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**NATURALIST**

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# BEDFORDSHIRE NATURAL HISTORY SOCIETY & FIELD CLUB

1949

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# JOURNAL

OF THE

## BEDFORDSHIRE

### NATURAL HISTORY SOCIETY

### AND FIELD CLUB

EDITED BY RAY PALMER, F.R.E.S., F.Z.S.

No. 3.—1948

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## Report of Hon. Secretary

During the twelve months that have elapsed since my last report the Society has advanced by great strides. This is especially borne out by the increase in membership, which rose from two hundred and twenty-six to two hundred and eighty. Junior membership increased from eight to nineteen, a very promising sign, and though there was a slight fall in the number of Associates, from thirty-eight to thirty-six, this was principally because several of these became full members. The number of Students remained stationary at nine, but Corporate Membership increased by one to total ten. We heartily welcome the Letchworth Naturalists' Society.

The outstanding increase, of course, was in the number of Ordinary Members. From one hundred and fifty-seven at the commencement of the year the number rose finally to two hundred and one. Ten members resigned owing to leaving the County, while because of difficulty in travel from the more outlying parts of the County, one or two others indicated that they might do so. These promised to reconsider their decision and happily have done so. The Council appeal to all members for their utmost support during these difficult and vital years, and trust that everyone will continue to enthuse others who may be interested in natural history, and in our aims and objects, and thus secure a further increase in membership.

It is with regret that I report the death of one member, Mr. E. T. Broadbent, of 261 Stockingstone Road, Luton.

The principal factor contributing to the success of the year's programme was the weather. On the whole the winter weather was not severe, and during the summer the elements were largely on our side. Although a fair amount of rain fell at the height of the season, fortunately the majority of the field excursions were remarkably free from this, in particular the ornithological outings, several of which were of marked success, as reported elsewhere in detail. Several of the more outstanding were the day spent at Hickling and Horsey Broads, and the unforgettable trip to the Norfolk coast. In perfect spring weather a further party travelled through the Cotswolds to visit the headquarters of the Severn Wildfowl Trust at Slimbridge. The one black spot was the excursion to Wicken Fen, but the downpour did not daunt the courage of our oldest member, who made a round of the area.

A joint excursion with the Hertfordshire Natural History Society was made to Dedmansey Wood and was well attended, and the Council trusts that similar excursions with neighbouring societies will be feasible in future. It was disappointing that unavoidable circumstances prevented Mr. G. D. Nicholls, of Cambridge, from conducting a geological excursion in the County, but such a meeting is contemplated for inclusion in the summer programme for 1949.

The remainder of the excursions, apart from several made by the ornithologists to Northampton Sewage Farm, were to various localities in the County and were, on the whole, well attended; the fungus foray

being probably the best. To all those who have not yet attended these excursions, which are a vital and integral part of the activities of the Society, I would suggest that these members probably do not realise what opportunities they are missing, and the Council hope that a greater number of members and their friends will participate in future excursions. All who have taken part will, I am sure, agree that these are very enjoyable occasions.

Before remarking on the various winter meetings, both early and late in the year, the Society voices its gratitude to our President for so admirably lecturing to a packed house in Bedford Town Hall during May, in order to create funds for the Society. This spontaneous gesture was yet further evidence of his great interest in our venture, and as a result a substantial sum was added to our finances.

Apart from lectures on a variety of subjects by our own members, we were fortunate enough to secure the services of a number of well-known outside speakers, among whom were Drs. C. B. Williams and C. G. Butler, of Rothamsted, and Mr. Richard Morse, F.L.S., of Letchworth. The Society is extremely grateful to these gentlemen for their interest and support, which has contributed so greatly to the success of our programme. Invitation to attend Dr. Butler's lecture was extended to the Bedfordshire Beekeepers' Association, and such enthusiasm was aroused that visitors came to Luton from as far away as Sandy, and a packed meeting resulted.

During the late autumn the ornithological section came into being under the Secretaryship of Mr. H. A. W. Southon, assisted by a Committee of four who organised, at short notice, a very varied and most successful programme, fully reported in the proceedings of the section.

Due to the untiring efforts of our Editor, Mr. Ray Palmer, and his colleagues of the Editorial Committee, Drs. H. F. Barnes and V. H. Chambers, the Journal of the Society reached a very high standard, and the members express their gratitude for this work. THE BEDFORDSHIRE NATURALIST, as it was called for the first time, has done more than anything else to publicise and elevate the Society, and there can be few societies in southern England who are not acquainted with our existence and activities. Some new members have not yet purchased copies of this and the first issue, and it is hoped that to their great benefit they will soon avail themselves of these.

The gratitude of the Society is also expressed to the County Headquarters of the St. John Ambulance Brigade, Bedford, to the principal of the Froebel Training College, Bedford, and to the Society of Friends, Luton, for the kind loan of halls for meetings. Cordial thanks are also extended to owners of properties who permitted field excursions to be held on their land, and to all those members who conveyed others in their cars.

Finally, the Council are grateful for the support given during the past year and in particular the manifestation of keen interest by the good attendance at most of the indoor meetings and field excursions. Such encouragement inspires those in office to carry on with the good work which is meeting, and will continue to meet, with increasing fruition.

HENRY A. S. KEY.



**PROCEEDINGS : SESSION 1948****Indoor Meetings**

9TH ORDINARY MEETING, 8th January, 1948, Bedford, "The Weather", by A. W. Guppy, B.Sc.

10TH ORDINARY MEETING, 14th January, 1948, Luton, "The Cause of Insect Outbreaks", by C. B. Williams, sc.D.

1ST ANNUAL GENERAL MEETING, held on Thursday, 5th February, 1948, at St. John Ambulance Brigade Hall, Cauldwell Street, Bedford, Mr. Keith Piercy in the Chair. Fifty-three members were present.

The Chairman said that a letter had been received from the President, Mr. Oliver G. Pike, regretting his inability to attend, but expressing his sincere wishes for the success of the meeting and for the continued good progress of the Society.

The Honorary Secretary then read his first annual report giving an account of the Society's activities and steady progress during the past season. This report was adopted and followed by some remarks from the Chairman on the objects of the Society and the need for the preservation of the countryside.

The Honorary Treasurer then gave his financial statement, showing a balance in hand of £48 9s. 9d. The report was adopted, with a vote of thanks to Mr. Bonnett for his valuable services.

The Chairman then read the draft Rules of the Society, which had been drawn up by the Council and printed in the first issue of the Journal, but not yet approved at a general meeting. The rules were adopted without a division.

The election of officers then took place, the Council recommending that Mr. Oliver G. Pike be asked to serve as President for another year. The officers elected were as follows:—

*President:* Mr. Oliver G. Pike.      *Chairman:* Mr. Keith Piercy.  
*Hon. Sec.:* Mr. H. A. S. Key.      *Hon. Treasurer:* Mr. W. H. Bonnett.  
*Council:* Messrs. H. F. Barnes, V. H. Chambers, J. G. Dony, Brigadier C. C. Foss, Miss K. Goodwin, Mr. C. MacKechnie Jarvis, Mr. Ray Palmer, Miss E. Proctor, Messrs. F. G. R. Soper, H. A. W. Southon, B. B. West, and K. E. West.

The business of the meeting concluded with a discussion of some of the most suitable localities to visit on excursions during the coming summer.

The latter part of the meeting took the form of a Brains Trust formed of the Society's Recorders, with the Chairman as question master. Much interest was caused by the many questions that were dealt with.

11TH ORDINARY MEETING, 12th February, 1948, Bedford, "A Case for Nature Reserves", by J. G. Dony, ph.D.

12TH ORDINARY MEETING, 25th February, 1948, Luton, "Our Freshwater Fish", by F. G. R. Soper.

13TH ORDINARY MEETING, 11th March, 1948, Bedford, "Slugs and Snails in Bedfordshire", by B. Verdcourt, B.Sc.

14TH ORDINARY MEETING, 24th March, 1948, Luton, "Birds and Bird Watching", by K. Piercy.

15TH ORDINARY MEETING, 30th April, 1948, Bedford, "Some Effects of Light on Animals", by Miss E. M. Stephenson, M.Sc.

16TH ORDINARY MEETING, 7th October, 1948, Bedford; bird evening and formation of Ornithological Section; H. A. W. Southon (Hon. Sec.), Mrs. M. E. King, H. B. Sargent, S. W. Rodell, H. Cole to form the Committee.

17TH ORDINARY MEETING, 14th October, 1948, Luton, "Bee Behaviour", by C. G. Butler, Ph.D.

18TH ORDINARY MEETING, 28th October, 1948, Bedford, "Injurious Insects of Economic Importance in Bedfordshire", by B. K. Randall, B.Sc.

19TH ORDINARY MEETING, 11th November, 1948, Luton, bird evening.

20TH ORDINARY MEETING, 25th November, 1948, Bedford, "Slugs", by H. F. Barnes, Ph.D.

21ST ORDINARY MEETING, 9th December, 1948, Luton, "Pathways of Evolution", by Richard Morse, F.L.S.

## Field Meetings

SATURDAY, 24TH APRIL, FLITWICK MOOR. Leader: Dr. H. Godwin, F.R.S. (University of Cambridge). A party of twenty-four met in fine weather to hear Dr. Godwin's advice upon the survey of the Moor in progress. Fields 312, 311, 314, 321 (Folly Wood) and 309 were perambulated and the flora explained to the leader, who dug a few exploratory holes. Dr. Godwin was of the opinion that the Moor is mainly a recent Phragmites fen, that much of the complexity of the flora could be explained by variation in water-level, a survey of which and of the surface levels should be undertaken. Work should first be concentrated upon Folly Wood (being felled) as here the vegetation was at a most mature stage of development.

No further progress in the survey was made during 1948 for the want of suitable survey equipment.

SUNDAY, 9TH MAY, TOTTERNHOE. Leader: Miss K. Goodwin. A small party of six visited Totternhoe Knolls and Meads in fine weather. The only record of interest was *Ranunculus hederaceus*.

SUNDAY, 16TH MAY, KING'S WOOD, HEATH AND REACH. Leader: Dr. J. G. Dony. A large party of forty-two—including a coach load from Bedford—spent an enjoyable day in fine weather in this interesting wood. In the evening a short visit was made to the heath adjoining Baker's Wood.

SUNDAY, 30TH MAY, DEDMANSEY WOOD, WHIPSNAD. Joint meeting with the Hertfordshire Natural History Society and Field Club. Leaders: Sir Edward Salisbury, F.R.S. and Dr. J. G. Dony. About sixty naturalists were present. Naturally, with a distinguished ecologist in the party, some emphasis was laid upon this aspect of our studies. Sir Edward said that he knew this wood intimately and had followed during the years the development of the scrub on the lower slopes. During the afternoon he listed one hundred and two species of plants in the scrub to compare with his previous lists.



SUNDAY, 27TH JUNE, SOUTHILL PARK. Leader: Mr. K. Piercy. The day was sunny with a strong westerly wind; twenty-nine members present. A short ramble was made round the margin of the lake to examine the typical greensand heath flora in the dry areas and the rich marsh flora adjacent to the lake. Parties toured the lake by punt. On the lake were seen a nest of hatching coots, three pairs of great crested grebes and herons on the island. In general it was too windy for insects, but the following sawflies were taken: *Rhogogaster viridis*, *Macrophya ribis*, *Strongylogaster lineata* and *Aneugmenus stramineipes*.

SATURDAY, 3RD JULY, HANGER WOOD, STAGSDEN. Leader: Miss Elsie Proctor. Ten members assembled in fine, overcast weather. Among the plants found were *Campanula hybrida*, *Galium tricornae*, *Paris quadrifolia*, *Daphne laureola*, *Cyanoglossum officinale*, *Listera cordata*, *Habenaria bifolia* and *Ophrys apifera* and *Orobanche major* on the verge of the main road outside the wood. Insects included white admiral, comma and speckled wood butterflies and six spot burnet moth.

SATURDAY, 17TH JULY, CLOPHILL DISTRICT. Leader: Dr. V. H. Chambers. About thirty members, with Mr. W. Watson, the well-known batologist, met in warm, overcast weather at the entrance to the State Forest. With the lack of strong sunshine the wild bees and wasps abundant in the district, were not in evidence, but members saw several nests of the wood ant (*Formica rufa*) and admired the beautiful Staphylinid beetle (*Oxyporus rufus*) found in fungi, in the Forest. Later a nest of the jet ant, *Lasius fuliginosus*, was found on the wide verge of the main road. The rich greensand flora, not only within the Forest (fox-glove, sheep-bit, climbing corydalis, etc.) but along the sandy roadside, was more especially enjoyed by some members from the north of the county, to whom it was new. In addition, a beautifully coloured slow-worm was found by a young member and "borrowed" by Mr. Palmer to be photographed. In the evening, despite rain, a party walked round Warren Wood, where the abundance of the stink-horn fungus, a marked feature of the day, was further emphasised by smell and sight.

SUNDAY, 1ST AUGUST, SHARNBROOK. Leader: Miss G. H. Day. A party of five met in the morning at Sharnbrook in warm, cloudy weather and moved off to Halsey Wood. Here the main interest was in the wealth of arable weeds on the margins of the field enclosed by the wood, in addition to the rich flora expected in a north Bedfordshire wood. After lunch the party took a cross-country route to Francroft Wood and was there joined by the ornithologists. This wood, having recently been coppiced, provided a good example of the effect of increase in sunlight and of local increase in potash from burnt slashings upon the vigour and diversity of the vegetation. Throughout the meeting the leader proved again her well-known fieldcraft. A sawfly new to the recorder, *Caliroa cinxia*, was taken in Halsey Wood.

SATURDAY, 25TH SEPTEMBER, CHILTERN GREEN. Leader: Mr. H. Cole. Nine members assembled in hot weather. A brief exploration of Chiltern Green Common showed that ling still maintains a precarious foothold in this south-eastern extremity of the county. Goldfinches were numerous on the common. The expedition to the neighbouring

Hostler's Wood developed into a fungus foray: the stinkhorn and other interesting species were found. A single hornet was also seen near the wood.

SUNDAY, 10TH OCTOBER, FUNGUS FORAY, ASPLEY WOOD. Leader: Dr. R. W. G. Dennis. A most successful day; twenty-five members present. A full account is given elsewhere in this issue.

Other Field Meetings were held as follows: Sunday, 23rd May, a party travelled by coach to Wicken Fen, but drenching rain spoilt the day; on Saturday, 19th June, the meeting at Rowney Warren was abandoned owing to the poor muster and absence of the leader; Sunday, 11th July, cold and rain again spoilt the visit to Twin Wood, Oakley and on Sunday, 29th August, although the weather was kinder, as the lake at Battlesden had been drained during the year, little useful work was done. The proposed geological excursion was cancelled. Reports of meetings held primarily for ornithologists are given by the recorder of that Section.

## Ornithological Section

The Section was formally constituted at a general meeting of the Society, held in Bedford, on Thursday, 7th October, 1948, under the Chairmanship of the Recorder for Birds assisted by a Committee of five members, including a secretary. The Section was formed with the following objects:—

1. To encourage a greater interest in birds by means of monthly meetings over and above the general meetings of the Society.
2. To increase the amount and standard of field work in the Society and, at the same time, increase the available data on the distribution of birds in the county at all times of the year.

During the remaining three months of the year considerable progress was made, and by the end of the year it was possible to say, although with caution, that this new venture had been successfully launched. The Committee met during October and discussed, at some length, the objects of the Section and the means by which they were to be attained. It was decided that, provided the demand justified it, meetings should be held in Bedford and Luton each month.

The first meeting of the Section was planned for the middle of November in Bedford but owing to the cancellation of a lecture, the first meeting was, in fact, in Luton at the beginning of November. About thirty members were present and, after the Recorder and the Secretary had explained the aims and objects of the Section, particularly as applied to the Luton area, there was a lengthy discussion, from which many useful points arose. The first meeting in Bedford, held in the Nature Room of the Froebel Training College, by kind permission of Miss M. Spence, was well attended, over forty members being present. As there was still much to be decided and discussed, the majority of the meeting was devoted to an explanation of the way in

which the Section would function and of the form that the meetings would take. This was followed by a discussion. At this meeting the question of subscriptions was settled so that the Section should be financially independent and by the end of the meeting it was felt that most of the preliminary work had been done.

The Committee met again before the end of November, in Luton, and decided the dates and subjects for future meetings, working on the plan of selecting subjects such as families or groups of birds which could be adequately treated in an evening and which would have a direct bearing on the field work to be carried out in the Spring and Summer. The last meeting of the Section in 1948 was in mid-December in Bedford, again at the Froebel Training College. This meeting was even better attended than the first, almost fifty members being present. The subject was the "Crow Family" and with the aid of cases of stuffed birds loaned by Mr. D. W. Elliott, the family was dealt with species by species and many aspects of habitat, behaviour and distribution were discussed.

The opening of the New Year will have seen the beginning of the Section's field work and I should like to take this opportunity of thanking members for their excellent support in the past and of urging all to co-operate to the greatest possible extent in all the Section's activities, by taking part in field work, a most important aspect of our activities, by taking an active part in the indoor meetings and by encouraging all those interested to join in the work of the Section.

H. A. W. SOUTHON.

#### FIELD MEETINGS OF THE ORNITHOLOGICAL SECTION

SUNDAY, 18TH JANUARY. Led by Messrs. W. G. Sharpe and C. M. Crisp, seventeen members enjoyed a ramble in fine but cold weather in the Flitwick-Steppingly area. The more interesting species observed were Nuthatches, Goldcrests and Sparrow Hawks.

SUNDAY, 15TH FEBRUARY. Bedford Sewage Farm. By far the largest attendance. Forty-nine members were present and the weather was again fine. Apart from various species of wildfowl, three Hooded Crows were seen. *Leader:* The Recorder.

SUNDAY, 21ST MARCH. Coach trip by twenty-five members to Northampton Sewage Farm, Ecton, and Sywell Reservoir. The more interesting species seen included Ruff, Curlew, Ringed Plover and Shoveller together with several other species of wildfowl. *Leader:* The Recorder.

SUNDAY, 11TH APRIL. Similar trip to Northampton Sewage Farm. Attendance of twenty-six members. Similar species seen with the addition of Garganey. *Leader:* The Recorder.

TUESDAY, 20TH APRIL. Bedford Sewage Farm. Fine evening. A large number of Yellow Wagtails and three Jack Snipe seen. *Leader:* H. A. W. Southon.

SUNDAY, 25TH APRIL. Sunny day. More than a dozen members attended this excursion to the Barton Hills. Nothing of special interest noted. *Leader:* H. B. Sargent.

SATURDAY—SUNDAY, 1ST AND 2ND MAY. The proposed "Even-song and Dawn Chorus" meeting was cancelled owing to rain storms.

SUNDAY, 9TH MAY. Coach trip to Norfolk Broads. Sunny day. Stone-Curlew, Wheater, Redstart and Crossbill seen at a heath en route. Garganey, Marsh- and Montagu-Harriers, Black Tern, Grey Plover, Gadwall, Bittern, and Grasshopper-Warbler seen at the Broads. *Leader*: The Recorder.

SUNDAY, 13TH JUNE. Another hot day. Coach trip to Blakeney and Cley. Various terns, gulls and waders seen at both places in addition to Bitterns near Cley. *Leader*: The Recorder.

SUNDAY, 20TH JUNE. Coach trip to various localities in Sussex conducted by I. J. N. F. Lees, of Handcross. The nest of a Hobby was seen at one inland haunt and a number of interesting gulls, terns and waders, etc., at Pagham Harbour and Thorney.

SUNDAY, 27TH JUNE. Excursion to Southill Park and Lake. Good attendance. *Leader*: K. Piercy. Usual species of the area seen.

SUNDAY, 18TH JULY. More than twenty members visited Northampton Sewage Farm by coach in good weather. The more interesting species observed included Greenshank and an immature male Scaup. *Leader*: The Recorder.

SUNDAY, 15TH AUGUST. Coach trip to Marsh House decoy, Tillingham; Osea Island and Horsey Island, Essex. Weather sunny. *Leader*: The Recorder. Many interesting sea birds and waders observed including Grey Plover.

SUNDAY, 22ND AUGUST. Bedford Sewage Farm. Weather fine. *Leader*: F. G. R. Soper. Usual birds of the area seen including Ruff on migration.

SUNDAY, 12TH SEPTEMBER. Coach trip to Northampton Sewage Farm marred by a downfall of rain. However, Ruff, Curlew, Greenshank and other waders seen. *Leader*: The Recorder.

SUNDAY, 31ST OCTOBER. Coach trip to Northampton Sewage Farm in fine weather. *Leader*: The Recorder. Usual species observed.

SUNDAY, 28TH NOVEMBER. Cold foggy day. Only the Recorder and two others participated in an interesting walk in the Oakley and Stevington area. Many species of birds were seen by the river or in various woods including Woodcock.

SUNDAY, 19TH DECEMBER. Ramble in the Southill area. Dull and cold day. Twelve members attended. *Leader*: The Recorder. Goldcrests were seen in Warden Park; Teal, Mallard, Pochard, Wigeon and Tufted Duck on Southill Lake.

HENRY A. S. KEY.

## The Weather of 1948

By A. W. GUPPY

The year 1948 was in strong contrast to its predecessor, and conditions throughout tended to be equable rather than extreme. A mild dry winter, almost free from snow, was followed by a cool wet spring, and by a summer with less than its usual quota of warm days, while the autumn was, on the whole, mild and open.

January began with three warm days, a temperature of 56° being recorded on the 2nd and the whole month was mild and wetter than average. This weather continued until the middle of February when there was a short cold spell, with slight snow on the 21st, a day which brought a blizzard to the more southerly districts of England. A return to unbroken mild conditions followed, with a record temperature of 68° on the 9th March; at Cranfield it was even warmer with 71°. The remainder of March was dry, with temperatures exceeding 50° daily. The last day of the month initiated a week of squally and showery weather, but the rest of April was warm for the time of year, with long periods of sunshine.

May began and ended with cold wet periods, the total rainfall for the month being well above the average, but there was a week from the 13th to 19th inclusive which gave the sunniest and finest Whitsun holiday period ever recorded, with the temperature up to 76° on the 18th.

The wet cool weather continued throughout June, only five days reaching or exceeding 70°, and on into July, the 9th of that month, in particular, being very cold for the time of year with a maximum temperature of 55°. An improvement took place on the 18th and temperatures rose to a climax during the heat wave of the last week of the month, when six consecutive days had temperatures exceeding 80°, the 29th being the hottest day of the year with a maximum shade temperature of 90°.

The hot spell terminated abruptly on 2nd August with heavy thunderstorms and exceptional rainfall (referred to later), and August as a whole was cool and unsettled, as were the first two weeks of September.

The latter half of September and beginning of October were warmer and drier, with a temperature of 74° on the 26th September, but wet and fairly mild conditions were resumed on 10th October and continued well into November. A remarkable period of more or less continuous thick fog persisted from 22nd November until the 2nd December with only slight midday clearance. Conditions were particularly bad in the low-lying parts of the Ouse Valley, and it was noticeable how the fog remained dense there at times when higher ground, such as Cranfield, was showing considerable clearance.

The anticyclonic conditions producing the fog gave way to another mild wet period in early December, and although somewhat colder conditions with north-easterly winds prevailed over Christmas, the close of the year saw the resumption of relatively mild weather.

#### TEMPERATURE

The average temperatures for the various months are here tabulated, and the average for the whole year compared with the Bedford figure obtained by Mr. E. H. Lock.

January	41.82	July	61.61
February	39.62	August	59.91
March	47.07	September	57.45
April	49.36	October	49.45
May	53.38	November	43.50

June	57.50	December	41.92
Average for the whole year		50.21	
Average for Bedford (Mr. Lock)		50.52	

The hottest day, as already recorded, was on 29th July when 90° was registered, as compared with 88° in Bedford on both the 28th and 29th July. At Hockliffe, however, Mr. Kilby recorded 93° for the latter day.

There were only two days on which the temperature failed to exceed freezing point, a maximum of 31° being recorded on 20th February and 32° on the 21st.

The lowest night air temperature was 22° on the night of 20th–21st February which is identical with Mr. Lock's reading, 1° higher than at Cranfield, and 2° higher than at Hockliffe. A ground temperature of 18° was recorded by Mr. Lock on the same night.

Air frost occurred on forty-three nights, of which twelve were consecutive from 16th to 27th February inclusive. The first air frost of the autumn did not occur until 27th October.

#### RAIN AND SNOW

Precipitation occurred on 159 days, the total amounting to 25.58 inches. This is over one inch less than for Bedford, but more than for either Kempston or Great Barford. The discrepancies between the various observers are partially accounted for this year, by the thunderstorms of August Bank Holiday week-end. The large annual total for Aspley Guise, in particular, is largely attributable to the two storms of 29th July and 2nd August which together gave 3.38 inches.

Snowfalls were in extreme contrast to those of the previous year, occurring, as they did, on three days only, 19th to 21st February, and then only of negligible amount.

#### THUNDERSTORMS

Thunder occurred on sixteen days, but on only two of these was it accompanied by considerable rain. The first occasion was on the afternoon of 1st May, when 0.9 inch fell; the other, on the evening of 2nd August and early morning of 3rd.

This latter occasion merits particular notice. The brief spell of great heat which lasted from 25th July to the 2nd August was terminated by a whole series of thunderstorms on the evening of August Bank Holiday which continued into the following morning. The accompanying rainfall over a small area around Bedford was exceptionally heavy, as can be gathered from the following figures:—

Aspley Guise	1.81 inches
Bedford	3.33 „
Bromham	2.68 „
Cardington	3.30 „
Great Barford	1.95 „
Kempston	2.76 „
Silsoe	3.0 „

Falls of such intensity must be very rare in this part of England.

The following table summarises the monthly rainfall totals as recorded by the observers named:—

	Ampthill	Aspley Guise	Bedford	Bromham	Cardington	Clifton	Cranfield	Great Barford	Hockliffe	Kempston
January ...	—	4.52	3.34	3.05	3.42	3.97	3.24	3.58	4.33	3.14
February ...	—	1.23	0.65	0.48	0.88	0.86	0.64	0.60	0.91	0.74
March ...	—	0.43	1.03	0.85	0.68	0.85	0.57	0.83	0.62	0.86
April ...	—	1.77	1.15	1.35	0.95	1.42	1.22	1.80	1.26	1.22
May ...	—	3.57	4.07	3.88	3.50	3.03	3.55	3.50	2.96	3.57
June ...	—	2.50	2.81	2.53	2.79	2.93	2.48	3.31	3.60	2.58
July ...	—	3.22	1.18	1.08	0.77	1.00	1.92	0.77	1.78	0.97
August ...	4.65	3.68	4.90	4.35	5.09	4.34	—	3.49	2.07	4.10
September ...	2.04	2.39	2.12	2.33	1.86	1.62	2.15	1.97	1.97	1.86
October ...	2.41	2.37	2.19	2.34	2.19	1.97	2.17	2.08	2.74	2.23
November ...	1.25	1.44	1.30	1.38	1.25	1.43	1.09	1.42	1.44	1.26
December ...	1.73	2.20	1.90	1.96	1.45	1.66	1.87	1.70	1.85	1.77
Total ...		29.32	26.64	25.58	24.83	25.05		25.05	26.53	24.30
Wet days ...	—	—	136	159				159	173	

Ampthill (Mr. Horne).  
 Aspley Guise (Mr. Young).  
 Bedford (Mr. Lock).  
 Bromham (the writer).  
 Cardington Aerodrome (per Mr. Speed).

Clifton (Mr. W. Inskip).  
 Cranfield Aerodrome (Air Ministry Daily Weather Report).  
 Great Barford (Mr. Whitchurch).  
 Hockliffe (Mr. Kilby).  
 Kempston (Mr. Payne).

## The 1948 Fungus Foray

It is hoped that a fungus foray organised by the Society will be an annual event. We are indeed fortunate to have had the leadership of an excellent mycologist, Dr. R. W. G. Dennis of the Royal Botanic Gardens, Kew, during our first two years and we trust that this useful co-operation may continue for many years. On 12th October, 1947, we visited King's Wood and Rushmere, Heath and Reach; but this visit was unproductive as it came at the end of a long spell of dry weather. The visit to Aspley Wood on 10th October, 1948, was, as the list appended will show, most successful. The morning was spent in Aspley Wood and the afternoon on the adjoining Wavendon Heath. We shall remember the patience of Dr. Dennis as we brought him the same species in various stages of growth and decay hoping that we had found something new. To Miss Elsie Proctor and Miss Pamela Soper our thanks are due, as lists made by them during the day have contributed to the completeness of the list given here.

### FUNGUS RECORDS

#### (a) In Aspley Wood:

*Amanita citrina* (Schaeff.) Roques.; *A. muscaria* (L.) Fr.; *A. rubescens* (Pers.) Fr.; *Boletus chrysenteron* (Bull.) Fr.; *B. subtommentosus* (Schaeff.) Fr.; *B. bovinus* (L.) Fr.; *B. badius* Fr.; *B. edulis* (Bull.) Fr.; *B. granulatus* (L.) Fr.; \**B. versipellis* Fr.; *Calocera viscosa* Fr.; *Cantharellus tubaeformis* (Bull.) Fr.; *C. cinereus* (Pers.) Fr.; *Clavaria argillacea* (Pers.); \**Collybia radicata* (Rehl.) Berk.; \**C. maculata* (A. and S.) Fr.; *Cortinarius malachius* Fr.; *Clitocybe obsoleta* (Batsch.) Fr.; *Cudoniella acicularis* (Bull. ex Fr.) Boud.; \**Daedalea quercina* Pers.; *Flammula carbonaria* Fr.; \**F. sapinea* Fr.; *F. alnicola* Fr.; \**Galera hypnorum* (Batsch.) Fr.; *Haglundia perelegans* Nannfeldt. (new to Britain); *Hypholoma fasciculare* (Huds.) Fr.; *Lactarius blennius* Fr.; *L. glyciosmus* Fr.; *L. plumbeus* Fr.; *L. quietus* Fr.; *L. rufus* (Scop.) Fr.; *L. turpis* Fr.; *L. vellereus* Fr.; *Lepiota amianthina* (Scop.) Fr.; *Merulius tremellosus* Schrad.; *Marasmius acervatus* (Fr.) Pearson and Dennis; \**Mycena galericulata* Qual.; *Péxillus involutus* Fr.; *Phallus impudicus* (L.) Pers.; *Pholiota mutabilis* (Schaeff.) Fr.; \**Polyporus betulinus* (Bull.) Fr.; *P. perennis* (L.) Fr.; \**Polystictus versicolor* (L.) Fr.; *Psathyrella pennata* (Fr.) Pearson and Dennis; *Psilocybe elongata* Fr.; *Russula adusta* Fr.; *R. emetica* (Schaeff.) Fr.; *R. fellea* Fr.; *R. delicata* Fr.; *R. nigricans* Fr.; *R. ochroleuca* Fr.; *R. venosa* Vel.; *Sepedonium chrysospermum* Fr.; \**Scleroderma aurantium* Pers.; *S. verrucosum* Pers.; *Tricholoma nudum* Fr.; *T. portentosum* Fr.; and *T. rutilans* (Schaeff.) Fr.

Species marked \* in the above list were also found at Heath and Reach in 1947.

#### (b) in either King's Wood or Rushmere, Heath and Reach and not in Aspley Wood:

*Armillaria mellea* (Vahl.) Fr.; *Auricularia auricula-judae* (L.) Schoet.; *Boletus scaber* (Bull.) Fr.; *Clitocybe aurantiacus* (Wulff.)



Studer.; *Collybia dryophila* (Bull.) Fr.; *Coprinus atramentarius* (Bull.) Fr.; *Fistulina hepatica* (Huds.) Fr.; *Fomes nigricans* (Fr.) Lloyd; *Galera mycenoides* (F.) Quel. sensu Kùchner; *G. tenera* var. *minor* Lange; *Hypholoma sublateritium* (Schaeff.) Fr.; *Lepiota lilacea* Bres.; *Lycoperdon depressum* Bon.; *L. perlatum* Pers.; *Mycena sanguinolenta* (A. and S.) Fr.; *Peniophora aegerita* v. Hoehn. and Litsch. with its imperfect state *Aegerita candida* Pers.; *Polystictus abietinus* (L.) Fr.; *P. subericaea* Fr.; *Trametes rubescens* (A. and S.) Fr. and *Tubaria pellucida* (Bull.) Fr.

#### MOULDS

*Bactridium flavum* Kunze ex Fr.; *Cladosporium herbarum* Link ex Fr.; *Stilbum fimetarium* (Pers. ex Fr.) B. and Br.; *Trichoderma viride* Pers. ex Fr.; and *Trichothecium roseum* Link ex Fr.

## A Bobart Herbarium at Bedford

Mr. T. Cooper, F.L.A., the Librarian of Bedford Public Library, drew my attention in 1939 to an old herbarium in the old Bedford Library. The intervening war years made it difficult to pursue the matter further, but in 1946 Mr. Spencer Savage, Librarian of the Linnean Society, expressed a desire to see the herbarium and the Bedford Library Committee kindly consented to its loan to the Linnean Society. Mr. Savage has now made an interesting note on it in the *Proceedings of the Linnean Society* 160 Pt. 1 (Nov. 1948). Over 2,500 plants are represented and there are two distinct handwritings on the labels. "The handwriting on the older labels," writes Mr. Savage, "agrees with that of Jacob Bobart the elder (1599-1680) and the corrections on the labels and other inscriptions are in the handwriting of Jacob Bobart the younger (1641-1719)." Mr. Savage has checked the writing with known examples of the handwriting of each. The Bobarts were in turn Superintendents of the Botanic Gardens, Oxford, and their combined work makes an interesting link between that of the herbalists of the sixteenth and early seventeenth centuries and the botanists of the eighteenth century. The corrections on the labels are of special interest and of some importance.

Mr. Savage notes that "the arrangement of this herbarium is alphabetical; and seems to have reference to the catalogues of the Oxford Gardens published in 1648 and 1658. At several places there is an attempt to classify a genus, which may have some connection with the younger Bobart's work in editing the third volume of Morison's *Historia*." The *Historia*, a standard work in its day, was continued by Bobart when Morison died in 1683. "The plants are without localities and include garden plants. At the end of the volume is what appears to be a sketch-plan in pencil of the Oxford Botanic Garden."

It would be interesting to know how this herbarium found its way to Bedford, as neither Bobart appears to have had any connection with the neighbourhood. Mr. Cooper thinks that it is one of the earlier accessions of the Library which was formed in 1703. This would preclude any connection being made with Thomas Martyn, the famous

Cambridge botany professor, who could have acquired it through his equally famous father; but Martyn did not come to Perterhall until 1798. Abbot, on the other hand, appears to make no reference to it in his papers, or correspondence. The only clues the herbarium itself offers are the inscription "Mr. Bevan" on the inside front cover and an indistinct imprint which appears to read "Bedford General Infirmary, Medical Library."

J. G. DONY.

## Bedfordshire Butterflies

By BERNARD B. WEST

Probably the most remarkable feature of Bedfordshire is that it contains, within a relatively small area, such a diversity of geological formation and of scenery. From the open chalk country in the south, to the heavy clayland oak woods in the north there is an ever changing topography of hill and dale, which though sparse in timber except along the greensand range, can show much small coppice growth and minor woodland, and which, in spite of the judgment of those who only motor through our flat river plain, is seldom dull. In view of these diversities of soil formation it is to be expected that there will be an equally varied flora and fauna, and such is indeed the case. Bedfordshire being unusually rich in its wild life, in spite of what have appeared to be almost deliberate efforts in the past to wipe out some of the most interesting areas.

Of butterflies in the county we have an unusually high total; forty-five being recorded out of the sixty-eight British species. This figure is not inclusive of four doubtful species about which more information is required, and which will be discussed later. Of this number there are many that owe their existence in the county to the presence of suitable breeding grounds, and where these occur they should be most carefully preserved; there are certain species, the hold of which is not strong, and wartime measures of cultivation and clearance have inevitably taken their toll.

Compared with some of its neighbours the county has not been very heavily worked for its Lepidoptera. It can, however, vie with one neighbour, Huntingdonshire, for the discovery of a butterfly new to the British Isles within its borders; this was the Chequered Skipper (*Carterocephalus palaemon*) first taken by Dr. Abbot at Clapham Park Woods in 1798, a fact which was announced to the Linnean Society in the same year, and published by Donovan in his "Natural History of British Insects" in 1798. Another former inhabitant of Bedfordshire was the Large Blue (*Maculinea arion*), which held out at the not far distant Barnwell Wold, in Northamptonshire, until the sixties of last century, and which is now confined to the Cotswolds, Devon and Cornwall. It flew in Bedfordshire until about the mid 1820s, having first been discovered by Dr. Abbot and later recorded by J. C. Dale in June 1820. It owed its existence here to the limestone of the Ouse Valley on which grew the food plant of the larva, prior to its strange association with the ant.

Owing to the fact that there is so much recent data of importance, further history of collecting in the county will have to give precedence to the more recent records. Any species which have occurred in the past and whose present status is doubtful will be considered under their appropriate headings.

My records are by no means purely personal, and are considerably augmented by those of my father, Mr. K. E. West, covering a period of two years when I was not collecting in this country. Others have come from N. G. M. and J. M. S. Hague, of Potters Bar, Ray Palmer and Oliver Palmer, of Flitwick, J. H. Payne, of Wellingborough, and B. Verdcourt, of Luton.

*Pararge aegeria* (L.). Speckled Wood.

Common throughout our woodlands, but becomes rarer towards the southern end of the county. Records north of a line Woburn, Silsoe, Shillington, are too numerous to mention in detail; to the south it has been taken at Studham Woods (B.B.W., 1942), Barton, Leete Wood (B.B.W., K.E.W., 1942-48), Totternhoe (N.G.M.H., 1948), Dedmansey Wood (K.E.W., B.B.W., 1948).

*Pararge megera* (L.). Wall.

Very common throughout the county; it produced a partial third brood during the very hot summer of 1947 (K.E.W.).

*Melanagia galathea* (L.). Marbled White.

This has a fairly general distribution. Cleete Hill (N.G.M.H., J.M.S.H.). Fields beyond Foster Hill till 1943, Oakley, Clapham, Bolnhurst, Putnoe, Keysoe, Riseley, West Wood, Knotting, Dean and Ridgemont (K.E.W., B.B.W., 1942-48).

*Eumenis semele* (L.). Grayling.

My only records are of two battered specimens near Ravensburgh Castle in 1944 and one in 1948, flying over previously cultivated ground which bears their favourite flower, Viper's Bugloss. There is obviously a small colony somewhere here, perhaps actually in Hertfordshire.

*Maniola tithonus* (L.). Hedge Brown.

Very common throughout the county.

*Maniola jurtina* (L.). Meadow Brown.

Very common, especially in meadow land that has remained unploughed for a considerable time.

*Aphantopus hyperanthus* (L.). Ringlet.

Common, but rather more restricted to woodland than open country, though found on the lower chalk at Barton. Forms approaching *caeca* and *obsleta* have occurred at Odell, but nothing extreme.

*Argynnis selene* (Sch.). Small Pearl Bordered Fritillary.

I have no recent records of this insect in the county, it should occur, and information of it would be of value. It is to be taken in Northamptonshire in plenty, and should occur in similar habitats in our oak woods.

*Argynnis euphrosyne* (L.). Pearl Bordered Fritillary.

This has a patchy distribution but is locally common. Odell Great

Woods (B.B.W., K.E.W., J.H.P.), Bromham until agricultural clearance 1942-43 (B.B.W.), Heath and Reach (K.E.W.), Dedmansey Wood (B.B.W., 1948).

*Argynnis aglaia* (L.). Dark Green Fritillary.

This has its headquarters on the chalk in the southern end of the county and is there locally common. It occurs in small numbers elsewhere, Barton and Warden Hills (B.B.W., 1943-48), Putnoe Woods (N.G.M.H., 1944).

*Argynnis cydippe* (L.). High Brown Fritillary.

Odell Great Woods (B.B.W., N.G.M.H., 1943), Clapham (B.B.W., 1943).

*Argynnis paphia* (L.). Silver Washed Fritillary.

Our commonest of the larger fritillaries, and well distributed, especially in the older oak woods. Putnoe Woods, Keysoe, Odell, Halsey Wood, Sharnbrook, West Wood, Knotting, Dedmansey Wood, Worley's Wood, Melchbourne, Swineshead, Bolnhurst, Bushmead, Great Bramingham, Streatley, Leete Wood, Barton, Wootton Woods, Potton, Stagsden and Ridgemont (B.B.W., K.E.W., N.G.M.H., R.P.).

*Euphydryas aurinia* (von Rott). Marsh or Greasy Fritillary.

Not common, and probably a case of artificial introduction. It needs the strictest protection within the county. Totternhoe (B.B.W., K.E.W., N.G.M.H., 1942-48), Heath and Reach (K.E.W., 1948).

*Vanessa atalanta* (L.). Red Admiral.

An immigrant which reaches and breeds in Bedfordshire in numbers, during a normal season, and abundantly in such summers as 1947.

*Vanessa cardui* (L.). Painted Lady.

Survives the winter under mild conditions, but greatly augmented by immigration. 1947 was a good year for it, but 1948 very poor in comparison. I observed no more than three specimens throughout the whole summer.

*Aglais urticae* (L.). Small Tortoiseshell.

Of very wide distribution throughout the county.

*Nymphalis polychloros* (L.). Large Tortoiseshell.

One specimen of this somewhat rare insect was taken asleep on wooden palings in Bromham in 1943. It may be spreading westwards from its East Anglian headquarters, and further records are desirable. Another specimen seen at close quarters, Everton, 1947 (R.P.).

*Nymphalis io* (L.). Peacock.

Very common throughout the county.

[*Nymphalis antiopa* (L.). Camberwell Beauty.

Records from Bedfordshire are badly needed. During the last three years it has been seen and taken in all our neighbouring counties and must inevitably have occurred at times within our borders.]

*Polygonia c-album* (L.). Comma.

Since the 1920s when this insect began to spread from the west of England, it has become more and more common in the eastern counties. It occurs throughout Bedfordshire, but the early summer form *Hutchinsonii* has not been observed in the numbers that one would expect.

*Apatura iris* (L.). Purple Emperor.

Recent records for this insect are badly needed. I have taken it in Northamptonshire in 1948, but I am aware of no records for Bedfordshire later than the 1900s. It should occur in some of the oak woods in the county that have escaped felling.

*Limenitis camilla* (L.). White Admiral.

This insect, like the Comma, has only returned to the eastern counties since the period 1920-30, and it is now well represented in Bedfordshire, especially in the north. Putnoe, Odell, Swineshead, Potton, Worleys Wood, Melchbourne, Haynes (B.B.W., K.E.W., 1942-48). Abundant at Flitwick Moor, 1947. None seen 1948 (R.P.).

*Cupido minimus* (Fues). Small Blue.

Another insect needing protection within the county as it is very local in distribution. Totternhoe (B.B.W., N.G.M.H., J.M.S.H., 1943-44) (especially abundant in June, 1947, N.G.M.H.); Dunstable Downs (B.V., 1943); Barton, a partial second brood, which is unusual in such a wet season as 1948 (B.B.W.).

*Aricia agestis* (Sch.). Brown Argus.

Common especially on the chalk. This species is very prone to the mite *Belaustium*; in the Barton Hills area it occurs with the mites sometimes festooned around the thorax in considerable numbers.

*Polyommatus icarus* (von Rott). Common Blue.

Of very wide distribution, and locally abundant.

*Lysandra corydon* (Pod.). Chalkhill Blue.

Confined solely to the chalk in the south of the county and there locally common. Totternhoe, Barton, Knocking Hoe, and Blow's Downs, Dunstable (B.B.W., K.E.W., B.V.). Another host to the parasite *Belaustium*.

*Lysandra bellargus* (von Rott). Adonis Blue.

Possibly native, and if so Bedfordshire is almost its north eastern limit along the chalk, at any rate as far as the Hitchin Gap where it certainly occurs in small numbers actually in Herts., Totternhoe, Sharpenhoe, Sundon, Dunstable and Barton (B.B.W., K.E.W., N.G.M.H., J.M.S.H., 1940-48). Also host to *Belaustium*.

*Celastrina argiolus* (L.). Holly Blue.

Very common throughout the county, especially in suburban areas.

*Lycaena phlaeas* (L.). Small Copper.

Locally common. Form *Coeruleapunctata*, Putnoe (B.B.W., 1944).

*Callophrys rubi* (L.). Green Hairstreak.

A common, but secretive species. Stevington, Barton (B.B.W., K.E.W., N.G.M.H., J.M.S.H.), Totternhoe (N.G.M.H.), Clapham (J.M.S.H.), Dedmansey Wood (B.B.W., K.E.W., 1948), Pegsdon (O.R.P.).

*Thecla betulae* (L.). Brown Hairstreak.

More records are needed for this species. Bedford Cemetery,

one male specimen (B.B.W., 1943), Larvae, Odell (J.H.P., 1943-48).

*Thecla quercus* (L.). Purple Hairstreak.

Our commonest Hairstreak, though not often observed owing to the height at which it flies. Putnoe, Keysoe, Odell, Swineshead, Bolnhurst, Wootton and Houghton Conquest (B.B.W., K.E.W., N.G.M.H., 1943-48). Aspley Heath (O.R.P., 1947).

*Strymonidia w-album* (Knoch.). White Letter Hairstreak.

Clapham Park (J.M.S.H., 1943-44), Odell (B.B.W., J.H.P.), Clophill (B.B.W.), Shefford (K.E.W.), Pulloxhill (R.P., 1943).

*Strymonidia pruni* (L.), Black Hairstreak.

The most important butterfly in our county, where so far it has not been officially recorded. Its habitat at Keysoe is within the orbit of its peculiar Midland distribution, of which the southern end of the old Rockingham forest is the headquarters. It should occur in the parishes north of the Ouse, unless Keysoe does happen to be the only link between the North Buckinghamshire and mid Huntingdonshire habitats, which is unlikely. Keysoe (B.B.W., K.E.W., N.G.M.H., J.M.S.H., 1943-48).

*Leptidea sinapis* (L.). Wood White.

Odell (B.B.W., N.G.M.H., J.M.S.H., J.H.P., 1943-44). Very rare indeed and in need of the greatest protection that can be given to it. It is probably an introduction to this habitat, but it may have spread from Northamptonshire.

*Pieris brassicae* (L.). Large White.

Common, but varies from the scarce to the very abundant, depending on fluctuations in immigration numbers.

*Pieris rapae* (L.). Small White.

Commoner indigenously than the preceding species, depending less on immigration.

*Pieris napi* (L.). Green Veined White.

A more rural species than the two preceding, locally common.

*Euchloë cardamines* (L.). Orange Tip.

Plentiful throughout the county, but females seem to be in the minority.

*Colias hyale* (L.). Pale Clouded Yellow.

An immigrant which in good summers is to be taken in the county. Odd specimens occurred in the very hot summer of 1947. Stevington, by Woodcraft Wood (B.B.W., 1940).

*Colias croceus* (Geof.). Clouded Yellow.

Plentiful in 1947 (K.E.W., B.B.W.). As far as can be ascertained it was entirely absent in the county in 1948. Bromham (B.B.W., 1941), Thurleigh, still flying, 2nd November, 1943 (B.B.W.), Turvey, Totternhoe, Dunstable, Felmersham and Chellington (B.B.W., 1944-47).

Var. *helice*, Bedford (K.E.W., 1947).

*Gonepteryx rhamni* (L.). Brimstone.

Of fairly even distribution throughout the county.

*Erynnis tages* (L.). Dingy Skipper.

This species has a patchy distribution, but is common locally. Totternhoe, Dedmansey Wood, Ravensden, Stevington, Bromham, Dean and Shillington (B.B.W., K.E.W.), Barton (B.B.W., N.G.M.H., 1940-48), Flitwick (O.R.P.).

*Pyrgus malvae* (L.). Grizzled Skipper.

It is commonest on the chalk, but is generally well distributed.

*Carterocephalus palaemon* (Pall.). Chequered Skipper.

Although discovered in our county for the first time in the British Isles, by Dr. Abbot, I have no recent records, and any information would be welcome.

*Thymelicus sylvestris* (Esp.). Small Skipper.

Very common throughout the county.

*Thymelicus lineola* (Och.). Essex Skipper.

An important insect in Bedfordshire, in that our county is one of the farthest from the coast that it inhabits, though there may have been artificial introductions. Putnoe, Renhold and Willington (B.B.W., K.E.W., 1942-48.)

*Ochlodes veneta* (Bremer and Grey). Large Skipper.

A very plentiful insect of woodland and woodland margins, and which is also locally common in the chalk bottoms.

#### RECORDERS

J.M.S.H.=J. M. S. Hague; N.H.M.H.=N. G. M. Hague;  
R.P.=Ray Palmer; O.R.P.=Oliver R. Palmer; J.H.P.=J. H. Payne;  
B.V.=Bernard Verdcourt; B.B.W.=Bernard B. West; K.E.W.=  
Kenneth E. West.

## The Fat Dormouse in Captivity

By ELSIE PROCTOR

To those who read Dr. Vevers's article on the Fat or Squirrel-tailed Dormouse in the second number of our journal, *Glis glis* will be more than a name. To me, it represents a distinct personality.

Known to her more intimate friends as "The Poppet", my squirrel dormouse has been a captive for two years. She was given to me by Dr. Vevers in October, 1947, having been captured some time previously at Whipsnade, where a little colony of her kind live wild among the trees near Dr. Vevers's bungalow.

My original intention was to keep the animal throughout one winter to study her temperature variations during hibernation. For a normally seven months hibernator she was unusually active during the winter. For this reason, apart from the fact that we became fond of her, I decided to study her behaviour throughout another winter.

During the earlier days of her captivity she was hostile and suspicious. She bit the hand of a friend of mine to the bone, but she never showed hesitation in accepting food, and soon learned to take it from the

hand. She grumbled loudly at everything that went on around her, in what has been described as a "coughing bark". This sound is made on the intake of the breath, and we find that she can put variations of tone into it so that we can tell whether she is angry, impatient or just being pathetic. The amount of emotional expression in the voice is amazing. She has a specially sharp admonition for me if I am slow in feeding her, and when pleased she vibrates her whiskers and purrs distinctly. During the first winter of her captivity "The Poppet" showed every sign of making her traditional attempt at hibernation. To shelter her from draughts, I placed her cage inside an old blue tin parrot cage and filled the intervening space with straw, hoping that she would pull some of this into her own cage to add to the quantity already there and to help build her nest. This she did. She made a beautiful nest, lining it with shreds of linen from an old duster, draped over the side of her cage and pulled inside by her own activity.

The squirrel dormouse is nocturnal, so that we arranged for her feeding time to be 10.30 p.m. Like most animals, she has her own method of assessing time, and after a few days of routine, she emerged from her daily slumber promptly at 10.30 each evening and has done this, regularly as clockwork, every day since, with the exception of five days during January, 1948, when she remained asleep. These five days constituted her "hibernation" and apart from this isolated occasion, she has not, while she has been with me, ever truly hibernated at all.

The dormouse takes her feeding times seriously and concentrates on the piece of food in her hand to the exclusion of all else, often letting me take her temperature while she gnaws her nut or piece of apple. Nuts and fruit form the basis of her diet (although she likes a certain amount of variety in these) and she drinks no water, obtaining all necessary moisture from the fruit (mainly apples). She eats every portion to the last fragment, afterwards washing her nose and fingers. When her hunger is appeased she rejects all other offerings and will not even have them in the cage, pushing them out with her nose, and grumbling stridently if one persists in forcing the unwanted food towards her.

The fat-dormouse has earned our respect through her cleanliness. She is the most naturally "housewifely" animal I have ever seen and frequently "tidies up" her cage—sweeping debris (such as odd pieces of food waste, skin of apples, etc.) into one corner of the cage (the same corner each time). She tolerates no food particles or faeces in her sleeping nest and uses one particular corner for toilet operations. The performance of "sweeping up and clearing out" is usually accompanied by a series of staccato grunts as each piece of debris is pushed to its corner. This activity on the part of my animal greatly facilitates my own task in keeping her cage clean; her cage seldom becomes thoroughly dirty and since she drinks nothing the straw remains comparatively dry. In spite of this, however, we feel bound to change her straw at intervals. She resents this operation and fights like a tiger to retain her straw. We try, if possible, not to disturb her sleeping nest, but if this has to go with the rest, her voice, at first angry, becomes pathetic and reproachful, and after this final tragedy she becomes



despondent and resigned and abandons further interest in the proceedings. It usually takes her two days to recover her spirits and when she rebuilds her nest, she will never rebuild in the same corner. The dormouse has a beautiful cage, a large one, lent to me from the small mammal house at Regents Park Zoo, where *Glis glis* spent the summer vacation.

The results of my investigations into the temperature changes of this animal have given me as much food for thought, as did those of my hedgehogs. I hope to publish the full results sometime later, but the main item of interest is that for two winters this animal has been living a fairly normal life (although less active than in summer) as far as its feeding habits and daily functions are concerned, with a constantly subnormal temperature of about 16.0° C.!

"The Poppet" is a really delightful animal. My friends like to watch her with a sector of apple—holding it like a piccaninny would hold a slice of melon, and making repetitive scraping noises against the skin with her rodent teeth. If spoken to while eating, she regards this as an unwelcome interruption and looks up appealingly with her big "bush-baby" eyes making impatient little clucking noises, her mouth full of food. She hurries through the piece of food, gnawing away at break-neck speed, licks her fingers and bounds up to the bars purring, with whiskers vibrating, and pushing her nose in and out of the bars, inviting us to feed her.

## Reports of Recorders

### BOTANY (Flowering Plants)

This has been an active year but no new natives have been recorded. As last year about twenty new aliens were found and Mr. Watson again did useful work on the bramble flora. Members who wish to keep their records complete should note that Mr. Watson has revised his views and that *R. rotundifolius* (Bab.) Blox. and *R. melanoxyton* M. and W. go from last year's list. The following brambles found this year are now to be added to the list \**R. horridisepalus* (Sud.) W. Wats., Clophill; *R. pallidus* Weihe, Kidney Wood confirming an earlier record by Saunders; \**R. Adamsii* Sud., Kidney Wood and \**R. bavaricus* Weihe, Daintry Wood, a new species to Britain, which it is hoped Mr. Watson will describe elsewhere. The known range of a number of plants has been extended, the most interesting of these being *Melampyrum arvense* L. shown to me at Higham Gobion by Mr. R. L. Chambers and *Sambucus Ebulus* L. at Barton. I must thank Mr. I. J. Odell for drawing my attention to this locality from which the plant was recorded 300 years ago by Francis Tavener. A number of well known botanists again visited the county including A. J. Wilmott, N. Y. Sandwith, J. P. M. Brenan, R. W. Butcher, V. S. Summerhayes and J. E. Lousley. It was with pleasure that we were able to welcome back E. Milne-Redhead on a number of occasions.

J. G. DONY.

## BOTANY

*(Vascular Cryptogams and Bryophytes)*

FERNS. Three species were added to the county list during the year; The Oak Fern (*Gymnocarpium Dryopteris* (L.) Newm.); the Limestone Polypody (*G. Robertianum* (Hoffm.) Newm.) and the Brittle Bladder Fern (*Cystopteris fragilis* (L.) Bernh.). All were found by the Recorder in company with J. G. Dony on damp, north-facing, brickwork at Leagrave, where they were growing with seven other species of ferns. *C. fragilis* and *G. Robertianum* have each been recorded from similar habitats in two of the adjacent counties, both species, however, being truly native only on limestone rocks and scree in the north and west of the country. *G. Dryopteris* has not been recorded for any of the adjacent counties. It is again a plant of the north and west, usually growing in woods and sheltered rocky places. The spores from which these plants at Leagrave arose were possibly carried by trains from the north; the damp, sheltered mortar of the wall providing a suitable place for their germination.

A number of new stations for some of our rarer ferns were found, notably the Rusty-back Fern (*Ceterach officinarum* DC.). Previously only known at Stevington it was found by J. G. Dony at Amptill and Leagrave and by the Recorder at Chiltern Green. Twenty-one species of ferns are now known to occur in the county.

MOSSES AND LIVERWORTS. The only published records of Bedfordshire Bryophytes known to the Recorder are those of C. Abbot in *Flora Bedfordiensis* and J. Saunders in the *Victoria County History*, the *Journal of Botany*, and elsewhere. The Census Catalogues published by the British Bryological Society, the Bedfordshire records in which are mainly compiled from the above lists, are used as a basis for the following new county records.

Mosses. *Seligeria pauciflora* Carruth., at Streatley and Pegsdon; *Weisia microstoma* C.M. apparently widespread on the chalk escarpment; *Thuidium hystricosum* Mitt. at Pegsdon; *Mnium cuspidatum* Hedw. and *Plagiothecium elegans* Sull. at Aspley Wood; *Phacomitium canescens* Brid. at Souldrop. The last named was found by J. G. Dony, the rest by the Recorder.

Liverworts. *Riccia glauca* L. at Woodside; *R. sorocarpa* Bisch. at Woodside and Kidney Wood, Luton Hoo; *R. crystallina* L. at Drake-low Pond, Woburn Park; *Lunularia cruciata* (L.) Dum. at many places including the wall of Luton Museum; *Fossombromia pusilla* (L.) Dum. at Kidney Wood; *F. Wondraczeki* (Corda) Dum. at Woodside and Kings Wood, Heath and Reach; *Anthoceros punctatus* L. at Woodside. All found by the Recorder.

In addition, whilst going through the Saunders collection of mosses, now at Luton Museum, specimens of *Riccia fluitans* L. from Luton Hoo Lake and *Metzgeria furcata* (L.) Dum. from several localities were found. Neither species is recorded for Beds. in the Census Catalogues.

It is hoped to include the Bryophytes in the forthcoming flora of the county. With this end in view the Saunders collection is being reorganised and added to and a small collection formed by the old Beds. Nat. Hist. Soc. has been borrowed from Bedford Library for the

purpose of extracting records. The Recorder will be pleased to name mosses and liverworts from any part of the county.

PETER TAYLOR.

### MOLLUSCA

During 1948 three species of snail were added to the list of species which at present live (or did until very recently) in our county. Several other records of interest are included.

*Carychium minimum* Müll. (in strict sense). Dyer's Hall Swamp, Sundon. This is the piece of marshy ground at the foot of Sundon Hills, and is a remnant of the once extensive belt of marshland that stretched across the county near the foot of the chalk scarp. Unfortunately, the locality is being rapidly drained.

*Vallonia pulchella* (Müll). Old shells, Dyer's Hall Swamp. This and *V. excentrica* Sterki are now commonly regarded as extreme ecovars of one species. First record of *V. pulchella* sensu stricto.

*Vertigo angustior* Jeff. A single shell of this rare and minute species was found at Dyer's Hall Swamp. The nearest record known to the writer is the Holocene of Tring. The species favours fenny situations such as are found in Norfolk. (This record has been reported in *J. Conch.* 22:312.)

*Arion rufus* (L.). Three white ones were seen in Palm Wood, Luton (14. viii. 48). Two had some grey in the middle of their backs. The fringes were tinged with yellow and the tentacles black.

*Clausilia rolphii* Leach (in Turton). This species is the best find of the year. It was discovered by a Hertfordshire conchologist, Mr. L. W. Stratton and later by the writer, who also found *Azeca goodalli* (Fér) in the same locality. The latter is a few yards up the western branch of the crossroads at the corner of Dedmansey Wood, Whip-snade, the exact locus being the base of the hedge bordering the right-hand side of the road (as one approaches Whip-snade). The road itself is on a narrow band of chalk, whilst the slopes on either side, including the greater part of Dedmansey Wood, are on chalky clay with flints. Eighteen other species of mollusca occurred with this species and Mr. Stratton is going to write an account of the ecology of this habitat and compare it with the results of the writer's study of the mollusca of Dedmansey Wood.

*Helix pomatia* L. Six adults from the Someries locality were kept in captivity during the year in a glass box filled to a depth of four inches with soil. A good depth is essential to ensure egg-laying. Dandelion was the sole food offered to the snails and it apparently suits them very well. Mating took place from the 20th May, and the very lengthy courtship (often lasting over a day), described in the books, was observed. The firing of the dart was also noted. Eggs were laid in batches of 20-50 at about three inches below the level of the soil. These were first noted on 19th July. Hatching took place from 10th August and infant mortality was very low indeed, though it has been stated that under natural conditions it is frequently extremely high. The young differ from the adults in the colour of their tentacles which are quite a dark grey (pale in the adults). It must be reported here that five adults

and forty or so young were released amongst *Clematis vitalba* L. on the right-hand side of Barton Cutting as one goes north. The species once occurred in the locality and it will be of interest to see whether or not the introduced colony will thrive.

*H. aspersa* Müll. Varieties of this are common in the Barton locality mentioned above, and the species is very abundant on *Lactuca* in the Eaton Socon gravel pits. These gravel pits apparently provide a very suitable habitat for this species and also for *Helicella virgata* (da Costa).

*Zonitoides excavatus* (Bean M.S., Alder). This species is the only snail which is definitely classed as a calcifuge. The previous Bedfordshire record rested on a single specimen taken at Bedford. This was probably brought down on river debris, but the writer has recently found the species in a very typical habitat. It is frequent on the boards bordering the ponds on Wavendon Heath, in association with *Eucomulus fulvus* (Müll), *Vertigo pygmaea* (Drap.) and *Arion subfuscus* (Drap.).

*Oxychilus cellarius* (Müll). Two large variant shells of this species, which closely resembled *O. lucidus* (Drap.) in some respects, were found in a dry "Typha ditch" at Cople Pits. Rather a distinct variety.

*Pisidium personatum* Malm. Abundant in a peaty trickle between Wavendon Heath and the lane.

BERNARD VERDCOURT.

#### ODONATA.

The wet and cool weather prevailing throughout most of the summer and autumn of 1948 was not favourable to dragonflies, which were less in evidence than usual. Nevertheless, although no new species have been recorded for the county, there are additional records of some of the less common species which are worth mentioning.

*Cordulegaster boltonii* Don. Recorded by Bernard West as being taken at Putnoe Wood at the end of June. It is very satisfactory to have the presence of this species in the county confirmed by a captured specimen, as the previous record was from observation only.

*Aeschna juncea* L. I have made a special search for this species, and caught and released many specimens of *A. cyanea* in the process. The only *A. juncea* I found was on Flitwick Moor on 13th September, though I have seen and failed to capture several others that I suspected to be this species. It is also recorded from a garden in Bedford on 31st August by D. W. Snow.

*Aeschna mixta* Lat. I have again found this species on Flitwick Moor, and also at Baker's Wood, Heath and Reach, on 19th September.

*Anax imperator* Leach. Taken at Barton Hills by Bernard West in June. This appears to be the first record of this powerful flier being captured, the previous records being from observation only.

*Libellula quadrimaculata* L. A large number observed by B. Verdcourt on 30th May, at Wavendon Heath; probably migrants.

*Sympetrum sanguineum* Müll. One taken at Cople pits on 3rd July by B. Verdcourt. I took one and saw others at Battlesden Park on 28th August, and also at Baker's Wood, Heath and Reach, on 19th September, where specimens were captured and released. It has also

been taken at Felmersham and Wyboston by Bernard West, and seems to be more widely distributed in the county than was at first supposed.

*Lestes sponsa* Hans. Reported by B. Verdcourt as abundant at Cople Pits on 3rd July, and also found in some numbers by the same observer at Wavendon Heath on 20th August. Specimens from the latter locality were seen by me.

*Coenagrion pulchellum* Van der Lin. Previously recorded only from Biddenham and Stevington, this little "damsel fly" has now been found at Sharnbrook by Bernard West.

RAY PALMER.

## NEUROPTERA

Seven species and one variety of this order were added to the county list during the year, namely, *Coniopteryx tineiformis* Curtis, *Hemerobius stigma* Steph., *H. nitidulus* Fab., *Kimminsia rava* (With.) (previously only recorded from Kent, Surrey and Hampshire), *Wesmaelius concinnus* (Steph.), *Chrysopa flava* (Scop.), *C. flavifrons* Brauer, and *C. ventralis prasina* (Burm.). Several Neuroptera showing abnormal wing venation have also been taken in the county.

BERNARD VERDCOURT.

## HEMIPTERA

Many species have been added to the list during the year by Dr. Chambers, Mr. Laurence and the writer. The list now stands at 162 (Dec., 1948), which is roughly a third of the number on the British List. It is likely that well over 300 species will be found in the county when it is better worked. A list will shortly be published in the E.M.M. Certain information is now available concerning the species noted in the addendum to the writer's paper on water bugs (*J. Beds. Nat. Hist. Soc.*, 1, 26). *Notonecta viridis* Delc., *Corixa limitata* Fieb., *C. fossarum* Leach, and *C. moesta* Fieb. were all taken near Bedford by E. S. Brown (*J. Soc. Brit. Ent.*, 1948). The writer has also found *C. moesta* in the ponds on Wavendon Heath (20. viii. 48).

BERNARD VERDCOURT.

## HYMENOPTERA

HYMENOPTERA ACULEATA. The dull and rainy summer of 1948 was not at all suitable for the collecting and study of the bees, wasps and related insects that comprise this small section of the Hymenoptera. Nevertheless, five species were added to the county list during the season, although I paid little attention to this group. With an already long list of known species, it is likely that the best way of making additions would be to carry out specific searches for individual species at present "missing" but expected to be present in the county: provided, of course, that one favoured the barren record-hunting type of natural history. It is all the more surprising that I should come across four species more or less by accident. Thus, while having lunch on a bank outside King's Wood, Heath and Reach, on 16th May, 1948 (just before the field meeting) I picked a female *Chrysis fulgida* L. from my white (*sic*) jacket. Another species in this family—the beautiful, parasitic or

cuckoo wasps known as "ruby-tails"—was found three days later, while looking for sawflies, as two examples settled on aspen leaves at Flitwick Moor. This is a species for which I have been looking for three years, *Omalus violaceus* (Scop.), a small wasp, entirely deep purple or almost black with smoky wings, and which, like other members of the genus, rolls up into a ball—wings and all—when disturbed. Members will remember that we had one really hot week at the end of July. Verdcourt, Laurence and I had a day together on 25th July and all agreed after some hours that it was not worth collecting any longer, all the insects had disappeared! A week later on 31st July, the weather was still hot and little turned up with the exception of a Dryinid, new to me, swept from birch in Warren Wood, Clophill. This proved to be a very distinct species, *Mesodryinus britannicus* Rich., which, however, has only been taken twice before in Britain and was first described as a new species as recently as 1939. Lastly, I made one of my almost weekly visits to Dedmansey Wood, Whipsnade, at a date, 18th September, when such visits are more or less in the nature of an excuse to get away from an ugly and dirty town. I only took one "aculeate", but this was new to the county, a small, pretty bee with foxy-red thorax and white-banded abdomen, *Halictus laevigatus* (Kirby). Never miss an opportunity to get out, whatever the time of year or weather: something new can turn up, an original observation made or a fresh experience gained any day of the year!

Newson experienced a similar day on 16th May when he paid a visit to Sundon rubbish dump, so beloved by our eccentric botanists. This locality can be very good for beetles: I recall a visit made just after the war with Dony and E. Milne-Redhead, when the latter demonstrated to me just what could be found by uprooting and shaking weeds. However, Newson tells me he took nothing except one small worker ant, which proved to be *Ponera coarctata* (Latr.), a new county record.

**HYMENOPTERA SYMPHYTA.** Interesting captures have been made in the sawflies during the season: altogether seventeen species have been added to the county list, two of which, *Arge ochropus* Gmelin and *Athalia rosae* L., are due to Mr. Verdcourt and *Pamphilius histrio* Latr. to Mr. R. B. Benson. In fact, this latter genus of beautiful and rare insects figures quite largely in the season's results. In addition to *P. histrio* (from King's Wood, Heath and Reach), two other aspen species seldom found in Britain, *P. betulae* L. (a beautiful orange and black sawfly) and *P. latifrons* Fallen were taken by me on Flitwick Moor. (The more frequently one visits this place the more strongly is the conviction held that almost anything in British insect life will be found there sooner or later!) Furthermore, in no previous year have I seen so many *Pamphilius* larvae on birch: I became accustomed to finding them anywhere I looked, and they are not easy to find. I took a large number for rearing and species determination and I should have quite a lot of interest to report next season.

Verdcourt's capture of a single specimen of the turnip sawfly (*Athalia rosae*) is of interest, as this species is really extinct in Britain. A few records from southern England have been made during the past two or three years, but there is no doubt that these quite small insects

have flown or been blown across the Channel from the Continent, where the species continues to be a pest. It was this sawfly that created havoc among turnips soon after their widespread cultivation in this country during the eighteenth century.

Through the kindness of the Duke of Bedford and of his Head Forester, Mr. Mitchell, I was able to visit the plantations of exotic conifers at Flitwick Plantation and the Evergreens, Woburn Park. Quite a number of sawflies—not, of course, native to Britain—are found attached to spruce, large and pine and are only to be found in plantations of these. Four species new to me fell to my net, two of them, *Pachynematus scutellatus* Hartig and *Pristiphora abietina* Christ being very abundant on spruce. There is no doubt that additional species from both spruce and larch remain to be discovered.

A further list of new species of sawflies taken during the past two seasons, with biological notes, will shortly be published in the *Entomologist's Monthly Magazine*.

V. H. CHAMBERS.

## DIPTERA

The approach of finals has correspondingly reduced the time available for collecting. A few collecting trips in 1948 however produced some interesting species. Probably the most interesting capture was that of a male *Oncodes gibbosus* L. (Cyrtidae). This was swept from stream herbage in the Hummocky Field, Totternhoe, and is apparently rarely taken, although frequent in the New Forest. The family is parasitic on spiders, and two of the three British species are recorded from Bedfordshire. *Oncodes* is very sluggish and, but for Mr. B. Verdcourt, would have been passed over in the net. Also taken in the same locality were the Stratiomyids *Oxycera trilineata* F., *Nemotelus nigrinus* Fall. and *Odontomyia viridula* F. only known previously from Fancott. Twenty-two out of forty-nine British Stratiomyids are now recorded from Bedfordshire. For an agricultural county this number is relatively high as most of the family are rather local, marsh loving species. A new Robber Fly, *Dysmachus trigonus* Mg., was found on the Society's field meeting at Rushmere Heath on 16th May and has since been found by Messrs. Newson and Jarvis at Flitwick Gravel Pit. A very early male *Neotamias cyanurus* Lw. was found in King's Wood on the same field meeting.

The waterfall at Harlington was visited fairly continuously in July but only *Oxycera morrisii* Curt. appeared. Some new observations were made on the feeding habits of *Microphorus crassipes* Macq. (Empididae). The majority of Empids are active predators on other insects, mostly other Diptera. *Microphorus*, however, waits until insects are caught by spiders, and then comes along and feeds on the prey on the webs. Details of this variation on the "Spider and Fly" theme are being published elsewhere.

Nineteen other records of predators and prey were obtained during the year (including one by Mr. Verdcourt) and the full list, of seventeen predators taken with sixty species of prey in the county, will be published shortly.

A visit to Flitwick Moor on 25th July produced *Leptis lineola* F.,

previously known from Amphill Marsh, and this species may be added to the three Leptids already known from the Moor (*Leptis scolopacea* L., *Leptis tringaria* L., *Chrysopilus cristatus* F.). *Chrysopilus aureus* Mg. occurs at Fancott and Sundon Swamp. The bloodsucking *Chrysops quadratus* Mg. was captured on the Moor as last year. There are now six bloodsucking species known from Flitwick, which is unfortunate from the personal point of view of the ecologist. The beautiful "Daddy", *Dictenidia bimaculata* L. (Tipulidae), which appeared on 21st June, 1947, has not been seen again.

Fancott has been rather neglected during the year and was visited sixteen times, mostly in the early spring. Populations of *Empis tessellata* F. (see *ŷ. Beds. Nat. Hist. Soc.* 1:31) were further investigated and a significant difference has been found between the habitat ranges of two varieties of this species which differ in leg colouration. The results are being reported fully elsewhere. Large numbers of hover flies appeared in April, including *Chilosia grossa* Fall. and *Criorrhina ranunculi* Pz., species not previously recorded, and species of *Xylota* (= *Zelima*) were more abundant than usual in Woodcock Wood in June. (*Xylota segnis* L., *X. lenta* Mg., *X. xanthocnema* Coll. and *X. abiens* Mg.). A notably rare species was *Rhingia campestris* Mg. which was abundant here in 1947. Syrphids as yet not recorded from Fancott, but found elsewhere in the county, are *Tropidia scita* Harr. and *Xanthogramma ornatum* Mg.

The large *Tachina grossa* L., which parasitises the Oak Eggar and Fox Moth, was captured at Pegsdon on 19th August. I would ask all those breeding Lepidoptera to send me all unexpected progeny, with data of host, etc., as such records are of extreme value.

The number of species added to the county list during the year has not been very great, and we still have over four thousand species to find, but 1948 was still a quite interesting year.

B. R. LAURENCE.

## FISHES

Perhaps the most interesting item to report for 1948 was the capture of specimens of the Spiny Loach (*Cobitis taenia*). This loach, which is far less common than the Stone Loach (*Nemachilus barbatula*) is only found in a few districts in England, of which the Ouse and Cam area is one, but even in this area they are very infrequently met with. In January, 1948, the Longholme Boating Pool at Bedford was netted by the Fishery Board, many thousands of fish, mostly roach, bream, perch and pike, being taken and transferred to other waters in the district; but a subsequent examination of the mud, weed and other rubbish which was caught up in the bottom of the net proved interesting. From it a number of Stone Loach were secured, as well as several Spiny Loach. I kept them all in an aquarium for many months. They averaged two to three inches in length. In general, both species are found at the bottom of clear streams with a clean bed and their presence in a landlocked pool with a soft muddy bottom was unexpected. Other specimens of spiny loach were taken later in the year in the New Cut to the east of Bedford.



The only other item of outstanding interest during the year was the taking of a Pike weighing 28 lbs. and measuring 3 ft. 10 ins. in length from Firbanks Pit at Leighton Buzzard on 5th October. So far as I can trace, this is easily the largest pike recorded for Bedfordshire for a great many years. Firbanks Pit is a flooded sandpit now owned by British Railways, who propose to use it for dumping rubbish. It is sad to think that a piece of water that has so developed biologically over the years as to produce fish of this quality—and it is known to contain many other fine fish—should be deliberately destroyed in this manner.

F. G. R. SOPER.

### BIRDS

As the following detailed report shows the 1948 season produced a "bumper crop" of records giving our more interesting list of occurrences since collective recording commenced. No extremes of weather marked the year, although the summer was for the most part very hot, but the breeding season was almost ideal, and in consequence most of the species which suffered so badly in the early months of 1947 have now recovered their numbers and virility. Very good broods of young were noted throughout the county and large flocks of Passerines were seen as the summer advanced.

No severe wintry conditions were experienced and no prolonged frosts, and in consequence the numbers and species of wildfowl observed were rather below average.

As far as it is possible to estimate without doing a complete census of each species in the county (some trial counts were made for comparative purposes), the Carrion Crows, Rooks and Jackdaws have still further increased, but there seems to have been a check in the spread of Magpies due no doubt to more vigorous measures by land-owners to keep the species down to reasonable numbers. Organised shoots of Rooks will probably have the same effect within the next few years, but it is against the Carrion Crow that repressive measures must chiefly be directed. These birds are causing terrific damage by taking large numbers of eggs of other species. It will not be out of place to mention here that such action should be taken also, for like reason, to exterminate the introduced grey squirrel.

After many years of comparative absence the White Breasted Barn Owl is now being seen regularly, and is fairly well distributed as a breeding species. It is especially hoped that farmers and owners of estates will afford all possible protection to this bird, which does little harm and has a great deal in its favour as a friend to agriculture. Diligent and lengthy search throughout the county has failed so far to discover any Long-eared Owls and once again I appeal to game-keepers and owners of farms and estates, as well as to our own members, to report any suspected occurrences immediately. These remarks apply also to the Hobby. The distribution of these two species in the county is earnestly sought and all reports will be treated as confidential.

There has been one addition to the county list, namely, the Blue-headed Wagtail, and for the first time on record the Garganey attempted to nest in the county. Other rare visitors were the Bittern and Montagu Harrier. No Quails were reported during the year, although special

watch for them was made at the various localities where these birds have appeared in the past. They may of course be overlooked, as few observers seem to be familiar with their calls.

It is almost certain that no less than six species of duck attempted with varying degrees of success to breed in the county, and this serves to strengthen the argument so often repeated, that useful additions could be made to our bird-life if only more protection could be afforded and the right conditions created; both within the realms of possibility.

The ornithologists of the Society held a number of field excursions in the county and in addition paid visits by coach to a number of widely separated localities, chiefly at the coast. A summary of these is given elsewhere (page 9).

As last year, may I once more appeal to all watchers to take particular note of the first date of arrival and last date of departure of both summer and winter visitors, and also to take note of any unusually large flocks of birds, their direction of flight, and the prevailing weather conditions.

Abbreviations of observer's names:—

H.C.=H. Cole, D.W.E.=D. W. Elliott, F.C.G.=F. C. Gribble, A.J.=A. Johnston, E.P.P.=Mrs. Ray Palmer, C.S.P.=C. S. Payne, W.K.P.=W. K. Piercy, Rec.=Recorder of Birds, H.B.S.=H. B. Sargent, W.G.S.=W. G. Sharpe, H.A.W.S.=H. A. W. Southon.

**HOODED CROW** (*Corvus cornix*)—The birds which turned up at Bedford Sewage Farm during the autumn of 1947 remained throughout the winter, three in number. The last one was seen on 9th April in company with a Carrion Crow (Rec. and H.A.W.S.).

One was observed at Dunstable Sewage Farm on 18th December and ten on the following day (A.J. and H.B.S.).

**SISKIN** (*Carduelis spinus*)—Small flock at Hinwick on 27th October (Col. R. R. B. Orlebar). Flock of fifty at Southill on 5th December and thirty on 12th (W.K.P.). About eighty at Flitwick Moor on 27th December feeding on alders, as were those at Southill (H.A.W.S. and F.C.G.).

**TWITE** (*Carduelis flavirostris*)—A male seen at Clifton on 26th January (W.K.P.).

**BRAMBLING** (*Fringilla montifringilla*)—A few seen with Chaffinches near Clifton from 26th January to 14th March. Maximum number ten (W.K.P.). One female at Dunstable Sewage Farm 18th December (H.B.S.). A few near Studham in late December (K. Allsop).

**CORN-BUNTING** (*Emberina calandra*)—Heard commonly in the summer in the Cardington-Kempston-Hardwick area and scattered pairs through the north of the county. It is intended to study the distribution of this species more closely and observations of the distribution are requested.

**WOOD-LARK** (*Lullula arborea*)—Seen and heard in the area of King's Wood and Heath and Reach. J. Steele Elliott was unable to give positive proof of breeding within the county, but our former President informs me that he has seen and photographed several nests within our boundaries.

**BLUE-HEADED WAGTAIL** (*Motacilla flava flava*)—An addition to the county list. A male bird was identified at Bedford Sewage Farm on 18th April by F.C.G. and H.A.W.S. It remained perched on the filters for a long time and excellent views at a few yards range were obtained. All characters were carefully noted.

This or a similar bird was seen with a female, presumed but not proved to be one of this species, near Cardington Mill on 8th May by H.A.W.S. and again on 28th. On 12th June, F.C.G. made careful notes on the female, seen at close range and proved it to be a female blue-headed Wagtail. On 5th and 6th August,

H.A.W.S. saw a pair of birds near the railway, at the Sewage Farm, feeding four young, but as the party was also engaged in bathing and approach was difficult, it was impossible to be certain of all the details of plumage. There is however strong evidence that a pair of Blue-headed Wagtails brought up a brood in this area. The adults were seen by several other observers, including the Recorder. A male last seen 15th September near Cardington Road (C.S.P.). Once before, several years ago, a pupil of Bedford School reported that he had seen a male of this species at the Sewage Farm but the record could not be then accepted owing to insufficiently detailed observation. It is most probable that it has been overlooked in the past.

**YELLOW WAGTAIL** (*Motacilla flava flavissima*)—First arrival seen at Bedford Sewage Farm on 14th April (H.A.W.S.). Passage then continued throughout the month until only the resident pairs remained. Maximum number of migrants exceeded 100 on 20th April (Rec.). Seen also at Eaton Socon and Wyboston gravel workings and a number of other localities. Last one observed at Bedford Sewage Farm on 26th September (H.A.W.S. and Rec.).

**GREY WAGTAIL** (*Motacilla cinerea*)—Mostly males seen. One at Bedford Sewage Farm, 8th–15th February (Rec.). One at Burdelys Manor, Stagsden, 10th July (D.W.E.), two Bedford Sewage Farm, 4th November (Rec.), two at Castle Mills, Goldington, 15th October (C. F. Tebbutt), two at Bedford Sewage Farm, 5th–22nd December (F.C.G. and H.A.W.S.), two at Dunstable Sewage Farm on 19th December (H.B.S.), and four at Flitwick Moor, 15th September (E.P.P.).

**WHITE WAGTAIL** (*Motacilla alba*)—One at Bedford Sewage Farm on 16th March (Rec.), two there on 21st (F.C.G.).

**LONG-TAILED TIT** (*Aegithalagos caudatus rosaceus*)—Party of forty-six seen at Chiltern Green on 26th June (H.C.).

**GREAT GREY SHRIKE** (*Lanius excubitor*)—One male seen near Kempston Hardwick on 16th December (Bedford School).

**RED BACKED SHRIKE** (*Lanius collurio*)—Five young fledged from a nest near Luton, 6th July (H.C.). Two pairs with young seen on Blows Down, Dunstable, during June and July (H.B.S.). Four seen here on 31st August (A.J.).

**WAXWING** (*Bombycilla garrulus*)—Two seen feeding on haws at Oakley Hill on 15th February (B. B. West).

**CHIFFCHAFF** (*Phylloscopus collybita*)—First arrival seen at Flitwick, 15th March (W.G.S.).

**WILLOW-WARBLER** (*Phylloscopus trochilus*)—First arrival seen at Tingrith, 25th March (W.G.S.).

**GRASSHOPPER-WARBLER** (*Locustella noëvia*)—A male singing at Dedmansey Wood on 19th April (H.C.). Four singing near Chiltern Green on 4th August (H.C.). Also observed at Pennyfather's Hill, Clophill, and Flitwick Moor (Rec.).

**REED-WARBLER** (*Acrocephalus scirpaceus*)—First seen at Bedford Sewage Farm on 12th May (F.C.G.).

**SEDGE-WARBLER** (*Acrocephalus schoenobaenus*)—First arrival at Bedford Sewage Farm on 19th April (Rec.).

**GARDEN-WARBLER** (*Sylvia borin*)—First arrival at Southill on 19th April (Rec.).

**BLACKCAP** (*Sylvia atricapilla*)—Male singing on Wilstead Hill on 29th March (Rec.).

**WHITETHROAT** (*Sylvia Communis*)—Several singing near Southill on 19th April (Rec.).

**FIELDFARE** (*Turdus pilaris*)—Large flocks with Redwings in Flitwick area till 26th April (W.G.S.). First winter arrivals flying over Bedford on 27th September (Bedford School).

**MISTLE-THRUSH** (*Turdus viscivorus*)—Migration of some small flocks across Flitwick Moor, southwards during the evening of 6th July (Rec.).

**REDWING** (*Turdus musicus*)—Large passages noted: 1,000+ flying S.E. over Bedford Sewage Farm, 2nd February (H.A.W.S.); 2,000+ flying S.W. over

Bedford Sewage Farm, 12th December (F.C.G.). First autumn arrivals at Tingrith on 16th September (W.G.S.).

**WHEATEAR** (*Oenanthe oenanthe*)—One near Stagsden on 1st May (Rec.); seven or eight in garden of "Kenilworth", Kimbolton Road, Bedford, on same day (L. W. Stubbs); one at Bedford Sewage Farm on 19th August and 13th September (Rec.); male at Battlesden Park on 28th August (H.C.); male at Kempston on 28th August (W.G.S.).

**WHINCHAT** (*Saxicola rubetra*)—A female at Bedford Sewage Farm on 27th August (Rec.); three there on 2nd May and eventually at least one brood reared (Bedford School and Rec.); one pair at Blows Down, Dunstable, in April, and one—three seen on 9th June and 1st September (H.B.S. and A.J.). Four at New Mill End on 29th May (H.C.); a female at Eaton Socon gravel workings on 3rd August (Rec.).

**STONECHAT** (*Saxicola torquata*)—Male at Bedford Sewage Farm on 10th October (Miss P. B. Sillar).

**REDSTART** (*Phoenicurus phoenicurus*)—Much more now known about its breeding distribution on the Greensand. Several pairs seen. One nest with eggs found.

**NIGHTINGALE** (*Luscinia megarhyncha*)—First heard at Stagsden on 19th April (D.W.E.).

**SWALLOW** (*Hirundo rustica*)—First-arrival seen at Bedford Sewage Farm on 12th April (Staff of Sewage Farm). Last seen at Flitwick, 23rd October (E.P.P.).

**HOUSE-MARTIN** (*Delichon urbica*)—First seen at Bedford Sewage Farm on 17th April (Rec.). A late emigrant seen flying round houses in the Goldington Road—Bushmead Avenue, Bedford, area on 8th December (Rec. and A. J. Dymond). One seen at Kempston 12th October (C.S.P.).

**SAND-MARTIN** (*Riparia riparia*)—First arrivals seen at Oakley on 15th April (A. G. Oldfield).

**SWIFT** (*Apus apus*)—Eight seen at Luton Hoo on 3rd May—first arrivals (H.C.). One flying S.E. over Bedford, on 29th October (P. Symes).

**NIGHTJAR** (*Caprimulgus europæus*)—Now known to nest occasionally in certain oak woods in the North of the county (Rec.).

**CUCKOO** (*Cuculus canorus*)—First heard at Sharnbrook on 11th April (H. A. Hales) and at Flitwick on the same date (W.G.S.).

**SHORT-EARED OWL** (*Asio flammeus*)—Two flushed from stubble at Stepingley on 8th November (W.G.S.).

**PEREGRINE FALCON** (*Falco peregrinus*)—The female reported in last year's journal to have frequented the Felmersham—Chellington area, stayed here till the spring of 1948 (Miss G. H. Day and Commander G. E. T. Milburn). One was shot while attacking decoy pigeons at Roxton on 27th March (C. F. Tebbutt).

**HOBBY** (*Falco subbuteo*)—One seen flying near woods between Brickhill and Hockliffe on 6th September (W.G.S.).

**COMMON BUZZARD** (*Buteo buteo*)—One seen flying along the hill-ridge near Ridgmont on 2nd November (W.G.S.).

**MONTAGU HARRIER** (*Circus pygargus*)—A male flew in a westerly direction over Bedford Sewage Farm on 18th August and caused great disturbance to Herons and Mallard (Rec. and H.A.W.S.).

**COMMON HERON** (*Ardea cinerea*)—Gradually recovering its strength. Twenty-four nests were recorded from the county including five from the increasing heronry on the island in Southill lake.

**BITTERN** (*Botaurus stellaris*)—First observed to pay nocturnal visits to reed beds at Oakley Bridge, by two fishermen, Messrs. Scrimshaw and Benson, on 3rd August, to whom it was an unfamiliar species. They eventually informed Dr. G. A. Metcalfe of the occurrence (19th), who passed on the information immediately to the Recorder, and H.A.W.S. visited the area that evening and saw and confirmed the identification. It was later seen by the Recorder and others on 19th, 22nd and 24th. It disappeared shortly afterwards from this area, due no doubt to the disturbance caused by people in the vicinity of Oakley Bridge each

evening. It (or a similar bird) showed up towards the end of the year by the river between Biddenham and Kempston Church where it remained during the winter. On several occasions it called with its typical harsh note. It was probably this bird which was seen on another stretch of the Ouse near the New Cut, Bedford, by pupils of Bedford School on 29th and 30th September.

**GREY LAG GOOSE** (*Anser anser*)—An obviously wild bird was stalked by the Recorder, H.A.W.S. and F.C.G. during a rain storm at Radwell on 4th April. The bird was very wary, but by making use of a hedgerow as cover the observers got to within eighty yards of the bird and with the aid of glasses were able to note down all the characters.

**WHITE-FRONTED GOOSE** (*Anser albifrons*)—Four were reported at Bedford Sewage Farm on 4th December (W. J. Champkin). These were seen by the Recorder and others, who got good close up views of them. According to the employees at the Works, the birds arrived on the previous day.

**PINK-FOOTED GOOSE** (*Anser fabalis brachyrhynchus*)—A party of some thirty–forty of these birds apparently frequented the water-meadows between Biddenham and Kempston Church during late December and were seen by Mr. Flute, farmer of Box End, to be feeding on his land. Thinking that they were domestic geese from a neighbouring farm he took no notice of them and it was on 7th January, 1949, that H. T. James came across them and reported the occurrence. (A full report will be given therefore in the 1949 issue of the JOURNAL).

**MALLARD** (*Anas platyrhynchos*)—No great flocks were seen. Those at Southill Park, the greatest number being c. 250 on 14th November, were disturbed by tree felling in the spring (W.K.P.).

**TEAL** (*Anas crecca*)—The same remarks for the Southill area apply to this species as to the foregoing. About eighty were here on 14th November (W.K.P.). More than two hundred were at Bedford Sewage Farm on 16th March. A nest was found on the island in Southill Lake on 18th April (W.K.P.).

**GARGANEY** (*Anas querquedula*)—Three birds were present at Bedford Sewage Farm on 11th April. From then on the numbers increased to six (five males and one female) and a careful watch was kept on the area. During this season a large quantity of surplus water had been forced out onto the river meadows and a bog of several acres in extent was formed. It was here that H.A.W.S. found the nest containing eight eggs on 29th May and these were photographed by the Recorder on 8th June. Some days later the nest was destroyed apparently by cattle. The pair of birds were present till 19th June after which date they disappeared.

As mentioned before, this is the first recorded attempt at breeding and it is a great shame that the nest should have come to such an untimely end, especially as the eggs were well incubated (Rec., H.A.W.S., F.C.G. and Bedford School).

**WIGEON** (*Anas penelope*)—There were about fifty, chiefly males, at Bedford Sewage Farm on 21st February (Rec.). A male was seen on the River Ouse near Westfields Farm, Oakley, on 13th August (M. H. Crummie).

**PINTAIL** (*Anas acuta*)—One male at Kempston Hardwick Clay Pit pool on 25th January (C.S.P.). One at Bedford Sewage Farm on 27th February (Bedford School).

**SHOVELLER** (*Spatula clypeata*)—A male was seen at Southill lake on 7th March (W.K.P.). There were three pairs at Bedford Sewage Farm on 21st March but only a single male was seen on 2nd May. On 14th August a female was seen in company with a juvenile which could just fly and it is almost certain that the species bred in this locality. A search was made several times for a nest but without result. (Rec., H.A.W.S. and Bedford School).

One pair at Felmersham Gravel Pits on 11th October (F.C.G.).

**COMMON POCHARD** (*Aythya ferina*)—These were seen through the spring in small numbers in widely scattered localities till 7th March at Cardington (F.C.G.). A pair seen at Park Farm Pit, Henlow, on 12th September may have attempted nesting in the area. A female with a brood of four recently hatched young was seen at Felmersham Gravel Pits during the last week in May (Lady D. Wells). Three were present at Bedford Sewage Farm on 30th December (H.A.W.S.) and seven at Felmersham on 11th November (F.C.G.).

**FERRUGINOUS DUCK (*Aythya nyroca*)**—An immature male was reported at the clay pit pool, Kempston Hardwick on 4th December (C.S.P.).

On the following day in company with the reporter, the Recorder and H.A.W.S. paid a visit to the pool and stalked the bird at fairly close range with telescopes and glasses. As it preened, the white undertail coverts were very distinctive and as it was accompanied by a female Tufted Duck, the comparison was made easy. Another noticeable character was the crescentic white wing bar, observed when the bird flapped its wings. The white extended well into the primaries.

**TUFTED DUCK (*Aythya fuligula*)**—A few birds were well distributed on various pools throughout the winter and the first winter visitors (five) were reported at Southill lake on 14th November. A female with five young was discovered in the Gravel Pit pool at Henlow on 2nd August by the Recorder and H.A.W.S. These were probably the same six present on 12th September (W.K.P.). A supposed Tufted Duck with young was reported from Oakley Bridge early in June. Two males and a female were at Felmersham Gravel Pits on 13th June (F.C.G.).

**GOLDEN-EYE (*Bucephala clangula*)**—An immature male was at Kempston Hardwick pool from 14th November till the end of the year (C.S.P.).

**GOOSANDER (*Mergus merganser*)**—One and then two birds (immature) were present at Kempston Hardwick pool from 3rd January to 27th February (C.S.P. and Bedford School).

**CORMORANT (*Phalacrocorax carbo*)**—One at Southill lake on 15th February (Rec.).

**GANNET (*Sula bassana*)**—As reported in the press, an immature bird was picked up at College Farm, Keysoe, during harvest on 7th or 8th September. We are indebted to the farmer, Mr. J. R. Bates, for particulars of the occurrence. He saw the unusual bird in a field of "seeds" and although it had blood on an injured wing it was so fierce that two of his employees had to use a pitchfork to catch it. The children of one of the men, Mr. J. Hollowell, took it to the local school where Miss Pacy tried to feed it on milk sops. Dr. G. M. Vevers informs us that another mistress, Miss Beeby, sent the bird eventually to the Zoological Society where it arrived safely.

Gales which had blown several days prior to the occurrence were no doubt responsible for this visitation and also for that of the Manx Shearwater given below.

**MANX SHEARWATER (*Puffinus puffinus*)**—An adult bird, which had a bullet wound in the right thigh, was picked up in the Kimbolton Road area, Bedford, on 3rd September, and kept in confinement by the finder for several days while an unsuccessful attempt was made to feed it on milk sop. I was informed by Mrs. M. E. King on 8th September, that the bird had been taken to the lake in Bedford Park, there to be released. Eventually, on the 9th, I recovered the dead bird from one of the park keepers who stated that it had been stoned by some boys after it had been placed on the lake on the 6th. He, the keeper, had also tried to feed it but the bird died on the 9th. It was sent away by me to be stuffed and I received a report on the stomach contents, etc., saying that the bird was well nourished but that the stomach contained only a little silkweed.

**TURTLE-DOVE (*Streptopelia turtur*)**—One at Gt. Barford on 19th April (C. F. Tebutt).

**BAR-TAILED GODWIT (*Limosa lapponica*)**—One and then two were at Bedford Sewage Farm from 26th March to 1st April (Rec.).

**COMMON CURLEW (*Numenius arquata*)**—One at Bedford Sewage Farm on 2nd April (Rec.). One flew westwards over Burdleys Manor, Stagsden, on 12th April (D.W.E.). Five in meadows by the gravel pits at Felmersham on 3rd April (F.C.G.). Three at Bedford Sewage Farm from 5th–9th August (H.A.W.S.).

**WOODCOCK (*Scolopax rusticola*)**—More information obtained about the breeding range in the county. Several nests found (W. G. Sharpe).

**JACK SNIFE (*Lymnocyptes minimus*)**—Last winter visitors, three in number, seen at Bedford Sewage Farm on 21st April (Rec.).

**DUNLIN** (*Calidris alpina*)—One at Bedford Sewage Farm on 25th March and two on 27th (Rec.). Two more here on 2nd May (Bedford School), and five on 6th and 7th August (H.A.W.S.). Two at Fenlake on 5th August (H.A.W.S.).

**RUFF** (*Philomachus pugnax*)—One at Bedford Sewage Farm on 26th March and two on 27th; stayed till 1st April (Rec.). Three here on 18th August and four from 22nd till 26th (H.A.W.S.).

**COMMON SANDPIPER** (*Actitis hypoleucos*)—First summer visitor at Fenlake on 3rd May (Rec.). From then on well distributed, passing through suitable areas. On the return migration, numbers were seen by the River Ivel at Henlow and in the Arlesey areas on 2nd August and the last emigrant was seen on 19th September (Rec. and H.A.W.S.).

**WOOD-SANDPIPER** (*Tringa glareola*)—One at Bedford Sewage Farm 11th–27th August (Rec., H.A.W.S. and C.S.P.), seen at close range through glasses on several occasions and all characters noted satisfactorily. Distinctive call also heard.

**GREEN SANDPIPER** (*Tringa ochropus*)—Well distributed during passage, in small numbers, along the courses of streams and margins of pools throughout the county. The largest number (twelve) was at Bedford Sewage Farm from the 7th to the 18th of August and a single bird stayed here till 9th December (H.A.W.S. and Rec.).

One was flushed from a farm pond at Burdleys Manor, Stagsden, on 31st July and three more here on 2nd August (D.W.E.).

**BRITISH REDSHANK** (*Tringa totanus britannica*)—A small party were feeding in a deep chalk excavation at Houghton Regis on 23rd April. The first arrival of breeding birds at Bedford Sewage Farm was on 12th March (Rec. and H.B.S.).

**GREENSHANK** (*Tringa nebularia*)—One called as it flew over the Recorder's house, heading south on the night of 4th August. One at Bedford Sewage Farm from 5th to 19th August (Rec. and H.A.W.S.).

**RINGED PLOVER** (*Charadrius hiaticula*)—Two at Elstow Hardwick on ploughland near the pits on 1st October (Bedford School).

**GOLDEN PLOVER** (*Pluvialis apricarius*)—Last emigrants seen on 15th April (H.A.W.S.). First autumn arrival (a single bird) seen also at Bedford Sewage Farm on 6th August (H.A.W.S.). Flocks of over two hundred in several places during the winter.

**OYSTER-CATCHER** (*Haematopus ostralegus*)—One heading in a southerly direction during the still clear night of 10th August called at regular intervals as it passed over the Recorder's house.

**BLACK TERN** (*Chlidonias niger*)—Six seen at Felmersham on 17th May and stayed for a week (Lady D. Wells). Four passed along the River Ouse, downstream, at Bedford Sewage Farm on 19th May (Rec. and H.A.W.S.).

**COMMON TERN** (*Sterna hirundo*)—Three at Bedford Sewage Farm on 19th May (H.A.W.S.).

**LITTLE TERN** (*Sterna albifrons*)—Ten seen at the Felmersham pools on 17th May (Lady D. Wells). These stayed for about fifteen minutes.

**COMMON GULL** (*Larus canus*)—Several at Bedford Sewage Farm in company with Black-headed Gulls on 21st February (Rec.). Four at Radwell on 22nd February and one at Flitton Bog on 27th December (F.C.G.).

**HERRING GULL** (*Larus argentatus*)—Nine near Odell Mill on 19th December and one at Bedford Sewage Farm on 30th (Rec.) One at Langford on 24th October (F.C.G.). One at Bromham on 28th December (H.A.W.S.).

**LESSER BLACK-HEADED GULL** (*Larus fuscus*)—One at Kempston Hardwick on 17th October (Bedford School).

**WATER-RAIL** (*Rallus aquaticus*)—One picked up in a cow yard at Pertenhall during October (Miss L. E. Modlen).

**COOT** (*Fuligula atra*)—The number of birds present at Southill lake reached their peak for the season in November when over 200 were present (W.K.P.).

## MAMMALS

No additions to the mammalian fauna of the county have been recorded during 1948, but there is additional information regarding one little mammal that seems to have become very rare within recent years. This is the Harvest Mouse (*Micromys minutus soricinus* Hermann), to which Dr. G. M. Vevers referred in the footnote to his article on mammals at Whipsnade on page 44 of the 1947 *Bedfordshire Naturalist*.

Dr. Vevers now writes as follows:—"Both Philip Bates, the overseer of Whipsnade Park, and my own gardener, Jesse East of Totternhoe, say that twenty years ago Harvest Mice were quite common at Whipsnade and Totternhoe, but neither of them have seen any for many years. There is no doubt that what they saw were Harvest Mice, as they described them very accurately and also the beautiful nests which they weave on the corn stalks."

In view of the above I am pleased to be able to record that the Harvest Mouse still exists in Bedfordshire. On 14th February, 1949, I was walking over a farm at Dunton with some members of the Beds. C.A.E.C., one of whom was Mr. H. Tong, Superintendent of Whipsnade Zoo. Suddenly we noticed a very small yellowish mouse running in some stubble. I succeeded in catching it, and both Mr. Tong and I handled it and were satisfied as to its identity; but, unfortunately, it eventually escaped. Mr. Tong has discussed the incident with Dr. Vevers, who writes, "I have no doubt it was a Harvest Mouse."

I shall be glad if other members, particularly those in any way associated with agriculture, will keep a look out for the Harvest Mouse, in particular any nests that may be found in growing corn or hedgeside vegetation.

RAY PALMER.

## Bedfordshire Naturalists

### III—CHARLES ABBOT (1761-1817)

By J. G. DONY

The desire to seek after and relate the unusual is strong in most people, but the recording of ordinary things is the mark of a student. It is almost to be expected that probably the first bird record for Bedfordshire should be that of an eagle shot on Sandy Warren and that the relatively rare purple milk vetch should be the first plant recorded for the county. Such was the approach to natural history in the county until Abbot came, and, with a patient record of common every day occurrences, was able to see the uncommon in its right perspective.

He was born on 24th March, 1761, probably at Blandford, entered Winchester School in 1772 and proceeded to New College, Oxford, in 1779 where he took his Master of Arts degree in 1788. In the same year he came to Bedford to be usher or under-master at the Grammar School, a post like that of the master usually reserved for graduates of New College. In the meantime on 7th November, 1787, he had married



Sarah Harris of Chocken Hall, now Cherkenhill, in the parish of Leigh Sinton, near Malvern, Worcestershire. He is already described as resident of Bedford on the marriage certificate although he refers in his correspondence to his coming to Bedford in 1788. Honours and additional positions came to him quickly. He was elected a Fellow of New College in 1788 and a Fellow of the Linnean Society in 1793. In 1802 his university honoured him with the degree of Doctor of Divinity, and he was elected a Fellow of the Society of Antiquaries in 1813. He was Vicar of Oakley Reynes from 1798, the last before the livings of Oakley and Bromham were joined, and Vicar of Goldington from 1803. He was curate of St. Mary's, and for a time St. Paul's, Bedford. He was disappointed when he was not appointed master of the school when John Hooke, the Master, died in 1810 but he had no cause to complain of lack of attention in other directions.

He corresponded with all the great naturalists of his day; these included Sir J. E. Smith who, fresh from his personal triumph of having secured the Linnaean collection, was now writing the *Flora Britannica*, and nursing the Linnaean Society in its early years; James Sowerby, whose desire for fresh material for illustrations for his *English Botany* seemed inexhaustible; A. W. Haworth, the author of *Lepidoptera Britannica*; Dawson Turner, the authority on seaweeds and James Dickson, an authority on cryptogams.

It is as a botanist that Abbot will be remembered. As early as 1795 he sent a paper entitled *Planta Bedfordiensis* to the Linnean Society. This was not published but thanks to Mr. S. Savage, the present Librarian of the Society, it has been preserved. It lists 200 plants which he thought to be the less common Bedfordshire species and must be considered as the first Flora of the county. He refers in his preface to the paper to the fact that to prepare a complete Flora of the county "would be a great loss to any man who should be adventurous enough to publish it at his own expence". How little has time changed this! Three years later he took the risk and the *Flora Bedfordiensis*, almost a model as a County Flora, was published. The county now took its place with Oxfordshire and Cambridgeshire, and was the third county to have a printed Flora. A reference is made with every plant listed to a standard work where a description of the species could be found. Six plants are illustrated including Abbot's favourite flower, the Lady's Mantle. His own annotated copy now in the possession of Mr. R. L. Hine, of Hitchin, contains many additions and emendations showing the same thoroughness revealed in the original work. A letter to Smith (3rd September, 1802) lists a number of additions but the annotated copy, one of the most valuable contributions to Bedfordshire natural history, goes much beyond this.

Constant reference is made in his correspondence to Mrs. Abbot, the "amiable and interesting partner of his pursuits and labours". He is persistent in his demands that Smith and Sowerby should give credit when it was owing to her. She was apparently mainly responsible for his herbarium. This consists of five large volumes and passed to the Higgins family after Abbot's death. It remained at Turvey Abbey until 1945, when it was placed on long loan at Luton Museum by the Rev.

H. H. L. Longuet-Higgins. The collection is in an excellent state of preservation and, if it be Mrs. Abbot's work, is a testimony to her care and skill. It has one serious drawback; not a single specimen is localised—Abbot used the herbarium to assist him in the identification of his plants and not, as botanists have more recently compiled them, as evidence of the occurrence of plants in definite localities as well as for the purpose chosen by the earlier botanists. The herbarium is a useful check on Abbot's knowledge and it is a fairly safe assumption that species recorded in *Flora Bedfordiensis* are usually represented in the herbarium by specimens of what he thought these species to be. It was thoroughly examined by A. R. Pryor in 1881, then working on the *Flora of Hertfordshire*, and his paper on the herbarium in the *Journal of Botany*, 1881, is a useful contribution to the study of Bedfordshire botany.

Apart from his work on the Bedfordshire Flora Abbot devoted a great deal of time to willows. He drew the attention of Smith to the Bedford Willow (*Salix Russelliana*) which, despite the opinions of other botanists and the doubts of the Duke of Bedford in whose honour he wished it to be named, he insisted was a separate species. The Bedford Willow is now considered to be a hybrid between the White and Crack Willows (*S. alba x fragilis*) but Abbot is to be forgiven for failing to see this.

It is interesting to note that Abbot could turn from a subject as scientific and controversial as the Bedford Willow to advising farmers on the useful and harmful plants of agricultural land. His *Hints to the Bedfordshire Farming Interests* addressed to Thomas Batchelor engaged in writing his *General View of Agriculture in Bedfordshire* (1808) is an interesting paper which it is hoped may soon be published in full.

The greatest compliment paid to Abbot as a botanist was that Smith in the *Flora Britannica* (1800) gave *Flora Bedfordiensis* references to every species. Abbot wrote that he was prouder of this recognition and to be classed by Smith among his friends than to have been honoured by his university with the degree of Doctor of Divinity.

Abbot's lesser known but probably his greatest interest was lepidoptera. In November 1798, he presented a long paper to the Linnean Society describing the occurrence of the Chequered Skipper—its first in Britain—at Clapham Park Wood. This part of the paper was printed in the *Transactions* of the Society; but the remaining part containing descriptions of new species was apparently not favourably received by other entomologists present at the meeting. The paper contains a delightful description of the flight of the Chequered Skipper which I quote as a typical example of Abbot's literary style. "The times when this *Papilio* is most easily taken are May and June when the *Lucina* is out, though its term of existence must be longer, as I have taken several of them in good condition a full fortnight after the Burgundy has disappeared. They should be sought for from seven to nine o'clock in the morning, indeed I have observed them playing in pairs just after sunrise or at least as soon as the morning Fog has evaporated. Its flight is extremely short, and the insect is far from being timid, for should the maladroitness of the Aurelian suffer him to escape

from capture, he may be easily traced among the herbage by a vigilant eye and re-taken. They fly very near the ground and delight to settle on the blades of very long Grass or the various species of the Carex tribe." His papers and correspondence contain many references to the breeding of caterpillars. Their food plants and life histories fascinated him as much as the beauty of the insects themselves. He crossed swords with Donovan, probably the leading entomologist of the day, on the life history of the Humming Bird Hawk Moth. Haworth, in his *Lepidoptera Britannica*, makes many references to "amico meo C. Abbott D.D." A moderate list of Bedfordshire lepidoptera can be compiled from Haworth; but there is probably a more complete list made by Abbot himself in a copy of *Flora Bedfordiensis*. This passed after Abbot's death to J. C. Dale, in his day a noted entomologist. It was sold in a London saleroom in 1928 and every Bedfordshire naturalist should join in the search to find this unique work. His collection of insects, in two large framed and glazed mahogany cases, was bought for four guineas by Mr. Bucklow of the Swan Inn, Bedford. Bucklow was supposed to have refused an offer of ten guineas for one insect—one wonders what it represented.

Abbot was an incurable collector, for coins and medals were added to plants and insects. His house in front of the old school in Harpur Street must have been a veritable museum.

It is difficult to estimate his worth as a naturalist. He was an optimist and always travelled hopefully. His enthusiasm led him to see the unusual when it was not there. He sent willow roots, still preserved in the letter, to Smith hoping it would prove to be a new species of algae. There are mistakes in *Flora Bedfordiensis* but one must allow for the limited descriptions in the books at his disposal. His description of the female of the Clouded Yellow as a new species may be yet another example of his optimism.

His character comes out very clearly in his correspondence. He liked notice and his letters to Smith contain many complaints of having travelled some distance "as Dunstable, Eversholt, Whipsnade, &c." to send Sowerby plants "by his own desire" only to find them "in the names of other contributors or without a name as plants of ordinary occurrence." One may have some sympathy with Abbot considering the difficulty he must have had in travelling comparatively short distances by horse back; but many another would have allowed Sowerby's lack of attention to pass. At times his insistence on a matter of personal viewpoint is marked in his letters, even to Smith, and more than once he concludes, "but please do not let me the style of one who wishes to dictate." Mrs. Abbot was constantly at his elbow demanding her share of attention.

He viewed his school duties and his church livings very lightly. Someone, somewhere, should provide him with the income of a gentleman and sufficient time to expend his energies to the really important things of life—for him flowers, willows, mosses and butterflies. This is a reasonable enough attitude for a man with live interests as he had.

He claimed, one wonders with what truth, friendship with the

Russells and the other gentry of the county. His letters always went franked, usually by Lord John Russell. He was very patriotic and tried to persuade the Linnean Society to adopt the Duke of York Fritillary as the name of the Chequered Skipper. It must, however, be realised that we were at war and Tory views were synonymous with patriotism, yet he published a poem on the death of Charles James Fox.

He died, a comparatively poor man, at Bedford on 8th September, 1817. He had quarrelled with Brereton, Hooke's successor at the school, but under the circumstances that was to be expected. He was buried with his wife, who predeceased him, at Great Malvern near her old home.

#### BIBLIOGRAPHY

† Abbot, C.—

*Planta Bedfordiensis*, 1795 MS. Linnean Soc.

*Flora Bedfordiensis*, 1798.

*Flora Bedfordiensis*, author's annotated copy in the possession of the late Mr. R. L. Hine, Hitchin.

[Insect Notes] Linnean Society Papers, No. 192a MS. 1798.

Correspondence with J. E. Smith, Linnean Society. MSS. Collection.

Correspondence with J. E. Sowerby. MSS. Collection, Dept. of Botany, Nat. Hist. Museum.

Hints to the Bedfordshire Farming Interest. MS. Beds. County Record Office, D.D.X. 135/4.

Hymns composed for the use of St. Mary's Church in the Town of Bedford, 1791. Verses sacred to the memory of the Duke of Bedford, 1802.

A Sermon on the Death of the late Lord Viscount Nelson, 1805.

A Sermon preached before His Majesty's 14th Regiment of Foot,

1805. Elegy on the death of Charles James Fox, 1806. Verses on the death of Saml. Whitbread, M.P., 1815. A Sermon on the Slave

Trade, —.

Minutes of the Harpur Trust, MS. Harpur Trust, Bedford.

*Transactions of the Linnean Society*, V, 1800.

Lyson's Correspondence. B.M. Add. MSS. 9804.

Marsh, T. Orlebar. Collections for a biography of persons connected with Bedfordshire. B.M. Add. MSS. 21,067.

Sowerby, J. *English Botany*, 1790-1814.

Smith, J. E. *Flora Britannica*, 1800.

Haworth, A. W. *Lepidoptera Britannica*, 1803.

Batchelor, T. *General View of Agriculture in the County of Bedford*, 1808.

Smith, J. E. *English Flora*, 1824.

[Forbes, J.] *Salicium Woburnense*, 1829.

Smith, Lady P. *The Correspondence of J. E. Smith*, 1832.

Pryor, A. R. Notes on the Herbarium of Abbot, *J. Bot.* 23, 1881.

*Dictionary of National Biography*, 1885.

Sargeant, J. and Hockliffe, E. *A History of Bedford School*, 1925.

Farrar, C. F. *Harper's Bedford Charity*, 1930.

Britten, J. and Boulger, G. *Biographical Index of deceased British and Irish Botanists*. Second edition revised A. B. Rendle, 1931.

## Notes and Observations

### FUNGUS RECORDS

The following species of fungi were found by Mr. E. Milne-Redhead on 17th September, 1948, in Dedmansey Wood. They were kindly determined by Miss E. M. Wakefield, of the Royal Botanic Gardens, Kew.

*Clitopilus prunulus* (Scop.) Fr.; *Cortinarius purpurascens* var. *subpurpurascens* Fr.; *C. anomalus* Fr.; *Craterellus cornucopiodes* (L.) Fr.; *Hebeloma saccharioides* Quel.; *H. coccineus* (Schaeff.) Fr.; *Hygrophorus conicus* Fr.; *Inocybe geophylla* (Son.) Fr.; *Laccaria amethystina* (Vaill.) Cooke; *L. laccata* (Scop.) Cooke; *L. glyciosmus* Fr.; *Lactarius pyrogalus* (Bull.) Fr.; *L. subdulcis* (Pers.) Fr.; *Leptonia lampropus* Fr.; *Lycoperdon saccatum* (Vahl.) Fr.; *Mycena galopus* (Pers.) Fr.; *M. pura* (Pers.) Fr.; *Pluteus nanus* (Pers.) Fr.

PETER TAYLOR.

### BEES AND DELPHINIUMS

Deck chair natural history is a pleasant sedentary occupation in hot weather. In the last very hot week of July, 1948, I spent some time in my garden at Luton watching bees visiting Delphiniums. I noticed that bumble bees (*Bombus* sp.) would feed either in the normal legitimate way at the flowers or, and these were in the majority, they would feed illegitimately by piercing the spur behind the flower and gaining access to the nectaries in this way. This habit is well known in the long-tongued bees, but is the difference due to a difference in habit between bees from different nests, and is the habit learnt or inherited? All the hive bees I saw visiting the flowers fed at the spur and apparently a hole once made is used more than once. Species of Diptera (hover flies of the genus *Eristalis*) visited the flowers in the normal way and presumably fed on pollen. It would seem that although Hymenoptera are the chief visitors to Delphiniums they need not be the chief pollinators, and in some cases actually damage the flower, as the spur often withers once attacked.

Of 464 flowers examined at random 253 (fifty-five per cent) were found to have had the spur pierced by Hymenoptera. Of these fifty-eight per cent were purple, twenty-five per cent pink and seventeen per cent white. Approximately forty-six per cent of the pink and white flowers were attacked, but the percentage of blue attacked was higher (sixty-three per cent) and this suggests selection of blue colouration. This colour was dominant (fifty per cent of sample population), and perhaps these plants were better situated and stronger growing. The pink and white flowers occupied thirty per cent and twenty per cent respectively of the sample.

The younger flowers, as one might expect, had not suffered so much as the older; the flowers were counted in the morning. The youngest flowers of the Delphinium are those which terminate the raceme. In the sample of 464 flowers taken, eighty-one were terminal and twenty-five (thirty-one per cent) of these had been attacked. If the

age of the flower did not affect the result one would have expected fifty-five per cent of the eighty-one to be attacked, and the difference is significant.

B. R. LAURENCE.

#### COURTSHIP OF THE WALL BUTTERFLY

At Flitwick Moor on 29th July, 1945, I watched the following epigamic behaviour of *Pararge megera* L. (Satyridae). Male and female were facing each other on flat ground. The female had wings constantly vibrating, outstretched flat on the ground. The male was standing before the female with wings slightly open. With a periodicity of about five seconds it would jerk its wings forward and hit the fore edge of the female's wings with its own. During this process the antennae of both sexes were constantly vibrating. This continued for about four minutes. When disturbed the female flew into a grass tussock closely followed by the male.

E. B. Ford (1945, *Butterflies*, Collins) does not mention such specific behaviour but notes that the male often stands beside the female waving his wings. "The scent of the male is scattered by the androconia . . . and they form distinct patches on the fore wings of the male Satyridae."

B. R. LAURENCE.

#### A RARE HAWKMOTH IN BEDFORDSHIRE

A specimen of the Silver-striped Hawkmoth (*Hippotion celerio* L.) was taken by J. B. Purser at Milton Ernest, near Bedford, on 6th December, being found inside a house on a window ledge.

This insect is a native of Southern Europe, as well as Africa and Asia, but is only a rare occasional immigrant to Britain. This is believed to be the first record for Bedfordshire, though the moth is a great traveller and seems to have been taken at various times in widely separated parts of the British Isles.

This beautiful and active insect appears to visit us chiefly in the autumn, though both early spring and summer specimens have been recorded. Very occasionally breeding takes place here, and there are a few records of caterpillars being found; the foodplants are fuchsia, Virginian creeper, yellow bedstraw and grape vine.

RAY PALMER.

#### MISCELLANEOUS RECORDS

Two further species of harvestman have been added to the list:—*Nemastoma chrysomelas* Herman, Dyer's Hall waterfall, Sundon (15. vii. 48), *Liobunum blackwalli* Meade, one in Ravensdell Wood together with the abundant *L. rotundum* (Latr.) (1. viii. 48).

The large ichneumon *Amblyjoppa laminatoria* (Fab.) was taken on birch at Flitwick Moor (25. vii. 48). It is a parasite of the Elephant Hawk moth which is frequent on the moor.

Besides the Silver-Fish and the Fire-Brat only one other species of Thysanuran appears to have been taken in the county. A specimen of *Praemachilis parvicornis* Bagn. was found by the writer amongst dead beech leaves in Long Wood, Studham (16. ii. 47). On this date the hard winter had reached its height and all the leaves were covered with ice. Little life was evident though a few of the hardy snails *Trichia striolata* (Pfr.) and *Goniodiscus rotundatus* (Müll.) were not altogether inactive.

BERNARD VERDCOURT.

#### WILLOW TITS IN BEDFORDSHIRE

Bedfordshire records of the Willow Tit (*Parus atricapillus*) are very scanty. In fact I am aware of only two other records beside my own. Steele-Elliott does not mention it at all, since it was not distinguished from the Marsh Tit in his day.

During the winter of 1947-48 I made fairly frequent visits to Putnoe Wood, near Bedford, in order to make observations on tits. There were then only Great, Blue, and Long-tailed Tits present. On 21st March I had an excellent view of a Willow Tit, and heard it singing. After that I had few opportunities of visiting the wood again until September, 1948, when I again saw a Willow Tit. This winter (1948-49) I have seen Willow Tits there regularly, and have seen at least three together. It is therefore likely that a pair arrived last March and successfully raised a family, and it may be hoped that a permanent colony will be founded. It is of interest to note that at about the time that the Willow Tits arrived, Marsh and Coal Tits also appeared, and have been there since.

The whole question of the distribution of the Willow Tit (as also of the Marsh and Coal Tits), is most puzzling. It is very likely that there are other isolated and as yet undiscovered colonies in Bedfordshire. I would be very pleased to hear from anyone who discovers them. Details of the type of habitat in which they are found would be especially valuable.

It should be stressed that it is really essential to hear the note, as the differences in plumage between the British Marsh and Willow Tits are very slight.

D. W. SNOW.

### ABSTRACTS OF LITERATURE ON BEDFORDSHIRE NATURAL HISTORY FOR 1948.

By THE RECORDERS

The following articles relating to the natural history of Bedfordshire were published during 1948:—

1. AGRICULTURE. Vol. 55 (May, 1948).  
"The Colorado Beetle in England, 1947." By C. T. Gimingham and I. Thomas, pp. 55-63 (with maps). The first recorded specimens are plotted on maps without mention of locality.
2. THE BEDFORDSHIRE MAGAZINE. Vol. 1 (1948).
  - (a) "Bedfordshire Birds in Early Spring." By Keith Piercy, pp. 129-32 (illustrated).
  - (b) "Wild orchids in Bedfordshire." By John G. Dony, Ph.D., pp. 145-8 (illustrated). Includes two excellent *in situ* photographs by Mr.

Robert Atkinson of two rare orchids found in the county, the lizard and autumnal lady's tresses and a number of excellent drawings of flowers for diagnostic purposes by Mr. Peter Taylor.

- (c) "Butterflies of the Bedfordshire Woodland." By Bernard West, pp. 193-6 (illustrated).
- (d) "Wildfowl in Bedfordshire." By Henry A. S. Key, pp. 217-221 (illustrated).
3. BOTANICAL EXCHANGE CLUB. Report for 1946-7 (September, 1948).
- (a) Excursion Reports "Bedford and District, 19th-22nd July, 1946. Leader: Dr. J. G. Dony", pp. 220-3, contains a number of records, many new to the county.
- (b) "Plant Notes", p. 279. *Vulpia megalura* (Nutt.) Rydb. an American grass, new to Britain, found on a railway embankment at East Hyde, by J. G. Dony, described by C. E. Hubbard.
- (c) "Plant Records", pp. 281-323, contains many Bedfordshire records, a number new to the county.
4. BRITISH BIRDS. Vol. 41 (1948).
- (a) "Report on the immigration of Waxwings" (*Bombycilla garrulus*). Winter, 1946-7. No. 2. Page 36. Reports by several observers on occurrences in the county.
- (b) "Song Period of Hedge-Sparrow." No. 6. Page 191. Short note on some observations made at Biggleswade during September, 1945 and September, 1946, by C. W. Towler.
- (c) "Report on the inland Passage of Arctic and Common Terns in the Spring of 1947." No. 6. Page 171. One bird recorded seen at Woburn by the Duke of Bedford.
- (d) "Recovery of Marked birds." No. 12, pp. 365-366. A Kestrel (*Falco t. tinnunculus*) ringed at Clapham on 19.7.47 was recovered at Huy (Liege) Belgium during May, 1948. A Common Heron (*Ardea c. cinerea*) ringed at Eaton Socon 19.4.39 as a young bird was recovered at Diélette (Manche), France, during September, 1939.
5. ENTOMOLOGIST'S MONTHLY MAGAZINE. Vol. 83 (1947) and 84 (1948).
- (a) "Note on the prey of *Calobata cibaria* L. (Dipt., Micropezidae)." By B. R. Laurence, Vol 83, p. 296. Records (from Ampthill Marsh) *Ormosia pseudosimilis* Lundst. (Dipt., Tipulidae) as prey.
- (b) "Some further British species of *Amauronematus* Konow (Hym., Tenthredinidae)." By Robert B. Benson, Vol. 84, pp. 28-32. The new species *Amauronematus rex* Bens. is recorded from King's Wood, Heath and Reach.
- (c) "British sawflies of the genus *Pachynematus* Konow (Hym., Tenthredinidae)." By Robert B. Benson, pp. 58-65. The two new species described (amongst others) in this paper, *P. calcicola* and *P. chambersi*, are recorded from Pegsdon and Ampthill respectively.
- (d) "Notes on the distribution of the British Longicorn Coleoptera." By Raymond R. U. Kaufmann, pp. 66-85. Several species are noted as occurring in the county without giving localities.
- (e) "Pselaphidae (Col.)—new county records." By Rev. E. J. Pearce, M.A., F.R.E.S., pp. 87-8. Bedfordshire localities for four species are named.
- (f) "The Habitat of *Alphitophagus bifasciatus* Say, etc. (Col., Tenebrionidae)." By Bernard Verdcourt, p. 98.
- (g) "A revision of the European Dacnusiini (Hym., Braconidae, Dacnusiinae)." By G. E. J. Nixon, B.A., pp. 207-24. *Rhizarcha stramineipes* (Haliday) from King's Wood, Heath and Reach.
- (h) "The correct name of the species described as *Pompilus cardui* Perkins, 1917 (Hym., Pompilidae)." By V. H. Chambers, Ph.D., A.R.C.S., pp. 232-4. *Anoplus caviventris* (Auriv.) is recorded from Wymington Scrubs, Whipsnade and Billington.
6. ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION. Vol. 60 (1948).
- (a) "Abundance and scarcity of *Rhingia campestris* Mg. (Dipt. Syrphidae)." By B. R. Laurence, pp. 100-1.
- (b) "Cyrtidae (Diptera) in Bedfordshire." By B. R. Laurence, p. 101.



- (c) "Scarcity of *Rhingia campestris*, Mg. (Dipt., Syrphidae)." By B. Verdcourt, p. 108.
7. PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON (A). Vol. 23 (1948).  
 "New records of Dryinidae and Bethylinidae (Hymenoptera)." By O. W. Richards, M.A., D.Sc., F.R.E.S., pp. 14-18. Dryinid wasps not already recorded in this JOURNAL are Mr. Benson's captures of the following from King's Wood, Heath and Reach: *Anteon flavicorne* var. *bensoni*, *A. infectum*, *A. scapulare*, *A. lucidum*, *Aphelopus melaleucus* and *A. holomelas*.
8. TRANSACTIONS OF THE SOCIETY FOR BRITISH ENTOMOLOGY. Vol. 9 (1948).  
 "A contribution towards an ecological survey of the aquatic and semi-aquatic Hemiptera-Heteroptera (Water Bugs) of the British Isles; dealing chiefly with the Scottish Highlands and East and South England." By E. S. Brown, B.A., F.R.E.S., pp. 151-195. Several species are listed from Bedfordshire, with localities closely described.
9. JOURNAL OF LINNEAN SOCIETY (BOTANY) 54 (Sept., 1948).  
*A Prodomus of the British Hieracacia*, H. W. Pugsley, contains a number of Bedfordshire records.
10. TRANSACTIONS OF THE BRITISH MYCOLOGICAL SOCIETY. Vol. 31 (1947).  
 W. C. Moore (pp. 86-91) records *Sphaerotheca fuliginea* (Schlecht.) Salm. on cultivated *Doronicum*, etc., in Bedfordshire.

NOTE.—The following references were omitted in error from the article "A Bibliography of Entomological notes relating to Bedfordshire", by V. H. Chambers, published in last year's issue:—

ENTOMOLOGISTS' MONTHLY MAGAZINE, Vol. 80 (1944).

"Records of Bedfordshire Hemiptera." By B. Verdcourt, p. 75.

"*Xiphydria camelus* L. and *X. prolongata* Geoffr. (Hym., Siricidae) in Bedfordshire." By B. Verdcourt, p. 87.

## NEW MEMBERS

- Allsop, K., Barwythe, Studham, Dunstable.  
 Armitage, D. J., 35 St. Michael's Road, Bedford.  
 Bell, Mrs. B. M., 26 Mayne Avenue, Leagrave, Luton.  
 Bellwood, Miss K. M., 4 De Parys Avenue, Bedford.  
 Bishop, Miss D., 4 Devon Road, Bedford.  
 Blade, Miss U. I., 3 The Embankment, Bedford.  
 Burnapp, D., 55 Chestnut Avenue, Bedford.  
 Chalkley, H. E. W., 10 Whitehill Avenue, Luton.  
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 Cole, Mrs. A., 44 Linden Road, Bedford.  
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 Day, Miss E. M. B., B.E.M., 14 Spenser Road, Bedford.  
 Dearden, —, 5 Dunstable Close, Luton.  
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 Durant, Mrs. W., 45 Ford End Road, Bedford.  
 Durant, Miss, 45 Ford End Road, Bedford.  
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 Halkett, Mrs. V. M. C., 134 Bromham Road, Bedford  
 Hanley, Mrs. P., 61 Bedford Road, Moggerhanger, Beds.  
 Hearn, Mrs. M., 32A Wellington Street, Luton.  
 Hutchings, W. J., The Keeley, Wootton, Beds.

James, H. J., 19 Nelson Street, Bedford.  
 Jeffreys, Dr. D. M., 116 Hurst Grove, Bedford.  
 Kennedy, J., 21 Kingsbrook Road, Bedford.  
 Letchworth Naturalists' Society.  
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 Matthewman, J. G., Ashton Lodge, Dunstable.  
 Mickle, Mrs. F. M., 22 Clapham Road, Bedford.  
 Oxley, Miss M. F., B.A., —.  
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 Pentland, D. A., 32 Putnoe Lane, Bedford.  
 Plummer, G., 13 The Baulk, Biggleswade.  
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 Richardson, L. A., 170 Great North Road, Eaton Socon, Hunts.  
 Rooth, Miss M. E., 49 The Grove, Bedford.  
 Scrimgeour, Miss J., 9 Linden Road, Bedford.  
 Smith, Mrs. E. J., Meadway Hostel, Dunstable.  
 Steele, R. J., 19 Philpotts Avenue, Bedford.  
 Thorpe, Miss O. G., 665 Hitchin Road, Luton.  
 Way, Miss E. D., 86 Beecroft Way, Dunstable.  
 Young, H. V. M., 14 The Dell, Kempston.

#### CHANGES OF ADDRESS

Bullen, E. R. *to* 23 Oldfield Road, Bedford.  
 Bullen, Mrs. K. H. *to* 23 Oldfield Road, Bedford.  
 Coleman, R. C. *to* 45 St. Michael's Road, Bedford.  
 Cresswell, G., M.P.S. *to* Castle Road, Bedford  
 Gurney, Miss M. E. *to* 14 Douglas Road, Harpenden, Herts.  
 Jarvis, C. MacKechnie, F.L.S. *to* 15 Kingcroft Road, Harpenden, Herts.  
 Knight, K. A. *to* 34 Albany Road, Leighton Buzzard.  
 Vevers, Geoffrey M., F.R.C.S. *to* Springfield, Whipsnade Park, Beds.

#### ALTERATION OF RULES

The following revision of Rule 4 was passed at a Special General Meeting held on 4th February, 1949:—

##### RULE 4

The management of the Society shall be vested in the Officers and a Council of ten. The Officers shall consist of a President, Chairman, Secretary, Treasurer and Editor, all of whom shall be nominated by the Council and elected at the Annual General Meeting.

The Council shall be elected annually; any candidate for election as a member of the Council shall be nominated in writing by not less than two members of the Society. All nominations must be in the hands of the Hon. Secretary not less than fourteen days before the Annual General Meeting. The Council shall have power to co-opt members for special committees and to fill vacancies.

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(EDITORIAL NOTE.—It has been decided in the interest of economy not to publish the full list of Members or the Rules of the Society each year, but only New Members, Changes of Address and any Alterations to the Rules.)

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