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NATURALIST**

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BEDFORDSHIRE NATURAL HISTORY SOCIETY & FIELD CLUB

1958

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GREAT CRESTED GREBE ON STEWARTBY LAKE (see p. 11)

(*Photograph by H. A. S. Key*)

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EDITED BY A. W. GUPPY, B.S.C.

No. 12—1957

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Report of the Council

The year 1957 brought about no great change in the affairs of the Society and the steady progress of the past was maintained. Membership remained almost the same at the end of the year as it had been at the beginning, with 266 names on the register. 30 new members joined during the year and these were offset by the regretted deletion of others whose subscriptions were grossly in arrears. The death of one member was recorded with considerable regret; Mr. W. F. Roue died as the result of a climbing accident in Switzerland.

On the whole the various meetings of the Society were well supported, but the attendance at lectures could be considerably improved and, indeed, must be so if the Council is to consider inviting a wider selection of visiting speakers. Members are therefore urged to take a more practical interest in the proceedings, and to put forward more constructive suggestions for improving all programmes. The weather during the summer could have been kinder, yet the field excursions were well patronized and joint rambles with neighbouring Societies were again notable events.

The outstanding event of the year was the lecture by Field-Marshal Viscount Alanbrooke, K.G., G.C.B., O.M., who spoke in the Corn Exchange, Bedford, on 4th April, taking as his subject 'Wild Birds in Holland and Great Britain'. A packed hall applauded both the excellent commentary and the wonderful series of colour films. As a result of this memorable meeting the funds of the Society were augmented considerably.

Delays in publishing the Journal were remedied, and both the 1955 and 1956 issues were printed and distributed. The Society records its appreciation of the services of our Hon. Editor, Mr. A. W. Guppy. Others singled out for special mention were Miss E. Proctor through whose energies the library continues to expand, and Mr. E. Lucas as Hon. Auditor.

Finally, the indebtedness of the Society is recorded to all who have in any way contributed to this further progress.

HENRY A. S. KEY,

Hon. General Secretary.

THE BEDFORDSHIRE NATURAL HISTORY SOCIETY AND FIELD CLUB

STATEMENT OF ACCOUNTS FOR THE THE YEAR ENDED 31st DECEMBER, 1957

RECEIPTS	£	s.	d.	£	s.	d.	PAYMENTS	£	s.	d.	£	s.	d.	
To Cash in Bank, 1st January, 1957	159	5	2				By Printing, Stationery and Postages				22	9	8	
„ Cash in Hand, 1st January, 1957	5	14	7				„ Lecture Expenses, including							
				164	19	9	„ Hire of Halls					6	19	10
„ Subscriptions, 1957, and arrears	91	4	0				„ Bank Charges and Sundry Ex-							
„ Subscriptions, 1958	1	10	0				„ penses					1	8	0
				92	14	0	„ Printing Journal, 1955	70	12	0				
„ Sale of Journals				1	5	0	„ Printing Journal, 1956	92	1	6				
„ Donations	1	15	0								162	13	6	
„ Donations, Journal Fund	1	11	6				„ Cash in Bank, 31st December,							
„ Donations, Founder Members'							1957	123	12	9				
Trust Fund	4	6	0	7	12	6	„ Cash in Hand, 31st December,							
							1957	4	13	5				
„ Field-Marshal Alanbrooke's											128	6	2	
Lecture:														
Receipts	108	0	2	54	6	5								
Expenses	53	13	9											
							„ Surplus on Eye Brook Reservoir							
„ Coach Trip							Coach Trip					19	6	
				£321	17	2					£321	17	2	

STATEMENT OF ACCOUNTS

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.
5th February, 1958.

MCPHERSON, TIMMINS & EDNIE,
Chartered Accountants, Honorary Auditors.

PROCEEDINGS 1957

Indoor Meetings

102ND ORDINARY MEETING, 17th January, 1957, Bedford. 'Scotland Revisited' by F. C. Gribble. Attendance 28. *Chairman*: Mr. F. G. R. Soper.

103RD ORDINARY MEETING, 23rd January, 1957, Luton. 'A Tour of North America' by Dr. H. F. Barnes. Attendance 53. *Chairman*: Mr. L. A. Speed.

104TH ORDINARY MEETING, 7th February, 1957, Bedford. 'Spring Flowers in Wales and Scotland' by Eric Meadows. Attendance 26. *Chairman*: Mr. H. A. S. Key.

105TH ORDINARY MEETING, 13th February, 1957, Luton. 'A Bird-watcher in Fair Isle' by R. White. Attendance 51. *Chairman*: Mr. W. G. Harper.

10TH ANNUAL GENERAL MEETING, 28th February, 1957, Bedford. Details as printed in the last issue, No. 11, 1956, page 12.

106TH ORDINARY MEETING, 14th March, 1957, Bedford. 'Badgers' by Miss P. Hager. Attendance 37. *Chairman*: Miss A. L. Cooper.

107TH ORDINARY MEETING, 27th March, 1957, Luton. 'Wild Life of the Moors and Hills' by H. A. S. Key. Attendance 50. *Chairman*: Mr. F. C. Gribble.

108TH ORDINARY MEETING, 3rd October, 1957, Luton. 'A Naturalist in Lapland' by F. C. Gribble. Attendance 34. *Chairman*: Mr. S. W. Rodell.

109TH ORDINARY MEETING, 17th October, 1957, Bedford. 'Cacti' by W. F. Robinson. Attendance 24. *Chairman*: Miss E. Proctor.

110TH ORDINARY MEETING, 7th November, 1957, Luton. 'Hibernation of Animals' by Miss E. Proctor. Attendance 25. *Chairman*: Miss A. L. Cooper.

111TH ORDINARY MEETING, 21st November, 1957, Bedford. 'Reminiscences of North America' by H. Felce. Attendance 44. *Chairman*: Mr. F. G. R. Soper.

112TH ORDINARY MEETING, 5th December, 1957, Luton. 'A Naturalist in the Outer Hebrides' by E. Meadows. Attendance 35. *Chairman*: Mr. W. G. Harper.

113TH ORDINARY MEETING, 12th December, 1957, Bedford. 'An Explorer on the Amazon' by J. Woodall. Attendance 43. *Chairman*: Mr. F. C. Gribble.

Field Meetings

SUNDAY, 31ST MARCH, 1957. HANGER WOOD. *Leader*: L. A. Speed. Twenty-four members visited Hanger Wood on a fine warm day. The usual spring flowers were found in profusion as well as Twayblade and Herb Paris.

A Tawny Owl's nest with four eggs was found, but on visiting it later it was discovered that the eggs had been taken.

During lunch in the wood Peacock and Brimstone butterflies were seen. There was evidence of a large Badger population in the wood; indeed, one badger in a decomposed state was found, as well as the skull of another.

SATURDAY, 13TH APRIL, 1957. WAIN WOOD, PRESTON. *Leader*: Sister M. Christophane. This meeting was held in conjunction with the Letchworth Society and thirty-four people were present, the day being fine and dry. The party met at Hitchin and walked over the park to Wain Wood. A colony of Toothwort was found, as well as Early Purple Orchid and Adder's Tongue.

GOOD FRIDAY, 19TH APRIL, 1957. PEGSDON HILLS. *Leader*: Doris Mever. A small party from Bedford visited Pegsdon but failed to make contact with the Letchworth contingent—this meeting having been arranged by the Letchworth Society. The Pasque Flower was found in profusion.

SUNDAY, 28TH APRIL, 1957. FELMERSHAM TO RADWELL. *Leader*: F. C. Gribble. Meeting at Felmersham Church on a bright and sunny day, fourteen members proceeded to the gravel pits where a number of summer migrants were seen: House and Sand Martins, Swallow, Sedge Warbler, as well as residents, Great Crested Grebes and Coots. The party then walked across the fields to Radwell where the Lesser Whitethroat was seen, as well as two Turtle Doves.

THURSDAY, 2ND MAY, 1957. HANGER WOOD. *Leader*: F. C. Gribble. Twenty-four members visited Hanger Wood on a very cold but sunny evening for the evening bird chorus. Very little bird song was heard, but a number of Fly Orchids were found in the wood.

SUNDAY, 5TH MAY, 1957. CLOPHILL. *Leader*: H. A. S. Key. Twenty-three members met at Clophill at 3.30 a.m. to listen to the bird chorus in Maulden Wood. The main chorus was delayed owing to a strong north-west wind, and little song was heard until after 5.30 a.m.

SUNDAY, 12TH MAY, 1957. KENSWORTH. *Leader*: S. W. Rodell. Only five members were present at this meeting, the weather being very threatening, heavy rain with fine periods. A Yellow Hammer's nest with one egg and a Great Tit's with young were found. Some old brick workings and dilapidated farm buildings were visited, but nothing of interest resulted. A Badger's sett was discovered in a small wood, and later, in Deadmansea Wood nearby, Wood Sorrel and Archangel were present in large masses.

THURSDAY, 16TH MAY, 1957. BASMEAD MANOR, STAPLOE. *Leader*: E. O. Squire. A party of seventeen members were very hospitably received by Mr. Squire who conducted them around his garden and ornamental waters with nearly fifty species of wildfowl, including Emperor Goose. Breeding pens with various ducks, wallabies, Sika deer and Soay sheep were also seen.

SUNDAY, 19TH MAY, 1957. WEST WOOD, KNOTTING. *Leader*: F. C. Gribble. Only five members visited West Wood, the weather being dull and cool, but becoming sunny later. Interesting botanical finds included Bird's Nest, Early Purple, Spotted, and Butterfly Orchids. Several Nightjars and Blackcaps were among the few birds heard singing. The party returned via Felmersham Gravel Pits, where nests of Willow Warblers, Goldfinch and Little Grebe were found.

THURSDAY, 23RD MAY, 1957. WILLINGTON TO GREAT BARFORD. *Leader*: F. C. Gribble. Meeting at Willington, a party of twelve members walked along the river to Barford. Little bird-life was seen, those most in evidence being Sedge Warblers.

SUNDAY, 2ND JUNE, 1957. DERBYSHIRE DALES. *Leader*: W. Durant. A coach-load of thirty-three members visited Monsal and Miller's Dales on a fine, hot day. Interesting botanical finds were made, and Dipper and Redstart were seen.

THURSDAY, 13TH JUNE, 1957. WARDEN HILLS. *Leader*: W. G. Harper. It was perfect weather for this evening meeting at Warden and Galley Hills, and twenty-two members were rewarded to find two downland species—the Purple Milk Vetch in profusion and the Great Earthnut: also the White Helleborine still in flower in Triangle Wood. Some of the party had fine views of a Red-backed Shrike.

SATURDAY, 22ND JUNE, 1957. BROMHAM PARK. *Leader*: K. West. About forty members visited Bromham Park for moth-trapping by mercury-vapour lamp. The weather, however, was unpropitious and few captures were made.

SUNDAY, 30TH JUNE, 1957. WHITE LANE. *Leader*: L. A. Speed. Twelve members assembled with cars on a fine hot day. The river near Odell Mill was first visited, and the usual aquatic plants were seen. The party then walked up White Lane to Podington Aerodrome; on the way the Everlasting Pea, Nettle-leaved Bell-flower, and Wild Liquorice were found. A heavy thunderstorm brought the meeting to an abrupt end.

SUNDAY, 7TH JULY, 1957. WALBERSWICK, SUFFOLK. *Leader*: F. G. R. Soper. Thirty members journeyed in a coach to Walberswick where contact was made with eighteen members of the Suffolk Society. The party divided into two main groups for botanical and ornithological studies.

SUNDAY, 21ST JULY, 1957. WOBURN SANDS. *Leader*: W. Durant. Sixteen members met at Woburn Sands and visited Aspley Heath. In the afternoon they went on to Heath and Reach, but the meeting was brought to a premature conclusion by a thunderstorm.

SUNDAY, 1ST SEPTEMBER, 1957. HERTS.-ESSEX BORDER. *Leader*: K. West. Fourteen members in cars, meeting at Bedford and Hitchin, visited Hatfield Broad Oak, stopping at several interesting areas en route. Nothing of outstanding interest was found, but an enjoyable day was spent in a district new to some of the party.

SUNDAY, 8TH SEPTEMBER, 1957. DUNGENESS. *Leader*: F. C. Gribble. Over thirty members in a special coach visited Dungeness on a fine summer day. The party was conducted over the bird observatory where the work was explained by the warden, and a demonstration was given of trapping and ringing birds. A Sand Lizard was found; owing to the late period of the year very little of botanical interest was seen.

SUNDAY, 15TH SEPTEMBER, 1957. SOUTHILL PARK. *Leader*: R. Edwards. This meeting was held in conjunction with the Letchworth Society. Fifteen members walked through the Park, but nothing of outstanding interest was noted.

SUNDAY, 29TH SEPTEMBER, 1957. FUNGUS FORAY AT DEADMANSEA WOOD. *Leader*: D. Reid. The annual Fungus Foray is reported in detail on page 8.

SUNDAY, 27TH OCTOBER, 1957. PORTOBELLO FARM, SUTTON. *Leader*: E. C. Lamb. Twenty-two members rambled round Portobello Farm on a fine day. Being late in the year, nothing of great interest was seen, but potentially this area suggests that bird and moth life should be very active in the spring.

SUNDAY, 1ST DECEMBER, 1957. WARDEN HILLS. *Leader*: F. C. Gribble. A party of fifteen walked from Warden Hills to Lilley and back on a very cold day—the hoar frost persisting throughout. A few Gulls were noted and, in particular, large numbers of Skylarks on the ploughed fields together with flocks of various Finches.

Botanical Section

The meetings arranged for the general Summer Programme were such that, with few exceptions, all held botanical interest, and further, the varied localities gave an exceptionally wide range of different types of habitats. This resulted in a very large number of species being 'logged' for 1957, and the list compiled is probably the largest recorded in a session by the Section so far. The following meetings cover the main botanical habitats visited.

The meeting on Sunday, 19th May, to West Wood, Knotting, provided the first long list of the season, and although nothing of special note was found, a large and varied number of woodland plants were seen and recorded.

Of the two main botanical meetings outside the county the first was the coach trip on Sunday, 2nd June, to Monsal and Miller's Dale, Derbyshire. The walk through the two dales proved very successful, and from the long list of plants seen we were very fortunate in finding the following six, some of which had been previously recorded by the Section. The two most important of these were the Mountain Melic, *Melica nutans*, and Mossy Saxifrage, *Saxifraga hypnoides*; both are mountain species and are found here in probably their most southerly stations. The other four were: Sweet Cicely, *Myrrhis odorata*; Large Bittercress, *Cardamine amara*; Common Butterwort, *Pinguicula vulgaris*; Bitter Vetch, *Lathyrus montanus*. In addition to these, much interest was shown in the abundance of many plants which are either rare, or not to be found, in Bedfordshire.

The Annual Botanical Exhibition was held on the following evening, Monday, 3rd June, at the Nature Room, 4 The Avenue, Bedford. The exhibition was well attended, and members were able to see a display of the plants found the previous day in Derbyshire. Among other plants on display much interest was shown in a specimen of Birthwort, *Asarum clematitis*, gathered near Oxford by Mrs. Lucas.

On Thursday evening, 13th June, a visit was made to the Warden Hills, well known for their excellent chalk flora. Of the many plants found on the hills one of the most outstanding is the Purple Milk Vetch, *Astragalus danicus*, and this, as usual, aroused a great deal of interest, as also the orchids. Although nothing new was seen, the list of plants logged for the season was enlarged considerably as a result of the visit.

The second main botanical meeting was the coach trip on Sunday, 7th July, to Walberswick on the Suffolk coast where we joined the Suffolk Naturalists' Society. The object was to study the plants of the salt-marsh and shingle-beach, and once more we were rewarded with a successful day. The outstanding plant from the locality is the Sea Spurge, *Euphorbia paralias*, and this we were able to record for the first time. Another plant which aroused considerable interest was the Tree Lupin, *Lupinus arboreus*; although not native, it is well naturalized here. The majority of the other plants had been recorded previously from former visits to Cley and Blakeney, and of these the one which attracted the most attention was without doubt the Yellow Horned Poppy, *Glaucium flavum*; this makes a colourful show on the bare shingle, and it is not a plant which anyone can overlook when in flower. From the remaining long list of plants it is difficult to single out any for special mention, but the list included such plants as Sea Lavender, Sea Pink, Sea Campion, and Sea Aster, and important grasses, such as Marram Grass, Cord Grass, and Sea Couch Grass, to name just a few. It is worthy of note that quite a number of members took an interest in the sea grasses, sedges, and rushes, and much useful work was done in this direction.

The meeting on Sunday, 21st July, to the Woburn Sands area provided the last long list of the season. From this area we were able to see and record plants of the Greensand. Among those recorded, the Bilberry, *Vaccinium Myrtillus*, from Aspley Guise is worth mention, and from Rushmere, Heath and Reach, the two most interesting plants were the Lesser Dodder, *Cuscuta epithymum*, growing on Ling, and Sheep's Bit, *Jasione montana*.

The foregoing account, while not covering the whole of the botanical meetings gives a survey of the Section's activities and most of the main ones. These were again all well attended and the interest of members was well maintained throughout the season.

W. DURANT.

The Fungus Foray

The foray was held on the 29th September, 1957, at Deadmansea Wood, near Whipnade, and was led by Mr. D. A. Reid. Fortunately the initial heavy rain cleared by mid-morning and gave way to a cold sunny day. The early downpour was no doubt partly responsible for the fact that only sixteen members of the Society were present.

Deadmansea Wood consists of large tracts of oak, birch and ash with a few scattered beech trees. On the north side, however, a considerable area had been cleared of undergrowth and the resulting bonfires had left some enormous burnt patches. These proved extremely rewarding and yielded some interesting fungi. Of these special mention must be made of the Discomycetes and of *Galactinia proteana* var. *sparassoides* in particular, which was represented by several extremely well-developed specimens up to a foot across and 9 ins. in height. The fructifications resembled large white or pinkish cauliflowers and caused considerable excitement. Two other species of *Galactinia* were collected on the burnt ground—*G. praetervisa*—an attractive violet-tinted species and *G. sarrazinii*. Large areas of these bonfire sites were covered with the tiny but densely crowded, fringed, orange discs of *Anthracobia melaloma*. Less easy to see amongst the charred wood were the black apothecia of *Plicaria trachycarpa* var. *muricata*. A large number of agarics which grow on burnt ground were also collected; the least common being *Coprinus boudieri* with its mitre-shaped spores and *C. gonophyllus*.

Other interesting agarics found during the foray included *Hygrophorus calyptraeformis* recognised by its beautiful pink cap, *Clitocybe fallax*, and *Lactarius tabidus*. The two last-named species are new to the British list.

Large numbers of fruitbodies of the rare polypore—*Polyporus melanopus*—were gathered under oaks in an area from which the undergrowth had been cleared.

A total of 113 species of fungi were collected, of which 16 were new county records, and one confirmed an old existing record. Of the new county records, two were species which had not hitherto been listed from the British Isles.

Amanita muscaria (Linn.) Fr.; *A. rubescens* (Pers.) Fr.; *Amanitopsis vaginata* (Bull.) Roze; *Armillaria mellea* (Vahl) Fr.; *Bolbitius vitellinus* (Pers.) Fr.; *Clitocybe clavipes* (Pers.) Fr.; †*Clitopilus fallax* (Qué.) Sacc. & Trott.; *Collybia ambusta* Fr.; *C. fusipes* (Bull.) Berk.; *C. radicata* (Rehl) Berk.; *C. tuberosa* (Bull.) Fr.; **Coprinus boudieri* Qué.; **C. gonophyllus*

Quél.; *C. lagopus* Fr.; *C. micaceus* (Bull.) Fr.; *Flammula carbonaria* Fr.; *F. gummosa* (Lasch) Quél.; *F. sapinea* Fr.; *Galera hypnorum* (Batsch) Fr.; (*) *Hygrophorus calyptraeformis* Berk.; *H. niveus* (Scop.) Fr.; *H. pratensis* (Pers.) Fr.; *Hypholoma fasciculare* (Huds.) Fr.; *H. hydrophilum* (Bull.) Fr.; *H. velutinum* (Pers.) Fr.; *Inocybe griseo-lilacina* Lange; *Laccaria amethystina* (Vaill.) Cooke; *L. laccata* (Scop.) Cooke; *Lactarius blennius* Fr.; *L. glycyosmus* Fr.; *L. mitissimus* Fr.; *L. plumbeus* Fr.; *L. pyrogalus* (Bull.) Fr.; *L. quietus* Fr.; *L. subdulcis* (Pers.) Fr.; †*L. tabidus* Fr. sensu Kühner & Romagnesi; *L. torminosus* Fr.; *L. vellereus* Fr.; *Lepiota amaranthina* (Scop.) Fr.; *Marasmius dryophilus* (Bull.) Karst.; *M. epiphyllum* (Pers.) Fr.; *M. ramealis* (Bull.) Fr.; *M. undatus* Berk.; *Mycena ammoniaca* Fr.; *M. epipterygia* (Scop.) Fr.; *M. galericulata* (Scop.) Fr.; *M. galopus* (Pers.) Fr.; *M. inclinata* Fr.; *M. polygramma* (Bull.) Fr.; *M. sanguinolenta* (A. & S.) Fr.; **Naucoria siparia* Fr. sensu Kühner & Romagnesi; *Omphalia fibula* (Bull.) Fr.; *O. fibula* var. *swartzii* Fr.; *O. hydrogramma* (Bull.) Fr.; *Paxillus involutus* (Batsch) Fr.; *Pluteus cervinus* (Schaeff.) Fr.; **Psalliota langei* Moll.; *Psathyrella pennata* (Fr.) Pearson & Dennis; *Russula fellea* Fr.; *R. foetens* Fr.; *R. fragilis* Fr.; *R. ochroleuca* Fr.; **R. xerampelina* Schizopyllum commune Fr.; *Stropharia aeruginosa* (Curtis) Fr.; **Tricholoma fulvum* Fr.; *T. personatum* Fr.; **Tubaria autochtona* (B. & Br.) Sacc.

Boletus chrysenteron (Bull.) Fr.; *B. scaber* (Bull.) Krombh.

Daedalea quercina (L.) Fr.; *Polyporus adustus* (Willd.) Fr.; *P. betulinus* (Bull.) Fr.; *P. giganteus* (Pers.) Fr.; *P. lacteus* Fr.; **P. melanopus* (Swartz) Fr.; *P. sulphureus* (Bull.) Fr.; *Polystictus perennis* (L.) Fr.; *P. versicolor* (Linn.) Sacc.; *Poria versipora* (Pers.) Baxter; **P. viridans* Berk.; *Trametes confragosa* (Bolt.) Jörstad.

Clavaria cinerea (Bull.) Fr.; *C. cristata* (Holmsk.) Fr.; *C. luteo-alba* Rea; *Typhula erythropus* (Bolt) Fr.

Coniophora puteana (Schum.) Karst.; *Craterellus cornucopioides* Fr.; *Stereum hirsutum* (Willd.) Fr.; *S. purpureum* (Pers.) Br.; *S. rugosum* (Pers.) Fr.

Lycoperdon pyriforme (Schaeff.) Pers.

Tremella mesenterica (Retz.) Fr.

Calocera cornea (Batsch) Fr.; *Dacryomyces deliquescens* (Bull.) Duby.

Melampsorium betulinum Kleb.; **Pucciniastrum epilobii* Otth.

Aleuria umbrina Boud.; *Anthracobia melaloma* (A. & S.) Boud.; **Ascobolus carbonarius* Karst.; *Bulgaria inquinans* (Pers.) Fr.; *Coryne sarcoides* (Jacq. ex Fr.) Tul.; *Dasyscypha virginea* (Batsch ex Fr.) Fuckel; *Galactinia praetervisa* (Bres.) Boud. sensu Boudier; **G. proteana* Boud. var. *sparassoides* Boud.; *G. sarrazinii* Boud. sensu Boudier; **Plicaria trachycarpa* (Curr.) Boud. var. *muricata* Grelet.

Cordyceps militaris (L. ex Fr.) Link; *Microsphaera alphitoides* Griff. & Maub. (conidial); *Xylaria hypoxylon* (L. ex Fr.) Grev.

**Isaria farinosa* Fr.

Lycogala epidendrum Fr.; *Trichia persimilis* Karst.

DEREK A. REID.

* New county record. (*) Confirmation of existing record.

† New British record.

Ornithological Section

During the year several ornithological meetings were held in conjunction with the Society's main programme. The Secretary gave a talk in January at Luton on two areas of Scotland he had recently visited and this was followed in February by an interesting account on the activities of Fair Isle Bird Observatory by Mr. R. White. Birds seen on migration and methods of trapping were described and the latter were illustrated by a colour film taken during the visit. The same month a coach trip was run to Eye Brook Reservoir, Leicestershire, where good numbers of ducks and gulls were seen. Particularly noticed was the large party of Goosanders.

The "Dawn Chorus" at Maulden Wood, Clophill, led by Mr. H. Key was unfortunately marred by high winds, which reduced song appreciably, though the Grasshopper Warblers were seen and heard very well.

At the kind invitation of Mr. Oliver Squire a party visited Basmead Manor, Staploe, to see his collection of waterfowl. Some fifty species of ducks and geese were seen at very close quarters and several nests and eggs examined.

In July a coach trip was run to Walberswick, Suffolk, where Bearded Tits, Bitterns and various ducks and waders were seen. A third coach trip was run in September to Dungeness Bird Observatory, Kent. Mr. Axell, the warden, kindly showed us round and gave us a demonstration of trapping and ringing. Later in the afternoon the party went on to the Midrips where among a large variety of waders was a Red-necked Phalarope.

To start the winter activities the Secretary gave a talk in Luton on a visit he had made to Swedish Lapland the previous June. A field meeting over the Warden Hills, Luton, was the final activity of the year. As this coincided with a motor cycle rally few birds were seen as the area was much disturbed.

Apart from these planned meetings several members helped in the Wildfowl Counts and in the surveys of Coots and Nightjars organised by the British Trust for Ornithology. These surveys will be repeated in the coming year and assistance from interested members will be most welcome.

F. C. GRIBBLE.

Annual General Meeting 1958

This, the ELEVENTH ANNUAL GENERAL MEETING of the Society, was again held in the Nature Room of the Training College, The Avenue, Bedford, on Thursday, 28th February, 1958. Mr. F. G. R. Soper presided over the gathering of forty-eight members.

The Chairman called on the Hon. General Secretary, firstly to read the minutes of the previous A.G.M. which were adopted, and then to submit the Report of the Council for 1957. This showed that the steady progress of past years was still being maintained and that membership had remained fairly constant; otherwise the year had not been significant in any way. The Report was unanimously adopted.

In the absence of the Hon. Treasurer, Mr. J. M. Dymond, the Statement of Accounts was submitted from the chair. This showed that the funds of the Society had continued to increase and that the finances of the Society were on a sound basis. Economies had been effected, more particularly in the cost of publishing the Journal, always the main item.

The Report was adopted with an expression of thanks again to Mr. E. Lucas as Hon. Auditor and to Mr. Dymond for his good offices.

As Hon. Editor, Mr. A. W. Guppy then spoke briefly concerning the next issue of the Journal and appealed for a greater variety of contributions from members. No report was received from the Hon. Librarian, Miss E. Proctor, due to illness, but it was known that the Library had now outgrown its storage space—an encouraging sign. Both Mr. Guppy and Miss Proctor were suitably thanked for their untiring services as, too, was Mr. L. A. Speed, the Hon. Programme Secretary, who submitted a satisfactory report on the both indoor meetings and outdoor excursions.

The Reports of the Ornithological and Botanical Sections were once again submitted by the respective Section Secretaries, Messrs. F. C. Gribble and W. Durant, who earned the gratitude of members for the accomplishment of very successful programmes.

All the retiring officials of the Society, including the President, Sir Frederick Mander, M.A., were re-nominated and re-elected by the unanimous wish of the meeting.

Twelve nominations were received to fill the ten vacant seats on the Council. As one of the nominees, Miss A. L. Cooper, had intimated that she might be leaving the county during the summer, and this would mean that another member would have to be co-opted to fill the vacancy, it was unanimously decided by the meeting that no ballot should be held and that the ten retiring members should be elected *en bloc*, the other two being on this occasion co-opted.

To round off the business of the meeting, considerable discussion took place regarding suitable programmes for the future and Dr. J. G. Dony was prompted to make some healthy observations on nature conservation in the county.

As a conclusion to the programme, several members showed a selection of their colour slides on the screen, some depicting recent field excursions.

The Birds of the Bedfordshire Clay Pits

By F. C. GRIBBLE

Most of us in Bedfordshire are aware of the many ways in which our county is exploited for its minerals. Gravel is dredged in many parts of the Ouse valley, and in the south whole hills have been quarried away for chalk. In the west, at Leighton Buzzard, sand is also quarried. More prominent than these excavations, however, are the clay pits of mid-Bedfordshire. Not only are the excavations deeper and of much greater area than those previously mentioned, but the vast array of kiln chimneys indicates their presence from a great distance.

According to their age and situation these clay pits or knott holes, as they are known to the brickmakers, offer several different types of habitat to birds. When excavation first commences, the top soil or overburden overlying the blue Oxford clay is removed, and this latter is then taken out to a depth of between 30 and

80 feet, depending on its quality. As the work proceeds, the overburden is tipped back into the pit in such a manner that a series of parallel ridges is formed. Being of non-porous clay, though not of the quality used for brickmaking, the ridges collect surface drainage water, and, where springs or streams run in, pumps are used to keep the level of this water down. In this early stage the clay pits offer little attraction to birds though one may find the odd Redshank and Common Sandpiper on passage.

The soil being of poor quality, vegetation grows slowly. After two or three years coltsfoot, thistles, teasel and coarse grasses with a few brambles and hawthorn bushes begin to cover the banks, and reed mace, reeds and rushes start to grow in the pools between the ridges. Scrubby willow trees make an appearance, but their rate of growth is small compared with willows in the gravel and sand-pits. Under these conditions one finds more birds arriving both as breeding species and passage migrants. Yellow Wagtails, Skylarks, Meadow Pipits and Partridges nest amongst the coltsfoot whilst Reed Buntings, Reed and Sedge Warblers, Snipe, Redshank, Little Grebe, Moorhen and a few Coot and Mallard are found about the pools. In the crevices of the cliffs at some of the larger pits Stock Doves and Little Owls breed and in the scrubland surrounding the pits Magpies, Carrion Crows, Turtle Doves and Wood Pigeons appear, together with various finches, buntings and warblers, particularly Whitethroats and Lesser Whitethroats.

On spring and autumn migrations Wheatears, Whinchats and Meadow Pipits occur regularly together with the occasional Red-backed and Great Grey Shrikes, Stonechats, Short-Eared Owls and Merlin. Kestrels are a common sight at all seasons of the year; also Pied Wagtails which in one autumn roosted in large numbers in one of the reed beds at Stewartby.

Some of the pits, for instance those at Elstow Hardwick and Brogborough, are likely to remain in a semi-dry state as the amount of surface water draining into them is sufficient only to make up for that lost by evaporation.

When the area is exhausted of its clay and the pit becomes disused it is in some cases filled with refuse. In this case its life as an interesting bird haunt is limited. For a short period the water-loving species remain, until the water is polluted to such an extent that they are forced to leave. Newcomers, however, take over. These are the hordes of Starlings with House Sparrows, Rooks, Jackdaws, Carrion Crows, Black-headed and Herring Gulls. In recent years the latter two species have become quite common in winter on such refuse tips.

Fortunately for the bird watcher, however, there is an alternative to tipping refuse, namely flooding. As the pits are very deep this usually takes some time, especially where there is no stream which can be diverted for this purpose.

During the period of transition to a single large lake a number of changes occur in the resident bird population. I have been fortunate enough to witness these very thoroughly at the large pit at Stewartby where flooding commenced in May, 1955. The many small pools become joined and the number of Coot increase; Great Crested Grebes and Mute Swans take up residence. At Stewartby a few pairs of Tufted Ducks and Pochard remained after wintering on the pit, to breed successfully in both 1956 and 1957. Black-headed Gulls that were also winter visitors stayed on into the spring of 1956 when at least eighteen pairs bred. In the following year the colony, after a bad start when thirty nests were robbed, increased to over one hundred pairs. In these early days of flooding the ridged nature of the pit bottom leads to the formation of many islands especially suitable to the above species as breeding sites. They also provide a feeding ground for migrating waders such as Greenshank, Common Sandpiper, Ringed Plover, Turnstone, Oyster-catcher, Dunlin and Curlew. Common and Black Terns occurred on passage at Stewartby during the autumn of 1956 and in both spring and autumn of the next year. Lesser Black-backed Gulls have been quite frequent visitors and in May, 1957 three Little Gulls were seen. In addition to the breeding ducks the growing area of water has attracted Teal, Wigeon, Shoveler and Garganey. The rise in the water has led to the breeding of fewer Reed Buntings, Reed and Sedge Warblers and Yellow Wagtails as the vegetation has not had time to grow again on the shallow areas, which are very small. Other inhabitants of the islands in 1957 were Rabbits and Brown Rats. The latter were responsible for some of the losses of eggs among the nesting birds.

In the final stage of flooding, when the pit has been transformed to a large lake, such as that at Kempston Hardwick, very few islands remain and the shores, being steep, support little vegetation. Consequently they provide little cover for nesting birds. The odd pairs of Great Crested Grebe, Mute Swans, Mallard and a few Coots and Moorhens remain. The diving ducks are discouraged as breeding species due to the great depth of water which provides much less in the way of vegetation and animal life for food in comparison with shallower waters. The Little Grebe disappears, probably not only due to the lack of nesting sites but also to the appearance of large Pike which take a toll of their numbers. This final stage has not yet been reached at Stewartby, and it will be interesting to study the changes in greater detail, as flooding will reach its final level during 1958.

The numbers of migratory waders, stopping for a rest whilst on passage, are also reduced as the feeding ground is not available. Those most commonly seen are Redshank, Common Sandpipers and Snipe. Terns and gulls however find the new conditions still suitable and are regularly seen.

The great depth of water has one advantage. Owing to this and the constant presence of waves formed by the wind the lakes do not freeze over easily in hard weather. The steep banks also provide a wind-break behind which wildfowl can shelter. In hard weather large numbers of ducks find a haven on the pits, particularly Mallard and Wigeon with a few Teal and Pintail. These rest on during the day and flight out to the surrounding countryside to feed at night. When the shallower waters are frozen the Pochard and Tufted Ducks arrive in larger numbers and Goldeneye, Goosander and Smew are not infrequent visitors. One or two Great Crested Grebes also winter and Black-headed, Common and Herring Gulls use the lakes as a roost.

Other, less usual visitors to the pits have included Bewick's Swan, Ferruginous Duck, Long-tailed Duck, Black and Red Throated Divers, Slavonian Grebe, Cormorant and Great Black-backed Gull.

In the years to come, with the promise of further large areas being turned into lakes, mid-Bedfordshire should provide a great attraction for water fowl of many kinds and offer good opportunities to the bird watcher.

In conclusion I would like to thank the various firms and land owners who have given myself and others permission to visit their property for the purpose of studying birds.

Report of Recorders

FLOWERING PLANTS

I made few excursions into the county this year, and no plant discoveries were reported to me. What appeared to be a promising season for wool adventives proved disappointing, and only seven new species were added. Apart from alien species the only record of note was the hybrid *Senecio squavidus* × *viscosus* by the Recorder from Luton Corporation rubbish tip.

Luton Museum was recently presented by Epsom College with a herbarium made between 1819 and 1823 by A. W. Franks. Most of the specimens were collected from Hertfordshire, but two, *Erica cinerea* from Caddington, 1819, and *Scutellaria galericulata* from Luton Park, 1820, are perhaps the earliest localised specimens from the county.

J. G. DONY.

METEOROLOGY

The year 1957 was remarkable for its unusually mild winter, the temperature during the first three months never falling below 28 deg. F., while there were only sixteen night frosts. This was followed by a chilly and very dry spring, a fine hot June, and a wet cool summer in July, August and September. October produced some belated fine weather, November was entirely free from its traditional fogs, while December had the two coldest periods of the year, both of very short duration. The net result was a rather disappointing year, although the rainfall was lower, and the average temperature higher, than in 1956. Vegetation was naturally unusually forward during the first three months, but was then adversely

RAINFALL FOR 1957

	Amphill	Bedford	Bromham	Cardington	Carlton	Kempston	Silsoe
January	0·94	0·86	0·70	0·74	1·19	0·91	0·91
February	2·68	2·22	2·00	2·45	2·35	2·31	2·61
March	1·38	1·37	1·30	1·48	1·95	1·33	0·99
April	0·16	0·21	0·23	0·21	0·30	0·20	0·21
May	1·14	1·26	1·65	1·23	2·02	1·42	1·10
June	1·41	1·64	1·92	1·48	1·94	1·69	1·03
July	2·82	1·75	2·05	2·81	2·24	2·52	3·19
August	2·84	2·16	1·45	3·14	1·79	2·52	2·69
September	2·61	3·26	3·53	2·77	3·91	3·31	2·14
October	1·63	1·46	1·39	1·62	1·79	1·53	1·67
November	1·74	1·40	1·32	1·57	1·78	1·59	1·38
December	2·37	2·23	2·19	2·09	2·23	2·18	2·12
Totals ...	21·72	19·82	19·73	21·59	23·49	21·51	20·04

Amphill (Mr. Horne)
 Bedford (Mr. Lock)
 Bromham (the writer)

Cardington Aerodrome (Per Mr. Speed)
 Carlton (Col. Battcock)
 Kempston (Mr. Payne)

Silsoe (N.I.A.E., Wrest Park, per Mr. Dunn)

affected by the cold and drought of April and May, and by the hot dry periods in June.

RAINFALL was everywhere slightly below average by from 2 to 10 per cent and there was less variation than usual between stations. There was a certain similarity to 1956, in that the first six months were much drier than the second, although February was unusually wet. At most places September was the wettest month of the year, although at a few, notably Amphill, the August total was highest by a small margin.

Once again, for the fourth successive year, April was easily the driest month; in the twenty-five days from 28th March to 21st April inclusive the total rainfall was only .07 in. The two longest completely dry periods of the year were both in the spring and both of ten days' duration—26th April to 5th May, and 12th to 21st June.

The heaviest day's rain was that of 23rd September with .93 in.

No snow was recorded during the year, and there was sleet on two occasions only, one, surprisingly enough, on 6th May which was exceptionally chilly for the time of year.

THUNDER occurred on fourteen days, six of them in June and four in July. The most violent storm was that on the late evening of 30th June following the intense heat of the two preceding days; .88 in. of rain was measured, representing nearly one-half of the month's total.

The average TEMPERATURES were as follows:

January ...	42.88 deg. F.	July ...	62.82 deg. F.
February ...	41.96	August ...	60.91
March ...	48.96	September ...	55.60
April ...	47.60	October ...	52.33
May ...	51.20	November ...	43.70
June ...	61.22	December ...	40.17
Average for the whole year	50.78 deg. F.
(Average for 1956	47.53 deg. F.)

The exceptionally mild winter is, of course, mainly responsible for this excess of over 3 deg. above that of the previous year. The low figures for May and September will be noted.

The hottest days were those of 28th and 29th June with 89 and 90 deg. respectively; the coldest, 15th December with 34 deg. The coldest nights were those of 1st and 2nd December, both with minima of 21 deg. F.

A display of the AURORA BOREALIS was seen on the evening of 29th September.

A. W. GUPPY.

PALAEONTOLOGY

This year has been an extremely fruitful one with regard to my palaeontological work. The Records of 1956 were, unfortunately, rather lacking in information due to circumstances beyond my control, and the visits to the localities concerned were forced to be made on the spur of the moment, with the result that they were sometimes not as thorough as I would have wished.

The present year, in addition to the established sections, has seen excavations into some unusual beds—several of which have not been exposed before in that particular locality. My visits to the various quarries have been made at regular intervals throughout the year, and this method has proved vastly superior to the necessarily fleeting inspections of previous years.

The many quarry owners—with the exception of the London Brick Company—have been extremely co-operative, and have allowed me access

to the different sections at any time. I am most grateful to them for their consideration and assistance. It is to be greatly regretted that no visits are possible to any of the quarries owned by the L.B.C., as these are the largest Jurassic sections in the county, but permission to pay a visit is steadfastly refused to an individual. A very serious gap will exist, therefore, in the Palaeontological Records of the county for an indefinite period of time.

The year commenced with the Recorder again visiting the quarries at Leighton Buzzard, and studying both the Shenley Limestone and the Gault Clays.

The Shenley Limestone of Munday's Hill Quarry again yielded abundant Brachiopods, and several Lamellibranchs were discovered. A notable find was a small group of the crab *Goniodromites scarabeus*. This crab is not common in the limestone, and the discovery of a group of six, in an area of approximately ten inches square, indicates that they were probably drifted together at this spot by ocean currents. Unfortunately, these specimens occurred in a lenticle of unusual hardness, and extraction was consequently very difficult. Slight damage was unavoidable, therefore, to some of the specimens, and a perfect crab was not obtained.

Several extremely small shells were collected from the limestone, two of them measuring 1.5 mm. in breadth. Identification of all specimens, however, appear in the main list.

The Gault Clay at Billington Road Quarry was visited and a few fossiliferous gritty nodules were discovered. These yielded several gastropods and a few casts of ammonites, mostly fragmentary, but one very well preserved ammonite, *Hoplites aff. paronai*, was picked up loose at the base of the sloping face of clay.

At Chamberlain Barn Quarry the Gault Clay was well exposed and a number of specimens were noted. Prominent among them were many small belemnites *Neohibolites minimus*. Fossiliferous nodules occurred, but rather rarely, and the nodule bed previously stated as being situated immediately below the subsoil (C. V. Wright and C. W. Wright, 1947, Geo. Mag.) was not in evidence at this particular section. Fossils were not unduly common in the Gault at this locality and, apart from the numerous specimens of *Neohibolites minimus*, the yield was disappointing. Several whorl sections of ammonites were obtained, but preservation was generally very poor.

The Lower Gault at Munday's Hill yielded many specimens, mostly from a nodule bed approximately 8 ft. below the base of the Upper Gault. Scattered over the surface of the clay slope were the numerous small belemnites *Neohibolites minimus* which were by far the commonest fossils. The brachiopod *Terebratula biplicata* was found attached to a phosphatic nodule, but was unfortunately rather distorted and crushed. *Inoceramus concentricus* was well in evidence, and various casts of ammonites were observed. The uncoiled Cephalopod *Hamites attenuatus* was also recorded from the nodule bed in the Lower Gault.

The nodule bed at the base of the Upper Gault was extremely fossiliferous. *Neohibolites minimus* were again the commonest fossils, many thousands of which occurred throughout the nodule bed and overlying clay. No doubt many of the Upper Gault specimens were washed down on to the surface of the Lower Gault by rain, but I endeavoured to separate the nodule band fossils by recording only those found *in situ*.

Inoceramus concentricus was again abundant, and also a large number of ammonites (*Anahoplites planus* predominantly), a few of which were in a good state of preservation. These ammonites occurred very commonly, and were mingled with the belemnites over the surface of the complete section.

A considerable number of teeth were also obtained, and also many small vertebrae. These specimens were discovered mainly in the Upper Gault nodule bed, but were also represented in the Lower Gault nodules. Identification, apart from determining them as fish teeth and vertebrae, proved impossible.

As in 1956, presentations of important Shenley Limestone specimens were made during the year, and the Brachiopods *Terebratella menardi* (Lamarck) var. *pterygotos* (Lamplugh & Walker); *Rhynchonella* sp. nov.; and the crab *Goniodromites scarabeus* (Wright) now repose in the collection of the Geological Survey and Museum, South Kensington.

The Lower Chalk at Barton-in-the-Clay was paid a further visit and yielded a few specimens. Worth mentioning (although previously recorded) was the discovery of a very large *Austiniceras austeni*.

These large specimens are seldom obtained complete, as their shape is a disadvantage when blasting or cutting the chalk, and fragments are usually obtained in lieu. This particular ammonite is, however, in a perfect state of preservation and measures $24\frac{1}{2}$ inches in diameter.

Several small lamellibranchs were discovered near the base of the quarry, and a few brachiopods can be put on record as occurring in the chalk near the Bedford-Luton road. Fossils were, however, not common in the quarry, and a full day's searching produced less than a dozen specimens, most of which were indifferently preserved.

The Lower Chalk at Sundon Cement Works, on the other hand, yielded a fairly large number of fossils although different species were relatively infrequent. An interesting observation was made at Sundon this year through the help of the Works Manager—Mr. T. F. Goodwin. A week prior to my visit to the section, a large ammonite *Austiniceras austeni* was observed *in situ*, approximately 40 ft. above the base of the quarry. This was to be left untouched until my visit on the forthcoming Saturday. Unfortunately, a large fall of rock occurred on the Friday, and the specimen was buried under several tons of material. I was pointed out the exact location in the chalk face where the ammonite had protruded however, and this information, when compared with the horizon of *Austiniceras austeni* at Barton, indicates that the lowest strata at Sundon is between 30 and 40 ft. below that of Barton Lime Works.

There is no doubt that the base of the section at Sundon approaches the Chalk Marl horizons. A grey, clayish, softish chalk is in evidence at the lowest levels, and crushed fossils are not uncommon. Ammonites, notably *Schloenbachia varians* and *S. subvarians* occur in the lowest beds, and also the cephalopod *Turrilites tuberculatus* (an Ammonoid resembling a gastropod in general shape). The actual floor of the quarry is now obscured by dumped and drifted chalk, however, and access to the ammonite zone is consequently difficult. Since my last inspection of the chalk some two years ago, a new quarry has been opened at the Sundon Works. This yielded no ammonites other than the *Austiniceras austeni* previously mentioned, as the level is slightly higher than the old pit, and is consequently above the ammonite-bearing stratum. Several brachiopods and lamellibranchs were reported, however, but distortion and crushing of the specimens made identification rather difficult.

A further locality—not previously on record locally—is an abandoned chalk quarry on the east side of the Harlington-Sundon road, approximately one mile south-east of Harlington. This is now a very poor exposure of the Lower Chalk, and no fossils were observed *in situ*, despite diligent searching. A few ammonites *Schloenbachia subvarians* were picked up in the loose rubbly chalk at the base of the slope, however, but the whole area is now overgrown and thickly wooded. Fossils are, therefore, almost unobtainable at this particular locality.

An important Geological record was taken in the vicinity of Bedford during the early part of the year, when a sewer trench was excavated at Bromham, and a deep trench at Clapham for the water authority.

The trench at Clapham, which was situated near the Working Men's Club, was twenty feet deep. It penetrated through six feet of subsoil into the Great Oolite (White Limestone) beneath. The Great Oolite had a thickness of 13 ft. at this point, and 1 ft. of the Upper Estuarine clays was exposed at the base of the trench. The Great Oolite varied in colour from a yellowish-white to blue-black but the beds are, nevertheless, White Limestone.

Due to the rarity of fossil remains, doubt existed regarding the exact horizon of the various strata. My first collection of specimens indicated the Lower Cornbrash Limestone when compared with type specimens. This was hailed as phenomenal, as the thickness of the Lower Cornbrash should not exceed 3 to 4 ft. A return visit to the site, however, yielded a good specimen of *Epithyris* sp. cf. *oxonica*, which conclusively proved the Great Oolite Limestone.

Fossils were, as stated, rare in the formation (which also points to Great Oolite), but after much searching a reasonably satisfactory collection was formed. Unfortunately, the only specimen discovered that would have dated the beds immediately—an Ammonite—was in such a poor state of preservation that identification was not possible.

The sewer trench at Bromham, between the Roman Bridge and "The Swan," was not visited due to lack of knowledge about the work. Much of the excavated material (Great Oolite Limestone) was, however, deposited in Gold Lane. This deposit yielded a very good selection of specimens, most of which were easily seen in the slightly weathered surface of the rock. Identification of the specimens, however, had to be carried out by comparison, as with the Clapham specimens.

Lamellibranchs and Gastropods were the commonest fossils obtained, and a very good specimen of *Pholadomya lirata* was removed from a block of softish limestone.

At the eastern end of the Roman Bridge another excavation was made. In this instance the Great Oolite was again penetrated and an interesting collection of specimens made. The rock at this locality differed slightly in texture and crumbled easily on exposure to the weather, and is almost certainly due to "underground weathering" caused by the annual flooding of the river. The brachiopod *Kallirhynchia concinna* occurred, and also the lamellibranch *Modiolus imbricatus*. The small shell *Placunopsis socialis* was also reasonably common in the material.

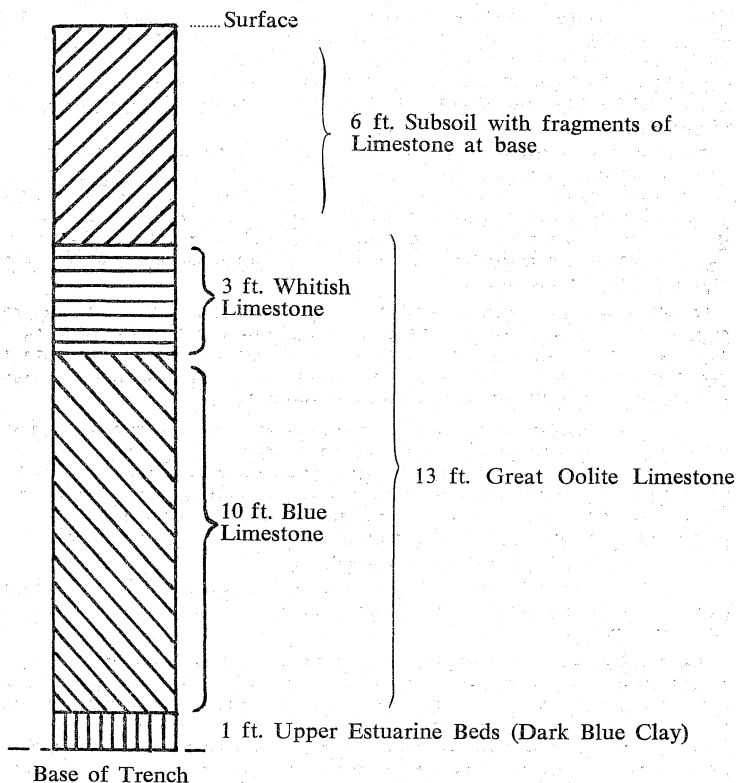
A section diagram of the deep trench, near the Working Men's Club at Clapham, is reproduced on page 20.

A further excavation in the Clapham area, this time in Cornbrash Limestone, was made towards the latter part of the year. In this instance the exposure was made at the site of the new Reservoir on the south side of the Bedford-Clapham road. The excavation was a very large one, and ample material was available for study although the final result, in the number of specimens, was rather disappointing.

The Cornbrash Limestone was at a considerable depth at this point, and was overlaid by various coloured clays including a thin stratum of large limestone fragments. The fauna was fairly prolific, consisting mainly of small oyster shells, and thorough searching through the various deposits yielded most information in the way of specimens.

The predominant discovery was a "shell bed" which consisted almost entirely of these small oysters (*Liostrea hebridica* and *Liostrea aff. subrugulosa*). This bed occurred only in the blue coloured Cornbrash,

and was generally about 1 ft. thick. The shells were mostly crushed and fragmentary, but a few were obtained complete and in a good state of preservation.



SECTION AT CLAPHAM, NEAR WORKING MEN'S CLUB, FEBRUARY, 1957

It is of great interest to observe that this Cornbrash Limestone was not recorded from the 20 ft. deep trench in Clapham, where 13 ft. of Great Oolite Limestone was penetrated. A few specimens that are typical of these Oolites were recorded from both localities, but this is not surprising as, for example, *Modiolus imbricatus* occurs throughout the complete formation. This species was relatively common at both the deep trench and the new Reservoir. The *Globularia* Gastropods were not observed, but an unusual species occurred in the yellowish clays above. This Gastropod (*Nerineid gastropod indet.*) did not occur at the deep trench, as the Cornbrash was entirely absent. The specimens were rather rare, however, but one large cast was obtained and resembles, in general shape, the famous Portland Screw.

The clay assemblage above the Cornbrash appeared to be drift formations or river alluvium, although doubt originally existed as the fossils were extremely poorly preserved. The layers of broken Cornbrash indicated a

deposit of this nature and the specimens obtained confirmed this as, condensed into the few feet of clay, were fossils representing the Cornbrash below.

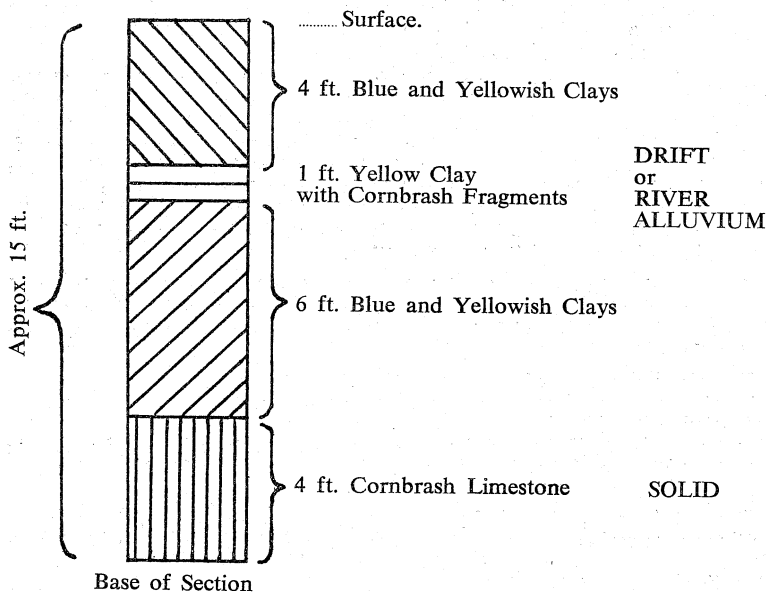
The Cornbrash Limestone was also difficult to determine as, in both colour and composition, it resembled the Great Oolite. One individual specimen of *Nucleolites* was obtained, however, and conclusively proved Cornbrash, as this fossil is definitely diagnostic of horizon.

All specimens from the locality were obtained from the tip of clay and rock at the rear of the deepest excavation and, consequently, exact depths at which they occurred were not available. The section reproduced below is accurate to within a few inches, however, but I was given to understand that the rock had been drilled and the charges inserted prior to blasting. An excursion into the excavation would not, therefore, have had much material value and may possibly have prevented the preparation of this, and all future, Annual Reports.

The diagram of the section, which was drawn from the closest available distance, is perfectly accurate for all practical purposes.

To conclude, there is no doubt that interesting changes of strata occur in the Clapham area. A series of bore holes sunk in the neighbourhood would be of great interest, and would yield much useful and interesting information. Perhaps, at some future date, further excavations will be made in this area and a close watch on events will undoubtedly be well worth the trouble.

The exposure at the Reservoir site was, therefore, of great interest, and I am indebted to the agent of James Miller Ltd. who kindly consented to my work on the site.



SECTION AT NEW RESERVOIR, BEDFORD-CLAPHAM ROAD
(SOUTH SIDE), SEPTEMBER, 1957

Another important (and very seldom seen) Jurassic deposit was exposed at Ampthill Railway Cutting. Contractors had been working in the cutting and, in addition to various work on the shoulders, the inside slopes had been scraped clean of the vegetation that has obscured the clays for many years.

The Corallian Beds at the mouth of the tunnel (on the Bedford side) were well exposed after this scraping but were unfortunately compacted due to the weight of the machinery employed. This condition resulted in lack of fossils and, although a few fragments were obtained, they were ground and crushed by the scraper and identification was impossible.

On the shoulder of the cutting, however, the excavated clay and rock had been dumped to form a large spoil heap, and a selection of specimens was collected. The most notable finds were fragments of large ammonites (*Perisphinctids*), up to 18 inches in diameter when complete, and large specimens of the lamellibranch *Gryphaea dilatata*. Some small ammonites also occurred sparingly in a layer of yellowish clay.

All these specimens were, unfortunately, mixed together in the spoil heap and the exact depths that the species occurred *in situ* was not determinable. However, the specimens recorded give an indication of the species that occur in the Corallian Beds at this section which is of great importance, as the cutting will again soon be overgrown.

The small ammonites (*Amoeboceras*) were not well preserved and, of the several species found, very few can be identified with reasonable accuracy out of the collection. This is most unfortunate, and the state of affairs arises mainly from the fact that the majority of the specimens are nuclei of larger ones. This condition results in the loss of the outer whorls, and the consequent loss of the main identifiable features. Several visits to the locality, spread over a period of some months, yielded sufficient fragments to carry out comparisons, and I am most grateful to the British Museum staff for undertaking this most difficult task.

Belemnites were not common, but fragments of large specimens, *Cylindroteuthis sp.* were observed occasionally, and several extremely well-preserved specimens of *Hibolites hastatus* were picked up in the soft, weathered clay. The tubes of the Annelid worm *Serpula sulcata* occurred, several of them on the surfaces of various shells (notably the large *Gryphaea dilatata*) and a few in the soft clay. These worm tubes were not as common in the deposit as one would expect (the Ampthill Clay is noted for fossils encrusted with worm tubes), but a satisfactory selection was obtained over the period of several visits to the cutting.

A few spine fragments (radioles) of the Sea Urchins *Cidaris sp.* and *Paracidaris florigemma* were collected from the weathered surface of the clay, and also a few ossicles of *Isocrinus sp.* These were, however, rare in the deposit.

From a palaeontological aspect, therefore, the exposure was of great interest as it is the first for many years, and the following specimens were presented, after identification, to the British Museum (Natural History): *Gryphaea dilatata* (J. Sowerby); *Plicatula weymouthiana* (Damon); *Serpula sulcata* (J. Sowerby); *Hibolites hastatus* and *Paracidaris florigemma* (Phillips).

It must be remembered, however, that the fossils recorded from the cutting may possibly be proper to two deposits (both Corallian)—the Oakley Beds, and the overlying Ampthill Clay. The total thickness of the Corallian Beds at this point is 61 ft. (see *Arkell, 1933*)—the major part of which is, undoubtedly, Ampthill Clay. For the purpose of the Records, however, I am treating the whole section as Corallian, to avoid any accidental use of Oakley Beds fossils in the Ampthill Clay section of the

reports. The method of clearing the cutting slopes, and the fact that zoning was impossible due to this practice, necessitates the use of the collective term "Corallian".

To compare the fauna of Ampthill Cutting, a visit was made to a further section of Corallian Beds at Sandy. The old Brickworks at Sandy was, in the past, extremely rich in fossil remains, and it was hoped that a collection comparable with the Ampthill one could be obtained.

The quarry at Sandy is now, unfortunately, hopelessly overgrown with vegetation. Fossils are rare (with the exception of numerous badly weathered *Gryphaea*). Diligent searching revealed a few specimens and, taking the condition of the pit into consideration, and the fact that most of the specimens obtained had weathered for many years, the total collection was remarkable.

It was impossible to determine the thickness of the Corallian Beds at this locality, as the quarry is flooded in the centre. Approximately 30 ft. of the section is attainable, however, but clay slip has destroyed all hope of zoning.

Scattered fossils were obtained, including *Gryphaea dilatata* and *Exogyra nana*. Two badly-weathered Ammonites—*Cardioceras* sp. were discovered half-way up the clay slope, and one very well-preserved specimen of the Brachiopod *Rhynchonelloidea* cf. *thurmanni* was picked up in the loose clay at the base of the slope. The lowest available beds yielded a few belemnites: (?) *Cylindroteuthis* sp. and *Hibolites* cf. *hastatus* and a small number of crinoid ossicles (*Isocrinus* sp.) were also obtained from this horizon.

It is to be regretted that the whole section has fallen into such a state since abandoned but, meagre though the results of the visit are, the yield of specimens will be extremely valuable when the section is completely unattainable in the not so distant future.

A deposit of Upper Cornbrash Limestone was well exposed in the Milton Ernest area, and a large number of fossils were collected. This exposure of rock occurred in a new ditch, approximately 200 yds. south of the turning to the Royal Aircraft Establishment, and was situated on the east side of the Bedford-Rushden road.

The ditch was the result of road works, and a good section was accessible, approximately 100 yds. in length.

The limestone at this point was 10 ft. below the surface, and was capped by several inches of weathered rock of a clayish texture containing many fragments of shells, mostly lamellibranchs. Below this stratum, the rock assumed a yellow colour, and passed into the typical hard blue rock at the base of the ditch. The total vertical section of limestone visible was generally about 1 ft. 6 ins., with an occasional 2 ft. exposed, and the majority of fossils occurred in the upper half of the deposit.

The fossils were generally rather poor regarding preservation, but a few good specimens were obtained. Two well-preserved brachiopods were taken from the yellow rock, but brachiopods were rare. Lamellibranchs, on the other hand, were extremely prolific, and a large number of specimens were collected. Occasional worm tubes (*Serpula* sp.) were observed on the larger shells, but the most important zoning fossils—the Ammonites—were not in evidence, and an intensive search proved that none were available at this particular section.

Undoubtedly, therefore, although the section is not of great size, it is worth recording as it will soon be overgrown, and no other exposures of this limestone occur in the area since the type locality, at Bletsoe, is now filled with rubbish and is completely inaccessible.

A large number of interesting discoveries were made, during the later months, on the site of the new Brickhill Estate at Bedford. The most outstanding finds were quantities of a rubbly rock (the Kellaways Rock) packed with various fossils. This rock occurred at various points on the Estate and was exposed at a large number of excavations. A trench approximately 8 ft. deep for the water supply yielded many fragments of this deposit, and a large collection of typical Kellaways Rock fossils were obtained.

The yellowish clays surrounding the rock were not particularly fossiliferous, and I am inclined to think that rotted rock fragments were responsible for the few scattered fossils that I did obtain from the clays. Small fragments of Kellaways Rock were in evidence whenever fossil specimens were found, except for occasional discoveries of broken belemnites and large *Gryphaea* sp. The rock fragments, which varied in size up to 4 ft. in diameter were, on the other hand, absolutely packed with fossils.

Belemnites and Lamellibranchs were extremely prolific, and occasional ammonites were also represented. The whole formation, however, indicated a Drift deposit, and the scattered fragments of Kellaways Rock occurring at various depths tended to confirm this view. Normally, of course, the Kellaways Rock forms the separating stratum between the Oxford Clay (above) and the Kellaways Clay (beneath). At the Brickhill site, unfortunately, the dark blue clay beneath the rock was not exposed in great detail but, after collecting and sorting through as much of the material as possible, the fossils obtained tended to confirm the Kellaways Clay. If this is proved, then the Kellaways Rock is a Solid deposit, the overlying clays being Drift.

Before a definite verdict can be given, however, it will be necessary to obtain fuller evidence from trenches, etc., and a close watch on the area should clarify the position. The Estate will be under construction for many months, therefore I propose to bulk the complete record of discoveries and include them in the 1958 Annual Report. This will enable the situation to be explored fully, and reduce the chances of any errors in dating the strata as, by the end of 1958, a check on all the excavations over the complete Estate will probably have been brought to a successful conclusion. Deeper excavations than those at the present time should yield the necessary fossils that will definitely determine the underlying clay.

Before I commence the 1957 faunal records, I should like to explain that in the headings of the sections, i.e. *Gastropoda*, *Brachiopoda*, etc., I am not confining myself to any hard and fast ruling. Great confusion would almost certainly result through splitting up the Phylums into Classes, Orders, and Sub-orders.

To explain this briefly, the Phylum Mollusca includes Lamellibranchs and Cephalopods amongst its five classes. I have shown these two Classes as headings in the records. Also as a section heading is the Decapoda—but this is a Sub-order, of the Order Dibranchia, of the Class Cephalopoda. In reality, therefore, (a) Crabs *could* be included under Cephalopoda. Alternatively (b) I could split up the complete Phylum into Classes, Orders, and Sub-orders.

For the purpose of these Annual Records, however, I intend to compromise. To take (a) as a working principle would cause great confusion if the Classes, Orders, etc. were unfamiliar to the reader. (b) would be more satisfactory, but would take up most of the present size of *The Bedfordshire Naturalist*. Also, an indeterminable species could not be allocated into any particular Class—thus causing a breakdown of the system.

The headings of the sections in the Annual Reports are, therefore, the most self-explanatory ones—regardless of Phylums, Classes, Orders and Sub-orders. This system, although a rather doubtful procedure from a

classification point of view will, I feel sure, be eminently satisfactory when recording individual specimens.

The following were recorded from the localities shown, and are additions to the previous lists.

Billington Road Quarry, Leighton Buzzard (Lower Greensand and Gault Clay)

Cephalopoda: *Hoplites aff. paronai* (Spath), *Leymeriella sp. cf. tardefurcata* (d'Orbigny), *Neohibolites minimus* (Lister).

Lamellibranchia: *Inoceramus concentricus* (Parkinson).

Gastropoda: *Pleurotomaria sp.*, *Gyrodes genti* (J. Sowerby).

Chamberlain Barn Quarry, Leighton Buzzard (Lower Greensand and Gault Clay)

Cephalopoda: *Neohibolites minimus* (Lister), *Hoplites sp.*

Lamellibranchia: *Inoceramus concentricus* (Parkinson).

Scaphopoda: *Fissidentalium decussatum* (J. Sowerby).

Mundays Hill Quarry, Leighton Buzzard (Shenley Limestone)

Brachiopoda: *Terebratula Shenleyensis* (Lamplugh & Walker), *Terebratella menardi* (Lamarck) var. *pterygotos* (Lamplugh & Walker), *Rhynchonella sp. cf. mirabilis* (Lamplugh & Walker), *Kingena newtonii* (Lamplugh & Walker), *Terebratula sp. cf. dutempleana* (d'Orbigny), *Magas orthiformis* (d'Archiac), *Rhynchonella sp. nov.*

Lamellibranchia: *Neithea quinquecostata* (J. de C. Sowerby), *Septifer lineatus* (J. de C. Sowerby), *Anomia laevigata* (J. de C. Sowerby), *Oxytoma seminudum* (Dames), *Chlamys robinaldinus* (d'Orbigny), *Pseudolimea gaultina* (Woods).

Decapoda: *Goniodromites scarabeus* (Wright).

Double Arches Quarry, Leighton Buzzard (Shenley Limestone)

Brachiopoda: *Terebratella menardi cf. var.*

Lamellibranchia: *Oxytoma seminudum* (Dames).

Mundays Hill Quarry, Leighton Buzzard (Lower Gault)

Brachiopoda: *Terebratula biplicata*.

Cephalopoda: *Hoplites dentatus* (J. Sowerby), *Neohibolites minimus* (Lister), *Eutrephoceras clementinum* (d'Orbigny), *Hamites attenuatus* (J. Sowerby).

Lamellibranchia: *Inoceramus concentricus* (Parkinson).

Crinoidea: *Isocrinus sp.*

Pisces: *Vertebrae and teeth indet.*

Anthozoa: *Trochocyathus sp.*

Mundays Hill Quarry, Leighton Buzzard (Upper Gault)

Cephalopoda: *Anahoplites planus* (Mantell), *Euhoplites aff. alphalautus* (Spath), *Hamites intermedius* (J. Sowerby), *Hysterocheras varicosum* (J. de C. Sowerby), *Euhoplites trapezoidalis* (Spath), *Euhoplites inornatus* (Spath), *Neohibolites minimus* (Lister), *Euhoplites opalinus* (Spath), *Hysterocheras orbigny* (Spath), *Euhoplites proboscideus* (Spath).

Lamellibranchia: *Inoceramus concentricus* (Parkinson), *Inoceramus sulcatus* (Parkinson), *Nucula ovata* (Mantell).

Gastropoda: (?) *Confusiscala dupiniana* (d'Orbigny).

Scaphopoda: *Fissidentalium decussatum* (J. Sowerby).

Barton-in-the-Clay (Lower Chalk)

Brachiopoda: *Rhynchonella mantelliana*, *Concinnithyris sp.*

Cephalopoda: *Schloenbachia sp.*

Lamellibranchia: *Inoceramus sp.*, *Ostrea canaliculata*.

Echinoidea: *Holaster sp.*, *Conulus subrotundus* (Mantell).

Sundon (Lower Chalk and Chalk Marl).

Brachiopoda: *Terebratula* sp., *Rhynchonella* sp., "*Rhynchonella*" *martini* (Mantell), "*Rhynchonella*" *dimidiata* (J. Sowerby), *Terebratulina striata* (Wahl).

Cephalopoda: *Turrilites tuberculatus* (Bosc), *Schloenbachia* cf. *intermedia* (Mantell), *Schloenbachia* aff. *subvarians* (Spath) trans to *S. subtuberculata* (Sharpe) sp., *Schloenbachia varians* (J. Sowerby), *Schloenbachia subvarians* (Spath).

Lamellibranchia: *Plicatula inflata* (J. de C. Sowerby), *Inoceramus crippsi* (Mantell), *Plagiostoma globosa* (J. de C. Sowerby), *Ostrea vesicularis* (Lamarck).

Gastropoda: *Solarium* sp., *Anchura* (*Perissoptera*) cf. *mantelli* (Gardner).

Pisces: *Vertebra* indet.

Porifera: *Plocoscyphia labrosa* (T. Smith), (?) *Polyjerea*.

Abandoned Quarry East of Harlington-Sundon Road (Lower Chalk)

Cephalopoda: *Schloenbachia subvarians* (Spath).

Clapham, Bedford (Near Working Men's Club) (Great Oolite Limestone)

Brachiopoda: *Epithyris* sp. cf. *oxonica* (Arkell), (?) *Cererithyris* sp., *Terebratula* sp.

Cephalopoda: *Indet ammonite*.

Lamellibranchia: *Pseudolimea duplicata* (J. de C. Sowerby), *Modiolus* sp., *Mactromya varicosa* (J. Sowerby), *Myophorella* (*Vaugonia*) *moretoni* (Morris & Lycett), *Modiolus* sp. cf. *bipartitus* (J. Sowerby), *Modiolus imbricatus* (J. Sowerby), *Aniscardia* (*Antiquicyprina*) sp., *Lima* (*Plagiostoma*) *subcardiformis*.

Gastropoda: *Globularia* sp., *Globularia* sp. cf. *morrisi* (Cox & Arkell).

Bromham, Bedford (West side of Roman Bridge) (Great Oolite Limestone)

Brachiopoda: *Terebratula* sp.

Lamellibranchia: *Pholadomya lirata* (J. Sowerby), *Modiolus imbricatus* (J. Sowerby), *Aniscardia* (*Antiquicyprina*) *loweana* (Morris & Lycett), *Isocyprina* sp.

Gastropoda: *Globularia* sp.

Pisces: *Strophodus magnus* (L. Agassiz) (Tooth).

Bromham, Bedford (East side of Roman Bridge) (Great Oolite Limestone)

Brachiopoda: *Kallirhynchia concinna*.

Lamellibranchia: *Placunopsis socialis* (Morris & Lycett), *Aniscardia* sp., *Liostraea hebridica* (Forbes), *Modiolus* sp., *Modiolus* sp. cf. *bipartitus* (J. Sowerby).

Clapham, Bedford (New Reservoir on South side of road) (Cornbrash Limestone)

Brachiopoda: *Terebratula* sp.

Lamellibranchia: *Liostraea hebridica* (Forbes), *Modiolus imbricatus* (J. Sowerby), *Liostraea* aff. *subrugulosa* (Morris & Lycett), *Chlamys* (*Radulopecten*) *vagens* (J. de C. Sowerby), *Aniscardia* (*Antiquicyprina*) *loweana* (Morris & Lycett), *Chlamys* (*Radulopecten*) sp., (?) *Isocyprina* sp., *Pleuromya uniformis* (J. Sowerby), *Gresslya* sp., *Exogyra nana* (J. Sowerby).

Gastropoda: *Nerineid gastropods*. *Indet*.

Echinoidea: *Nucleolites* sp.

Annelida: *Serpula* sp., *Serpula tetragona* (J. de C. Sowerby).

Amphill Cutting (Bedford side of tunnel) (Corrallian Beds)

Cephalopoda: *Perisphinctes* (*Perisphinctes*) *varicosatus* (Buckland), *Decipia* sp., *Amoeboceras* (*Prionodoceras*) sp., *Perisphinctes* sp., *Amoeboceras* (*Prionodoceras*) sp. cf. *serratum*, *Cylindroteuthis* sp., *Hecticoceras* (*Brightia*) sp., *Hibolites hastatus*, *Decipia decipiens*.

Lamellibranchia: *Thracia depressa*, *Gryphaea dilatata* (J. Sowerby), *Ostrea sp.*, *Nucula sp.*, *Entolium demissum* (Phillips), *Oxytoma expansa* (Phillips), *Grammatodon concinnus* (Phillips), *Plicatula weymouthiana* (Damon), *Exogyra nana* (J. Sowerby), *Lopha gregaria* (J. Sowerby), *Lima sp.*, *Chlamys sp. cf. nattheimensis* (De Loriol), *Chlamys sp. cf. blyensis* (De Loriol), *Chlamys fibrosa* (J. Sowerby), *Chlamys splendens* (Dollfus).

Gastropoda: *Indet. sp.*

Crinoidea: *Isocrinus sp.*

Echinoidea: *Cidaris sp.*, *Paracidaris florigemma* (Phillips).

Annelida: *Serpula sulcata* (J. Sowerby), *Serpula sp. cf. gordialis* (Schloth), *Hamulus tetragona* (J. Sowerby).

Sandy (Abandoned Brickworks Quarry) (Corallian Beds)

Brachiopoda: *Rhynchonelloidea cf. thurmanni* (Voltz).

Cephalopoda: *Hibolites sp. cf. hastatus*, *Cardioceras sp.*, (?) *Cylindroteuthis sp.*

Lamellibranchia: *Gryphaea dilatata* (J. Sowerby), *Exogyra nana* (J. Sowerby), *Ostrea sp.*

Gastropoda: *Indet. sp.*

Crinoidea: *Isocrinus sp.*

Annelida: *Serpula sp.*

Milton Ernest (Upper Cornbrash)

Brachiopoda: *Rhynchonelloidella sp.*, *Burmhynchia cf. leedsii* (Walker), *Microthyridina lagenalis* (Schlotheim), *Microthyridina sp.*

Lamellibranchia: *Lima (Plagiostoma) cf. subrigidula* (Schlippe), *Modiolus bipartitus* (J. Sowerby), *Modiolus sp.*, *Liostrea undosa* (Phillips), *Pseudolimea duplicata* (J. de C. Sowerby), *Trigonia cassiope* (Lycett) ex d'Orbigny, *Trigonia elongata* (J. de C. Sowerby) var. *angustata* (Lycett), *Ctenostreon rugosum* (W. M. Smith), *Myophorella scarburgensis* (Lycett).

Annelida: *Serpula grandis* (Goldfuss), *Serpula sp.*

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P. J. SMART.

LEPIDOPTERA

Entomologically, 1957 must go on record as a disappointing year; there were many cold nights in April and May when we ran our mercury vapour lamp without any captures whatever, and it was also a late season and a poor one for butterflies in spite of the hot weather of June and early July. The only really first-class outing was one to the Breckland on the 29th of June when we took over 70 species of moths at light.

The lamp was run throughout the year at Cardington Road, but only a fraction of the species of the previous year was recorded; *Triphaena pronuba* (Linn.), the Yellow Underwing, which was such a pest in 1956 was actually scarce, and the Maple Prominent, *Lophopteryx cucullina* (Schiff.), which caused so much excitement the previous year did not put in an appearance at all. The mothing night at Bromham Park when the Soper family were our hosts was once more a complete failure, and what again made it so unfortunate, the attendance was a large one. We also set up the lamp at Mr. Lamb's house in Blunham on the 27th of July but the

night was very cold, and little of interest was recorded. We did have one or two fair outings outside the county, but many ended in cold disappointment.

On the credit side there are several species of moths not previously recorded which made their appearance in 1957, and there was also a very gratifying flight of some of the *Nymphalidae* in September and October in spite of the fact that the August week-end was the last real hot weather of the year. Lt.-Col. Young of Pavenham who has supplied me with some very interesting records refers to the Red Admiral, *Vanessa atalanta* (Linn.), as very plentiful in September and October, and he also saw one Painted Lady, *Vanessa cardui* (Linn.), in September. In Mr. Barnes' orchard and garden at Cardington Road both species and also Commas, *Polygonia c-album* (Linn.), were to be seen on the dahlias in late summer, and towards autumn could be found sluggish and sated on the juice of fallen fruit.

Outside the county, but perhaps of general interest, is the indication that the renewed Swallow Tail colony at Wicken Fen appears to be progressing satisfactorily; we saw eight there on a short visit on the 30th of June. Doubtless, the reflooding of Adventurers Fen will be beneficial to this species. Also, on the Isle of Wight, the M.V. lamp was run at Cowes for a fortnight with quite satisfying captures, so it may be that the Midlands and the North fared worse in a season which most entomologists apparently found rather barren.

The records of butterflies and moths which follow should be read in conjunction with the list for 1956, and my original butterfly records. Only where there is anything of significance to report are there any repetitions. Recorders are as listed below, or acknowledged by name in the report itself: KEW = K. E. West, BBW = B. B. West, DMJ = Dr. D. M. Jeffereys, HEB = Dr. H. E. Bellringer.

Maniola jurtina (Linn.), Meadow Brown: Much less common than usual, a fact borne out by Lt.-Col. Young of Pavenham. Entirely absent in some of its haunts, particularly for some reason in the river meadows.

Aphantopus hyperanthus (Linn.), Ringlet: More plentiful than usual in contrast to the last species, and seen in a variety of new habitats, the form at Willington approaching var. *arete*.

Polyommatus icarus (Rott.), Common Blue: Lt.-Col. Young reports this as very scarce at Pavenham. This accords with our findings throughout the county. I can recall few years in which this species was so reduced in numbers.

Celastrina argiolus (Linn.), Holly Blue: Three of the spring brood seen by Lt.-Col. Young at Pavenham. This is the first of this species that I have seen or heard of for two years; it has become a rare insect.

Sphinx ligustri (Linn.), Privet Hawk: In comparison with the previous season, a very disappointing year. One taken at light and a few larvæ seen in Bedford. In 1956 it was plentiful.

Deilephila porcellus (Linn.), Small Elephant Hawk: Recorded by Mr. Greenwood and family of Luton from the Sharpshoe district. My last record in the county was for Bromham in 1942; it cannot be called a common insect.

Cerura furcula (Linn.), Sallow Kitten: One specimen, Cardington Road, July. Possibly a willow feeder in the town, though perhaps attracted to Sallow in garden. (BBW).

Macrothylacia rubi (Linn.), Fox: Larvæ on Totternhoe Knolls, early May. Pupation was doubtless delayed by the cold weather of April. The males of this species can be seen in midsummer careering madly over the open downland. Commonest on Warden and Galley Hills, Streatley. (BBW).

Eilema griseola (Hübner), var. *flava* (Haw.), The Dingy Footman, pale form: Cardington Road, Bedford. The more usual *griseola* form was taken outside the county. (KEW, BBW).

Eilema lurideola (Zinck), Common Footman: Cardington Road, Bedford: Taken also in previous years at Burdleys Manor Farm, Stagsden. (BBW).

Craniophora ligustri (Fabr.), Crown: One at Cardington Road in August; this was a very good season for this species, it was taken plentifully on the Isle of Wight, and also on the Breck. (BBW).

Lycophotia varia (Vill.), True Lover's Knot: One specimen taken at Cardington Road in July; this is an extraordinary record since the species is a lover of open heathland, and a heather feeder. (BBW).

Peridroma porphyrea (Schiff.), Pearly Underwing: One specimen, Cardington Road, September. (KEW).

Agrotis puta (Hübner), Shuttle-Shaped Dart: Cardington Road, July. As a lover of marshy meadows this must obviously breed by the river; a form approaching *radiola* (Stephens) is the commonest. (KEW, BBW).

Hadena cucubali (Fuessl.), Campion Coronet: August, Cardington Road; one must assume that these have fed on horticultural campions, although a few colonies of *Lychnis flos-cuculi* survive in the meadows beyond the Dame Alice Harpur School. (KEW).

Hadena serena (Fabr.), Broad-barred White Gothic: One specimen at Cardington Road in August. This is common as larvæ on Hawk's-Beard in the water meadows. (KEW, BBW).

Procus strigilis (Clerck.), Marbled Minor: July, Cardington Road. (BBW).

Apamea ophiogramma (Esp.), Double Lobed: Essentially an eastern counties insect, common in July and August. (KEW).

Apamea crenata (Hufn.), Cloud-bordered Brindle: A grass-feeding species, frequent at light at Cardington Road. (KEW).

Apamea lithoxylea (Fabr.), Common Light Arches: This is the commonest of the 'Arches' genus in the garden at Cardington Road, and also in the Chaucer Road district when the lamp is run in Dr. Jeffrey's garden. (DMJ, KEW).

Apamea sublustris (Esp.), Reddish Light Arches: Two specimens at light, Cardington Road. (BBW).

Hydraecia micacea (Esp.), Rosy Ear: One specimen, Cardington Road, July; a coastal species which possibly is restricted to the river valley. I have taken it at Houghton in Huntingdonshire. (BBW).

Meristis trigrammica (Hufn.), Treble Line Wainscot: One specimen, Cardington Road, June. (BBW).

Orthosia gracilis (Fabr.), Powdered Quaker: This was abundant at Cardington Road on one night in May; formerly it was only once taken in Dr. Jeffrey's garden at Chaucer Road in 1955. (DMJ, BBW).

Jaspidia pygarga (Hufn.), Marbled White Spot: One specimen in June, Cardington Road. Since 'South' gives the foodplant as *Molinia caerulea* the nearest locality for which is north of Cooper's Hill, Ampthill, it would be interesting to know the Bedford foodplant. (BBW).

Scoliopteryx libatrix (Linn.), Herald: August, Cardington Road, one specimen. We formerly recorded this species at Wootton, in Dr. H. Bellringer's garden, in 1955; it is not as common as one would expect. (HEB, BBW).

Comibaena pustulata (Hufn.), Blotched Emerald: July, Cardington Road, one specimen. We have taken it commonly in Northamptonshire in Salcey Forest. As an oakwood species its presence in Bedford is interesting; it may breed in the St. John's Glebe. (BBW).

Operophtera brumata (Linn.), Common Winter Moth: On a day's fishing at Woodcraft Wood, Stevington, on 27th December, the males of this species were abundant towards evening, both by the river and along field hedges. (KEW, BBW).

Earophila badiata (Hübner), Shoulder Stripe: April, Cardington Road. (KEW).

Biston strataria (Hufn.), Oak Brindled Beauty: This has been reported from Wootton by Dr. and Mrs. Bellringer, and it is intended to test the size of the colony with M.V. lamp in 1958. The only other record is from Mr. Dennis Elliott in 1953, at Stagsden. (HEB).

Apeira syringaria (Linn.), Lilac Beauty: One specimen from Wootton, recorders as above. This is a woodland species in the Midlands, feeding mainly on Honeysuckle; we have found the larvæ in the past at Odell. (HEB).

Zygaena filipendulae (Linn.) and *hippocrepidis* (Steph.), Narrow-Bordered Six-spot Burnet and Broad-Bordered Six-spot Burnet: We consider that both species have been identified in spite of the contention that *hippocrepidis* is a hybrid. The former is a chalk species common on Totternhoe Knolls, the latter a meadow-land species in the north of the county. (KEW, BBW).

Zygaena lonicerae (Esp.), Narrow-Bordered Five-Spot Burnet: Lane to Swineshead Wood, and on earthworks of Willington Danish Docks. (BBW).

BERNARD B. WEST.

ODONATA

The Hairy Dragonfly (*Brachytron pratense*) was seen at Willington Staunch pool in June but was not captured. This is the first sighting of this insect by your recorder in the county, and an attempt will be made in 1958 to make a capture for confirmation of the identification. It is recorded for neighbouring counties with the exception of Herts. and Bucks. which indicates an association with the Midland rivers at their deeper and more mature stage. We have taken it plentifully in the past at Wicken Fen and on the Broads. *Aeshna grandis* and *Aeshna cyanea* were quite plentiful along the Ouse, but the autumnal flight of *Aeshna mixta* was very limited, the most seen having been at Oakley bridge in September.

The Red-Eyed Damsel-fly (*Erythromma najas*) is now abundant in some of the quiet backwaters at Willington (these are, actually, partly in Renhold parish). In one stretch which is covered with lily leaves over thirty were concentrated in comparative amity. The females only join this all-male concentration, in our opinion, in the late afternoon, when egg-laying takes place; there seems to be little mating or egg-laying during the day. The female is often totally submerged by the male and forced by him to lay her eggs quite a long way down stems or submerged leaves.

The two forms '*violacea*' and '*rufescens*' of *Ishnura elegans* were both noted during the summer, the latter on Longholme, Bedford, and the former at Willington.

K. E. WEST.

BIRDS

Bird movement during 1957 followed much to the usual pattern and apart from the late departure of a Swallow at Pavenham in November, migration dates appeared to be average.

No reports gave evidence of the unusually large parties of tits, etc. seen in other parts of the country during the Autumn and reported in *British Birds*, but an article in the *Luton News* on the local increase of attacks on milk bottles by such species may have been related.

Several of the more unusual species were recorded during the year; namely, Red-throated Diver, Long-tailed Duck, Little Gull and Hoopoe. The various gravel workings in the county are producing year by year an increasing variety of interesting records more especially among the waders, and the Little Ringed Plover appears to be increasing its distribution. Parties of gulls are now a common feature in the Bedfordshire countryside throughout the year, numbers being greater in the autumn and winter. Although Black-headed Gulls turned up at Dunstable sewage farm in the spring, breeding did not take place again there. It is interesting to note that a pair of these birds nested by the River Ouse near Oakley House.

The main focus of interest during the year was the large flooded claypit at Stewartby. The rising water had produced a variety of islands, some steep sided, others comparatively flat. While a few were only a few square yards in area, others were quite large. On some there was a growth of grass and/or scrubby plants including bushes and a few willows, yet others were almost bare or sparsely clothed with coltsfoot. In addition, there were a few isolated and partially submerged bushes. It was realised that the input of water in one further winter would submerge almost all of these islands, so as much investigation as possible was given to the population of the several species nesting at the pit.

Resulting from this it was found that several pairs of Pochard and Tufted Duck reared broods, Coot were plentiful and Great Crested Grebe reached a new high level for the county. The islands still had isolated colonies of rabbits and at least one pair of Stock Doves nested in the rabbit holes. More than a hundred pairs of Black-headed Gulls nested with limited success. After the first nests had been robbed, the gulls moved to other islands surrounded by deep water which were only accessible by boat. In one small group of these the concentration was very great—in fact, one narrow strip, at its widest not more than 5-6 yards and in length about 30 yards contained the following nests: Two of Great Crested Grebe, one of Little Grebe, one of Pochard, one of Coot and thirty-four of Black-headed Gull.

The pool also attracted during the season such interesting species as Black Tern, Smew and the Red-throated Diver, Long-tailed Duck and Little Gull already mentioned.

Reports were received with gratitude from the following members and are acknowledged in the text by initials:

TWA = T. W. J. Abbis; PSB = P. S. Bates; HC = Harry Cole; JFL = I. J. N. Ferguson-Lees; FCG = F. C. Gribble; JFH = J. F. Harper; ARJ = A. R. Jenkins; MO = More than 4 observers; RKN = R. K. Norman; CSP = C. S. Payne; WKP = W. E. K. Piercy; REC = Recorder of Birds (Henry A. S. Key); SWR = S. W. Rodell; MPR = M. P. Roseveare; CFT = C. F. Tebbutt; DRW = D. and R. J. White; MW = Michael Wortley; EVY = Lt.-Col. E. V. Young.

Localities: BSF = Bedford Sewage Farm; DSF = Dunstable Sewage Farm; GP = Gravel Pit; ChP = Chalk Pit; CIP = Clay Pit; L = lake.

Numbers refer to the B.O.U. Check-List (1952).

The following species were also recorded during the year in about average numbers and distribution:

93. Sparrow-Hawk; 110. Kestrel; 115. Red-legged Partridge; 116. Partridge; 118. Pheasant; 126. Moorhen; 234. Wood-Pigeon; 241. Barn-Owl; 246. Little Owl; 247. Tawny Owl; 258. Kingfisher; 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; 303. Song-Thrush; 325. Robin; 364.

Goldcrest ; 371. Hedge-Sparrow ; 373. Meadow-Pipit ; 380. Pied Wagtail ; 392. Greenfinch ; 393. Goldfinch ; 401. Bullfinch ; 409. Yellow Hammer ; 410. Corn-Bunting ; 421. Reed-Bunting ; 424. House-Sparrow.

1. BLACK-THROATED DIVER: One remained at Arlesey CIP, 23rd Jan.-13th Feb. It was seen on several occasions in good light at close range and from the full description received, appeared to be an immature bird. On one occasion it was heard to wail. (AKJ and FCG).

4. RED-THROATED DIVER: Almost certainly the same 'oiled' bird that was recorded from Eastwood's CIP in Dec. '56, turned up at Stewartby CIP where it remained alive till the end of April '57. Its remains were found during the summer on one of the islands. (MO).

5. GREAT CRESTED GREBE: 1957 was an outstanding year for this species in Bedfordshire, mainly due to the extended flooding of Stewartby CIP, where a few birds were present throughout the year. More than 20 nests were found here ; some were successful, some abandoned through various causes such as water level and probable disturbance by other species and there were undoubtedly several 'repeats'. The whole situation was very confused, but it was felt that up to 15 pairs nested. FCG counted a maximum of 46 birds on 11th August, of which 24 were juveniles. Successful breeding was also recorded at Coronation CIP—1 pair ; Southill L—7 pairs ; Felmersham GP—2 pairs ; Battlesden L—1 pair and Luton Hoo L—2 pairs, while birds were present during the summer, but breeding not proved, at Harrold GP, Wyboston GP, Leighton Buzzard GP and Houghton Regis ChP. (MO).

A first winter juvenile was picked up exhausted at Basmead Manor, Staploe, 8th Dec. (FCG).

7. SLAVONIAN GREBE: One bird in full breeding plumage, Stewartby CIP, 19th April. (MPR).

8. LITTLE GREBE: Distribution normal at most usual stations. No outstanding numbers seen during the winter months. The chief breeding haunt was again Stewartby CIP with a conservative estimate of 6 pairs. (MO).

28. CORMORANT: Single birds seen, Stewartby CIP, 7th and 22nd April, and probably the same bird at BSF on the latter date. (MPR and FCG).

30. HERON: No census was taken during the year but 13 nests were reported at Southill L. Other sites occupied were Bromham, Tempsford, Sandy and Leighton Buzzard.

45. MALLARD: Recorded from all the usual localities. The largest winter flocks were—c. 200, Southill L and Stewartby CIP in Jan. and up to c. 500 on occasions at the latter station Nov. and Dec.

c. 200 were here also 18th Aug. and c. 200 Luton Hoo L 21st Aug. (MO).

46. TEAL: No report of breeding. Largest winter parties at the following haunts: Southill L—c. 100, 3rd Jan.; Luton Hoo L—c. 40, Jan.-Feb.; Stewartby CIP—c. 200, 23rd Jan.

Numbers were very small at BSF towards the end of the year due to the comparatively dry condition of the meadows. (MO).

47. GARGANEY: 1 male and 3 females, Barker's Lane GP, Bedford, 31st March. (FCG and MPR).

50. WIGEON: Up to 50, Stewartby CIP, Jan.-Feb. and up to 60 here in Dec. c. 60 Eastwood's CIP, 27th Jan. (MO).

52. PINTAIL: 2 pairs Stewartby CIP, 17th Feb. (D. White and MW).

53. SHOVELER: 3 females and 1 male, Southill L, 3rd Jan. (MW and DRW). 1 pair Stewartby CIP, 15th April, increasing to 5 males and 4 females, 20th April and 1 pair remaining till 4th May—no reports of breeding. 3 birds here also 19th Aug. and a pair, 27th Dec. (CSP, DRW and FCG).

55. SCAUP: 4, Southill L, 3rd Feb. (WKP).

56. TUFTED DUCK: The largest winter parties were recorded at the following waters: Southill L—c. 50, 3rd Jan.; Henlow GP—42, 13th Jan.; Luton Hoo L—51, 5th Jan.; Woburn L—38, 19th Feb.; Stewartby CIP—c. 40, 24th March. Small numbers were recorded from several other localities. (MO). 2 pairs bred at Wyboston GP; 1 pair at Southill L and at least 6 pairs at Stewartby CIP. Pairs were also present at Cityfields Farm GP, Henlow and Battlesden L during the breeding season but there was no report of nesting at either station.

57. POCHARD: The largest winter parties were: Luton Hoo L—up to 55, Jan.-May; Southill L—c. 40, 3rd Jan.; Stewartby CIP—up to 25 present Jan.-March and similar numbers by early Dec. On the 15th of that month there was a sudden increase to c. 200 birds (80% ducks) with a maximum of 230 (accurate count by DRW) on 27th. A few birds also recorded at several other waters.

A pair bred at Battlesden L and 2 pairs at Stewartby CIP. (MO).

60. GOLDEN-EYE: 1 male, Stewartby CIP—13th Jan. and 1 or 2 females there 18th Jan.-7th April. (FCG, MPR and MW).

61. LONG-TAILED DUCK: 1, Stewartby CIP, 24th Nov.-21st Dec. (FCG, CSP and MPR). The following description was taken on 8th Dec.:

Head: Crown—dark brown with white mark on nape; Face—white with dark brown cheek-patch and a dusky brown area round bill.

Neck: White, being abruptly terminated by smoky brown of upper breast.

Lower breast and all under parts: White to undertail coverts.

Mantle and tail: Dark brown, with light area in wings.

Bill: Short and pale brown-grey in colour.

White under-tail coverts showed well as the bird dived owing to the action of half-opening wings. It remained submerged on several occasions for over a minute.

(This bird was thought to be an adult female in winter plumage, but detailed observation on 16th March '58 suggested an immature drake coming into summer plumage.)

70. GOOSANDER: 2 females at Stewartby CIP, 17th Jan., 1 remaining till 10th Feb. (FCG, MPR, DRW and MW).

71. SMEW: All records from Stewartby CIP: 4 females, 17th-18th Jan. and 2 on 27th Jan.; 2 drakes, 3rd Feb. and single males and females till 3rd March.

2 drakes, 27th Dec. and 1 duck on 29th. (FCG, MPR, MW and DRW).

73. SHELD-DUCK: 6 birds reported by Mr. Ferriman at BSF, 18th-21st Feb.; 2, Stewartby CIP, 28th April. (MPR).

74. GREY GESE: 4 (probably 'pink-footed'), BSF, 27th Jan. (MPR).

75. GREYLAG-GOOSE: 2 on meadows at Harrold, 21st April. (REC, FCG and MPR).

82. CANADA GOOSE: 1, grazing on stubble near Wyboston GP, 28th Sept. (FCG).

84. MUTE SWAN: Up to about 100 birds were again present on the Bedford Borough stretch of the River Ouse during winter months.

91. BUZZARD: 1, Southill L, 3rd Jan.; 1, Luton Hoo, 5th Jan.-Feb. and another here, 11th-13th Sept. (MW and DRW). 3 flew over Millbrook Wood, 23rd March. (TWA).

A pair remained all through spring and summer in a wood just outside the western boundary of the county but there was no report of nesting. (CFT).

104. HOBBY: 1, at the heath, Heath and Reach, 9th June. (DRW). (2 other birds—probably of this species from data received, which was not conclusive—flew over Stewartby CIP, 1st Sept. 1 was seen to stoop at a Swallow some 150 feet below it). (MW).

117. QUAIL: 1 male heard calling at Flitwick Road, Maulden, during mid-June. (TWA).

1956 Record: Apparently a similar occurrence took place at about the same time and in the same locality.

120. WATER-RAIL: 1, East Hyde, 3rd March. (D. White). 1 heard calling at Flitwick Moor, 10th Feb. (FCG). 3 birds, 1 a juvenile, were seen here, 17th Aug., when there was a certain amount of combat and calling. Loud calling was also heard from the peat bog, 12th Oct. (TWA).

127. COOT: Largest winter parties: Southill L—100-150, 3rd Jan.; Luton Hoo L—150-200, 1st Jan. and Stewartby CIP—c. 80, 27th Jan. Small number present and a few pairs bred on several other waters, the main station being Stewartby CIP; c. 80 birds were seen here, 28th July. (MO).

133. LAPWING: The largest winter flock was one of c. 3,000 birds in Marston Valley, 10th Feb. (FCG). The first summer flocking was at Luton Hoo, 28th July, with a party of c. 70. (DRW).

A fledgling ringed at Tempsford by CFT, 31st May, 1954, was recovered at Livorno (Leghorn) Italy, 27th Feb., 1957.

134. RINGED PLOVER: 1, Stewartby CIP, 28th April and 2, 11th Aug. 1, Wyboston GP, 1st June. (FCG and MPR).

135. LITTLE RINGED PLOVER: First arrivals: 1 and then 2, BSF, 4th and 8th April and 2nd May; 2, Harrold GP, 21st April and 1, Stewartby CIP, 3rd May. 3 pairs bred at a gravel pit in North Beds. and 7 juveniles were seen on 14th July. (FCG and MPR).

A nest with 4 eggs was found just outside the county boundary near Leighton Buzzard, 9th June, and the agitated condition of the adult birds on 23rd seemed to indicate that the eggs had hatched. (DRW).

2 birds were seen at another sand pit in this area (this time in Beds.) on 12th June and the number had increased to 4 adults on 16th. A nest containing 1 egg was found on the latter date and there were 4 eggs on 30th. 2 pairs—1 with 2 flying young—were present on 23rd. On 21st July no birds or eggs could be found. (HC).

140. GOLDEN PLOVER: Many flocks of c. 50 birds were reported from several localities throughout the county in the early months of the year and again in Dec. The largest parties were c. 100-150 at Cardington, Meppershall and Kempston Hardwick in Jan.-Feb. and c. 500 near Clifton during Feb. (MO).

First autumn arrival, Luton, 13th Sept. and c. 30 by 20th. (HC).

143. TURNSTONE: 2, Wyboston GP, 1st June—1 being in full breeding plumage. (FCG).

145. COMMON SNIBE: Distribution about normal. The status at the two main haunts was: BSF—a maximum of c. 150 on 24th Feb. and c. 100 28th Dec. Very few remained during the summer. (FCG and MPR).

DSF—maximum of c. 70, 17th Jan. and c. 50-60, 8th Dec. Position in summer not stated. (HC and DRW).

147. JACK SNIBE: 1, BSF, 15th Jan. (MPR). 1, DSF, 4th-17th Jan. (DRW).

148. WOODCOCK: Many records of single birds flushed during winter months. 'Roding' seen at Flitwick Moor, Rowney Warren, Flitwick Wood and Millbrook Wood. Several nests found in the Greensand area. (MO).

150. CURLEW: 1, Stewartby CIP, 1st. Jan. (SCP). Party flying eastwards over Henlow calling after dark, 16th March (RKN) and one of 8-9 birds seen in the dusk over Stewartby, 30th April (may have been Curlew or Whimbrel).

2, BSF, 7th July and 21, Stewartby, 28th Aug. (MPR). This latter is the largest party that can be found recorded in the county.

Another party calling over Luton, about 23rd Sept. (Via JFH).

151. WHIMBREL: 1, calling over Kempston, after dark, 11th Oct. (CSP).

154. BLACK-TAILED GODWIT: 1, BSF, 7th-21st July. (MPR, FCG and Miss G. Gribble).

155. BAR-TAILED GODWIT: 1 shot from a party of c. 8 flying N.E. at Colesden, during the first week in May. (CFT).

156. GREEN SANDPIPER: The situation at the main haunts was:

BSF—2 birds wintered here. 5 birds were present on 10th March, decreasing to 2 on 20th and the last 1, 23rd April. 1 was present, 20th July and 18th Aug.; 6, 25th Aug. and up to 5 during Dec. (FCG and MPR).

DSF—Singly on 19th and 28th April and 24th July; 2 here 1st Aug. and up to 4 till 11th Sept. (HC and DRW).

Ickleford—Last winter birds seen 15th April. First arrivals, 3, 7th July. Numbers increased to 8 by 13th with a maximum of 9, 11th Aug.; then a gradual decrease. (ARJ).

Also 3, Stewartby CIP, 19th Aug. (DRW).

157. WOOD-SANDPIPER: 1, gravel pit, Barker's Lane, Bedford, 30th May. (FCG). 1, DSF, 11th Aug. (HC).

159. COMMON SANDPIPER: Numbers present at the main haunts were:

BSF—1, 31st July and 27th Aug. (MPR).

DSF—Up to 4, 24th July-11th Sept. and last bird on 15th. (DRW and HC).

Stewartby CIP—1, 19th and 30th April; 1 or 2, 26th July-22nd Sept. (MPR, FCG and DRW).

Wyboston GP: 3, 14th July increasing to 6, 5th Aug. (MPR and FCG).

Single birds also recorded at Kempston, 8th July and Luton Hoo L, 21st Aug. (CSP and DRW), and 2, Houghton Regis ChP, 5th Aug. (HC).

161. REDSHANK:

BSF—First arrivals 3, 24th Feb., an unusually early date; up to 15 from March with 2 pairs remaining to breed. Single birds present, 24th Nov. and 28th Dec. (FCG and MPR).

DSF—First arrivals 3, 10th March; 10 here by 2nd April. 3-4 pairs stayed, leaving from the end of June. No proof of breeding but an agitated pair on 23rd June may have had young. (DRW).

Stewartby CIP—1 bird here 24th Nov. Up to 15 birds present from March-July. 2 pairs bred. (FCG and MPR). 1 pair also bred at Wyboston GP. (FCG).

5 birds seen also at Heath and Reach GP—12th June. (DRW).

162. SPOTTED REDSHANK: 1, DSF, 12th May was in summer plumage. All characters were noted and the call-note was heard. (R. White and HC).

165. GREENSHANK: 1 or 2, BSF, 7th July-25th Aug.; 1, Wyboston GP, 5th-10th Aug.; 1, Stewartby CIP, 27th Aug. and 22nd Sept. (FCG and MPR).

171. LITTLE STINT: 1, BSF, 27th Sept. (MPR).

178. DUNLIN: 1, DSF, 2nd April; 1, Stewartby CIP, 7th April; 1, Heath and Reach, 14th July; 1, BSF, 27th-28th Aug. and 3 here, 22nd Dec. (FCG, MPR, HC and DRW).

184. RUFF: 2, Stewartby CIP, 7th April; 2, Wyboston GP, 1st June; single males, BSF, 20th-21st July, 21st-27th Aug. and 16th Sept.; up to 5 (3 Ruff and 2 Reeve), DSF, 21st-29th Sept. (FGR, MPR, HC and DRW).

198. GREATER BLACK-BACKED GULL: 1, Arlesey Pits, 27th Jan. and 3 flying over this area towards N.E., 3rd Feb. (ARJ); 1, Sundon Rubbish Dump, 28th Jan. (MW); 1, over Luton, flying towards N.E., 14th Dec. (HC) and one immature bird, Stewartby CIP, 15th Dec. (FCG and MPR).

199. LESSER BLACK-BACKED GULL: 2 flying N.E. over Felmersham, 9th Feb.; 1 flying S.W. over Renhold, 22nd Feb.; 1 or 2, Sundon Dump, 13th-26th Feb.; 8, flying N.E. over BSF, 22nd April; 2 immature, Stewartby CIP, 3rd May; up to 3, BSF, 4th-11th Aug. (2 adults were of the Scandinavian race); up to 3 birds (some immature) at Stewartby CIP during July-Sept.; 3, DSF, flying southwards, 11th Sept.; 2 over Luton, 15th Sept.; 1, BSF (Scandinavian race), 28th Dec. (MO).

200. HERRING GULL: Small parties reported from several areas during winter months. In Jan.-Feb. parties of up to 100 birds at Luton, Houghton Regis and Sundon dumps and Galley Hill, Luton area. c. 15, BSF, 9th Feb. and c. 30 here 22nd Dec. 1 or 2 at Stewartby CIP in Dec.

201. COMMON GULL: 1, Radwell, 9th Feb.; c. 6, Blows Down, Dunstable, 6th March; up to 10, Houghton Regis ChP, Jan.-March and odd birds in Luton area during this period; c. 45, of which many were immature birds, along the Downs near Dagnall, 14th April; after 29th Oct. parties were seen daily around Luton (FCG, DRW and HC).

207. LITTLE GULL: Up to 3 (2 adults and 1 immature), Stewartby CIP, 28th-30th April. (FCG and MPR).

208. BLACK-HEADED GULL: Small parties seen feeding in the countryside—more particularly in the north of the county—at most times of the year, the largest recorded being: c. 500, New Mill End, Luton, 14th Jan.; up to 160 (10th March) at Houghton Regis ChP, Jan.-March; c. 150, Luton Hoo, 3rd Feb.; c. 150, BSF, 9th Feb. and up to 500 here in late Dec. Present at DSF up to 23rd June when 15 adults were present but these did not nest.

Birds attempted to nest at Coronation CIP but were robbed.

At Stewartby CIP the nesting colony developed as follows: c. 75 birds were present, 24th March and numbers had increased to c. 150 by 15th April. 21 nests were found on islands at the west side of the pit, 28th April, but these early attempts were robbed. The birds then re-nested on more isolated islands and the colony grew to over 100 nests. The majority of the nests were on firm ground but some were on partially submerged patches of brambles and bushes. A proportion of the eggs disappeared and not less than 50 per cent hatched but less than 100 chicks reached full growth. Predation by Crows was very evident and other causes were probably rats and pike(?). c. 200 birds were present on 18th Aug. (FCG, REC and DRW).

A pair nested by the River Ouse near Oakley House. (A. G. Oldfield).

By the end of Dec. a roost of c. 500 birds was being formed nightly on the pit.

211. KITTIWAKE: 1 adult found dead, BSF, 24th Feb. (FCG and MPR). An immature bird was seen at Arlesey CIP, 24th-26th Jan. and 2nd Feb. by ARJ. (Full details supplied).

212. BLACK TERN: 1, Stewartby CIP, 23rd May; 1, 19th Aug.; 13, 22nd Sept. and 6 or 7 on 29th. (FCG).

217/8. COMMON/ARCTIC TERN: Stewartby CIP—10, 28th April (at least 1 Common Tern among them) and 1 on the following day; 2, 3rd May and 1 on 5th; 1, 11th Aug. flew southwards and 4, 18th Aug., flew across pit from N.E.; 7, 22nd Sept., flew off N.W. (FCG, MPR and DRW).

217. COMMON TERN: 2, Stewartby CIP, 23rd May (CSP); 1 there 11th Aug. (MPR).

218. ARCTIC TERN: 1, BSF, 4th Aug. (MPR).

232. STOCK-DOVE: Distribution normal. 1 nest with 2 eggs found in rabbit hole on one of the islands at Stewartby CIP. (JFL).

235. TURTLE-DOVE: First arrivals (2) seen Radwell, 28th April. (Mrs. F. G. R. Soper). Last bird seen, Stewartby, 19th Aug. (DRW).

237. CUCKOO: First heard at Whipsnade, 19th April. (PSB). Last emigrants (juveniles), BSF and DSF, 18th Aug. (FCG and DRW). Some observers remarked that the species appeared to be scarcer this season.

248. LONG-EARED OWL: At least 2 adults and 4 young at Fairy Hole, Hexton, 9th June—just over the county boundary in Herts.

252. NIGHTJAR: Birds seen or heard at Luton Hoo, Wavendon Heath, Clophill and Rowney Warren.

255. SWIFT: First arrival, over Bedford, 23rd April (MPR); a few were reported at Houghton Regis and Stewartby, 3rd May, and described as plentiful at Kempston on 10th. (MO).

Last emigrants, 3, Luton, 10th Sept. (HC).

261. HOOPOE: 1 seen feeding on the lawn at Willbury Hotel on Herts.-Beds. border by two local grammar school boys, at a range of 20 feet, 18th Sept. Excellent description supplied. (Via ARJ).

264. LESSER SPOTTED WOODPECKER: No definite report of any seen or heard during the year.

271. WOODLARK: Male, singing at Rowney Warren, 31st May. (FCG). 2 (Pair?), near Woburn Sands, 8th June. (HC).

272. SKYLARK: Flocks of more than 100 birds reported near Stewartby, Warden Hills and Eaton Bray in Nov.-Dec. (FCG and HC).
274. SWALLOW: First immigrants, Kempston, 3rd April (MPR) and Southill on 6th (FCG). The next wave was in the Caddington-Dunstable-Whipsnade area 18th-20th April. (PSB and DRW).
1 bird was seen at Pavenham, 7th Nov., by Lt.-Col. E. V. Young—a very late date. A decrease was reported this year from several areas.
276. HOUSE-MARTIN: First arrivals—several over Whipsnade, 18th April. (PSB). Last emigrants—several over Kempston, 20th Oct. (CSP).
277. SAND-MARTIN: First arrivals: single birds seen over Henlow, 20th March and at BSF on 24th. (RKN and MPR).
The large colony at Tingrith Sand Pit was destroyed by excavations for the new motor highway.
293. WILLOW-TIT: 1, seen and heard, Luton Hoo L, 21st Jan. (MW).
296. NUTHATCH: Seen and heard at Southill and Aspley Guise. (FCG). Nesting reported at Flitwick Manor, Millbrook Woods and Steppingley Wood. (TWA). Nests found at Luton Hoo and Stockwood Park, Luton. (DRW).
302. FIELDFARE: No very large winter flocks reported.
Last emigrants seen at Stockwood Park, Luton and Pegsden, 19th April. (DRW and FCG).
First arrival over Luton, 12th Oct. (HC).
304. REDWING: Comparatively few birds were reported in the north of the county, Jan.-March. A roost in thorn bushes just below Barton Cutting was found in Jan. to contain at least 400. (DRW).
First winter arrivals heard after dark over Caddington, 12th Oct. (HC).
308. BLACKBIRD: Distribution—normal. 1 ringed in Luton, 25th March, 1954, was recovered within 100 yards, 7th Feb., 1957. (SWR).
311. WHEATEAR: First arrivals: 5, Blows Down, Dunstable, 17th March and 2 near Tythe on 21st; single males at Dunstable, 19th April; Whipsnade the next day and Sundon, 1st May.
Return passage—1, Stondon, 27th July; 1, Dunstable, 1st Aug.; 4 Warden Hills, 13th Aug.; 1, BSF, on 18th; 1, DSF, 1st Sept. and 4, Dunstable Golf Course, on the same day. (MO).
According to Mr. T. L. Whitmore a number was seen in the Thurleigh area in early June, which would suggest the possibility of breeding. (Via FCG).
317. STONECHAT: 1 male, Stewartby CIP, 21st Dec. (MPR).
318. WHINCHAT: First arrival, female, Luton, 5th May. (SWR).
2 pairs were located near the Warden Hills in June and 2 pairs nested near Streatley—one nest destroyed by predator.
Single birds reported in Aug. at BSF, Luton, Stewartby CIP and up to 7, DSF, in Aug., but no proof of breeding in any of these localities. (MO).
320. REDSTART: First arrivals, males, Gregory Wood, Luton, 19th April and Rowney Warren, on the following day. (DRW and HC).
Pairs present in June at Rowney Warren, and a wood near Stagsden, where at the latter station 1 or 2 young were reared.
Males also heard in July at Aspley Heath and Wavenden Heath.
322. NIGHTINGALE: First heard, Odell Wood and Pegsden, 21st April. (JFH and DRW).

327. GRASSHOPPER-WARBLER: First heard on rough ground near Stewartby CIP, 20th April (FCG and MPR). Birds also heard at Flitwick Moor; Pennyfather's Hills, Clophill; Maulden Wood and Dunstable Downs. (TWA, FCG, JFH and HC).

R. White heard a further bird, 28th July, near Bell's Copse, Woburn Sands (a new locality) and TWA at Flitwick Wood (also a new haunt).

333. REED-WARBLER: First report—2 pairs engaged in nest building, BSF, 9th May. (FCG).

337. SEDGE-WARBLER: First arrivals heard singing—Felmersham, 15th April; BSF and Oakley, both on 19th. (FCG and MPR).

Largest emigrant—DSF, 11th Sept. (DRW).

343. BLACKCAP: First arrivals heard—Goldington, 20th April and Pegsdon on the following day. (CSP and DRW).

346. GARDEN-WARBLER: Only reports received were of pairs seen at Gregory Wood and Palmers Scrubs, Woburn in June. (DRW).

347. WHITETHROAT: First arrivals seen—Pegsdon and BSF, 19th April (FCG and MPR) and at Kempston, Stewartby, Rowney Warren and Luton on the following day. (CSP, FCG and HC).

Last birds seen BSF, 18th Aug. (FCG).

348. LESSER WHITETHROAT: First arrival seen and heard, Luton, 20th April (HC). Also reported from Felmersham, Whipsnade, Galley Hill, Luton and Leighton Buzzard. (FCG, PSB and DRW).

354. WILLOW-WARBLER: First arrivals seen and heard Luton and Luton Hoo, 31st March. (HC and DRW).

Heard at Southill, 3rd April and Rowney Warren on 6th. (MPR and FCG).

356. CHIFFCHAFF: First arrivals heard and seen, Luton, 22nd March (D. Stanbridge) and at Streatley, Flitwick Wood, Flitwick Moor and Millbrook Wood on the following day (JFH and TWA). Last heard, Luton, 15th Sept. (DRW).

357. WOOD-WARBLER: A blank year. Several members visited the few known haunts but no bird was heard.

366. SPOTTED FLYCATCHER: First seen, Whipsnade, 20th May. (PSB). Last seen, Dunstable, 18th Aug. (DRW).

376. TREE-PIPIT: First seen and heard, Pegsdon, 21st April. (DRW). Seen also at Heath and Reach and Woburn Sands in June.

380(b). WHITE WAGTAIL: 1, Henlow, 2nd April (RKN) and 1 male, BSF, 11th-14th April. (FCG).

381. GREY WAGTAIL: Single birds at Southill L, Stewartby CIP and Luton Hoo L, Jan.-Feb.; 1 juvenile, Luton Hoo L, 28th July; 1, DSF, 6th Sept. and 3 here 8th Dec.; 1, Flitwick Moor, 12th Oct. and 1, Staploe, 22nd Dec. (MO).

382. YELLOW WAGTAIL: First arrivals, 2 males, BSF, 6th April—numbers increased to 28 males by 16th and the first female was seen on 21st. (FCG and MPR). New localities recorded were Leighton Buzzard Gravel Pit and Heath and Reach Sand Pit, and a pair was seen feeding young in a wheat field at Maulden, 12th June. (DRW and TWA). Last bird seen, DSF, 22nd Sept. (DRW).

388. RED-BACKED SHRIKE: First arrival, Galley Hill, Luton, 26th May. (JFH). Pairs seen during the breeding season at Blows Down, Galley Hill, Warden Hill and Skimpot (all Luton area). Some birds were seen later with young and of two nests found one was abandoned and the other disappeared. The majority of these localities are now very public. (RW, SWR, JFH and DRW).

1 immature bird also seen at Arlesey, 17th Aug. (HC). Last bird seen at Clifton, 8th Sept. (WKP).

389. STARLING: A pale, sandy coloured bird was seen at Streatley, 10th Jan. (DRW).

Most reports refer to the considerable flights of birds during the winter months to the very large roosts sited at (a) Horn Wood, Bozeat, Northants.—drawing birds from the north of the county (extreme southern limit found to be small numbers from the Maulden-Clophill area) and (b) Cheverells Green, near Studham (in Herts.) taking the majority of the birds from South Beds.

391. HAWFINCH: Excellent views of a male displaying to its male, Luton Hoo, 23rd April. (DRW). The male was seen to feed the female, and with its body horizontal on a branch and with its tail fanned and wings stiffly half-open, it rocked from side to side uttering a low 'tik-tik-tik'. The female also swayed on its perch about two feet away.

4 young seen at Whipsnade, 11th May. (PSB).

1 bird reported seen at Lower Stondon early in the year. (Via RKN).

394. SISKIN: c. 8, Flitwick Manor, 16th Feb. (TWA); 2 juveniles, Pavenham, 30th Sept. (EVY); c. 20 feeding on alder cones, Woburn Park, 8th Dec. (HC).

395. LINNET: Party of c. 200 near Pegsdon, 28th Sept. (HC).

397. REDPOLL: 2, Clophill, 20th Jan. (DRW); 1, Flitwick, 10th Feb. (FCG) and 1, Woburn Sands, 22nd April. (HC).

404. CROSSBILL: PSB reports seeing small flocks at Whipsnade during most of the year.

1 female, Aspley Guise, 24th March, seen near the garden of Mr. S. Lynn. Mr. Full reported to FCG that up to the beginning of Jan. '57, 12-15 birds were seen in the area; shortly afterwards they split up probably to pair for breeding. A party of juveniles was seen in his larch trees at the end of May.

407. CHAFFINCH: A party of c. 500 birds was seen at BSF during Dec. (FCG).

408. BRAMBLING: Largest party recorded during first part of the year was one of c. 100 birds feeding among beeches in Luton Hoo-East Hyde area. Other flocks reported near Caddington, Harlington, Flitwick Moor and Legrave Marsh, the last emigrants (6) being seen on the Electrolux Field, Luton, 24th April. (HC, DRW and SWR).

First winter visitor, Bedford, 17th Nov. and 2, Flitwick Moor, on 24th. (MPR and HC).

Also c. 10, BSF, 12th Dec. (FCG).

425. TREE-SPARROW: Largest winter flocks were again reported at BSF where c. 300 had assembled by mid-Oct., increasing to c. 500-600 by 28th Dec. (FCG).

HENRY A. S. KEY.

MAMMALS

What a pity it is that more members do not evince more interest in the wild animals of the county! Nothing of outstanding interest was brought to my attention during the year but I repeat that it is the earnest wish of the Recorder that details of even the most trivial observations should be recorded and reported. Only in this way will a true picture of the distribution of the many species be built up.

Badgers received rather more attention, due to several being killed on the roads at night. The body of a heavy male, notified by Mr. D. W. Elliott of Stagsden, was photographed, while interesting measurements and other morphological details of a large female picked up at Hazelwood Lane Hill, Ampthill, were supplied by Mr. T. H. Gardner of Ampthill. This species is still being very much disturbed through various causes, and a number of old setts have been deserted.

Rabbits are still endeavouring to increase their numbers and hares are still remaining very plentiful. There has been evidence here and there of the recurrence of myxomatosis in the former species.

Mr. D. W. Elliott was delighted to report once again several harvest mice on his farm. It now looks as if this species has become established and members should make suitable enquiries among farmer friends to discover the extent of the distribution. It is felt that this must be greater than is at present apparent.

Finally, news of otters along the numerous county waterways is earnestly sought. It is here that those members who are keen fishermen can contact fellow-sportsmen, keepers and water-bailiffs in order that some idea can be obtained of the present status of this animal in Bedfordshire.

HENRY A. S. KEY.

FISHES

The main item of interest was the occurrence of a European Catfish or Wels (*Silurus glanis*) in the Ouse at Kempston on 17th September, 1957. An angler having caught a fish with which he was not familiar decided it was a lamprey and took it home to eat. Finding it not to his liking, he threw it away but fortunately reported his catch to a local fishing-tackle dealer who told me of it. An immediate search for the decomposing remains was successful and identity established. It had originally weighed 1 lb. 8½ ozs.

One of the lakes at Woburn Park was stocked with these fish last century and specimens over half a hundredweight were recorded there, whilst others were introduced by Lord Rothschild into one of the reservoirs at Tring. These reservoirs feed the Grand Junction Canal in the Leighton Buzzard area where small specimens have been taken from time to time, but the occurrence of one so many miles downstream is of interest. Possibly it came down in a flood.

F. G. R. SOPER.

Notes and Observations

BADGERS AT BROMHAM

The ease with which items of wild life interest can escape notice came before me in the autumn of 1957. A fellow villager to whom I gave a lift one morning, asked if I had seen Mrs. A's badger. I admitted I had not and set about making enquiries. Mrs. A occupies a house fronting the main Bedford-Northampton road and the garden at rear develops into a rough overgrown orchard leading down to the banks of a stream. It

seems that one morning she found a half-grown badger beneath the floor of an outbuilding, its head having been crushed by a limestone block under which it had been burrowing and which had apparently slipped. The appearance of the animal occasioned her no surprise; she said that she and her husband knew that there always had been badgers living in the rough undergrowth at the bottom of the garden by the stream but that they had never told anyone about it.

Badgers are often unjustly accused of various crimes but the fact that a colony can live out their unobtrusive and blameless lives for years within a hundred yards or so of Bromham "Swan" unknown to practically the whole human community in the district is certainly worthy of note and a tribute to their harmlessness.

F. G. R. SOPER.

MIGRATION OF REDWINGS

One of the most interesting occurrences we have noted since we came to Bromham six years ago has been the departure of the redwings each spring. These birds with the fieldfares appear each autumn and stay with us in varying numbers all through the winter. Some years we can count on seeing a redwing in the garden every day of the winter but in others, we may have a spell of some weeks without seeing one at all. By the second week in March they start collecting in the Park, the flocks steadily increasing in numbers until the end of the month. There is obvious excitement, the flocks are noisy and snatches of pure song are often heard. Our dawn chorus during the first week of April contains an appreciable volume of redwing song, clearly distinguishable from the dominant notes of native blackbirds and thrushes. The date of the actual departure does not vary greatly and seems to be unaffected by the severity or mildness of the winter or whether it is a late or early spring. They usually go between the 8th and 10th of April and their departure last year was witnessed. The birds had collected every evening in ever-increasing numbers in a group of trees and a casual passer-by might have been forgiven for thinking they were a noisy flock of starlings settling down to roost. The setting sun sank lower and then, as it went, the redwings rose in a cloud and after circling round once or twice, set off east down the river and disappeared into the gathering darkness. Next morning, not a redwing was to be seen.

F. & D. SOPER.

UNUSUAL BEHAVIOUR OF WOOD-PIGEONS

On the 16th June I was along the side of the spinney in Kempston Park when my pointer dog put up a wood-pigeon (*Columba palumbus*) from the long grass. Instead of flying off in the usual manner it flew straight across the Park over the short grass at a height of only one foot from the ground, similar to a common sandpiper flying over water. It kept at this height until it got to a tree seventy yards away. I was puzzled at this, having never seen or heard of this behaviour before. I was also surprised that the dog did not chase it. Looking back at the dog, I saw that he was at the same place, but was rigidly pointing something, and when I approached, I saw that a yard in front of him was a fully-grown and feathered young pigeon which had presumably fallen to the ground before it could fly. I caught it and placed it in a fir tree. Apparently the dog concentrated on the young bird and was not distracted by the parent which, to save its young, so cunningly, but unsuccessfully, invited a chase.

Six days later, at the same place, my attention was called to the dog by his giving a muffled bark. He seemed excited, but was walking very slowly. I went to him and saw that in front of him was an adult wood-pigeon floundering along in the long grass as if it had no legs, and progressing a few inches at a time, very awkwardly, by means of its wings. Although I have seen other birds 'injury-feigning' it quite deceived me and I thought

it was really wounded, but when I went to pick it up it rose buoyantly into the air and flew over the hedge and away. On this occasion no young bird was found. It seemed almost certain that it was the same adult as six days earlier, and, if so, it still retained its distraction behaviour, although the young bird should by then have been well able to fly.

C. S. PAYNE.

(*The Handbook of British Birds* gives 'injury-feigning' as being infrequent in this species.—RECORDER.)

ABSTRACTS OF LITERATURE ON BEDFORDSHIRE NATURAL HISTORY FOR 1957

BRITISH BIRDS, Vol. 50 (1957)

Report on Bird-ringing for 1955, No. 2.

(a) p. 47. A juvenile Heron, ringed near St. Neots on 5/5/1937 was recovered near Over (Cams.) on 6/5/1955.

(b) p. 51. A juvenile Shoveler ringed at Gladhouse Reservoir (Midlothian) on 26/6/1955 was shot at Luton Hoo on 15/10/1955.

'Sewage-farms as bird habitats' by A. W. Boyd. No. 6, pp. 253-263, refers to sewage-farms at Bedford and Dunstable.

Book Review

Tornadoes in England, May 21, 1950, by H. H. Lamb. Geophys. Mem., Meteorological Office, London, Vol. 12, No. 99, 1957. H.M.S.O. 7s. 6d.

The tornadoes described in detail in this paper were of particular concern to Bedfordshire. A large part of the track of the main tornado, and the entire tracks of two subsidiary tornadoes lay in the county. They occurred in the late afternoon of 21st May, 1950.

The sixty-five mile track of the main tornado from near Wendover in Buckinghamshire to the Fens near Ely ranks among the longest which have occurred in Europe. It entered Bedfordshire at Leighton Buzzard, having only a few minutes before caused great damage in Linslade, where cars were lifted and thrown about and some fifty houses were unroofed. On its track across the county cows were killed at Broom Hills Farm and nurseries were damaged at Heath-and-Reach. Its violence was intermittent in character (tornadoes habitually lift off the ground from time to time). It crossed Woburn Park with little serious damage, regenerated at Lidlington, and passed just south-east of Bedford, where walls at Harrowden Road were blown down. Uprooted trees blocked the River Ouse at Fenlake, but the whirlwind again weakened and left the county at Wyboston with little further damage.

One subsidiary tornado was a minor affair of very short duration near Biggleswade, but the track of the second from Houghton Conquest to Kimbolton in the far north of the county was twenty miles in length. The area from Cardington to Goldington suffered damage from both this and the main tornado only half an hour apart.

The strongest winds, estimated at over 100 kt., occurred just to the east of the tracks where the cyclonic circulations of the tornadoes were reinforced by the prevailing southerly wind, but the heaviest rainfall was often a few miles farther west, associated with thunderstorms which accompanied the tornadoes over tracks about twenty miles wide. In contrast, the trail of damage of the tornadoes was no more than five to seven yards wide over much of its length, but at its widest fifty to eighty yards. The thunderstorms were very severe, causing many power failures, and, indeed, two

people were killed by lightning at Houghton Conquest. The rainfall exceeded 2 inches in many places, and there was widespread flooding and heavy hail.

Mr. Lamb does not limit his attention to the damage caused, as this brief account may make it appear. He studies in great detail the conditions associated with the formation of these violent phenomena, and lists the fifty-odd destructive tornadoes in the British Isles between 1868 and 1950. He finds that there is a striking maximum of incidence in south-east England, and in the vicinity of the Chiltern Hills in particular. It is probably not well known that there is a rather similar pronounced maximum in south-east England of the number of days with thunder, averaging more than twenty days per year in a belt extending from Bedfordshire to the Wash. This compares with less than ten days per year throughout south-west England, Wales and Scotland.

If any criticism can be levelled at this otherwise excellent study it is of the extraordinary delay in publication. W.G.H.

[These are the tornadoes described in the *Journal*, No. 5, 1950, page 13. —EDITOR.]

THE LIBRARY

The following books are missing from the Library and have not been signed for:

Insect Behaviour, by E. Cheeseman.

Flora of the British Isles, by Clapham, Tutin and Warburg.

The latter is a very valuable book costing 50/- and it is hoped that it will be returned with all possible speed. It might also be pointed out that a signing-out list is always kept on the inside of the Library door so that this procedure should be carried out on the spot.

ADDITIONS TO THE LIBRARY

BOOK

The House Fly, by C. Gordon Hewitt. From Mr. K. E. West.

PERIODICALS

Countryside, 1957 (complete).

Geographical Magazine, Jan., 1957.

OUR CONTEMPORARIES

Buckinghamshire Arch. & Arch. Soc., *Jour.* Vol. XVI, Pt. 2, 1955-6.

Hertfordshire Nat. Hist. Soc., *Trans.* Vol. XXIV, Pt. 6 (June, 1957).

Letchworth Nat. Hist. Soc., *Jour.* No. 12 (Spring, 1957)

London Nat. Hist. Soc. (The London Naturalist), *Jour.* 1956.

Northamptonshire Nat. Hist. Soc. & F.C., *Jour.* Vol. XXXIII (June, 1956).

Northumberland, Durham and Newcastle-on-Tyne Nat. Hist. Soc., *Trans.* Vol. XII, Nos. 1-6.

Suffolk Nat. Hist. Soc., *Trans.* Vol. X, Pt. 1 (1956), Pts. II and III (1957).

ORNITHOLOGICAL REPORTS

British Ornithologists' Club, *Bull.* Vol. 77, No. 3 (March, 1957).

London Bird Report, 1956.

The Norfolk Bird Report, 1956.

REPRINTS

Once again, a large number of reprints of natural history articles have been received from the Nature Conservancy, many of them continuing series of studies of which we possess the earlier parts. As they number fifty-six in all it is not practicable to print the titles, and members interested should inspect them in detail in the Library; they cover a wide variety of interests, coming as they do from 'Nature,' 'Journal of Ecology,' 'Journal of Animal Ecology,' 'British Birds,' 'Weather,' and the like.

E. PROCTOR.

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