Michael Wotton. Attendance 55. *Chairman*: R. G. O. Stephenson.

141ST ORDINARY MEETING, 27th October, 1960, Bedford. 'Moths,' by B. B. West and K. E. West. Attendance 25. *Chairman*: F. G. R. Soper.

142ND ORDINARY MEETING, 3rd November, 1960, Luton. 'How to recognise Birds,' by Ian Wallace. Attendance 77. *Chairman*: R. G. O. Stephenson.

143RD ORDINARY MEETING, 17th November, 1960, Luton. 'Wanderings of a Naturalist,' by E. G. Meadows. Attendance 43. *Chairman*: M. D. Wortley.

144TH ORDINARY MEETING, 24th November, 1960, Bedford. 'Summer days in France,' by R. G. O. Stephenson and Mrs Stephenson. Attendance 39. *Chairman*: F. G. R. Soper.

145TH ORDINARY MEETING, 1st December, 1960, Luton. 'The Black Rat,' by Dr Lloyd-Evans. Attendance 41. *Chairman*: S. W. Rodell.

146TH ORDINARY MEETING, 15th December, 1960, Bedford. 'Natural History in Colour Slides' by W. J. Champkin. Attendance 39. *Chairman*: F. G. R. Soper.

Field Meetings

SUNDAY, 14TH FEBRUARY, 1960. BATTLEDEN LAKE AND SURROUNDING WOODLAND. *Leader*: M. D. Wortley. Only four members braved the weather for this meeting over Battlesden Park and King's Wood. With the snow still lying underfoot, the party made its way across to Battlesden Lake which revealed little of any real interest, other than the normal wintering flocks of Tufted Duck and Pochard. In the afternoon a visit was made to King's Wood which proved to be rich in woodland birds. Species identified at close range included Goldcrest, Tree Creeper, Long-tailed Tit and Marsh Tit, to mention only a few.

SUNDAY, 24TH APRIL, 1960. SOUTH BEDFORDSHIRE. *Leader*: M. D. Wortley. Ten members attended this meeting. Starting from Clophill, the party moved on to Stanford Gravel Pit, where the Little Ringed Plover was the main attraction; also observed was a male Yellow Wagtail in full breeding plumage, along with a few of the more common residents. The next place of interest was Southill Park, where the party was able to watch the adult Herons coming into the heronry with food for the young. The Sand Martins and Swallows were also coming through in fair numbers. A walk in the woods was rewarded with good views of Lesser Spotted Woodpecker, Tree Creeper and Nuthatch. A little later, Blackcap was heard in full song, along with a Nightingale which gave a few short bursts of song.

SATURDAY, 30TH APRIL, 1960. CAMBRIDGE BOTANICAL GARDENS. *Leader*: F. G. R. Soper.

SUNDAY, 1ST MAY, 1960. ROWNEY WARREN. *Leader*: H. A. S. Key. This meeting was held at 3.30 a.m. to hear the dawn chorus of birds.

THURSDAY, 5TH MAY, 1960. PARK WOOD, LILLEY. *Leader*: R. G. O. Stephenson. The wood chosen for this meeting is actually just outside the Bedfordshire border. It contains a variety of habitats, from dense thickets to newly-planted areas, but the party was disappointed to see nothing but the commoner species of birds. A few of the eighteen or so members present continued across to Warden Hills in the dusk, and were rewarded by hearing a Grasshopper Warbler there.

SUNDAY, 8TH MAY, 1960. WOODS IN THE CLAPHAM AREA. *Leader*: L. A. Speed. This was an afternoon meeting.

SUNDAY, 15TH MAY, 1960. WEST WOOD, KNOTTING, AND WORLEY'S WOOD, MELCHBOURNE. *Leader*: M. Anniwell.

SUNDAY, 22ND MAY, 1960. PRINCES RISBOROUGH AREA. *Leader*: K. E. West.

SUNDAY, 29TH MAY, 1960. ODELL GREAT WOOD AND FELMERSHAM GRAVEL PITS. *Leader*: W. Durant. Afternoon meeting only.

MONDAY, 6TH JUNE, 1960. TINGRITH LAKES AND WOODS, WASHER'S WOOD AND DAINTRY WOOD. *Leader*: T. Abbiss.

THURSDAY, 9TH JUNE, 1960. MAULDEN WOOD. *Leader*: E. Meadows. Evening meeting only.

SUNDAY, 12TH JUNE, 1960. BLACK MOUNTAINS, BRECON. *Leader*: H. A. S. Key. This was a return visit to this area and was arranged to be about a month later than that of 1959. In consequence, it was considerably more rewarding, especially from a botanical standpoint. Fourteen species of ferns and sixty-one other flowering plants were recorded (see report of Botanical Section, p. 6).

SUNDAY, 19TH JUNE, 1960. FLITWICK MOOR. *Leader*: Miss N. Johnston. Meeting held in conjunction with the Hertfordshire Natural History Society.

SUNDAY, 26TH JUNE, 1960. HERTFORD HEATH. *Leader*: W. Durant. The weather was very fine, but the meeting was poorly attended. The object was primarily botanical, and twelve species of sedges and fifty-three other species were recorded.

THURSDAY, 30TH JUNE, 1960. SHARPENHOE CLAPPERS. *Leader*: E. Meadows. Evening meeting only.

SUNDAY, 3RD JULY, 1960. WICKEN FEN AND DEVIL'S DYKE. *Leader*: K. E. West.

SUNDAY, 10TH JULY, 1960. DANCER'S END NATURE RESERVE. *Leaders*: Mr and Mrs Bannister. Meeting held in conjunction with the Hertfordshire Natural History Society.

SUNDAY, 17TH JULY, 1960. PEAK DISTRICT OF DERBYSHIRE. *Leader*: E. Meadows. Despite a wet dawn, a hopeful party of twenty-seven members set off early and ran into sunny weather in Leicestershire, and this sparkling sunshine lasted well into the afternoon. The route followed the River Derwent through Matlock in its limestone ravine, passed Chatsworth House and then on below the barer gritstone hills with their 'edges' of dark rock once used for millstones. Finally Edale was reached below the high plateau of Kinderscout, and fine views were enjoyed in the clear atmosphere. In the afternoon a rewarding couple of hours were spent in Cave Dale behind Castleton, with the ruins of Peak Castle perched on the cliffs above. Plants of interest are noted in the report of the Botanical Section. Lastly, the party entered the Peak Cavern with its winding passages, the huge entrance arch sheltering a rope-walk.

SUNDAY, 24TH JULY, 1960. RIVER OUSEL NEAR LEIGHTON BUZZARD. *Leader*: H. A. S. Key. Afternoon meeting only.

SUNDAY, 21ST AUGUST, 1960. NORTH BEDFORDSHIRE. *Leader*: E. C. Lamb.

SUNDAY, 11TH SEPTEMBER, 1960. GIBRALTAR POINT. *Leader*: M. D. Wortley. Twenty-four members had an enjoyable coach trip to Gibraltar Point and Skegness Nature Reserve, near Skegness, Lincolnshire. Mr A. E. Smith, Hon. Secretary of the Lincolnshire Naturalists' Trust, gave a short talk on the natural history in general of the reserve, which covers at least 1,300 acres of sand dunes, salt marshes and foreshore. During the afternoon a number of interesting birds were seen, the most interesting observation being that of an Arctic Skua chasing a Sandwich Tern which had just caught a fish, the Skua following every twist and swerve of its quarry as it endeavoured to escape, until the latter was forced to drop the fish. The Great Skua was observed in flight offshore. Other interesting species identified were: Oystercatcher, Ringed Plover, Turnstone, Bar-tailed Godwit, Redshank, Dunlin, Sanderling, Ruff, and a single Redstart.

SUNDAY, 18TH SEPTEMBER, 1960. TRING RESERVOIRS. *Leader*: B. L. Sage. This meeting was held in conjunction with the Hertfordshire Natural History Society.

SUNDAY, 25TH SEPTEMBER, 1960. SUTTON FEN. *Leader*: D. A. Reid. This was the annual Fungus Foray, of which a detailed account appears elsewhere in this Journal.

Botanical Section

Although the summer weather of 1960 was mainly bad, we were extremely fortunate to have fine weather on the main botanical excursions in the Summer Programme. These were again outside the county, and provided us with many interesting records. We were much more successful this year than last in recording new species, and 1960 can be counted as one of our more successful years.

The first of the four main excursions, on Sunday, 12th June, was a return visit to the Black Mountains in Wales; this date was a month later than last year, and was considerably more rewarding. Particular interest was shown in the Ferns, and as these are not plentiful in Bedfordshire, the fourteen species recorded are worth mention:

1. Maidenhair Spleenwort.
2. Black Spleenwort.
3. Wall Rue.
4. Rusty Back.
5. Hart's Tongue.

6. Hard Fern.
7. Common Polypody.
8. Male Fern.
9. Lady Fern.
10. Bracken.
11. Bladder Fern.
12. Mountain Buckler Fern.
13. Broad Buckler Fern.
14. Spiny Buckler Fern.

In addition to the Ferns, sixty-one other species were logged. Of these, the most important was the Small Marsh Marigold, *Calitha minor*, found in one of the mountain streams, both species of Cotton Grass, the Common and the Hare's Tail, *Eriophorum polystachion* and *E. vaginatum*, between which we were able to see the differences at first hand. Other plants noted and worth mention were Mossy Saxifrage, *Saxifraga hypnoides*, Common Butterwort, *Pinguicula vulgaris*, Common Cow-Wheat, *Melampyrum pratense*, Pennywort, *Cotyledon umbilicus*, and Sweet Cicely, *Myrrhis odorata*.

The second main excursion, on Sunday, 26th June, to Hertford Heath, was, unfortunately, poorly attended, despite the very fine weather. However, those who were present had a most rewarding day. This habitat provided good scope for the study of Sedges, and we recorded twelve species; of these, much interest was shown in comparing the Common Sedge, *Carex nigra*, and the Glaucous Sedge, *Carex flacca*, two species which are easily confused. Two other species found and worth mention were *Scirpus pauciflora* and *Carex pseudo-cyperus*, the Cyperus Sedge. One interesting grass was noted which does not occur in Bedfordshire, the Matgrass, *Nardus stricta*. Other good 'finds' were Creeping Willow, *Salix repens*, Dyer's Greenweed, *Genista tinctoria*, and the Needle Furze, *Genista anglica*. In all, fifty-three species were recorded.

In another locality close by we were fortunate to see the Marsh Orchid, *Epipactis palustris*, and the Fragrant Orchid, *Gymnadenia conopsea*, growing together.

On Sunday, 3rd July, the third main botanical excursion was made to Wicken Fen and the Devil's Dyke in Cambridgeshire and a most enjoyable day resulted. The Society has made several visits in the past to Wicken Fen, and consequently nothing new was recorded, but interest is always aroused in seeing the special plants for which the fen is noted; for example, the Marsh Pea, *Lathyrus palustris*, the Greater Spearwort, *Ranunculus lingua*, the Meadow Thistle, *Carduus pratensis*, and the Marsh Fern, *Dryopteris thelypteris*, to name a few. Interest was also shown in noting the differences between the Common Reedmace, *Typha latifolia*, and the much rarer Lesser Reedmace, *Typha angustifolia*. On the return journey a short stay was made at the Devil's Dyke, and, although nothing of special note was found, thirty-three species were recorded.

The last main botanical excursion was the coach trip on Sunday, 17th July, to Castleton in the Peak district of Derbyshire. Cave Dale, a small dale behind Castleton was visited and proved highly successful. Three new species were recorded: Field Garlic, *Allium oleraceum*, Keeled Cornsalad, *Valerianella carinata*, and Vernal Sandwort, *Arenaria verna*. Other good plants noted were: Wall Lettuce, *Lactuca muralis*, Lesser Meadow-rue, *Thalictrum minus*, Bladder Fern, *Cystopteris fragilis*, and Maidenhair Splenewort, *Asplenium trichomanes*. In a pond at the end of the dale Ivy-leaved Crowfoot, *Ranunculus hederaceus*, was seen in abundance.

The Botanical Exhibition was held on Monday, 13th June, in the Nature Room, 4 The Avenue, Bedford. Sixty species were on display, most of

which were from the previous day's coach trip to the Black Mountains, other species being provided by Mr Guppy and Mrs Stonebridge. Unfortunately the Exhibition was very poorly attended, and it is questionable whether it is worth while continuing this annual event.

W. DURANT.

Ornithological Section

The Ornithological Section's outdoor activities started with a field meeting at Bedford Level and the Wash area on 24th January, the weather being rainy in the morning, but clearing later. A number of Bewick Swans and Wigeon were observed on flooded meadowland in the Bedford Level area. The Snettisham locality proved very interesting, with the following observations made: Red-throated Diver, Goldeneye, Scaup, Bar-tailed Godwit and the more common shore birds, as well as small flocks of Snow Bunting feeding on the tidewracks. The next field meeting at Battlesden Lake and surrounding woodland on 14th February proved very disappointing, both from the number of members present and in the variety of species identified.

The first indoor meeting was held at Luton on 18th February when I. J. Ferguson-Lees gave a talk on the birds of Finland, and illustrated it with an excellent colour film called 'Wild Finland'. This was followed by a new venture at Luton on 10th March, called 'Nature Magazine' which was very much a co-operative effort by several members, who gave demonstrations and descriptions on various sections of natural history.

For the summer months several field meetings of an ornithological nature were arranged, to Stanford Gravel Pit and Southill Park on 24th April to watch the spring migration, and to Rowney Warren on 1st May for the Dawn Chorus, followed by an 'Evening-chorus-of-birds' meeting at Lilley Park Wood, on 5th May. Two coach excursions were organized; to the Black Mountains in Wales on the 12th June, the other to Gibraltar Point Nature Reserve, Lincolnshire, on 11th September. Mr A. E. Smith, Secretary of the Lincolnshire Naturalist Trust, gave an introductory talk on the Reserve. A number of notable observations were made during the day, the most interesting of which were Arctic and Great Skuas and Common Seal at close quarters.

For the Autumn a field meeting was held at Tring Reservoirs in conjunction with the Herts. Society in September.

Indoors again, the Society's programme contained two meetings mainly of interest to the bird watchers; Michael Wotton's talk 'In Search of Birds', illustrated by film taken during his stay in America, and the Editor of the London Bird Report, Mr D. I. M. Wallace's very entertaining and stimulating talk on the 'Fundamentals of Bird Identification'.

Several members have helped in Wildfowl counts and in the surveys organised by the British Trust for Ornithology. These surveys will be repeated in the coming year, and one or two new ones started, so that assistance from interested members will be most welcome.

MICHAEL D. WORTLEY.

The Fungus Foray

The annual fungus foray was held at Sutton Fen, near Sandy, on the 25th September, 1960, and was led as usual by Mr D. A. Reid. We were once again fortunate in having a fine sunny day and this no doubt accounted for the relatively large attendance of over thirty people, but only a fraction of this number were members of the Society.

The morning was spent collecting in the fen but this proved to be difficult of access and some of the party preferred the less hazardous course of searching the nearby pastures. However, after leaping over or wading through streams and negotiating other obstacles in the form of barbed wire even the most enthusiastic members were ready to spend the afternoon in the more hospitable woodland on Sandy Hill, the latter consisting of pine plantations and areas of mixed deciduous trees.

None of the fungi collected on this occasion was of outstanding rarity but nevertheless a number of species aroused considerable interest. Discomycetes were more in evidence than usual and members had the rare opportunity of comparing two rather uncommon species of *Otidea*. This genus consists of a number of pezizoid fungi which, instead of forming flattened discs or cup-shaped fruitbodies, produce erect ear-like lobes. The most striking of the two species collected was *O. onotica* with its clusters of large salmon-pink fructifications which contrasted with the smaller dark umber brown apothecia of *O. umbrina*. It was also possible to study both the familiar white lobed *Helvella crispa* and its close relative *H. lacunosa* which differs in its blackish cap and dark grey stalk. In contrast to these larger Discomycetes, a number of the party were able, with the aid of a lens, to observe the beauty of the minute fructifications of *Cyathicula coronata*. This little stalked fungus, which is only about 1 mm. high, has its cup fringed with long delicate hairs.

Among the Basidiomycetes a large specimen of *Sparassis crispa* attracted most attention but other noteworthy finds included a number of specimens of *Hydnum auriscalpium* which always grows from buried cones, and several fruitbodies of *Amanita phalloides* which is better known as the Death Cap.

Altogether 124 species were collected of which 17 were new to the county and a further 3 confirm old existing records.

Amanita citrina [Schaeff.] S. F. Gray; *A. muscaria* (L. ex Fr.) Hooker; *A. phalloides* (Vaill. ex Fr.) Secr.; *A. rubescens* (Pers. ex Fr.) S. F. Gray; *Bolbitius vitellinus* (Pers. ex Fr.) Fr.; *Clitocybe aurantiaca* (Wulf. ex Fr.) Studer; *C. clavipes* (Pers. ex Fr.) Kummer; *C. flaccida* (Sow. ex Fr.) Kummer; *C. infundibuliformis* (Schaeff. ex Weinm.) Qué!; *C. vibecina* (Fr.) Qué!; *Collybia dryophila* (Bull. ex Fr.) Kummer; *C. maculata* (A. & S. ex Fr.) Kummer; *C. velutipes* (Curt. ex Fr.) Kummer; *Coprinus lagopus* (Fr.) Fr.; *C. plicatilis* (Curt. ex Fr.) Fr.; *Entoloma sericeum* (Bull. ex Mérat) Qué!; *Flammula carbonaria* (Fr. ex Fr.) Kummer; *F. gummosa* (Lasch) Kummer; **F. penetrans* (Fr. ex Fr.) Qué!; **Galera rickeniana* (Sing. ex P. D. Orton); **G. rickenii* J. Schaeff.; *G. rubiginosa* (Pers. ex Fr.) Gillet; *Gomphidius glutinosus* (Schaeff. ex Fr.) Fr.; *Hebeloma crustuliniforme* (Bull. ex St. Amans) Qué!; *H. mesophaeum* (Pers.) Qué!; *Hygrophorus miniatus* (Fr.) Fr.; *Hypholoma fasciculare* (Huds. ex Fr.) Kummer; *H. velutinum* (Pers. ex Fr.) Kummer; *Inocybe fastigiata* (Schaeff. ex Fr.) Qué!; *I. geophylla* (Sow. ex Fr.) Kummer; *I. griseolilacina* J. Lange; **I. nanipes* J. Lange; **I. posterula* (Britz.) Sacc.; *Laccaria laccata* (Scop. ex Fr.) Cooke; *L. proxima* (Boud.) Pat.; *Lactarius hepaticus* Plowr. apud

Boud.; *L. quietus* (Fr.) Fr.; *L. rufus* (Scop. ex Fr.) Fr.; *L. tabidus* Fr.; *L. torminosus* (Schaeff. ex Fr.) S. F. Gray; *L. turpis* (Weinm.) Fr.; **Lepiota brebissonii* Godey apud Gillet; *L. cristata* (Fr.) Kummer; *L. rhacodes* (Vitt.) Quél.; **Marasmius languidus* (Lasch.) Fr.; **M. myosurus* (Fr. ex Fr.) Karst.; *M. oreades* (Bolt. ex Fr.) Fr.; *M. peronatus* (Bolt. ex Fr.) Fr.; *Mycena ammoniacae* (Fr. ex Secr.) Quél.; *M. avenacea* (Fr.) Quél.; *M. epipterygia* (Scop. ex Fr.) S. F. Gray; *M. galericulata* (Scop. ex Fr.) S. F. Gray; *M. galopus* (Pers. ex Fr.) Kummer; **M. leucogala* (Cooke) Sacc.; **M. olida* Bres.; *M. sanguinolenta* (A. & S. ex Fr.) Kummer; *M. speirea* (Fr. ex Fr.) Gill.; *Nolanea staurospora* Bres.; *Panaeolus sphinctrinus* (Fr.) Quél.; *Paxillus involutus* (Batsch. ex Fr.) Fr.; †*Pholiota aegerita* (Brig.) Quél.; *P. spectabilis* (Fr.) Kummer; *Pluteus cervinus* (Schaeff. ex Fr.) Kummer; *Psathyrella disseminata* (Pers. ex Fr.) Quél.; *P. pennata* (Fr.) Pearson & Dennis; *Psilocybe foenicicci* (Pers. ex Fr.) Quél.; *P. semilanceata* (Fr. ex Secr.) Kummer; *Russula nigricans* (Bull. ex Merat) Fr.; *R. ochroleuca* (Pers. ex Secr.) Fr.; **R. pectinatoides* Peck.; *R. xerampelina* (Schaeff. ex Secr.) Fr.; *Stropharia aeruginosa* (Curt. ex Fr.) Quél.; *S. coronilla* (Bull. ex Fr.) Quél.; *S. semiglobata* (Batsch ex Fr.) Quél.; *Tricholoma aggregatum* (Schaeff. ex Secr.) Cost. & Duf.; **T. album* (Schaeff. ex Fr.) Kummer; *T. melaleucum* (Pers. ex Fr.) Kummer; *T. rutilans* (Schaeff. ex Fr.) Kummer; †*T. sulphureum* (Bull. ex Fr.) Kummer; **Tubaria crobulus* (Fr.) Karst.; *T. furfuracea* (Pers. ex Fr.) Gill.; *T. inquilina* (Fr. ex Fr.) Gill.; *Volvularia speciosa* (Fr. ex Fr.) Kummer;

Boletus badius Fr.; *B. chrysenteron* Bull. ex St. Amans; *B. elegans* Schum. ex Fr.; *B. scaber* Bull. ex Fr.; *B. subtomentosus* L. ex Fr.;

Fomes annosus (Fr.) Cooke; *Polyporus adustus* [Willd.] Fr.; *P. betulinus* [Bull.] Fr.; *P. schweinitzii* Fr.; *P. stypticus* (Pers.) Fr.; *Polystictus abietinus* (Dicks.) Fr.; *P. versicolor* (L. ex Fr.) Fr.; *Poria versipora* (Pers.) Baxter;

Hydnum auriscalpium [L.] Fr.;

Coniophora puteana (Schum.) Karst.; *Peniophora gigantea* (Fr.) Masee; *Phlebia merismoides* (Fr.) Fr. [— *P. aurantiaca* [Sow.] Karst.]; *Stereum hirsutum* [Willd.] Fr.; *S. purpureum* (Pers.) Fr.; *S. sanguinolentum* (Fr.) Fr.; *Thelephora terrestris* (Ehrh.) Fr.;

Sparassis crispa (Wulf.) Fr.;

Calvatia saccata (Vahl.) Morg.; *Lycoperdon echinatum* Pers.; *L. nigrescens* (Pers.) Lloyd; *Phallus impudicus* [L.] Pers.; *Scleroderma verrucosum* (Vaill.) Pers.; *S. vulgare* (Horn.) Fr.;

Calocera viscosa (Pers.) Fr.;

Ustilago violacea (Pers.) Fuckel;

**Cyathicula coronata* (Bull. ex Fr.) De Not.; *Helotium fructigena* (Bull. ex Fr.) Fuckel; *Helvella crispa* Scop. ex Fr.; **H. lacunosa* Afz. ex Fr.; †*Otidea onotica* (Pers. ex Fr.) Fuckel; **O. umbrina* (Pers.) Bres.; **Pustularia catinus* (Holmsk. ex Fr.) Fuckel;

Nectria cinnabarina (Tode ex Fr.) Fr.; *Xylaria hypoxylon* (L. ex Fr.) Grev.;

Ptychogaster albus Corda;

Craterium minutum Fr.

DEREK A. REID.

* New county record.

† Confirmation of existing record.

Annual General Meeting 1961

The 14th Annual General Meeting was held at the Guild House, Harpur Street, Bedford, on Thursday, 23rd February, 1961. Mr F. G. R. Soper was in the chair and the attendance was fifty-seven.

The minutes of the previous Annual General Meeting were read, adopted, and signed. The Hon. General Secretary, Mr K. E. West, then presented the Report of the Council for 1960 which showed a further increase in membership, and referred to the formation of the Bedfordshire and Huntingdonshire Naturalists' Trust, to the change in the Secretaryship, and to the transfer of the Society's activities to the Guild House. The Report was unanimously adopted.

The Hon. Treasurer, Mr J. M. Dymond, presented a very satisfactory report showing an increase in subscriptions and a total of £116 in hand. It was pointed out that we now had expenses not previously incurred, such as the hire of the new meeting-place, and there had been a deficit of £14 on the coach trips; our expenditure required to be watched carefully. A vote of thanks was passed to Mr Dymond and to the Hon. Auditor, Mr E. Lucas, for their services.

Mr A. W. Guppy, as Hon. Editor, reported upon the lateness of the last Journal and the omission of the Bird Report. Very little material was in hand for the next issue and contributors were not sufficiently forthcoming.

The Ornithological Secretary, Mr M. D. Wortley, presented a very satisfactory report upon a very good year. The Bird Bulletin was now self-supporting, and thanks were due to the regular contributors; there was a general feeling in favour of expanding into other interests. This Report was adopted with appreciation. Mr R. G. O. Stephenson spoke of the new system of keeping records that they hoped to adopt in future.

The Botanical Section had not functioned separately, but the Botanical Secretary, Mr W. Durant, reported successful activities on the Society's outings. He spoke of the continued lack of interest in the Botanical Exhibition, and doubted whether its continuance was worth while. His Report was adopted.

In the absence of the Hon. Programme Secretary, the Hon. General Secretary gave a preliminary rough draft of the Summer Programme. Mr R. G. O. Stephenson suggested more frequent reminders of forthcoming important meetings, but while this was admitted to be desirable, the opinion was expressed that the work and expense involved would be too great; the matter would be further considered by the Committee.

The President then spoke of his efforts to persuade Dr Metcalfe to take office after him, but Dr Metcalfe had declined to do so for reasons of health, while thanking Dr Dony and the Society for the honour done him. Dr Dony then proposed Mr W. E. K. Piercy, associating him with events which had led to the eventual formation of our Society, and with much good work after its formation. Mr Piercy was unanimously adopted and expressed his thanks; he hoped that his other duties would enable him to attend more frequently than of late.

Officers were then elected as follows:

Chairman: Mr F. G. R. Soper.
Hon. General Secretary: Mr K. E. West.
Hon. Treasurer: Mr J. M. Dymond.
Hon. Editor: Mr A. W. Guppy.
Hon. Programme Secretary: Mr L. A. Speed.
Hon. Librarian: Miss G. M. Tattam.

The Council was then elected as follows:

Messrs J. G. Dony, W. Durant, I. J. Ferguson-Lees, H. A. S. Key, C. L. Lamb, E. Meadows, S. W. Rodell, R. G. O. Stephenson, B. B. West, and M. D. Wortley.

On the proposition of Dr J. G. Dony, who spoke of her services both to botany and to the Society, Miss G. H. Day, now living in Surrey, was unanimously elected an Hon. Life Member.

At the conclusion of the business meeting, the retiring President, Dr J. G. Dony, gave his second Presidential Address; he hoped that it would become customary for future Presidents to do likewise. The subject of his talk was 'Wool Aliens'. The occurrence of certain alien plants at Eaton Socon in 1946, and the discovery of their dispersal by means of seeds carried in wool waste or 'shoddy', was described. South Africa, America, the Mediterranean, and Australia and New Zealand were among the widely-distributed sources from which they were derived. Reference was made to similar discoveries in Scotland along the River Tweed by Miss Ida Haywood, and by Mr J. B. Prior at Bradford Sewage Works, and to the fact that this County is noted for its aliens, often at the expense of its native flora.

A vote of thanks from the Chairman was heartily endorsed by the meeting and concluded the proceedings.

Report of Recorders

BOTANY

A noteworthy addition to the plants of the county was made during the year by Mrs Rixon, of Rushden, who found Large Bitter-cress (*Cardamine amara* L.) growing near Tempsford. There is every reason to think this may be a previously overlooked native species.

The very wet season produced a luxuriant native flora, but had the result of providing few alien plants. Only one new wool-adventive was recorded.

J. G. DONY.

METEOROLOGY

The two halves of the year 1960 were in sharp contrast; a fairly normal first half with the usual dry spring was followed by an exceptionally wet second half, the net result being a year with a total rainfall which has seldom been exceeded and a summer disappointing alike to naturalists and holidaymakers in its heavy downpours and absence of warm settled weather.

January and February were generally mild, though both had brief cold intermissions at mid-month accompanied by snow. March was rather dry and dominated by easterly winds, while April was exceptionally dry throughout. May began fine and dry, became unsettled in the middle and then returned to warm weather which developed into a small heat-wave; the climax was reached on 5th June—the hottest day of the year. There were several thundery spells during the remainder of June, and this tendency continued into July and August which were cool, wet and thundery throughout. September had some fine weather during the second and fourth weeks, but, despite this, the rainfall was very high although confined to about ten or eleven days. October was unusually wet, with only three or four completely dry days. November and December

RAINFALL FOR 1960

	Ampthill	Bedford	Bromham	Cardington	Eversholt	Kempston	Luton A	Luton B	Silsoe
January ...	2.41	2.36	2.43	2.12	3.10	2.68	2.55	2.57	2.06
February ...	2.31	2.12	2.04	1.82	2.78	2.19	2.27	2.36	2.06
March ...	1.75	1.64	1.57	1.38	1.43	1.69	1.69	1.62	1.41
April ...	0.33	0.31	0.21	0.24	0.57	0.32	0.52	0.51	0.34
May ...	1.34	1.39	1.22	1.40	1.36	1.41	1.77	1.74	1.38
June ...	2.61	2.19	1.98	2.17	3.10	2.39	1.71	1.77	2.67
July ...	3.60	3.97	3.39	3.39	3.57	3.40	3.60	3.77	2.90
August ...	3.04	2.70	1.99	2.84	3.48	2.62	3.38	3.66	2.97
September ...	3.11	3.95	3.37	3.68	3.45	3.86	3.84	3.41	3.04
October ...	3.82	3.99	3.98	3.97	4.34	4.08	5.55	5.22	3.81
November ...	3.00	2.97	2.88	2.83	3.12	3.36	4.10	4.27	2.82
December ...	3.25	2.99	2.33	2.37	3.85	2.92	3.74	3.76	3.21
Totals ...	30.57	30.58	27.39	28.21	34.15	30.92	34.72	34.66	28.67

Ampthill (Mr Horne)
 Bedford (Mr Lock)
 Bromham (the writer)
 Cardington Aerodrome (per Mr Speed)
 Eversholt (Col. Battcock)

Kempston (Mr Payne)
 Luton A (Crescent Road) (Mr Meadows)
 Luton B (Runley Wood) (Mr. Meadows)
 Silsoe (N.I.A.E., Wrest Park) (per Mr Dunn)

continued this tendency to a lesser degree; temperatures continued high, due to the almost uninterrupted succession of rain-producing 'fronts' from the Atlantic. There were consequently very few frosts during the autumn, and only two short foggy periods.

RAINFALL was everywhere in excess of average by amounts varying from 30 to 35%. The spring was dry, the combined total for the months of March, April and May lying between 3 ins. and 4 ins., whereas the totals for the second six months exceeded 20 ins. in most places, and it is probably necessary to go back to 1875 for a comparable period in this district. The longest dry period comprised the fourteen days, 24th May to 6th June inclusive, while the twenty-one days from 13th October to 2nd November were the longest rainy spell.

SNOW occurred on nine days, four in January, four in February, and one in December, but amounts were comparatively small, and not persistent.

THUNDER was recorded on fifteen days, the heaviest storms being those of 23rd June with a total rainfall for the day of nearly three-quarters of an inch (1.16 ins. at Eversholt).

TEMPERATURES. In sharp contrast to 1959, temperatures of 80 deg. F. were reached or exceeded on only four days, all in June. The hottest day of the year at Bromham was 5th June with 86 deg.

The two coldest days were 13th and 14th January, both with maxima of 33 deg., while the coldest night was that of 27th/28th February with a minimum of 23 deg. The latest air frost occurred on the night of 26th/27th April, exceptionally late, whereas, owing to the almost continuous wet and mild weather in the autumn, the onset of air frost was unusually delayed until 27th/28th November.

Averages were as follows:

January ...	39.0 deg. F.	July ...	59.35 deg. F.
February ...	39.5	August ...	58.65
March ...	42.85	September ...	55.65
April ...	47.65	October ...	50.95
May ...	54.9	November ...	45.3
June ...	60.35	December ...	39.2

Average for the whole year: 49.45 deg. (51.68 in 1959).

As might be expected, the SUNSHINE figures for the months from June onwards contrast sharply with those of the previous year. Figures from the N.I.A.E. at Silsoe are as follows (1959 figures in brackets):

June	8.93 hours average <i>per diem</i> (8.0)
July	4.93 (8.7)
August	5.18 (7.4)

A further commentary on the weather of October is provided by the fact that the daily sunshine average for that month was actually *less* than that for November which is usually a month deficient in sunshine.

A. W. GUPPY.

LEPIDOPTERA

1960 began as a wonderful year, promising a fulfilment of the previous summer, but with the collapse of the weather at the end of June we had one of the worst seasons entomologically since the miserable summer of 1948; soaking rains in autumn made the harvest a travesty, and must have affected the late summer butterflies in particular. The succeeding winter months have been disastrously open and mild, and the dampness must have affected species overwintering in the larval or pupal state. However, the early spring is bringing forth a reasonable emergence of all the common and some of the less common insects, so one goes forward into 1961 with renewed hope.

During May my father and I carried out an investigation of the Keysoe Park Wood S.S.I. to determine the present status of the Black Hairstreak, *Strymonidia pruni* (Linn.). After careful beating of blackthorn along the rides one larva was taken, and it was then decided that further activity would be dangerous as the specimen was mature. This could mean that others had pupated and could suffer damage from such activity. The wood has become overgrown, but this is to the advantage of the species which prefers the taller straggly bushes for egg-laying. It would seem that this insect survives, but the small area of the habitat is a danger.

The surge in the numbers of the Holly Blue, *Celastrina argiolus* (Linn.), continued, and a fine summer brood series was reared from 43 The Grove where a holly tree had almost one larva to every berry cluster at the lower levels. Overwintering pupae began to emerge at the end of February. A good series of the Small Blue, *minima* (Fuessl.), was reared from the 1959 Totternhoe larvae. It was found that during the process of pupation, which takes place early in the year, desiccation was a great danger, and daily spraying a necessity.

Colonel Young at Pavenham also considered the season a poor one, yet one species which he normally records only from time to time was abundant in 1960, the White Letter Hairstreak, *Strymonidia w-album* (Knoch); from his descriptions of the proximity of Wych Elm, the species is obviously breeding in numbers locally.

The Mercury Vapour light was run throughout the year and various expeditions were made using the generator. At Sandy it was found that the Pine Hawk colony was stronger than at first thought, which was a very rewarding discovery. This must be the most productive site which we visit, and in 1960 it produced several species new to us, in particular the Cream Spot Tiger, *Arctia villica* (Linn.). Strangely enough, however, we completely missed the emergence of the Light Marbled Brown, *trimacula* (Esp.), which was so abundant in June, 1959.

In addition to Colonel Young's records for the year, I have also been given access to the notebooks of Peter Franghiadi, who has worked a Mercury Vapour light at Wrest Park. Although his records do not extend the County lists (with one notable exception) they naturally give a new locality for a number of previously recorded species. The exception is the record of the Alder Dagger, *Apatele alni* (Linn.), from Leighton Buzzard. Although named after the Alder the larva of this moth feeds on a variety of trees, but one does recall the Alders of the Ouzel and the canal as a possible explanation for the presence of this rare insect.

I have also had useful records from Terence Knight who, in common with the rest of us, did not have a very satisfactory season's work. The work done by Bedford School Natural History Society has also been brought to my notice. This compels admiration and is an excellent example of what can be achieved by quite a small band of enthusiasts. Mr Reay tells me that he would prefer to work for a further season before compiling a report on the use of the Mercury Vapour lamp and drawing any conclusions from the experiments which have been carried out at the school and at other sites in the town. I have had access to the lists, and reference to any new species is made in mine which follows this report.

Peter Roseveare has also given me lists of moths taken at night on the occasions that he has been able to collect in Bedford. Some of his 'counts' on good nights during August are interesting in confirming our findings that certain species completely dominate the rest, '*pronuba*' and '*c-nigrum*' being typical examples. On 25th August for example 143 '*c-nigrum*' were recorded, whereas the maximum for any other species was 32.

Recorders are as follows: KW—Kenneth West, BW—Bernard West, EPY—Lt-Col E. P. Young, PF—Peter Franghiadi, PJR—P. J. Reay, JND—J. N. Dymond, WC—Walter Champkin, PR—Peter Roseveare.

177. *Arctia villica* (Linn.), Cream Spot Tiger: Bunker's Hill, Sandy, 27/5/60, (M.V.), (KW and BW). Two specimens. I understand from Mrs Soper that she had larvae of this species identified on Tamarisk in Chaucer Road, Bedford, some years ago. We have not previously taken it.

206. *Apatele alni* (Linn.), Alder Dagger: Plantation Road, Leighton Buzzard, 10/5/59 (J. W. Slater via PF). This very interesting record only became available upon receipt of Mr Franghiadi's records during 1960. This is a species which since the use of Mercury Vapour has proved to be more widespread than was at first thought, but it is still a rare insect and a very beautiful one.

260. *Diarsta brunnea* (Fabr.), Purple Clay: Bedford School, (M.V.), three on 31/5/60, not previously listed.

355. *Dypterygia scabriuscula* (Linn.), Bird's Wing: Bunker's Hill, Sandy, 27/5/60, (M.V.), (BW and KW).

386. *Nonagria typhae* (Thunb.), Bullrush Wainscot: Sharnbrook, 1959-60, (WC). (Mr Champkin has made several interesting discoveries of which this is one, and he has, of course, his beautiful coloured transparencies as proof.)

446. *Panolis flammea* (Schiff.), *piniperda* (Panz.), Pine Beau, formerly Pine Beauty: Bunker's Hill, Sandy, 27/5/60, (M.V.), and larvae on Pine subsequently, (BW and KW).

511. *Acontia luctuosa* (Esp.), Four Spot: Bunker's Hill, Sandy, 27/5/60, (M.V.), (BW and KW).

551. *Lygephila pastinum* (Treits.), Plain Blackneck: Sharnbrook Summit, (WC).

643. *Lygris testata* (Linn.), Common Chevron: Great Barford, August, (WC).

732. *Coenotephira derivata* (Schiff.), *nigrofasciaria* (Goeze.), Streamer: Blunham, 15/5/60, (KW and BW).

741. *Eupithecia irriguata* (Hübner), Marbled Pug: Bunker's Hill, Sandy, 27/5/60, (M.V.), (BW and KW).

809. *Angerona prunaria* (Linn.), Orange Thorn, formerly Orange Moth: Hinwick Dungee, June, (KW and BW).

812. *Semiothisa liturata* (Clerck.), Tawny-Barred Angle: Bunker's Hill, Sandy, June, 1960, (M.V.), (KW and BW).

1119. *Aegeria myopaeformis* (Borkh.), Small Red-Belted Clearwing: Cardington Road, Bedford, June, (BW), freshly emerged, but at some distance from Apple trees.

1122. *Aegeria tipuliformis* (Clerck.), Currant Clearwing: Brown's Close, Barker's Lane, Newnham, Bedford, (BW and KW).

1128. *Sesia apiformis* (Clerck.), Poplar Hornet Clearwing: May, Bedford, in grounds of Castle Close, at rest on Poplar, (BW).

New localities of general interest, etc.:

16. *Argynnis aglaia* (Linn.), Dark Green Fritillary: Souldrop cutting, two on 28/6/59 and one on 3/7/60, (JND).

32. *Limnitis camilla* (Linn.), White Admiral: one var. *nigra*, Putnoe Woods, 1959, (JND), not previously listed.

149. *Gastropacha quercifolia* (Linn.), Common Lappet: Ravensden, June, (WC).

166. *Pseudoips bicolorana* (Fuessl.), Scarce Silver Lines: Wrest Park Lodge, Silsoe, August, 1958, not previously listed, (PF).

314. *Eumichtis adusta* (Esp.), Dark Brocade: Bedford School, (M.V.), (PJR). A further confirmation of TNDP's report of this species in 1959.

327. *Thalophilia matura* (Hufn.), Straw Underwing: Bedford, August, (PR).

540. *Euclidimera mi* (Clerck.), Mother Shipton: Cardington Gravel Pits, (WC).

545. *Mormo maura* (Linn.), Old Lady: Bedford, 2/8/60, (M.V.).

681. *Ortholitha chenopodiata* (Linn.), Shaded Broad Bar: Bedford, 25/8/60, (PR).

827. *Deuteronomos alniaria* (Linn.), Canary Shouldered Thorn: Plantation Road, Leighton Buzzard, 1959, and Wrest Park Lodge, Silsoe, 1958, both records not previously listed.

B. B. WEST.

GEOLOGY AND PALAEOONTOLOGY

This year has been fairly fruitful with regard to the Geological records, although bad weather that was so common during the year made certain quarries unworkable at times. Conditions were good, however, compared with those that prevailed last year, when I carried out the Motorway researches. The results of the M1 investigations formed the entire report for 1959, as the temporary sections exposed during the construction of the Motorway across the county were very short-lived and, at the time of writing these words, have been completely obscured by soil and vegetation for over twelve months.

It was a definite relief to turn once more to the sections (both temporary and permanent) exposed during 1960. The M.1 was very interesting, but entailed an enormous amount of rush and tear, due to the speed of operations. The final reports also had an unfortunate incompleteness about them, due to the fact that cuttings were excavated so fast, and material moved so frequently, that it was often impossible for me to be at the right place at the right time. However, the conditions were there and had to be accepted, and I can only hope that nothing of great importance was missed.

This year, also, I am pleased to announce that a geological report has been received from a member of the Society—Mr Joll—who has furnished me with some very interesting records. These are incorporated in the usual way, and the aspect that I am grateful for is his work on the more 'recent' deposits such as the gravels and boulder clays. This is the ideal system if it can ever be attained as I am forced, through lack of time, to specialise more and more on certain areas, predominantly the Gault and Lower Greensand beds of Leighton Buzzard. This, of course, means that the annual reports will never show a true picture unless more members co-operate, and send me details of exposures that I cannot personally record. Mr Joll has included, in his information, details of derived specimens occurring in various gravel pits, but the 'solid' deposits from which these specimens were derived are not shown for obvious reasons, as too much doubt exists. The specimens to date are common ones, and I can but hope that he will do further collecting in these pits in future years. I feel that I must emphasize at this point, also, that identification of palaeontological specimens is difficult and complicated, as also is the determination of many deposits. For this reason, the initials of the person supplying the information is inserted after their respective records, and they must thus assume responsibility for the accuracy of their statements.

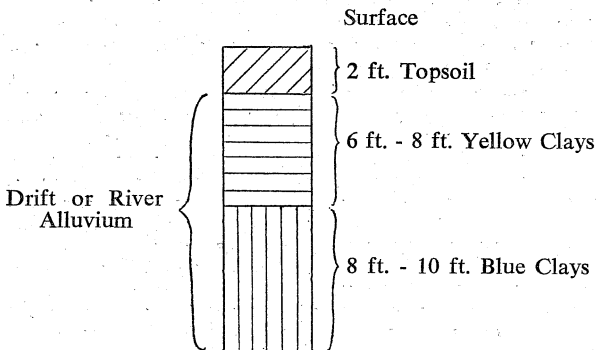
1960 commenced with a visit to an exposure at the junction of Day's Lane and Bromham Road, Bedford. A large excavation had been made at this point and several visits were made during the early part of the year. The exposure revealed two main features, but no 'solid' beds were penetrated. Below the topsoil were several feet of yellow clays and sands, the clays being packed with small discoloured Selenite crystals, and a few badly preserved derived fossils, notably lamellibranchs. A few rotted limestone fragments (Cornbrash) also occurred.

The Selenite crystals in these clays were generally small splinters, and only rarely did they exceed two inches in length. The average size was, indeed, much less than this.

Below the yellow clays, a dense blue clay extended to the base of the exposure. This differed considerably in consistency from the overlying bed, although the selenite and fossils were comparable. Lamellibranchs were common in the blue clay, and one well preserved small ammonite *Macrocephalites macrocephalus* was obtained from the tip of clay near Bromham Road, the specimen measuring 34 mm. in diameter. I understand, however, that Mr Joll obtained a good specimen from this same site with a diameter of several inches. Blocks of Cornbrash Limestone again occurred, and the whole exposure can be regarded as Drift or River Alluvium, similar to that overlying the Cornbrash at the new Water Treatment Plant, Clapham Road, recorded in 1957. (See Bedfordshire Naturalist, No. 12, 1957.)

The Selenite crystals from the blue clay beds were very much larger than those from the yellow clays above, some of them being up to six inches long and very broad. Composite crystals also occurred, the individual crystals growing round a central point and radiating out in all directions. Many of these crystal clusters were as much as four inches in diameter and, although the crystals forming such clusters were smaller than the single diamond-shaped ones, these clumps were quite impressive.

Apart from these discoveries, nothing of particular interest can be recorded. The fossils were usually very badly preserved, many of them being heavily coated with iron pyrites, and most of those that I discovered showed distortion in some form or another.



Section at junction Day's Lane and Bromham Road, Bedford
January, 1960

The Leighton Buzzard quarries were visited several times during the year, the visit made in January to Munday's Hill being fairly interesting. Since my last visit in 1958 the Gault had again been scraped away to

expose more sand and, from the clay slope, a number of ammonites were obtained. These, however, were not particularly well preserved. There was no doubt that other geologists had visited the site, and the choicest specimens had been removed. A few teeth (*Pisces*) were obtained, all being fairly small.

The Shenley Limestone proved, however, to be much more interesting. Very few fossils were obtained from *in situ* lenticles but, on the tip of clay, some limestone was exposed and, after a rather hectic survey, a few fossiliferous lenticles were located. This rush to mark the interesting blocks of rock was necessary in order to find them again, as it began to snow heavily and, in a very short space of time, both lenticles and gault were invisible under an inch or so of snow. This visit to Munday's Hill (and, also, a later one in August) was made in the company of Mr Joll, and we operated on various lenticles throughout the major part of the day.

Quite a large number of specimens were obtained on the two dual visits, the majority being, of course, the common brachiopods recorded in previous years. A number of additions were obtained, however, and these appear in the lists in the usual way.

The Shenley Limestone was, I feel sure, deposited under very special conditions regarding ocean currents. There is no doubt that shells of similar shape occur within definite limited boundaries. This would explain many of my past discoveries, and would also clear up the question of the unfossiliferous rock fragments to a large extent. In 1957 I recorded a group of the rare crab *Goniodromites scarabeus*, all from one small lenticle, and I have not seen this species since. This is a good example of the way in which shells of similar shape can be drifted together by eddies, as this crab is extremely uncommon in the limestone and, for half a dozen to occur in an area of a few square inches, such special conditions must have existed during deposition. The brachiopod *Terebratula biplicata* var. *gigantea* also occurs in such a fashion. I cut thirty-two specimens of this species out of one lenticle in 1956, but have only seen one or two since then. Of course, the odd one of any species will always insist on turning up to prove the exception to the general rule!

Double Arches Quarry also yielded a number of specimens when I paid a visit in October, but the lenticles in this pit were very current bedded and relatively barren regarding fossil remains. A few of the common brachiopods were obtained and, in addition, an extremely interesting crinoid, the individual ossicles of which were strongly embossed with rows of raised projections. The specimen was taken to the Geological Museum in South Kensington for precise determination, but nothing resembling this could be seen in the Shenley Limestone section and, at present, it remains unknown.

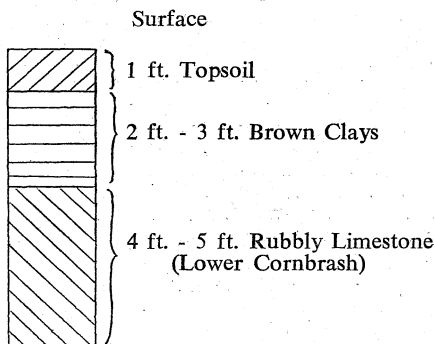
The Gault clays overlying the Shenley Limestone were also studied and, as usual, vast numbers of fossils were exposed. Nothing of particular interest can be put on record, however, from either Upper or Lower Gault, and the surface of the clays were generally much too wet to permit close study. On one occasion, after strong winds and some sunshine, the surface of the slope was dried out sufficiently to kneel down at intervals and it is surprising, when one gets really close to the clays, just what can be observed. On this occasion, I discovered a number of minute teeth and vertebrae. None of these could be named with certainty, as the fish when alive would certainly have been smaller than the average sardine, and only a complete skeleton would give enough characteristics for accurate identification.

The highlight of the year, however, proved to be nearer Bedford than the Leighton Buzzard pits. This was the old Cornbrash quarry near Oakley Junction, first recorded in 1958. The very interesting brachiopods

occurring in this pit led me, in 1959, to contact the Nature Conservancy with a view to preserve it against obliteration. I am very pleased to say that, following a visit to the site by Conservancy geologists, my suggestion has been approved and the locality has been proposed as a Site of Special Scientific Interest, under Section 23 of the National Parks and Countryside Act, 1949. To save space in this journal I do not propose to write much on this, as a report was published in *The Bedfordshire Times* of 19th August, 1960, covering the essential details, and a more comprehensive account will be published in *The Bedfordshire Magazine* some time in the near future.

In addition to the important palaeontological discoveries, however, the quarry reveals a miniature faulted anticline in the Cornbrash, and it is this anticline that divides the quarry into two sections. Anticlines are, according to the Conservancy geologists, rather rare in the Cornbrash Limestone, and this was an additional inducement to get the site scheduled as a S.S.S.I. I have, naturally, paid many more visits to the site, and have obtained quite a large number of the unusual Rhynchonellids. These are not recorded in the lists, as they can only be allocated as *Rhynchonella sp. nov.*, as in 1958, and there is thus no particular point in recording them, apart from a mention in the text.

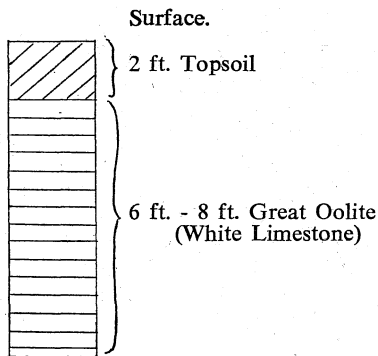
Also examined this year were two temporary sections excavated for sewer pipes. The most interesting of the two was exposed approximately 40 yards east of Stafford Bridge, Oakley, at the site of a small pumping station. The strata exposed is shown in the following diagram.



Section 40 yards east of Stafford Bridge, Oakley
25th August, 1960

This exposure was unfortunately very limited in area, and the weather was also extremely bad at the time of my visits to the site, with the natural result that the excavation was flooded, as was usual in 1960! The Lower Cornbrash was very rubbly, and large slabs were fairly uncommon in the excavated material. Those that did occur appeared to have been removed from the base of the exposure but, as over a foot of mud and water existed in the hole, I could not verify this. Fossils were not common but, over a period of several weeks, a number of brachiopods were obtained. Specimens of the Rhynchonellacea were the most interesting of the finds, as they were similar species to those obtained from the proposed S.S.S.I. near Oakley Junction, previously mentioned, and great interest was shown by the G.S.M. geologists when viewing these. A few other brachiopods were also obtained and, for once, all the specimens were quite well preserved.

The other temporary section was at Sharnbrook, on the new Colworth Park Housing estate. This was excavated for a large diameter pipe, and exposed the Great Oolite (White Limestone), the fossils from which proved that the basal 10 ft. of the limestone was exposed. A few badly preserved lamellibranchs were obtained, and a large number of brachiopods, notably small Rhynchonellids. Approximately 40 yards of trench was examined and, after several weeks of weathering, a reasonable collection of specimens was made, although the preservation generally left much to be desired.



Section at Sharnbrook (Colworth Park Estate)
March, 1960

The following specimens are recorded from the localities shown and are additions to former lists; also all records from members other than myself have their initials associated thus: MJ—M. Joll.

Mundays Hill Quarry, Leighton Buzzard (Shenley Limestone)

Brachiopoda: *Rhynchonella cf. antidichotoma* (Buvignier), Rec. MJ; *Rhynchonella grasiana* (d'Orbigny); *Rhynchonella lineolata* var. *carteri* (Davidson); *Rhynchonella depressa* (J. de C. Sowerby); *Rhynchonella lineolata* (Phillips); *Terebratella hercynica* (Schloenbach); *Magas orthiformis* (d' Archaic), extreme variation; *Kingena newtonii* (Lamplugh & Walker), coarse variation; *Rhynchonella sp. nov.*

Cephalopoda: *Neohibolites minimus* (Lister).

Lamellibranchia: *Septifer sublineata* (d'Orbigny); *Chlamys subacuta* (Lamarck); *Mutiella canaliculata*, Rec. MJ, (now in B.M., (N.H.)).

Gastropoda: *Turbo sp.*, Rec. MJ.

Echinoidea: *Cidaris sp.*

Annelida: *Serpula sp.*

Double Arches Quarry, Leighton Buzzard (Shenley Limestone)

Brachiopoda: *Terebratula biplicata* var. *gigantea*; *Rhynchonella shenleyensis*; *Terebratula ovata*; *Terebratella hercynica* (Schloenbach); *Terebratula moutoniana*; *Kingena sp.*

Crinoidea: *Indet sp.*

Mundays Hill Quarry, Leighton Buzzard (Upper Gault)

Gastropoda: *Pleurotomaria plicata* (J. Sowerby), Rec. MJ.

Oakley, Bedford. Section near Stafford Bridge (Lower Cornbrash)

Brachiopoda: *Kallirhynchia cf. yaxleyensis* (Davidson); *Kallirhynchia cf. crassicosta* (S. S. Buckman); *Kallirhynchia sp. nov.*; *Obovothyris magnobovata* (S. S. Buckman); *Obovothyris sp.*; *Cererithyris sp.*; Undescribed *Rhynchonellids* (several species).

- Sharnbrook. Section on Colworth Park Estate (Great Oolite - White Limestone)
 Brachiopoda: *Kallirhynchia sharpi* (Muir-Wood); *Epithyris* sp.
 Lamellibranchia: *Modiolus imbricatus* (J. Sowerby); *Anisocardia* (*Antiquicyprina*) sp.
 Echinoidea: *Acrosalenia hemucidaroides* (Wright).
- Elstow Brick Works (Lower Oxford Clay), Rec. MJ
 Lamellibranchia: *Nucula calliope* and *Palaeoneilo morrissi*, now in B.M. (N.H.).
- Marston. Lidlington Quarry (Lower Oxford Clay), Rec. MJ
 Cephalopoda: *Erymnoceras* sp.
 Lamellibranchia: *Oxytoma* cf. *expansa*; *Gryphaea dilatata* (J. Sowerby).
- Bedford. Section junction, Day's Lane and Bromham Road (Drift Clays), Rec. MJ. Derived Fossils
 Cephalopoda: *Macrocephalites macrocephalus* (Schlotheim); *Macrocephalites (doliikephalites) typicus* (Blake); *Cadoceras* sp.
 Lamellibranchia: *Pleuromya uniformis* (J. Sowerby); *Gresslya peregrina* (Phillips); *Trigonia* sp.
 Gastropoda: *Pleurotomaria* sp.; *Pseudomelania* sp.
 Echinoidea: *Nucleolites* sp.
- Bromham. Gravel Workings (Gravel only), Rec. MJ. Derived Fossils
 Lamellibranchia: *Pholadomya deltoidea*; *Gryphaea arcuata*.
 Gastropoda: *Bithynia tertaculata*; *Corbula* sp.
 Vertebrata: *Elephas antiquus* (Molar Tooth only); *Reptilia* sp. (Vertebra).
- Bedford. Gravel Workings (Gravel only), Rec. MJ. Derived Fossils
 Lamellibranchia: *Gryphaea arcuata*.
 Echinoidea: *Echinocorys scutata* (Leske).

ACKNOWLEDGEMENTS

My sincere thanks are due to Mr R. V. Melville, M.Sc. and Dr R. Casey, F.G.S. of the Geological Survey and Museum, South Kensington, for undertaking the identification of many of the specimens, and to the many quarry owners for their co-operation in allowing access to their workings at various times during the year.

P. J. SMART.

BIRDS, 1959

The report for 1959 is not as complete as it might have been, owing to the time lag allowed before the job of collating the material was eventually tackled, with the result that all the following notes and observations have had to be extracted from the Bedfordshire Bird Bulletins, Nos. 1-5.

During the year a number of very interesting bird movements was observed in the county, most of which closely related to the general trend throughout the British Isles, and all do credit to the various recorders concerned, for the accurate notes taken. The most notable are as follows.

According to observations made by radar, the first large emigrations of Winter visitors in an eastward direction towards the Baltic, took place on 25th, 26th and 27th February. Those of the 26th and 27th were nocturnal movements and were fairly heavy. These were followed by further emigrations during the day and night of 4th March and by nocturnal movements from 10th to 13th. Further large movements in the same direction occurred on 23rd, 25th and 26th March, and again on 13th April.

One of the most interesting features of May was the passage of Black Terns. The first ones were reported on the 10th and small numbers were

seen throughout the next thirteen days up to the 25th, at various localities in the county, reaching a peak on the 24th, when 15 birds were recorded at Houghton Regis Pit.

Another interesting feature of May was the number of waders reported from all parts of the county.

Bedford Sewage Farm was watched very regularly during the Autumn between 11th July and 15th August, and the results showed an interesting pattern for some species, but also indicated some inaccuracies in observation or recording.

A very heavy Thrush movement was observed in all parts of the county during early October, and again in late October and the first part of November, all of which fitted in with the national picture of Thrush movements. Between 9th and 11th October there was a very large influx of Thrushes from the north of Scotland to the south coast. This movement included Blackbirds, Redwings, Fieldfares, and a spattering of Ring Ouzels. At the end of October there was a further movement, this time a diurnal one, of Thrushes in East Anglia and south-east England.

Siskins and Redpolls were present in unusually large numbers in the county during November and December, and over the country as a whole.

We were sorry to lose during the Spring the valued services of our Ornithological Secretary, Mr A. J. Dymond, and we wish him every success in his new ventures. We welcome Mr M. D. Wortley to succeed him.

While gratefully acknowledging an increased number of reports, may we be permitted to draw attention to one annoying defect in drafting some of them. This defect is the omission, by some recorders, of sufficient details of diagnostic characters which would place the identity of the species reported beyond doubt. This has resulted in the deletion of certain potentially interesting items by reason of these omissions.

It is most desirable that, where possible, anyone witnessing anything unusual should endeavour to share the experience with other reliable observers who can verify the occurrence. Finally, loose terms such as 'plentiful', 'sporadically', etc., should be avoided at all costs. This report is the outcome of co-operative effort, and attention to such details will result in both improved quality and value, to the mutual advantage of all concerned.

Observers' names are indicated in the text by the following initials:

TWJA—T. W. J. Abbiss; HC—Harry Cole; AJD—Anthony J. Dymond; JMD—Miss J. M. Dymond; JND—J. N. Dymond; DWE—D. W. Elliott; DEE—D. E. Ellis; IJFL—I. J. Ferguson-Lees; FCG—F. C. Gribble; JFH—J. F. Harper; WGH—W. G. Harper; ARJ—A. R. Jenkins; HASK—H. A. S. Key; AJL—A. J. Livett; BFM—B. F. Manners; MJM—M. J. Marriott; CSP—C. S. Payne; ADP—A. D. Pentland; DP—D. Peterkin; WEKP—W. E. K. Piercy; PJR—P. J. Reay; SWR—S. W. Rodell; MPR—M. P. Roseveare; RKS—R. K. Smith; RGOS—R. G. O. Stephenson; RJW—R. J. White; EMW and PJW—E. M. and P. J. Wilkinson; MDW—M. D. Wortley.

Localities: BLGP—Barker's Lane Gravel Pit; BSF—Bedford Sewage Farm; ChP—Chalk Pit; CIP—Clay Pit; GP—Gravel Pit; L—Lake.

Numbers refer to the B.T.O. Check List (1953).

The following species were also reported as having been observed in normal numbers and distribution:

84. Mute Swan; 93. Sparrow Hawk; 110. Kestrel; 115. Red-Legged Partridge; 118. Pheasant; 126. Moorhen; 133. Lapwing; 234. Wood Pigeon; 241. Barn Owl; 246. Little Owl; 247. Tawny Owl; 262. Green Woodpecker; 263. Greater Spotted Woodpecker; 280. Carrion Crow;

282. Rook ; 283. Jackdaw ; 284. Magpie ; 286. Jay ; 288. Great Tit ; 289. Blue Tit ; 290. Coal Tit ; 292. Marsh Tit ; 294. Long-tailed Tit ; 298. Tree Creeper ; 299. Wren ; 301. Mistle Thrush ; 308. Blackbird ; 325. Robin ; 364. Goldcrest ; 371. Hedge Sparrow ; 373. Meadow Pipit ; 380. Pied Wagtail ; 392. Greenfinch ; 393. Goldfinch ; 395. Linnet ; 401. Bullfinch ; 407. Chaffinch ; 409. Yellow Hammer ; 410. Corn Bunting ; 421. Reed Bunting ; 424. House Sparrow.

28. CORMORANT: 1, Stewartby CIP, 19th April and 1, 27th September, (HASK).

30. HERON: A poor year. 6 nests at Bromham ; 8, Southill Park ; 1, Tempsford, (AJD, MPR) ; 1 found shot, Blue Waters ChP, September, (SWR), ringed in May, Copenhagen.

45. MALLARD: 60, Luton Hoo Lake, 5th December ; 75, Luton Hoo Lake, 27th December, (MDW) ; probably 500-600, Stewartby CIP, November-January ; unfortunately few counts made.

46. TEAL: More numerous than usual in the Autumn ; 22 max. BSF, 16th September, (PJR) ; 25, Luton Hoo Lake, 5th December, (MDW) ; 100, BSF, 26th December, (PJR) ; 30-35, Luton Hoo Lake, 27th December, (MDW).

47. GARGANEY: Exceptional numbers in England and Wales, particularly in the S.W. ; surprisingly few Beds. records. 2, Stanford GP, 12th April ; 2, Southill Park Lake, 20th April, (WEKP) ; 1, Shefford, 25th April, (HC) ; 1 female, BSF, 30th April, (MPR & JND) ; 1 female, BSF, 1st May, (JND) ; 1 pair, Stanford GP, 11th May, (WEKP) ; 1 male and 1 pair, Stanford GP, 23rd May, (WEKP) ; 1 pair, Southill Park Lake, 24th May, (WEKP) ; 1, BSF, 26th July, (IJFL).

49. GADWALL: 1, Wyboston GP, 21st April, (MPR) ; 1, Wyboston GP, 18th, 20th & 27th September, (PJW, EMW, JND) ; 1, BSF, 26th December, (CSP) ; 1 male, Wyboston GP, present from 1st October-10th January, 1960, (MO).

50. WIGEON: First winter bird, Chimney Corner CIP, 4th October, (AJD) ; 1 pair, Stewartby CIP, 1st November, (FCG) ; 1 male, BSF, 6th December, (EMW) ; 4, BSF, 13th December, (PJW & EMW) ; 1, BSF, 28th & 31st December, (MJM & PJR) ; 10-40, Stewartby CIP, between November, 1959 and January, 1960.

52. PINTAIL: One male, BSF, 30th December, (MPR).

53. SHOVELER: 1 pair, Stanford GP, 4th May, (WEKP) ; 1 pair., 13th May ; Drakes only, 19th and 23rd May, Stanford GP ; 1 male, eclipse, Stewartby CIP, 30th July, (MPR) ; 1 female, Stanford GP, 8th July, (RGOS).

55. SCAUP: 1 pair, Stewartby CIP, 1st October, (FCG).

56. TUFTED DUCK: Good breeding year ; moderate size families seen on majority of pits and Luton Hoo Lake.

Wintering flocks observed at the following localities: 20, Wyboston GP, 20th November, (JND) ; 37, Luton Hoo Lake, 5th December, (MDW) ; 27, Wyboston GP, 13th December, (JND) ; 54, Luton Hoo Lake, 27th December, (MDW).

57. POCHARD: Successful, but smaller numbers than Tufted ; 3-4 pairs, Millbrook CIP ; 1-2 pairs, Stewartby CIP ; 6 pairs, 35 young, Luton Hoo Lake, (HASK, AJD, MDW).

Wintering flocks present at the following localities: 25, Wyboston GP, 15th November, (PJR) ; 26, Luton Hoo Lake, 5th December, (MDW) ; 40, Wyboston GP, 13th December, (PJR) ; 37, Luton Hoo Lake, 27th December, (MDW).

60. GOLDENEYE: 1 female, Wyboston GP, 11th-13th December, (PJR, MPR & JND).
70. GOOSANDER: 26 almost certainly identified at Stewartby CIP, 10th December; also 1 male, 12th December, (DP); coinciding with an influx at Tring and in London area.
71. SMEW: 1 pair, Stewartby CIP, 10th December, (MPR); 1 male, Stewartby CIP, 27th December, (MPR).
73. SHELDUCK: 1, Stewartby CIP, 5th April, (ARJ); 2, Stewartby CIP, 10th December, (MPR); 1, Stewartby CIP, 12th December, (JND).
82. CANADA GOOSE: 1, Stanford GP, 13th May, (WEKP).
91. BUZZARD: 1 flew over BSF in Westerly direction, 23rd April, (MPR & JND); 1, Luton Hoo Park, early August, (RJW); 1, circling high over Stewartby CIP, 27th September; 1, Luton Hoo Park, 31st October, (MDW & AJL).
104. HOBBY: 1 male, Brogborough CIP, 14th June, (HC).
105. PEREGRINE: 1, Stewartby CIP, 19th July, (AJD).
120. WATER RAIL: Heard Flitwick Moor, 8th August, (TWJA); more than usual for December. 6, BSF; 7 single birds seen in $\frac{1}{4}$ mile on R. Hiz., (ARJ); 1, Southill Park Lake, 23rd December, (JND).
133. LAPWING: Largest wintering flock 900-1,000, Luton Hoo Park, 27th December, (MDW & AJL).
134. RINGED PLOVER: 2, Wyboston GP, 17th April, (MPR); present from 19th-28th May at Stanford GP, with a maximum of 11 on 21st May, (MPR, ARJ, WEKP).
135. LITTLE RINGED PLOVER: First arrivals at Stanford GP, 24th March, (ARJ). A maximum of 8 present at one breeding haunt on 19th April; 1 at sandpits near Leighton Buzzard on 23rd May.
140. GOLDEN PLOVER: 1 bird, Northern type, summer plumage, amongst 30 at East Hyde, 1st March, (HC); Last record for the winter, 56, Stanford, 12th April; first winter arrival at Biddenham, 16th September, (PJW); no large flocks reported until 11th November; c. 250, Stanford GP, (HC); c. 500, Houghton Conquest, 24th December, (CSP); 40, Marston, 27th December, (PJR).
143. TURNSTONE: 1, BSF, 28th July and 1st August; 1, Wyboston GP, 1st August, (MPR).
147. JACK SNIBE: 3, BSF, 3rd March; 1, BSF, 14th March, (MPR); Last winter record, 1, Brogborough CIP, 29th March, (HC); winter arrivals: 1, BSF, 8th October, increasing to 5 by 11th.
148. WOODCOCK: 1, Daintry Wood, 8th May, (RGOS); 1, Rowney Warren, 13th May, (AJD).
150. CURLEW: 25-30 flew W. over Bedford, 15th March, (MPR); 1, Stewartby CIP, 26th April, (MPR); 1, flying N.W. over Galley Hill, 11th May, (MDW); several calling in flight at night over Luton, 5th July, (HC); 2 flying E. over Bedford, 1st August, (ADP); 1, BSF, 12th September, and 1, Luton Hoo Lake, 31st October, (MDW & AJL); 3 flying N.W. over Bedford, 26th November, (MJM).
151. WHIMBREL: 1 flying N. over Clifton, 4th May, (WEKP); 1, BSF, 17th July; 1 calling, flying S. Rowney Warren after dark, 4th August, (HASK).
156. GREEN SANDPIPER: Seen regularly at BSF from 16th July-25th October, with a peak date of 22 on 12th August; one or two at frequent intervals, 1st November-31st December.

157. WOOD SANDPIPER: 1, Stanford GP, 20th-22nd May, (ARJ); 1, BSF, 11th-13th July; 1, Stanford GP, 3rd August, (HC, PJW); 1, BSF, 30th July-3rd August; 1, Wyboston GP, 3rd-7th August, (MPR); 1, BSF, 9th August; 1, BSF, 20th August-1st September and 17th-27th September, (MPR).

159. COMMON SANDPIPER: Spring Passage—1, BSF, 25th and 28th April, (MPR); On numerous dates in May.

The autumn migration starting on 12th-13th July, with single birds at BSF and a maximum of 4 on 4th August.

161. REDSHANK: Present throughout the breeding season at BSF and last observed on 30th August.

162. SPOTTED REDSHANK: 1, BSF, 21st July; 1, BSF, 14th-16th September.

165. GREENSHANK: 2, BSF, 28th March, (JND); 1, BSF, 20th-22nd July; 1, BSF, 25th July; 2, BSF, 26th July; 1, BSF, 10th August; 2, BSF, 15th August; last reported, BSF, 20th August.

178. DUNLIN: 1, BSF, 17th April; and on numerous occasions in May; 1, BSF, 12th-18th July; 2, BSF, 20th July; 1, BSF, 26th and 29th July; 1, BSF, 2nd and 15th August; 1, Wyboston GP, 3rd-7th August, (MPR).

179. CURLEW SANDPIPER: 1 male, Wyboston GP, 24th April, (AJD); 1, BSF, 31st August-1st September.

181. SANDERLING: 1, Wyboston GP, 17th May, (MPR).

184. RUFF: Single birds, BSF, 5th, 14th and 15th March, (MPR, JND); 2, Stanford GP, 5th April, (ARJ); 1, BSF, 17th April, (MPR); 1 female, Stanford GP, 23rd April, (WEKP, DEE, ARJ); 4 just beginning to show breeding plumage at Wyboston GP, 24th May, (MPR); 4, full breeding plumage, BSF, 31st May, (MPR); present in varying numbers in the Autumn Passage at BSF throughout July-August, with a peak of 4 on 7th-10th August; 1, Stewartby CIP, 30th July, (MPR).

189. STONE CURLEW: 1 seen and heard, Beds./Herts. border near Hexton, 19th April, (AJD).

199. LESSER BLACK-BACKED GULL: Towards the end of July numbers at BLGP increased to between 50 and 80.

201. COMMON GULL: 1, BSF, 26th July, (MJM); 1, Stewartby CIP, 6th August, (MJM, MPR).

208. BLACK-HEADED GULL: Birds bred, or attempted to do so, as follows:—

The main colony this year was at Stewartby CIP on a small island in the middle of the pit. A count was made on the 21st June by IJFL and HASK; there were 133 nests, of which 26 were empty, leaving 107 with eggs or newly hatched young. In all, there were 169 eggs and 99 young, of which 10 were dead, leaving approximately 120 breeding pairs on the island and an estimated 450-500 gulls flying overhead.

Nests were also found in small numbers at several of the other pits, as follows:—

Chimney Corner Pit, 2 or 3 nests; Coronation Pit, 20-25 nests; majority robbed, but 4 or 5 probably successful; Millbrook Pit, 6 nests; Brogborough Pit, up to 6 nests, but probably no success, (AJD & HASK).

211. KITTIWAKE: 1, Linslade, 28th February, (HC); 1, immature, Stewartby CIP, 7th March, (MPR & JND); both these birds were probably remnants of a large cross-country movement that took place on 21st and 22nd February.

212. BLACK TERN: The spring passage this year was exceptionally heavy, with birds recorded between 10th and 25th May at the following localities:—

5, Stanford GP, 10th May, (HC) ; 1, Stanford GP, 11th May, (WEKP) ; 3, Stewartby CIP, 16th May ; 3, Stanford GP, 20th May, and 2, 22nd May, (ARJ) ; the peak date was 24th May, with the following counts made:— 15, Houghton Regis ChP, (SWR & RGOS) ; 3, Wyboston GP, (AJD) ; 8, Stanford GP, (WEKP & ARJ) ; 13, Arlesey Pits, (ARJ) ; 2, Stewartby CIP, (RGOS) ; 2, Arlesey Pits, 25th May, (ARJ) ; 2, Stanford GP, 25th May, (WEKP).

217/8. COMMON/ARCTIC TERN: 2, BSF, 25th April, (MPR, JND, PJR) ; 1, Stanford GP, 10th May, (ARJ) ; 6, Stewartby CIP, 17th May, (JND).

217. COMMON TERN: 3 over Bedford, 25th April, (CSP) ; 1, BLGP, 12th May, (AJD) ; 2, Stanford GP, flying E., 24th May, (ARJ).

235. TURTLE DOVE: First arrival, Stagsden, 5th May, (DWE) ; last emigrants, 1, BSF, 27th September, (PJW & EMW) ; 1, Luton Sewage Farm, 27th September, (RKS).

237. CUCKOO: First arrival, heard Tingrith, 14th April, (DEE) ; last emigrant, BSF, 30th August, (FCG).

252. NIGHTJAR: First reported from the Greensand range on 13th May, (AJD) ; recorded in three localities, 3-4 birds in the Wavendon Heath area, (MDW) ; 4 pairs, the nest of one of which was found, in a further Greensand area ; further pair reported in the Sandy area, (HASK).

255. SWIFT: First arrival seen over Bedford, 25th April, (CSP, MPR, JND, PJR) ; few odd records during last 5 days April, but not really widespread until first week in May ; last emigrant over Luton, 10th September, (RKS).

261. HOOPOE: One seen on lawn of nursing home, Woburn Sands, observed by Matron and several patients, (per IJFL).

274. SWALLOW: First arrival, 8th April, (MPR) ; single birds till 18th and 19th, (AJD, CSP) ; then in large numbers corresponding to national picture ; last emigrant seen over Bedford School, 25th October, (PJW).

276. HOUSE MARTIN: First arrival, observed Luton Hoo Lake, 18th April, (AJL) ; several, 25th, with a few odd records, last 5 days April ; not really widespread until first week May.

277. SAND MARTIN: First arrival, present Felmersham, 25th March ; not reported in any large numbers until 19th April at Wyboston GP (AJD).

302. FIELDFARE: Last emigrant, 1, Luton Airport, 31st March, (RGOS) ; the first winter arrivals were not observed until the latter half of October.

304. REDWING: Last emigrant, Rowney Warren, 12th April, (AJD) ; first arrivals of the winter, seen on 27th September, a party of 10-12, Hexton Wood, on the Beds./Herts. border, (MDW) ; not observed in large numbers until second week of October ; further movement on 30th October, with birds moving in a W. and S.W. direction over Felmersham, and also over Bedford in the evening, (FCG) ; in the South, birds observed flying N.W. over Luton on the 31st October ; in a westerly direction over Caddington and Stanford on 1st November, (HC).

307. RING OUZEL: 1 male, BSF, 24th April, (MPR, JND, PJR) ; 1, BSF, 8th October, (PJR) ; 2, Warden Hill, 17th October, (AJL) ; 1, Cardington Mill, 18th October, (NC).

311. WHEATEAR: Spring passage—1, BSF, 17th April, (PJR) ; 1, Meppershall, 25th April, (HC).

Return movement—1, near Luton, 8th August, (HC) ; 1, Kempston, 13th August, (CSP) ; single birds at Heath & Reach and Blunham on 16th August, (HC, MDW) ; 15 birds recorded during September ; last seen, 1 on M.1 near Luton, 9th October, (SWR) ; 1, Renhold, 10th October, (AJD).

317. **STONECHAT**: Improvement on previous years; 4 autumn records at BSF; 1 female, 3rd October, (PJR); 1 male, 16th October, (CSP); 1 female, 25th October, (PJR); 1 female, 31st October, (CSP); rather above normal numbers recorded at BSF during the period November-December, with 1-2 observed at regular intervals; also at the following localities—1 female, Wyboston village, 15th November; 1 female, Wyboston GP, 11th December; 1 female, Stewartby, 26th December.
318. **WHINCHAT**: First arrivals—1, Stewartby, 28th April, (MPR); 1 pair, BSF, 1st May, (JND); 1, BLGP, 12th May, (AJD); 1 pair, Elstow, 31st May, (DEE); breeding birds found during June-July, with young, at Lidlington and Galley Hill; several other pairs seen, Luton area, (HC, PJR, MDW); reports from six localities between 4th and 22nd September.
320. **REDSTART**: First arrivals—Tingrith, 14th April, (DEE); 1, Toddington, 16th April, (JH); 1 male, Charle Wood, 23rd May, and 3+ young reared, June-July, (MDW); heard Rowney Warren, no proof of breeding, (HASK); 1 pair, breeding Luton Hoo Park, and 1+ young reared, (MDW); 1, Putnoe Wood, 9th August, (JMD); seen on several occasions up to 12th September, Beds./Herts. border near Hitchin, (ARJ).
322. **NIGHTINGALE**: First arrival—Luton, in built-up area, 18th April, (SWR).
327. **GRASSHOPPER WARBLER**: First arrival—singing Clifton, 8th and 10th April, (WEKP); later reported from Rowney Warren, Maulden Wood, Barton Hills, (DEE, RGOS); 3 pairs, Daintry Wood, 4th May, (TWJA).
337. **SEDGE WARBLER**: First arrival—1, Clophill, 19th April, (WGH, WEKP); 6, BSF, 19th April; 1, Wyboston GP, (AJD); relatively numerous subsequent days; last emigrant, BSF, 27th September, (PJW & EMW).
343. **BLACKCAP**: First arrivals—1 in song, Leighton Buzzard, 1st March, (BFM); almost certainly a wintering bird taking advantage of a short fine spell of weather; 1, Flitwick, 28th March, (TWJA).
347. **WHITETHROAT**: First arrival—Aspley Guise, 19th April, (RJW & AJD); relatively numerous subsequently, spreading rapidly after first appearance.
348. **LESSER WHITETHROAT**: 1, Felmersham, 23rd April, (MPR).
354. **WILLOW WARBLER**: First arrival—1, BSF, 23rd March, (BS); subsequently 4 records in 3 weeks; this obviously produces an inaccurate picture.
355. **CHIFFCHAFF**: First arrivals—1, East Hyde, 22nd March, (HC); 1, Flitwick Moor, 22nd March, (HC); a gap of two days before the species appeared to be widely distributed on the 25th; last emigrant, 1, Wardown Park, 6th October, (AJL).
357. **WOOD WARBLER**: 1 pair, Charle Wood, 23rd May, and also present during June-July, (MDW).
366. **SPOTTED FLYCATCHER**: First arrival—Bedford, 8th May, (MPR); probably much overlooked; last emigrant, 1, Stagsden, 5th September, (DWE).
376. **TREE PIPIT**: First arrival—Tingrith, 14th April, (DEE); birds also observed at the following localities during the breeding season—Lilley Park, Galley Hill, Barton Cutting, Flitwick Moor, Charle Wood, Luton Hoo Park, Barton Hills, Rowney Warren, and Daintry Wood near Tingrith, (MDW & TWJA).
- 380(b). **WHITE WAGTAIL**: 1, Ickleford, 29th March, (ARJ); 3, Wyboston GP, 19th April, (AJD); 1, Wyboston GP, 1st May, (MPR).

382. **YELLOW WAGTAIL**: First arrival—Wyboston GP, 4th April, (MPR); followed by further single birds at Stanford GP, 8th April, (ARJ); BSF, 12th April; with an arrival peak of 20+ at Wyboston GP on 19th April, (AJD).

388. **RED-BACKED SHRIKE**: 2 pairs in separate localities in chalk hills in south of county, 27th and 28th May; 1 pair appeared to be engaged in nest building, (RGOS).

394. **SISKIN**: Bedfordshire, in common with the rest of the country, had unusually large numbers of Siskins between October-December. 12-16 in flight, and feeding on silver birches, Warren Wood, Clophill, 11th October, (MDW); 40, Flitwick Moor, 21st November, (TWJA); 10-12, Maulden Wood, 8th December, (DEE); 12, Southill Park, 23rd December, (PJR); 12, Ickleford, Beds./Herts. border, 24th December, (ARJ); 20-30 at the same locality on 25th December, (ARJ); 6, Woburn, 27th December, (MPR).

397. **REDPOLL**: 3 in mixed flock of finches, Luton Hoo Park, 26th September, (MDW); several, Clophill area, 11th October, (MDW); 40, Flitwick Moor, 21st November, (TWJA).

404. **CROSSBILL**: 1 pair watched feeding in pine wood at Flitwick, 24th May, (TWJA); observed again during June; 10, Maulden Wood, 27th July; these were almost certainly part of a new irruption from the Continent to the British Isles; 1 pair Maulden Wood, 17th December, (DEE).

R. G. O. STEPHENSON.

M. D. WORTLEY.

BIRDS, 1960

Observers' names are indicated in the text by the following initials:

HC—Harry Cole; NC—N. Craddock; AJD—Anthony J. Dymond; JND—J. N. Dymond; DEE—D. E. Ellis; IJFL—I. J. Ferguson-Lees; FCG—F. C. Gribble; DH—D. Hasdell; TAH—T. A. Hasdell; ARJ—A. R. Jenkins; HASK—H. A. S. Key; AJL—A. J. Livett; MJM—M. J. Marriott; ACM—A. C. Morris; DP—D. Peterkin; CSP—C. S. Payne; WEKP—W. E. K. Piercy; PJR—P. J. Reay; SWR—S. W. Rodell; MPR—M. P. Roseveare; FGRS—F. G. R. Soper; RKS—R. K. Smith; RGOS—R. G. O. Stephenson; CFT—C. F. Tebbutt; RVAW—R. V. A. Wagstaff; KRW—K. R. Weeden; EMW and PJW—E. M. and P. J. Wilkinson; MDW—M. D. Wortley; EPY—Lt-Col E. P. Young.

1. **BLACK-THROATED DIVER**: Stewartby L, 1, 31st January-21st February, (JND, PJR, PJW, *et al.*).

5. **GREAT CRESTED GREBE**: No breeding at Stewartby L owing to water level (*cf.* 1957 and 1958). Insufficient data from other areas, though birds present in summer at Southill L, Wyboston GP, etc.

7. **SLAVONIAN GREBE**: Stewartby L, 1, 5th April, (PJW, EMW); 2 (1 almost in summer plumage), 12th April, (NC, JND).

8. **BLACK-NECKED GREBE**: Stewartby L, 2, 2nd February, (NC, MJM); 1 almost in summer plumage, 2nd April, (JND).

9. **LITTLE GREBE**: Normal distribution; largest party was *c.* 26 in August at Barker's Lane GP (PJR).

28. **CORMORANT**: Stewartby L, 1, 15th May, (MJM); 1 immature, 23rd October, (NC, PJW, EMW); 1, 30th October, (PJR).

29. **SHAG**: Bedford, 1 immature stayed on the Great Ouse and habitually roosted on the buttresses of the town bridge, 21st February-4th August, (NC, JND, IJFL, HASK, CSP, *et al.*); Stewartby L, 2 immatures, 23rd October, (JND).

30. HERON: Occupied nests were recorded at Southill L (10) and Bromham (6), but there was none this year at Tempsford, (AJD).
38. BITTERN: Southill L, 1, 23rd January, (WEKP).
45. MALLARD: Maximum numbers as follows—Stewartby L, 300-400, 7th February, (JND); c. 300 in September built up to 900-1,200 by 13th November and 29th December, with a drop to c. 400 in mid-December, (MJM, PJR); Wyboston GP, c. 150, March, (PJR).
46. TEAL: Maximum numbers as follows—Bedford SF/Barker's Lane GP, 150, 31st January, (PJR, EMW); 150, 30th October, (MJM); 150, 13th November, (JND). Stewartby L, 100, 25th December, (PJR). Wyboston GP, 100, 20th November, (MJM). Luton Hoo L, 25+, 13th November, (MDW). There were also two at Bedford SF on 23rd April and 1 there on 10th June and 10th August, (PJR).
49. GADWALL: Continues to occur with great regularity and more than ever before recorded. Stewartby L, 1 female, 4th April, (PJR); 3, 25th December, (MJM). Chimney Corner CIP, 1 female, 25th December, (PJR). Wyboston GP, 1 male, 1st-10th January, 7th and 14th February, (JND, PJR, EMW); 7, 12th October, (CFT); 1 male, 13th and 20th November, (JND). Little Barford, 5, 26th March, (CFT). Bedford SF, 1 male, 19th March, (MPR). Luton Hoo L, 1, 7th February, (AJL, MDW); 1 female, 14th April (AJL, MDW); 1, 14th May, (MDW).
50. WIGEON: Stewartby L, present until 4th April and from 16th October, with maximum of c. 92 on 25th January, (CSP) and 80 on 29th December, (MJM, PJR, PJW, EMW); smaller numbers (under 20) less regularly at Wyboston GP, Bedford SF, Southill L, etc.
52. PINTAIL: Stewartby L, 1 male, 6th February, (CSP); 1 male and 2 females, 13th November, (PJR); 1 male, 25th December, (PJR); 8 males and 6 females, 29th December, (MJM, PJR, PJW, EMW); 4, 30th December, (PJW, EMW); Bedford SF, up to 3, 19th March-13th April, (NC, FCG, MPR, PJR, *et al.*); 2 males, 17th May, (PJR).
53. SHOVELER: Stewartby L, present January-April and October-December, with maxima of 24 on 4th-6th April, (CSP, PJR, PJW, RVAW, *et al*) and 10-16 on 29th December, (MJM, PJR, PJW, EMW); also 3 or 4 on 7th May, (PJR). Bedford SF, present 15th March-29th April, with maximum of 26-28 on 26th March. Barker's Lane GP, 2, 3rd-7th May, (PJR). Southill L, 3, 16th October, (EMW). No records of nesting.
56. TUFTED DUCK: Maximum numbers as follows—Stewartby L, c. 80, 14th and 28th February, (JND); c. 40, 6th November, (JND); then up to c. 100 till end of year, (JND, MJM, PJR). Bedford SF/Barker's Lane GP, c. 30, 3rd-28th April, (JND, MJM, PJR); c. 50, 9th November, (PJR); c. 40, 13th November, (JND); Wyboston GP, c. 30, 1st April, (PJR); c. 30, 20th November, (JND, MJM). Luton Hoo L, 40-45, 13th November, (MDW). Only 4 breeding records, all of broods of young, from Luton Hoo L (2), Southill L and Bedford SF.
57. POCHARD: Maximum numbers as follows—Stewartby L, 100-150, 7th February, (JND, MJM); c. 80, 13th November, (MJM); c. 120, 29th December, (MJM). Wyboston GP, c. 60, 13th November, (JND). Luton Hoo L, 40-45, 13th November, (MDW). No records of breeding, but present in summer at Stewartby L, Luton Hoo L and Barker's Lane GP.
60. GOLDENEYE: Wyboston GP, 2 or 3, 10th January, (JND, EMW). Stewartby L, 1 female, 12th January, (PJR); 1 female, 27th-28th February, (JND); 1 female, 27th November, (JND). Bedford SF, 1 male, 28th February, (NC, JND, PJW); 1 female, 6th-13th November, (JND, MJM, PJR). Stanford GP, 1 female, 25th November, (CFT, RGOS).
64. COMMON SCOTER: Wyboston GP, 1 male, 1st-22nd April, (JND, MPR, PJR, EMW).

70. GOOSANDER: Stewartby L, 1 "brown-head", 4th April, (PJR).
71. SMEW: Stewartby L, 2 males and 2 "red-heads", 16th January, (PJR, PJW, EMW).
73. SHELDUCK: Stewartby L, 1, 2nd January, (CSP); 2, 4th January, (EMW); several during 7th February-1st May, with maximum of six on 22nd April, (JND, PJR, PJW, *et al.*); 25th September, (PJW, EMW); 8, 30th December, (PJW, EMW).
- GREY GEESE: Edlesborough, party of 14 unidentified grey geese, 26th March, (HC).
86. BEWICK'S SWAN: Southill L, 18, 16th January, (IJFL, WEKP); 4 in flight three miles to the north next day, (AJD, JND). Stewartby L, 5, 31st March, (NC, PJR). 6 swans which were either Whooper or Bewick's were seen in flight at Wyboston on 10th January, (JND, PJR).
91. BUZZARD: Luton Hoo, 1, 21st January, (AJL); 1, 7th February, (AJL, MDW). Bedford, 1, 5th May, (PJR).
93. SPARROWHAWK: This species has much decreased in many parts of England in the last few years, probably as an indirect result of the use of toxic chemicals in agriculture, and so it is worth noting that only two reports were received—Stewartby L, 1 female, 18th April, (MJM); Barker's Lane GP, 1 male, 13th June, (DH).
94. GOSHAWK: Eaton Socon, 1 sitting on electric wires by river, made unsuccessful swoop to ground and then flew into tree-tops on Huntingdonshire side, no sign of jesses, 5th December, (CFT).
102. MONTAGU'S HARRIER: Galley Hill, near Luton, 1 male in flight at ranges down to 25 yards and on the ground at 75 yards, 22nd May, (RVAW).
103. OSPREY: Bedford, 1 flying over, 14th May, (NC).
104. HOBBY: Stanford GP, 1 striking down a Sand Martin, 28th July, (ACM). West Hyde, near Luton, 1 male shot by gamekeeper, mid-September, (*per* MDW).
105. PEREGRINE: Stewartby, 1 female, 8th March, (IJFL). Southill Park, 1, 11th June, (DH). Bedford SF, 1 female mobbed by Starlings and Carrion Crows, 15th August, (JND).
120. WATER RAIL: Noted in January at East Hyde, (RKS), and Southill Park, (JND), in February at East Hyde, (RKS), in March at Bedford SF, (JND, PJR, PJW, EMW), during the breeding season at Flitwick Moor, (PJW, EMW), and in November at Barker's Lane GP, (PJR).
127. COOT: Maximum numbers as follows—Wyboston GP, 150+, 20th November, (MJM). Stewartby L, 200+, 25th December, (MJM).
131. OYSTERCATCHER: Barker's Lane GP, 1, 30th May, (DH).
133. LAPWING: Maximum numbers as follows—near Barton, c. 1,000, 5th January, (MJM). Stewartby L, c. 1,000, 27th November, (JND).
134. RINGED PLOVER: Stanford GP, 2, 22nd May, (NC, PJW, EMW). Wyboston GP, 1, 6th August, (EMW).
135. LITTLE RINGED PLOVER: First record, Stanford GP, 30th March, (ACM). Present in breeding season at Stanford GP, (DEE, ARJ, ACM), Barker's Lane GP, (PJR, *et al.*), Wyboston GP, (JND, FCG, PJR, *et al.*), and Heath and Reach pits near Leighton Buzzard, but no details of nesting success. Autumn migrants at Bedford SF: 2, 4th-7th August, (EMW); 1, 9th-10th August, (PJR, EMW); 2, 23rd August, (EMW).
140. GOLDEN PLOVER: Maximum numbers—200+, Bedford SF, 27th March, (JND); 250, Wyboston GP, 20th November, (JND). Parties of 50-150 during January-April and/or October-December at Warden Hill (near Luton), Kempston Hardwick, Stewartby, Amptill, Meppershall and Chiltern Green. Last spring record, Warden Hill, 8, 30th April, (RKS, MDW). First autumn record, Stanford GP, 1, 4th August, (ARJ).

143. TURNSTONE: Barker's Lane GP, 1, 7th-8th May, (JND, PJR).
145. SNIBE: Largest number—Bedford SF, 200-300, 13th November, (MJM).
147. JACK SNIBE: Present at Bedford SF until 6th April and from 16th October, (JND, PJR, PJW, *et al.*), with a maximum of 12 on 20th November, (MJM). Only other record—Ickleford, 3, 11th December, (ARJ).
148. WOODCOCK: Recorded in breeding season at Fox Covert, Luton Hoo Park, Wavendon Heath, Daintry Wood and Rowney Warren.
150. CURLEW: Bedford SF, single ones, 23rd March, (MPR), 26th March, (JND, PJR), and 23rd April, (PJR); 5, 6th August, (EMW); 9, 27th August, (EMW); single ones, 23rd and 29th December, (PJW, EMW).
154. BLACK-TAILED GODWIT: Bedford SF, 1, 18th-27th March, (JND, MPR, PJR, *et al.*); 2 in summer plumage, 5th June, (PJR); 1, 4th August, (DH, EMW).
156. GREEN SANDPIPER: Bedford SF, seen in every month except May and June (last spring record, 29th April; first autumn, 15th July); up to 3 in March and October, up to 4 in July and September, up to 10 in August (27th). Also reported singly at Stanford GP, Wyboston GP, Kempston SF and Milbrook CIP.
157. WOOD SANDPIPER: Bedford SF, 1, 21st April, (NC); 1, 6th-7th and 9th-10th August, (JND, DH, PJR, EMW); 1, 17th and 25th September, (JND, DH, PJR, EMW).
159. COMMON SANDPIPER: Five spring records—Barker's Lane GP, 2, 31st March, (NC, PJR); Cardington Mill, 1, 14th April, (NC, PJW, EMW, *et al.*); Wyboston GP, 1, 17th and 26th April, (JND, PJR); Stewartby L, 1, 28th April, (MJM); Heath and Reach pits near Leighton Buzzard, 1, 1st May, (HC). Numerous autumn records at these and other localities, 1st-27th August; last record, Stewartby L, 9th October, (PJR, PJW, EMW, *et al.*).
161. REDSHANK: Bedford SF, first record, 2, 28th February, (JND); maximum, 18, 10th April, (JND); 6 pairs present during breeding season, (PJR); last seen, 15th August, (PJR, EMW); 1 heard, 6th November, (PJR). Also on passage in small numbers at Stewartby L, Wyboston GP, *etc.*
165. GREENSHANK: Bedford SF, single ones, 9th August, (DH, EMW), 8th September, (NC), and 17th September, (PJR).
169. KNOT: Stanford GP, single ones, 17th March and 2nd November, (ACM).
171. LITTLE STINT: Bedford SF, 2, 16th October, (NC, JND, MJM, PJR, *et al.*). There were exceptional numbers in England and Scotland in September and October.
177. CURLEW SANDPIPER: Stanford GP, 1 immature, 30th October, (ACM).
178. DUNLIN: Bedford SF, single ones, 1st-2nd April, (NC, DP, PJR, RVAW), 10th April, (DP, RVAW), 5th June, (PJR), 15th July, (PJR), and 24th August, (EMW). Barker's Lane GP, single ones, 27th April, (PJR), and 3rd September, (DH). Stanford GP, 3, 30th October, (ACM).
184. RUFF: Bedford SF, 1, 10th March, (JND); 2, 26th March, (MPR); 3, 27th and 31st March, (JND); 1, 1st-2nd April, (PJR); 1, 10th April, (JND); 1, 3rd July, (JND, PJW, EMW); 3, 6th-10th August, (DH, PJR, EMW); 1, 30th August, (PJW, EMW). Wyboston GP, 1, 30th October, (PJW).
198. GREAT BLACK-BACKED GULL: Stewartby L, c. 10 roosted regularly, January-February, (PJR). Barker's Lane GP, up to 6, December, (PJR). Chiltern Green, 4, 27th December, (HC).

199. LESSER BLACK-BACKED GULL: Stewartby L, the only count reported was c. 10 on 6th November, but this species is probably regularly represented in the large winter roost of gulls there. Barker's Lane GP, few in spring, but autumn numbers reached 30 on 22nd July, 60 on 10th August and c. 100 on 30th October, (PJR).
200. HERRING GULL: Stewartby L, apparently no counts of the proportion of this species in the winter roost of some 6,000 mixed gulls; it is something which would well repay study in the future. Barker's Lane GP, regular in winter and over 1,000 in December, (PJR).
201. COMMON GULL: Stewartby L, apparently no counts. Barker's Lane GP, marked increase to c. 250, 3rd April, (PJR).
207. LITTLE GULL: Stewartby L, 1 immature, 26th September, (JND, RP).
208. BLACK-HEADED GULL: Nested again in Stewartby area—Stewartby L, 100+ nests on small island; Eastwood Flettons, 10 pairs; Coronation CIP, 10+ pairs; Millbrook CIP, 30+ pairs; Brogborough Hill Pit, c. 6 pairs, (*per* HASK); most were robbed, except the main colony on Stewartby L. Apparently no winter counts.
211. KITTIWAKE: Barker's Lane, 1 adult, 24th April, (JND).
212. BLACK TERN: All records relate to the period 7th-22nd May, during which time there was a considerable passage in many parts of the country. Stewartby L, 1, 7th May; 4, 9th May; 1, 15th May; 8, 22nd May, (PJR). Barker's Lane GP, 1, 7th May, (DH). Wyboston GP, several, 12th-14th May, (CFT).
- 217/8. COMMON/ARCTIC TERN: Stewartby L, 1, 10th April, (DP, RVAW); 1, 7th May, (PJR); 1, 15th May, (PJR); 9 or more, 22nd May (JND, PJR). Wyboston GP, 1, 1st May, (JND, PJR); several, 12th-14th May, (CFT). Barker's Lane GP, 1, 7th May, (DH). Longholme L (Bedford), 1, 12th May, (NC); 1, 21st September, (NC). Bedford SF, 4, 30th September, (EMW).
237. CUCKOO: First records—Luton Hoo Park and Barton, 17th April, (DP, KRW, RVAW). Last record—Bedford SF, juvenile, 25th September, (JND, PJR).
249. SHORT-EARED OWL: Cowslip Meadow (Luton), 1, 13th March, (AJL, MDW). Stewartby L, 1 or 2, 6th-29th November, (JND, MJM, PJR, PJW, EMW).
252. NIGHTJAR: Reported only from Wavendon Heath, Daintry Wood, Rowney Warren and Tingrith, (HASK, PJR, MDW), and at least 1 pair nested at the last locality, (HASK). Coverage clearly incomplete.
255. SWIFT: First record—Luton, flock, 19th April, (SWR). Last record—Bedford, 5th October, (DH). Swifts came to Britain early and departed late in 1960; there were a number of October records in other parts of the country.
264. LESSER SPOTTED WOODPECKER: In view of the scarcity of records of this overlooked species in most years, it is worth noting that a pair bred in Bromham Park, (FGRS).
274. SWALLOW: First record—Wyboston GP, 1st April, (PJR). Last record—Pavenham, 12-20, 24th October, (EPY).
276. HOUSE MARTIN: First record—Wyboston GP, 7th April, (DH). Last record, Pavenham, 2 or 3, 21st October, (EPY).
277. SAND MARTIN: First record—Little Barford, 26th March, (CFT); followed by 5 to 10 at Barker's Lane GP next day, (MJM, PJR).
293. WILLOW TIT: Chiltern Green, 2, 31st December, (HC). No other record of this overlooked species.
302. FIELDFARE: Last spring record—Bedford, 1st May, (PJR). First autumn record—Stanford GP, 30th September, (ACM); no numbers until

5th November when c. 100 flew W. in several small flocks over Luton; on the 6th c. 4,000 were moving S.S.W. near Bedford SF.

304. REDWING: Last spring record—Bedford, 13th April, (NC). First autumn record—near Maulden, 12-16, 2nd October, (MDW); no general influx until 11th-15th October when night migrants were widely heard.

311. WHEATEAR: First record—Wyboston GP, 1 female, 1st April, (PJR); a total of 21 birds reported on spring passage. Last record—Luton SF, 9th October, (RKS); a total of 14 records involving 23 birds reported on autumn passage.

317. STONECHAT: Many more records than usual (*cf.* 1958-59 and, more particularly, 1956-57). Bedford SF, noted on 4th, 7th-8th (2), 15th and 17th January; 7th (male) and 28th (male) February; 6th November; and 26th and 29th December, (MJM, PJR, PJW, *et al.*). Stewartby L, noted on 31st January (male); 16th (male) and 23rd (4) October; 6th, 13th and 18th November; and 22nd (female) and 25th (male) December, (MJM, PJR, *et al.*). Wyboston GP, noted on 3rd January; and 20th November (2 males, 1 female), (MJM, PJW, EMW). Barker's Lane GP, noted on 11th January; and 30th October (pair), (MJM, EMW). Single birds also reported from Cutenhoe allotments, Luton (female), 27th September, (HC); Southill Park (female) 16th October, (EMW); and Silver Jubilee Park, Bedford (male), 3rd November, (PJR).

318. WHINCHAT: First records—Barker's Lane GP, male, (DH), and Legrave, male, (RGOS), both 4th May. Nested at Galley Hill, near Luton, where 2 pairs and a nest with 5 young were seen on 19th June, (PJR, MDW), and at Bedford SF, where 1 pair and 3 or 4 young were noted on 3rd July, (JND, EMW). Otherwise reported only from Stewartby L (male, 22nd May), (PJR).

320. REDSTART: First record—Rowney Warren, male, 19th April, (DEE). Nested at Warden Warren, where a pair and 2 or 3 young were seen on 6th August, (MDW). Otherwise reported only from Pavenham, (DH, TAH), and Hanger Wood, (PJW).

320. NIGHTINGALE: First record—Maulden Wood, 21st April, (DEE).

327. GRASSHOPPER WARBLER: First record—Haynes, 21st April, (DEE). Otherwise reported only from Galley Hill near Luton, Daintry Wood, Tingrith.

333. REED WARBLER: First record—Blue Waters Pit, near Houghton Regis, 2, 7th April, (SWR).

337. SEDGE WARBLER: First records—Ickleford and Legrave Marsh, 10th April, (ARJ, RGOS). Last record—Bedford SF, 18th September, (JND).

343. BLACKCAP: First record—near Bedford, 16th April, (MJM).

346. GARDEN WARBLER: Reported during the nesting season from Flitwick Moor, Woburn, Fox Covert, Palmers Scrubs, Washer's and Daintry Woods and Luton Hoo Park, (JND, PJR, RGOS, EMW).

347. WHITETHROAT: First record—Putnoe, 14th April, (JND). Last records—Newmill End and Stewartby, 25th September, (MJM, RKS).

348. LESSER WHITETHROAT: This much overlooked species was reported only from Biddenham, where 1 pair nested, (JND, PJW, EMW), Warden Hill, (RGOS), and Luton Hoo, (RKS).

354. WILLOW WARBLER: First record—Barker's Lane GP, 31st March, (PJR).

356. CHIFFCHAFF: First record—Southill Park, 13th March, (EMW, MDW). Last record—Great Barford, 25th September, (PJR).

366. SPOTTED FLYCATCHER: First record—Legrave Marsh, 1 or 2, 4th May, (RGOS).

376. TREE PIPIT: First record—Rowney Warren, 24th April, (PJR). Also reported during breeding season from Brogborough Hill, Totternhoe Knolls, Washer's Wood, Daintry Wood, Worley Wood (Melchbourne), Warden Warren and Heath and Reach (Leighton Buzzard).
381. GREY WAGTAIL: Barker's Lane GP and adjacent river, at least 2 during winter months, (PJR); first reported 25th August, (PJW, EMW).
382. YELLOW WAGTAIL: First record—Bedford SF, 11th April, (NC). Last record—Bedford SF, 2nd October, (JND). Present during summer at Bedford SF and Wyboston GP, but no proof of nesting.
383. WAXWING: Sandy Lodge, 1, 26th December, (CFT).
388. RED-BACKED SHRIKE: No reports received.
389. STARLING: No details of roosts received.
391. HAWFINCH: No reports of this overlooked species received.
394. SISKIN: Unusual numbers in the early part of the year. Ickleford, maximum 50-60, 9th January; last seen, 13th March, (ARJ). Southill Park, 20-30, 17th-24th January; 8-10, 31st January; last seen, 15th April, (JND, *et al.*). Flitwick Moor, 20-50, 27th January, (HC); about 5, 6th March, (JND, PJR). Maulden Wood, 10-12, 30th January; 1, 18th March, (DEE). Legrave Marsh, 2, 21st February, (RGOS); 3, 26th February, (RGOS); 6, 29th February, (SWR); 1, 13th March, (SWR). In striking contrast, only one record at the end of the year. Flitwick Moor, 7, 26th December, (KRW).
397. REDPOLL: Flitwick Moor, 10-15, 6th March, (JND, PJR); c. 18, 26th December, (KRW). Bull Wood, 6 to 8, 27th December, (MDW).
404. CROSSBILL: 1 pair reared young in the south of the county, (R. F. Dickens *per* IJFL). Only two other records—Maulden Wood, pair, 8th January, (DEE); Pennyfathers Hill near Maulden, 2, 6th March, (HC).
408. BRAMBLING: Bedford SF, 1, 14th January, (PJR); 15-20, 31st January, (PJR); 6 to 8, 26th March, (DP, RVAW). Wyboston GP, 2, 17th January, (PJR); 1, 6th February, (PJR). Marston, c. 50, 31st January, (JND). Kempston, 30+, 21st February, (PJR). Luton Hoo Park, 2, 30th October, (RKS, KRW).

I. J. FERGUSON-LEES.
R. G. O. STEPHENSON.
M. D. WORTLEY.

BEDFORD
SCHOOL NATURAL HISTORY SOCIETY

Report for 1960

President—M. J. MARRIOTT

Secretary—P. J. REAY

Committee—J. N. DYMOND, M. JOLL

Membership during the year hovered precariously around thirty, although the number actively engaged in serious field-work was considerably less. Nevertheless, on every Sunday afternoon of all three terms small parties ventured into the surrounding countryside to explore its natural history. Furthermore, nine indoor meetings were held during the year, H. A. S. Key, B. B. West, Dr G. A. Metcalfe, M. P. Roseveare and T. N. D. Peet addressing the Society on such occasions. When no visiting lecturer was available, members of the Society talked on their own particular subjects, or, failing this, pond-life was examined through the microscope.

Twenty-three members visited Cley on 1st May on the occasion of the Annual Outing. We were indeed fortunate to see a Kentish Plover, but the non-ornithologist found little to interest him there; nevertheless Ruby Tiger Moth as well as Yellow-horned Poppy, Sea Campion and Alexanders were identified.

During the Easter term, both bird-watching and palaeontology were in full swing, but the summer term focussed more attention on entomology and, to a lesser extent, on botany; outings to Flitwick Moor, Barton Hills, Odell Wood, Hanger Wood, and Salcey Forest in Northamptonshire were arranged. The newly-acquired Mercury Vapour Moth Trap completely revolutionised moth-hunting, making it an easy and attractive sport; the trap was run at various localities in the town during the term. Not surprisingly, ornithology came into its own once more, in the Christmas term; unfortunately the regular fungus forays were made impossible by unfavourable weather conditions in the autumn months. Several members were actively engaged in the N.W.T. Wildfowl Counts at Stewartby, Wyboston, Southill, Felmersham, Barker's Lane and Bedford Sewage Farm. The ornithologists had an extremely successful year, the highlights of which are recorded in the Quarterly Bird Bulletins.

The Junior Collecting Prize was awarded to J. R. L. Turner who submitted beetles.

On the lines of more specialised field-work, the President made an ecological survey of Judge's Spinney at Clapham, and the Secretary did some experimental work on moths.

Courses attended by members during the holidays included the Brathy Ornithological Course on Foula (G. C. Anderson), and the Scottish Field Studies Association courses—Arran Geology (M. Joll) and Highland Ornithology (P. J. Wilkinson and the Secretary).

P. J. REAY.

COLEOPTERA

The following list of over fifty species, collected almost entirely in the Bedford area, is the result of the year's work by two members of the Bedford School Natural History Society, O. J. Marlow and J. R. L. Turner.

CARABIDAE. *Carabus granulatus* (L.), Ground Beetle, Bedford, April, under a dead rook; *Clivina fossor* (L.), Bedford, April, under a dead starling; *Harpalus rufipes* (D.G.), Queen's Park, Bedford, April; *Feronia*

(*Pterostichus nigrita* (F.), Bedford, February ; *Pristonychus terricola* (Hb.), Flitwick Moor, March and Biddenham, June, in moth trap ; *Agonum dorsale* (Pp.), Biddenham and Bedford, April ; *Dromius quadrimaculatus* (L.), Biddenham, February, under bark ; *Risophilus (Demetrias) atricapillus* (L.), Hanger Wood, Stagsden, June.

DYTISCIDAE. *Colymbetes fuscus* (L.), Bedford School, July, in moth trap.

GYRINIDAE. *Gyrinus colymbus* (Er.), Whirligig Beetle, Bedford School Swimming Pool, July.

SILPHIDAE. *Phosphuga atrata* (L.), Bedford, June.

STAPHYLINIDAE. *Oxyporus rufus* (L.), Rove Beetle, Dunstable, August, under fungus ; *Philonthus politus* (L.) (= *aeneus*), Bedford, April, on earth ; *Ocyopus (Staphylinus) olens* (Mu.), Devil's Coach-Horse, Bedford, December ; *Quedius tristis*, Hanger Wood, Stagsden, June.

CANTHARIDAE. *Cantharis rustica* (Fn.), Bedford, May ; *Cantharis pallida* (Gz.), Hanger Wood, Stagsden, June, on cow-parsley ; *Cantharis livida* (L.), Bedford, July, on grass ; *Malachius bipustulatus* (L.), Bedford, May, on riverside reeds ; *Anthocomus rufus* (Hb.), Bedford, July, on riverside reeds.

ELATERIDAE. *Athous bicolor* (Gz.) (= *longicollis*), Skipjack, Bedford, May, on *Ranunculus* ; *Agriotes lineatus* (L.), Hanger Wood, Stagsden, June, on hawthorn.

HELODIDAE. *Microcara testacea* (L.), Flitwick Moor, May, on oak.

DERMESTIDAE. *Anthrenus museorum* (L.), Museum Beetle, Bedford School, July, on rose.

NITIDULIDAE. *Meligethes aeneus* (F.), Bedford, June, on *Ranunculus*.

COLYDIIDAE. *Bitoma crenata* (F.), Biddenham, March, under bark.

ENDOMYCHIDAE. *Endomychus coccineus* (L.), April, under wood.

COCCINELLIDAE. *Adalia bipunctata* (L.), Two spot Ladybird, June, riverside ; *Adalia 10-punctata* (L.), Ten-spot Ladybird, July, riverside ; *Coccinella 7-punctata* (L.), Ladybird, April and August, ubiquitous ; *Halyzia 16-guttata* (L.), Ladybird, Bedford, July, on nettle ; *Psyllobora 22-punctata* (L.), Ladybird, Bedford, September, in grass ; *Anatis ocellata* (L.), Eyed Ladybird, Bedford, May ; *Mysia oblongogutta*, Bedford, May, on nettle.

PYROCHROIDAE. *Pyrochroa serraticornis* (Sp.), Cardinal Beetle, Stewartby, May.

TENEBRIONIDAE. *Tenebrio molitor* (L.), Hardback, Bedford, June and July, indoors.

SCARABAEIDAE. *Geotrupes stercorarius* (L.), Dor Beetle, Bedford, December and April ; *Aphodius fossor* (L.), Dung Beetle, Bedford, June, in moth trap, and 2 in July ; *Aphodius erraticus* (L.), Dung Beetle, Oakley, April, in decaying wood ; *Melolontha melolontha* (L.), Cockchafer, May, in moth trap.

CERAMBYCIDAE. *Stenocorus meridianus* (L.), Longicorn Beetle, Salcey Forest, Northants., July, on *Spiraea*.

CHRYSOMELIDAE. *Donacia semicuprea* (Panz.), Leaf Beetle, Bedford, June, on reeds ; *Lema melanopa* (L.), Hanger Wood, Stagsden, July, on grass ; *Gastrophysa (Gastroidea) viridula* (D.G.), Bedford, June, riverside ; *Gastrophysa polygoni* (L.), Bedford School, July, on grass ; *Hydrothassa marginella* (L.), May, on *Ranunculus* ; *Timarcha tenebricosa* (F.), Bloody-nosed Beetle, Bedford Sewage Farm, September, and Biddenham ; *Timarcha goettingensis* (L.), Biddenham, September ; *Halticinae sp.*, Flea Beetle, Queen's Park, in willow ; *Lythararia salicariae* (Pk.), Bedford, June, on willow ; *Hippuriphila modeeri* (L.), Bedford, June, on *Carex*.

CURCULIONIDAE. *Cossonus parallelipipedus* (Hb.), Bedford, June, on tree stump ; *Rhynchaenus (Orchestes) alni* (L.), Bedford, July, indoors.

Notes and Observations

MALLARD DIVING

At Barker's Lane Gravel Pits on 20th September, 1960, a female Mallard was disturbed from under the bank. The bird swam very low in the water, calling anxiously, and, with a short flap of the wings, dived deep under the surface, reappearing after ten seconds about fifteen yards away—still swimming low. After this, it disappeared.

P. J. REAY.

GULLS ALIGHTING ON HEDGES

In November, 1959, at the Barker's Lane Gravel Pits, Black-headed Gulls were watched skimming the top of a Hawthorn hedge—apparently trying to remove berries. Other gulls hovered over the tops and a few managed to perch on the twigs for a few seconds, some actually taking berries.

At the same locality in April, 1960, this species exhibited similar behaviour over Willow trees by the railway. Presumably these were trying to take insects.

P. J. REAY.

NOCTURNAL REDWING PASSAGE

From mid-October to mid-November Redwings were listened for as they passed quite low over Bedford on their autumnal migration. The birds were calling almost every ten seconds and it was thus possible to ascertain the direction in which they were travelling; this was invariably found to be southwards, as would be expected from the time of year.

The results were as follows: 11th-15th October (inclusive), maximum on 12th, usually 8 p.m. until 10 p.m.; 23rd October; 27th October, 10.30 p.m.; 30th October; 6th November, heavy passage at 10.30 p.m.; 8th November, 8.30-9.30 p.m., heaviest passage of autumn; 9th and 12th November, just a few heard; 14th November, much earlier than usual, at 6.30 p.m., last heard.

On many dates during the period the birds were listened for but were not heard at all. The "see-ip" note is quite distinctive, even on windy nights, and there was no difficulty in detecting it.

The above results agreed closely with the national picture.

Such a study of migration has great potentialities since if carried out all over the country it could provide a useful support to the evidence gained from observation by radar on the vast nocturnal movements.

P. J. REAY.

DOMINANT MOTH SPECIES DURING THE SUMMER

The following notes are based on M.V. Moth Trap catches recorded by members of Bedford School Natural History Society during the summer months of 1960. The trap was run at each of the following localities on as many nights as possible:

- (a) School Grounds.
- (b) Putnoe Estate.
- (c) Ampthill Road area.
- (d) London Road area.

Between 8th and 11th May, Hebrew Character (*gothica*) appeared to be dominant at both Putnoe and in the School grounds—12-16 being recorded at each locality. However, by the 15th, Nutmegs (*Mamestra trifolii*) were coming into their own with 25 at the School. Between the 23rd and 28th at London Road Nutmeg numbers increased from 19 to 41, but by the end of this period Heart-and-Dart (*Agrotis exclamationis*) had become dominant at 150. Nevertheless this species had only taken a slight lead over Nutmeg on the 29th at the School. Large numbers of Heart-and-Dart

were recorded until at least mid-June with 123 at the School, 200 at London Road and as many as 290 at Ampthill Road.

From mid-July to late August, Heart-and-Dart were virtually absent and it was the Dark Arches (*Apamea monoglypha*) and the Common Yellow Underwing (*Triphaena pronuba*) which had pride of place although on several occasions Common Rustic (*Apamea secalis*) and more Nutmeg reached fairly high proportions. No further observations were carried out until late August when both at Putnoe and in the School grounds, Setaceous Hebrew Character was found to be dominant with often as many as 200 present.

However those numbers given mean very little by themselves; relative proportions are more important. Nevertheless it will suffice to say here that on almost all occasions the dominant species formed about 75 per cent of the total population caught; the exception was in July and early August when a very noticeable sharing of dominance was noted amongst several different species, decreased the possibility of a high individual dominance.

Short seasonal changes can of course be perceived in other than dominant species and all are inter-related with emergence and migratory times. For example, Silver-Y did not appear in the trap until mid-June; Common Yellow Underwing which were dominant in late July were virtually absent in mid-June.

Although up to thirty-eight different species were recorded at London Road several nights in early August, the total number of individuals at this time did not exceed that attained in June and July when the most number of species recorded was never more than twenty.

P. J. REAY.

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