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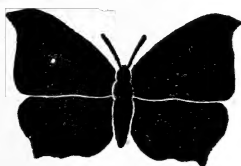
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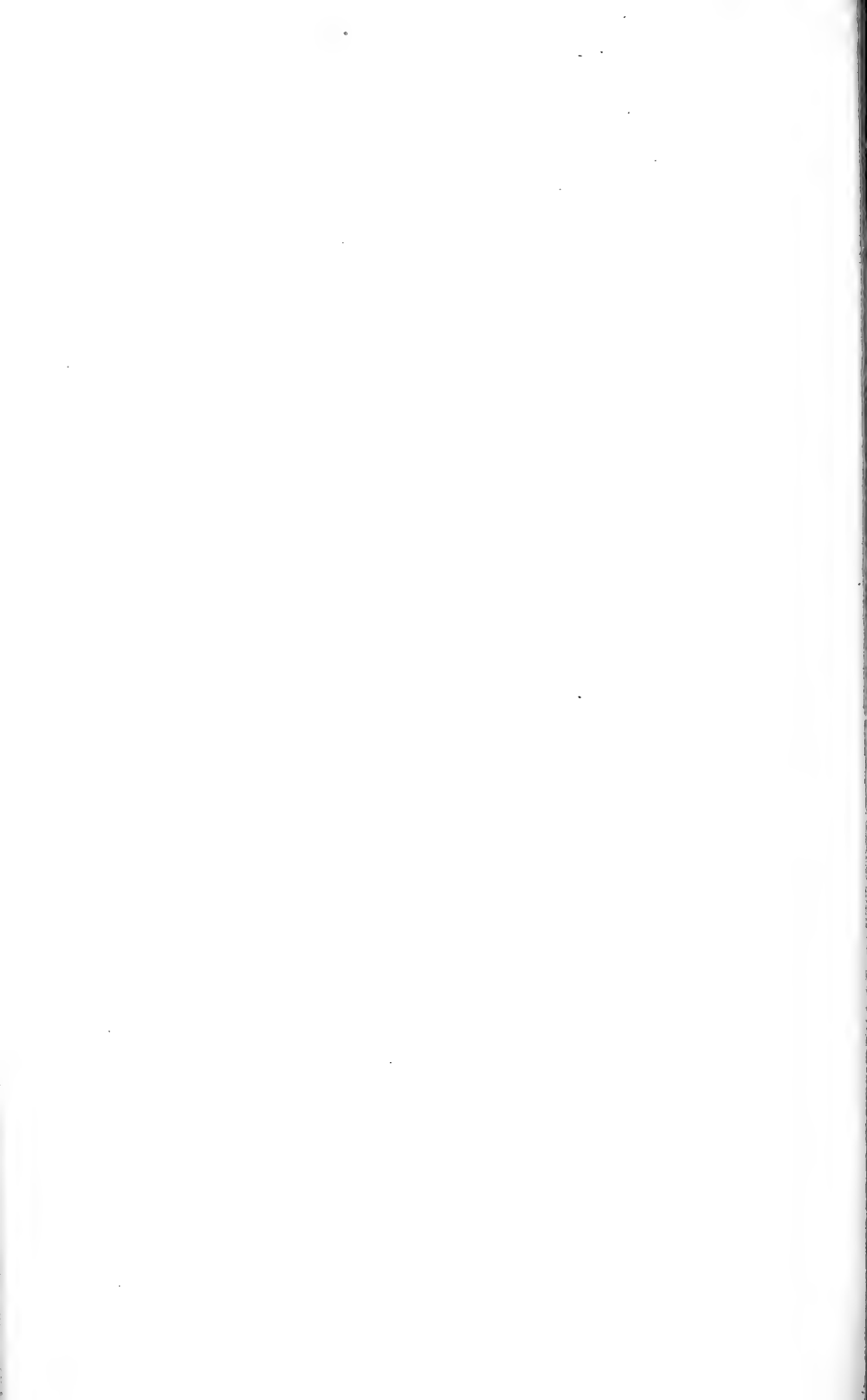
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No. 64

BULLETIN

AUGUST 1944

Vol. 6 of the "Bulletin of the Amateur Entomologists' Society," edited by Beowulf A. Cooper, B.Sc., A.R.C.S., Dept. of Agriculture, The University, Leeds, 2. Issued free to members. Annual subscription to the A.E.S. 5/-, 2/6 to boys and girls aged 18 or under. Hon. Secretary: Phyllis L. Rogers, 9i, Middle Lane, London, N.8.

PROGRESS

The New Format—Nine years ago this month, when we were six members strong, appeared our first publication, *Journal* No. 1. With this issue commences the first printed volume of the *Bulletin of the Amateur Entomologists' Society*. Vol. 1 (1935-6), Vol. 2 (1937) and Vol. 3 (1938) were known as the *Journal* of the Society, and contained both longer articles of lasting interest, and shorter paragraphs, exchange notices, lists of members, and editorial announcements, matters of more ephemeral value. In 1939, as Vol. 4, these were separated, the former going into the bimonthly printed *Journal*, known as the *Amateur Entomologist*, the latter into a duplicated pamphlet, the *Bulletin*. With the onset of war, the *Bulletins* were greatly curtailed and Vol. 5 appeared as issues of the *War-time Exchange Sheet* (1940-44). All these issues were duplicated, almost all being done by one or two members of the Society's Committee on the Society's own machine. It is hoped that these printed *Bulletins* will allow of a gradual transition to more frequent or larger issues as conditions allow, retaining the *Journal* in its present annual form as hitherto. It may be added that Vol. 7 of the *Amateur Entomologist*, sent to press eighteen months ago, is still in the printer's hands and making very slow progress; we hope to change to another printer at the earliest opportunity.

1945 Subscription Rate—At the last meeting of the Society's Committee,

it was decided to raise the subscription for 1945 to 5/- for all members aged over eighteen, remaining at 2/6 for boys and girls of eighteen or less. This is necessitated by the more expensive printed *Bulletins*, and by the fact that the cost of obtaining new members has for some time been considerably more than the 2/6 subscription; we intend before long to make a great effort to increase our membership total. The new subscription rate comes into force on September 1st, from when new members' subscriptions cover the period until the end of the following year.

Assistance Required—Owing to the calling up of Mr B. S. Goodban, who has for the past three years undertaken the duplicating, addressing, stamping and posting of our *Bulletins*, we should be very glad of any offers of assistance in these respects. As far as addressing and posting goes, it would be of most help if one of our Scottish members could undertake the work, as, the *Bulletins* now being printed at Arbroath, it would save time in transit, not always reliable at the present time, and may result in members getting their issues a few days sooner than otherwise. We should also be glad to hear from two members living in or near London who could act as auditors of the Society's books for the year 1943-4. The Editor will also be very glad of assistance in typing manuscripts for the printer from time to time.

Donations—We owe a great debt of gratitude to all members of the Society who have given donations towards the Society's funds, which are now in a much healthier state than they have been at any previous time. In particular, we wish to express our thanks to Professor Balfour Browne, through whose kindness we shall be able to issue a printed Membership List (as *Bulletin* No. 65) and have been enabled to introduce printed issues sooner than we had planned.

BEOWULF A. COOPER.

27/6/1944.

WANTS AND EXCHANGES

Collection of W. A. CHRISTIANSON (170) has been destroyed in a fire and he is very anxious to purchase or exchange Lepidoptera with collectors in any part of the world.

M. SPELMAN (624) requires papered Lepidoptera, perfect quality only, and is prepared to pay \$5.00 per hundred for common species, \$10.00 for the less common species and Papilionidae. At present he only needs specimens from the Indo-Malayan and Ethiopian regions. He especially desires quantities of *Kallima inachus* and any of the tropical Orthoptera which are good examples of mimicry. Of British Leps. he requires *A. atropos*. Of Coleoptera he requires tropical species of bright colouring, odd shape or large size particularly. He is prepared to offer special prices for the rarer Papilionidae (*Ornithoptera*) and Saturniidae (*Actias*, *Attacus*).

WANTED—Books, separates, articles, pamphlets and cuttings relating to British ants. Good prices paid; kindly state titles, authors and dates. Cpl. J. RICHARDSON, R.A.M.C., Army School of Hygiene, Mytchett, Aldershot, Hants. (A.E.S. No. 381).

M. P. SIDDONS (516) has larvae or cocoons of Small Eggar (*E. lanestris*); wanted Lime (*M. tiliae*), Elephant (*D. elpenor*) or Eyed (*S. ocellata*) Hawks.

A. BEDDINGTON (573) is anxious to contact anyone interested in the sport of falconry.

F. HEWSON (601) wishes to obtain literature upon Micros.

J. H. JANES (614) is anxious to obtain 2nd-hand collecting apparatus.

E. J. GREEN (477) would be grateful to receive data re Anopheline mosquitoes in the Hampshire Basin.

G. S. KLOET (477) has various store-boxes and cabinets for sale.

E. G. A. FARNHAM (616) would be grateful for observations on moths and butterflies around Harrow. Mddx.

D. O. JONES (466) wishes to purchase a book on simple entomology written in French, price up to 10/-.

J. M. K. SAUNDERS (618) requires set or unset specimens, particularly males, of *aethiops* (Scotch Argus) and *epiphron* (Small Mountain Ringlet). Would exchange for southern species such as *sinapis* (Wood White) or *camilla* (White Admiral).

WANTED by P. SIVITER SMITH (250), any specimens of "Copper" butterflies from all parts of the world, in particular *phlaeas* (Small Copper) from British Isles as well as abroad, but other species of Coppers wanted also. Will buy or exchange. Duplicates in exchange for Coppers: many continental and exotic butterflies and moths; some Japanese and British Coleoptera; Vol. III Seitz (Noctuidae), text and plates unbound; sundry books, etc.

B. A. COOPER (19) is anxious to obtain adults and larvae of most species of Elaterid beetles, living or dead, set or unset, carded, tubed or pickled, for the Leeds University collections. Battered or imperfect imagines will be useful for dissection. *Agriotes obscurus*, *sputator*, *lineatus* and *palidulus* not required. For exchange: other Yorkshire Elaterids, larvae of *paronia* (Emperor) and *verbasei* (Mullein Shark).

R. W. LLOYD (445) is anxious to rescue from salvage odd copies of the *Entomologist's Monthly Magazine*—if any members have any numbers, or series, of this periodical, which they wish to dispose of, he would be glad to have them.

MEMBERSHIP CHANGES

New Members

- 168 J. A. Humphreys, c/o Woodlands Cottage, London Lane, Wymeswold, near Loughborough, Leics. (Gen. ent.).
- 170 W. A. Christianson, Room 5, N.P. Depot, Brainerd, Minn., U.S.A. (Tropical L.).
- 614 J. A. Janes, Ailsa Terrace, Tiverton, Devon. (L.).
- 615 Dr D.M. Jeffreys, M.B., B.Ch. (Cantab.), University College Hospital, Gower Street, London W.C.1. (L., Ornithology, gen. ent.).
- 616 E. G. A. Farnham, The Park, Harrow-on-the-Hill, Mddx. (L. C.).
- 617 T. A. Cooper, 66 Elmstead Gardens, Worcester Park, Surrey. (C. L.).
- 618 J. M. K. Saunders, 27 Canonbury Ave., Pinner, Mddx. (R. variation).
- 619 W. W. Jackson, 18 Belmont Road, Aberdeen, Scotland. (L.).
- 620 R. G. Turner, 23 Heaton Road, Solihull, Warwicks. (H.).

- 621 G. de C. Fraser, Warren Mount, Freshfield, Liverpool. (L, C).
 622 Miss D. M. Garstang, N.D.H., Studley College, Studley, Warwicks. (Gen. and economic ent., especially L, H).
 623 Miss S. Symmons, B.Sc., Studley College, Studley, Warks. (Gen. ent., especially H).
 624 M. Spelman, 2781 Grand Concourse, New York 58, N.Y., U.S.A. (Exotic I).
 625 Robert L. Kenyon, F.R.H.S., 85 Rudston Road, Childwall, Liverpool. (Insect pests).

Deceased—We regret to have to announce the recent death of Mr T. H. Edmonds, F.R.E.S. (552).

Resigned—Miss L. Smith (220); J. Deal (284); J. S. Green (438); A. G. Bedford (496).

Membership Total—394 subscribing members.

Change of Address—H. J. Larwood (417), to: Manor Hall Flat, Turf Street, Bodmin, Cornwall.

Degreasing—There is no need to worry about insects going greasy. I have had many such and no one could now tell which had been the greasy ones in looking over my collection. My plan is as follows:—

With strong thread, tie a piece of cork $1\frac{1}{2}$ -2 ins. square and $\frac{1}{4}$ in. thick, to a flat steel washer $1\frac{1}{2}$ -2 ins. diameter to act as a sinker. Put this into a *clean dry* glass which has had canned tongue in it. Pin one or two greasy specimens on the cork and gently pour in enough BENZENE to cover the insects and leave them for two or three hours, moving the cork a little every now and then to bring fresh solvent to the specimens. Take them out and pin on a piece of dry cork and allow to dry thoroughly. All the grease will be left in the benzene and the specimens will not be relaxed. It is best not to wash too many specimens in the same lot of benzene, otherwise the grease, left in the liquid, is apt to be deposited on the insects. A quarter of a pint of benzene should wash 100 small or 50 large specimens of Lepidoptera. With large insects, such as the Hawk Moths, a second wash may be necessary. But a word in your ear—BENZENE—commonly known as BENZOL—and not BENZINE—must be used. The two are quite different substances and have different powers of dissolving various fats,

oils and greases; thereby hangs a tale, but it must be a post-war one.

H. HENSTOCK, Ph.D., F.I.C. (209)
 17/4/44.

OVERSEAS MIGRATION OBSERVATION

The Insect Immigration Committee are anxious to trace to their source the swarms of insects recorded from time to time as arriving in the British Isles. Dates of emergence, estimated numbers, flight direction and climatic conditions prevailing at the time are wanted, also details of local foodplants, habits, etc. Entomologists abroad having opportunities for observation are urged to send records of any apparent migration to the Keeper of Entomology, Natural History Museum, S.W.7, or direct to the undersigned.

Capt. T. DANNREUTHER, R.N.,
 F.R.E.S., Windycroft,
 Hastings, Sussex.

28/4/1944

IS IT DEAD YET?

Here is a tip that may ease the conscience of many a novice who has not yet learnt the vagaries of his favourite killing agent. The peculiar brilliance in the eyes of moths must be well known to all collectors. This brilliance disappears in the lethal chamber, and, if observed, the insect may safely be certified as dead. The eyes must appear uniformly opaque, as the slightest sign of the brilliance is a warning that the specimen will revive.

ERNEST L. BEAN (115)

26/10/1939

PUDDLE ATTRACTION

During the first week of July 1941, when a dry spell of weather was in progress, a favourite wood of mine in Surrey was swarming with White Admirals (*L. camilla*) and it was possible to see as many as six or more at a time, all flying low. The interesting thing was that on the side of a small road which went through the wood a puddle had remained throughout the dry season; this was alive with the butterflies flying around the puddle and apparently drinking from it. Many specimens were settling on Umbelliferous flowers, especially *Angelica sylvestris*, and it was possible to see three or four at one flower-head, while other White



WANTS AND EXCHANGES

WANTED TO PURCHASE, by L. B. CLARKE (157): the book, *The Honey Bee*, by D. Chapman, published by Blackwell Ltd., Oxford, now out of print.

WANTED, by K. H. POOLE (133): *A Moth Hunter's Gossip*, by P. B. M. Allan, either to buy (preferably) or to borrow. Mr Poole also desires to meet or correspond with any member stationed in Orkney or other northern island.

J. W. WHITWORTH (629) wishes to make contact with a specialist breeder of *tiliae* (Lime Hawk) and *caja* (Garden Tiger). Wanted: Pupae and set or unset specimens of all Sphingidae, particularly *tiliae*, *atropis*, *populi*, *celerio*, *livornica*, *stellatarum*, and also of *caja* and *villica*, *polychloros*, *iris*, *epiphron*, *aethiops*, *agestis*, *corydon* and *icarus*; these are required for completion of a specialised series; will buy or exchange. Rare foreign butterflies and vars. of British Leps. offered.

E. L. TODD (270) requires second-hand volumes of Seitz's *Macrolepidoptera*.

MISS P. BAIN (492) has a number of *potatoria* (Drinker) larvae to offer, and would like in exchange larvae or cocoons of Fox (*rubi*), Kentish Glory (*versicolora*), December Moth (*P. populi*) or Small Elephant Hawk (*porcellus*). In addition she wishes to purchase second-hand Lucas's *British Hawk Moths*.

J. NEWTON (439) has for sale, or for suitable exchange, South's *Moths of the British Isles* (Series I) and *Butterflies of the British Isles*. Wanted: *A Moth Hunter's Gossip* by P. B. M. Allan, *Practical Hints* (Tutt), and *The Insect Hunter's Companion* (Rev. Greene).

DR J. N. PICKARD (599) offers larvae of *plantaginis* (Wood Tiger), *ligustri* (Privet Hawk), *vinula* (Puss), *carpini* (Emperor), *hirtaria* (Brindled Beauty), etc. Wanted, early stages of many other species, some quite common, especially the Thorn, Prominent, Beauty and Eggar families.

J. BROADHURST (210) has for exchange pupae of *elpenor* (Elephant Hawk); wanted: pupae of *porcellus* (Small Elephant) or *ocellatus* (Eyed).

G. S. KLOET (477) still has a few cabinets and storeboxes for disposal.

WANTED, by A. F. O'FARRELL (58): Insects found damaging or in association with foodstuffs, clothing and stored products. Identified specimens returned to sender if desired. Full data with all material essential. Pyralidina and Tineina (except *E. sarcitrella* (*lactella*), *H. pseudospretella*, *E. sericarium* (*kuhniella*) and *P. farinalis*) are particularly asked for, living specimens in any stage preferred.

N. W. J. CARTER (213), at present in M.E.F., wishes to purchase a copy of F. N. Pierce's *Genitalia of the Geometridae*.

D. G. SCOTT (534) has for exchange larvae or pupae of *ocellatus* (Eyed Hawk). Wanted: larvae of *tiliae* (Lime) or *elpenor* (Elephant Hawk).

F. SUTTON (403) is in search of a second-hand copy of Snodgrass' *Principles of Insect Morphology*.

MEMBERSHIP CHANGES

Abbreviation: J. = Junior Member.

New Members

- 133 K. H. Poole, 65 The Crescent, Milton, Weston - super - Mare, Somt. (L.)
- 626 R. T. H. James, Sunnyside, Lower Chute, near Andover, Hants. (Gen. ent., ornithology.)
- 627 S. Beaufoy, B.Sc., A.M.I.E.E., F.R.P.S., 98 Tuddenham Road, Ipswich, Suffolk. (L.)
- 628 L. S. Beaufoy, 54 Bower Mount Road, Maidstone, Kent. (Breeding L., N.H.)
- 629 J. M. Whitworth, F.Z.S., F.R.E.S., 334 Leeds Road, Bradford, Yorks. (L., particularly R., breeding.)
- 630 S. P. V. Bray, B.Sc., A.R.I.C., c/o Lincoln Farm, Hampton-in-Arden, Warwickshire. (Gen. ent., esp. life-histories, pest control.)

- 631 Mrs R. E. S. Marshall Bell, 255 Belle Vue Road, Southbourne, Bournemouth, Hants. (Brit. mosquitoes, grasshoppers, crickets.)
- 632 J. C. R. J. Murphy, Balrath House, Balrath, Co. Meath, Eire. (L.)
- 634 Lieut. W. R. Murchie, with U.S. Army in Great Britain (letters c/o the Editor will be forwarded). (L., gen. ent., zoology.)
- 635 Miss E. M. Davies, 9 St John's Square, Wakefield, Yorks. (B.)
- 636 S. R. Tailby, B.Sc., A.R.I.C., 1 Church Place, Ardrossan, Ayrshire. (L.)
- 637 J. D. J. Skipper, 2 Gables Cottage, Chenies Road, Chorley Wood, Herts. (L.)
- 638 J. H. T. Hadley, B.A. (Oxon.), 1 Shrubbery Terrace, Weston-super-Mare, Somt. (L.)
- 639 J. M. J. Brooks, 77 Rossall Road, Cleveleys, Lancs. (L.)
- 640 J. H. W. Merrill, The Marsh, Marsh Road, Thornton-le-Fylde, Lancs. (L.)
- 641 J. B. G. Stott, 10 Trafalgar Road, Blackpool, Lancs. (L.)

New Honorary Member

- 201 W. H. T. Tams, British Museum (Natural History), London, S.W.7.

Names Removed from Membership List—Members Nos. 494, 390, 453, 312, 414, 474, 518, 376, 513, 400, 458, 434, 454, 461, and 511.

Membership Total—394 subscribing members, 13 honorary members.

Change of Address—41, E. W. Clasley to: Salisbury House, Salisbury Grove, Mytchett, Surrey. 216, S. F. Roberts to: 410 Woodchurch Road, Oxtou, Birkenhead, Cheshire. 217, B. S. Goodban to: 81 West Street, Ewell, Epsom, Surrey. 392, Lt.-Col. C. W. Mackworth Praed to: Castle-top, Burley, Hants. 448, G. A. Roberts to: 53 Broadway, Fulford, York. 464, R. Hartland-Rowe to: Y.M.C.A., Gt. Russell Street, London, W.C.1. 580, F. L. Hodgson to: 23 Stuart Avenue, Bare, Morecambe, Lancs.

ENTOMOLOGICAL EXHIBITION

Members of the A.E.S. are invited by the Secretary of the South London Entomological and Natural History Society to attend his Society's annual exhibition to be held at the Chapter House, St Thomas's Street, London,

S.E.1 (near London Bridge Station), on the afternoon of Saturday, 14th October 1944. Visitors are invited to bring specimens of general interest from their collections and so contribute to making the meeting a success. The meeting will be formally opened at 2.30 p.m., but exhibits may be handed in at any time from 11 a.m. onwards. The meeting will take the form of a *conversazione* displaying varieties and other interesting specimens and collections of our native fauna and flora.

A.E.S. ADVISORY PANEL

Addressing—The only requirement of members for the use of the Advisory Panel is that they must enclose stamps to cover cost of return of specimens, or stamped envelope for reply. Otherwise, reply cannot be guaranteed. It will also be of assistance if membership number is quoted in all enquiries. In the absence of any suitable Adviser in the table below, members should address their enquiry to: "The Adviser on (subject of query), c/o The Editor, Amateur Entomologist," who will forward the letter on to the authority he thinks most competent to deal with the matter. At present advice can only be given on matters concerning the fauna of the British Isles.

Packing—In sending set specimens by post, the box containing the specimens should be placed inside a larger box packed tightly with balls of crushed paper. As a further precaution, a strip of cotton wool pinned in with the specimens will collect legs and antennae that may break off, saving them from being shaken about in the box and damaging the insects further. Needless to say, pins should be pushed well into the cork of the container before despatch. Live insects should be firmly, but not tightly, packed with moss, grass or fibre, to prevent their being killed by bruising, but lush young foliage should not be used lest mortality be caused by suffocation or condensation. Photographic plates and microscope slides must be especially carefully packed in a well-insulated tin or wooden box, as they are very liable to be cracked in transit. Photographs and pen drawings should be placed between cardboard and the envelope marked "Please keep flat."

LEPIDOPTERA—Identification, Macros and Micros: W. L. RUDLAND, 211 Caversham Road, Reading, Berks.
 Identification of larvae: E. W. CLASSEY, Salisbury House, Salisbury Grove, Mytchett, Surrey.
 Rearing silkmths: R. W. R. HUNT, 3 Brockwood Lane, Welwyn Garden City, Herts.
 Selection, propagation and cultivation of foodplants and floral attractions: R. C. DYSON, 103 Stanford Avenue, Brighton, 6, Sussex.

COLEOPTERA—Waterbeetles, all matters, including identification: Prof. F. BALFOUR BROWNE, Brae, Dumfries, Scotland. Prof. Balfour Browne is particularly anxious to see specimens from all localities in connection with distribution maps which he is at work on.

Other beetles, identification: D. TOZER, 98 Copdale Road, Leicester.

Books and collecting methods: G. B. WALSH, 22 Stepney Drive, Scarborough, Yorks.

HYMENOPTERA — Sawflies — identification and general advice: R. B. BENSON, Zoological Museum, Tring, Herts.

Aculeata—identification and general advice: Dr I. H. H. YARROW, Ravenswing, Aldermaston, Berks.

Parasitica—identification and general advice: G. J. KERRICH, Manchester Museum, Victoria University, Manchester, 13.

DIPTERA—General advice: J. MURGATROYD, 195 Bramhall Lane, Stockport, Cheshire.

Mosquitoes: E. W. CLASSEY, Salisbury House, Salisbury Grove, Mytchett, Surrey.

ORTHOPTERA AND DERMAPTERA—Identification and general advice: W. D. HINCKS, 46 Gipton Wood Avenue, Leeds, 8.

HEMIPTERA—Books and collecting methods: G. B. WALSH, 22 Stepney Drive, Scarborough, Yorks.

ODONATA—Identification and general advice: A. F. O'FARRELL, 85 Malone Road, Belfast, N. Ireland.

Books—General advice: T. BAINBRIGGE FLETCHER, Rodborough Fort, Stroud, Glos.

MICROSCOPY—General advice: M. J. HIRONS, 138 Wyken Avenue, Wyken, Coventry, Warwickshire.

PHOTOGRAPHY—General advice, not colour photography or cinematography: E. G. NEAL, Flat 1, Rendcomb, Cirencester, Glos.

PESTS—Garden and farm pests: B. A. COOPER, Dept. of Agriculture, The University, Leeds, 2.

Stored products pests: A. F. O'FARRELL, 85 Malone Road, Belfast, N. Ireland.

CHEMICAL MATTERS—General advice: Dr H. HENSTOCK, Glengariff, Caerwys, Mold, N. Wales.

INSECT MIGRATION—General advice: Capt. T. DANNREUTHER, Windycroft, Hastings, Sussex.

CAPTURES AT FROME, SOM.

I should like to record two captures of mine in my garden this year. On May 9th an *alni* (Alder Dagger) sitting on one of my very few beech trees. On July 13th in my greenhouse a *polychloros* (Large Tortoiseshell) male, which had evidently been fluttering about for some time, as both fringes of the forewings were chipped. I think I have reported already that last year I caught four *livornica* (Striped Hawk) and two *simulans* (Dotted Rustic) on the valerian in my garden. Both last year and this I took one pale straw-coloured var. of *selene* (Small Pearl-Bordered Fritillary) within a mile or so of the town.

G. H. W. CRUTTWELL (118).

24/7/1944.

FOR SALE—Fertile ova of the Mulberry Silkworm, *Bombyx Mori*, price 2/- per hundred, postage 3d. Cash with order. Proceeds to A.E.S. funds. P. FEATHERSTONE, 6 Stafford Road, Tonbridge, Kent.

DIAMOND-TYPE DATA LABELS printed to order, in multiples of 125 of one wording. 10/- per 1000, or 6/- per 500; sex signs, 1/- per 500. Proceeds to A.E.S. Publication Fund. B. A. COOPER, Dept. of Agriculture, The University, Leeds, 2.

FOR DISPOSAL — Butterfly-net, hoop and Y-piece (net-bag unused): 7/6; 44 cylindrical glass bottles, 2½" x ¾" diam. (mostly with cork bung): 3d each; 24 brass-mounted brass guage vents, 1¾" diam. (for ventilating cages, etc.): 4d each. Post free. R. W. R. HUNT, 3 Brockwood Lane, Welwyn Garden City, Herts.

LIST OF MEMBERS—August 1944

The addresses given below are those home or permanent addresses to which A.E.S. communications will be sent, and from which letters will be forwarded to any temporary abode (e.g., school or military address) of members likely to move about. The Junior membership list has been compiled from the application forms sent in by members on joining, and includes all members who were aged 18 or less on January 1st, 1944; it is possible that it may contain several inaccuracies, and it would be appreciated if Junior members, when next they write to the Hon. Secretary, would mention their date of birth, so that there can be no doubt in future. Members having interests other than those given here are asked to send details to the Hon. Secretary, for guidance in recommending suitable correspondents to new members. Members are also asked to mention their membership number, given in brackets after their name and initials, in all A.E.S. correspondence.

The following abbreviations are used:

- aq.=aquatic
 B.=biology
 C.=Coleoptera (beetles)
 E.=ecology
 econ.=economic
 ent.=entomology
 esp.=especially
 gen.=general
 H.=Hymenoptera (ants, bees, wasps, sawflies, parasites)
 Hem.=Hemiptera (bugs)
 L.=Lepidoptera (moths and butterflies)
 M.=migration
 M.L.=Microlepidoptera
 N.H.=natural history
 O.=Odonata (dragonflies)
 P.=photography
 R.=Rhopalocera (butterflies)

Senior Members

- Abell, S. G. (76), 154 Thornbury Road, Isleworth, Mddx. (L.)
 Adair, D. R. J. (456), Cosy Lodge, Culmore Road, Londonderry, N. Ireland. (L.)
 Adams, F. A. (267), 8 Wellingborough Road, Broughton, Kettering, Northants. (Gen. ent.)
 Adams, H. W. (510), 14 Scott Road, Kettering, Northants. (L.)
 Adams, Mrs J. B.Sc., F.Z.S. (508), 45 Devon Road, Bedford. (B.)
 Adkin, B. W., F.R.E.S. (556), Highfield, Pembury, Tunbridge Wells, Kent. (L.)
 Adolph, P. A., M.B.O.U. (529), The Lodge, Ashurst Place, Langton Green, Tunbridge Wells, Kent. (L. in relation to ornithology.)
 Aldridge, R. V. (262), Aprillis, New Road, Amersham - on - the - Hill, Bucks. (C., M.L.)
 Allaway, J. (349), 22 Lightwood Hill, Warley, Smethwick, Staffs. (L.)
 Ashwell, D. A. (223), 34 North Street, Bishops Stortford, Herts. (L., O., P.)
 Baker, B. (361), 2 St Saviour's Terrace, Field Road, Reading, Berks. (L.)
 Banner, Dr J. V. (103), 41 Vardean Gardens, Brighton 6, Sussex. (L.)
 Barnes, A. (500), 22 Colchester Road, Blackpool, Lancs. (L.)
 Barnett, T. L. (281), 31 Littleheath Road, Selsdon, Surrey. (L.)
 Bascombe, V. H. D. (574), Denham Lodge Annexe, near Olney, Bucks. (R.)
 Basden, E. B. (550), Budleigh, Farnham Royal, Bucks. (ent., breeding.)
 Bean, E. L. (115), 121 Queen's Road, West Croydon, Surrey. (L.)
 Beattie, I. S. (142), 21 Stirling Road, Edinburgh, 5. (L.)
 Beaufof, L. S. (628), 54 Bower Mount Road, Maidstone, Kent. (breeding L., N.H.)
 Beaufof, S., B.Sc., A.M.I.E.E., F.R.P.S. (627), 98 Tuddenham Road, Ipswich, Suffolk. (L.)
 Beer, Miss Madge L. (568), Madoreen, Sunninghill, Berks. (B.)
 Bell, Mrs R. E. S. Marshall (631), 255 Belle Vue Road, Southbourne, Bournemouth, Hants. (Brit. mosquitoes, grasshoppers, crickets.)
 Bennett, N. Chaplin (544), 37 Fore Street, Totnes, S. Devon. (L., N.H., ornithology.)
 Benson, R. B., M.A., F.R.E.S. (543), Zoological Museum, Tring, Herts. (H., esp. sawflies, Brit. fauna and flora, biogeography.)
 Birkett, Dr N. L. (583), The Cottage, Kilner Park, Ulverston, Lancs. (L., M.L., insect physiology.)
 Bonar, I. A. (499), Emmet's Grange, Simonsbath, Minehead, Som. (L.)
 Bowyer, Hon. Bertram (594), Denham Lodge, Olney, Bucks. (L., H.)
 Bradley, A. (219), 5 Alberta Mansions, Teignmouth, Devon. (J.)
 Bradley, J. D. (195), 15 Ridley Road, London. S.W.19. (L.)
 Brangham, A. Norman (18), 11 The Quadrangle, Welwyn Garden City, Herts. (ants.)

- Bray, S. P. V., B.Sc., A.R.I.C. (630), c/o Lincoln Farm, Hampton-in-Arden, Warks. (gen. ent., esp. life histories, pest control.)
- Briegel, R. H. (539), 141 Burnt Oak Lane, Sidcup, Kent. (L.)
- Britton, Mrs L. M. (108), 13 Ansthorpe Road, Crossgates, Leeds. (L.)
- Broadhurst, Rev. J. J. (210), St Peter's Vicarage, Newton-le-Wilwols, Lincs. (L.)
- Brooker, A. (540), 12 Baron Close, Elland Road, Leeds, 11. (L., econ. ent.)
- Broughton, J. E. (437), 14 Easedale Road, Heaton, Bolton, Lincs. (L., rearing.)
- Brown, Miss E. (602), 6 Effingham Lodge, Surbiton Cres., Kingston-on-Thames, Surrey. (gen. ent., aq. ent.)
- Brown, J. P. H., R.N. (290), 81 Warminster Road, Bathampton, Bath, Som. (L.)
- Brown, S. C. S. (532), 454 Christchurch Road, Bournemouth, Hants. (M.L., H.)
- Browne, Prof. Frank Halfour, F.R.S., (340), Brae, Dumfries, Scotland. (gen. ent., aq. C.)
- Buckler, H. A. (334), 3 St John's Road, Leicester. (L., M.L.)
- Bull, Dr G. V. (160), White Gables, Sandhurst, Kent. (L.)
- Burt, G. (48), Sunny Cottage, Preston, Weymouth, Dorset. (L., B., gen. ent.)
- Burton, W. (179), 18 Terminus Road, Sheffield, 7. (L.)
- Byers, F. W. (137), 59 Gurney Court Road, St Albans, Herts. (L.)
- Caldecott, J. B. (397), Amberley, near Arundel, Sussex. (L.)
- Calverley, W. J. (596), 267 Park Road, Sittingbourne, Kent. (insect B.)
- Capener, A. L. (6), St George's Home for Boys, P.O. Cleveland, Johannesburg, S. Africa. (Homoptera except Aphidae and Coccidae, Myrmelionidae, gen. ent.)
- Cardew, Col. P. A., F.R.E.S. (251), 21a Thornton Hill, London, S.W.19. (L.)
- Carter, N. W. J. (213), 1 Wood Street, E. Grinstead, Sussex. (L.)
- Cater, H. R. St Clair (587), Hergest Mill, Kington, Herefordshire. (O. silkmths.)
- Chambers, A. E. C. (450), 36 Watergate, Grantham, Lincs. (L.)
- Charlson, S. (520), 112 Manchester Road, Manchester. (M.L., M.)
- Chipperfield, H. E. (64), 27 Chilton Avenue, Stowmarket, Suffolk. (L.)
- Christianson, W. A. (170), Room 5, N.P. Depot, Brainerd, Minn., U.S.A. (tropical L.)
- Clarke, L. B. (157), Turkey Hall, Eldersfield, Glos. (L, beekeeping, agric. ent.)
- Classey, E. W., F.R.E.S. (41), Salisbury House, Salisbury Grove, Mytchett, Surrey. (L., mosquitoes.)
- Cockayne, Dr E. A. (238), Merstone, Tring, Herts. (L.)
- Coggon, J. G. (582), 20 Oswald Street, Millfield, Sunderland, Co. Durham. (L.)
- Coghill, K. J., B.Sc. (430), 11 Luxembourg Gardens, London, W.6. (gen. ent.)
- Coleridge, Lt.-Col. P. L. (239), Marden Ash, Teignmouth Road, Torquay, Devon. (L.)
- Collins, R. J. (256), Appledore, Mugswell, Chipstead, Surrey. (L., world Geometridae.)
- Collyer, Mrs Ethel (132), 27 Guildford Way, Wallington, Surrey. (L.)
- Colyer, Lt. C. H., R.A. (404), The Grange, Old Buckenham, Norfolk. (Diptera.)
- Cooper, Beowulf A., B.Sc., A.R.C.S. (19), The Vicarage, Northallerton, Yorks. (L., gen. ent., M., E., econ. ent., beekeeping.)
- Cooper, Mrs G. M. R., B.Sc. (447), The Vicarage, Northallerton, Yorks. (B.)
- Cooper, T. A. (617), 66 Elmstead Gardens, Worcester Park, Surrey. (C., L.)
- Coote, F. D. (166), 32 Wickham Avenue, Cheam, Surrey. (L., M.L.)
- Cove, Miss I. M., B.Sc. (612), Avery Hill Training College, Sandy Mount, Crosland Moor, Huddersfield, Yorks. (B., gen. ent.)
- Coxev, S. (358), 8 Wyresdale Road, Bolton, Lincs. (L.)
- Crow, P. N. (393), Heathcote, Cookham Dean, Berks. (L.)
- Cruttwell, G. H. W. (118), Rowden House, Frome, Som. (L.)
- Curd, O., F.Z.S. (129), Elsinore, Whiston Lane, Prescott, Lincs. (L.)
- Dale, W. E. (42), 54 Baldwyns Park, Bexley, Kent. (L.)
- Daniels, E. T. (53), 334 Dereham Road, Norwich, Norfolk. (O., Hem.-Heteroptera.)
- Dannreuther, Capt. T., R.N. (60), Windycroft, Hastings, Sussex. (M.)
- Davidson, A. R. (575), 2 Foster Road, Formby, Liverpool. (gen. ent. L.)

- Davies, Miss E. M. (635), 9 St John's Square, Wakefield, Yorks. (B.)
- Day, G. V. (29), Furlong Road, Stoke Ferry, King's Lynn, Norfolk. (L.)
- Deimel, I. R. (410), Iona, Bures Road, Gt. Cornard, Sudbury, Suffolk. (L.)
- Devenish, L. R. (246), 23 Grosvenor Road, E. Grinstead, Sussex. (L., gen. ent.)
- Devenish, R. C. (501), 23 Grosvenor Road, E. Grinstead, Sussex. (L.)
- Down, C. L. (59), 7 Mersham Drive, London, N.W.9. (L.)
- Driver, H., B.Sc. (557), 16 The Crescent, London Road, Northwich, Cheshire. (L.)
- Duffy, E. A. (200), 28 Lansdowne Road, E. Croydon, Surrey. (C., aq. ent.)
- Duncan, S. (280), Lone Pine, Anlaby, Yorks. (L.)
- Dyson, R. C., N.D.A. (91), 103 Stanford Avenue, Brighton 6, Sussex. (L., foodplants.)
- Eade, G. J. (190), 3 Rutland Road, Hove 3, Sussex. (L.)
- Eagles, T. R. (194), 32 Abbey Road, Enfield, Mddx. (L.)
- Easton, Nigel T., F.R.E.S. (370), 214 Worcester Road, Droitwich, Worcs. (L., N.H., P.)
- Eberlie, W. J. D. (70), Brooke House, Crawley Green Road, Luton, Beds. (L., O.)
- Edelsten, H. M., F.R.E.S. (208), Bramble Hill, Balcombe, Sussex. (L.)
- Edwards, Rev. W. O. W., M.A. (570), Sunny Nook, Moor Lane, Budleigh Salterton, Devon. (L.)
- Elliott, J. H. (530), 45 St Olave's Road, Clifton, York. (H.)
- England, W. E. (183), 7 Tea Garden Terrace, Sheffield, 4. (L.)
- Fairbairn, W. J. (443), Northfields, St Abb's, Berwickshire. (L.)
- Fairclough, R. (528), Blencathra, Deanvak Lane, Leigh, Surrey. (L., ornithology.)
- Farnham, E. G. A. (616), The Park, Harrow-on-the-Hill, Mddx. (L., C.)
- Fassnidge, W. (293), 13 Commercial Road, Parkstone, Dorset. (M.L., Neuroptera, Trichoptera.)
- Ferry, R. S. (207), Fulling Mill House, Welwyn, Herts. (gen. ent., L.)
- Finlay, Capt. R. A. J. (229), 9 Hermitage Gardens, Edinburgh, 10. (gen. ent.)
- Fletcher, D. S. (199), 11 Kenton Lane, Kenton, Harrow, Mddx. (L.)
- Fletcher, T. Bainbrigge, F.R.E.S. (52), Rodborough Fort, Stroud, Glos. (L., M.L., gen. ent.)
- Fluck, G. G. (569), Redroof, Reading Road, Fleet, Hants. (L.)
- Ford, Rev. G. A. (377), Shoreham Vicarage, Sevenoaks, Kent. (L.)
- Ford, R. L. E., F.R.E.S., F.Z.S. (527), Durfold, Parkhill, Bexley, Kent. (H.)
- Fox, T. H. (105), 226 St Alban's Road, Watford, Herts. (L., breeding.)
- Fraser, Mrs G. de C. (457), Warren Mount, Freshfield, Liverpool. (L.)
- Fraser, G. de C. (621), Warren Mount, Freshfield, Liverpool. (L., C.)
- Freer, Rev. Walter L. (366), Ever-shot Rectory, Dorset. (L.)
- Gardiner, B. O. C. (225), The Red House, River-in-Dover, Kent. (L., Neuroptera.)
- Garstang, Miss D. M., N.D.H. (622), Studley College, Studley, Warks. (gen. ent., econ. ent., L., H.)
- Gent, P. J. (192), 34 Castle Street, Wellingborough, Northants. (L.)
- Gerard, Hon. R. (359), Blakesware, Ware, Herts. (L.)
- Gibson, Miss E. M. (311), Ashcroft, Station Road, Petersfield, Hants. (L.)
- Gidman, C. C. (362), 25 Fairclough Road, Accrington, Lanes. (L., C.)
- Gillery, A. G. (442), Station House, Gilling East, Yorks. (L.)
- Glanfield, A. (2), Devoncote, Darlington Road, Hartburn, Stockton-on-Tees. (L., Brit. and foreign.)
- Goodban, B. S. (217), 81 West Street, Ewell, Epsom, Surrey. (L.)
- Goodson, A. L. (241), 26 Park Road, Tring, Herts. (L.)
- Grant, J. H. (330), 74 Coleshill Road, Ward End, Birmingham. (L.)
- Grant, R. M. (163), 1 Maple Street, Sheerness, Kent. (L.)
- Gray, Dr Elizabeth G., Ph.D. (332), N. Scotland College of Agriculture, 41½ Union Street, Aberdeen, Scotland. (B., mycology.)
- Green, E. J. (387), 58 Ufton Road, London, N.1. (medical ent.)
- Greig, G. D. S. (10), 65 Cavendish Drive, Rockferry, Cheshire. (L.)
- Gyselman, G. (218), 84 Gamble Road, Thornton, Blackpool, Lancs. (L.)
- Hadden, N. G. (586), Underway, West Porlock, Som. (L.)
- Hadley, J. H. T., B.A. (Oxon.) (638), 1, Shrubbery Terrace, Weston-super-Mare, Som. (L.)
- Hammond, H. E. (423), 16 Elton Grove, Adcocks Green, Birmingham, 27. (ent., L., life-histories.)
- Handon, G. T. (504), 94 De Vere Gardens, Ilford, Essex. (L.)

- Hanson, S. M. (320), 167 Gunnersbury Park, Popes Lane, London, W.5. (L.)
- Hards, C. H. (176), 40 Riverdale Road, London, S.E.18. (L., microscopy.)
- Harvey, Rev. B. F. (537), 12 Osney Gardens, Paignton, S. Devon. (L., R., Sphingids.)
- Harwood, P. (273), Loch Alvie Cottage, Aviemore, Inverness-shire. (Hem. Homoptera, H. Aculeata, C.)
- Hellings, G. E. A. (297), Cripplegate, St John's Road, Woking, Surrey. (L.)
- Henstock, Dr H., Ph.D., M.Sc., F.I.C. (209), Glengariff, Caerwys, Mold, N. Wales. (L.)
- Herroun, E. F. (172), North Bank, Yorke Road, Reigate, Surrey. (L.)
- Hewson, F. (601), 23 Thornhill Drive, Shipley, Bradford, Yorks. (L.)
- Hick, A. E. (567), Sherrards, Cricket Field Lane, Bishops Stortford, Herts. (O., H.)
- Hick, E. Pentland, F.R.E.S. (141), Athol House, Fulford Road, Scarborough, Yorks. (exotic L.)
- Hill, G. H. (164), 52 Love Lane, Pinner, Mddx. (L.)
- Hilliard, R. (99), c/o 3 Oakleigh Gardens, Edgware, Mddx. (L., N.H.)
- Hincks, W. D., M.P.S., F.R.E.S. (531), 46 Gipton Wood Avenue, Leeds, 8. (gen. ent., C., Orthoptera, Dermaptera.)
- Hirons, M. J. (444), 138 Wyken Avenue, Wyken, Coventry, Warks. (L., microscopy.)
- Hodges, G. B. (314), Sennocke, Priest's Lane, Shenfield, Essex. (L.)
- Hodgson, F. L. (580), 23 Stuart Avenue, Bare, Morecambe, Lancs. (L.)
- Holloway, Paul H. (429), Warwick House, Fair Oak, Eastleigh, Hants. (L., R.)
- Holroyd, G. C. (253), 8 Elmside, Onslow Village, Guildford, Surrey. (L.)
- Hood, L. A. (526), 104a High Street, Maldon, Essex. (L.)
- Horder, A. (85), c/o 43 Cranston Street, Penicuik, Midlothian, Scotland. (L., M.)
- Howard, P. (607), 126 Fleet Road, Fleet, Hants. (L.)
- Howard, R. W. (363), Highgrove, Stapehill Road, Stapehill, Wimborne, Dorset. (L.)
- Hughesdon, J. (87), 112 Aldenham Road, Bushev, Herts. (L.)
- Humphrey, S. W. (386), Pear Tree House, Roade, Northants. (R.)
- Humphreys, J. A. (168), c/o Woodlands Cottage, London Lane, Wymeswold, near Loughborough, Leics. (gen. ent.)
- Hunt, R. W. R. (261), 3 Brockwood Lane, Welwyn Garden City, Herts. (silkmths.)
- Hurter, Mrs D. (498), 41 Garston Old Road, Liverpool, 19. (L.)
- Jackson, W. W. (619), 18 Belmont Road, Aberdeen, Scotland. (L.)
- James, R. T. H. (626), Sunnyside, Lower Chute, near Andover, Hants. (gen. ent., ornithology.)
- Janes, J. A. (614), Ailsa Terrace, Tiverton, Devon. (L.)
- Jefferson, T. W. (242), 37 Riversdale Terrace, Sunderland, Co. Durham. (R.)
- Jeffreys, Dr D. M., M.B. B.Ch. (Cantab.) (615), University College Hospital, Gower Street, London, W.C.1. (L., ornithology, gen. ent.)
- Keji, J. A. (571), Albany Hospital Sanatorium, Tudor Road, Albany, N.Y., U.S.A. (L. larvae, especially Saturniidae, Notodontidae, Eucleidae.)
- Kennedy, A. (20), 130 Vesper Road, Leeds, 5. (L.)
- Kenyon, Robert I. (625), 227 Cheetham Hill Road, Dukinfield, Cheshire. (insect pests.)
- Kerrich, G. J., M.A., F.R.E.S. (551), 53 Palatine Road, Manchester, 20. (H. Parasitica.)
- Kershaw, J. L. (418), 1a Marsden Street, Barrow-in-Furness, Lancs. (L.)
- Key, J. C. (173), Cardington, Hall Lane, Upminster, Essex. (L.)
- King, A. Roland (425), Moor Hall, Ludlow, Salop. (L.)
- King, Capt. J. D., R.A. (485), Brightwell Baldwin, Oxon. (C., agric. pests.)
- Kloet, G. S., F.Z.S., F.R.E.S. (477), 8 Knutsford Road, Wilmslow, Cheshire. (gen. ent., nomenclature.)
- Knight, John E. (94), Toftrees, Woodside Avenue, London, N.12. (L., rearing.)
- Lanfear, A. H. (74), 5 Barton Drive, Paignton, Devon. (L.)
- Larwood, H. J. (417), Manor Hall Flat, Turf Street, Bodmin, Cornwall. (B., Isopods, Myriapods.)
- Last, H. R. (117), 12 Winkworth Road, Banstead, Surrey. (L., C.)
- Latham, F. H. (369), 26 Hollie Lucas Road, Birmingham, 14. (L.)
- Latter, J. (385), Edenderry, near Chard, Som. (L.)

- Leeds, H. A. (282), Wood Walton, Hunts. (L., esp. R. vars.)
- Lees, F. H. (375), The Gables, Maidencombe, Newton Abbot, S. Devon. (L.)
- Leitch, D. (415), 60 Gloucester Road, Kingston Hill, Surrey. (L., moths.)
- Leonard, B. G. (96), 29 Storeton Road, Oxtou, Birkenhead. (L., hawkmoths.)
- Letts, J. K. (506), 183 Windmill Lane, Greenford, Mddx. (microscopy.)
- Lewis, Rev. E. S. (373), Forton Rectory, Newport, Salop. (L.)
- Lisney, A. A. (315), The Red House, Narborough, Leicestershire. (L.)
- Little, J. C. (563), 126 Silverleight Road, Thornton Heath, Surrey. (L., exotic L.)
- Lloyd, Major C. T., D.Sc., Ph.D. (468), 25 Belmont Avenue, New Malden, Surrey. (L., M.L., microphotography, ornithology.)
- Lloyd, R. W. (445), Treago Castle, St Weonards, Hereford. (L.)
- Lorimer, J. A. (576), 23 Osborne Street, Burton-on-Trent, Staffs. (L.)
- Lorimer, R. I. (600), 23 Osborne Street, Burton-on-Trent, Staffs. (L.)
- Lygo, W. F. (514), 8 Joyce Road, Groby Road, Leicester. (L.)
- Maenicol, Dr D. A. B. (67), 52 St Albans Road, Edinburgh, 9. (L., M.L., P.)
- Maggs, P. (244), Sibylla, East End, Lymington, Hants. (L.)
- Main, H., B.Sc. (63), 9 Woodside Road, Woodford Wells, Essex. (L., C., P., B.)
- Manly, G. B. (427), 72 Tenbury Road, King's Heath, Birmingham. (L.)
- Mansfield, M. J. (134), 5 Chigwell Road, Bournemouth, Hants. (L.)
- Marcon, Rev. J. N. (248), Christchurch Vicarage, Eastbourne, Sussex. (R.)
- Martin, W. (553), Causeway, Dartington, Totnes, Devon. (L.)
- McLeod, C. H. (491), Culverlea House, Pennington, Lymington, Hants. (L.)
- McLeod, Sir Murdoch C., Bt. (35), Culverlea House, Pennington, Lymington, Hants. (L., esp. R.)
- Mears, T. (590), 97 Pepys Road, London, S.W.20. (H. Aculeata.)
- Michaelson, Capt. C. H., R.N. (436), Great Tower, Windermere, Westmorland. (L.)
- Mills, Miss D. (354), Blendon Preparatory School, Bexley, Kent. (L.)
- Millward, A. J. (344), 26 Warwick Street, Stourport - on - Severn, Worcs. (gen. ent.)
- Moore, Miss D. T. (476), 18 Church Row, London, N.W.3. (B.)
- Moore, John, R.N.V.R. (146), c/o Lloyds Bank, Tewkesbury, Glos. (L.)
- Morgan, H. G., B.A. (90), Dept. of Plant Pathology, Seale-Hayne Agricultural College, Newton Abbot, Devon. (L., gen. ent., Hem.)
- Morton, R. D. (145), 16 Gray's Lane, Hitchin, Herts. (L.)
- Moys, C. J. (463), 41 Ayling Lane, Aldershot, Hants. (ent., botany.)
- Mullings, P. (360), 20 Grange Park, London, W.5. (H., microscopy.)
- Mumby, P. D. (509), 2 Westfield Road, Great Shelford, Cambs. (H., C., M.L., Diptera.)
- Murchie, Lt. W. R. (634), U.S. Army, letters c/o B. A. Cooper, The Vicarage, Northallerton, Yorks. (L., gen. ent., zoology.)
- Murgatroyd, J. H. (480), 195 Bramhall Lane, Stockport, Cheshire. (C., Diptera, microscopy.)
- Murphy, H. N., B.Sc., F.Z.S. (593), Tudor House, Selsey, Sussex. (L.)
- Murray, Dr H. (177), Ashbourne, Clonmel, Eire. (L.)
- Nathan, L. (428), 19 Monton Street, Moss-side, Manchester, 14. (ent., L.)
- Neal, E. G., B.Sc., (467), Flat 1, Rendcomb, Cirencester, Glos. (L., C., M., breeding.)
- Ness, A. R. (549), 15 Homefield Avenue, Newbury Park, Ilford, Essex. (L.)
- Newman, L. Hugh (503), The Butterfly Farm, Bexley, Kent. (L.)
- Newton, J. (439), The Retreat, Tetbury, Glos. (L.)
- Nicholson, G. (33), Nuns Moor Crescent, Newcastle-on-Tyne. (L.)
- Nunn, C. T. (523), 161 Wadey Road, Brentwood, Essex. (L.)
- O'Farrell, A. F., B.Sc., A.R.C.S., F.R.E.S. (58), 85 Malone Road, Belfast, N. Ireland. (O., L., Diptera, econ. ent.)
- O'Rourke, F. J. (191), 45 St Kevins Park, Rathmines, Dublin, Eire. (H.)
- Otter, G. W. (475), 23 Fendon Road, Cambridge. (L., C., Trichoptera.)
- Page, L. (598), The Gables, Cookham Dean, Berks. (L.)
- Parfitt, R. W. (525), 1 Dunsdon Avenue, Guildford, Surrey. (L., M.L.)

- Parsons, D. (449), Bass Manor School, Broxbourne, Herts. (L.)
- Payne, J. H. (353), 10 Ranelagh Road, Wellingborough, Northants. (L.)
- Peacey, A. F. (407), Hillside, Brimscombe, Stroud, Glos. (L., M.L., H.)
- Peck, S. (546), 8 Nine Elms Road, Longleavens, Gloucester. (L.)
- Pellatt, J. J. K. (338), 45 Maple Street, Sheerness, Kent. (L.)
- Pennock, E. T. (82), 16 Drive Road, Linthouse, Glasgow, S.W.1. (L.)
- Pickard, Dr J. N., (599), 36 Storey's Way, Cambridge. (L., genetics.)
- Poole, K. H. (133), 65 The Crescent, Milton, Weston-super-Mare, Som. (L.)
- Potter, C. W. (214), 10 Fern Rise, Garden City, Humberstone, Leicester. (L.)
- Pow, A. (39), 63 Sharphill Road, Saltcoats, Ardrossan, Ayrshire. (L.)
- Praed, Lt. Col. C. W. Mackworth, (392), Castletop, Burley, Hants. (ent., zoology, ornithology.)
- Prichard, R. (460), 4 Woodcroft Lane, Bebington, Cheshire. (L., M.L.)
- Procter, R. (265), 20 Beeston Royds, Ring Road, Leeds, 11. (L.--Noctuids and Geometers.)
- Purcell, E. W. (416), 6 Owen Road, Wolverhampton, Staffs. (L.)
- Ramsden, E. (130), R.A.F., Southern Rhodesia, letters c/o Rev. J. J. Broadhurst, St Peter's Vicarage, Newton-le-Willows, Lancs. (L.)
- Randall, M. C. (535), 64 Mount Pleasant Road, Chigwell, Essex. (L.)
- Ranwell, D. S. (481), 6 Ellardale Road, Bognor, Sussex. (breeding L.)
- Rawlings, W. G., F.R.E.S., M.B.O.U., F.Z.S. (452), 14 Westfield Park, Bath, Som. (C. and L. in relation to ornithology.)
- Richards, A. W., M.A., B.Sc. (566), Nether Edge, Chapel Lane, Hawley, near Camberley, Surrey. (L., O., Orthoptera.)
- Richardson, Austin (483), Beaudesert Park, Minchinhampton, Glos. (L.)
- Richardson, J., R.A.M.C. (381), 104 Bothwell Street, Well Street, Glasgow, C.2. (H.)
- Richardson, N. A. (431), 20 Bletchley Road, Bletchley, Bucks. (L.)
- Roberts, G. A. (448), 53 Broadway, Fulford, York. (gen. ent., L., botany.)
- Roberts, M. J. (613), 4 Plumtree Cottages, Hans Road, Hawkhurst, Kent. (B.)
- Roberts, S. F. (216), 410 Woodchurch Road, Oxtou, Birkenhead, Cheshire. (L.)
- Roberts, W. N. (77), 48 Bishops Mansions, Bishops Park Road, London, S.W.6. (L., gen. ent.)
- Robson, J. P. (44), 10 Vane Road, Barnard Castle, Co. Durham. (L., M.L.)
- Roche, Dr P. T. L. (408), 8 Landsdowne Road, Bedford. (C., Hem.)
- Rogers, Miss P. L. (205), 91 Middle Lane, London, N.S. (L., ent., N.H.)
- Roscoe, Mrs M. (560), South Holwell Cottage, Warmwell, Dorchester, Dorset. (L.)
- Rose, H. G. (486), 7 Lime Tree Walk, Sevenoaks, Kent. (N.H., esp. foreign Arachnida.)
- Rowden, A. O. (405), Rydon Crest, Countess Wear, Exeter, Devon. (gen. ent.)
- Rudland, W. L. (249), 211 Caversham Road, Reading, Berks. (L., M.L., H.)
- Russell, W. (412), 69 Lochlea Road, Glasgow, S.3. (L., camouflage.)
- Sanderson, Dr R. E. R. (372), 276 Dunstable Road, Luton, Beds. (R.)
- Sangster, D. R. (578), 69 Leadsid Road, Aberdeen, Scotland. (L.)
- Saunders, J. M. K. (618), 27 Canonbury Avenue, Pinner, Mddx. (R. vars.)
- Shaw, H. K. Airy, B.A., F.L.S., F.R.E.S. (545), Daglingworth, Cirencester, Glos. (Hem. Heteroptera, C., E., botany.)
- Siggs, L. W. (243), 3 Culverden Park Road, Tunbridge Wells, Kent. (L.)
- Smith, A. (23), 23 First Avenue, Heworth, York. (L., M.L., P., conchology.)
- Smith, C. King (159), Bitton Hill, Bitton, Bristol. (L.)
- Smith, Ellsworth J., M.D. (473), 91 Beach Avenue, Larchmont, N.Y., U.S.A. (rearing insects, tree-frogs and toads.)
- Smith, E. K. (178), 25 Hungerford Drive, Reading, Berks. (L., veterinary ent.)
- Smith, F. Stanley (389), Hatch House, Pilgrim's Hatch, Brentwood, Essex. (L.)
- Smith, K. G. (388), 2 Warren Cottages, Portsmouth Road, Camberley, Surrey. (ent.)

- Smith, P. Siviter (250), Little Aston Park, Streetly, Birmingham. (L., P.)
- Smith, S. Gordon, F.L.S., F.R.E.S. (478), Estyn, Boughton, Chester. (L.)
- Snell, B. B. (419), Woodsome, Plym-
yard Avenue, Bromborough,
Cheshire. (L., M.L.)
- Spann, Lt.-Col. T. (493), Leaside,
Brooklyn Crescent, Cheadle, Che-
shire. (L., C.)
- Spelman, M. (624), 2781 Grand Con-
course, New York 58, N.Y.,
U.S.A. (large exotic insects.)
- Spencer, H. (186), 80 Park Road, El-
land, Yorks. (L.)
- Sterling, D. H. (84), 36 Estella
Avenue, New Malden, Surrey.
(L.)
- Stone, T. (365), Lockeridge Villa,
Shrubland Road, London, E.10.
(L., parasites.)
- Stretton, D. R. (564), 133, King's
Avenue, London, S.W.4. (L.)
- Sutton, Francis G. (403), 58 Blake-
mere Road, Welwyn Garden City,
Herts. (gen. B., ornithology,
gen. ent.)
- Sutton, Frank R., F.Z.S. (538), 42
Fairfield Drive, London, S.W.18.
(L.)
- Sutton, Miss M. F. (603), 6 Effingham
Lodge, Surbiton Crescent, King-
ston-on-Thames, Surrey. (gen.
ent., aq. ent., esp. Corixidae.)
- Symington, B. G. (301), Shutta, Looe,
Cornwall. (Exotic L.)
- Symmons, Miss S., B.Sc. (623), Stud-
ley College, Studley, Warks.
(gen. ent., esp. H.)
- Syms, E. E., F.R.E.S. (406), 22
Woodlands Avenue, London,
E.11. (all orders, breeding, P.)
- Tailby, S. R., B.Sc., A.R.I.C. (636),
1 Church Place, Ardrossan, Ayr-
shire. (L.)
- Talbot, M. J. R. (384), c/o The
Foreign Office, London, S.W.1,
by Angora Bag. (L.)
- Taylor, A. G. (433), Whiteshoots Hill,
Bourton-on-the-Water, Chelten-
ham, Glos. (gen. ent.)
- Taylor, E. Johnson (446), 25 South
Parade, Stockport, Cheshire. (L.)
- Taylor, L. R. (441), 325 Abbey Hey
Lane, Manchester, 18. (L.)
- Taylor, L. W. (591), c/o Lulworth
Cove, Raleigh Road, Mansfield,
Notts. (L., gen. ent.)
- Taylor, P. (350), 12 Manton Drive,
Luton, Beds. (R.)
- Tesch, L. R. (1), 75 St Lukes Road,
Maidstone, Kent. (L.)
- Thompson, A. M. P. (342), 50 Fullar-
ton Drive, Troon, Ayrshire. (B.,
P., microscopy.)
- Thornburn, W. (592), 44 Wharf Road,
Woodston, Peterborough, North-
ants. (L.)
- Thorpe, H. J. (482), 11 Egghill Lane,
Northfield, Birmingham, 31. (L.,
C., ornithology.)
- Timms, E. Cartwright (547), 524a
Moseley Road, Birmingham, 12.
(Diptera.)
- Todd, Lt. Edward L. (270), U.S.
Army, letters c/o B. A. Cooper,
The Vicarage, Northallerton,
Yorks. (R.)
- Tonge, A. E. (274), Ashville, Trafford
Road, Alderley Edge, Cheshire.
(L.)
- Townsend, C. C. (451), 68 Gloucester
Road, Cheltenham, Glos. (C., O.,
Hem. Heteroptera, botany.)
- Tozer, D. (36), 98 Copdale Road,
Leicester. (L., C.)
- Turner, H. B. (341), Malverleys,
Newbury, Berks. (L.)
- Turner, J. Fincham (288), 17 Litch-
field Avenue, Morden, Surrey.
(L.)
- Turner, R. G. (620), 23 Heaton Road,
Solihull, Warks. (H.)
- Vince, A. A. P. (588), 14 Church Hill,
London, N.21. (L., aq. C., glass-
house pests.)
- Waddington, L. G. F. (169), 9 Rose
Hill Rise, Bessacarr, Doncaster,
Yorks. (L.)
- Wager, J. R. (181), 338 Blossomfield
Road, Solihull, Birmingham. (L.,
esp. R.)
- Wakely, Sir L. D., (561), 37 Marryat
Road, London, S.W.19. (L.)
- Walder, W. (102), 79 Livingstone
Road, Hove, 3, Sussex. (L.)
- Walker, J. (22), 7 Mount Hermon
Road, Torquay, Devon. (L.)
- Wall, G. (554), 57 Willow Crescent,
Willowbank, Denham, Uxbridge,
Middx. (L., C., ornithology.)
- Wallace, H. R. (318), 115 Aber-
crombie Road, Fleetwood, Lancs.
(L.)
- Walsh, G. B., B.Sc. (24), 22 Stepney
Drive, Scarborough, Yorks. (C.,
B., Hem.)
- Walton, A. M. (426), 275 Croxted
Road, London, S.E.21. (L.)
- Waustall, P. J. (465), 54 Matlock
Road, Brighton, 5, Sussex. (R.,
mosquitoes.)
- Watson, J. P. (519), Fieldhead,
Crosby, Isle of Man. (L.)
- Watts, W. J. (240), 42 Bramerton
Road, Beckenham, Kent. (L., C.)

- Welti, A., F.R.E.S. (402), 34 Gt. St. Helens, London, E.C.3. (L.)
- White, O. M. (140), 78 Eastdale Road, Nottingham. (L., O.)
- Whitworth, J. M., F.Z.S., F.R.E.S. (629), 334 Leeds Road, Bradford, Yorks. (L., esp. R., breeding.)
- Wild, Dr O. H., M.B. (440), 79 Hatherley Road, Cheltenham, Glos. (L.)
- Wilkinson, R. A. (597), 38 Poole Crescent, Crossgates, Leeds. (gen. ent.)
- Willis, W. (589), 77 Nest Lane, Wel- linghamborough, Northants. (gen. ent., botany.)
- Wills, T. R. (235), 67 Magdalen Road, Portsmouth, Hants. (L.)
- Willshee, C. J. (420), 9 Blondvil Street, Cheylesmore, Coventry. (L.)
- Woollatt, L. H. (413), 6a The Quad- rant, Wonford Road, Exeter, Devon. (gen. ent.)
- de Worms, Baron Charles, Ph.D., F.R.E.S. (260), 12 Harcourt Terrace, Salisbury, Wilts. (L.)
- Wright, A. H. (355), 25 Markham Avenue, Carcroft, Doncaster, Yorks. (L.)
- Wright, J. (609), 1 Highlands Road, Drayton, Portsmouth, Hants. (L., C., ornithology.)
- Yarrow, I. H. H., M.A., Ph.D., F.R.E.S. (559), Ravenswing, Aldermaston, Berks. (H. Acule- ata.)
- Junior Members**
- Abraham, J. (542), 16 Broad Lawn, London, S.E.9. (L.)
- Ackland, D. M. (584), 17 Grange Park, Westbury-on-Trym, Bris- tol. (M.L., L., C.)
- Bain, Miss P. C. (492), St Boswell's, Dene Road, Northwood, Mddx. (L., rearing, N.H.)
- Balter, R. S. D. (455), 18 Ferncroft Avenue, London, N.W.3. (B., microscopy, breeding L.)
- Barham, D. (459), 17 St Martin's Grove, Leeds, 7, Yorks. (L.)
- Beddington, A. (573), Robinites, Charterhouse, Godalming, Sur- rey. (L., food of larvae, compar- ative anatomy.)
- Bennett, P. (605), Ingoldsby, Chels- ton, Torquay, Devon. (gen. ent.)
- Bessant, R. (367), 831 Field End Road, Ruislip, Mddx. (L.)
- Bevan, Miss P. (536), 75 Grange Road, London, W.5. (L., micro- scopy.)
- Brooks, M. J. (639), 77 Rossall Road, Cleveleys, Lancs. (L.)
- Bryant, D. C. (512), 107 Delamere Road, London, W.5. (R.)
- Burnaby, R. (489), Bell Dip Farm, Baggrave, Hungerton, Leics. (C.)
- Bywater, H. C. I. (432), Sandal Cot- tage, Appleby, Westmorland. (L., Neuroptera, O., C.)
- Clarke, G. J. (579), 3 Harcourt Road, Wallington, Surrey. (L.)
- Clements, A. N. (505), 9 Clifford Avenue, Taunton, Som. (Dip- tera, econ. ent., gen. ent.)
- Cox, G. (565), 8 Whitmore Road, Taunton, Som. (C., social H., P.)
- Cuthbert, I. R. (555), 35 Bourne End Road, Northwood, Mddx. (micro- scopy, aq. ent.)
- Donne, M. J. (421), 10 Nizells Avenue, Hove, 2, Sussex. B., L., C., microscopy.)
- Eade, W. (374), 8 Nizells Avenue, Hove, 2, Sussex. (C., L.)
- Eastmore, D. F. (470), 43 Muswell Road, London, N.8. (L.)
- Eldridge, S. P. W. (581), Bembridge School, Coniston, N. Lancs. (C.)
- Featherstone, P. (469), 6 Stafford Road, Tonbridge, Kent. (L., M.L., M.)
- Forrow, Miss Y. M. (517), 153, Station Road, London, N.W.4. (L.)
- Goodbody, I. M. (484), Warriston, Glengearry, Co. Dublin, Eire. (L., H.)
- Harding, G. R. (558), Woodrow High House, Amersham, Bucks. (L.)
- Harley, J. M. B. (541), 18 Leighton Avenue, Pinner, Mddx. (L.)
- Heard, M. J. (595), 36 Exford Road, London, S.E.12. (L., esp. gene- tics.)
- Honey, G. W. D. (488), 101 Dela- mere Road, London, W.5. (R., Brit. and foreign.)
- Jackson, D. (502), Oakdene, London Road, Hassocks, Sussex. (M.L.)
- Jones, D. O. (466), 22 Spencer Road, Cheltenham, Glos. (L., C., M., breeding.)
- Keylock, J. G. (471), 20 Council Houses, Winchcombe, Chelten- ham, Glos. (agric. ent., insect physiology and homology.)
- Large, C. (608), 17 Foundry Ap- proach, Leeds, 9. (C.)
- Lifton, J. (346), 19 Wheat Sheaf Gar- dens, Sheerness, Kent. (L.)
- Lindley, K. A. (577), 9 Old Oak Road, London, W.3. (L., ornithology.)
- Menzies, Ian S. (585), 98 Sandy Lane, Cheam, Surrey. (L., M.L., C., H.)

- Merrill, H. W. (640), The Marsh, Marsh Road, Thornton-le-Fylde, Lancs. (L.)
- Milner, P. F. A. (521), 71 Chatsworth Road, London, N.W.2. (L.)
- Montagu, H. E. (604), House-on-the-Hill, Bradfield College, Berks. (L., rearing.)
- Mortimer, K. J. (398), 5 Holroyd Road, London, S.W.15. (L.)
- Morton, J. K. (522), 131 Roker Avenue, Sunderland, Co. Durham. (L.)
- Murphy, C. R. J. (632), Balrath House, Balrath, Co. Meath, Eire. (L.)
- Pauly, R. (572), American University of Beirut, Beirut, Lebanese Republic. (L., breeding.)
- Platts, J. H. (515), 29 Dene Road, Northwood, Middx. (L.)
- Ridgwell, P. J. (611), 2 Churchmead, Great Cambridge Road, Chess-hunt, Herts. (gen. ent.)
- Ritchie, Irvine (472), 93 Argyle Road, Saltcoats, Ardsrossan, Ayrshire. (L.)
- Rowe, R. C. B. Hartland (464), Y.M.C.A., Gt. Russell Street, London, W.C.1. (L.)
- Scott, D. G. (534), Byrlton House Vallis Way, Frome, Som. (L.)
- Scudamore, Miss A. F. (562), Haughton House, Canford Cliffs Avenue, Parkstone, Dorset. (gen. ent.)
- Shapland, J. D. (548), Chislehurst, Sydenham Villas Road, Cheltenham, Glos. (L., microscopy.)
- Shephard, G. C. (524), 1 Carisbrooke Road, Leicester. (L.)
- Sherlock, R. J. (606), Pit Orchard, Axminster, Devon. (L.)
- Siddons, M. P. (516), Trosnant Lodge, Pontypool, Mon. (L.)
- Skipper, D. J. (637), 2 Gables Cottage, Chenies Road, Chorley Wood, Herts. (L.)
- Smith, C. C. (487), 65 Graham Avenue, Brighton, 6, Sussex. (M.L., M.)
- Snow, K. S. J. (533), 86 London Road, Neath, Glam. (C., H., microscopy.)
- Speight, A. J. P. (490), 49 Blackpool Old Road, Poulton-le-Fylde, Lancs. (L.)
- Stephens, J. C. (507), The Deanery, Ledbury, Herefordshire. (L.)
- Stott, B. G. (641), 10 Trafalgar Road, Blackpool, Lancs. (L.)
- Taylor, R. K. (497), Northleigh, Ledbury, Herefordshire. (L.)
- Tee, D. E. H. (610), The Cottage, Small Dole, Sussex. (gen. ent.)
- Trimmer, J. (495), South Littleton Vicarage, near Evesham, Worcs. (L., H.)
- Williams, J. E. M. (462), 28 Spencer Road, St Mark's, Cheltenham, Glos. (R., mayflies, Apterygota, E., insect anatomy and physiology.)
- Wykes-Sneyd, Miss E. M. (382), Locrenton Vean, St Keync, Liskeard, Cornwall. (L.)

Honorary Members

- Head, H. W. (15), Burniston, Scarborough, Yorks. (L., breeding.)
- Tams, W. H. T., F.R.E.S. (201), Entomology Department, British Museum (Natural History), London, S.W.7. (L.)
- Williams, Dr C. B., Rothamsted Experimental Station, Harpenden, Herts. (M., gen. ent.)
- Editor, the *Entomologist's Record*, Hy. J. Turner, 25 West Drive, Cheam, Surrey.
- Editor, the *Entomologist's Monthly Magazine*, Dr B. M. Hobby, Hope Department of Entomology, University Museum, Oxford.
- Editor, the *Entomologist*, N. D. Riley, 7 McKay Road, London, S.W.20.
- Keeper of Entomology, British Museum (Natural History), London, S.W.7.
- Keeper of Printed Books, British Museum, London, W.C.1.
- University Libraries of Oxford, Cambridge, Edinburgh and Dublin: Copyright Office, 4 St James Street, London, W.C.1.
- The Library, S.E. Union of Scientific Societies, Redroofs, Peaslake, Guildford, Surrey.
- Membership Total**—Subscribing:—
 Juniors: 63, Seniors: 331, total 394.
 Honorary: 13. Gross Total: 407.

Vol. 6 of the "Bulletin of the Amateur Entomologists' Society," edited by Beowulf A. Cooper, B.Sc., A.R.C.S., Dept. of Agriculture, The University, Leeds, 2. Issued free to members. Annual subscription to the A.E.S. 5/-, 2/6 to boys and girls aged 18 or under. Hon. Secretary: Phyllis L. Rogers, 91, Middle Lane, London, N.8.



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BULLETIN

No. 66

DECEMBER 1944

PROGRESS

Another Century—Within a twelve-month, we have again added a hundred members to our total and have attained our fourth century. Mr A. M. Walton, F.R.E.S., has been appointed Advertising Secretary to help maintain this rate of increase and inaugurate new methods of making ourselves known. It would therefore be appreciated if suggestions for so doing and increasing sales of publications were now addressed to Mr Walton at the address given on p. 28, rather than to the Secretary or Editor. He will be glad to send application forms for membership and other literature to any likely addresses that members can send him.

Meetings—It is planned shortly to resume the holding of A.E.S. meetings and Mr E. W. Classey, F.R.E.S., Salisbury House, Salisbury Grove, Mytchett, Surrey, has been appointed Meetings Secretary. To increase the personal contact between members, we intend to arrange both indoor and field meetings in all the larger centres of our membership, wherever possible in conjunction with existing local societies. We have already heard of such meetings having been held spontaneously, in one case resulting in the bringing to life of a vigorous entomological section of an old-established natural history society. Mr Classey is most anxious to hear from members willing to organise such local groups and meetings.

We have also planned another exhibition of apparatus and collecting methods as was such a success in 1939, and full details will be given in the next Bulletin. We are also proposing to hold a summer holiday school or camp, intended primarily to enable younger members to meet in congenial surroundings, learn the best collecting and rearing methods, see something of work on subjects and orders that are not their own, and generally have a good holiday; such a gathering would be in the charge of a responsible staff of volunteers, and its expense would be kept down to bare costs. Any who could suggest suitable camping sites or other accommodation, who could offer any form of as-

sistance, or who might be interested in attending, are asked to communicate with Mr Classey so that he can have some idea of the response likely to be forthcoming.

Committee Resignations—We have reluctantly had to accept the resignation from the Committee of two of our number who have given very great help during a difficult period of our war-time existence: Messrs B. S. Goodban and W. H. T. Tams. We thank them greatly for their help, without which our 1941 Journal and 1942-4 Bulletins might never have been possible.

Constitution—With the gradual return towards peace-time conditions, the end of Home Guarding and much Civil Defence, more people will have time for their entomological interests, and the demand for a more vigorous and useful A.E.S. will become apparent. With our increase in membership, the toil called for from the three or four active members of the Society's Committee has become overburdening, and additional help and new blood has become imperative. The "War-time Constitution" of the General Meeting of October 29th, 1939, has proved itself lacking in flexibility, and the Committee would like to return as far as possible to the 1938 Constitution. The suggested new constitution sent out with this Bulletin will need to be ratified at a Special General Meeting of the Society, date and place for which has not been settled at time of going to press, but will be notified to members at least a fortnight before it is due. As under the 1938 Constitution, we ask all members to let us know by post whether they approve this draft constitution, and if not, what emendations they propose. These emendations will be voted upon at the General Meeting. It is hoped that all who can do so will attend. Nominations for election of persons willing to assist in A.E.S. business and serve on the Committee should be received by the Editor at least a week before the date of the Meeting.

Decentralisation—With the growth of a Society like ours, whose member-

ship covers the whole of Britain, the need for some sort of decentralisation soon becomes apparent if growth is to proceed smoothly. It has been suggested that Regional Secretaryships might be set up to co-ordinate local activities and see that all possible was being done in each area. It is very difficult, for example, for an Organiser in Yorkshire or Secretary in London to know whether there are opportunities being wasted for bringing in new recruits in Manchester, or getting members together in Glasgow, or holding a camp at Aberystwyth. A District Secretary, say for each Naturalists' Union, could do much towards remedying this. It has also been proposed that future annual general meetings should take place in different centres in different years, say, every third year in London, and in other towns intermediately. A District Secretary would make practicable such a scheme, and would do much to foster local interest in our Society. Correspondence is invited from any who may be able to help.

Affiliate Membership—To assist and encourage entomological activities in school societies, it has been decided to inaugurate a new form of membership. School societies may affiliate to the A.E.S. for a subscription of 5/-, this covering the period of the school year. The Affiliate Society will receive all Bulletins and Membership Lists issued during the twelve months of their membership, and members may, in the name of the Affiliate Society, send for publication wants and exchange notices, observations, queries and be entitled to use the A.E.S. Advisory Panel.

Advisory Panel—Since the appearance of the last Bulletin, we have received an additional offer of assistance on the Panel—Mr E. A. J. Duffy, F.R.E.S., Ambleside, Church Road,

Ash, near Guildford, Surrey, who offers his services as Adviser on Coleopterous larvae and life-histories.

Subscriptions—Subscriptions for 1945 become due on January 1st and should be paid to the new Hon. Treas., C. H. Hards. As hitherto, additional donations will be welcome and will be devoted to the provision of illustrations in our publications, unless the donor desires to allocate them to any particular other purpose.

BEOWULF A. COOPER.

29/10/1944.

ANNUAL REPORT FOR YEAR 1943-4

Throughout the twelve months, April 1st, 1943, to March 31st, 1944, the Society has shown steady progress as regards both membership and funds. In 1943-4 we issued 7 Bulletins, comprising 26 pages (pp. 43-68), compared with 4 Bulletins of 14 pages the preceding year, while exchange notices published numbered 61 against 18 in 1942-3. One Leaflet (No. 3) was published in the year (one the year before), but, owing to printers' delay, the year's Journal had not appeared by the end of the year (Vol. 6 was published at the close of 1942-3). The first Pamphlet: "A New System of English Naming for British Macrolepidoptera" was also published during the year. In the period under discussion, subscribing membership rose from 211 to 342, as against a drop from 215 to 211 the previous year, with 122 new members and 25 former members rejoined (only 18 new members in all in 1942-3). We wish to thank our two Reading members, Messrs W. L. Rudland and C. Runge, for so kindly volunteering to go through all the Society's books and receipts and for auditing the following report:

INCOME

	1942-3		1943-4	
	£	s. d.	£	s. d.
Brought forward	27	13 4	30	17 10½
Subscriptions	28	12 6	55	3 6
Post and Donations	13	6 3½	42	0 4½
Journals	34	9 2	43	4 7½
Leaflets	1	0 0	2	15 9
Advertisements	2	15 0	3	13 0
Special Publication Fund	—		48	0 10

£107 16 3½ £225 15 11½

EXPENDITURE

	1942-3		1943-4	
	£	s. d.	£	s. d.
Printing	58	9 6	77	3 11½
Blockmaking	—		44	6 1
Postage	11	16 5	20	7 1½
Stationery	6	5 0	14	19 0½
Advertising	—		1	13 0
S.E.U.S.S. Fee	0	7 6	0	7 6
Various	—		1	9 0
Cash in hand	30	17 10½	65	10 3

£107 16 3½ £225 15 11½

Audited and found correct.
9th October 1944.

C. RUNGE.
W. LEWIS RUDLAND.

The expenditure during the year on blocks and printing includes both the last instalment on Vol. 6 Journal (1942) and advance payment on Vol. 7 Journal, which had not then appeared, and also payment for printing Pamphlet No. 1 and Leaflet No. 3. The greater cost of postage and stationery is due to the increased membership and the larger number of pages published. The Special Publication Fund comprises sales of Pamphlets, data labels, silkmooth cocoons and other items, proceeds from which are to be devoted to increasing our series of *Leaflets* and *Pamphlets*. We are especially grateful to the member who prints our data labels, which, to judge by the large number of letters of thanks we have received for them, would be difficult to improve upon. By his labours will the appearance of these Leaflets have been made possible. We also wish to thank all members who have given donations, sent us addresses of prospective members, and in other ways helped to make the year one of great progress.

PHYLLIS L. ROGERS.

29/10/1944. BEOWULF A. COOPER.

MEMBERSHIP CHANGES

Abbreviation: * = Junior Member.

New Members

- 283 A. W. Cox, 16 Raymere Gardens, London, S.E.18. (L.)
- 390 H. B. S. Cartwright, The Rectory, Kegworth, near Derby. (L.)
- 560* Miss M. D. Roscoe, South Holworth Cottage, Warnwell, Dorchester, Dorset. (L.)
- 633* J. Phillips, 27 Lavant Street, Petersfield, Hants. (C., R., ML.)
- 642* Miss G. M. Ekins, 17 Croyland Road, Wellingborough, Northants. (gen. ent., botany, ornithology, geology.)
- 643* Miss M. J. Robinson, 19 Doddington Road, Wellingborough, Northants. (L., B.)
- 644* D. F. Cole, 79 Manor Road, Erith, Kent. (rearing L.)
- 645 E. G. Procter, 21 Derlene Road, Shirley, near Birmingham. (L.)
- 646 J. F. Marshall, C.B.E., M.A., 47 London Road, Cheltenham, Glos. (Culicidae.)
- 647* J. J. Irvine, 29 Eglinton Crescent, Troon, Ayrshire, Scotland. (rearing L., O., B.)
- 648* R. H. Davie, Attenboro, The Drive, Chorley Wood, Herts. (L.)

- 649* H. P. J. Trevor, The Nook, Barford St. Michael, Oxford. (L.)
- 650 C. M. Jarvis, 16 Linden Road, Bedford. (C., econ. ent.)
- 651 C. S. H. Blathwayt, M.A. (Oxon.), 27 South Road, Weston-super-Mare, Som. (L.)
- 652 E. C. Newman, 5 Shepway Avenue, Maidstone, Kent. (L.)
- 653 R. R. Broome, F.L.S., F.R.E.S., 47 Keswick Road, Boscombe, Bournemouth, Hants. (aq. ent., salmon and trout fisheries, botany.)
- 654 R. S. North, 41 Buckingham Road, Aylesbury, Bucks. (L.)
- 655* Miss M. W. Atherly, 43 Farley Road, Derby. (L.)
- 656 D. B. Scott, Abernyte, Durham Terrace, Lower Largo, Fife, Scotland. (L.)
- 657* J. L. Hamerton, 11 Linkway, London, S.W.20. (L., C., O.)
- 658 Dr W. Ramsden, Pembroke College, Oxford. (silk and silk-producing animals, especially silkmooths.)
- 659 R. Gorer, Payne Street, Charing, Ashford, Kent. (L.)
- 660* W. H. Wallace, 72 Eglinton Crescent, Troon, Ayrshire. (C., L., O.)
- 661 Miss K. Barnett, Hillside Senior School, Boreham Wood, Herts. (Garden insects.)
- 662 Miss E. G. Barker, The Training College, Portsmouth, Hants. (B., beekeeping.)
- 663 C. Runge, 11 St Andrews Road, Caversham, Reading, Berks. (L., gen. ent.)
- 664 D. Dawson, 30 Kelvin Road, Roath Park, Cardiff, S. Wales. (horticultural ent.)
- 665* R. K. Roscoe, Grove Park School, Brightwell Baldwin, Oxon. (L.)
- 666 Prof. G. D. Hale Carpenter, M.B.E., D.M., Hope Dept. of Entomology, University Museum, Oxford. (bionomics.)

Resigned—Mrs M. Roscoe (560).

Membership Total—422 subscribing members.

Change of Address—S. Charlson (520) to: 112 Manchester Road, *Tuldesley*, Manchester. K. J. Coghill (430) to: Men's Hostel, C.S.A., Reaseheath, Nantwich, Cheshire. Lt. C. N. Colyer (404) to: 8 Canning Court, Newnham Road, London, N.22. E. A. J. Duffy (200) to: Ambleside, Church Road, Ash, near Guildford, Surrey. Rev. W. O. W. Edwards (570) to: Moor View, Links

Road, Budleigh Salterton, Devon. Rev. Guy A. Ford (377) to: Balsham Rectory, Balsham, Cambs. A. H. Lanfear (74) to: 20 South Eastern Road, Ramsgate, Kent. W. A. Martin (553) to: Longcause, Totnes, S. Devon. P. Siviter Smith (250) to: 66 Stirling Road, Edgbaston, Birmingham, 16. I. M. Goodbody (484*) to: F.A.U., 4 Gordon Square, London, W.C.1. G. R. Harding (558*) to: Fordcombe Manor, near Tunbridge Wells, Kent. D. Jackson (502*) to: 9 Third Avenue, Hove, Sussex. J. E. Miles Williams (462*) to: Corpus Christi College, Cambridge.

Corrections to last list—R. D. Morton (145) is also interested in bee-keeping. P. Lowry Mullings (360) is interested in beekeeping and especially bee diseases. D. O. Jones (466*) lives at Spenser Road, not as printed. J. G. Keylock (471*) is interested in aq. ent., not ag. ent. J. E. M. Williams (462*) is also interested in aq. ent.

WANTS AND EXCHANGES

S. CHARLSON (520) offers ova of *autumnaria* (Large Thorn), pupae of *elyper* (Elephant Hawk). Wanted: Zygæniidae (Burnets), Sesiidae (Clearwings), Psychidae (Bagworms), *cossus* (Goat), *pyrina* (Leopard), either as ova, larvae, pupae or set specimens. Please note corrected address in "membership changes" section of this Bulletin.

IVAN M. GOODBODY (484*) would like to get into touch with any member who could either sell or lend him a pair of field glasses for the next 9-12 months or even shorter period, depending on how long his work keeps him in England.

WANTED, by E. A. J. DUFFY (200): Any Brit. coleopterous larvae, alive where possible, and especially wood-boring species. Also live or mounted specimens of the less common Longicornia. Specimens gratefully acknowledged and local adults sent in exchange.

WANTED: Fowler's *Coleoptera of the Brit. Isles*, preferably complete and illustrated. Also any pamphlets books or other literature on Coleoptera larvae. Price according to condition. What offers? E. A. DUFFY (200).

J. PAYNE (353) has for exchange ova of *autumnaria* (Large Thorn) type and a few melanics, ova of *rectilinea* (Saxon), larvae of *prunaria* (Orange Moth).

JOHN MOORE (146) has a few dozen tropical grasshoppers (Trinidad) which he would be pleased to give to any specialist. He also wants to purchase some cork-lined storeboxes in good condition, about 16 x 12 ins.

DR N. L. BIRKETT (583) is interested in studying the spread of the Golden Plusia Moth (*Polychrisia moneta*) in this country. Since first appearing in 1890, this moth has spread and become reasonably common throughout the British Isles. Records are desired of (1) year of first appearance in any district; (2) usual frequency of occurrence, i.e., common, rare, etc.; (3) any years of special abundance or rarity; (4) usual date of first appearance. He would be very grateful if members could help with such details.

C. H. HARDS (170) wishes to purchase a copy of P. B. M. Allan's *Moth Hunter's Gossip*. Full price paid for copy in good condition.

A. E. TONGE (274) has for sale or exchange the following storeboxes: four 9½ in. x 8 in.; one 11½ in. x 8½ in.; one 15½ in. 10½ in.; one 13 in. x 10 in.; one 17½ in. x 12 in. (mahogany); one 18 in. x 12 in. (show case); and *Monograph of Chalk-Hill Blue* by Bright and Leeds. Wanted in exchange: varieties of any British butterflies.

P. N. CROW (393) has for exchange ova of *P. plumigera* (Plumed Prominent). Wanted: Healthy larvae of *C. hera* (Jersey Tiger), *O. carmelita* (Scarce Prominent), *C. furcula* (Sal-low Kitten) and *C. bifida* (Poplar Kitten).

M. P. SIDDONS (516*) is anxious to make contact with anyone who has collected Lepidoptera in Monmouthshire or Shropshire. He also wishes to borrow the *Entomologists' Weekly Intelligencer*, Vols. ix and x, and Rev. J. Greene's *Insect Hunter's Companion*.

W. EADE (374*) wishes to correspond with anyone who knows anything about the rearing of *atropos* (Death's Head Hawk) from the pupal state.

R. W. PARFITT (525) has for exchange set specimens of many species of British Lepidoptera and would be glad to receive lists of requirements.

C. C. TOWNSEND (451) wishes to obtain specimens in good condition of foreign Carabidae, especially N. American and Indian examples, with data, but not necessarily named, for cash or in exchange for botanical specimens or foreign stamps.

J. E. M. WILLIAMS (462*) wishes to contact members living in the Cambridge district.

REV. W. O. W. EDWARDS (570) has set *hera* (Jersey Tiger), *coridon* (Chalk-Hill Blue), *Phlaeas* (Small Copper), *c-album* (Comma), etc., to exchange for vars. of butterflies or store-boxes in good condition.

M. ATHERLY (655*) requires a kite net, new or second-hand, complete with bag, diameter about 12 ins.

E. W. CLASSEY (41) requires *O. musculosa* (Brighton Wainscot) any stages, living or preserved; offered: *P. fuliginaria* (Waved Black) set adults, or, in spring, living larvae. He also requires living larvae and/or set adults of *Z. pyrina*—write stating wants.

M. SPELMAN (627) has a good stock of N. American Lepidoptera, papered, and would like to hear from members wishing to exchange. British or exotic butterflies desired, excluding Neotropical material. Only papered set and perfect specimens are wanted. He also desires to buy double Vols. 4 (text and plates) in good condition of *Macrolepidoptera of the World* by A. Seitz, English text.

REARING SILKMOTHS

I have had much pleasure this summer in pairing and rearing the Ailanthus Silkmoth (*Phyllosamia cynthia*) in my garden. My two Ailanthus bushes are now completely stripped. I have found that, next to Ailanthus of course, lilac has been most satisfactory, especially in the later stages. I believe the succulence of this plant to be a source of failure in the very early stage, on account of the exudation of moisture when the leaves are nibbled by the very small larvae. The exception to this seems to be when the ova are sleeved out—the exudation then appears neither noticeable nor so fatal. Privet never does this and is useful in enabling the critical first few days to be got over. My privet-fed cocoons are very small, and those from lilac about normal.

28/8/1944. T. H. Fox (105).

DEGREASING

I am glad to have Dr Henstock's tip about *benzene* and *benzine* (*A.E.S. Bull.*, 64). I use a method

which is more economical of fluid. Many moths, such as the internal feeders, Swifts, some Thorns and their near relatives, show grease in their bodies early, even when on the boards. When they are quite hard, I remove the bodies and soak them in a series of small tubes with about $\frac{3}{4}$ inch of fluid in each, leaving them for 12-24 hours in each according to the size of the bodies. At the end of this treatment I once more affix them to the specimen, and further greasing-up is impossible. When the fluid in No. 1 gets yellow, I throw it away and refill, so that No. 1 becomes No. 4. A few moths, such as *S. ocellatus* (Eyed Hawk), seem to get greasy wings and body all at once; then, of course, my method does not apply.

Dr G. V. BULL (60).

27/7/44.

BOOK REVIEWS

Talking of Moths, by P. B. M. Allan (Newtown: The Montgomery Press, 1943, pp. xii + 340 + 1 pl., 8/6), companion volume to the same author's excellent *Moth Hunter's Gossip*, is packed with tips and whimsies, witty tales and robust prejudices, with a leaven of thought-provoking argument. As stimulant for the collector and rearer it is perhaps behind its predecessor, but in other respects it is unrivalled, with a character of its own that cannot fail to please.

By far the most useful essay therein is that comprising Chapters 7 and 8, being an exposure of some entomological frauds of the past and of the folly of some auction-room collectors to-day. It should be reprinted in pamphlet form and given to every would-be purchaser of set insects. We never tire of exhorting people to collect, rear, photograph and study insects for themselves, yet how few of us can hope to build up by our own captures alone a collection that is at all representative of our fauna. So, by exchange or purchase, we fill our gaps and improve our series through the labours of others, using Continental types of rare native species. But some there are who *insist* on British specimens. Do they feel that Continental examples are in some way distinct morphologically? Not at all. Most of the species so sought after are immigrants, and "true British" specimens are in fact hatched on the Continent; they may be more alien than the dealer's "Continental" speci-

mens, which have at least emerged over here; they may be identical in every possible respect, condition included. This lust for *British* rarities so far exceeds the supply that again and again the unscrupulous have been induced to pass off bred insects of foreign ancestry as British. Why, asks Allan, does the auction-room insect-hunter pay sixpence for a Calais *lathonia* and a guinea for a similar specimen labelled Dover? Why does he even pay exorbitant prices for insects which he *knows* are not what they purport to be and which all his friends know to be "foreigners"?

Perhaps it is this *penchant* of the auction-room collector which has endowed so many rare moths with the extraordinary power of reproducing themselves after death, occasionally after the lapse of many years. Such species are, of course, very very rare. The most notable example I can think of is *N. bicolor*, the White Prominent. In 1865 Joseph Chappell, a Manchester collector, secured six specimens in Burnt Wood, Staffordshire. One of these laid some eggs before it died and from these eggs seven more specimens were obtained. But although there were no further pairings the strain was not lost: brood after brood was reared from the dead moths, and to-day it is said that there are more than sixty specimens in British cabinets, all bearing Chappell's original labels. Genuine old paper labels they are too, written in an old-fashioned handwriting in faded ink. There can be no possible doubt about them. And if further proof of their genuineness is required each one of these moths cost its proprietor between two and three pounds. *N. trilonphus*, too, and *H. peregrina*, to mention only two other species, possess this strange power: single specimens recorded in the entomological journals have reproduced themselves time after time, labels and all."

If only for an insight into the shady side of bughunting, the evil effects of rarity-worship, of extermination to maintain rarity-value and extermination by commercial over-collecting, the book should be widely circulated. Only by making such past outrages widely known can collectors be guarded against such happenings to-day and the integrity of modern dealers be upheld. For their predecessors have a lot to answer for.

B. A. C.

The Morphology and Biology of *Culex molestus*: Observational Notes for Investigators, by John F. Marshall (Hayling Island, Hants: British Mosquito Control Institute, pub. No. 34, 1944, pp. iv + 15, 1/-). Though unnoticed in Britain till 1934, the mosquito *Culex molestus* has rapidly gained notoriety by the annoyance it has been shown to cause in buildings, especially in town areas. Hitherto confused with *C. pipiens*, the common gnat, the two species differ in a number of ways, the most important being that whereas females of *pipiens* rarely, if ever, bite human beings, those of *molestus* do, fiercely and persistently, whenever given the opportunity. The pamphlet, which is well illustrated, outlines the structure and metamorphosis of mosquitoes in general, and in particular differences of structure between all four stages of *pipiens* and *molestus*, the biological peculiarities of *molestus* and British records of this insect, with an account of the "case-history" of each. Of practical value is the section on control, while instructions on collecting and rearing will be appreciated by entomologists. This useful pamphlet concludes with a helpful bibliography and a list of the thirty known British mosquito species. As more information on the occurrence and distribution of this mosquito is greatly desired, a free copy of this publication will be sent to any entomologist willing to assist in the work, on application to the author at 47 London Road, Cheltenham, Glos.

B. A. C.

Nature and Camera, by Oliver Pike (London: Focal Press, pp. 262, including 64 pp. of half-tone photographs, 1943, 13/6). Oliver Pike's success as a Nature Photographer cannot be questioned, and this book is a masterly summary of fifty years' experience of hunting with a camera. Most aspects of the subject are catered for, and each page is full of useful hints which will be of great benefit to the amateur photographer. The book is clearly written, and although more of a text book in scope, it is made very readable by the innumerable incidents humorously told.

The insect chapter is a summary of the more important techniques for taking butterflies and moths, caterpillars and aquatic types, and the tiny specimens that are the photographer's nightmare because they will

not keep still. From our point of view we should like to have seen it treated with more detail, but some of us will laugh at ourselves when we see the picture entitled "When chasing butterflies . . . watch your step!" The book is profusely illustrated by first-class photographs. Unfortunately, many of them are so reduced in size that much of their pictorial value is lost, but they certainly give the reader an excellent idea of the almost endless possibilities of Nature Photography. I know of no better book on the subject.

E. G. NEAL.

WAR-TIME CHANGES IN FAUNAS

The past five years have seen great changes in the face of both our rural and our urban areas. All over the land much excellent collecting country, scrub, marsh, fen, moor heath and down, has disappeared before the plough, the bulldozer and the moledrainer. Extensive woodlands have been felled, and woods felled in the last war have been grubbed and cleared. Land drainage has been improved as never before, ponds filled in and ditches and rivers deepened and straightened to make this island self-supporting. New crops have been grown, flax and rye and lupins, while new leys and the extensive use of lime and phosphates have changed the appearance even of the grassland. Hedges have been laid low or grubbed up altogether, while changed needs and mechanisation have altered rotations, and this again has brought about changes in fauna and flora. Areas formerly cultivated have become camps and parts, particularly on our coastline, have run wild, while immense areas have been grassed down to form aerodromes. Even in the towns there have been changes. Bombing has provided sites for many plants normally scarce there, and with them have come their attendant faunas. Even the black-out has had its effect, and species which could not survive the attraction of street and house lighting have been returning to urban areas to compete with their more tolerant town relatives. All these changes have influenced faunas and floras, and it would be of great interest if observation on these changes were put on record.

Of particular interest in the immediate future is the effect of light upon town insect populations. Fell-

ing, replanting, drainage and ploughing have all occurred before, and will continue from time to time and in small areas as long as human existence continues. But the effect of five years of total black-out has not been known before, and it is to be hoped will not be required again. During the first year or two of resumed free outside lighting, an opportunity will be present to collect information on the precise effect which light has had on insect, and particularly moth, populations. Not merely dwellers in the big towns should keep their notebooks handy. In September 1935 our founder, Mr L. R. Tesch, writing in *Journal* No. 2, expressed his belief that even in country areas light collecting was less productive than he had known it in his youth. Could improved house and street lighting and motor car headlamps have had so wide an effect? Only observation can tell for certain. We shall look forward to receiving sufficient observations on the effect of war-time changes to throw light on this and other interesting problems connected with the ecological effect of the war.

5/9/1944.

B. A. C.

SCOUTING AND BUGHUNTING

I think bughunting is a great game for Scouts; it satisfies the hunting and possessive instincts and is wonderfully good training in observation. Most boys from towns who come out into the country cannot use their eyes and even if they see things the impression is not carried to the brain. I had a biggish lad out the other day who was rather scornful till he found that my eyesight could follow that elusive little beggar the Green Hairstreak while his could not. We at "Great Tower" are a kind of supply depot for all the young Scout beginners and my setting boards are kept pretty full in order to supply their needs. Two of your new members first caught the infection here last summer and are now ripe to take a wider interest: I hear that at a Handicrafts Exhibition recently* each had a stall to show their collections, with relays of Scouts working at setting, etc. The chief difficulty with the novice is to know of an expert in his vicinity to whom he can take doubtful specimens for identification—and this is where the A.E.S. Membership List comes in handy; it is a pity that all entomologists in the

country could not be included. Books are a bit of a difficulty, too, as there seems to be such a demand even for second-hand books now. Three London Scouts who took up bughunting last year hit on the idea of each taking out one volume of South at their local library, and so keeping them all at hand. Our reference library here is in its infancy, but we hope to enlarge it as time goes on.

Capt. C. H. MICHAELSON, R.N.
(Warden, Great Tower Scout Camp)
26/5/1943

*POSTSCRIPT, 1944 — Their efforts last year did not attract the judge's attention, but this year P. Speight was given First Prize. Quite a number of boys coming here to camp have become infected with the bughunting craze this year, but it is not much use suggesting that they should become members till we see whether any of them take it up as a serious hobby. Development of observation is what I am mostly after, and having something to take an interest in when they get out into the country. Too many of them see nothing, hear nothing, and go home just as darned ignorant as when they came. But some are induced to take a more than fleeting interest: for every three or four who are only keen on catching there is usually one who is interested in identification and setting. Three youngsters presented themselves for membership the other evening, all from the Blackpool neighbourhood and in the same Troop as Peter Speight. I pressed them pretty closely and I think they will all stick at it, and the added importance of feeling that they are members of a Society may help. Peter proved his usefulness by spotting a Tissue—which is new to us—wrongly placed among our Mottled Beauties.

12/8/1944.

C. H. M.

THE PINE HAWK

Returning from a collecting excursion on July 9th, 1944, I noticed two large moths at rest on a telegraph post, the locality being a few yards from the Berks.-Hants. border, within fifty miles of London. Expecting to find two Privet Hawks, it was a pleasant surprise on turning back to espy a perfect pair of Pine Hawks (*H. pinastri*). They were about seven feet above ground level and at rest within an inch of one another, and though at the time they were not

paired, they evidently had been. Both specimens were in the freshest possible condition, but I thought it worth the risk to keep them for ova. This being impossible at my R.A.F. station, my friend, Mr Runge, kindly accepted the venture and reward followed. Commencing the second night after capture, the female parent laid, on successive nights: 5, 26, 32, 24, 52, 42, 7 and 2 ova, making a total of 192. The resulting larvae were parcelled out to several people who are experienced in caterpillar rearing, and, whether sleeved or reared in cages, the result was the same—practically every larva died. I cannot make it out. What is the secret of rearing Pine Hawk caterpillars? Mr Runge spent an hour or two beating in the locality recently, but had no luck at all.

It may also be of interest to record that early in May I found a Large Tortoiseshell (*N. polychloros*)—only one specimen—at Pamber Forest, Hants.

B. R. BAKER (361).

24/8/1944.

THE JERSEY TIGER MOTH

The earliest record that I can find of this moth, *Callimorpha hera* (*quadripunctaria*), in the county of Devon is that of a specimen netted at Alphington, near Exeter, in the year 1871. The earliest record for England, according to South, was as far back as 1855. From about 1880 it began to appear in considerable numbers between Teignmouth and Dawlish, where it seemed to have become firmly established, extending from the south bank of the River Exe to the north bank of the River Teign.

I first took *hera* at Dawlish, on the Exeter side of the town, in 1891. The moth is always worked for by beating the hedges along the roads; at that time there was no tarmac surface on the roads, and the hedges were white with dust, which made beating an uncomfortable job. The Jersey Tiger could then only be taken at Starcross, at the mouth of the River Exe, and appeared never to extend more than a mile inland from the coast.

Not until 1907 did my brother and I encounter *hera* beyond the Teignmouth and Exmouth district. As we were pushing our bicycles up a very steep hill on the way to Teignmouth we saw one flying in front of us. This was near Kingsteignton, a village on the north bank of the Teign. We

worked the hedges around the district and caught another, but failed to find any on the south side of the river. This seemed to indicate that it was extending up the river, but only on the north side.

In August of the following year, 1908, starting at Shaldon at the mouth of the river, and working up towards Newton Abbot, we took several on the south bank, but for several years they spread no farther than the village of Stoke on Teign. By 1910, however, the insect had extended up the river as far as Newton Abbot on the north bank. This was the farthest point inland at which we had taken it, and there it seemed to stop until 1920 when it began to extend its range inland as far as Abbots Kerswell, and East Ogwell.

The first *hera* of which I heard in the Torbay area was one taken at Brixham on July 21st, 1925. It was not until 1930 that I visited Brixham at the time when *hera* would be flying, when I found it to be fairly plentiful in the lanes near Mudstone Bay. In 1933 three *hera* were taken near Cockington, Torquay, and another seen flying in the town itself. Since then it has spread all over the Torquay district, and has extended as far as the village of Barton to the north, and Paignton to the south, so linking up with Brixham. In August 1942 several were taken, and others seen, at Totnes.

This is as far as I can trace its drift to date. It appears now to be located within a radius of about thirty miles of Torquay. The reasons for this great extension in its distribution I cannot explain. It has been said that it was caused by fresh immigration, but this seems hardly likely, as the adult is so weak on the wing and never flies far at a time. It resembles the spread in recent years of the Comma Butterfly (*Polygonia e-album*), which has gradually extended over England and Wales from its headquarters thirty years ago in the West Midlands.

J. WALKER (22).

8/12/1942.

A PROPHECY—In the *Entomologist's Weekly Intelligencer*, Vol. 1, p. 26 (26/4/1856), H. T. Stainton, in his Editorial, discussing native and introduced species, writes: "If *Callimorpha hera* has similar periodic fits of migration northwards, we might expect it occasionally on our southern coast, but there is little doubt that, were the South of Ireland and all the

counties bordering the British channel well searched, several species we do not at present number as British would be met with, and perhaps *hera* would be among them." I wonder which reader of his it was, and when, and where, first introduced this grand moth to Britain?

B. A. C.

A BOXING METHOD

From my earliest collecting days, I have found the humble matchbox of inestimable value in boxing specimens off walls, fences and other hide-outs. Even when other entomological equipment is available, the matchbox often provides a surer mode of capture, with less chance of escape in boxing than with pillbox or collecting vial. But, of course, discretion must be used in deciding what species *not* to box by this method, as the larger or more active species become damaged in a matchbox sooner than in any other container. The matchbox is held, three-quarters open, between thumb and second finger, with the forefinger resting on the end of the tray. The specimen is cautiously approached and neatly trapped by swiftly placing the tray over it. The specimen is then imprisoned by slowly sliding the tray back with the forefinger, removing the box before it is quite shut to blow in any legs or antennae that may otherwise be trapped and cut off. Matchboxes lie flatter in the pocket than any other box, and it is worth while always having one or two handy wherever one may be. So don't waste your empty matchboxes!

N. W. J. CARTER (213).

23/7/1942.

MYRMECOPHILOUS BLUE LARVAE

An interesting article in the *Australian Museum Magazine* (7: 351, 1941) by Dr G. A. Waterhouse describes the feeding of certain Blue larvae by ants. Mr J. Macqueen observed that larvae of the Blue *Pseudoipsas myrmecophila illidgei* found in the nest of the ant *Iridomyrmex nitidus* in a fallen log, came out regularly to feed on slices of apple which he had provided. In feeding on the apple they stayed with their heads buried in it, and seemed to suck the juice rather than eat the apple. He thought it possible that

they were fed by the ants and found the apple juice a substitute for the honeydew supplied by them. This observation confirms those made earlier (*Aust. Mus. Mag.*: 4: 219, 1931) by Dr Waterhouse, who was able to rear a related species to the adult by placing the larvae on slices of apple on which they fed. It would be interesting to see whether this could be repeated with British myrmecophilous Blue larvae such as *Maculinea arion* (Large Blue).

B. A. C.

KILLING LEPIDOPTERA

I should like to make a few remarks on A.E.S. Leaflet No. 2: "Setting Lepidoptera." The utility of oxalic acid is dismissed far too summarily. I consider it to be the *best* killing agent from the point of view of results. I qualify my statement because it has the disadvantage of being more complicated and well-nigh impracticable in the field, and can only be used for medium and large-bodied insects.

My method is as follows:—Make a hypodermic syringe from a "Dropper" bottle with a rubber bulb, such as "Mystol" or "Ephedrine" are sold in, by drawing the glass tube in a flame to a point. Fill the bottle with a saturated solution of oxalic acid, preferably filtered. Stupefy, but do not kill, the insect, in cyanide. Then kill by inserting the syringe into the thorax below the head in line with the body and injecting a drop of liquid. The insect should be held between finger and thumb with the wings vertical, and can be pinned without being relinquished. Any fluid that seeps from the puncture should be removed with a small piece of blotting paper. The specimen should be set within half-an-hour.

Burnets need not be stupefied (a long process in cyanide); they should be collected alive and taken home separately in pill-boxes. Tip them out one at a time, pick up with forceps by placing the points under the wings and gripping the thorax, transfer to finger and thumb, inject and pin. This may sound difficult, but with practice it can be done very expeditiously as the moths feign death and only about one in twenty will prove obstreperous.

I always pin insects in the V formed by placing the finger and thumb together, gently gripping the thorax

and holding the pin in a pair of forceps. The table-cloth method strikes me as being less sure.

The importance of data labels cannot be overstressed. At one time I used only a consecutive numbering system, but as my collection grew it became annoying to have to look up the book every time I wanted to know from whence a specimen came. Now I use both, the book giving me more exact particulars of locality, or, if bred, of life-history, such as date of capture, pupation and foodplant.

I heartily endorse Mr Cooper's final remarks, particularly those regarding the number of specimens taken. If I breed many of one species, I always endeavour to replace any I have previously taken by turning out live imagines in the same spot. I consider that one of the greatest pleasures of the lepidopterist is observing the different species on the wing in their natural haunts.

JOHN E. KNIGHT (94).

25/8/1941.

FIGURE-OF-80 MOTH

It may be of interest to record that in the spring I dug up one, and this month three, pupae of *P. octogesima* under poplar trees at Shrewsbury.

M. P. SIDDON (516*).

22/10/1944.

1944 IN EAST DEVON

The warm dry winter of 1943-4, followed by the long spell of east winds and frosts in spring, seem to have played havoc with hibernating larvae in this part of the country. I had, amongst others, hundreds of *phlaeas* (Small Copper) and *caja* (Garden Tiger) larvae, and also three highly prized *iris* (Purple Emperor) larvae which I had beaten out in September. The former all died in November, and the others perished in early spring. Many of my friends' larvae suffered similarly, and it must have been the same for most caterpillars in the open, for I have never seen fewer butterflies on the wing during May and June.

July and August showed a great improvement, but I saw not a single *cardui* (Painted Lady) or *caja* this year. The commonest Tiger Moth in these parts has been *hera* (Jersey Tiger), which appeared in good numbers. I found *io* (Peacock), *urticae* (Small Tortoiseshell), *atalanta* (Red

Admiral), *sinapis* (Wood White), *euphrosyne* (Pearl-bordered Fritillary), *icarus* (Common Blue), *astrarche* (Brown Argus) and *phlaeas* rather scarce, whilst *c-album* (Comma), *edusa* (Clouded Yellow) with var. *helice*, *argiolus* (Holly Blue) second brood and *aegon* (Silver-studded Blue) have been fairly numerous. The Ringlet (*hyperanthus*) and Gatekeeper (*tithonus*) have been very plentiful and I have taken some nice vars.

I am delighted to know that, at long last, *polychloros* (Large Tortoiseshell) has reappeared. On July 19th I captured a fine specimen whilst partaking of refreshment in a wayside tea-room; it was dashing wildly about the lofty ceiling, then suddenly dived down and swept past the open door and came and fluttered about on the window by my table.

REV. W. O. W. EDWARDS (570).

NOTES FROM BISHOP'S STORTFORD, HERTS.

Between September 17th and 22nd this year, the powerful searchlight here attracted a large number of moths of at least 32 species. The



most interesting were 5 *Convolvulus* Hawks (*H. convolvuli*), 1 Pale Oak Eggar (*T. crataegi*), 3 Ruby Tigers (*P. fuliginosa*), 10 Large Wainscot (*C. lutosus*), a number of Sallows (*X. fulvago*), Barred Sallow (*X. aurago*), Dusky Lemon Sallow (*X. gilvago*), and many other Noctuae, 1 Latticed Heath (*C. clathrata*) and several Dusky Thorns (*E. fuscantaria*). At the beginning of the period, the most plentiful species was the Angle Shades (*P. meticulosa*), about 5000 being seen the first night, with about 4000 Silver Y (*Plusia gamma*). Later the Silver Y was replaced by many Hebrew Character (*N. c-nigrum*). Another *Convolvulus* Hawk was taken at a different searchlight about four miles away, and a larva was found near Colchester.

DEREK A. ASHWELL (223).

17/10/1944.

NOTES FROM MAIDSTONE, KENT

In July 1944 a full-grown *machaon* (Swallowtail) larva was found wandering in a garden at Willington, near Maidstone, Kent. Carrots were growing nearby. It pupated and the imago emerged in August. It is not yet known whether the butterfly is of the East Anglian form, or the Continental type, that most commonly occurring in this part of England. Enquiries are being made to ascertain whether any butterflies had been released in the neighbourhood earlier in the year. In July of this year I watched a female *napi* (Green-veined White) ovipositing in my garden on *Arabis*. I took the ova and the resulting larvae thrived and duly pupated on this unusual foodplant.

L. S. BEAUFROY (628).

11/10/1944.

EXPERIMENTS WITH CATERPILLARS

As a sequel to my observations in *A.E.S. Bulletin* No. 62 (April 1944, p. 72), I have been experimenting with over a hundred Oak Eggars (*L. quercus*) larvae I had from Branton, N. Devon, this August. I commenced by feeding them on hawthorn, and they fed well, there being no casualties. All the frass was black. Later I fed them on bramble, and, though they fed as well, their frass became light green, turning light brown as it got stale. Frass colour would appear, therefore, of little use in identifying larvae, as it seems to depend only on the food eaten. This may not be the case with all caterpillars; for instance, I have not seen Privet Hawk (*S. ligustri*) frass any other colour than black, whether the larvae were feeding on *Buddleia*, privet, ash, holly or teazel.

I made use of the above observation in finding how long Oak Eggars take to digest completely a piece of their foodplant. I took three or four of the young larvae that had been feeding for some time on bramble, and put them on hawthorn, timing them from the moment the first started eating. When the first black droppings appeared it could be supposed that the larva had finished digesting that piece of hawthorn. This is rather a nice experiment, carried out under natural conditions, the larvae not having been starved pre-

viously. The result was 3 hours 50 minutes—very rapid digestion. I want to see next how long it takes for a full grown larva to digest food.

However, this has not a lot to do with identifying a larva by its frass. I find that all faeces (of the larger Macros) have six grooves longitudinally round the surface. The number is always six.

IAN S. MENZIES (585*).

9/10/1944.

QUERY

I can keep most species of butterfly alive in captivity for several weeks, and get eggs, but my White Admirals (*L. camilla*) all die inside 48 hours. Why? Will any successful member advise.

DEREK A. ASHWELL (223).

17/10/1944.

(An article on pairing and obtaining eggs from butterflies would be very much appreciated in the pages of our *Bulletin* or *Journal*; Dr Stovin's useful article in W. J. Stokoe's recent *Caterpillars of the British Isles* (Warne, 1944, 10/6) omits advice on this important point and breeders would find it of great assistance.—Ed.)

NOTES FROM FROME, SOM.

I have grown Tobacco Plant for years to attract *S. convolvuli* (Convolvulus Hawk) and it was only this year that I saw and managed to net one—on September 9th, a smallish male in quite good condition. On October 1st I had sent to me the remains of an *atropos* (Death's Head Hawk) caught at Cheddar on September 20th. During September a doctor here described a larva in his garden which from the description of the colour and the protruding horns as he termed them must have been *plexippus* (Milkweed Butterfly). I don't see what else it could have been. Unfortunately, he did not keep the specimen for me.

G. H. W. CRUTTWELL (118).

6/10/1944.

(Several other members have mentioned taking or hearing of the taking of *convolvuli* this year, but we have not space to publish details of each. Records of this and other immigrant insects would be very use-

ful, however, if they were sent to Capt. T. Dannreuther, Windycroft, Hastings, who will index them so that they may be subsequently examined statistically for evidence throwing light on the migration problem now under investigation.—(B. A. C.).

FOR SALE, in good condition: "The Larvae of the British Lepidoptera, with Foodplants," all coloured plates, by Wilson. Price £3. JOHN PAYNE, 10 Ranelagh Road, Wellingborough, Northants.

FOR DISPOSAL, a number of storeboxes, 18 in. x 18 in., corked and papered, with camphor cells; also small collection of European Lepidoptera, including several species rarely occurring in Britain, small series of Chrysophanus dorilis, virgaureae, chryseis and gordius, contained in one storebox as above. What offers? R. W. PARFITT, 1 Dunsdon Ave., Guildford, Surrey.

PLEASE NOTE—The Society has recently received a number of complaints concerning a circular letter recently sent out by a member. The Committee wish to state that they had no knowledge of this letter and accept no responsibility for its suggestions.

Vol. 6 of the "Bulletin of the Amateur Entomologists' Society," edited by Beowulf A. Cooper, B.Sc., A.R.C.S., Dept. of Agriculture, The University, Leeds, 2, from whom A.E.S. publications are obtainable. Bulletins are issued free to members. First subscriptions to the A.E.S. (5/-, 2/6 to boys and girls aged 18 or under) should be sent to the Hon. Secretary, Phyllis L. Rogers, 91 Middle Lane, London, N. 8, and subsequently to the Hon. Treasurer, C. H. Hards, 40 Riverdale Road, London, S.E.18, from both of whom publications are also obtainable. Membership Application Form and information as to the work and publications of the Society will be sent on enquiry to the Advertising Secretary, A. M. Walton, F.R.E.S., 275 Croxted Road, London, S.E.21.



THE GENERAL MEETING

The first wartime General Meeting of the Society took place at the Chapter House, S.E.1, on December 30th last, 21 members and 3 visitors being present. Mr F. D. Coote took the Chair.

We were fortunate in having present the Founder of the Society, Mr L. R. Tesch, who opened proceedings with an account of his early problems with jelly-panned *Journals* and lack of helpers; his main fear in the development of the Society was that it might eventually lose his original intention of making it a young-people's organisation, become somewhat more technical and in due course evolve into yet another entomological society of the orthodox type.

Mr Cooper carried on the story of our growth up to and since the war, and reassured Mr Tesch that all was being done to see that the younger collector's needs were put above all others. The formation of the temporary Wartime Organisation was undertaken with this especial purpose, as a safeguard lest those serving with the Forces should find their viewpoint permanently lost sight of in their absence. Owing to the war, it was not now possible to have a Committee composed principally of young people, as was the case in 1939, but it was hoped to return to this when peace came. All the same, the Society was dependent to a very great extent, both for finance and for articles, on its senior members, and, while the needs of the younger members must come first, those of the older members must not be overlooked. The aims of the Society must always in the first place be *educational*, the emphasis, however, being placed on the *enjoyment* to be derived from an interest in entomology rather than on the *intellectual merits* of so doing. Our main work must be to *stimulate interest* as well as to *guide* those who are already enthusiastic. We must see that our publications primarily describe *methods* rather than facts—the province of the older societies and journals—and must encourage people to explore new continents rather

than to describe what they have found there. The year 1945 would mark the termination of ten years of our existence, and members must all help make it a record one in the history of the Society. A very great deal of aid was still wanted in the way of articles and observations, drawings and photographs, for publication, help in typing, addressing the envelopes for the *Bulletins*, drawing posters, and in many other ways to ensure that progress was smooth and sure.

The proposed new Constitution for the Wartime AES was then read item by item, and various emendations put forward were discussed and incorporated. The Constitution was approved in principle and it was agreed that certain clauses be drafted anew by the Committee after taking legal advice as to their wording. The Constitution will therefore have to be submitted once more to another General Meeting when members have been circularised as to the revised wording, and a further poll taken thereafter before they become valid. We are much obliged to all who raised points of importance, in person or by letter, on these matters.

Mr Tesch then took the Chair for the remainder of the business meeting. The President and Trustees nominated in the circular sent out with the December *Bulletin* were then elected *nem. con.* It having been agreed that the President should be an ex-officio member of the Committee, one vacancy remained to be filled to bring the number of Ordinary Members of the proposed Committee up to nine; Miss Pamela Bain was duly proposed and seconded. There being no other nominations, the whole Committee of fifteen was elected *en bloc*, the remaining names being those nominated in the circular accompanying the December *Bulletin*.

The year's accounts were then taken as read, having been published previously in Bulletin No. 66, and the audited Balance Sheet was available for inspection.

Various suggestions were then brought forward for increasing our membership and sales abroad, and

with that the business meeting came to an end.

Cpl. E. W. Classey then showed a humorous series of coloured lantern slides entitled "Noffie," exhibited by kind permission of Col. E. B. Allnutt, Commandant of the Army School of Hygiene. Until recently the slides were used in the Army for instruction purposes, representing a method of teaching anti-malaria control by presenting the subject in a facetious manner. The name of the principal character of the story, "Noffie," is a contraction of "Anopheline," the tribe of mosquitoes which carries malaria.

Mr E. E. Syms then gave a lantern lecture, copiously illustrated by his own photographs, on the Eggs of British Insects, with examples from nearly every order. Specimens brought by those present were also passed round for inspection.

BEOWULF A. COOPER.

14/1/1945.

ADVISORY PANEL

E. A. J. Duffy, Adviser on Coleopterous larvae, has now moved to Binfield, Frimley Road, Mytchett, Surrey. The Adviser on Diptera, J. H. Murgatroyd, has resigned from the Advisory Panel. We shall be glad to receive an offer of assistance for this group, and for any other group not yet covered by the Panel.

MEMBERSHIP CHANGES

(Abbreviation: * = Junior Member,
‡ = Affiliate Member)

New Members

- 119 S. G. Castle Russell, Springetts, Seaview Road, Highcliffe-on-Sea, Hants. (L., R. vars.)
312 C. Greenwood, Two Barns, West Town, Bristol. (L.)
667 H. G. Dew, Poplar Lodge, Green Lane, Freshfield, Lancs. (C.)
668 E. Crisp, High Street, Heathfield, Sussex. (gen. ent.)
669 P. E. N. Hitchens, Sicklebank, Horam, Sussex. (L., esp. temperature trials on pupae)
670 W. S. Pitt, Wildwood, Silverdale Avenue, Walton-on-Thames, Surrey. (bumblebees.)
671* J. A. Croucher, 6 Westbrook Road, London, S.E.3. (L.)
672‡ The Field Club, The Grammar School, Glossop, Derbyshire.
673 C. F. Saffery, 71 The Ridgeway, London, N.W.11. (R.)

- 674 Miss E. Chamberlain, 94 Gillespie Road, London, N.5.
675 F. C. L. Essenhigh, Brockhampton Council School, Bringsty, Worcester.
676 Dr P. A. Gorer, The Elms, Fitzroy Park, London, N.6. (genetics of L., local variation.)
677 C. Craufurd, Denny, Galloway Road, Bishops' Stortford, Herts. (L.)
678 H. Ray, Mill House Cottage, Bishopstoke, Hants. (phototropic behaviour of insects.)
679* D. J. Ray, Mill House Cottage, Bishopstoke, Hants. (R., M., bird M.)
680 H. A. Peace, Vicarage Farm, Wigginton, Tring, Herts. (R., bees and wasps.)
681* Miss Nita Davis, 17 High Street, Aylburton, near Lydney, Glos.
682 R. F. Whitworth, 16 Seagry Road, London, E.11. (agric. ent., esp. L. and Diptera.)
683 L. Birch, 225 Coleshill Road, Ward End, Birmingham, 8. (L.)
684 E. F. Wood, 18 Nursery Road, Prestwich, Lancs. (L.)
685 E. Milne-Redhead, 24 French's Avenue, Dunstable, Beds. (C., L., Hem.-Heteroptera.)
686 V. D. P. Hynes, 92 W. Pitman, Battle Creek, Mich., U.S.A. (silkmoths.)
687 Prof. T. D. A. Cockerell, Desert Museum, Box 416, Palm Springs, Calif., U.S.A. (Zoology, gen. ent., H.)
688 Lieut. N. Taylor, B.Sc., R.E., 2 The Oaks, Walton-on-the-Hill, Stafford. (L.)
689 P. P. Milman, 19 St Michael's Road, Paignton, S. Devon. (L.)
690 E. E. J. Trundell, 6 Arragon Gardens, West Wickham, Kent. (ent., L.)
691* F. I. Lee, 109 Kenton Lane, Kenton, Harrow, Mddx. (L.)
692 E. J. Henshaw, B.Sc., 42 Cleveland Road, Manchester, 8. (L., horticultural ent.)
693 N. H. Moody, 119 Southampton Road, Ringwood, Hants. (L.)
694 G. E. Thomas, B.Sc., School of Agriculture, U.C.N.W., Memorial Buildings, Bangor, Caern., N. Wales. (gen. econ. ent., Hem.-Heteroptera.)
695‡ Dulwich College Natural History Society, Dulwich College, London, S.E.21.
696 H. J. Turner, 33 Pine Avenue West, Southbourne, Bournemouth. (L.)

697 H. Hilton, 12 Langley Grange, Prestwich, Lancs. (L., ML.)

Resigned—Dr R. E. R. Sanderson (372), J. Richardson (381), G. M. R. Cooper (447), J. H. Murgatroyd (480), and H. G. Rose (486).

Membership Total—450 subscribing members.

Change of Address—D. Dawson (664) to: 126 Fidas Road, Llanishen, Cardiff. E. A. J. Duffy (200) to: Binfield, Frimley Road, Mytchett, Surrey. R. C. Dyson (91) to: 112 Hollingbury Park Avenue, Brighton, 6, Sussex. Nigel T. Easton (370) to: 25 Lambolle Road, London, N.W.3. R. M. Grant (163) to: 31 High Street, Sheerness, Kent. J. A. Humphreys (168) to: The Caravan, Ballyhilly, Turnberry, by Girvan, Ayrshire. John Moore (146) to: 11 The Gastons, Tewkesbury, Glos. G. W. Otter (475) to: Southwood, Blandford Road, Broadstone, Dorset. Dr P. J. L. Roche (408) to: c/o D.M.S., Lagos, Nigeria. W. J. Watts (240) to: Glanlie, First Avenue, Stanton-le-Hope, Essex. Baron Charles de Worms (260) to: Milton Park, Egham, Surrey. R. C. B. Hartland Rowe (464*) to: 8 Lisgor Terrace, London, W.14.

Corrections to full list—R. Aldridge (262), interests L., not ML. H. Driver (557), interests include ML., H., beekeeping. Ernest G. Neal (467), interests are L., C., Hem., P. J. W. Whitworth (629), initials not J. M.

THANKS

The Meetings Secretary wishes to thank all who have written regretting that they cannot provide an exhibit at the forthcoming exhibition, whose letters he has been unable to answer personally. The exhibition has now been fixed for Saturday, May 5th, 1945, and will be held at Buckingham Gate Central School, Wilfred Street, London, S.W.1., near Victoria Station. Any who now find that they may be able to provide an exhibit on that date, are asked to write again.

WANTS AND EXCHANGES

CLIFFORD CRAUFURD (677) requires the complete nine volumes of Buckler's *Larvae of British Butterflies and Moths*. Write stating price first.

G. FLUCK (569) wishes to buy the *Entomologist* for 1930-31; good price offered. He also has for disposal pupae of *Saturnia pavonia* (Emperor).

E. A. J. DUFFY (200—N.B. new address) URGENTLY REQUIRES RECORDS of the Musk Beetle. Will any member who has seen or taken this beetle (*Aromia moschata* L.) during the past 25 years kindly forward particulars of locality, date and habitat; all replies gratefully acknowledged.

JOHN MOORE (146—N.B. new address) has a number of exotic butterflies (W. Indies) for exchange (list sent). Also A. G. Scorer's *Entomologist's Log Book*.

FRANK A. ADAMS (267) requires a substage condenser, complete with iris and stop carrier, for a Leitz microscope, and a 1/12" oil immersion objective for same.

W. J. WATTS (240—N.B. new address) wishes to buy Step's or Ellis's book on British Shells.

WALTER R. CALVERLEY (596) requires any book on biology or dissection; he offers: Eric Hosking and Cyril Newberry's book of *Birds of the Day*, as new, pub. price 12/6.

J. WALKER (22) has larvae of *C. hera* (Jersey Tiger) to exchange for any hawkmoth pupae (except Privet), or for pupae of *versicolora* (Kentish Glory) or *carpini* (Emperor); also exotic butterflies in papers, or exchange for foreign stamps.

B. A. COOPER (19) is anxious to purchase a Bignell beating tray.

JOHN J. IRVINE (647*) is anxious to buy second-hand collecting apparatus, especially a net and drying-cage.

J. P. ROBSON (44) offers *The Moths of the British Isles* (2 vols.) by South, in exchange for *A Moth Hunter's Gossip* and *Talking of Moths* by Allan, or he is willing to buy copies of the latter two books. Also wanted: the following Noctuidae:—*A. tritici* var. *aquilina* (Streaked Dart), *A. cursoria* (Coast Dart), *A. obscura* (Stout Dart), *A. hyperborea* (Northern Dart), *N. castanea* (Neglected Rustic), *N. depuncta* (Plain Clay), *N. dahlii* (Barred Chestnut), *T. subsequa* (Lunar Yel. Und.), and *T. interjecta* (Least Yel. Und.). Many species to offer in exchange for good specimens with data.

COLLECTING CLEARWINGS—I

It is intended, in this series of articles, to deal with some of the clearwings which the amateur collector is likely to meet, and of which the authors have personal experience.

Abundance—The impression given by the majority of textbooks that all but one or two species are rare is er-

roneous. This fallacy has arisen through the obscurity of the habits of most species. A diligent search in any district will probably disclose the presence of at least half-a-dozen of the species on the British list. Even the recently discovered *A. flaviventris* (Sallow Clearwing) is by no means uncommon in the southern counties. *A. andrenaeformis* (The Orange-tailed Clearwing) too, is sometimes abundant in localities where its foodplant *Viburnum lantana* (The Wayfaring Tree) occurs.

New Species—As an additional incentive to the study of this group there is always the possibility of turning up species new to the British list. There are many species which are common and widespread on the Continent, and for which suitable habitats must exist in Britain, but which have not yet been found here.

Collecting—As the adults of most of the species are very elusive, being very fast on the wing, shy, and similar in appearance to hymenopterous insects, by far the most remunerative method of collecting specimens for the cabinet is to rear the adults from larvae or pupae. Searching for the early stages possesses the advantage that it may be pursued during the winter months, when little else is to be done in the field. The tools needed are: a hammer and chisel, a small hand saw, a strong penknife, and a good supply of perseverance. In general, the best way to ensure a high percentage of successful emergences is to remove a section of the tree or shrub containing the larvae or pupae, and to stand it in damp sand until the adults have emerged.

Artificial Sections—When collecting the pupae of some species which live in large trees it often happens that the cocoon is broken and the pupa tumbles out. Artificial sections must then be made from narrow strips of corrugated cardboard, about 1 in. to 1½ ins. wide. The pupae should be gently pushed *head first* into one of the open ends of a corrugation, and the hole lightly plugged behind it, i.e., tail end, with cotton wool. If an attempt is made to push the pupae in tail first they will certainly be damaged as they have rings of backward projecting spines on the abdominal segments which enable them to wriggle along the galleries formed by the larvae.

Emergence—Place the corrugated cardboard in a roomy container and keep fairly damp. The sections, whether natural or artificial, should

be exposed to three or four hours sunshine each day (preferably in the morning) as the emergence time approaches. The adults of all the species emerge in the morning and the wings are expanded very rapidly. To ensure perfect specimens for the cabinet it is best to kill them between two and three hours after emergence. Bred females will readily assemble males if taken to a suitable locality.

Habits—Great care must be taken in boxing the adults as they have a disconcerting habit of jumping backwards; in fact the best method is to hold the box behind the insect and the lid above it, a slight movement of the lid will induce the moth to jump into the box, on which the lid should be promptly closed. The main time of flight is mid-morning, and preferably in hot sunshine. All the Clearwings are to be found in colonies. When once a specimen of any species, and in any stage, has been observed others are sure to be found, and probably abundantly, in the immediate neighbourhood.

Aegeria culiciformis L. (The Large Red-belted Clearwing), is one of our commonest species, being found wherever birches are plentiful, throughout Britain, with the possible exception of the north of Scotland. The larvae inhabit both the slender stems or shoots of Birch and the stumps left in the ground after trees have been felled, but they are far more easily found when in the latter situation. Open woodlands or heaths with scattered trees are favoured localities for this species. Stumps of trees felled during the previous winter should be searched during July and August, when the presence of feeding larvae is clearly indicated by yellow, sawdust-like frass issuing from crevices between the bark and the wood. The position of affected stumps should be noted, or they can be marked with a knife cut, for attention in the following spring, when the larvae have pupated.

Late April is the best time for removing the pupae: by this time most, if not all, of the frass will have been washed or blown away and the only external sign of the position of the insect in the stump will be a small hole, less than one-eighth of an inch in diameter, usually between the bark and the wood of the stump, and often hidden by a layer of decaying frass and rotten wood. This is the hole from which the adult will emerge. The hole leads, via a gallery one or two inches long, to a shuttle-shaped cocoon

composed of wood chips bonded with silk. The whole of the boring may be exposed if the bark is gently taken off and, with care, the cocoon will remain intact. It is then an easy matter to cut out, with a handsaw, a wedge-shaped section containing the cocoon; the bark may be replaced on the section, but this is not essential.

When the affected stump is not more than two or three inches in diameter it may be sawn off five or six inches from the top and removed as a whole.

The adult moths emerge from the beginning of May onwards, peak emergence periods coinciding with the warmer spells of weather.

Aegeria andrenaeformis Lasp. (The Orange-tailed Clearwing), is a species which, until its early stages were discovered less than forty years ago, was considered an insect of the first rarity, and few collections could muster a specimen. It is now known to be quite common in many places on the Downs of southern England, and at least as far north as Leicester, in localities where its foodplant *Viburnum lantana* (the Wayfaring Tree) flourishes. The larva inhabits stems or branches upwards of half an inch in diameter, and occurs most frequently on bushes growing in sheltered sunny situations. The larval period extends over at least two years.

In the last year of growth the larva makes provision for its emergence as an adult in the following summer by cutting a disc-shaped cap in the bark over the emergence hole. This cap sometimes falls off but more usually remains in place and sinks a little below the level of the surrounding bark. A small amount of frass may be visible but generally the only sign of the presence of a full-fed larva, or pupa, is the "cap"; these are most easily seen when the branches are bare of leaves. February and March are probably the best months to collect them. In cases where the cap has fallen from a tenanted mine the emergence hole is reddish in colour; old borings of previous years are black and often enlarged, are very conspicuous and give a certain indication of the presence of the species.

The larval boring runs upwards from the emergence hole for about three or four inches, and may go below the hole for about one inch; it is therefore safest to cut the branch off about five to six inches above, and three inches below, the cap. This

also ensures that the sections are planted the right way up in the damp sand of the breeding cage.

The adults emerge throughout June and July, sometimes earlier or later, depending upon weather conditions. This species is, in some localities and seasons, heavily parasitized by ichneumonids, four or more of which will sometimes be bred from a single mine.

E. W. CLASSEY, F.R.E.S. (41)
R. W. PARFITT (525)

NOTES FROM ASSAM

After many months of monsoon, heat, and general stink of Assam villages, like a breath of clean English air four *AES Bulletins* arrived at once. It's good to read, once again, "Wants and Exchanges" and "Observations." Although I am quite a new member and joined whilst I was out here, I look forward to many happy meetings back in dear old England. My friend John Knight (94) has unfortunately left this part of the world and is now in Southern India. We had many days out together when he was with this Regt., and we have done quite a lot of collecting and sent many specimens home for our later attention (much later).

Whilst on leave last year at Darjeeling, I purchased Evans' *Identification of Indian Butterflies* and it has helped us considerably in learning about the many hundreds of species found out here. In this part of the globe variation runs riot and we have often got very confused with the Browns as so many have dry season and wet season forms. I have been lucky enough to obtain several of the large Yellow Birdwings, one with a wing expanse of 6½ ins., and at Darjeeling both John and I managed to get a male of the rare Kaiser-i-Hind (*Teinopalpus imperialis imperialis*), surely the finest of all Indian butterflies. But away with all these lovely Indian species, and give me England every time!

I really know so little about the English Lepidoptera that I am eager to learn much more. When I get back to England, with John's help and the encouragement of the Society, I hope to take up seriously once again a hobby I have liked since childhood, but one in which I have never been able, until joining the AES, to find a keen friend to help.

You may be interested to know how we killed the Birdwings (*Troides* spp., *helena*, *aeneus*, etc.) and Yellow Helens (*Papilio chaon chaon*), which are rather too large for the killing-bottle. We made an extract by soaking some cheap cigars in water, stewing them in the oven and straining the liquid. By means of a rubber tube attached to a small hypodermic needle (the M.O. is a good sort!), one drop of this liquid was injected into the body of the specimen and soon put paid to the largest insect (and little wonder—one whiff of these cigars is enough to send any healthy man into a paralytic stupor for several hours!).

I am rather worried about the relaxing when I get back of the specimens I have sent home. They have been wrapped in cellophane packets (the sort cigarettes are wrapped in), with their wings folded over the back, and I learn they have arrived in good condition, with no trace of mould or mite. What treatment do members advise?

F. R. SUTTON (538).

26/11/1944.

PRESERVING PAPERED INSECTS

For preservation of the papered specimens, I can only recommend plenty of powdered or finely-flaked naphthalene. Even if they appear to have arrived home in a good state, they are sure to have some mould-spores on them, ready to sprout if they get a chance. A naphthalened-atmosphere will keep those spores from sprouting, as well as repelling any insect pests.

T. BAINBRIGGE FLETCHER (52).

COLLECTING IN INDIA

For general instructions on collecting, etc., members may care to refer to my paper in *Proceedings of Third Entomological Meeting, Pusa*, Vol. III (1920), pp. 936-975 + 16 pl. This paper was reissued separately as a Bulletin, No. 113, of the Pusa Agricultural Research Institute (price 10 Annas), and may be still obtainable in India from the Imperial Agricultural Research Institute, New Delhi. "Notes on Rearing" (*ibid*, pp. 875-892 + 8 pl.) was also reissued as Bulletin 112 (price 7 Annas).

T. BAINBRIGGE FLETCHER (52)
(formerly Imperial Entomologist,
India).

RELAXING DIFFICULT SPECIMENS

The problem of relaxing old dry specimens satisfactorily is so common that it is worth quoting from two helpful articles in *SAMAB* (*South African Museums' Association Bulletin*) in the hope that much cause for exasperation to the setter may be avoided. The first method, devised by D. Gunn and J. Pringle (*SAMAB*, 1 (1): 15, September 1936), is applicable to the larger insects with tough cuticles, such as beetles, which ordinarily require from one to three weeks to relax in the usual damp tin. Any suitable container which will withstand heating for long periods may be used. They used a circular container 7 ins. in diameter and 8½ ins. in height, a size which proved large enough to keep one setter continuously occupied. A stand with a perforated wooden top 6½ ins. across and 4½ ins. tall (about half the height of the container) was made to stand in this.

Water was placed in the container to a depth of about 2 ins., the stand inserted, and the top covered with several thicknesses of calico, these being cut larger than the diameter of the container so as to close the gap between the stand and the container. The latter was then heated from below and when the water was boiling the insects were placed on the cloth and left for about ten minutes; they were then examined every few minutes until found to be sufficiently relaxed to mount. After some practise, it became an easy matter to estimate the time required to relax insects in the "steam relaxer" and mounting became a continuous process with no delays. A cover to the container kept the temperature up, minimised the heating required and loss of moisture, but over steaming was not advisable. This process should not be used on very small specimens.

The second method, described by G. Arnold (*SAMAB*, 2 (15): 373, September 1942), is recommended for use against butterflies and moths which have been preserved dry in envelopes and are difficult to relax sufficiently by ordinary methods. "Sometimes," he says, "and especially with old specimens, they can be kept in a relaxing tin, for days until the wings are sodden, and even then are not softened enough to permit of being opened and set."

He recommends that "the specimens should be kept overnight in a relaxing tin. In the morning one, or at the most two, drops of ammonia are injected into the thorax with a hypodermic syringe. The solution, about one part of strong ammonia in five parts of water, is used by placing the specimen on its side, and the needle, inserted at the base of the thorax, is then pushed half way up the thorax towards the head. Sometimes a little of the fluid, which can be soaked up with blotting paper, will leak out through the sutures. The specimens should then be returned to the relaxing tin for about twenty minutes, after which it will be found that the muscles at the base of the wings are completely softened, so that the wings open out with ease.

"To make a good relaxing tin, obtain a large flat tin about 5 ins. diameter and 2 ins. deep. Pour into it wet plaster of Paris to a depth of about half an inch; allow the plaster to set. When required for relaxing, saturate the plaster with water to which 5% carbolic acid has been added. The carbolic prevents the formation of mould and has no effect on the colours of the insects."

THE SALLOW CLEARWING

In the *Amateur Entomologist*, Vol. 5, No. 38, p. 20, Mr Tams stated that in *tipuliformis* (Currant Clearwing) (fig. 73) "the two veins from the lower angle of the cell" (in hindwing) "are shortly stalked, while in *Aegeria flaviventris* (fig. 72) they are connate." The neuronal characters thus stated may hold for perhaps 95% of specimens but are not a reliable test, as in *tipuliformis* these two veins in the hindwing are occasionally connate or even separate at origin (and sometimes also the lower of these two veins is forked at its tip). A better character to separate these two species seems to be:—

Back of head (at junction of head and thorax) with a yellow collar
tipuliformis (Currant Clearwing)
 Back of head uniformly black
flaviventris (Sallow Clearwing)

Personally I place these two species in the genus *Conopia* and not in *Aegeria*, of which I take the genotype to be *apiformis*.

T. BAINBRIGGE FLETCHER (52).

21/1/1942.

THIS YEAR'S RECORD

I should like to record that I observed a Peacock Butterfly (*Nymphalis io*) in Judd School, Tonbridge, on January 1st this year.

PETER FEATHERSTONE (469*).

10/1/1945.

NOTE FROM CHIGWELL, ESSEX

On August 31st, 1944, I took a very worn specimen of *Catocala nupta* (Red Underwing) with brown hindwings near where I am at present stationed here. A fellow member, Mr A. R. Ness, took another in the same district in 1926.

L. R. TAYLOR (441).

24/9/1944.

(Quite a large number of *Catocala nupta* with brown hindwings have been captured, most of them in or near London. They have been caught as far away as Reigate and Esher. The form was named by Warren in Seitz ab. *brunnescens* and is figured there. It is still very uncommon.—Dr E. A. COCKAYNE (238)).

REARING THE CLOUDED YELLOW

During a holiday in N. Cornwall in early July 1944, three *C. croceus* were seen on two different days north of Boscastle, each in a different spot. A female captured on July 6th was kept alive for four weeks till August 1st. It laid a few ova each fine day, yielding a total of 90 deposited on the leaves and flowers of a purple clover plant. About 30 were infertile and shrivelled up in about a fortnight. The remainder hatched and were enclosed in batches in glass-topped tins with a plentiful supply of clover, changed twice a day. During the early stages a number of larvae disappeared and despite close examination of the foliage and the containers, no trace could be found; cannibalism was suspected, as there was no possibility of escape. Some larvae grew more quickly than others, and when each was put into a separate container no further losses occurred.

The first egg hatched on July 16th and the first caterpillar pupated on August 12th. The first adult emerged on September 5th and the last on October 13th. Altogether 25 larvae pupated. From these pupae, 23 perfect imagines emerged, of which 11 were males and 12 females. Eight of

the latter were of the normal form, one var. *pallida* and three var. *helice* in pale to deep primrose tints. One of the two dead pupae was pale in colour and was dissected, proving to be another var. *pallida*. It was interesting to note that the mother *C. croceus* was quite normal; must the female parent of the captured butterfly have been a var. *pallida*?

C. H. CRIPPS, B.A., and
S. W. HUMPHREY (386).

NOTES FROM TEWKESBURY, GLOS.

From August 24th-26th *Agrotis tritici* (White-line Dart) was abundant here just after dark on flowers of *Mentha hirsuta* (Hairy Mint). Previously I had always thought of this as a coast and sandhills species. South says of *Diloba coerulescephala* (Figure-of-Eight Moth): "The moth . . . is rarely seen" (*Moths of the Brit. Isles*, Vol. I, p. 266). Between 19th and 23rd October a few specimens came in every night through the "dim-out" in my mother's house at Tewkesbury.

JOHN MOORE (146).

23/10/1944.

CURVED FORCEPS

Insect forceps are an expensive item, the cheapest costing about 3/6; with the modest outlay of fourpence, however, I have made a very good substitute. Starting with a broad-ended pair, such as are sold as an "aid to beauty," the first difficulty, of bending both prongs in an even curve, was overcome with the aid of a vice and a pair of pliers. Having first bent the end of each prong outward a little, I held the forceps closed, gripped the two closed ends with the toothed face of the pliers and screwed the pliers up in the vice. Very gently I bent back the forceps a little way, making the start of the curve. Moving the whole thing up a little in the vice, I then repeated the bending process farther up the forceps several times until the desired shape had taken form. Finally, I tidied up the tips with a file.

But whether you make your own forceps or pay several shillings for them, if you set high up on the pin you will find the pinhead prevents your getting a firm hold of the specimen. Some people cut the heads off their pins, but I prefer to drill a small

hole right through both prongs of the forceps so that they can close over the head of the pin. This affords the greatest possible grip, and prevents the forceps from slipping down on to the insect even when being forced into hard cork.

N. A. B. COLLYER (132)
(now a P.O.W. in Germany).

R. FAIRCLOUGH, Blencathra, Deanoak Lane, Leigh, Surrey, has for disposal several large storeboxes, with or without Lepidoptera.

L. HUGH NEWMAN, F.R.E.S., wishes to thank all the numerous members of the AES who responded so magnificently to his recent appeal for pupae and duplicates to help build up stocks of Lepidoptera at the Bexley Butterfly Farm. It was immensely gratifying to find so much goodwill towards us expressed in all the kind letters we received. We can now face the new breeding season with confidence.

Vol. 6 of the "Bulletin of the Amateur Entomologists' Society," edited by Beowulf A. Cooper, B.Sc., A.R.C.S., Dept. of Agriculture, The University, Leeds 2, to whom all contributions, exchange notices, illustrations, etc., for publication should be sent. Bulletins are issued free to members. First subscriptions to the AES (5/-, 2/6 to boys and girls aged 18 or under) should be sent to the Hon. Secretary, Phyllis L. Rogers, 91 Middle Lane, London, N.8, and subsequently to the Hon. Treasurer, C. H. Hards, 40 Riverdale Road, London, S.E.18. Data labels and publications of the Society may be obtained from Hon. Business Manager, G. A. Roberts, 53 Broadway, Fulford, York, or from any of the above officers. Membership Application Form, specimen Bulletin and information as to the work and publications of the Society will be sent on receipt of threepence by the Hon. Advertising Secretary, A. M. Walton, F.R.E.S., 275 Croxted Road, London, S.E.21. Details of field meetings in the London area will be sent regularly on receipt of 1/- by Hon. Meetings Secretary, E. W. Classey, F.R.E.S., Salisbury House, Salisbury Grove, Mytchett, Surrey.



THE EXHIBITION

The AES Exhibition, as announced in our last issue, is to be held on Saturday afternoon, May 5th, 1945, at Buckingham Gate Central Schools, Wilfred Street, London, S.W.1, near Victoria Station. Elsewhere in this issue the scope of the exhibition is discussed, and it is hoped that all who can do so will come along with their friends and some form of exhibit. It is the aim of the meeting not merely to show the novice the best way to tackle the various aspects of his hobby, but to enable collectors to meet together and discuss their plans for the season with other collectors, gather ideas for the construction of their own apparatus and suggest to others how they can add to their own enjoyment.

As we have held no exhibition of this type since 1939, we are still somewhat out of touch with members who may be able to help with the organisation. We need further offers to help with demonstrations of larva preserving, setting, degreasing, simple experiments, mounting wings or genitalia in balsam, photography and the like. It is suggested that such things as setting and larva preserving be conducted in relays as few will be able to gather round the operator at a time, and the operator will himself wish to mix with the crowd and see what is going on elsewhere. Anyone who is willing to assist for even ten minutes in this way will be materially helping things along. Would they please let the Meetings Secretary, Mr Classey, know beforehand what they are willing to do, and whether they will bring with them living or killed material ready to operate upon? It is hoped that other members or visitors will bring with them examples of breeding cages, sleeves, nets, storeboxes and transport boxes and all sorts of other apparatus. It is suggested that even where apparatus is too bulky to bring, exhibitors will be able to provide sketches showing how they are constructed; possibly some of these types of apparatus will be suitable for description in the *Bulletin* subsequently.

Other requirements for the exhibition are the loan of coloured paper,

blackout or other curtain material or strips to drape desks and tables for the exhibition. These should be brought to the Exhibition preferably between 11 a.m. and 1.30 p.m. Another need is for Londoners who can accommodate fellow AES members at their homes for one night, or two nights, at the time of the exhibition, to get into touch with the Meetings Secretary *immediately*. If members requiring such accommodation will write to Mr Classey, he will put them in touch with people who may be able to put them up if sufficient such offers have been received.

Leaflets—We are most anxious during the coming months to bring out many more *Leaflets* of practical value to the amateur. For this purpose we need the assistance of members able to supply descriptions of how to make and use apparatus, how to rear all stages of many groups of insects, how to collect, mount, photograph and name their favourite groups or orders. We require *Leaflets* for every type of beginner, and we need them to be well illustrated.

In nearly every case this will mean a co-operative effort if they are to be first-class productions. One member may have considerable interest and experience, let us say, in dragonflies or hoverflies; another is a moth collector and a careful artist; yet another photographs caterpillars. A *Leaflet* written by the first might be excellent, but, without illustrations, not quite what we need. Here the others can help and a most useful publication result. Such a joint effort has produced *Leaflets* 11 and 12. Or again, many members may know useful dodges worth including in such *Leaflets*, information of definite *practical* value to the novice, yet they may not have sufficient knowledge to write a whole *Leaflet* themselves. If they will send along even the briefest tip, the Editor will see to it that it is incorporated where it will be of most use, and the note itself published in the first *Bulletin* which has room for it. At present we are most in need of descriptions of making butterfly nets, fixed and collapsible, and, if we have any joiners or carpenters among us, of

cabinets, glass-fronted cases and storeboxes. Of photographs, we are most in need of ones of living beetles, Orthoptera, caddises, and growing foodplants and ornamental shrubs and flowers useful as foodplants or attractive to adult insects. Line drawings of any kind of apparatus or entomological operation are also much desired. The Editor will be glad to pass on to an artist to draw up for the blockmaker any kind of rough sketch submitted, or to re-write any notes submitted for publication if the contributor desires it.

Auditors—No offers to act as Auditors having been received at the General Meeting in December, we should be most grateful to any two members, not on the Committee, and preferably within reach of London, who would be willing to audit the Society's books for the current year, which ends on March 31st. Perhaps anyone willing to help would let Mr Hards know.

BEOWULF A. COOPER.

25/2/1945.

MEMBERSHIP CHANGES

* = Junior Member

New Members

- 37 A. H. Pickett, L.D.S., D.M.D., 32A Chatsworth Road, Brighton, Sussex. (L.)
- 698 Miss L. M. Long, White House Farm, Somerleyton, via Lowestoft, Suffolk. (L., rearing, gen. ent.)
- 699* D. S. Horner, 81 Leigh Road, Eastleigh, Hants. (L.)
- 700* P. A. Betts, 28 Kidmere Road, Caversham, Reading, Berks. (L., H. Aculeata)
- 701 B. W. Weddell, 13 The Halve, Trowbridge, Wilts. (L., ML.)
- 702* J. P. T. Boorman, 35 Carew Road, Wallington, Surrey. (L.)
- 703* L. H. Williams, 10 Lower Armour Road, Tilehurst, Reading, Berks. (gen. ent., botany, ornithology)
- 704 C. Brown, B.Sc., M.Ed., 12 Orchard Road, Anlaby Park, Hull, Yorks. (L.)
- 705* D. E. Marriott, 12 Kensington Avenue, Watford, Herts. (L., O.)
- 706 Dr H. B. D. Kettlewell, M.A., M.B., B.Chir., M.R.C.S., L.R.C.P., F.R.E.S., Homefield, The Common, Cranleigh, Surrey. (L., genetics)
- 707 G. K. Durnford, 9 Stockwell Park Crescent, London, S.W.9. (L., C.)
- 708* Veronica Durnford, 9 Stockwell Park Crescent, London, S.W.9. (L.)
- 709 E. A. J. Ward, 6 High Street, Swanage, Dorset. (L.)
- 710* Laurence Christie, 65 Rowan Road, London, S.W.16. (L.)
- 711 Donald Allen, F.R.P.S., F.R.E.S., F.R.S.A., 698 Warwick Road, Solihull, Warwickshire. (H., L.)
- 712* B. Wolfenden, 10 Rectory Lane, Prestwich, near Manchester. (L.)
- 713* K. Davies, 39 Galgate, Barnard Castle, Co. Durham. (B., N.H., L.)
- 714* T. E. T. Weston, 11 Kingsfield Drive, Enfield, Mddx. (C.)
- 715 K. M. White, 25 Tavistock Drive, Nottingham. (H., biometrics, gen. ent.)
- 716 Prof. J. W. Hesiop Harrison, D.Sc., F.R.S., F.R.S.E., Gavarnie, The Avenue, Birtley, Co. Durham. (gen. ent., L., biogeography)
- 717 W. A. Carter, 11 Bourne End Road, Northwood, Mddx. (Acarina)
- 718 J. D. Campbell, Bleak House, Navenby, Lincoln. (L.)
- 719* P. G. Taylor, 51 Woodland Drive, Watford, Herts. (L., C., agric. pests)
- 720 A. B. Mitten, 40 Oxford Street, Wellingborough, Northants. (L.)
- 721 W. R. Wooff, 9 Marshall Street, Barnard Castle, Co. Durham. (B., N.H., L.)
- 722* R. Sutton, 20 Ongar Road, London, S.W.6. (N.H., esp. L.)
- 723 Dr M. M. Melrose, M.D., Wargrave House, St Owen Street, Hereford. (L., esp. ML.)
- 724* R. W. Butler, 14 Merlin Road, Welling, Kent. (gen. ent.)
- 725* T. Fletcher, Newlyn, Ash, Surrey. (gen. ent.)
- 726 S. H. Butler, 14 Merlin Road, Welling, Kent. (gen. ent.)
- 727 S. Sunderland, Cragg Mount, Midgehole Road, Hebden Bridge, Yorks. (C.)
- 728* A. L. LeQuesne, Moorside, Ashburton, Newton Abbott, Devon. (L.)

Resigned—E. G. A. Farnham (616) and R. K. Taylor (497).

Membership Total—480 subscribing members.

Change of Address—A. F. O'Farrell (58) to: c/o Mrs K. M. F. O'Farrell, Chyngton, Steyning Road, Rottingdean, Sussex. E. A. J. Duffy (200) to: The Vicarage, Tongham, near Farnham, Surrey. C. C. Townsend (451) to: Polgarrich House, Puckerrill, Cambourne, Cornwall. R. Burnaby (489*) to: 28 Elsworthy Road, London, N.W.3. C. T. Nunn (523) to: 2 Boyles Court Cottages, Warley, Essex. Prof. T. D. A. Cockerell (687) to: 908 Tenth Street, Boulder, Col., U.S.A. (N.B.: Prof Cockerell asks us to make it clear that he is not in a position to undertake correspondence or make exchanges with members.)

Corrections to previous lists—Miss E. M. Davies (635) is interested in L. and aq. insects, not as stated. Miss Nita Davis (681*) is interested in L.

TREASURER'S NOTICE

All subscriptions for 1945 should by now have been paid. Members who have not done so are asked please to deal with the matter, so as to avoid the trouble and expense of having to write individually to each one concerned. It would be appreciated if anyone who does not wish to continue his membership would drop me a card to say so. My leisure minutes for dealing with AES affairs are still very restricted.

It would also be helpful if members would take care of their receipts, as, while all care is being taken of the Society's books and accounts, the possibility of their being lost through enemy action still exists; in that event such receipts would be the only complete means of checking up. I trust that the occasion will never arise.

C. H. HARDS.

12/2/1945.

WANTS AND EXCHANGES

J. WALKER (22) would be pleased to receive records of *C. hera* (Jersey Tiger) from localities other than those mentioned in his article in *AES Bulletin* No. 66, pp. 24-5.

H. HILTON (697) wishes to obtain pupae of *S. ocellatus* (Eyed Hawk) and pupae or ova of *D. tiliae* (Lime Hawk). Please write first.

R. BURNABY (489*) requires a hive and apparatus in good condition.

P. G. TAYLOR (719*) wishes to contact lepidopterists in the Welling-ton-Newport (Salop) area, and also anyone who has records of *T. quercus* (Purple Hairstreak) ab. *bellus*. He will also give full price for a copy of P. B. M. Allan's *Moth-hunter's Gossip* in good condition.

J. A. HUMPHREYS (168) is anxious to learn of ways of preserving Agaric fungi for a collection, apart from pickling. Can anyone advise him? What books are recommended on this subject?

CARTWRIGHT TIMMS (547) wishes to purchase a copy of *Diptera Danica*, Part V (1916), Syrphidae, by W. Lundbeck.

E. W. CLASSEY (41) wishes to get into touch with any members who are *actively* interested in Aegeridae, particularly those in Scotland or Ireland who can obtain *A. scoliaeformis* (Welsh Clearwing) and who wish to obtain some of the southern species.

J. M. K. SAUNDERS (618) asks: "Could any member supply me with an address for August holiday accommodation at Shoreham, Sussex?"

PROF. J. W. HESLOP HARRISON (716) wishes to obtain a batch or two of Vapourer Moth (*O. antiqua*) eggs.

H. E. HAMMOND (423) is very interested in preserving lepidopterous larvae and would like to contact others similarly interested with a view to collaboration or exchange. In season he would be prepared to blow limited numbers for those unable or unwilling to do this, of course without charge, but duplicates would be appreciated. Large numbers of dead and empty pupae and cocoons still required. A good number of duplicate pupa cases and blown larvae available to anyone interested.

R. G. TURNER (620) wishes to purchase a Greenough type binocular dissecting microscope — preferably a Watson or Zeiss.

E. A. J. DUFFY (200—N.B. new address) requires coleopterous larvae, preferably living and with pabulum, though spirit material is acceptable, especially of local species. Specimens will be determined whenever possible. Offered in exchange are mounted adults of *Tomoxia biguttata*, *Platypus cylindricus*, *Cassida nebulosa*, etc.

M. P. SIDDONS (516*) requires 1½ dozen (mixed sexes) pupae of each: *populi* (Poplar), *ocellatus* (Eyed),

Bring your friends and bring an exhibit with you to the Exhibition.

elpenor (Elephant) and *ligustri* (Privet) Hawks.

P. SIVITER SMITH (250) wants all species of "Copper" butterflies from all parts of the world, including the Small Copper (*L. phlaeas*) particularly, foreign or British. Also wanted are specimens of the Satyrid genus *Oeneis* from all parts of the world except N. America. Will purchase the above, or exchange if wants are stated.

B. A. COOPER, The Vicarage, Northallerton, Yorks., is anxious to obtain for research purposes specimens of many British click-beetles (Elateridae), and also any overseas species of this family. Elaterids may be known by the backwardly-projecting prong on each side of the hindmargin of the thorax. Specimens preferred unmounted, but with data, in tubes or papers. Even battered examples will be of some use, for an examination of their genitalia. British specimens named for members in exchange for duplicates. Living larvae of many species also required. Yorkshire Elaterids offered in exchange, also small quantities of freshly-collected unidentified and unmounted Yorks. (N. Riding) insects.

AES EXHIBITION — Exhibits are particularly wanted on breeding methods, breeding cages and boxes, net making, micro-slide preparation, setting, preserving larvae, compact apparatus to take on a collecting trip by bicycle—and hundreds of other entomological subjects. If you have *anything* you can exhibit, please bring it along, and get your colleagues to do likewise; if possible please let E. W. Classey, Salisbury House, Salisbury Grove, Mytchett, Surrey, have a line at once to know what you propose to bring for exhibition so that the layout may be planned to leave room for all. The exhibition will be held at Buckingham Gate Central Schools on Saturday afternoon, May 5th, 1945; all admitted free, visitors welcome, particularly school parties. Due to commence at 2 p.m., but doors open to receive exhibits at 12.0 midday.

JOHN J. IRVINE (647*) is anxious to buy second-hand collecting apparatus, especially a net and drying-cage.

H. K. AIRY SHAW (545) has for disposal a number of specimens of *Chilacis typhae* Perr. (Hem.-Het., Lygaeidae), unset, and will be glad to supply applicants while stock lasts. He is also anxious to purchase Continental works on Hemiptera and Coleoptera, especially French and Russian.

FORTHCOMING MEETINGS

Saturday, May 5th.

AES Exhibition of Apparatus and Collecting Methods

To be held at Buckingham Gate Central Schools, Wilfred Street, London, S.W.1, near Victoria Stn., commencing at 2 p.m. Admission free. Non-members of the Society and school parties are particularly invited, and it will help the meeting forward if they, too, can bring an exhibit each. It is hoped to include many patterns of breeding cage, nets, demonstrations of entomological operations and technique, books, simple experiments and other activities. Are you sure that you set by the easiest method? What is it that you fail with in "blowing" larvae for your collection? Do your larvae suffer from a lack of suitable housing? Come and learn how others do it, and show your own pet gadget or makeshift substitute, book or living larvae.

An important item in the exhibition will be an "Exchange Stall"; AES members with insects for exchange should note that all mounted specimens exhibited on this stall should have data labels and be displayed in a glass-topped box with the owner's name clearly marked. The AES can take no responsibility for loss of, or damage to, insects. Living insects of all stages will also be welcomed at this stall.

Many helpers will be needed, and it would be appreciated if anyone who can spare the time would turn up at the school hall at midday and lend a hand. It would also be useful if people could bring along blackout curtains now in disuse and loan them for the afternoon for the purpose of draping school tables for use as stands. As far as possible, people making exhibits would do well to be there half-an-hour before the official opening time to enable the exhibits to be set out in time. The Meetings Secretary would be grateful if all intending exhibitors would write to him and let him know what they are exhibiting and what table space they will require, but additional exhibits will be welcomed if notification cannot be made in time. Everybody who can make any exhibit should come along and help to make this a bumper show.

Sunday, April 22nd.

Field Meeting to Chilworth and Albury

Leader: R. W. Parfitt. Meet at Chilworth Stn. (S.R.) at 10.40 a.m. A train leaves Victoria at 9.28 a.m. and reaches Chilworth at 10.40 a.m.; members coming for the afternoon only should leave Victoria by the 1.28 p.m., arriving at Chilworth at 2.40, where they will be met by the main party. Members should bring own lunch and tea.

Sunday, April 29th.

Field Meeting to Warley Common and Woods

Leader: G. B. Hodges. Meet outside Brentwood Station (L.N.E.R.) at 11.9 a.m. A train leaves Liverpool Street Station at 10.30 a.m., arriving at Brentwood at 11.9 a.m. Members attending this meeting are required to bring their own lunch and tea.

Sunday, May 13th.

Field Meeting to the Hog's Back

Leaders: E. A. Duffy (coleopterist) and E. W. Classey (lepidopterist). Meet outside Wanborough Station (S.R.) at 11.6 a.m. The London-Aldershot-Guildford (via Ascot) train leaves Waterloo at 9.24 a.m., arriving at Wanborough (two stations past Aldershot) at 11.6 a.m. Lunch will be available at a restaurant on the Hog's Back; will members requiring lunch please inform Mr Classey before May 3rd.

Sunday, May 20th.

Field Meeting to Gomshall and Shere

Leader: R. W. Parfitt. Meet at Gomshall Stn. (S.R.) at 10.35 a.m. A train leaves Victoria at 9.28 a.m. and reaches Gomshall at 10.33 a.m.; members coming for the afternoon only should leave Victoria by the 1.28 p.m., arriving at Gomshall at 2.33, where they will be met by the main party. Members should supply their own lunch and tea.

Offers to lead further field meetings are greatly desired.

**Birmingham Natural History Society
(Entomological Section)**

The Birmingham N.H.S., whose activities were suspended early in

the war when its large and valuable library, records, and collections were destroyed in the blitz, has now resumed activities, and will be pleased to make contact with any AES members living within reach. Meetings are now to be held on the last Friday in each month, at 7 p.m., in the Birmingham Photographical Society's Rooms, York House, Great Charles Street, Birmingham. Anyone interested in entomology will be welcomed. Anyone requiring further details is asked to write to G. B. Manly, Assistant Secretary, 72 Tenbury Road, Birmingham, 14.

South-Eastern Union of Scientific Societies

The Annual Congress of the SEUSS, to which the AES is affiliated, will be held at Harpenden on Saturday, July 7th, 1945, under the Presidency of Dr W. G. Ogg, Director of the Rothamsted Experimental Station, the title of his address being: "Some Aspects of the Work at Rothamsted." Opportunity will be afforded to visit the Experimental Plots and Laboratories. AES members are invited. Further details may be obtained from the Hon. Secretaries, SEUSS, 78 Dunwich Road, Bexleyheath, Kent.

COLLECTING DRAGONFLIES

Additions suggested to A. F. O'Farrell's article (*Leaflet* No. 12) since publication are as follows:—

(1) Common tumbler are excellent for rearing many species of dragonfly nymphs, and are much cheaper to obtain than accumulator jars.

E. E. SYMS (406).

(2) When dredging for nymphs in large ponds and lakes it is a good idea to paddle, in an old pair of gym-shoes, as if one wears rubber knee-boots sooner or later one steps in a deeper hole and receives a bootful of water.

(3) Some species of nymphs, e.g., *Cordulegaster boltonii* and *Agriion virgo*, which normally inhabit running water, can be reared quite satisfactorily in still water in a jamjar.

(4) When rearing nymphs one usually finds that a few die just before becoming adults. These can be preserved for the collection by keep-

If you can take charge of a stall for awhile, please let Mr Classey know beforehand.

ing them for about a year in a tube of methylated spirits, then removing them, spreading out the legs, etc., and allowing them to dry up.

DEREK A. ASHWELL (223).

DRAGONFLIES IN BEDFORD

During the last two summers I have taken note of the dragonflies seen along the River Ouse within a couple of miles of Bedford town, and found fourteen species within this very small area.

The season begins in May with an abundance of *Ischnura elegans* and *Pyrhosoma nymphula*. At the end of that month appears our commonest dragonfly *Coenagrion puella*, with a few *Enallagma cyathigerum*, and in one small area in 1942 I netted what I took to be specimens of *Coenagrion pulchellum*. With a little care all these can be picked off the herbage with the fingers, but to net the larger ones is not difficult as they return to the same spot to rest however often they are disturbed. This is especially true of *Libellula depressa* (abundant) and *Lib. quadrimaculata* (occasional) which also appear at the end of May. June brings *Erythroma najas*, clouds of *Agrion splendens* and *Platynemis pennipes*. The early ones of this species (30/5/42, 4/6/42 and 21/5/43) were all of the variety *lactea*, whereas the later ones of June were mostly of the ordinary blue type. At the end of July we have the *Aeshnas*: *cyanea*, *grandis* and *juncea*, and the season ends with *Sympetrum striolatum*, which I have seen up to mid-October.

I have been surprised how well nymphs of various species from running water have taken to life at home in the tank, where they have lived for some weeks before emerging. The only constant failure was *najas*. *Ischnura elegans* has a nice habit of coming out at breakfast time, when it can be seen, but my one and only *Aeshna grandis* was on the wing before I was awake.

Mrs J. M. ADAMS (508).

WANTED—DRAGONFLY RECORDS

Miss Cynthia Longfield, British Museum (Nat. Hist.), Cromwell Road, London, S.W.7, writes: "As I am now engaged in revising for publication the records of distribution of all the British dragonflies, I shall be most grateful if all those who have been able to identify the species without doubt would send me their

County records. If they can possibly do so, it would greatly help to have the Vice-County number (according to Watson) stated. Anyhow, a list of the localities, approximate status, first and last dates, with observations on habitats, definite proof of breeding (not only ovipositing, but emerging) and methods of oviposition, are all of great value. Such information will be gratefully acknowledged. Without help from all those interested, I cannot divine in which counties and vice-counties our British species are found, so I depend on the willing co-operation of all. For the rarer or more critical species I may need identification by capture, but for all the common species, a list with approximate status will be quite sufficient. There is a great deal still to be done in the British Isles on the ecological and biological aspects, and a most interesting field of study is open to many young students of the Order."

TESTING NATURAL SELECTION

The following points formed the substance of a communication to *Nature* (19th August 1944) and it is thought that in the pages of the *AES Bulletin* they may reach a wider circle and perhaps give several amateurs, school natural history societies, etc., an opportunity for testing natural selection, and subsequently putting on record their findings.

The cocoons of the Six Spot Burnet Moth, *Zygaena filipendulae*, are commonly found on tall waving grass stems, but others are formed on hedges, fence rails, or short stout stems of knapweed, etc. In the former case they are out of reach of birds, which can attack only those cocoons on stems which afford a foothold. During the summer of 1944 I took notes of the fate of all the cocoons formed on the strands of a coarse-meshed wire fence some eighty yards long and which ran through land inhabited by a colony of *Z. filipendulae*. Between May 24th and July 10th every cocoon that had been formed on the fence was observed and its fate noted; the figures are as follows: opened; and contents extracted: 22; contents damaged fatally, but not extracted: 2; moth emerged: 8; moth formed but failed to emerge: 2; contents destroyed by ichneumons: 3. Thus, out of 37 on the fence, 24 (= 64.8%) were destroyed by birds. I have actually seen a Great Tit perch on the fence, peck open the cocoon,

pull out the contents and thrust it down the throat of a screaming young one.

Thus it is clearly dangerous for a larva to spin on anything which enables a bird to obtain a foothold; more data of the kind mentioned are desirable, and comparison with the emergences from tall, unbroken, waving grass stems. It is of course possible that a bird might, even deliberately, break a pliable stem by perching on it and then attack the cocoon on the ground. Is there any instinct in the larva which leads it to spin, for choice, on a tall waving stem? If so, at what height is the instinct satisfied? Does a larva which has climbed a stem which proves only to be a short one come down and try another? If there is such an instinct, one would expect it to be selected by birds attacking the cocoons.

G. D. HALE CARPENTER (666).

19/10/1944.

COLLECTING CLEARWINGS—2

Aegeria spheciformis Schiff. (The White-barred Clearwing) is a species which is generally considered scarce. In fact, although local, the species is fairly well distributed throughout the South of England and in many places in the midlands, up to Yorkshire: it is usually abundant where it is found. *A. spheciformis* has a life cycle extending over two years; the larvae feed in the stems and trunks of alder (*Alnus glutinosa* Gaertn.), mainly at the base and often at, or below, ground level. Stems from a half to six inches, or even more, in diameter may be affected, and, in localities where the species is established, a sure indication of its presence is afforded by the emergence holes of previous seasons, usually between six and eighteen inches above ground level. Stems and trunks containing feeding larvae may be detected by the presence of yellowish or reddish frass, often in large masses, on the ground below or issuing from holes in the base of the stem. The size of the frass gives a good indication of the stage of growth of the larvae. It is advisable to wait until the larva is fully grown or has pupated, i.e., until the spring of the second year, before collecting them. The larva makes the "cap," to provide for the emergence of the adult, during the second winter, but does not pupate immediately; if the stems

are cut during the winter in cold weather they will probably be empty, the larva having retreated to the roots. In spring the pupal cell is formed at the top of the burrow, which turns outwards to the surface of the bark to facilitate the emergence of the adult. The thin layer of bark over the emergence hole is ruptured by the pupa immediately prior to emergence. The "caps" may sometimes be seen as discoloured patches or spots on the bark, but usually they are difficult to find. Twisting and bending the thinner stems will sometimes cause the thin layer of bark to break and betray the presence of a full-fed larva or a pupa within. Cut the stems at the base and at about a foot to eighteen inches above ground level. In thin stems the boring is longer than in thick ones and, if such stems are cut too short, the larva may be killed. The adults emerge over a rather short period between mid-May and mid-June, depending on weather conditions.

Aegeria vespiformis L. (The Yellow-legged Clearwing) is widely distributed over Southern England, and occurs at least as far North as Yorkshire and Westmorland. It may be found in most woodland areas where there is a good sprinkling of oak trees. The larval habit is somewhat similar to that of *A. culiciformis* L., i.e., it lives in galleries between the bark and the trunk, but the species now under consideration generally affects oak stumps, although it is said to have been found in birch and other trees. The ova are deposited by preference on stumps of oak trees that have been felled the previous autumn or winter, and the resultant larvae feed up slowly under the bark during the autumn and throughout the spring of the following year, when brown or blackish frass may sometimes be noticed around the base of the stump or issuing from crevices in the bark. In many cases, however, there is little or no external sign of the presence of *A. vespiformis* larvae in the stump. The bark of oak stumps of suitable age should be carefully prised off, with a chisel, in April, May or June; often full-fed larvae, smaller larvae and pupae will be found in the same stump. The larger larvae, if kept in tins with some chips of wood and bark from their stump, will feed up and pupate without needing much at-

tion. The pupa is enclosed in a rather small, tough, dark brown or blackish cocoon composed of particles of wood and frass strongly reinforced with silk. The cocoons may usually be removed intact from their cells between the bark and the wood of the stump; they should be kept fairly moist and warm. As will be gathered from the foregoing remarks, the emergence of the adult extends over a long period, from the beginning of May until the end of August, although June and July are the peak months for this moth. The adults revel in hot sunshine and may occasionally be observed flying in numbers around the oak stumps. Under such circumstances its resemblance to a small wasp is very great, and one realises how apt a name Linnaeus bestowed upon it.

Aegeria flaviventris Stgdr. (The Sallow Clearwing) is our most recently discovered species. First located near the South coast, it has since been found to occur in many parts of England, possibly extending as far North as Durham. It is certainly widespread and not uncommon in many parts of Southern England. The larva lives for nearly two years in the stems of willow (*Salix caprea* L., *S. cinerea* L., and probably other species), usually choosing those about $\frac{1}{4}$ " to $\frac{1}{2}$ " in diameter. During the first year there is little external indication of the presence of the larva, but towards the end of the second summer a gall is formed consisting of a bulbous thickening of the stem, tapering off more or less evenly at either end; the overall length of the gall averages about one inch. A similar gall is caused by a common beetle, *Saperda populnea* L., which attacks *Salix* and *Populus* species indiscriminately; frequently both beetle and moth galls occur on the same bush. Usually *Saperda* galls may be distinguished by their rather larger size and the thicker stems affected (up to 2" diameter); usually, too, they are more bulbous and less evenly tapered. The galls of *flaviventris* are most easily obtained during the winter months, when the branches are bare. January to March is a good time, although in some districts many larvae are pecked out by tits during the early months of the year; in order to forestall this, collection of the galls in the early winter is, perhaps, advisable. Bushes of all sizes are attacked by the species; galls are often found quite low down in the straight young

shoots from bushes which have been cut back a year or two previously, and also on the topmost twigs of old bushes. In cases where the gall is on a thin twig the stem above it is frequently withered and dry. The larval boring runs upwards from the gall for two or three inches. The affected stem should be cut about four inches above and below the gall and kept fairly damp until the adult emerges, which may be any time from the beginning of May until the end of July. A large percentage of the larvae dry up, and parasitism is sometimes heavy. As previously mentioned, *flaviventris* has a life-cycle of two years and it is a curious fact that there are very few, if any, records of the adult moth having been seen or bred in summers of odd years, e.g., 1941, 1943, etc.; the years to look for galls are the odd-even winters, e.g., 1945-46, 1947-48, and not even-odd winters, e.g., 1946-47, 1948-49.

Aegeria tipuliformis Clerck (The Currant Clearwing) is probably the most common and generally distributed Clearwing; it may be found throughout Britain wherever Red or Black Currants are grown. It has been introduced, no doubt with the foodplant, into most parts of the world. The ova are laid in June or July, preferably near the ends of shoots or branches that have been pruned the previous winter. The larva makes a central burrow, eating away the heart of the shoot for several inches. The larva is almost fully grown by the autumn and finishes feeding in April, when brownish frass may often be found issuing from the ends of affected shoots. The pupal chamber is formed at, or near, the end of the burrow; a thin layer of bark is left over the exit hole; this is punctured by the pupa, which, as in the case of all species of the group, protrudes from the exit hole before the adult emerges. The larvae or pupae should be collected in the spring; shoots with frass protruding from the ends should be cut off about five inches down, and, when frass is issuing from holes or crevices in the stem, about four inches above and four inches below the hole. The cuttings should be kept standing in damp sand. The adult moths emerge, under the influence of sunshine, during June and July.

Aegeria myopaeformis Borkh. (The Red-belted Clearwing) is another

common species, found in most parts of Britain, at least as far north as Yorkshire, wherever there are well-established orchards. The larva feeds beneath the bark of Apple and Pear, and has been recorded as feeding in many other trees, including Hawthorn; they prefer the trunks and larger branches of older and more neglected trees. It especially likes wounded trees, burrowing under the bark at the edges of the wounds. The reddish frass may be seen hanging from crevices in the bark during the latter half of the winter and, if the bark is carefully loosened and removed in April or early May, the cocoon will be exposed and may be extracted. The adults emerge, during sunshine, in the early morning and may sometimes be found at rest on the trunks, after emergence, in May and June. The species has a one-year life cycle.

Aegeria formicaeformis Esp. (The Red-tipped Clearwing) is another generally distributed species. It is somewhat local but much more common than is generally supposed, its range extending northwards at least as far as Yorkshire. It is usual to look for larvae of this species in cut stems of Osier but it feeds beneath the bark of nearly all the Sallows and Willows, boring in twigs, branches or trunks. There is not much external evidence of occupation but it has a preference for damaged trees, especially those damaged by the borings of other insects, and, if any old Sallows are discovered damaged in this fashion, it is worth while examining the bark for old emergence holes and empty pupa cases. When these are found careful search should be made for evidences of present occupation and a section of the tree cut and taken home to stand in damp sand. If the wood in which they are living is too big to cut a section, a V-shaped chip should be taken out with a chisel. If the pupae fall out during this treatment they should be placed in an artificial section and kept rather damper than is usual. The adults, as is usual with this group, emerge early in the morning and always on sunny days. Usually the emergence of a brood takes place in a very short period, but, if a dull spell comes in the middle of an emergence period, no

more will emerge until the weather improves. In such circumstances half the emergence may take place in June and the other half in August, as happened in a Surrey locality in 1944. Though emerged adults must be left long enough to harden their wings, this species needs killing rather sooner than others as it has two powdery yellow bands on the abdomen, in addition to the red one, composed of very loosely attached scales. Many of these are lost on its first flight, and, if left too long, all trace of them disappears. Most cabinet specimens are devoid of these bands.

E. W. CLASSEY, F.R.E.S. (41).
R. W. PARFITT (525).

DEGREASING

I was very interested in the recent notes on degreasing insects (*Bulletins* 64 and 66) and agree with both correspondents. My own method, however, I feel is much simpler and rather more effective. I take a wide-mouthed vessel and put in a sufficient amount of "lighter fuel" to cover the insect, leaving the label, which is often very greasy or dirty, still attached to the pin. I leave this to soak for three days. I then take another container and make a cushion of carbonate of mangesia, on which I place the insects so that the wings are resting flat on the surface of the powder. More magesnia is then sprinkled over the whole, until the still wet insect is completely buried. If the box is now gently tapped the powder will sink into all the unfilled spaces and make complete contact with all surfaces. The insect may be removed in twenty-four hours. There is no need whatever to remove the body even in the largest species (often a dangerous proceeding to the inexpert), and not only does this method remove grease, but cleans the wings and brightens up the whole insect generally. Carbonate of mangesia is very light and absorbent, and its lightness is an assurance that damage will not occur to even the finest antennae. Should any powder adhere to the cleaned insect, a gentle puff or a touch with a camel-hair brush will remove it. I also find "lighter fuel" a very effective substance for fumigation, with hardly

Don't forget to bring your duplicate adults (well set and with data labels) and living larvae to the "Exchange Stall."

any tendency to stain the storebox lining paper as with some other fumigants.

Do not use this method on small insects such as Pugs or small Carpets, and 'ware bred Geometers, which do not like any form of immersion. I think the best thing to do with the very small fry that go greasy is to destroy them. Of all the insects I have so treated, none have again been affected, nor have any so treated developed mould subsequently.

H. E. HAMMOND (423).

THE GREEN HAIRSTREAK

On June 24th last year, at Nesscliff, near Shrewsbury, I found two nearly fullgrown larvae of *Callophrys rubi* feeding on heather on the hillside. They pupated but unfortunately have since died. Is heather a usual food-plant for this butterfly?

M. P. SIDDON'S (516*).

5/3/1945.

(In *AES Journal* Vol. 1, Reprint (1937), p. 43, T. D. Fearnough writes of his experiences of this species on the moors near Sheffield. He placed three females in a breeding cage containing many likely food-plants from the spots in which the butterflies occurred; among these were heather and bilberry. About a hundred eggs were deposited, every one on the bilberry, on which the larvae were subsequently reared; he does not say whether he tried rearing them also on the ling. On the Moors near here (Northallerton) the butterfly is not uncommon locally, but always prefers those spots where the bilberry flourishes, though of course it roams widely over the surrounding heather hills.—Ed.)

SOME QUERIES ABOUT BUTTERFLIES

P. machaon var. In all the examples I have seen of *P. machaon* (Swallowtail) there is a yellowish streak on the apex between the costal vein and the first subcostal nervule. Looking at my swallowtails the other day I discovered that I had a male from Norfolk in which the streak is obsolete and the whole apical area is black. I have only a few swallowtails and should be interested to know whether this minor aberration is common.

P. brassicae and *P. rapae*. Is there any infallible way of distin-

guishing between the spring and summer males in the Small and Large White butterflies? All the books say there is a clear-cut difference, mainly in the amount of black scales on the tips of the forewings. But when I look through my own series I find several spring males of *brassicae* in which the apex is blackish, and several of the summer brood in which it is grey. In the same way with *rapae*: there are spring males with the apices and the black spots well marked, and summer males in which they are faint. Unless I could see the date on the label I should never be 100% sure which was which.

P. egeria egerides. The spots on the wings of the Speckled Wood seem, in my district (Gloucestershire), to be either whitish or yellow in the proportion of about 50-50. Have these two colour-forms been named, and is there any tendency in other districts for one or the other form to predominate? A similar question arises in the case of a common variation of *A. hyperanthus* (Ringlet). The ocellated spots on the underside of the forewings may be two in number, or three; and this variation in my experience seems entirely chancy, and to occur at random among any series I have examined.

JOHN MOORE (146).

REVIEW

The Caterpillars of the British Butterflies, including the eggs, chrysalids and food-plants: Based upon "The Butterflies of the British Isles" by Richard South, by W. J. Stokoe and Dr G. H. T. Stovin (London and New York: Fredk. Warne, pp. 248 + 32 pls., 16 being in colour, 10/6 net). In a popular book such as this, a very important part is played by the illustrations, and those of the eggs and foodplants are far and away the best things in the book. Quite sixty per cent. of the coloured illustrations of the caterpillars are so fuzzy that no details are discernible. In some cases, notably Pl. 21, fig. 2 (Small Copper), and Pl. 28, fig. 1 (Green-veined White), they are so bad that it is impossible to tell head from tail.

The text, on the whole, is very free from glaring mistakes. There is a curious omission in the description of the larva of the Swallowtail; although the *osmaterium* is discussed under

both family and species, no mention is made of the pungent odour emitted when the organ is extruded.

The index reference to the Arran Brown brings us to p. 58. Here, discussing the Scotch Argus (*Erebia aethiops* Esper), we read "It was in Arran in 1804 that it was first discovered as a British species, and was consequently known for some time as the 'Arran Brown';" this name, however, is usually given to another species of the same genus, *Erebia ligea* L.

It is a pity, since the book covers such a wide field, that it does not include anything on the pairing or egg-laying habits of the adults, so important to the amateur rearer. Likewise, the fact that the index is arranged under English and generic names, and not under specific names as well, will greatly reduce its utility to many collectors not well up in the latest generic naming.

On the whole, however, the book should be of value to the amateur and beginner, some parts, indeed, being really excellent.

E. W. CLASSEY (41).

THE BLACK HAIRSTREAK

June 24th, 1944, was a beautiful day and I thought I would try for late *palaemon* (Checkered Skipper) and possibly for *pruni* (Black Hairstreak) in a favourite collecting ground in Northants. After half-an-hour's walking I reached what seemed to be a likely spot, and whilst waiting, primarily for *palaemon*, I thought I detected a hairstreak flying round an oak tree. I watched for some time and saw several obvious hairstreaks on the wing, away out of reach. Eventually I moved away to a cross-ride some forty yards away, and after watching there for some five minutes saw a small butterfly alight on a guelder rose. It turned out to be a male *pruni* in poorish condition.

I returned in the afternoon and waited at this spot. By then the sun was pouring on to one side of the ride and all along the top of the sloe hedges *pruni* were flying. They were in very great quantity. I had to await my chance to take them at low levels, but in the space of 3½ hours I caught 21—the majority of them in excellent condition.

A fortnight previously I took two albino Wood Whites (*L. sinapis*) in perfect condition. One had rather ill-defined wing-tip markings, but in the other they were very well defined.

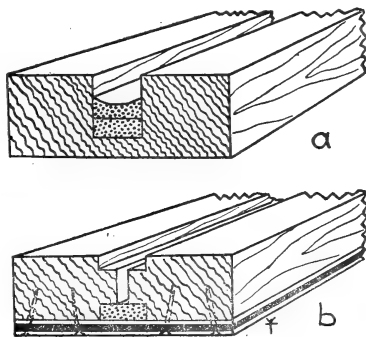
VICTOR BASCOMBE (574).

26/6/1944.

(It may be worth adding that in June 1941, A. F. O'Farrell and I were privileged to see *pruni* in these same woodlands in equal numbers. It is no exaggeration to say that up till 10.30 a.m. D.S.T. we took this number of adults in half an hour, as the butterflies fed on the Umbellifer blossoms. Later on, as the sun got hotter, they kept to the higher levels and hardly a single one came within reach. As, however, we only required three or four females for breeding purposes, and the remainder were released, this did not worry us.—B. A. C.)

SETTING BOARDS

Setting Boards can be quite a cheap part of the equipment if made of yellow deal with strips of cork inserted in the bottom of the groove as in fig. a. Two strips slightly wider than the groove should be cut from pieces of cork table matting (such as is sold by Messrs Woolworth), and firmly glued in. When the glue has set, twist a piece of glasspaper into a tight circle and rub the groove down until the section is concave.



For small insects, boards are more easily made as in fig. b. Two pieces of deal with a small rabbet cut top and bottom are glued and nailed to a piece of three-ply with a slip of

If your breeding cages are too big, bring a drawing of them, or your beating tray, sweepnet, folding net, water net, or setting board.

cork inserted so as to fill the bottom rabbet. These boards can be made in flat or oval sections as required. In choosing wood, deal with a bold brown marked grain should be avoided as it is usually much harder than wood with an insignificant grain. Even so, wood is, of course, less pinnable than cork and it is a good plan if your household has any of the large glass-bead-headed pins, to lay claim to them for setting purposes.

R. D. MORTON (145).

URTICATING CATERPILLARS

Having suffered considerably last year from the irritations caused by hairs from larvae of the Brown Tail Moth (*P. chrysoorrhoea*) and similar larvae, can members advise any remedy other than common soda?

PAMELA C. BAIN (492*).

17/2/1945.

(Of remedies, I can suggest none. Preventative action, by taking as few as possible of offending larvae, and handling or going near them or what has been in contact with them as little as possible, is the only plan I have found helpful. To me, the most painful irritation is caused on the hands, after handling Drinker Moth (*O. potatoaria*) caterpillars, the irritation caused, particularly on the neck, by adults or larvae of the Yellow or Brown Tail moths being alarming for awhile but never lasting for more than a day or two. At school I once thanked Yellow Tail larvae for giving me a day's holiday at midsummer.—B.A.C.).

JUST PUBLISHED

AES Leaflet No. 11: "Collecting Mosquitoes" by E. W. Classey, and **No. 12:** "Collecting Dragonflies" by A. F. O'Farrell, price 6d each, post 1d, 5/- per dozen. Both are practical introductions to the collecting and rearing of these groups, and are illustrated by photographs and text figures.

AES Leaflet No. 17: "Making a Garden Pond for the Study of Aquatic Insects," by Evelyn A. J. Duffy, price 3d, post 1d, 2/6 per dozen. Of particular value to the student of pond life, and the school, where living material is frequently required, and describes the making and stocking of

both small pools and larger ponds. Illustrated by line drawings and a photographic plate.

4½-point data labels printed to order, price 10/- per 1000, 6/- per 500; sex signs 2/- per 1000. Profits are devoted to the production of further AES Leaflets. Obtainable from G. A. Roberts, 53 Broadway, Fulford, York.

A CHECK LIST OF BRITISH INSECTS by G. S. Kloet, F.Z.S., F.R.E.S., M.S.B.E., and W. D. Hincks, M.P.S., F.R.E.S., M.S.B.E. Contents: A Check List of the 20,000 British Insects in classified order, with Preface, Introduction, Bibliography and Generic Index.

Price to Subscribers, £2 2/-, post free. Post Publication Price, £2 12/6, post free. **THE LIST OF SUBSCRIBERS WILL CLOSE ON APRIL 30th, 1945.** Cheques to be made payable to Kloet & Hincks and submitted to 322 Wellington Road North, Heaton Chapel, Stockport, Cheshire.

Vol. 6 of the "Bulletin of the Amateur Entomologists' Society," edited by Beowulf A. Cooper, B.Sc., A.R.C.S., Dept. of Agriculture, The University, Leeds 2, to whom all contributions, exchange notices, illustrations, etc., for publication should be sent. Bulletins are issued free to members. First subscriptions to the AES (5/-, 2/6 to boys and girls aged 18 or under) should be sent to the Hon. Secretary, Phyllis L. Rogers, 91 Middle Lane, London, N.8, and subsequently to the Hon. Treasurer, C. H. Hards, 40 Riverdale Road, London, S.E.18. Data labels and publications of the Society may be obtained from Hon. Business Manager, G. A. Roberts, 53 Broadway, Fulford, York, or from any of the above officers. Membership Application Form, specimen Bulletin and information as to the work and publications of the Society will be sent on receipt of threepence by the Hon. Advertising Secretary, A. M. Walton, F.R.E.S., 275 Croxted Road, London, S.E.21. Details of field meetings in the London area will be sent regularly on receipt of 1/- by Hon. Meetings Secretary, E. W. Classey, F.R.E.S., Salisbury House, Salisbury Grove, Mytchett, Surrey.



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No. 69

BULLETIN

JULY - 1945

VICTORY NUMBER

Yet Another Century—Once more we can report a rapid increase in membership, this time passing the 500 mark. This month's increase has been greater than that in any previous similar period of our existence, including that of before the war, which we had not hitherto exceeded. It is indeed a fitting V-month celebration, which, happily, coincides with the conclusion of ten years of our existence. In July 1935 Mr Tesch founded the Society, then entitled the "Entomological Exchange and Correspondence Club," and in August of that year appeared the first issue of our *Bulletin-cum-Journal*, entitled *The Journal of the Entomological Exchange and Correspondence Club*.

Assistance Required—All this growth means that more help is needed by the Committee, and particularly the Editor, if the *Bulletins* and other publications are to be brought out promptly, a difficulty which has proved insurmountable under wartime conditions. In particular, help would be appreciated with the typing of copy for the printer. We have several long manuscripts waiting to be dealt with, and from time to time have shorter articles that require typing more speedily than the Editor can manage himself. Again, the Meetings Secretary is drawing up a programme of field and other meetings for next year, and offers to lead or otherwise assist are very much desired. The Exhibition of Apparatus



"... one of our most distinguished Bugs: he's just had a professor named after him!"

and Collecting Methods was a considerable success—many visitors from long distances have since written saying that the visit was well worth while—and over 200 persons signed the attendance register, while numbers of others and several fair-sized school parties who did not sign were also present. It is hoped to make this type of meeting an annual event, and to hold similar shows in other towns, so future exhibitors and poster artists may plan in advance.

Advisory Panel—A new list of Advisers is to be published shortly, and the Editor would be glad to hear from anyone offering to help with orders and subjects not yet covered, and also from any Adviser not wishing to offer his services for another year.

Directory of Natural History Societies—We regret to announce that Mr W. G. Rawlings, who in December 1943 began the compilation of the above publication, has had to relinquish this task owing to ill health. We thank him for all the work he has put in on it, and wish him a speedy recovery. Mr H. K. Airy Shaw, of Daglingworth, Cirencester, Glos., has kindly taken over the work, which it is hoped will be in print before the end of the year. He is anxious to have details of any societies now existing, even if suspended temporarily, and particularly school and college societies, so that the first edition of this work may be as complete as possible.

Publications Sub-Committee—A Publications Sub-Committee, consisting of Messrs E. W. Classey, R. J. Collins, B. A. Cooper, A. F. O'Farrell and H. K. Airy Shaw, was appointed at the last AES Committee Meeting to approve for publication contributions for future Leaflets, Pamphlets, Journals and Handbooks. The editing, illustrating and layout of publications will still, as hitherto, be in the hands of Editor, Assistant Editor (A. F. O'Farrell) and the various specialists to whom each manuscript is submitted before going to press.

New Constitution—We have now received from our Legal Adviser his legally watertight draft for our new Constitution. This is now being considered in Committee. It will be presented to members for consideration at the next General Meeting, and the version there accepted ap-

proved by members by a postal vote. It will presumably be introduced to coincide with the winding up of the present Wartime Organisation and the return to the pre-war Organisation.

BEOWULF A. COOPER.

27/5/1945.

MEMBERSHIP CHANGES

*=Junior Member.

†=Affiliate Member.

New Members

- 287 A. Bliss, 4 Monahan Avenue, Purley, Surrey. (L.)
- 319 Capt. G. E. Stokes, The Brambles, Roe Green, Hatfield, Herts. (L.)
- 447 Mrs G. M. R. Cooper, B.Sc., The Vicarage, Northallerton, Yorks. (B.)
- 729* H. M. Jackson, The Rectory, Alford, Castle Cary, Som. (aquaria, L., esp. hawkmoths)
- 730 C. H. Cripps, B.A., Bull's Head Farm, Eakley Lanes, Stoke Goldington, Bletchley, Bucks. (L., esp. R.)
- 731 R. G. Heley, Lygoes, Burcott, Wing, Leighton Buzzard, Beds. (L., including exotics, botany)
- 732* D. A. Lang, West Winds, Wix Hill, West Horsley, Surrey. (L., esp. R.)
- 733* E. R. Garner, 16 Carlaw Road, Prenton, Birkenhead, Cheshire. (L.)
- 734 R. Lewis, Fiddler's Elbow, Staunton Road, Monmouth. (O., botany)
- 735* K. C. Alwood, 12 Brook Road, Loughton, Essex. (L.)
- 736 H. E. Webb, 20 Audley Road, London, N.W.4. (L.)
- 737* J. B. Gratton, 8 Cheltenham Crescent, Broughton, Salford 7, Lancs. (L.)
- 738 H. Parker, 21 Park Way, Southwick, Sussex. (gen. ent., N.H.)
- 739* G. Pallister, Panorama, The Avenue, Birtley, Co. Durham. (L.)
- 740* Miss O. Stone, 32 St Agnes Road, Birmingham 13. (L.)
- 741* A. S. Jordan, 19 Cornwall Road, Coventry, Warwickshire. (L.)
- 742* R. L. A. Page, 129 Alexandra Road, Sheerness, Kent. (gen. ent.)
- 743 J. R. A. Rivolta, 1 Boundary Lane, St Leonards, near Ringwood, Hants. (L.)

- 744 H. H. Patrick, F.R.H.S., F.R.E.S., 5 Marner Crescent, Radford, Coventry, Warks. (gen. ent., L. vars., microscopy, B.)
- 745* L. W. Balmer, 62 Linkstor Road, Woolton, Liverpool. (L.)
- 746† Biological Society, Boys' Grammar School, Rickmansworth Road, Watford, Herts. (gen. ent.)
- 747* Peter McDonald, 114 Queen's Avenue, Watford, Herts. (L.)
- 748 Peter Michael, 56 Cranmore Lane, Aldershot, Hants. (N.H., phenology, M., fishing, research, esp. rearing L.)
- 749 A. D. L. Cox, Edale, Ipswich Road, Colchester, Essex. (C.)
- 750 F. V. Sills, 14 Bede Road, Radford, Coventry, Warks. (L.)
- 751 Mrs J. O. I. Spoczynska, 208 Westbourne Grove, London, W.11. (L.)
- 752 R. W. Watson, Sunnysdale, Spring Lane, Lower Ashley, New Milton, Hants, (L.)
- 753* J. A. Collins, Brooklyn, Flowery Leys Lane, Alfreton, Derbyshire. (agric. and gen. ent.)
- 754 Canon T. G. Edwards, M.A., F.Z.S., Holy Trinity Vicarage, London, S.W.2. (gen. ent., esp. L.)
- 755 C. Wainwright, B.Sc., 216 St Bernard's Road, Birmingham 27. (L.)
- 756* K. Latty, 23 Church Street, Tetbury, Glos. (L.)
- 757* R. S. Greenwood, 22 Maidstone Road, Rochester, Kent. (L.)
- 758* D. Carter, 11 Bourne End Road, Northwood, Mddx. (C.: Geodephaga, N.H.)
- 759* J. R. Brunson, Westminster Bank House, Westerham, Kent. (L., esp. breeding)
- 760* M. J. Davies, 277 Surbiton Hill Park, Surbiton, Surrey. (C.: Geodephaga)
- 761 P. Barnard, 12 St Leonard's Avenue, Windsor, Berks. (L., microscopy)
- 762* B. W. Campion, 13 Guy Road, Wallington, Surrey.
- 763 D. Parsons, 2 Carshalton Place Terrace, Carshalton, Surrey.
- 764 Miss M. C. Entrican, Heather-ton House, Chesham Bois, Bucks. (L.)
- 765 Miss M. Edwards, College Hall, Malet Street, London, W.C.1. (H., L.)
- 766 T. W. Davis, 43 Parkside Way, North Harrow, Mddx. (mosquitoes, microscopy)
- 767* G. S. Flack, 1 Warwick Avenue, Bedford. (L., O.)
- 768* R. Finch, Brownhill, Ashing-round Road, Hayward's Heath, Sussex. (L., esp. Spingidae)
- 769 D. Gregory, 47 Grenville Gardens, Woodford Green, Essex. (gen. ent.)
- 770 L. C. Lloyd, F.Z.S., M.B.O.U., The Groves, Wenlock Road, Shrewsbury, Shropshire. (ecology)
- 777* A. F. Champion, 1 Cornwall Close, Barking, Essex. (L.)
- 778* J. F. Flint, Eventide, London Road, Datchet, Bucks. (gen. ent.)
- 779* M. J. Parr, 7 Crawford Gardens, Ruislip Road, Greenford, Mddx. (gen. ent., ornithology, ichthyology)
- 780 D. W. Empson, 70 Highmoor Road, Caversham, Reading. (gen. and economic ent.)
- 781 M. J. Field, 85 Castleton Avenue, Wembley, Mddx. (agric. ent.)
- 782* R. Murray, Murray's School, Horam, E. Sussex. (temperature expts., silkmths)
- 783* D. R. S. Mills, 19 Colebrooke Drive, London, E.11. (L.)
- 784 C. B. Pratt, 1 West Ham Lane, London, E.15. (L.)
- 785 F. P. Windsor, Woodend, Horley, Surrey. (gen. ent.)
- 786* D. J. Bruce, 12 Shepherd's Way, Rickmansworth, Herts. (L., C.)
- 787 T. Q. Abell, 154 Thornbury Road, Isleworth, Mddx. (L.)
- 788 B. J. L. Bryerley, 48 Elmgrove Road, Harrow, Mddx. (C.)
- 789* H. R. Eyre, 69 Harford Drive, Watford, Herts. (L.)
- 790* A. Seymour, 52 Chester Drive, N. Harrow, Mddx. (L., C.)
- 791 D. W. Leach, 12 High View Road, London, E.18. (gen. ent.)
- 792* Miss M. Outhwick, c/o Zoological Society, Regent's Park, London, N.W.8.
- 793 Dr G. R. Malkin, Fownhope, Hereford. (L.)
- 794† Natural History Society, Harrow School, c/o Druries, Harrow-on-the-Hill, Mddx.
- 795† Sacred Heart High School, c/o Sr. Mary St. Fintan, 188 High Street, Wealdstone, Mddx. (L., Neuroptera, H.)

- 796 Rev. E. J. Pearce, M.A. Cantab., F.R.E.S., House of the Resurrection, Mirfield, Yorks. (C., esp. distribution, particularly Halipididae, Pselaphidae)
- 797* D. Macfarlane, 22 Beechwood Avenue, Chatham, Kent. (L., C., H.)
- 798* J. S. Burton, 36 Regent Road, Surbiton, Surrey. (gen. ent., esp. L.)
- 799* M. H. Port, 31 Pinner View, Harrow, Mddx. (L., Orthoptera)
- 800* G. R. Myall, 3 Holmdene Avenue, North Harrow, Mddx. (L., C.)
- 801* E. L. Martin, 9 Devonshire Road, Harrow, Mddx. (L., O., Diptera, H.)
- 802* J. A. Copley, Ashgrove, Tollard Royal, Salisbury, Wilts. (L.: Nymphalidae, hawkmoths)
- 803 C. F. Parker, 61 Winchcomb Gardens, London, S.E.9. (L., microscopy)
- 804 J. C. Wainwright, 9 Priory Road, Hook Road, Surbiton, Surrey. (L.)
- 805* A. G. L. Corkill, Greencroft, Shute Hill, Bishopsteignton, S. Devon. (L.)
- 806* J. F. Finlay, The Gables, Honiton, Devon. (L.)
- 807* Miss M. D. Goodall, 47 Stratford Avenue, Ryhope Road, Sunderland, Co. Durham. (L., aq. ent., garden insects)
- 808† Natural History Society, Murrays School, Horam, E. Sussex.
- 809 A. C. Braham, 66 Sheepridge Road, Huddersfield, Yorks. (gen. ent., C., arachnology, N.H., B.)
- 810 H. Whitehead, B.Sc., 3 Barthorpe Avenue, Leeds 7. (aq. ent.)
- 811* R. H. Simons, 28 Aylmer Road, London, N.2. (habits, morphology, biol. control of pests)
- 812 C. A. Risbridger, Woodcock Lane, Birmingham 31. (L.)
- 813* M. D. Risbridger, Woodcock Lane, Birmingham 31. (L.)
- 814* J. K. Bates, Welland Terrace, Barrowden, near Oakham, Rutland. (N.H., esp. L.)
- 815 Miss B. Luscombe, Gardenhurst, Junior House, Rectory Lane, Burnham-on-Sea, Som. (L.)

Resigned—R. W. R. Hunt (261) and Mrs R. E. S. Marshall Bell (631).

Membership Total—562 subscribing members.

Change of Address—Dulwich College Natural History Society (695†) to: c/o Hon. Sec., Melbourne House, South Parade, London, W.4. William Fassnidge (293) to: 4 Bassett Crescent West, Southampton. G. T. Hanlon (504) to: 3 Rutland Road, Ilford, Essex. R. Hilliard (99) to: 5 Oakleigh Gardens, Edgware, Mddx. John Moore (146) to: Orchards, Bredon, near Tewkesbury, Glos. M. J. R. Talbot (384) to: c/o Foreign Office, London, S.W.1, "By Beirut Bag." J. R. Wager (181) to: Capel, Fiery Hill Road, Barnt Green, Worcs.

ADVISORY PANEL

Mr H. K. Airy Shaw is added as new Adviser on the determination of foodplants. Specimens should be sent to him at Daglingworth, Cirencester, Glos. Mr Francis G. Sutton, 58 Blakemere Road, Welwyn Garden City, Herts., replaces Mr R. W. R. Hunt as Adviser on the rearing of silkmths.

MEETINGS

Fixtures of forthcoming field meetings have not been received at time of going to press. It would be appreciated if volunteers to lead meetings would choose dates *some months at least* ahead, in order that they may be announced in time to give fair notice to members.

SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY

This Society has now changed its address to c/o The Royal Society, Burlington House, Piccadilly, London, W.1. Meetings are now to be held on the second and fourth Wednesdays in the month. No meetings will be held during late July and the whole of August. The Society extends an invitation to AES members to attend any of its field meetings; those wishing to attend are asked to inform F. D. Coote, 32 Wickham Avenue, Cheam, Surrey, beforehand.

WANTS AND EXCHANGES

P. SIVITER SMITH, 66 Stirling Road, Birmingham 16, wants all species of "Copper" butterflies from all parts of the world, including the Small Copper particularly, foreign or British. Also wanted are specimens

of the Satyrid genus *Oeneis* from all parts of the world except N. America. Will purchase the above, or exchange if wants are stated.

B. O. C. GARDINER, The Red House, River-in-Dover, Kent, wants bound or unbound volumes of the *Entomologist* and *Entomologist's Record*. Will buy or exchange for other books on entomology.

DR N. L. BIRKETT, the Cottage, Kilner Park, Ulverston, Lancs., wants Vol. II (only) *Joy's Practical Handbook of British Beetles*. Write stating price first.

PROF. G. D. H. CARPENTER, University Museum, Oxford, desires one or two whole pupae of Purple Emperor (*A. iris*), dead or alive, but empty skins useless.

E. E. SYMS, 22 Woodlands Avenue, London, E.11, is anxious to obtain living specimens of all the *Necrophorus* beetles, as many as can be sent of each species. He will return boxes and pay postage. The insects are required for a close study of their life-histories.

JOHN MOORE, Orchards, Bredon, Near Tewkesbury, Glos., would like to exchange early stages of many species (list sent) with a northern collector.

W. J. WATTS, Glanlie, First Avenue, Stanford-le-Hope, Essex, would like to buy Step's or Ellis' shell book, or would exchange for Step's *Bees, Wasps and Ants* and a storebox.

S. CHARLSON, 112 Manchester Road, Tyldesley, Manchester, requires for experimental purposes larvae or pupae of the Garden Tiger Moth (*A. caia*). Suitable return if wants are stated.

G. C. HOLROYD, 8 Elmside, Onslow Village, Guildford, Surrey, requires a small insect cabinet, in good condition.

H. E. MONTAGU, House-on-the-Hill, Bradfield College, Berks., wants a female pupa of Lobster Moth (*S. faqi*), a few large pupae of Large (*D. elpenor*) and Small (*D. porcellus*) Elephant Hawks, and six small larvae of the Fox Moth (*M. rubi*).

H. M. JACKSON (729*) offers for exchange pairs of British newts (Common, Crested and Palmate) for (a) books on entomology and birds, (b) hawkmoth pupae, or (c) collecting apparatus.

P. G. TAYLOR, 51 Woodlands Drive, Watford, Herts., is anxious to contact members with the following species of silkmoths for disposal: *R. orizaba*, *T. polyphemus*, *A. selene*, *A. luna*, *A. atlas*, *A. edwardsii*, *P. cynthia*, *A. pernyi*, *A. mylitta*, *C. promethea*, *P. cecropia*, *P. columbia* and *P. rubra* in egg, larval, or pupal states. Addresses of dealers in U.K. or U.S.A. also gratefully acknowledged.

B. A. COOPER, The Vicarage, Northallerton, Yorks., is most anxious to obtain adults or living larvae of many Elaterid beetles; in particular, larvae and female adults of *Athous longicollis* and *vittatus*. Yorkshire Elaterids for exchange.

R. LEWIS (734) would be pleased to receive specimens of any dragonflies for the purpose of study; specimens would be returned to the senders as he is not at present forming a collection.

W. A. CARTER, 11 Bourne End Road, Northwood, Mddx., is preparing a list of insects (all orders) from Northwood or Moor Park, Mddx., and would be glad to hear from any member who has records.

NOW IT CAN BE TOLD

Amusing anecdotes on the difficulties of wartime collecting would be much appreciated for future Bulletins. Knowing that many members, like myself, have made numerous



night patrols in the Home Guard, armed with a sweepnet (as well as, secondarily, a rifle), it would be interesting to hear of some of their captures.

B. A. C.

REVIEW

Valuable Hints to Collectors, Parts I and II, by L. W. Newman, F.R.E.S., revised by L. Hugh Newman (No date or publisher, sold by L. H. Newman, The Butterfly Farm, Bexley, Kent, 3 pp. each, size 5" x 8", no figs., 9d each).

While these leaflets contain no illustrations and considerably less material than recent threepenny AES *Leaflets*, they consist of just the kind of "tips" the amateur and beginner requires and can usually only find by prolonged search through the pages of magazines or buy by bitter experience. Apart from very minor editings, both parts are similar to previous issues, but Part II has the addition of two paragraphs on breeding butterflies in captivity. Other contents discuss (I) cleaning greasy insects, killing burnets and green insects, setting, keeping living ova and pupae, feeding larvae, substitute foodplants; (II) gives directions for hibernating larvae, feeding young larvae and keeping pupae during the heat of summer.

A grammatical error which should be rectified, as the leaflets will be read and memorised by many youthful breeders, has crept into Part II; it is the use on p. 1 of the word *ova* as both the singular and plural, and on p. 2 of *ovae* as the plural of the technical word meaning egg. *Ovum* should be the singular and *ova* the plural. Again, it is noticeable that in these leaflets all specific Latin names are anglicised by commencing them with a capital letter; why, we must ask, are not the standard English names, such as used by Richard South, preferred if the binomial scientific nomenclature, in which species are given no capital initial, is not favoured?

E. W. CLASSEY (41).

COLLECTING CLEARWINGS—3

Aegeria scoliaeformis Borkh. (The Welsh Clearwing) is common locally in Scotland, Wales, Southern Ireland, and Northern England, and has been reported from Hereford and Wiltshire. The larva feeds on the inner bark of old birch trees, forming a tortuous tunnel between the bark and wood and sometimes penetrating the wood itself. The old exit holes, usually from three to six feet from the ground, are easily seen. The larva lives for three and possibly four

years, and the powdery frass of the young larva is easily detected, but the coarse frass of the larva in its penultimate year is more difficult to find. It is poured out freely in April and May, but often collects under the lichen which covers most of the trees. The larva is nearly full grown in early May, but changes skin once more before making a tough cocoon in the late summer or autumn. Before this it bores its way to the surface, leaving a very thin layer of bark intact, but the cap cannot be seen until it has been lifted by the pupa. Towards the middle or end of May the larva pupates and this is the best time to collect it. Choose a tree with recent exit holes or the frass of young larvae and scrape off the lichen. A mass of dried frass a little bleached by weather indicates the presence of a pupa or pupating larva. Before cutting out the cocoon make sure that there is no exit hole; the cap sometimes remains attached after the empty pupa case has fallen to the ground. With a mallet and chisel cut out a piece of bark the size of the palm of your hand, cutting right down to the wood, and lever it out. The cocoon will be visible on the underside. Keep the pieces of bark in an airy cage in a damp atmosphere. Sunshine is not necessary for the emergence of this or any other clearwing. The moths emerge in June or early July. Sembling with a virgin female is very profitable in the morning or early afternoon of a sunny day. The female should be placed in a small muslin cage suspended from a branch or placed in the fork of a tree.

DR E. A. COCKAYNE (238).

KILLING BEETLES IN THE FIELD

On hot sunny days in summer, say from about mid-April to early September, when beetles are obtained in large numbers by sweeping or beating, it is often difficult to kill captures quickly enough, and yet to keep those from each locality or habitat separate. It is the pernicious habit of lumping large numbers of beetles into one killing bottle together that causes many collectors to know little about the ecological requirements of their captures. Killing bottles or tubes, whether of ethyl acetate, laurel or cyanide, have a habit of becoming weak with frequent use, and though they may easily be strengthened by the addition of a drop more E.A. from

a pocket oilcan, this is often sufficiently tiresome to deter the collector from such procedure.



I find that the best plan on such days is merely to lay the tubes in the sun, at as near right-angles to the sun's rays as possible; best results are obtained if they are laid on the lid of the tin in which one keeps one's stores of tubes, though, needless to say, the killing tubes, or tubes containing beetles that are being kept alive to rear from, must not be placed in the sun. Nor is this method applicable for insects that take harm from the presence of condensed moisture inside the tube. On arriving home, the beetles are perfectly relaxed for setting or dissection. I take with me on each trip a number of flat cigarette or other tins, each containing a dozen or more tubes, each tin fitting into the trouser pocket so that one does not have to return to one's knapsack frequently, or suffer overladen discomfort on a scorching hot afternoon.

B. A. COOPER (19).

13/4/1945.

ATTRACTING LEPIDOPTERA TO LIGHT

By C. G. M. DE WORMS, Ph.D.,
F.R.E.S.

Introduction—The lifting of the blackout and other wartime measures must have made many of us turn our thoughts once more to the pleasant pastime of collecting moths at night by the use of a bright light. For over five years we have longed to be able once more to stay out far into the night in some secluded spot away from human habitation, waiting and watching, hoping for a rush of insects or for some specially sought species, but equally prepared to draw a complete blank and go home empty-handed.

Method—This can be divided into two types: (a) Stationary, such as by using an indoor light, or a light trap, or by working street lamps; and (b) Portable, using a lamp carried by the collector, or some mechanically carried form of illumination such as the headlights of a car.

Stationary Light—In a house, quite a useful and effective way of attracting moths is to place a white



Indoor collecting at dead of night.

sheet over a fair-sized window, with an ordinary light at a suitable distance behind it in the room. If this is on a ground floor or there is a balcony outside, the insects can be readily bagged as they settle in the vicinity.

Movable Light Traps—Before the war, a number of light trap models were on the market; they can also be manufactured at home. They are usually in the form of a small box with a light attachment inside the sloping glass entrance and a contrivance to prevent insects from escaping. With a length of electric light flex, they can be placed on a roof or at some distance from the house. Alternatively, where electric power is not available, illumination can be provided by some form of carbide or oil lamp.

Fixed Light Traps—A more ambitious type of trap may be built on to a house in the shape of a small room with glass sides allowing for the ingress but not egress of moths. A correspondingly more powerful light could thus be employed. Insects quickly settle on the walls, which are usually whitewashed, and may be examined at leisure—quite an arm-chair mode of collecting! It needs, however, a fair financial outlay, which nevertheless is often well repaid in the volume and quality of the harvest.

The moth trap affords probably the most exciting and profitable means of collecting with light, and has the advantage that it can be run continuously throughout the season and the numbers of individuals and species compared with the prevailing and previous weather conditions.

Some most valuable data on time of flight and other phenomena were obtained in this way by Dr C. B. Williams, who made records over a number of years from the light-trap at Rothamsted Experimental Station.

Portable Light—The favourite type is a high power lamp burning petrol or paraffin as fuel. That burning petrol vapour usually gives the whiter light. Many models of these can be obtained, usually giving up to 300 or 500 candle power. Their chief advantage is that they can be placed almost anywhere.

Reflecting Sheet—It is most important to arrange the lamp so that it gives a maximum amount of illumination and reflection. For this purpose it is customary either to place a white sheet on the ground immediately beneath it, or to suspend one vertically behind the lamp at a distance at which the reflection of light appears best. Where it is possible to fix one up, a vertical sheet is usually preferable, as more insects are attracted by the horizontal beams than by the radiating beams of a lamp on a groundsheet. In wet weather, again, the latter method has distinct disadvantages as insects tend to crowd round the lamp and become damaged by moisture and mutual disturbance.

Mechanical Light—Some of us may be fortunate enough to possess and run a car. On the whole, car headlights provide by far the biggest bags



Car headlights in use.

among any of the means of attracting moths, especially in open country where a lamp is not always con-

venient. The powerful "sucking" effect of the beams seems to attract insects from a long distance and often out of thick undergrowth. The usual *modus operandi* is to place a white sheet on the ground in front of the car leading up to the lights. Care must be taken to prevent insects getting behind the lights or damaged underneath the sheet. Naturally the use of headlights is limited as a car cannot be driven anywhere, but where it can be employed, it brings in a greater harvest than a high-power lamp worked in the vicinity—no doubt the result of its much higher brilliance.

Brilliance of Light—A general maxim is that the more powerful the source of illumination, the greater the attraction to insect life. Under parallel conditions a 2,000 c.p. lamp will allure far greater numbers than one having a tenth of this brilliance.

Colour of Light—Quality of light also counts for a lot. We know very little about the actual physiological causes of the attraction of light on the insect world, or how the various wavelengths affect particular groups of insects. But there is no question that some parts of the spectrum, that is, certain colours of light, have a far greater attraction than others; for example, for most moths the ultra-violet end of the spectrum appears more attractive than the red end. The old carbon arc lamps, which gave out a very high proportion of ultra-violet light, used to attract a much bigger quantity of moths than many of the modern forms of street illumination, and the still newer mercury vapour lamps likewise seem to have this special attractiveness. A good deal of research is still needed on this fascinating subject.

Where to go—The terrain in this country can be divided roughly into woodland, heath, marshland, sandhill, pasture and farmland and coastal regions, each of which has its special insect fauna. Of these, woodland is of particular interest in that it can give special protection under a clear sky against the cooling night atmosphere. If a lamp can be placed in a warm and sheltered part of a wood, the greater the likelihood of obtaining a large catch under such weather conditions. I well remember this being forcibly brought to our notice when we were out after *Apocheima hispidaria* (Small Brindled Beauty) and *Odontotia carmelita* (Scarce Prominent). We started work under a

clear sky in a clearing of the wood where the temperature dropped rapidly and nothing came to the lamp. By moving to a sheltered corner, both these species were soon attracted, the former in large numbers.

Elevation of Site—When using light in open country it is an advantage to choose a raised eminence to site the lamp on, as the larger the area lit by the lamp, the bigger its power of attraction. Insects flying high are also more likely to be attracted into its sphere. Most lamp manufacturers, e.g., the Tilley Lamp Co., make a metal tripod from which the lamp may be suspended, and this is useful both in raising the lamp up and so increasing the area of ground on which it shines, and also in reducing the proportion of upward reflected light of relatively low attractive power. On a night with a cloudless sky, too, cold air tends to roll down valleys into the lower levels, and insect flight comes to an earlier stop than on higher land.

Prevailing Weather—Much has still to be learnt as to the factors regulating the activity of moths at night. On some occasions moths will swarm to a lamp and on another apparently similar night nothing will turn up at all. Williams has closely analysed many of the figures obtained at the Rothamsted light trap, as a result of which many generalisations can be made.

As a rule, we can expect the best attendance when there is a fairly high temperature, a light rain and a dark cloudy sky. Direction of wind has an important effect; a light breeze from a westerly quarter is definitely more favourable than any other. When there is thunder impending or just after a heavy storm some of the biggest catches can often be made.

But I have equally known nights that would appear to be ideal and yet nothing stirs. We wait in vain round the lamp, getting very impatient at the absence of our quarry. I well remember once in a locality where *Coscinia cribrum* (Speckled Footman) was plentiful, finding them sitting on the heather shoots and taking no interest in our lights though conditions seemed just right. Such a phenomenon usually precedes the arrival of bad weather.

Certain factors are definitely adverse to collecting with light. These include a clear sky, especially when accompanied by a full moon, a tem-

perature falling below 45° F. and above all a thick ground mist. The last seems to put a stop to all insect activity. A cool wind from the north-east is seldom favourable and yet on more than one such occasion I remember moths streaming to light. Once when there was driving mist and a cool north-east wind, I had an almost record bag one June night in Kent.

Time of Flight—As a general rule, under a clear sky and if the night is going to become cold, there is a very early flight for about half-an-hour just after dusk and then a sudden stop. Geometers will fly much more freely than other families on cool nights. It is well known that in a number of groups, particularly the Bombyces, it is the males which are most attracted to light; it is surprising how many fewer females do appear at our lamps. Many species have very regular times of appearing. The Prominents, Hawks, Tigers and Ermines are all late flyers, often only turning up well after midnight (G.M.T.). On good attracting occasions it is worth noting the times of arrival of the various species.

Sometimes the temperature rises during the night and a sudden new rush of insects may occur after a prolonged lull.

Perseverance Pays—As with most other forms of collecting, no hard and fast rules can be laid down to ensure success under every circumstance. Only trial and error will give the collector that experience which will bring him the most success, and, above all, a keenness to try again if at first disappointment besets his efforts. Every situation must be tried at every time of year and in all meteorological conditions. Even the most unpromising urban area can have its recompenses. AES members will recall the capture of *Xylophasia zollikoferi* in 1939 by Mr A. Kennedy in a Leeds suburban back-garden, and many an interesting capture has been made on town waste land, foundry slag-tip and grimy canal bank. There is no doubt that perseverance pays in all entomological activities.

WORKING STREET LAMPS

For the beginner, probably the most accessible source of light attraction is the street lamp and illuminated road-sign. The more agile enthusiast will develop a technique of

shinning up suitable posts and hand-picking the insects straight into a pillbox or killing bottle. One collector is reported to have used a rope ladder which he would sling up to the bar of the lamp-post and then proceed to haul himself up in comparative comfort. Others have tried the use of a rope around themselves with a hook affixed, whereby, having climbed the post, they could hook themselves in more or less security to the summit.

Most of us, however, have an inherent dislike of leaving *terra firma*, or the publicity that so doing is apt to invoke, and prefer to fiddle around with nets tied to the end of long bamboo rods, with other equally long prodding sticks to dislodge the insects and so persuade them to fall to the ground or fly vigorously away in an inaccessible direction. One motorist prepared a seat to go on the roof of his car so that he could attend to moths on his local lamps in comfort, without falling off when his colleague drove on to the next post.

But it should be possible to devise some piece of apparatus of more general utility for dealing with street lamp attractions, one that is light to carry and collapsible for transport, yet more efficient than a mere net on extended handle. One very useful pattern was described by K. H. Poole in the *AES Journal* for July 1939 (p. 30) and others are probably in use. What have our inventors to say? It is hoped to print descriptions of these together in a forthcoming Leaflet on Light Collecting, so please let us have your designs soon. It will not be long before street lamps are again fully illuminated.

Unfortunately many street lamps are turned off at midnight or some such time by a clockwork time-switch affixed to them. They are far from perfect and occasional lights shine on till far into the morning. It is for these, of course, that the entomologist makes on his later beats; frequently the least jar on the lamp causes it to go out, and in such cases climbing up is impossible; yet this cloud is not without its silver lining, for the great care needed to secure a suspected rarity adds to Nature's hazards and lends excitement to the chase. The dowsing of street lamps as one proceeds down a well-lit road cannot be excelled for arousing the suspicions of watchful householders who find it hard to sleep on a hot night.

I recall a most attractive street lamp at Esher, Surrey, about 1938, which called for periodic visits during the course of one excellent night for collecting. Eventually a Voice called forth from the darkness, ordering my colleague and self away. I could imagine an elderly gentleman, pyjama-clad, leaning from an upper window of a house behind the trees. But there were still interesting shapes touring the lamp, so on with the hunt. Again the Voice, this time nearer: "I give you five minutes to go away." Still the shapes dashed round... a *dictaeoides* (Lesser Swallow Prominent), a *miniata* (Rosy Footman), and another. Hopefully we looked for more, intrigued to know what he proposed to do—open fire, call the police or set a dog on us? But collecting was the order of the day, or, rather, night. He was not interested in our antics at the next lamp-post.

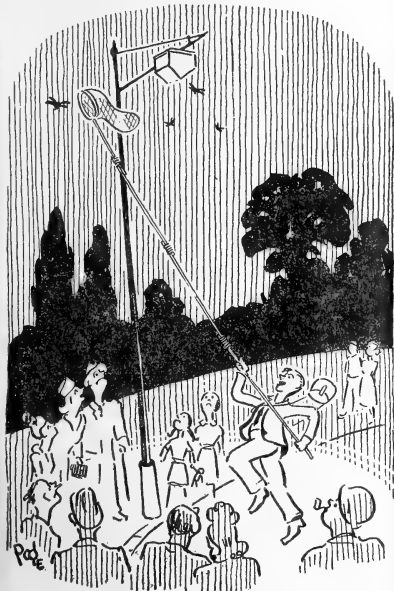


Stealing electric-light bulbs, eh?

On another occasion a policeman took some persuading that I was not stealing municipal electric light bulbs. Of course, every moth had vanished at his heavy tread and pillboxes of "flies" sounded a thin excuse.

At another place, a brilliant neon garage sign had attracted numerous

moths and the use of a net on a long stick proved sufficient to catch many of them. Unfortunately, a tin sign adjacent received several tangs from the net and awoke the inmates of the upper storey house. Two white shadowy figures appeared on the balcony, conferred in hushed tones, departed and off went the light. On a visit a few nights later, a sack was first thrown over the tin sign, and collecting proceeded without interruption till the last insect had been captured.



While suburbia sleeps.

Sodium or mercury-vapour "day-light" lamps, affixed much higher above the road than the smaller lamps, are quite inaccessible to the climber. Even a long stick is rarely a practical help. Late at night, when traffic has ceased, quite good captures may often be made by searching the roadway, pavement and walls beneath them. Too frequently the best insects are found flattened to the road by passing traffic, but even battered specimens are sometimes good for eggs or as records for the district. One line of such lamps, at Kenton, Mddx., yielded excellent captures in this way during the first year after its erection.

For carrying a collecting lamp on a bicycle, I had made two baskets sufficiently large to just receive the base of a lamp. One is affixed to the handlebars, with the lamp's reflector fac-

ing forwards, the other to the carrier behind the saddle, the reflector facing back. The lamps are padded into the baskets with the ground sheet on which they are stood at the collecting ground. The bike cannot suddenly be laid on its side while one dashes off after a moth that flutters by, but the arrangement is useful in travelling from one collecting ground to another without dimming lights, as well as for taking the lamps to the scene of action before darkness has set in. A two-legged stand, after the style of those fixed to motor-bikes, to keep the machine standing upright when at rest, is not difficult to have made and affixed at a garage.

In use, the lamps are removed from the baskets and stood or hung in their final positions, the reflectors being unscrewed for all-round illumination. A spiked or tripod stand to raise the lamp off the ground is an advantage in most situations.

BEOWULF A. COOPER (19).

LIGHT ON THE NORFOLK BROADS

In 1938 I spent the first two weekends in August in a houseboat on Barton Broad, and most of each night was devoted to light-collecting. Our favourite spot was a footbridge over a small lode at the side of the Broad. This provided us with a flat platform about 10 ft. by 6 ft. in area, raised just above the level of the tops of the rushes, and on it we spread our sheet, with a 300-candle-power petrol lamp standing in the middle.



We reclined at our ease

We reclined at our ease in two leather-covered, well-sprung and padded, bucket seats, obtained from

the car-breakers for 4/- each, and just boxed our specimens as they arrived, as they soon did in large numbers.

We also experimented nearby with a sheet stretched between two vertical poles and illuminated by a car head-lamp, but this did not attract many.

My own catch during the four nights included 5 species of Prominents, 6 Footmen, and 10 Wainscots, as well as some 40 or so other species. Our largest visitors were a late Poplar Hawk (*S. populi*) and many Drinkers (*O. potatoaria*) and Garden Tigers (*A. caju*). The latter looked particularly beautiful as they flew up. Our most numerous visitors were mosquitoes, but fortunately they were not of a pugnacious nature.

The most interesting Footman was the Dotted (*P. muscerda*), which was plentiful. Of the Wainscots a single male Reed Wainscot (*N. cannae*) turned up right at the end of the last night, but Fenn's Wainscot (*L. brevinelinea*) was common, and varied from the type to var. *sinelinea* with the line quite missing. Of other species the most welcome were several Large Emeralds (*H. papilionaria*), one Haworth's Minor (*C. haworthii*), one Silver Hook (*H. uncula*) and one Reed Leopard (*P. castaneae*).

DEREK A. ASHWELL (223).

(1/1/1945)

(It is interesting to hear that *castaneae* still exists in the Norfolk Broads. Possibly these are descendants of the Wicken eggs put down in 1873 by C. G. Barrett at Ranworth Fen; Barrett recalls that he took two males there in 1878. It is also possible, however, that the species has always existed, unnoticed, in Broadland.—B. A. C.)

ENGLISH NAMES

A small boy, aged 10, seeing the illustration of the Purple Emperor in the Puffin Book, *Butterflies in Britain* (in which the purple colour is over-emphasised on one wing) was heard to exclaim, "That's a John Andrews." The mystified parent consulted an AES member with whom the boy had had a collecting outing some weeks earlier. It transpired that there had been a discussion with another member about a *gynandrous* specimen. The boy had taken no part in the incident beyond listening.

L. W. SIGGS (243).

REARING THE JERSEY TIGER

When boxing females of *Callimorpha quadripunctaria* (*hera*) I always use inch-and-a-half, or two-inch glass-bottomed boxes, which are better than glass-topped ones. Most moths and butterflies will try to get away to the lightest part of anything placed over them, even if it is one's net. It is therefore more difficult to enclose an insect in a glass-topped box, as one is apt to crush or damage it as it makes its effort to get past the cover. In a glass-bottomed box the insect will try to get through the glass at the bottom, thus making it easier to put on the cover.

I always line my boxes with a strip of paper the exact depth of the box, and a circular piece inside the cover to make it a tight fit. Used manilla envelopes make good linings for the boxes, as one side is somewhat rough, and this surface is best for the moths to lay their eggs on. When the moths have finished laying, the paper can be removed with the batches of eggs attached, thus releasing one's boxes in a very short time, instead of having to wait until all the eggs have hatched, which takes about fourteen to fifteen days.

When first hatched, *hera* larvae are creamy white, but after their first meal they turn brownish-grey. This first meal is their empty egg shell, and they should not be disturbed until they have eaten all the egg shells, which takes them about twenty-four hours to accomplish. I then brush them off the papers on which the eggs were laid into small glass jars (fish or meat-paste jars), first furnishing each jar with a dandelion leaf broken up into small pieces. I think that by breaking the leaves up into small pieces the tiny caterpillars can start feeding more quickly, as the broken edges allow them to get at the substance of the leaf more easily.

After their first moult, I transfer them to one-pound glass jam jars, giving them fresh dandelion leaves every other day. I use two sets of jars, taking fresh jars each time I give them fresh food, and washing out the old ones, which are then ready for the next feeding. When changing the jars of larvae I turn them out on a newspaper after first getting the clean jars ready with the foodplant in them. I keep a teaspoon and a soft camel hair brush with which to transfer the larvae into the clean jars. The larvae always roll into a ring and feign death

when disturbed. This is why the teaspoon is so handy, as they can be brushed into the spoon and poured into the new jar, leaving the old food and the frass on the paper. Fifty or sixty larvae can be fed in a one-pound jam jar until their third moult, when I transfer them to two-pound jam jars and feed them up in these until the end of April. All jars are covered with a piece of muslin kept in place by a rubber band.

About the end of April I transfer them to breeding cages, and give them a change of diet. With the dandelion leaves I put twigs of whitethorn (hawthorn) as soon as the leaves are well formed. I also try rose, loganberry and raspberry leaves, and I find that they will gradually leave the dandelion for one of these. In the bottom of the cages I put plenty of dry moss, and then some pieces of cartridge paper rolled into tubes about one inch in diameter and two inches long. In these tubes the larvae, which feed by night, will rest in the day-time and in due course will also pupate in them. During frosty weather the larvae will lie up and hibernate, but as soon as the weather becomes mild they will begin feeding again. Jars should be kept in a cool outhouse during the winter.

I think that to rear *hera* successfully the larvae must be kept absolutely clean, and they must be provided with plenty of fresh food. Even then, with all one's care, in some seasons they will die off just as they are full fed. I think this is caused by some kind of bacteria. When transferring the larvae, or changing the food in the breeding cage, I keep a careful eye on them, and destroy every one that refuses to roll into a ring, as this is a sure sign that something is wrong with it. After many years of breeding *hera*, I still think it is something of a gamble.

J. WALKER (22).

DRAGONFLIES IN MONMOUTHSHIRE

On 29th May 1944 my sister and her friends collected two species of *Odonata* not previously recorded from the county. One was *Gomphus vulgatissimus* Linn. (The Club-tail Dragon-fly), captured on a small birch tree on a wooded bank at about 300 ft. above the River Wye, near Monmouth; it was observed flying up from the direction of the river and came to rest on the birch. The second was *Agrion*

splendens Harris (The Banded *Agrion*) captured on the banks of the River Wye at Hadnock, near Monmouth.

On 11th June 1944 I collected another species new to the county, one of the Damselflies, *Platynemis pennipes* Pallas (The White-legged Damsel-fly). It was captured on the banks of the River Wye at Hadnock, near Monmouth.

My identifications were all confirmed by Dr O. H. Wild, to whom the specimens were given.

R. LEWIS (734).

23/3/1945.

MIGRATION INVESTIGATIONS

The investigation into the problem of insect migration this year is being conducted, as in previous years, under the auspices of the Insect Immigration Committee of the South-Eastern Union of Scientific Societies. Records are desired of the presence and movement of any insects known to be migrants, or whose behaviour suggests that they are migrating. A list of species to be watched for, and on which observations and records are particularly desired, will be sent free of charge on application to Capt. T. Dannreuther, R.N., Windycroft, Hastings, Sussex, who will also send other literature on the migration investigations, cards for recording observations, list of County Recorders, etc. He is particularly desirous of enrolling observers who are in a position to make daily observations (in suitable weather) of garden or other attractive flowers, to note the rise and fall in numbers of different species in each part of the British Isles. He is particularly short of observers in the Northern parts of England and in Scotland. Forms for entering results will be sent to anyone interested.

There has been a large immigration this year of the Painted Lady (*V. cardui*), and the descendants of the early immigration are expected to begin emerging about July 19th. Up to June 1st Capt. Dannreuther had this year received records, extending as far north as the Shetlands, and mostly in western Britain, of 700 *V. cardui* (Painted Lady), 280 *V. atalanta* (Red Admiral), 9 *C. croceus* (Clouded Yellow), 6 *A. atropus* (Death's-head Hawk), 110 *M. stellerarum* (Humming-bird Hawk), and 350 *P. gamma* (Silver Y), excluding

records on half-a-gross Daily Schedules. He had 38 records of *C. l. livornica* (Striped Hawk) in April and 26 in May, so there must be many others yet to be recorded, and the prospect of larvæ later this season. Please send records of all migrants to Capt. Dannreuther, and not to the Editor of the *AES Bulletin*.

LOCALITIES

Do YOU collect mainly in "famous" localities? By "famous" localities I mean small areas well known to entomologists for decades (and usually thoroughly overworked). Famous names such as "Wicken," "Monk's Wood," "Rannoch" figure on the list. They ARE good localities, but so are thousands of other places which are never mentioned and often never worked.

I know that one has to go to the fens for fen insects—but why always Wicken? People will tell you, oh! but you have to go to Wicken for such beasts as *Meliana flammea* (Flame Wainscot) and *Phragmatoecia castaneae* (Reed Leopard); they don't occur anywhere else! Rubbish and piffle!—take it from me they do occur elsewhere—together with insects which you won't get at Wicken!

Go to Dungeness beach one day in September. There you will see a melancholy line of posts bordering a railway which runs across the shingle.

As you approach the posts you will notice that each one has a little oblong white patch on it which, upon closer inspection, will reveal itself as a visiting card fastened to the post by a drawing pin. So close is the competition among entomologists for the possession of those posts for sugaring purposes that they actually "book their seats" in advance.

Now those posts are probably the most easily accessible ones on that beach, but they are by no means the only ones.

I have heard collectors say that the scarce migrants are by no means as abundant on other posts on the beach as they are on those along the railway. Rubbish again! Such people, I dare wager, are not talking from experience but from hearsay. I have sugared on parts of the shingle quite remote from the railway, and a "bag" including *Leucania albipuncta* (White-point Wainscot), *L. vitellina* (Delicate Wainscot), *Cara-drina ambigua* (Vine's Rustic), *Aporo-*

phyla australis (Feathered Brindle), *Nonagria sparganii* (Webb's Wainscot), and many other good things, besides *Lasiocampa trifolii* (Grass Eggar) at light and larvae of *Heliothis peltigera* (Bordered Straw) by searching, is quite good enough for me!

The same thing applies to many other well-known localities—there are probably other places every bit as good in the district.

If you work any area thoroughly you will turn up good things, things that will perhaps surprise you; the important thing is to work thoroughly.

Do you want *Thecla betulae* (Brown Hairstreak)? It is quite common in some of the home counties, though people will visit a "locality" for it year after year, travelling many miles through country where it abounds to reach a place where they "know it occurs."

Are they blind, that they cannot see that there are many other suitable spots—or is it laziness that they cannot be bothered to work them?

The same applies to *Apatura iris* (Purple Emperor), which is much commoner than many people think, and may be obtained within twenty miles of London, and even to *Thecla pruni* (Black Hairstreak). One would think, to hear many people talk, that Monk's Wood was the only locality for *T. pruni*. In reality it is to be found over a fairly wide area, its range even extending into the home counties.

Don't go wandering miles to "suitable" collecting country when you don't know what is on your "doorstep."

I know a man (a member of the AES) who is too busy to be able to spare the time to go rushing off all over the country for "rarities," and whose collection is mainly composed of species taken at light in his own garden. His collection includes *Acherontia atropos* (Death's Head Hawk), *Herse convolvuli* (Convolutus Hawk), *Celerio lineata* (Striped Hawk), *Stauropus fagi* (Lobster), *Cerura bicuspis* (Alder Kitten), and hosts of other good things, not because his house is situated in an unusually well-favoured spot but because, before the war, he worked that garden light on every evening that he was able to be at home.

Coleopterists are not so hidebound on the "locality" question as lepi-

dopterists, and it is fairly obvious that one is more likely to turn up new species in an "unworked" than a "worked" locality. Coleoptera new to this country are continually being found on waste ground and rubbish dumps, and such places are often more fruitful than a lush grassy meadow.

To conclude: don't let me put you off going to the New Forest for *Catocala sponsa* (Dark Crimson Underwing) and *C. promissa* (Light Crimson Underwing), to the Norfolk Broads for *Pelosiya muscerda* (Dotted Footman) and *Arenostola brevilinea* (Fenn's Wainscot), to the Breck for *Emmelia trabealis* (Spotted Sulphur) and *Lithostege griseata* (Grey Carpet), as you will probably never see them otherwise; but do give your own district a chance; it isn't so barren as you think; it just wants working thoroughly.

E. W. CLASSEY, F.R.E.S. (41).

QUERY: KILLING AGENT

I am a recent convert from chloroform to ammonia and I am quite sure I shall never use chloroform again except for a few species. But I find one big snag; how should one carry ammonia in the field? If you hump about a stoppered bottle on a hot day you run the risk of losing your sight every time you take the stopper out. (Chloroform vapourizes, too, but not so formidably, nor is it so dangerous if the bottle explodes.) A hint from an old ammonia-addict would be helpful.

JOHN MOORE (156).

(In the field, don't use ammonia at all: use a laurel bottle or tin, strengthened each day, or during the day if freely used, with a few drops of EA (ethyl acetate). But don't lay it in the sun, or condensation may spoil the specimens. If you've room, carry several tins, so that half-killed insects don't fly out when you put the next one in. EA is best carried, to reinforce the killing tin, in a small oilcan. Catches are subsequently stored in an ammonia or (I prefer) laurel relaxing tin, but it is best, where possible, not to delay setting too long. I have seen ammonia used successfully in the field, killing tin being charged in the morning before setting off from home. But EA is generally more satisfactory after one has learnt how to overcome its few drawbacks.—B.A.C.)

OBSERVATIONS

D. A. LANG (732*) reports having seen *P. aegeria* (Speckled Wood) in Berks. in mid March, as well as Large and Small Whites (*P. brassicae* and *rapae*) and the Brimstone (*G. rhamni*) in February of this year.

L. R. TAYLOR (441) has observed in Belgium: 4 *rhamni* (Brimstone) on 14th February, 1 *libatrix* (Herald Moth) on 20th February, 1 *polychloros* (Large Tortoiseshell) and a few *urticae* (Small Tortoiseshell) on 23rd March.

G. HONEY (488*) has taken a Green-veined White (*P. napi*) with a dark black spot on the 7th and 8th veins of the left forewing, but not on the right; also another with a faint grey spot on the same veins of both forewings. Is this a frequent form of variation?

PAUL H. HOLLOWAY (429) took a Striped Hawk (*C. livornica*) at Eastleigh, Hants., on 26th April 1945; on 19th May, on a pine trunk also at Eastleigh, a male and female Pine Hawk (*H. pinastri*) in cop.

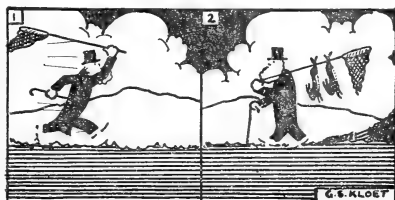
J. BOORMAN (702*) last summer found a Privet Hawk (*S. ligustri*) egg in his garden on a box tree, and a larva feeding on snowberry.

J. H. PLATTS (515*) records that during the winter of 1943-4 a large reed-bed near Northwood, Mddx., was flooded, the water being four feet deep. Yet next spring large numbers of Drinker Moth (*O. potatoia*) larvae appeared in the reed bed. He suggests experiments to see how such water-tolerant species manage to survive.

P. G. TAYLOR (719*) observed a Large Tortoiseshell (*N. polychloros*) in Pamber Forest, Hants., in June 1944. He also took a Convolvulus Hawk (*H. convolvuli*) near Wellington, Salop, on 12/9/1944, and, near Watford, Herts, three ab. *bellus* Purple Hairstreaks (*T. quercus*) on the same ash sapling.

INTRODUCING PROFESSOR FUNGUS

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JUST PUBLISHED

"THE AMATEUR ENTOMOLOGIST," Vol. 8 (1944). With 48 pp. and 6 plates, as well as numerous text figures. Contributions by D. A. Ashwell, E. C. Bedwell, S. C. Brown, S. Charlson, E. W. Classey, L. B. Clarke, B. A. Cooper, E. T. Daniels, R. Fairclough, R. S. Ferry, L. T. Ford, H. W. Head, A. Kennedy, R. D. Morton, A. F. O'Farrell, K. H. Poole, R. C. B. H. Rowe, C. Runge, A. Smith, P. S. Smith, E. E. Syms, L. G. F. Waddington and G. B. Walsh. Articles deal with the rearing, collecting and literature of dragonflies, elytron-bugs, micros and mosquitoes, varieties of Macros collected by members, the Red Admiral overwintered, making a pocket net and several types of sweepnet, and books recommended for the amateur's library. Price (to members): 3/8, post free. (N.B.—Vol. 7 "Am. Ent." is still not ready.)

AES LEAFLET No. 13: "Collecting Micros," by Leonard T. Ford, and No. 14, "Setting Micros," by S. Charlson, A. Smith and S. C. Brown (both 4 pp., illustrated, price 3d each, post 1d, 2/6 per doz.), together form a useful guide to the collecting of adults and larvae, rearing, killing, setting, and literature needed by the collector of micros.

AES PAMPHLET No. 2: "The Amateur's Library" (11 pp., 7d post free, 5/- per doz.) is a classified list of 220 reference and stimulant books, graded according to importance and technicality, with brief notes on contents, from which the amateur should make his library's first choice. Invaluable to both the amateur and school libraries.

Publications are obtainable from Hon. Business Manager, G. A. Roberts, 53 Broadway, Fulford, York. We regret to announce that the printing of data labels has had to be suspended for the present.

WOULD YOU LIKE TO WORK ON OUR "BUTTERFLY FARM"? An assistant required immediately; salary and fares paid; preference given to person living within easy reach of S.E. LONDON by rail or bus. Apply to L. Hugh Newman, F.R.E.S., 41/42 Salisbury Road, Bexley, Kent.

YOU ASKED FOR IT! Just published, additional notes to "Valuable Hints," Part 2 (price 9d, post 2½d). **BREEDING BUTTERFLIES IN CAPTIVITY** — Pairing, Egg Laying, Treatment of Larvae Just Hatched, etc. Part 1 and 2 ordered together 1/6 post free. New Spring and Summer List Now Ready. Finest Stocks since Pre-war Days due to generosity of AES Members. From L. Hugh Newman, "The Butterfly Farm," Bexley, Kent.

FOR SALE OR EXCHANGE—4 dozen Thick Sheets of FLOWER PRESSING ABSORBENT PAPER, size 22 in. x 18 in. Pre-war material. Going very cheaply. J. Trimmer, South Littleton Vicarage, Evesham, Worcs.

ENTOMOLOGICAL APPARATUS for Sale; Second-Hand. List from Mrs Coney, King's Hayes, Batcombe, Bath, Som.

Vol. 6 of the "Bulletin of the Amateur Entomologists' Society," edited by Beowulf A. Cooper, B.Sc., A.R.C.S., Dept. of Agriculture, The University, Leeds 2, to whom all contributions, exchange notices, illustrations, etc., for publication should be sent. Bulletins are issued free to members. First subscriptions to the AES (5/-, 2/6 to boys and girls aged 18 or under) should be sent to the Hon. Secretary, Phyllis L. Rogers, 91 Middle Lane, London, N.8, and subsequently to the Hon. Treasurer, C. H. Hards, 40 Riverdale Road, London, S.E.18. Publications of the Society may be obtained from Hon. Business Manager, G. A. Roberts, 53 Broadway, Fulford, York, or from any of the above officers. Membership Application Form, specimen Bulletin and information as to the work and publications of the Society will be sent on receipt of threepence by the Hon. Advertising Secretary, A. M. Walton, F.R.E.S., 275 Croxted Road, London, S.E.21. Details of field meetings in the London area will be sent regularly on receipt of 1/- by Hon. Meetings Secretary, E. W. Classey, F.R.E.S., Salisbury House, Salisbury Grove, Mytchett, Surrey.



AES ADVISORY PANEL

September 1945

Addressing—The only requirement of members for the use of the Advisory Panel is that they must enclose stamps to cover cost of return of specimens, or stamped envelope for reply. Otherwise, reply cannot be guaranteed. It will also be of assistance if the membership number of each enquirer is quoted in all enquiries. In the absence of any suitable Adviser in the table below, members should address their enquiry to: "The Adviser on . . . (subject of query) . . . c/o The Editor, *Amateur Entomologist*, . . ." who will forward the letter on to the authority he thinks most competent to deal with the matter. At present advice can only be given on matters concerning the fauna of the British Isles. Enquirers must remember that Advisers are busy people and frequently have not the time to identify set material during the summer months—it should be sent during the winter months when evenings are less likely to be occupied with collecting or mounting their own captures. Where large numbers of specimens are to be named, the enquirer should preferably have this done at a Museum, where paid officials are employed for the purpose of dealing with such enquiries. A personal visit, moreover, will usually solicit more information than would be obtained by correspondence.

Packing—In sending pinned or set specimens by post, the box containing the specimens should be placed inside a larger box packed tightly with balls of crushed paper, cotton wool or sawdust. As a further precaution, a strip of cotton wool pinned in with the specimens will collect legs and antennae that may break off, saving them from being shaken about in the box and damaging the insects further. With carded mounts, the mounts can be secured by means of sloping pins placed at the edge of each card. Needless to say, pins should all be pushed well into the pinning surface of the container; thick sponge rubber is a better material for this purpose than either cork or polyporus. Live insects should be firmly, but not tightly, packed with moss, grass or fibre, to prevent their being killed by bruising, but lush young foliage should not be used lest mortality be caused by suffocation or condensation. Photographic plates and microscope slides must be especially carefully packed in a well-insulated tin or wooden box, as they are very liable to be cracked in transit. Photographs and pen drawings should be placed between cardboard and the envelope marked "Please keep flat."

Labelling—Details of locality, habitat, foodplant, date, time and mode of capture and many other details may be an aid in identifying an insect. Usually it is impossible to identify an insect from a verbal description alone, without other data, and even then is it rarely easy. Specimens should all be labelled with sufficient data, preferably placed on a small card on the same pin as the insect. In all cases details of locality will be treated as confidential.

New Advisers—It will be seen from the succeeding list that there are still many subjects not yet covered by the Panel, and volunteers to assist in these departments are much desired. They should write to the Editor of the *Amateur Entomologist*, Dept. of Agriculture, The University, Leeds 2. Any Adviser wishing to relinquish his services should likewise notify the Editor.

Lepidoptera (Butterflies and Moths)

Identification, Macros and Micros—W. L. RUDLAND, 211 Caversham Road, Reading, Berks.

Identification of larvae—E. W. CLASSEY, Salisbury House, Salisbury Grove, Mytchett, Surrey.

Rearing Silkmoths—FRANCIS G. SUTTON, 58 Blakemere Road, Welwyn Garden City, Herts.

Selection, propagation and cultivation of foodplants and floral attractions—R. C. DYSON, 112 Hollingbury Park Avenue, Brighton 6, Sussex.

Trichoptera and Ephemeroptera (Caddises and Mayflies)

Identification and general advice—H. WHITEHEAD, 3 Barthorpe Avenue, Leeds 7.

Coleoptera (Beetles)

Books and collecting methods—G. B. WALSH, 22 Stepney Drive, Scarborough, Yorks.

Identification, other than of the groups named below—D. TOZER, 98 Copdale Road, Leicester.

Elaterridae, identification and general advice—B. A. COOPER, The Vicarage, Northallerton, Yorks.

Halipilidae and *Pselaphidae*, identification and general advice—REV. E. J. PEARCE, House of the Resurrection, Mirfield, Yorks.

Waterbeetles, identification and general advice—PROF. F. BALFOUR BROWNE, Brae, Dumfries, Scotland.

Larvae and life-histories—E. A. J. DUFFY, Salisbury House, Salisbury Grove, Mytchett, Surrey.

Hymenoptera

Symphyta (sawflies), identification and general advice—R. B. BENSON, Zoological Museum, Tring, Herts.

Aculeata (ants, bees, wasps), identification and general advice—DR. I. H. H. YARROW, 7 Redlands Road, Reading, Berks.

Parasitica, identification and general advice—G. J. KERRICH, Manchester Museum, Victoria University, Manchester 13.

Diptera (Flies)

Mosquitoes, identification and general advice—E. W. CLASSEY, Salisbury House, Salisbury Grove, Mytchett, Surrey.

We have no general Adviser at present on Diptera.

Odonata (Dragonflies)

Identification and general advice—A. F. O'FARRELL, 90 Woodward Road, London, S.E.22.

Orthoptera and Dermaptera (Grasshoppers, crickets, roaches and earwigs)

Identification and general advice—W. D. HINCKS, 46 Gipton Wood Avenue, Leeds 8.

Plecoptera (Stoneflies)

Identification and general advice—E. E. SYMS, 22 Woodlands Avenue, London, E.11.

Hemiptera-Heteroptera (Elytron-bugs)

General advice and approximate identification—H. K. AIRY SHAW, Royal Botanic Gardens, Kew, Surrey.

Books

General advice—T. BAINBRIGGE FLETCHER, Rodborough Fort, Stroud, Glos.

Microscopy

General advice—M. J. HIRONS, 138 Wyken Avenue, Wyken, Coventry, Warwickshire.

Photography

General advice, not colour photography or cinematography—E. G. NEAL, Flat 1, Rendcomb, Cirencester, Glos.

Botany

Identification of foodplants—H. K. AIRY SHAW, Royal Botanic Gardens, Kew, Surrey.

Pests

Farm and garden pests—B. A. COOPER, The Vicarage, Northallerton, Yorks.
Stored products pests—A. F. O'FARRELL, 90 Woodward Road, London, S.E.22.

Chemical Matters

General advice—DR. H. HENSTOCK, Glengariff, Caerwys, Mold, N. Wales.

Insect Migration

General advice—CAPT. T. DANNREUTHER, Windycroft, Hastings, Sussex.



A SUGGESTION OR TWO

A Union of School Societies? — In the Foreword by Sir Frederick Keeble to the *Report on Natural History* by the Canterbury Schools, reviewed elsewhere in this issue, we read the following interesting suggestion:

“Boys who have shown so much enterprise and assiduity in exploring the Natural History of the neighbourhood of their school may perhaps be willing to apply them in yet another direction, by finding out whether it may not be possible to bring into existence an Association of School Natural History Societies. It might begin with the Public Schools, with the avowed object of gradually including all schools, not only those in country districts, but those in urban places as well, the country schools helping the town ones. Could there be a more wholesome corrective to over-urbanisation of Society and over-mechanisation of mankind than an Association of young people determined to give Nature a chance of telling them what She is doing, and how She governs the world—for after all She does govern it!”

The President of the Canterbury Schools Natural History Society states later that “this Report will go to all schools with Natural History Societies,” of which there are certainly many hundreds, if not thousands in this country, so it is hoped that these suggestions will not rest there. Perhaps the AES may be able to assist, as we are preparing a list of school natural history societies as part of our forthcoming *Directory*, though we must admit that we have but a very small proportion of these at present listed and very far from “all schools with Natural History Societies.” Can our Affiliate Members start the ball rolling by calling a Conference to which all other known school natural history societies can be invited? Anyone interested in organising such a scheme is invited to communicate with the Editor.

Panel of Lecturers — Having received requests to supply lecturers to speak at school and other natural history societies, which we were not able

to provide, the AES is anxious to hear from members willing to help in this way. It is suggested that those interested should write to E. E. SYMS, 22 Woodlands Avenue, London, E.11, suggesting what subjects they would be prepared to speak on, and to what distance they would be prepared to travel. They would expect to have refunded by the Society addressed any travelling expenses involved. Societies requiring speakers and not knowing individual members able to do so, are also advised to write to Mr Syms.

Assistant Secretary—Our Secretary in 1939, D. H. Sterling, having now returned from five years' overseas service, has been appointed Assistant Secretary in order to help Miss Rogers with her somewhat tedious and occasionally irksome duties. In future, applications for membership and other matters involving correspondence should be addressed to Mr Sterling. His permanent (home) address is 36 Estella Avenue, New Malden, Surrey, from which correspondence will at all times be forwarded, but at the moment and as far as he can see for some months to come he is billeted at: 33 Barnardo Road, Exeter, Devon.

Data Labels — The AES is again able to print 4½-point entomological data labels, orders for which should be sent to G. A. Roberts, Business Manager, 53 Broadway, Fulford, York. As hitherto, income from these is devoted to the publication of Leaflets and Pamphlets. Orders are saved until sufficient have been received to print a number together and immediate delivery cannot be guaranteed.

Special General Meeting — Those among us who were members before the war will recall that at the General Meeting of October 29th, 1939, it was resolved that the organisation then existing should remain quiescent during hostilities, its funds being placed in the hands of two Trustees (with the exception of £5 given towards the forming of a Temporary Wartime Organisation) until the original organisation could again

function. This could only be brought about by the calling of a General Meeting of all prewar members as soon as possible after the cessation of hostilities. This occasion has now arisen, and a Special General Meeting has been organised for December 1st next, all members of both the prewar Society, as far as they can be traced, and the present organisation, having been notified of its whereabouts and agenda. It is intended to revive the original organisation, empower it to absorb all the assets and obligations of the Wartime Organisation, adopt a new Constitution and elect a new Council. The remainder of the meeting will be devoted to exhibits by members. It is hoped that all who can do so will attend.

BEOWULF A. COOPER.

3/9/1945.

MEMBERSHIP CHANGES

*=Junior Member

†=Affiliate Member

New Members

- 224 J. A. Robertson, 15 Bonnywell Road, Leigh, Lancs. (L.)
- 742* R. L. A. Page. (gen. ent.)
- 762* B. W. Campion. (L.)
- 763* D. Parsons. (L.)
- 771 J. Cowley M.A., F.R.E.S., Holywell House, Edington, Bridgwater, Som. (O.)
- 772* B. W. Ellis, The Ship Inn, Mousehole, Penzance, Cornwall. (L.)
- 773 E. W. Robinson, Woodacre, Woodford, Cheshire. (L., C., H.)
- 774 E. V. J. Slocombe, 13 Caerllwyn Terrace, Ynysddn, Newport, Mon. (gen. ent.)
- 775* I. Esslemont, 3 Newlands Crescent, Aberdeen. (mosquitoes, waterbeetles, O.)
- 776 C. J. Brook, 10 Southdown Avenue, Coppice Estate, Lower Willington, Sussex. (C.)
- 778* J. F. Flint. (gen. ent.)
- 792* Miss M. Outhwick. (L.)
- 816* G. F. Walker, F.Z.S., 1 Leighton Road, London, N.W.5. (L.)
- 817† The Darwin Society, Shrewsbury School, Shrewsbury, Salop. (Communications to be sent to the Chairman, Major W. J. Pendlebury, F.R.E.S., Broadlands, Canonbury, Shrewsbury). (L., C., H.)
- 818 G. E. Hyde, 20 Woodhouse Road, Doncaster, Yorks. (L., O., H.)

- 819* P. B. Popplewell, 28 Glenhurst Road, Prittlewell, Southend-on-Sea, Essex. (gen. ent., L.)
- 820 B. Readwin, 36 Warley Hill, Brentwood, Essex. (gen. ent.)
- 821* E. M. B. Green, Sherington Rectory, Banbury, Oxon. (L.)
- 822† The Field Club, R.N. College, Eaton, Chester. (Hon. Sec., E. T. Warner.)
- 823 J. McKim, J.P., F.Z.S., 12 Darvel Crescent, Ralston, Paisley, Scotland. (botany, fish, zoology, marine and freshwater B.)
- 824* T. J. Lloyd, Hammonds End House, Harpenden, Herts. (L.)
- 825 N. W. Harwood, 67 Swaledale Crescent, Billingham, Co. Durham. (L., P.)
- 826* J. S. D. Ashmore, 10 Barnfield, Urmoston, Lancs. (L., C.)
- 827* Miss Barbara A. Hopkins, 43 Hainton Avenue, Grimsby, Lincs. (breeding L.)
- 828 H. G. Stokes, 12 Roman Road, Salisbury, Wilts. (Orthoptera, O., Hem., gen. ent.)
- 829 V. S. Crappnell, 51 The Grove, Hipperhulme, near Halifax, Yorks. (gen. ent., ornithology)
- 830* M. J. Bennett, Leechwell Cottage, Totnes, Devon. (L.)
- 831* G. Sweet, 9 Bruce Gardens, Fenham, Newcastle-on-Tyne. (L.)
- 832 J. Briggs, 15 Frimley Drive, Little Horton, Bradford, Yorks. (L., C.)
- 833 G. S. Marsh, 17 Harlington Road East, Feltham, Mddx. (bees, their anatomy, physiology, diseases)
- 834 R. F. Haynes, The Sanctuary, West Humble, Dorking, Surrey. (L., ent., botany)

Names Removed from Membership List for Non-Payment of Subscription

—Miss E. Brown (602), H. J. B. Caldecott (379), Miss E. Davies (635), J. H. Elliott (530), D. S. Fletcher (199), A. G. Gillery (442), Dr E. G. Gray (332), G. T. Hanlon (504), G. H. Hill (164), R. W. Howard (363), H. J. Larwood (417), D. Leitch (415), Maj. C. T. Lloyd (468), R. L. Kenyon (625), T. Mears (590), A. J. Millward (344), P. D. Mumby (509), Dr H. Murray (177), E. W. Purcell (416), N. A. Richardson (431), K. G. Smith (388), B. B. Snell (419), Lt. Col. T. Spann (493), Miss M. Sutton (603), A. Thompson (342), Lieut. E. Todd (270), H. Spencer (186), Dr O. Wild (440),

R. A. Wilkinson (597), D. M. Ackland (584*), A. Beddington (573*), G. Cox (565*), I. R. Cuthbert (555*), D. F. Eastmure (476*), S. P. W. Eldridge (581*), Miss Y. Forrow (517*), G. R. Harding (558*), D. Jackson (502*), D. O. Jones (466*), C. R. J. Murphy (632*), Miss M. Roscoe (560*), R. Roscoe (665*).

Membership Total—546 subscribing members.

Change of Address — D. Dawson (664) to: 6 Elan Road, Llanishen, Cardiff, S. Wales. E. A. J. Duffy (200) to: c/o Salisbury House, Salisbury Grove, Mytchett, Surrey. Ivan M. Goodbody (484*) to: Warriston, Glengeary, Co. Dublin, Eire. R. Gorer (659) to: Little Pett Farm, Bridge, near Canterbury, Kent (tel.: Bridge 200). T. L. Hamerton (657*) to: 35 Bodley Road, New Malden, Surrey. Dr D. M. Jeffreys (615) to: Thrifty Beeches, The Grove, Lyndhurst, Hants. E. Milne-Redhead (685) to: Green Leaze, Somerford Road, Cirencester, Glos. Paul F. Milner (521*) to: 167 Lake Road West, Cardiff, South Wales. Lt. W. R. Murchie (634) to: Box 203, Sharon-Penna, U.S.A. A. F. O'Farrell (58) to: 90 Woodwarde Road, London, S.E.22. R. L. A. Page (742*) to: Abbots Gate, Falcon Gardens, Minster, Sheppey, Kent. D. A. Sang (732*) to: 7 Lyndhurst Drive, Sevenoaks, Kent. H. K. Airy Shaw (545) to: Royal Botanic Gardens, Kew, Surrey. D. H. Sterling (84) to: c/o 33 Barnardo Road, Exeter, Devon. L. R. Tesch (1) to: 532 Loose Road, Maidstone, Kent. E. L. Todd (270) to: 931 N. Walnut Street, Eureka, Kansas, U.S.A. J. Trimmer (495*) to: 47 Horsa Road, Southbourne, Bournemouth, Hants.

Full Membership List—This is now in the press and will appear as *Bulletin* No. 72.

WANTS AND EXCHANGES

WANTED, by the Editor: Typists, abstractors, reviewers. If you want your *Bulletins* and *Journals* on time, why not offer to give a hand?

W. WATTS (240), 77 Hayes Way, Beckenham, Kent, would like to get in touch with anyone who could kindly help him to identify land and freshwater shells.

WANTED—*L. phlaeas* (The Small Copper) from all parts of the World, particularly Middle East areas, N.

and E. Africa, Madeira, Scandinavia, Russia, Siberia, Mediterranean islands, Scotland, Ireland. Also other species of Coppers wanted, particularly from Middle to Far Eastern areas. Will purchase specimens or offer in exchange European and Exotic Lepidoptera. P. SIVITER SMITH (250), 66 Stirling Road, Edgbaston, Birmingham 16.

ERNEST L. BEAN (115), 121 Queen's Road, West Croydon, Surrey, has larvae of *ligustri* (Privet Hawk), *tiliae* (Lime Hawk) and *A. leporina* (Miller Dagger) for exchange.

J. P. ROBSON (44), 10 Vane Road, Barnard Castle, Co. Durham, has larvae of *C. dominula* (Scarlet Tiger) var. *bimaculata* to exchange for specimens of uncommon species or varieties of Lepidoptera.

JOHN MARSHALL BRUMBAUGH, 611 West Hull Street, Denison, Texas, U.S.A., is a collector who would like to buy unset butterfly specimens from England. He would like to receive lists of what members have to offer, quoting prices in United States money, as he is unfamiliar with British coinage.

E. A. J. DUFFY (200), Salisbury House, Salisbury Grove, Mytchett, Surrey, is preparing a paper on the life-histories of the beetles *Prionus*, *Erioccephalus polonicus* and *Stenochorus meridianus* and would like to receive any records or observations members could offer.

REV. W. O. W. EDWARDS (570), Moor View, Links Road, Budleigh Salterton, Devon, requires two or three storeboxes (13 ins. x 9 ins. preferred). Must be clean and in good condition—will give cash or *hyperborea (alpina)* (Northern Dart) in exchange.

WANTED—L. Hugh Newman (503), The Butterfly Farm, Bexley, Kent, urgently needs for breeding stock the following healthy pupae: *vinula* (Puss), *tiliae* (Lime Hawk), *ligustri* (Privet Hawk), *ocellatus* (Eyed Hawk), any Prominents (except *ziczac*); would exchange for *elpenor* (Elephant Hawk), *carpini* (Emperor), or other species in stock, or willingly buy for cash.

P. MAGGS (244), East End, Lymington, Hants., wishes to purchase a good book on larvae of British Moths.

D. COLE (644*), 79 Manor Road, Erith, Kent, would like old AES Bulletins, from 1-63. Please state price.

R. HARTLAND ROWE (464*), 8 Lisgor Terrace, London, W.14, requires Vols. I, II and III of F. V. Theobald's "Monograph of the Culicidae of the World." Also records of mosquitoes found on Wimbledon Common and Putney Heath.

L. H. WILLIAMS (703*), 10 Lower Armour Road, Tilehurst, Reading, Berks., wishes to purchase or exchange two female pupae of *S. fagi* (Lobster Moth). He has for exchange young larvae of *C. hera* (Jersey Tiger) and pupae of *D. elpenor* (Elephant Hawk). He also requires certain Prominents in their young stages.

WANTED—Entomological anecdotes likely to be of use to our cartoonist. EDITOR.

A. E. TONGE (274), Ashville, Trafford Road, Alderley Edge, Cheshire, who is having to give up active collecting, writes: If anyone is in need of the commoner butterflies and will send a box and return postage, I will gladly make up a series for him free of any cost.

E. W. CLASSEY (41), Salisbury House, Salisbury Grove, Mytchett, Surrey, would be interested to receive records of *L. pallens* (Common Wainscot) adults taken in the autumn—would any member who can give such information please send localities and dates of any such captures?

E. W. CLASSEY (41) is interested in obtaining living larvae, in any instar, of the noctuids. A few larvae of each species are required, including a large number of common species. Please send list of wants. He also requires living larvae and/or set adults of *S. apiformis* (Hornet Clearwing), *S. bembeciformis* (Lunar Hornet Cl.), *A. scoliaformis* (Welsh Clearwing), *A. muscaeformis* (Thrift Clearwing), *A. chrysidiformis* (Fiery Clearwing), *D. scopigera* (*ichneumoniformis*) (Six-belted Clearwing). Offered, set adults of *A. sphecoformis* (White-barred Clearwing), *A. andrenaeformis* (Orange-tailed Clearwing), *A. culiciformis* (Large Red-belted Clearwing) and (during this winter) galls containing living larvae or pupae of *A. flaviventris* (Sallow Clearwing), also set adults of *P. fuliginaria* (Waved Black) and *D. rubiginea* (Dotted Chestnut).

MEETINGS

Saturday, December 1st.

AES Special General Meeting

To be held at Buckingham Gate

Central Schools, Wilfred Street, London, S.W.1, near Victoria Station, commencing at 2.30 p.m. Doors open at 2.0 p.m. After the business there will be a short exhibition of interesting specimens from members' collections. Please remember to bring an exhibit.

Agenda:

- (1) Authorise recommencement of activities of the peacetime AES (suspended in 1939) and bringing to an end of the Temporary War-time Organisation.
- (2) Discuss and adopt the revised AES Constitution.
- (3) Elect a Council for the revised peacetime organisation.

The first General Meeting of the revived organisation, being also the Annual General Meeting of the War-time Organisation, to conduct the ordinary business of receiving the Annual Report, Accounts and Balance Sheet, and election of Council, will be held during the first quarter of 1946.

Indoor Meetings

Quite often I hear suggestions that, in districts where there are a number of AES members, regular indoor meetings should be arranged. In the case of London the suggestion is that it should be split into several areas of membership and that regular meetings should be held in each area. These are excellent ideas and, in one district at least (Gloucestershire) such meetings (held in conjunction with The Cotteswold Naturalists' Field Club) have proved a great success.

For the formation of such groups it is necessary to have local secretaries, since it is impossible for the Meetings Secretary to run such groups at a distance, and all AES members willing to undertake such secretariats should write to me.

The main difficulty, however, is housing. Where the membership of a group is small it is often possible to hold meetings in members' homes, taking it in turns to act as host. It is desirable that each such group should work with the local Natural History Societies, holding joint meetings, etc., and, in general, aiding and strengthening any such society.

Field Meetings—1946

During this year (1945) a number of Field Meetings were arranged for

the benefit of London members. Owing to war conditions, travel difficulties, flying bombs, V2s, etc., the attendance was often disappointing. In addition, it was difficult to find people to lead these meetings. Now that the war is over it is hoped to arrange, for 1946, a more extensive programme, not just for London members but wherever there are sufficient members to make such meetings possible. I would be very glad to hear from any members who would be willing to organise and/or lead Field Meetings in their own districts. It is essential that arrangements be made now as it is hoped to publish a full programme for the season early in 1946.

Local Natural History Societies are also invited to contact me with a view to arranging joint meetings.

ERIC W. CLASSEY
(Meetings Secretary),
Salisbury House, Salisbury Grove,
Mytchett, Surrey.

REVIEWS

Report on Natural History, Cornwall, 1940-1944, by the Canterbury Schools (King's School and St Edmund's) Natural History Society (W. Stephen-Jones, President, St Edmund's School, Canterbury, pp. 44, 8½" x 5½", 3/6).

This *Report* covers the years 1940-1944 when the schools were evacuated to Carlyon Bay, St Austell, in S.W. Cornwall, and is an excellent example of the kind of report that school societies can produce. Stimulated by the differences they saw between the fauna and flora they left behind in Kent and that of Cornwall, they have made a comprehensive survey of the plants, birds and marine life of the area. Insects are less well covered, but butterflies and moths appear to have a number of devotees; Cornwall, we learn (p. 14), is "altogether a very interesting County, not so luxurious, perhaps, as East Kent in Butterflies, but as varied in Moths, especially migrants." An enthusiastic band of watchers have been keeping their eyes open for migrant insects, and have made several interesting observations. They are evidently believers that many so-called migrants survive the winter in this country, for we read that a "Red Admiral was found hibernating in February 1942 in a shore-cave within a foot of a Bat." A little later: "The last specimen of

a Humming-Bird (Hawkmoth) was seen on October 20th. . . . One specimen hibernated in the buildings and would fly out whenever the light was put on. He was last seen on November 17th." And: "No doubt, in some of the more sheltered valleys on the coast, the larvae of some of the rare migrants manage to survive the winter."

It is a grand thing to see boys producing a *Report* such as this, and we hope more schools will find themselves able to follow suit. But the volume would have pleased certain critics more if a little adult guidance had been given with regard to proof-reading and spelling, particularly of scientific names. And why not an inter-school natural history report? The AES may in some measure be said to have originated in our own (University College School) Biological Society magazine *Biology*, which Braugham and I edited and produced in 1933. This was officially suppressed on the grounds that it took up too much of our time and the expense of having it printed professionally was too great for our slender resources. So Number 2 never appeared, and we had to wait until Mr Tesch handed over before we could continue our training in amateur journalism! A combined effort with other schools might well have led to bigger things and possibly an AES might have come into existence sooner.

B. A. COOPER.

The Caterpillars of the British Butterflies, by W. J. Stokoe and Dr G. H. T. Stovin.

Since the review of this book in *AES Bulletin* No. 68, pp. 46-7, April 1945, I have been asked for further information on its contents. Its shortcomings were treated somewhat exhaustively in the above, and I here intend to speak about those parts which are of especial value to AES members.

The first section of the book (Instructions and hints for rearing butterflies in captivity) is written by Dr Stovin. In it the reader will find everything he needs to know of the care of eggs, larvae, pupae and the newly-emerged adult. Several types of cage are discussed and welcome emphasis is laid on the construction of cages. Dr Stovin says: "One of the attractions of caterpillar raising lies in the fact that the

appliances required are of the simplest, whilst all the cages can be made by a handyman at very slight cost and with the expenditure of very little energy."

In the main body of the book the account of each species is commenced with an account of its distribution in Britain, and its habitats. The egg, larva and pupa are then described and, in most cases, illustrated; the illustrations of the eggs, in particular, are excellent. A list of the food-plants is included with the description of each species. At the end of the book is a comprehensive section of 60 pages dealing with the food-plants; there is an excellent, though hardly essential, black and white figure of each plant, a brief account of its distribution and habitats and a list of the caterpillars which will feed on it.

E. W. CLASSEY.

COLLECTING CLEARWINGS—4

Trochilium apiformis Cl. (Hornet Clearwing) is commonest in the Eastern Counties but occurs throughout England from Devon to Yorks, N. Wales, S. Scotland and Ireland. The caterpillar is to be found usually in large poplars and aspens but occasionally in those of smaller growth. It has also been reported from other trees. It prefers trees growing in isolated clumps and rows and there are usually many larvae in one tree. When feeding in quite small trees they often kill their hosts. The larva overwinters twice, thus, from eggs laid in 1946 adults will result in 1948. Infected trees are betrayed by protruding pupa cases just after emergence, and earlier by frass. As the larvae and pupae are to be found low down (often in the upper parts of roots) of large trees it is a difficult matter to obtain undamaged specimens of either and, if possible, it is best to rear this species from the egg. A captured female often lays a large number of tiny ova, which should be placed low down in chinks of bark of selected trees which should be searched two years later for freshly emerged imagines. A small tree growing in the garden serves the purpose well but suffers badly in the process. The imagines emerge in the early morning from June to August, and may be found newly emerged low down on trunks, sometimes in fair numbers. In dull weather the moth

often sits all day near its pupa case. In sunshine it soon flies and is then rarely seen.

Trochilium bembeciformis Hb. (Crabroniformis Lewin) (Lunar)

Hornet Clearwing) has a distribution much the same as the previous species but, in general, it is much commoner. The caterpillar feeds low down in the trunks of well grown willows, preferring those in marshy, shady places; it does, however, sometimes attack smaller stems and, when willows are cut down in winter or spring, the mines may often be seen. Larvae may be found in such cut stems and reared, but more often the mines are those of previous years. This species has also been recorded as attacking willows and poplars. The larva overwinters twice and, after gnawing the usual capped exit, forms a cocoon and pupates head upwards below the hole. The pupa may be found by patient search for capped mines; it lies a few inches from the exit hole and may be dug out with labour, a mallet and a strong chisel. This is not recommended. Both "Hornets" are more easily obtained in the adult stage than as larvae. Imagines are to be found from July to early August; they sit rather low down on trunks just after emergence until noon or even later in dull weather. They fly high round willows in sunshine and may be found *in cop.* on any part of the tree, including the foliage.

Sciapteron tabaniformis Rott. (Clear Underwing)

feeds, in the larval stage, on various species of willows and poplars, overwintering twice. The larva may be found in any part of the stem or branch, often making a slight swelling and extruding frass which betrays its presence. It often feeds in quite young poplar trees up to three inches thick, when it feeds low and extrudes copious frass. The pupa lies head upwards. The moth flies in June and July, being but rarely taken in Britain, but abundant in many localities abroad. This species is probably overlooked like many others of this group.

Dipsospechia scopigera Scop. (Aegeria ichneumoniformis Fb.)

(Six-belted Clearwing) is mainly to be found at the edge of chalk pits and on banks by the sea where its food-plants, the birdsfoot trefoil (*Lotus corniculatus*) and kidney vetch (*Anthyllis vulneraria*) abound. In

such places it is to be found throughout Great Britain as far north as Yorkshire. The larva overwinters once and feeds at the roots of its foodplant. It is very difficult to detect and this is one of the few species which are most easily obtained in the adult stage. The imago flies in sunshine round the foodplant. To detect its presence resort should be had to sweeping, which however usually yields only worn specimens. When found to be present one should proceed by careful search of grasses and stems on which the moth likes to sit. It especially likes the heads of the salad burnet (*Poterium sanguisorba*). The settled moths are easily netted and good specimens are thus obtained. This species is not too difficult to see on the wing.

E. W. CLASSEY (41).

WM. FASSNIDGE (293).

A PUPATION TIP

Very few larvae, in confinement, have the decency to spin up on the foodplant. The majority prefer the corners of the cage, and some with singular perversity select the hinges of the door or the lid. The former are difficult to remove when the cage is wanted for another batch; the latter by their anti-social action condemn their companions to starvation unless you take the risk of disturbing them at the critical moment of their metamorphosis. I have tried various ways of dealing with this nuisance, and I find the best is to transfer the larvae when fully-fed to muslin bags. The cocoons are easily removed (if necessary you can cut the muslin) and useful cages are not put out of action while you await the emergence of the moths. Of course, those kinds which pupate in earth must be moved to a trough containing earth or fibre.

JOHN MOORE (156).

WINGS v. STINGS

I suppose most of us know that many butterflies and moths are strongly attracted by the odour of trees infested by Goat Moth caterpillars (*Cossus ligniperda*). Such trees are visited by *iris* (Purple Emperor), and I know someone who captured five in one day as they flew round or alighted on the tree; but the butterfly you are most likely to

meet with in this way is the Red Admiral (*V. atalanta*), while wasps, bees and other insects also swarm on these trees. Well! here is a story told me by a friend which seems incredible, but is nevertheless quite true.

He and another naturalist came upon an infested tree, on and around which were crowds of Red Admirals, and a host of excited and pugnacious wasps who strongly resented the presence of their adversaries. A terrific fight was being waged, and the two friends stood spell-bound and watched the fray. The butterflies resting on the trunk turned and faced their enemies as they advanced. With wings folded, they waited for the right moment, and then down came their wings with a bang on the wasp and crushed it against the tree. The wasp dropped dead or badly stunned. Sometimes *atalanta* was not quick enough, and the wasp seized its prey. So the war went on, and upon the ground lay numerous wasps dead and dying, and many Red Admirals wounded and wingless. To me it seems marvellous that a butterfly possesses sufficient strength in its wings to crush a wasp, which usually takes a lot of killing. Have any readers ever witnessed a battle like this?

(REV.) W. O. W. EDWARDS (570).

To-day, September 11th, I have been watching Red Admirals feeding contentedly beside and amongst a host of wasps at a trickle of sweet liquid (?sap) smelling strongly of molasses—in fact, just like "sugar"—oozing from the bark of a large oak at Marske in Swaledale. Very rarely a wasp would bite at a Red Admiral, which merely flew away for a few moments. There were no casualties.

B. A. C.

ANY CURE FOR TROPICAL MOULDS?

I live in a very humid climate where the average humidity in the summer is over 80% and the annual rainfall over 200 inches. The result is that my collection of butterflies is every year in danger of being completely spoilt by mould which can, if unchecked, grow sufficiently to spoil a perfect specimen in a single day. Up to date I have been using six drops of creosote on a piece of cotton-wool attached to the head of a pin to keep

off the mould. The dose has to be repeated every two months to avoid mould forming. A very serious reaction of certain species is, however, caused by the creosote. In the cases of the green dusting on the wings of the glossy *Papilio*s, particularly *Papilio arcturus* and *Papilio paris*, the green colouring eventually goes yellow and the blue colour on the wings of *Xenocles* (*Paranticopsis*) disappears altogether and goes white, while the black colour of a very large number of species belonging to the *Satyridae*, particularly the *Lethes*, eventually, in less than a year, goes brown. I feel certain that these colour changes are due to the comparatively large amounts of creosote which must be used to prevent mould, since when specimens are kept in papers in tins with small amounts of creosote these colour changes do not occur. Can you possibly recommend me a better substitute than creosote to prevent mould and which will not cause the colour of specimens to become affected? Black and blue seem to be the colours most affected in butterflies and reds in moths. I will be most exceedingly grateful if you could let me have any advice you can on this subject—if possible, by Air-Letter—since some of my best specimens are getting ruined. If you can give any alternative to creosote, please be kind enough to give me full details of how to use it. The only other chemical I use in my storeboxes besides the creosote is, of course, camphor.

R. E. PARSONS, F.R.E.S.,
"Hopedale,"

Shillong, Assam, India.

SOME MIGRANT RECORDS

The year 1945 has been remarkable for the abundance of several species of scarce immigrant Lepidoptera, notably the Bath White (*P. daphidice*) and the Bordered Straw (*H. peltigera*), as well as most of the commoner migrants that visit these islands. While we have not the space in the *Bulletin* for a full report, one is being prepared by Captain Dannreuther, and will be published elsewhere, separately, if possible, being sent to all those who have sent him their records. As we have stated before, we would prefer that records of migrants were addressed to him at Windcroft, Hastings, Sussex, rather than to the Editor.

The Bath White — B. L. ELLIS (772*) writes: "To-day, July 14th, I was searching for Privet Hawk larvae when suddenly I noticed in the meadow that I was in a good few white-coloured butterflies, like Orange Tip females. I saw one settle on a flower (wild mustard) and having no net I caught it with my hands and found it to be a male Bath White. Seeing others about, I ran home for my net and managed to secure two more males, seven perfect females, and three partly damaged females, thirteen in all. I am keeping one of the damaged females and one male and am trying to breed them."

D. H. STERLING (84) tells how this species is abundant in the Middle East, where he has been in the habit of meeting it commonly fluttering around roads in open country. He continues: "On the morning of August 3rd I was walking by an overgrown blitzed site near the centre of Exeter, with a slight morning-after-the-night-before feeling and my mind rather far away from entomological matters. A white butterfly settled on a nearby flowerhead and I glanced down and thought 'rather a nice specimen of *daphidice*.' I must have walked on a good twenty yards before I suddenly came to earth and realised I was in England and far from the normal haunts of the species. I went back and searched around, but it had disappeared and I have been sadly coming to the conclusion that I should have to relegate it to the realm of pink elephants."

Later, Mr Sterling wrote again: "I saw a further specimen near Exeter High Street on August 27th. It emerged from a side street to the main road, with myself in hot pursuit, hat in one hand and cane in the other, much to the consternation of the good citizens of Exeter just going to their lunch. After a hit, the butterfly kindly deviated from the main road over some bombed ruins and I was able to run it down without too large a gathering of on-lookers. Fortunately, in spite of the rough handling, the specimen had not suffered any damage to speak of. I only wish that my person and my reputation had suffered as lightly! I saw two more on the same bit of ground, but had suffered enough in the cause of science for one day. On August 28th I put my kite net in my pocket when passing the same spot, and managed to get in about

ten minutes' collecting before the crowd of spectators became too large. In that short time I saw five specimens and netted three. During a similar period on August 30th I took one and saw three specimens."

W. WALDER (102) took a female at Hove, Sussex, on August 9th, and **N. T. EASTON** (370) took sixteen at Poundstock the previous week. On August 11th **T. J. LLOYD** (824*) took a worn male near Filleigh, on the banks of the River Bray, North Devon, by knocking it down with the butt of his gun. Several hundred have been seen or caught in the southern counties altogether this year.

Painted Lady—**B. L. ELLIS** (772*) writes: "In early April I saw several swarms of *Vanessa cardui* coming in from sea and dispersing along the coast. I happened to net a few but they all had rather ragged wings so released them again. For nearly a month they seemed extremely common, and then suddenly they disappeared. But now (25/6/45) the larvae are on nearly every thistle plant in this area. I have hatched at least thirty perfect specimens out of the pupa already." **N. W. HARWOOD** (825) took fifteen specimens at Redcar Sandhills, N.R., Yorks., on August 5th. **P. MICHAEL** (748) records seeing (6/6/45) a specimen at Heliopolis, near Cairo, Egypt, flying steadily in a N.W. direction. At Almaza, near Heliopolis, 9/9/45, he saw another worn specimen fly in from S.S.W. to rest at flowers. The species appeared absent during the intermediate period.

Long-tailed Blue—**M. PARR** (779*) records taking a slightly tattered *C. boeticus* on July 24th, 1945.

Clouded Yellow—**L. H. WILLIAMS** (703*) records seeing three *C. croceus* at Newquay, Cornwall, and three others at Paignton, Devon, in August. **R. GORER** (659) observed four specimens near Canterbury, and **P. H. HOLLOWAY** (429) saw many specimens near Eastleigh on August 5th.

Pale Clouded Yellow—**R. GORER** (659) took two *C. hyale* in the same district on July 28th, and saw a third one on August 10th. **P. H. HOLLOWAY** (429) took six males and two females in a lucerne field near Eastleigh, Hants., seven being on August 5th.

Humming-bird Hawk—**L. H. WILLIAMS** (703*) saw seven *M. stel-*

latarum in the Reading district, and literally hundreds at Newquay, Cornwall, and Paignton, Devon, during August.

Convolvulus Hawk—**P. H. HOLLOWAY** (429) took (15/8/45) a worn *H. convolvuli* resting by day on a post at Eastleigh, Hants. **D. S. HORNER** (699*) was given another, also at Eastleigh, which had flown in at a window on September 10th, evening. **L. H. WILLIAMS** (703*) took nine specimens as they hovered at dusk over tobacco flowers in Newquay, Cornwall (September 4-6th). A fortnight earlier he found a worn specimen on a post at Reading, Berks., in the daytime.

Death's-head Hawk—**P. MAGGS** (244) took a specimen of *A. atropos* at light at Lymington, Hants., on August 23rd, 1945.

Camberwell Beauty—**B. READWIN** (820) sends newspaper cuttings recording the seeing of a specimen of *N. antiopa* at Paglesham, Essex, on August 18th, and the capture of another at Binham, Norfolk, on August 13th.

The Vestal—**P. MAGGS** (244) took at light at Lymington, Hants., on August 21st, 1945, a very fresh male of *S. saccharia*.

Dragonflies—**N. W. HARWOOD** (825*) netted a male *Sympetrum flaveolum* on Redcar Sandhills, N.R., Yorks., on July 25th. On August 4th he caught one female and two more males, and saw five more, at Dunsdale Marsh, N.R., Yorks.

It is hoped that members who have not yet done so, will send Capt. Dannreuther records of other migrants they have seen, and particularly of directional flights of the commoner species like *P. brassicae* (Large White), *V. atalanta* (Red Admiral) and *P. gamma* (Silver Y), which have been exceptionally abundant in many places this year. Capt. Dannreuther will be pleased to supply them with cards for entering their records, and other literature, on request.

A *Leaflet* on British insect migrants is being prepared for publication next year. Good photographs of living (unset) adults of many species are greatly wanted in illustration. If any members have suitable photographs available, the Editor would appreciate it if they would send him a list of what they can offer, if possible with rough prints (which will be returned).

B. A. C.

URTICATING CATERpillARS

In answer to Pamela Bain's query (*AES Bulletin*, No. 68, p. 48, April 1945) asking for a remedy for swellings caused by contact with the urticating hairs of certain caterpillars, I can recommend the liberal dabbing of TCP on the affected parts with cotton wool. Last year I suffered a severe attack after changing the food in a cage of Yellow Tail (*P. similis*) larvae, without actually having touched any larvae. After applying TCP all irritation had ceased within half-an-hour, and the rash had disappeared in three hours.

F. L. HODGSON (580).

17/4/1945.

THE GREEN HAIRSTREAK

I was interested to read M. P. Siddons' record (*AES Bulletin*, No. 68, p. 46, April 1945) of finding *Callophrys rubi* feeding on heather. In western Argyll and Inverness-shire I have frequently found the larvae feeding on the cross-leaved heath (*Erica tetralix*), its colour and markings blending very well with the foliage. I have never found it on bilberry or broom in the district, though both occur, and I think the heath must be its main foodplant there.

DR D. A. B. MACNICOL (67).

21/5/1945.

PREDATORS OF VANESSIDS

Richard South, in "Butterflies of the British Isles," p. 72, speaking of the Peacock Butterfly (*N. io*) says: "It does not seem to be very clearly known where the caterpillars retire to for pupation." In investigating this during the past three years, I have in part learnt what takes place—the majority never get as far as pupation!

This season I have watched five separate broods of this butterfly. One of these I took—42 larvae in all—and they all pupated, 39 of them coming out as perfect butterflies. Of the remaining four broods, all reached the stage for pupating, and yet, out of 40-50 larvae in each, only four reached the chrysalis stage. In fact, one brood disappeared overnight. This is what I am quite certain of: they do not hide themselves at all, but during the period of hanging from the stalk prior to pupation they are attacked by beetles and spiders. The spider is not a large one, but is very

active at night; it has a yellow body and I have watched it crawling over the caterpillars at night. The beetle looks to me like the Burying Beetle (*Necrophorus*) but I am not sure. I am now rearing a brood of the Small Tortoiseshell (*A. urticae*) and also watching another brood in my garden to find out if the same thing happens to them.

C. T. NUNN (523)

(Have you watched the spider or beetle eating the fully-grown larvae? Could you not, by rearing both in captivity, ascertain whether these are the real culprits? Have we any member who could identify the spider for you?—we have an Adviser who could name the beetle for you.

B.A.C.).

OBSERVATIONS

The Silver Cloud in Glos. — From an assortment of pupae dug last winter under elm near Tewkesbury, Glos., I have hatched three specimens of *Xylomania conspicillaris*. This scarce moth has lately been reported more frequently from Glos., and may be getting commoner.—JOHN MOORE (156).

Records from Berks. — I have caught two *Plusia chryson* (Scarce Burnished Brass) near Reading, Berks., the first during the daytime in 1943 and one this year at light. I also caught a rather battered *Hydraecia petasitis* (Butterbur Ear) at light in Berkshire.—PAUL F. MILNER (521*).

Large Tortoiseshell at Aldershot—This spring I saw one specimen flying, and my wife is pretty certain that a butterfly she saw in the garden was another, of *N. polychloros*. This was on the N.E. Hants.-Surrey border.—PETER MICHAEL (748).

Blomer's Rivulet in Salop.—I took a fresh specimen of *D. blomeri* in Tick Wood, Buildwas, this summer. It is quite common in some seasons on the Wrekin. I also saw a specimen of the Speckled Wood (*P. aegeria*) in a suburban garden at Northwood, Mddx.—J. H. PLATTS (515*).

Ruby Tiger in S. London—In mid-July I caught a *P. fuliginosa* at light in Wallington, Surrey. Has this species increased during the years of blackout in London suburbs?—B. W. CAMPION (762*).

Purple Hairstreak Gynandromorph—While collecting *T. quercus* in Salcey, Northants, on July 15th, I obtained an interesting gynandromorph of this species. The right forewing is typical of the female; the left forewing has the usual blue patch of the female and the rest has the purple sheen of the male; the right hindwing is of the male marking except for a strip along the costal margin which is grey as in the female; the left hindwing is male except for a streak of grey running from the body to the tail. Fortunately it is in good condition.—S. W. HUMPHREY (386).

High-Brown Fritillary — I took a nice lot of *cydippe* last Saturday and several have no green scales on the underside of the lower wing. Is this exceptional? Neither South nor Frohawk seem to mention it.—L. W. SIGGS (243).

Speckled Footman in Hants. — On June 2nd of this year a specimen of *Coscinia cribraria* was taken at light by my friend Mr P. W. E. Batstone at Chandlersford, Hants. It is of the type lacking the black line on the forewings. As a resident species only three localities are known, the nearest probably between ten and twenty miles from where this was taken. There is no heather in the district, among which it is usually found.—PAUL H. HOLLOWAY (429). (It is not true to say that the species is only known from three localities in Britain; I have myself taken the moth freely in three spots, several miles apart, in Dorset, one of which is possibly the "heath near Bournemouth" referred to by South. In another of these places there are but a few sprigs of heather, hardly sufficient to support the number of moths which undoubtedly breed there. I have had no opportunity of studying the feeding habits of the larvae, but my impression is that, though local, the species is more widespread in Hants. and Dorset than is commonly thought.—B.A.C.)

Privet Hawk Foodplant—This year I have found *S. ligustri* larvae on four *Viburnum lantana* bushes.—ERNEST L. BEAN (115).

Larval Skin Outside Cocoon—Having just reared the Scalloped Hook-tip (*D. lacertinaria*), I was surprised to find that the larval skin was *outside* the cocoon which was spun up between birch leaves. On examining

the cocoon I found an aperture at the bottom or thin end where the skin had apparently been forced through. Since no reference is made to this by W. E. Kirby or by South, I mention it as a point of interest.—ERNEST L. BEAN (115).

EMPEROR SILKMOTHS

In the *Silkmoth Rearing's Handbook* the natural foodplant of *Saturnia spini* is said to be sloe. Here in Italy, however, out of ten broods under observation, seven fed on bramble, two on hawthorn, and one brood only on sloe; yet sloe was common everywhere. Cocoons also were found among fallen bramble leaves.

The Great Emperor (*Saturnia pyri*) is stated always to spin low down and in an upright position in the wild; but this year I found eleven (empty) cocoons spun horizontally under the wooden eaves of barns and outhouses, in some cases ten feet up.

A. H. WRIGHT (355).

3/6/1945.

THE CABBAGE MOTH

Fifteen larvae of *M. brassicae* pupated more or less simultaneously at the end of October 1944. Though kept in an unheated room, the first moth hatched on April 26th, 1945. Thereafter the imagines appeared at the following intervals: April 27th; May 7th; May 23rd; May 26th (two); May 31st; June 1st; June 9th (two); June 11th (three); June 13th; June 19th. Thus the emergences were spread over a period of nearly two months.

JOHN MOORE (156).

THE COPPER UNDERWING

Neither South nor A. G. Scorer (*Entomologists' Log Book*) mentions sycamore as a food-plant of *A. pyramidea*. In this district (Bredon Hill) sycamore appears to be the chief food-plant, and you find twelve caterpillars upon it for every one on other trees. However, in default of sycamore it seems to feed on almost anything it can get, and I have beaten full-fed larvae from hazel—another food-plant not mentioned in the books. Incidentally, Scorer states that it pupates "in a cocoon on the ground." This is certainly not so in confinement, when it invariably spins up between leaves.

JOHN MOORE (156).

JUST PUBLISHED

AES LEAFLET No. 16: "Making a Sweepnet," by L. G. F. Waddington and B. A. Cooper (5 pp., including 6 line and 2 half-tone figures, 4d post free, 2/6 per doz.) gives details on the construction of eight patterns of sweepnet, with some experiments to compare the utility of the light and heavy patterns.

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Vol. 6 of the "Bulletin of the Amateur Entomologists' Society," edited by Beowulf A. Cooper, B.Sc., A.R.C.S., Dept. of Agriculture, The University, Leeds 2, to whom all contributions, exchange notices, illustrations, advts, announcements of change of address, etc., for publication, should be sent. Bulletins are issued free to members. First subscriptions to the AES (5/-, 2/6 to boys and girls aged 18 or under) should be sent to the Hon. Assist. Secretary, D. H. Sterling, 36 Estella Avenue, New Malden, Surrey, and subsequently to the Hon. Treasurer, C. H. Hards, 40 Riverdale Road, London, S.E.18. Data labels and publications of the Society (except Bulletins) may be obtained from Hon. Business Manager, G. A. Roberts, 53 Broadway, Fulford, York, or from the Editor. Membership Application Form, specimen Bulletin and information as to the work and publications of the Society will be sent on receipt of threepence by the Hon. Advertising Secretary, A. M. Walton, F.R.E.S., 275 Croxted Road, London, S.E.21. Records of the capture or observation of migrant insects should be sent to Capt. T. Dannreuther, Windycroft, Hastings, Sussex.

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LIST OF MEMBERS

OCTOBER 1945

The highest membership number included in this list is No. 876.

The addresses given below are those home or permanent addresses from which AES communications will be forwarded to any temporary abode (e.g., school or military address) of members likely to move about. Members are asked to notify the Editor of their change of permanent address, for publication in the *Bulletin*, and so that the Poster's card-index, from which this list is compiled, may be kept up to date. Members having other biological interests than those given here are also asked to send him details, for guidance in recommending suitable correspondents to new members.

Junior Members are symbolised by an asterisk (*), and the list has been prepared from the Application Forms sent in by members on joining, comprising all members who were aged 18 or less on January 1st, 1945.

Members are asked to mention their membership number, given in brackets after their name and initials, in all AES correspondence.

The following abbreviations are used:—

agric.=agricultural

aq.=aquatic

B.=biology

C.=Coleoptera (beetles)

D.=Diptera (flies)

E.=ecology

econ.=economic

ent.=entomology

esp.=especially

exot.=exotic

fw.=freshwater

gen.=general

H.=Hymenoptera (ants, bees, wasps, sawflies, parasites)

Hem.=Hemiptera (bugs)

Het.=Heteroptera (het-bugs)

Hom.=Homoptera (hom-bugs)

L.=Lepidoptera (moths and butterflies)

M.=migration

mic.=microscopy

ML.=Microlepidoptera

NH.=natural history

O.=Odonata (dragonflies)

ornith.=ornithology

P.=photography

R.=Rhopalocera (butterflies)

Z.=zoology

Ordinary Members

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- Briegel, R. H. (539), 141 Burnt Oak Lane, Sidcup, Kent. (L.)
- Briggs, J. (832), 15 Frimley Drive, Little Horton, Bradford, Yorks. (L., C.)
- Britton, Mrs L. M. (108), 13 Ansthorpe Road, Cross Gates, Leeds. (L.)
- Broadhurst, Rev. J. J. (210), St Peter's Vicarage, Newton-le-Willows, Lancs. (L.)
- Brook, C. J. (776), 10 Southdown Avenue, Coppice Estate, Lower Willingdon, Sussex. (C.)
- Brooker, A. (540), 12 Baron Close, Elland Road, Leeds 11. (L., econ. ent.)

- Brooks, M. J. (639*), 77 Rossall Road, Cleveleys, Lancs. (L.)
- Broome, R. R. F.L.S., F.R.E.S. (653), 47 Keswick Road, Boscombe, Bournemouth, Hants. (salmon and trout fisheries, aq. ent., botany.)
- Broughton, J. E. (437), 14 Easedale Road, Heaton, Bolton, Lancs. (L., rearing.)
- Brown, C., B.Sc., M.Ed. (704), 12 Orchard Road, Anlaby Park, Hull, Yorks. (L.)
- Brown, Act. Sub. Lt. J. P. H., R.N. (290), 81 Warminster Road, Bathampton, Bath, Som. (L.)
- Brown, S. C. S. (532), 454 Christchurch Road, Bournemouth, Hants. (ML., H.)
- Browne, Prof. Frank Balfour, F.R.S. (340), Brocklehurst, Collin, Dumfries, Scotland. (gen. ent., aq., C.)
- Bruce, D. J. (786*), 12 Shepherd's Way, Rickmansworth, Herts. (L., C.)
- Brunsdon, J. R. (759*), Westminster Bank House, Westerham, Kent. (L., esp. breeding.)
- Bryant, D. C. (512*), 107 Delamere Road, London W.5 (R.)
- Bryerley, B. L. J. (788), 48 Elmgrove Road, Harrow, Mddx. (C.)
- Buckler, H. A. (334), Sutton Bassett, Market Harborough, Leics. (L., ML.)
- Bull, Dr G. V. (160), White Gables, Sandhurst, Kent. (L.)
- Bullamore, G. W. (857), Woolton Hill, Newbury, Berks. (gen. ent.)
- Burnaby, R. (489*), 28 Elsworthly Road, London N.W.3. (C.)
- Burton, J. S. (798*), 36 Regent Road, Surbiton, Surrey. (gen. ent., esp. L.)
- Burton, W. V. (179), 18 Terminus Road, Sheffield 7. (L.)
- Butler, R. W. (724*), 14 Merlin Road, Welling, Kent. (gen. ent.)
- Butler, S. H. (726), 14 Merlin Road, Welling, Kent. (L.)
- Byers, F. W. (137), 59 Gurney Court Road, St Albans, Herts. (L.)
- Bywater, H. C. I. (432*), Sandal Cottage, Appleby, Westmorland. (L., Neuropt., O., C.)
- Calverley, W. J. (596), 267 Park Road, Sittingbourne, Kent. (insect B.)
- Campbell, J. D. (718), Bleak House, Navenby, Lincoln. (L.)
- Campion, B. W. (762*), 13 Guy Road, Wallington, Surrey. (L.)
- Capener, A. L. (6), St George's Home for Boys, P.O. Cleveland, Johannesburg, S. Africa. (Hom. except Aphididae and Coccidae, Myrmeleionidae, gen. ent.)
- Cardew, Col. P. A., F.R.E.S. (251), 21A Thornton Hill, London S.W.19. (L.)
- Carpenter, Prof. G. D. Hale, M.B.E., D.M. (666), Hope Department of Entomology, University Museum, Oxford. (bionomics.)
- Carter, D. (758*), 11 Bourne End Road, Northwood, Mddx. (C. esp. Geodephaga, NH.)
- Carter, W. A. (717), 11 Bourne End Road, Northwood, Mddx. (Acarina.)
- Cartwright, H. B. S. (390), The Rectory, Kegworth, nr. Derby. (L.)
- Cater, H. R. St. Clair (587), Hergest Mill, Kington, Herefordshire. (O., silkmths.)
- Chamberlain, Miss E. (674), 94 Gillespie Road, Highbury, London N.5. (L.)
- Chambers, A. E. C. (450), 36 Watergate, Grantham, Lincs. (L.)
- Champion, A. F. (777*), 1 Cornwall Close, Barking, Essex. (L.)
- Charlson, S. (520), 112 Manchester Road, Tyldesley, Manchester. (ML., M.)
- Chipperfield, H. E. (64), 27 Chilton Avenue, Stowmarket, Suffolk. (L.)
- Christianson, W. A. (170), Room 5, N.P. Depot, Brainerd, Minnesota, U.S.A. (tropical L.)
- Christie, Laurence (710*), 65 Rowan Road, London S.W.16. (L.)
- Clarke, G. J. (579*), 3 Harcourt Road, Wallington, Surrey. (L.)
- Clarke, L. B. (157), Turkey Hall, Eldersfield, Glos. (L., beekeeping, agric. ent.)
- Classey, E. W., F.R.E.S. (41), Salisbury House, Salisbury Grove, Mytchett, Surrey. (L., mosquitoes.)
- Clements, A. N. (505*), 9 Clifford Avenue, Taunton, Som. (D., econ. ent., gen. ent.)
- Cockayne, Dr E. A. (238), Merstone, Tring, Herts. (L.)
- Cockerell, Prof. T. D. A. (687), 908 10th Street, Boulder, Colorado, U.S.A. (gen. ent., H.)
- Coggon, J. G. (582), 20 Oswald Street, Millfield, Sunderland, Co. Durham. (L.)

- Coghill, K. J., B.Sc. (430), Men's Hostel, C.S.A., Reaseheath, Nantwich, Cheshire. (gen. ent.)
- Cole, D. F. (644*), 79 Manor Road, Erith, Kent. (rearing L.)
- Coleridge, Lt. Col. P. L. (239), Marden Ash, Teignmouth Road, Torquay. (L.)
- Collins, J. A. (753*), Brooklyn, Flowery Leys Lane, Alfreton, Derbyshire. (agric. and gen. ent.)
- Collins, R. J. (256), Entomology Dept., Natural History Museum, Cromwell Road, London, S.W.7. (L. esp. world Geometridae.)
- Collyer, N. A. B. (132), 27 Guildford Way, Wallington, Surrey. (L.)
- Colyer, Lt. C. H., R.A. (404), 8 Canning Court, Newnham Road, London N.22. (D.)
- Cooper, Beowulf A., B.Sc., A.R.C.S. (19), The Vicarage, Northallerton, Yorks. (gen. ent., L., M., E., econ. ent., C. esp. Elateridae.)
- Cooper, Mrs G. M. R., B.Sc. (447), The Vicarage, Northallerton, Yorks. (B.)
- Cooper, T. A. (617), 66 Elmstead Gardens, Worcester Park, Surrey. (C., L.)
- Copley, J. A. (802*), Ashgrove, Tollard Royal, Salisbury, Wilts. (Nymphalidae, Hawkmoths.)
- Corkill, A. G. L. (805*), Greencroft, Shute Hill, Bishopsteignton, S. Devon. (L.)
- Cotton, W. David S. (852*), Ebbisham, Walton-on-the-Hill, Tadworth, Surrey. (L.)
- Cotton, A. John S. (853*), Ebbisham, Walton-on-the-Hill, Tadworth, Surrey. (L.)
- Cove, Miss I. M., B.Sc. (612), Avery Hill Training College, Sandy Mount, Crosland Moor, Huddersfield, Yorks. (B., gen. ent.)
- Cowley, J., M.A., F.R.E.S. (771), Holywell House, Edington, Bridgwater, Som. (O)
- Cox, A. D. L. (749), Edale, Ipswich Road, Colchester, Essex. (C.)
- Cox, A. W. (283), 16 Raymere Gardens, London, S.E.18. (L.)
- Coxey, S. (358), 8 Wyresdale Road, Bolton, Lancs. (L.)
- Crapnell, V. S. (829), 57 The Grove, Hipperholme, Halifax, Yorks. (gen. ent., ornith.)
- Craufurd, C. (677), Denny, Galloway Road, Bishop Stortford, Herts. (L.)
- Cripps, C. H., B.A. (730), Bull's Head Farm, Eakley Lanes, Stoke Goldington, Bletchley, Bucks. (L., esp. R.)
- Crisp, E. (668), High Street, Heathfield, Sussex. (gen. ent.)
- Croucher, J. A. (671*), 6 Westbrook Road, London S.E. 3. (L.)
- Crow, P. M. (393), Heathcote, Cookham Dean, Berks. (L.)
- Cruttwell, G. H. W. (118), Rowden House, Frome, Som. (L.)
- Curd, O., F.Z.S. (129), Elsinore, Whiston Lane, Prescott, Lancs. (L.)
- Dale, W. E. (42), 54 Baldwyns Park, Bexley, Kent. (L.)
- Daniels, E. T. (53), 334 Dereham Road, Norwich, Norfolk. (O., Hem.-Het.)
- Dannreuther, Capt. T., R.N. (60), Windycroft, Hastings, Sussex. (M.)
- Davidson, A. R. (575), 2 Foster Road, Formby, Liverpool. (gen. ent., L.)
- Davie, R. H. (648*), Attenboro, The Drive, Chorley Wood, Herts. (L.)
- Davies, K. (713*), 39 Galgate, Barnard Castle, Co. Durham. (B., NH., L.)
- Davies, M. J. (760*), 277 Surbiton Hill Park, Surbiton, Surrey. (C.-Geodephaga.)
- Davis, Miss Nita (681*), 17 High Street, Aylburton, nr. Lydney, Glos. (L.)
- Davis, T. W. (766), 43 Parkside Way, N. Harrow, Mddx. (mosquitoes, mic.)
- Dawson, D. (664), 6 Elan Road, Llanishen, Cardiff, S. Wales. (horticultural ent.)
- Day, G. V. (29), Furlong Road, Stoke Ferry, King's Lynn, Norfolk. (L.)
- Dean, J. T. (854*), Glenilex, Sunnydale Road, Swanage, Dorset. (L., gen. ent.)
- Deimel, I. R. (410), Iona, Bures Road, Gt. Cornard, Sudbury, Suffolk. (L.)
- Devenish, L. R. (246), 23 Grosvenor Road, E. Grinstead, Sussex. (L., gen. ent.)
- Devenish, R. C. (501), 23 Grosvenor Road, E. Grinstead, Sussex. (L.)
- Dew, H. G. (667), Poplar Lodge, Green Lane, Freshfield, Lancs. (C.)
- de Worms, Baron Charles, Ph.D., F.R.E.S. (260), Milton Park, Egham, Surrey. (L.)

- Dexter, S. (847), Riverside, St Dogmaels, near Cardigan. (gen. ent.)
- Donne, M. J. (421*), 10 Nizells Avenue, Hove 2, Sussex. (B., L., C., mic.)
- Down, C. L. (59), 7 Mersham Drive, London N.W.9. (L.)
- Driver, H., B.Sc. (557), 16 The Crescent, London Road, Northwich, Cheshire. (L., ML., H., bee-keeping.)
- Duffy, E. A., F.R.E.S. (200), c/o Salisbury House, Salisbury Grove, Mytchett, Surrey. (C., esp. C. larvae, aq. ent.)
- Duncan, S. (280), Lone Pine, Anlaby, Yorks. (L.)
- Durnford, G. K. (707), 9 Stockwell Park Crescent, London S.W.9. (L., C.)
- Durnford, Veronica (708*), 9 Stockwell Park Crescent, London S.W.9. (L.)
- Dyson, R. C., N.D.H., F.R.E.S. (91), 112 Hollingbury Park Avenue, Brighton 6, Sussex. (L., food-plants.)
- Eade, G. J. (190), 3 Rutland Road, Hove 3, Sussex. (L.)
- Eade, W. (374), 8 Nizells Avenue, Hove 2, Sussex. (C., L.)
- Eagles, T. R. (194), 32 Abbey Road, Enfield, Mddx. (L.)
- Easton, Nigel T., F.R.E.S. (370), 25 Lambolle Road, London N.W.3. (L., NH., P.)
- Eberlie, W. J. D. (70), Brooke House, Crawley Green Road, Luton, Beds. (L., O.)
- Edelsten, H. M., F.R.E.S. (208), Bramble Hill, Balcombe, Sussex. (L.)
- Edwards, J. (844), 81 Hassam Parade, Newcastle, Staffs. (O., D.)
- Edwards, Miss M. (765), College Hall, Malet Street, London W.C.1. (H., L.)
- Edwards, Canon T. G., M.A., F.E.S. (754), Holy Trinity Vicarage, London S.W.2. (gen. ent., esp. L.)
- Edwards, Rev. W. O. W., M.A. (570), Moor View, Links Road, Budleigh Salterton, Devon. (L.)
- Ekins, Miss G. M. (642*), 17 Croyland Road, Wellingborough, Northants. (gen. ent., botany, ornithology, geology.)
- Elliot, John H. (530), 45 St Olaves Road, Bootham, York. (H.)
- Ellis, B. W. (772*), The Ship Inn, Mousehole, Penzance, Cornwall. (L.)
- Empson, D. W. (780), 70 Highmoor Road, Caversham, Reading. (gen. and econ. ent.)
- England, W. E. (183), 7 Tea Garden Terrace, Sheffield 4. (L.)
- Entrican, Miss M. C. (764), Heather-ton House School, Chesham Bois, Bucks. (L.)
- Evans, B. M. (846*), 53 Woodstock Road, St Albans, Herts. (breeding L.)
- Essenhugh, F. C. L. (675), Brockhampton Council School, Bringsdy, Worcester. (L.)
- Esslemont, I. (775*), 3 Newlands Crescent, Aberdeen. (mosquitoes, water beetles, O.)
- Eyre, H. R. (789*), 69 Harford Drive, Watford, Herts. (L.)
- Fairbairn, W. J. (443), Northfields, St Abb's, Berwickshire. (L.)
- Fairclough, R. (528), Blencathra, Deanoak Lane, Leigh, Surrey. (L., ornithology.)
- Fassnidge, W. (293), 4 Bassett Crescent West, Southampton. (ML., Neuroptera, Trichoptera.)
- Featherstone, P. (469*), 6 Stafford Road, Tonbridge, Kent. (L., ML., M.)
- Ferry, R. S. (207), Fulling Mill House, Welwyn, Herts. (gen. ent., L.)
- Field, M. J. (781), 85 Castleton Avenue, Wembley, Mddx. (agric. ent.)
- Finch, R. (768*), Brownhill, Ashinground Road, Hayward's Heath, Sussex. (L., esp. Spingidae.)
- Finlay, J. F. (806*), The Gables, Honiton, Devon. (L.)
- Finlay, Capt. R. A. L., M.B.E. (229), 9 Hermitage Gardens, Edinburgh 10. (gen. ent.)
- Flack, G. S. (767*), 1 Warwick Avenue, Bedford. (L., O.)
- Fletcher, T. (725*), Newlynlds, Ash, Surrey. (gen. ent.)
- Fletcher, T. Bainbrigge, F.R.E.S. (52), Rodborough Fort, Stroud, Glos. (L., ML., gen. ent.)
- Flint, J. F. (778*), Eventide, London Road, Datchett, Bucks. (gen. ent.)
- Fluck, G. G. (569), Redroof, Reading Road, Fleet, Hants. (L.)
- Ford, Rev. G. A. (377), Balsham Rectory, Balsham, Cambs. (L.)
- Ford, R. L. E., F.R.E.S., F.Z.S. (527), Durfold, Parkhill, Bexley, Kent. (H.)
- Forrow, Miss Y. M. (517*), 153 Station Road, London N.W.4 (L.)

- Fox, T. H. (105), 226 St Albans Road, Watford, Herts. (L., breeding.)
- Fraser, Mrs G. de C. (457), Warren Mount, Freshfield, Liverpool. (L.)
- Fraser, G. de C. (621), Warren Mount, Freshfield, Liverpool. (L., C.)
- Freer, Rev. Walter L. (366), Evershot Rectory, Dorset. (L.)
- Gardiner, B. O. C. (225), The Red House, River-in-Dover, Kent. (L., Neuroptera.)
- Garner, E. R. (733*), 16 Carlow Road, Prenton, Birkenhead, Cheshire. (L.)
- Garstang, Miss D. M., N.D.H. (622), Studley College, Studley, Warks. (gen. ent., econ. ent., L., H.)
- Gent, P. J. (192), 34 Castle Street, Wellingborough, Northants. (L.)
- Gerard, Hon. R. (359), Blakesware, Ware, Herts. (L.)
- Gibson, Miss E. M. (311), Ashcroft Station Road, Petersfield, Hants. (L.)
- Gidman, C. C. (362), 25 Fairclough Road, Accrington, Lancs. (L., C.)
- Gilmour, E. F. (870), East View, Pickford Street, Milnsbridge, Huddersfield, Yorks. (C.)
- Glanfield, A. (2), Devoncote, Darlington Road, Hartburn, Stockton-on-Tees, Co. Durham. (L., Brit. and foreign)
- Goddard, T. D., F.R.E.S. (841), Long Hoyle Farm, Heyshott, Midhurst, Sussex. (L.)
- Goodall, Miss M. D. (807*), 47 Stratford Avenue, Ryhope Road, Sunderland, Co. Durham. (L., aq. ent., garden insects.)
- Goodban, B. S. (217), 81 West Street, Ewell, Epsom, Surrey. (L.)
- Goodbody, I. M. (484), Warriston, Glengearry, Co. Dublin, Eire. (L., H.)
- Goodson, A. L. (241), 26 Park Road, Tring, Herts. (L.)
- Gorer, Dr P. A. (676), Little Pett Farm, Bridge, near Canterbury, Kent (phone Bridge 200). (genetics of L., local variation.)
- Gorer, R. (659), Payne Street, Charing, Ashford, Kent. (L.)
- Grant, J. H. (330), 74 Coleshill Road, Ward End, Birmingham. (L.)
- Grant, R. M. (163), 31 High Street, Sheerness, Kent. (L.)
- Gratton, J. B. (737*), 8 Cheltenham Crescent, Broughton, Salford 7, Lancs. (L.)
- Gray, Dr. Elizabeth G., Ph.D. (332), N. Scotland College of Agriculture, 41½ Union Street, Aberdeen, Scotland. (mycology, B.)
- Green, E. J. (387), 58 Ufton Road, London N.1. (medical ent.)
- Green, E. M. B. (821*), Sherington Rectory, Banbury, Oxon. (L.)
- Green, W. (840*), 30 Neville Drive, Thornton-le-Fylde, Lancs. (gen. ent.)
- Greenwood, C. (312), Two Barns, West Town, Bristol. (L.)
- Greenwood, R. S. (757*), 22 Maidstone Road, Rochester, Kent. (L.)
- Gregory, D. (769), 47 Grenville Gardens, Woodford Green, Essex. (gen. ent.)
- Greig, G. D. S. (10), 65 Cavendish Drive, Rockferry, Cheshire. (L.)
- Gyselman, G. (218), 84 Gamble Road, Thornton, Blackpool, Lancs. (L.)
- Hadden, N. G. (586), Underway, West Porlock, Som. (L.)
- Hadley, J. H. T., B.A. (638), 1 The Shrubbery Terrace, Weston-super-Mare, Som. (L.)
- Hamerton, T. L. (657*), 35 Bodley Road, New Malden, Surrey. (L., C., O.)
- Hammond, H. E. (423), 16 Elton Grove, Acocks Green, Birmingham 27. (ent., L., life-histories.)
- Hanson, S. M. (320), 167 Gunnersbury Park, Popes Lane, London W.5. (L.)
- Hards, C. H. (176), 40 Riverdale Road, London S.E.18. (L. mic.)
- Harley, J. M. B. (541*), 18 Leighton Avenue, Pinner, Middx. (L.)
- Harrison, Prof. J. W. Heslop, D.Sc., F.R.S., F.R.E.S. (716), Gavarnie, The Avenue, Birtley, Co. Durham. (gen. ent., L., biogeography.)
- Harvey, Rev. B. F. (537), 12 Osney Gardens, Paignton, S. Devon. (L. esp. R., Sphingids.)
- Harwood, N. W. (825), 67 Swaledale Crescent, Billingham, Co. Durham. (L., P.)
- Harwood, P. (273), Loch Alvie Cottage, Aviemore, Inverness-shire. (Heim.-Hom., H. Aculeata.)
- Haynes, R. F. (834), The Sanctuary, West Humble, Dorking, Surrey. (L., ent., botany.)
- Heard, M. J. (595*), 36 Exford Road, London S.E.12. (L., esp. genetics.)
- Heath, J., F.R.E.S. (836), Heathcot, Hedle End, Southampton. (L., esp. ML.)

- Heley, R. G. (731), Lygoes, Burcott, Wing, Leighton Buzzard, Beds. (L., inc. exotics, botany.)
- Hellings, G. E. A. (297), Cripplegate, St John's Road, Woking, Surrey. (L.)
- Henshaw, E. J., B.Sc. (692), 42 Cleveland Road, Manchester 8. (L., horticultural ent.)
- Henstock, Dr H., Ph.D., M.Sc., F.I.C. (209), Glengariff, Caerwys, Mold, S. Wales. (L.)
- Herroun, E. F. (172), North Bank, Yorke Road, Reigate, Surrey. (L.)
- Heslop, Miss V. L. M. (835), Bernisdale, Hook Heath Road, Woking, Surrey. (L.)
- Hewson, F. (601), 23 Thornhill Drive, Shipley, Bradford, Yorks. (L.)
- Hick, A. E. (567), Sherrards, Cricket Field Lane, Bishop's Stortford, Herts. (O., H.)
- Hick, E. Pentland, F.R.E.S. (141), Athol House, Fulford Road, Scarborough, Yorks. (exotic L.)
- Hill, G. H. (164), 52 Love Lane, Pinner, Mddx. (L.)
- Hilliard, R. (99), 5 Oakleigh Gardens, Edgware, Mddx. (L., NH.)
- Hilton, H. (697), 12 Langley Grange, Prestwich, Lancs. (L. and ML.)
- Hincks, W. D., M.P.S., F.R.E.S. (531), 46 Gipton Wood Avenue, Leeds 8. (gen. ent., C., Orthoptera, Dermaptera, nomenclature.)
- Hirons, M. J. (444), 138 Wyken Avenue, Wyken, Coventry, Warwickshire. (L., mic.)
- Hitchens, P. E. N. (669), Sickelbank, Horam, Sussex. (L., esp. temperature trials on pupae.)
- Hodges, G. B. (314), Sennocke, Priest's Lane, Sheffield, Essex. (L.)
- Hodgson, F. L. (580), 23 Stuart Avenue, Bare, Morecambe, Lancs. (L.)
- Hodson, L. S. (851), Littlestowe, Essendon, Herts. (gen. ent.)
- Holloway, Paul H. (429), Warwick House, Fair Oak, Eastleigh, Hants. (R.)
- Holroyd, G. C. (253), 8 Elmside, Onslow Village, Guildford, Surrey. (L.)
- Honey, G. W. D. (488*), The Caravan, c/o The Hare and Hounds, Braywick Road, Maidenhead, Berks. (R., Brit. and foreign.)
- Hood, L. A. (526), 104a High Street, Maldon, Essex. (L.)
- Hopkins, Miss B. A. (827*), 43 Hainton Avenue, Grimsby, Lincs. (breeding L.)
- Horner, D. S. (699*), 81 Leigh Road, Eastleigh, Hants. (L.)
- Horton, R. W. (861*), 56 Guardhouse Road, Radford, Coventry. (L.)
- Horton, T. P. (862*), 56 Guardhouse Road, Radford, Coventry. (L.)
- Howard, P. (607), 126 Fleet Road, Fleet, Hants. (L.)
- Hughesdon, J. (87), 112 Aldenham Road, Bushey, Herts. (L.)
- Humphrey, S. W. (386), Pear Tree House, Roade, Northants. (R.)
- Humphreys, J. A. (168), The Caravan, Ballyhilly, Turnberry, by Girvan, Ayrshire. (gen. ent.)
- Hurter, Mrs D. (498), 41 Garston Old Road, Liverpool 19. (L.)
- Hyde, G. E., F.R.E.S. (818), 20 Woodhouse Road, Doncaster, Yorks. (L., O., H.)
- Hynes, Mrs Vonta D. P. (686), 92 W. Pitman, Battle Creek, Michigan, U.S.A. (silk-moths.)
- Irvine, J. J. (647*), 29 Eglinton Crescent, Troon, Ayrshire, Scotland. (rearing L., O., B.)
- Jackson, H. M. (729*), The Rectory, Alford, Castle Cary, Som. (aquaria, L. esp. hawk-moths.)
- Jackson, W. W. (619), 18 Belmont Road, Aberdeen, Scotland. (L.)
- James, R. T. H. (626), Sunnyside, Lower Chute, near Andover, Hants. (gen. ent., ornithology.)
- Janes, J. A. (614), Aisla Terrace, Tiverton, Devon. (L.)
- Jarvis, C. Mackechnie, F.L.S. (650), 16 Linden Road, Bedford. (C., econ. ent.)
- Jefferson, T. W. (242), 37 Riversdale Terrace, Sunderland, Co. Durham. (R.)
- Jeffreys, Dr D. M., M.B., B.Ch. (Cantab.) (615), Thrifty Beeches, The Grove, Lyndhurst, Hants. (L., ornithology, gen. ent.)
- Jolly, Miss M. E. (866), 61 Sunnyside Gardens, Upminster, Essex. (L., gen. ent.)
- Jordan, A. S. (741*), 19 Cornwall Road, Coventry, Warwickshire. (L.)
- Keji, J. A. (571), Albany Hospital Sanatorium, Tudor Road, Albany 3, N.Y., U.S.A. (L., larvae, esp. Saturniidae, Notodontidae, Eucleidae.)

- Kennedy, A. (20), 130 Vesper Road, Leeds 5. (L.)
- Kerrich, G. J., M.A., F.R.E.S. (551), 53 Palatine Road, Manchester 20. (H. Parasitica.)
- Kershaw, J. L. (418), 1a Marsden Street, Barrow-in-Furness, Lancs. (L.)
- Kettlewell, Dr H. B. D., M.A., M.B., B.Chir., M.R.C.S., L.R.C.P., F.R.E.S. (706), Homefield, The Common, Cranleigh, Surrey. (L., genetics.)
- Key, J. C. (173), Cardington, Hall Lane, Upminster, Essex. (L.)
- Keylock, J. G. (471*), 20 Council Houses, Winchcombe, Cheltenham, Glos. (aq. ent., insect physiology and homology.)
- King, A. Roland (425), Moor Hall, Ludlow, Salop. (L.)
- King, Capt. J. D., R.A. (485), Brightwell Baldwin, Oxon. (C., agric. pests.)
- Kloet, G. S., F.Z.S., F.R.E.S. (477), 8 Knutsford Road, Wilmslow, Cheshire. (gen. ent., nomenclature.)
- Knight, John E. (94), Toftrees, Woodside Avenue, London N.12. (L., rearing.)
- Lake, E. R. (868*), Hertford Constitutional Club, Lombard House, Hertford. (L.)
- Lanfear, A. H. (74), 20 South Eastern Road, Ramsgate, Kent. (L.)
- Lang, D. A. (732*), Westwood, Prior's Court, Chieveley, Berks. (L. esp. R.)
- Large, C. (608*), 17 Foundry Approach, Leeds 9. (C.)
- Last, H. R. (117), 12 Winkworth Road, Banstead, Surrey. (L., C.)
- Latham, F. H. (369), 26 Hollie Lucas Road, Birmingham 14. (L.)
- Latter, J. (385), Edenderry, near Chard, Som. (L.)
- Latty, K. (756*), 23 Church Street, Tetbury, Glos. (L.)
- Laurence M. T. (875*), St Albans, New Abbey Road, Dumfries, Scotland. (L.)
- Leach, D. W. (791), 12 High View Road, London E.18. (gen. ent.)
- Lee, F. I. (691*), 109 Kenton Lane, Kenton, Harrow, Middx. (L.)
- Leeds, H. A. (282), Wood Walton, Hunts. (L., esp. R. vars.)
- Lees, F. H. (875), The Gables, Maidencombe, Newton Abbot, S. Devon. (L.)
- Leonard, B. G. (96), 29 Storeton Road, Oxtou, Birkenhead. (L., hawk-moths.)
- Le Quesne, A. L. (728*), Moorside, Ashburton, Newton Abbot, Devon. (L.)
- Letts, J. K. (506), 183 Windmill Lane, Greenford, Middx. (mic.)
- Lewis, Rev. E. S. (373), Forton Rectory, Newport, Salop. (L.)
- Lewis, R. (734), Fiddler's Elbow, Staunton Road, Monmouth. (O., botany.)
- Lifton, J. (346*), 19 Wheatsheaf Gardens, Sheerness, Kent. (L.)
- Lindley, K. A. (577*), 9 Old Oak Road, London W.3. (L., ornithology.)
- Lisney, A. A., M.A., M.D., F.R.E.S. (315), The Red House, Narborough, Leicestershire. (L.)
- Little, J. C. (563), 70 Langley Way, West Wickham, Kent. (L., exotic L.)
- Lloyd, L. C., F.Z.S., M.B.O.U. (770), The Groves, Wenlock Road, Shrewsbury, Salop. (E.)
- Lloyd, R. W. (445), Treago Castle, St Weonards, Hereford. (C.)
- Lloyd, T. J. (824*), Hammond's End House, Harpenden, Herts. (L.)
- Long, Miss I. M. (698), White House Farm, Somerleyton, via Lowestoft, Suffolk. (L., rearing, gen. ent.)
- Lorimer, J. A. (576), 23 Osborne Street, Burton-on-Trent, Staffs. (L.)
- Lorimer, R. I. (600), 23 Osborne Street, Burton-on-Trent, Staffs. (L.)
- Luscombe, Miss B. (815*), Gardenhurst, Junior House, Rectory Lane, Burnham-on-Sea, Som. (L.)
- Lygo, W. F. (514), Forest View, Stamford Road, Kirby Fields, nr. Leicester. (L.)
- Macfarlane, D. (797*), 22 Beechwood Avenue, Chatham, Kent. (L., C., H.)
- Maenicol, Dr D. A. B. (67), 52 St Albans Road, Edinburgh 9. (L., ML., P.)
- Maggs, P. (244), Sibylla, East End, Lymington, Hants. (L.)
- Main, H., B.Sc. (63), 9 Woodside Road, Woodford Wells, Essex. (L., C., P., B.)
- Malkin, Dr G. R. (793), Fownhope, Hereford. (L.)
- Manly, G. B. (427), 72 Tenbury Road, Kings Heath, Birmingham. (L.)
- Mansfield, M. J. (134), 5 Chigwell Road, Bournemouth, Hants. (L.)
- Marcon, Rev. J. N. (248), Christchurch Vicarage, Eastbourne, Sussex. (R.)

- Marks, G. E. (839*), 228 Castle Road, Bedford. (L.)
- Marriott, D. E. (705*), 12 Kensington Avenue, Watford. Herts. (L., O.)
- Marsh, Capt. Dudley G. (863), Garrantor, Pigeon Lane, Eddington. Herne Bay, Kent. (L.)
- Marsh, G. S. (833), 17 Harlington Road East, Feltham, Middx. (anatomy, physiology and diseases of bees.)
- Marshall, J. F., C.B.E., M.A. (646), 47 London Road, Cheltenham. Glos. (D., Culicidae.)
- Martin, E. L. (801*), 9 Devonshire Road, Harrow, Middx. (L., ML., O., D., H.)
- Martin, W. A. (553), Longcause, Tonnes, Devon. (L.)
- McDonald, Peter (747*), 114 Queen's Avenue, Watford. Herts. (L.)
- McKim, J., J.P., F.Z.S. (823), 12 Darvel Crescent, Ralston, Paisley, Scotland. (botany, fish., Z., marine and fw. B.)
- McLeod, C. H. (491), Culverlea House, Pennington, Lynton, Hants. (L.)
- McLeod, Sir Murdoch, Bt. (35), Culverlea House, Pennington, Lynton, Hants. (L., esp. R.)
- Melrose, Dr M. M., M.D. (723), Wargrave House, St Owen Street, Hereford. (L., esp. ML.)
- Menzies, Ian S. (585*), 98 Sandy Lane, Cheam, Surrey. (L., ML., C., H.)
- Merrill, H. W. (640*), The Marsh, Marsh Road, Thornton-le-Fylde, Lancs. (L.)
- Michael, Peter (748), 56 Cranmore Lane, Aldershot, Hants. (NH., phenology, M., fishing and ichthyology, research, particularly in breeding. L.)
- Michaelson, Capt. C. H., R.N. (436), Great Tower, Windermere, Westmorland. (L.)
- Mills, Miss D. (354), Blendon Preparatory School, Bexley, Kent. (L.)
- Mills, D. R. S. (783*), 19 Colebrooke Drive, London E.11. (L.)
- Milman, P. P. (689), 19 St Michaels Road, Paignton, S. Devon. (L.)
- Milner, P. F. A. (521*), 167 Lake Road West, Cardiff, S. Wales. (L.)
- Mitten, A. B. (720), 40 Oxford Street, Wellingborough, Northants. (L.)
- Montagu, H. E. (604*), House on the Hill, Bradfield College, Berks. (L., rearing.)
- Moody, N. H. (693), 119 Southampton Road, Ringwood, Hants. (L.)
- Moore, Miss D. T. (476), 18 Church Row, London N.W.3. (B.)
- Moore, John, (146), Orchards, Bredon, nr. Tewkesbury, Glos. (L.)
- Morgan, H. G., B.A. (90), Dept. of Plant Pathology, Seale-Hayne Agricultural College, Newton Abbot, Devon. (L., gen. ent.)
- Mortimer, K. J. (398*), 5 Holroyd Road, London S.W.15. (L.)
- Morton, J. K. (522*), 131 Roker Avenue, Sunderland, Co. Durham. (L.)
- Morton, R. D. (145), 16 Gray's Lane, Hitchin, Herts. (L., beekeeping.)
- Moys, C. J. (463), 41 Ayling Lane, Aldershot, Hants. (ent., botany.)
- Mullings, P. Lowry (360), 20 Grange Park, London W.5. (H., mic., beekeeping, esp. bee diseases.)
- Murchie, Lt. W. R. (634), 389th Bomb Group, C.A.A.B., Charlston, So. Carolina, U.S.A. (L., gen. ent., zoology.)
- Murphy, H. N., B.Sc., F.Z.S. (593), Tudor House, Selsey, Sussex. (L.)
- Myall, G. R. (800*), 3 Holmdene Avenue, North Harrow, Middlesex. (L., C.)
- Nathan, L. (423), 19 Monton Street, Mossdale, Manchester 14. (ent., L.)
- Neal, E. G., B.Sc. (467), Flat 1, Rendcomb, Cirencester, Glos. (L., C., Hem., P.)
- Ness, A. R. (549), 15 Homefield Park, Newbury Park, Ilford, Essex. (L.)
- Newman, E. C. (652), 5 Shepway Avenue, Maidstone, Kent. (L.)
- Newman, L. Hugh (503), The Butterfly Farm, Bexley, Kent. (L.)
- Newson, P. (842), Ridheugh, West End Avenue, Guisborough, Yorks. (L.)
- Newton, J. (439), The Retreat, Tetbury, Glos. (L.)
- Nicholson, G. (33), Nuns Moor Crescent, Newcastle-on-Tyne. (L.)
- Norman, Dr. T. (68), 138 Andover Road, Newbury, Berks. (H., L., D., parasites of I.)
- North, R. S. (654), 41 Buckingham Road, Aylesbury, Bucks. (L.)
- Nunn, C. T. (523), 2 Boyles Court Cottages, Warley, Essex. (L.)
- O'Farrell, A. F., B.Sc., A.R.C.S., F.R.E.S. (58), 90 Woodwarde Road, London S.E.22. (O., L., D., econ. ent.)
- O'Rourke, F. J. (191), 45 St Kevins Park, Rathmines, Dublin, Eire. (H.)

- Otter, G. W. (475), Southwood, Blandford Road, Broadstone, Dorset. (L., C., Trichoptera.)
- Outhwick, Miss M. (792*), c/o Zoological Society, Regents Park, London N.W.8. (L.)
- Page, L. (598), The Gables, Cookham Dean, Berks. (L.)
- Page, R. L. A. (742*), Abbots Gate, Falcon Gardens, Minster, Sheppey, Kent. (gen. ent.)
- Pallister, G. (739*), Panorama, The Avenue, Birtley, Co. Durham. (L.)
- Parfitt, R. W. (525), 1 Dunsdon Avenue, Guildford, Surrey. (L., ML.)
- Parker, C. F. (803), 61 Winchcomb Gardens, London S.E.9. (L., mic.)
- Parker, E. (865), Feathercombe, Hambledon, Godalming, Surrey. (M.)
- Parker, H. (738), 21 Park Way, Southwick, Sussex. (gen. ent., NH.)
- Parr, M. J. (779*), 7 Crawford Gardens, Ruislip Road, Greenford, Mddx. (gen. ent., ornithology, fish.)
- Parsons, D. (449), Bass Manor School, Broxbourne, Herts. (L.)
- Parsons, D. (763*), 2 Carshalton Place Terrace, Carshalton, Surrey. (L.)
- Patrick, H. H., F.R.H.S., F.R.E.S. (744), 5 Marner Crescent, Radford, Coventry, Warks. (insect B., L. vars., mic., gen. ent.)
- Pauly, R. (572*), American University of Beirut, Beirut, Lebanese Republic. (L., breeding.)
- Payne, J. H. (353), 10 Ranelagh Road, Wellingborough, Northants. (L.)
- Peace, H. A. (680), Vicarage Farm, Wigginton, Tring, Herts. (R., bees, wasps.)
- Peacey, A. F. (407), Hillside, Brimscombe, Stroud, Glos. (L., ML., H.)
- Pearce, Rev. E. J., M.A. (Cantab.), F.R.E.S. (796), House of the Resurrection, Mirfield, Yorkshire. (C. and their distribution esp. Halipilidae and Pselaphidae.)
- Peck, S. (546), 8 Nine Elms Road, Longleavens, Gloucester. (L.)
- Pellatt, J. J. K. (338), 45 Maple Street, Sheerness, Kent. (L.)
- Pennock, E. T. (82), 16 Drive Road, Linthouse, Glasgow S.W.1. (L.)
- Phillips, J. (633*), 27 Lavant Street, Petersfield, Hants. (C., R., ML.)
- Pickard, Dr J. N. (599), Craufurd, Sawston, Cambs. (L. genetics.)
- Pickett, A. H., L.D.S., D.M.D. (37), 32a Chatsworth Road, Brighton, Sussex. (L.)
- Pitt, W. S. (670), Wildwood, Silverdale Avenue, Walton-on-Thames, Surrey. (bumblebees.)
- Platts, J. H. (515*), 29 Dene Road, Northwood, Mddx. (L.)
- Pomeroy, R. D. (876), Myrtle Cottage, Lancaster Gardens, Beltinge, Herne Bay, Kent. (L.)
- Poole, K. H. (133), 65 The Crescent, Milton, Weston - Super - Mare, Som. (L.)
- Popplewell, P. B. (819*), 28 Glenhurst Road, Prittlewell, Southend-on-Sea, Essex. (gen. ent., L.)
- Port, M. H. (799*), 31 Pinner View, Harrow, Mddx. (L., Orthoptera.)
- Potter, C. W. (214), 10 Fern Rise, Garden City, Humberstone, Leicester. (L.)
- Pow, A. (39), 63 Sharpill Road, Saltcoats, Ardrossan, Ayrshire. (L.)
- Praed, Lt.-Col. C. W. Mackworth (392), Castletop, Burley, Hants. (ent., zoology, ornithology.)
- Pratt, C. B. (784), 1 West Ham Lane, London E.15. (L.)
- Price, P.G. Hamilton (860*), Hambrook House, Chorlton Kings, Cheltenham, Glos. (L.)
- Prichard, R. (460), 4 Woodcroft Lane, Bebington, Cheshire. (L., ML.)
- Procter, E. G. (645), 21 Delrene Road, Shirley, near Birmingham. (L.)
- Procter, R. (265), 20 Beeston Roysd, Ring Road, Leeds 11. (L., Noctuids and Geometers.)
- Quesne, A. L. Le (728*), Moor-side, Ashburton, Newton Abbot, Devon. (L.)
- Ramsay, F. J. (837), Old Manse, Kilsarchan, Renfrewshire. (gen. ent.)
- Ramsden, E. (130), c/o Rev. J. J. Broadhurst, St Peter's Vicarage, Newton-le-Willows, Lancs. (L.)
- Ramsden, Dr W. (658), Pembroke College, Oxford. (silk, silk-producing animals, esp. silk-moths.)
- Randall, M. C. (535), 64 Mount Pleasant Road, Chigwell, Essex. (L.)
- Ranwell, D. S. (481), 6 Ellardale Road, Bognor, Sussex. (breeding L.)
- Rawlings, W. G., F.R.E.S., M.B.O.U., F.Z.S. (452), 14 Westfield Park, Bath, Som. (C. and L. in relation to ornithology.)

- Ray, D. J. (679*), Mill House Cottage, Bishopstoke, Hants. (ent., R., M., ornithology.)
- Ray, H. (678), Mill House Cottage, Bishopstoke, Hants. (phototropic behaviour of insects.)
- Read, E. C. (855), Stoney Corner, Meopham, Kent. (NH.)
- Readwin, B. (820), 36 Warley Hill, Brentwood, Essex. (gen. ent.)
- Redhead, E. Milne- (685), Royal Botanic Gardens, Kew, Surrey. (C., L., Hem.-Het.)
- Richards, A. W., M.A., B.Sc. (566), Nether Edge, Chapel Lane, Hawley, near Camberley, Surrey. (L., O., Orthoptera.)
- Richardson, Austin (483), Beaudesert Park, Minchinhampton, Glos. (L.)
- Richardson, N. A. (431), 20 Bletchley Road, Bletchley, Bucks. (L.)
- Ridgwell, P. J. (611*), 2 Churchmead, Great Cambridge Road, Chess-hunt, Herts. (gen. ent.)
- Riley, N. D., 7 McKay Road, London S.W.20. (L., gen. ent.)
- Risbridger, C. A. (812), Woodcock Lane, Northfield, Birmingham 31. (L.)
- Risbridger, M. D. (813*), Woodcock Lane, Northfield, Birmingham 31. (L.)
- Ritchie, Irvine (472*), 93 Argyle Road, Saltoats, Ardrossan, Ayrshire. (L.)
- Rivolta, J. R. A. (743), 1 Boundary Lane, St Leonard's, near Ringwood, Hants. (L.)
- Roberts, G. A. (448), 53 Broadway, Fulford, York. (gen. ent., L., botany.)
- Roberts, S. F. (216), 410 Woodchurch Road, Oxtou, Birkenhead, Cheshire. (L.)
- Roberts, W. N. (77), 48 Bishops Mansions, Bishops Park Road, London S.W.6. (L., gen. ent.)
- Robertson, J. A. (224), 15 Bonnywell Road, Leigh, Lancs. (L.)
- Robinson, E. W. (773), Woodacre, Woodford, Cheshire. (L., C., H.)
- Robinson, Miss M. J. (643*), 19 Doddington Road, Wellingborough, Northants. (L., B.)
- Robson, J. P. (44), 10 Vane Road, Barnard Castle, Co. Durham. (L., ML.)
- Roche, Dr P. J. L. (408), c/o D.M.S., Lagos, Nigeria. (C., Hem.)
- Rogers, Miss P. L. (205), 91 Middle Lane, London N.8. (L., ent., NH.)
- Rowden, A. O. (405), Rydon Crest, Countess Wear, Exeter, Devon. (gen. ent.)
- Rowe, R. C. B. Hartland- (464*), 8 Lisgor Terrace, London W.14. (L.)
- Rudland, W. L., F.R.E.S. (249), 211 Caversham Road, Reading, Berks. (L., ML., H.)
- Runge, C. (663), 11 St Andrew's Road, Caversham, Reading, Berks. (L., gen. ent.)
- Russell, S. G. Castle (119), Stokesay, Bridge Road, Cranleigh, Surrey. (R. vars.)
- Russell, W. (412), 69 Locklea Road, Glasgow S.3. (L., camouflage.)
- Saffery, C. F. (673), 71 The Ridgway, London N.W.11. (R.)
- Sang, D. A. (732*), 7 Lyndhurst Drive, Sevenoaks, Kent. (L., esp. R.)
- Sangster, D. R. (578), 69 Leadsid Road, Aberdeen, Scotland. (L.)
- Saunders, J. M. K. (618), 27 Canonbury Avenue, Pinner, Mddx. (R. vars.)
- Scott, D. B. (656), Abernyte, Durham Terrace, Lower Largo, Fife, Scotland. (L.)
- Scott, D. G. (534*), Byrlton House, Vallis Way, Frome, Som. (L.)
- Scudamore, Miss Amoret F. (562*), Haughton House, Canford Cliffs Avenue, Parkstone, Dorset. (gen. ent.)
- Seymour, A. (790*), 52 Chester Drive, N. Harrow, Mddx. (L., C.)
- Seymour, D., B.A. (874), Wynton, St Mary's Avenue, Northwood, Mddx. (L.)
- Shapland, J. Dee (548*), Chislehurst, Sydenham Villas Road, Cheltenham, Glos. (L., mic.)
- Shaw, H. K. Airy, B.A., F.L.S., F.R.E.S. (545), Royal Botanic Gardens, Kew, Surrey. (Hem.-Het., C., E., botany.)
- Shephard, G. C. (524*), 1 Carisbrooke Road, Leicester. (L.)
- Sherlock, R. J. (606*), Pit Orchard, Axminster, Devon. (L.)
- Siddons, M. P. (516*), Trosnant Lodge, Pontypool, Monmouthshire. (L.)
- Siggs, L. W. (243), 107 Upper Grosvenor Road, Tunbridge Wells, Kent. (L.)
- Sills, F. V. (750), 14 Bede Road, Radford, Coventry, Warwickshire. (L.)
- Simons, R. H. (811*), 28 Aylmer Road, London N.2. (habits, morphology, biology, control of pests.)

- Skelton, Rev. K. J. F. (858), Glen Villa, Castle Lane, Bolsover, Chesterfield, Derbyshire. (L.)
- Skipper, D. J. (637*), 2 Gables Cottage, Chenies Road, Chorley Wood, Herts. (L.)
- Slocome, E. V. J. (774), 13 Caerllwyn Terrace, Ynysddu, Newport, Mon. (gen. ent.)
- Smith, A. (23), 23 First Avenue, Heworth, York. (L., ML., P., conchology.)
- Smith, C. C. (487*), 65 Graham Avenue, Brighton 6, Sussex. (ML., M.)
- Smith, C. King (159), Bitton Hill, Bitton, Bristol. (L.)
- Smith, Ellsworth J., M.D. (473), 91 Beach Avenue, Larchmont, N.Y., U.S.A. (rearing insects, tree-frogs, toads.)
- Smith, E. K. (178), 25 Hungerford Drive, Reading, Berks. (L., veterinary ent.)
- Smith, F. Stanley (389), Hatch House, Pilgrim's Hatch, Brentwood, Essex. (L.)
- Smith, P. Siviter (250), 66 Stirling Road, Birmingham 16. (L., P.)
- Smith, S. Gordon, F.I.S., F.R.E.S. (478), Estyn, Boughton, Chester. (L.)
- Smyly, W. J. P. (859), Holly Bank, Cold Ash, Newbury, Berks. (C.)
- Snell, B. B. (419), Woodsome, Plym-ward Avenue, Bromborough, Cheshire. (L., ML.)
- Sneyd, Miss E. M. Wykes- (382*), Locrenton Vean, St Keyne, Liskeard, Cornwall. (L.)
- Snow, K. S. J. (533*), 86 London Road, Neath, Glam. (C., H., mic.)
- Speight, A. J. P. (490*), 49 Blackpool Old Road, Poulton - le - Fylde, Lancs. (L.)
- Spelman, M. (624), 2781 Grand Con- course, New York 58, N.Y., U.S.A. (exotic L.)
- Spoczynska, Mrs J. O. I. (751), 208 Westbourne Grove, London W.11. (L.)
- Stephens, J. C. (507*), The Deanery, Ledbury, Herefordshire. (L.)
- Sterling, D. H. (84), 36 Estella Avenue, New Malden, Surrey. (L.)
- Stokes, Capt. G. E. (319), The Brambles, Roe Green, Hatfield, Herts. (L.)
- Stokes, H. G. (828), 12 Roman Road, Salisbury, Wilts. (Orthoptera, O., Hem., gen. ent.)
- Stone, Miss O. (740*), 32 St Agnes Road, Birmingham 13. (L.)
- Stone, T. (365), Lockeridge Villa, Shrubland Road, London E.10. (L., parasites.)
- Stott, B. G. (641*), 10 Trafalgar Road, Blackpool, Lancs. (L.)
- Stretton, D. R. (564), 133 King's Avenue, London S.W.4. (L.)
- Sunderland, S. (727), Cragg Mount, Midgehole Road, Hebden Bridge, Yorks. (C.)
- Sutton, Francis G. (403), 58 Blake- mere Road, Welwyn Garden City, Herts. (gen. B., ornithology, gen. ent.)
- Sutton, Frank R. (538), 42 Fairfield Drive, London S.W.18. (L.)
- Sutton, R. (722*), 20 Ongar Road, London S.W.6. (NH., esp. L.)
- Sweet, G. (831*), 9 Bruce Gardens, Fenham, Newcastle-on-Tyne. (L.)
- Symington, B. G. (301), Shutta, Looe, Cornwall. (exotic L.)
- Symmons, Miss S., B.Sc. (623), Stud- ley College, Studley, Works. (gen. ent., esp. H.)
- Syms, E. E., F.R.E.S. (406), 22 Woodlands Avenue, London E.11. (P., all orders, breeding.)
- Tailby, S. R., B.Sc., A.R.I.C. (636), 1 Church Place, Ardrossan, Ayr- shire. (L.)
- Talbot, M. J. R. (384), c/o The Foreign Office, London S.W.1, by Beirut Bag. (L.)
- Taylor, A. G. (433), Whiteshoots Hill, Bourton-on-the-Water, Chelten- ham, Glos. (gen. ent.)
- Taylor, E. Johnson (446), 25 South Parade, Stockport, Cheshire. (L.)
- Taylor, L. R. (441), 325 Abbey Hey Lane, Manchester 18. (L.)
- Taylor, L. W. (591), c/o Lulworth Cove, Raleigh Road, Mansfield, Notts. (L., gen. ent.)
- Taylor, Lieut. N., B.Sc., R.E. (688), 2 The Oaks, Walton-on-the-Hill, Stafford. (L.)
- Taylor, P. (350), 12 Manton Drive, Luton, Beds. (R.)
- Taylor, P. G. (719*), 51 Woodland Drive, Watford, Herts. (L., C., agricultural pests, temperate and tropical.)
- Tee, D. E. H. (610*), The Cottage, Small Dole, Sussex. (gen. ent.)
- Tesch, L. R. (1), 532 Loose Road, Maidstone, Kent. (L.)
- Thomas, B.M.P. (864), 87 College Road, Enson, Surrey. (L.)
- Thomas, G. E., B.Sc. (694), School of Agriculture, U.C.N.W., Memo- rial Buildings, Bangor, Caern. (gen. ent., econ. ent., Hem.)

- Thompson, A. M. P. (342), 50 Fullarton Drive, Troon, Ayrshire. (B., P., mic.)
- Thornburn, W. (592), 44 Wharf Road, Woodston, Peterborough, Northants. (L.)
- Thorpe, H. J. (482), 11 Egghill Lane, Northfield, Birmingham 31. (L., C., ornithology.)
- Timms, E. Cartwright (547), 524a Moseley Road, Birmingham 12. (D.)
- Tonge, A. E. (274), Ashville, Trafford Road, Alderley Edge, Cheshire. (L.)
- Townsend, C. C. (451), Tehidy Hostel, Camborne, Cornwall. (C., O., Hem.-Het., botany.)
- Tozer, D. (36), 98 Copdale Road, Leicester. (L., C.)
- Trevor, H. P. J. (649), The Nook, Barford St Michael, Oxford. (L.)
- Trimmer, J. (495*), 47 Horsa Road, Southbourne, Bournemouth, Hants. (L., H.)
- Trundell, E. E. J. (690), 6 Arragon Gardens, West Wickham, Kent. (ent., L.)
- Turner, H. B. (341), Malverleys, Newbury, Berks. (L.)
- Turner, H. J. (696), 33 Pine Avenue West, Southbourne, Bournemouth. (L.)
- Turner, J. Fincham (288), 17 Litchfield Avenue, Morden, Surrey. (L.)
- Turner, R. G. (620), 23 Heaton Road, Solihull, Warwicks. (H.)
- Vince, A. A. P. (588), 14 Church Hill, London N.21. (L., aq. C., glass-house pests.)
- Waddington, L. G. F. (169), 9 Rose Hill Rise, Bessacarr, Doncaster, Yorks. (L.)
- Wager, J. R. (181), Capel, Fiery Hill Road, Barnt Green, Worcs. (L., esp. R.)
- Wainwright, C., B.Sc. (755), 216 St Bernard's Road, Birmingham 27. (L.)
- Wainwright, J. C. (804), 9 Priory Road, Hook Road, Surbiton, Surrey. (L.)
- Wakeley, Sir Leonard D. (561), 37 Marryat Road, London S.W.19. (L.)
- Walder, W. (102), 79 Livingstone Road, Hove 3, Sussex. (L.)
- Walker, G. F., F.Z.S. (816*), 1 Leighton Road, London N.W.5. (L.)
- Walker, J. (22), 7 Mount Hermon Road, Torquay, Devon. (L.)
- Walker, Dr J. A. (843), Penarul, Parkstone, Dorset. (L., ML.)
- Walker, P. J. (856*), 25 Regal Way, Preston Hill, Harrow, Mddx. (gen. ent.)
- Wall, G. (554), 57 Willow Crescent, Willowbank, Denham, Uxbridge, Mddx. (L., C., ornithology.)
- Wallace, H. R. (318), 115 Abercrombie Road, Fleetwood, Lancs. (L.)
- Wallace, W. H. (660*), 72 Eglinton Crescent, Troon, Ayrshire. (C., L., O.)
- Walsh, G. B., B.Sc. (24), 22 Stepney Drive, Scarborough, Yorks. (C., B., Hem.)
- Walton, A. M. (426), 275 Croxted Road, London S.E.21. (L.)
- Wanstall, P. J. (465), 54 Matlock Road, Brighton 5, Sussex. (R., mosquitoes.)
- Ward, E. A. J. (709), 6 High Street, Swanage, Dorset. (L.)
- Watson, J. P. (519), Fieldhead, Crosby, Isle of Man. (L.)
- Watson, R. W. (752), Sunnysdale, Spring Lane, Lower Ashley, New Milton, Hants. (L.)
- Watts, W. J. (240), Glaslie, First Avenue, Stanton-le-Hope, Essex. (L., C.)
- Waugh, R. M. (845*), The Oaks, Rotchell Park, Dumfries, Scotland. (gen. ent., esp. L., moths.)
- Webb, H. E. (736), 20 Audley Road, London N.W.4. (L.)
- Weddell, B. W. (701), 13 The Halve, Trowbridge, Wilts. (L., ML.)
- Welti, A., F.R.E.S. (402), 34 Gt. St. Helens, London E.C.3. (L.)
- West, B. B. (849), 8 St Loyes Street, Bedford. (L., O., botany, geology.)
- West, K. E. (848), 8 St Loyes Street, Bedford. (L., O., botany, geology.)
- Weston, T. E. T. (714*), 11 Kingsfield Drive, Enfield, Mddx. (C.)
- White, K. M. (715), 25 Tavistock Drive, Nottingham. (H., bionomics, gen. ent.)
- White, O. M. (140), 78 Eastdale Road, Nottingham. (L., O.)
- Whitehead, H., B.Sc. (810), 3 Barthorpe Avenue, Leeds 7. (aq. ent., Trichoptera, Plecoptera.)
- Whitworth, J. W., F.Z.S., F.R.E.S. (629), 334 Leeds Road, Bradford, Yorks. (L., esp. R., breeding.)
- Whitworth, R. F. (632), 16 Seagry Road, Wanstead, London E.11. (agric. ent., esp. L., D.)
- Wild, E. H. (867), Splatt Farm, Spaxton, nr. Bridgwater, Som. (gen. ent., L. esp. wainscots and clearwings, M., vars.)

- Wild, Dr. O. H., M.B. (440), 79 Hatherley Road, Cheltenham, Glos. (L.)
- Williams, H. B., LL.D., F.R.E.S. (871), Croft Point, Bramley, Surrey. (L., genetics.)
- Williams, J. E. Miles (462*), Corpus Christi College, Cambridge. (aq. ent., Apterygota, E., physiology, botany.)
- Williams, L. H. (703*), 10 Lower Armour Road, Tilehurst, Reading, Berks. (gen. ent., botany, ornithology.)
- Willis, W. (589), 77 Nest Lane, Wel-lingborough, Northants. (gen. ent., botany.)
- Wills, T. R. (235), 67 Magdalen Road, Portsmouth, Hants. (L.)
- Willshee, C. J. (420), 9 Blondvil Street, Cheylesmore, Coventry. (L.)
- Windsor, F. P. (785), Woodend, Hor-ley, Surrey. (gen. ent.)
- Winser, Harold E., Corydon, Crau-leigh, Surrey. (L.)
- Wolfenden, B. (712*), 10 Rectory Lane, Prestwich, Lancs. (L.)
- Wooff, W. R. (721), 9 Marshall Street, Barnard Castle, Co. Durham. (B., NH., L.)
- Woollatt, L. H. (413), 6a The Quad-rant, Wonford Road, Exeter, Devon. (gen. ent.)
- Wright, A. H. (355), 25 Markham Avenue, Carcroft, Doncaster, Yorks. (L.)
- Wright, J. (609), 1 Highlands Road, Drayton, Portsmouth, Hants. (L., C., ornithology.)
- Wright, R. F. P. (838*), Pine Glen, Ash, near Aldershot, Surrey. (L.)
- Wykes-Sneyd, Miss E. M. (382*), Locrenton Vean, St Keyne, Lis-keard, Cornwall. (L.)
- Yarrow, I. H. H., M.A., Ph.D., F.R.E.S. (559), 7 Redlands Road, Reading, Berks. (H., Aculeata.)

Affiliate Members

- Dartmouth—The Field Club (822†), R.N. College, Dartmouth, Devon. (Hon. Sec.: A. M. C. Nicholl, M.A., M.B.O.U.)
- Dulwich—Dulwich College Natural History Society (695†), Dulwich College, London S.E.21. (Com-munications to: Hon. Sec., Mel-bourne House, South Parade, London W.4.)
- Glossop—The Field Club (672†), The Grammar School, Glossop, Derby-shire.

Harrow—Natural History Society (794†), Harrow School, c/o G. H. Locket, Science Schools, Harrow-on-the-Hill, Mddx.

Horam—Natural History Society (808†), Murrays School, Horam, E. Sussex.

Shrewsbury—The Darwin Society (817†), Shrewsbury School, Shrewsbury, Salop. (Communi-cations to: The Chairman, Major W. J. Pendlebury, F.R.E.S., Broadlands, Canonbury, Shrews-bury.)

Watford—The Biological Society (746†), Boys' Grammar School, Rickmansworth Road, Watford, Herts.

Wealdstone—Sacred Heart High School (795†), c/o Sr. Mary St. Fintan, 188 High Street, Weald-stone, Mddx.

Honorary Members

- Head, H. W. (15), Burniston, Scar-borough, Yorks. (L., breeding.)
- Tams, W. H. T., F.R.E.S. (201), Entomology Department, British Museum (Natural History), Lon-don S.W.7. (L., spiders, P.)
- Williams, C. B., M.A., Sc.D., F.R.E.S., Entomology Depart-ment, Rothamsted Experimental Station, Harpenden, Herts. (gen. ent., M., B.)

Membership Total

Subscribing:	
Senior	454
Junior	151
Affiliate	8
Honorary	3
Total	616

Reviewers

- Review, Presentation, Exchange or Copyright copies of certain AES publications are also sent from time to time to the following:—
- Editor, *Entomologist's Record*, Hy. J. Turner, 25 West Drive, Cheam, Surrey.
- Editor, *Entomologist's Monthly Magazine*, Dr B. M. Hobby, Hope Department of Entomo-logy, University Museum, Oxford.
- Editor, *The Entomologist*, N. D. Riley, 7 McKay Road, London S.W.20.
- Keeper of Entomology, British Museum (Natural History), Crom-well Road, London S.W.7.

University Copyright Office, 4 St James' Street, London W.C.1 (for University Libraries of Oxford, Cambridge, Edinburgh, Dublin).

Copyright Office, British Museum, London W.C.1.

Library, S.E. Union of Scientific Societies, Redroofs, Peaslake, Guildford, Surrey.

Ward's Natural Science Establishment, Inc., 3000 Ridge Road East, Rochester 9, N.Y., U.S.A.

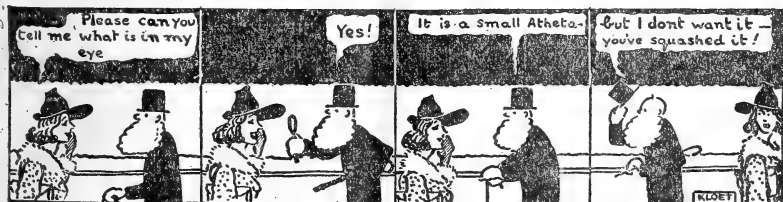
COLLECTING CLEARWINGS—5

Aegeria chrysidiformis Esp. (Fiery Clearwing) should be searched for in the larval stage in plants of dock and sorrel found along the slopes of Folkestone Warren, on the sea face of the cliffs. Examine those plants which have a sickly appearance or stunted growth, when the presence of a larva may readily be discovered by the mines or frass in the root-stocks. Replant the dug-up roots which do not produce larvae, as such disturbed roots are always productive the next year. The larvae are best collected in early April, when nearly fullfed. Plant the affected plants in light calcareous mould in boxes sufficiently deep to be covered with gauze or canvas, water well and keep in the sun. Early in May each larva sends up from the roots a conical case composed of small particles of the root fibres, and varying from an inch to an inch and a half in length. The moth emerges in June and July, and flies in the sunshine about noon over the foodplant, settling on the bare chalk. Although occasional specimens have been recorded from elsewhere, this is chiefly a Kentish insect, the Warren, Folkestone, being a renowned locality for it.

Aegeria muscaeformis View (**philanthiformis** Lasp.) (Thrift Clearwing) has been recorded from the rocky coasts of Devon, Cornwall, Isle of Man, Aberdeenshire, and several places in Ireland. In early May the larvae are to be found feeding in the stems and roots of sea thrift (*Armeria maritima* Willd.). The stunted plants scattered in the clefts of almost bare and water-worn rocks are those selected. A little red patch on the cushion of thrift betrays the work of the larva, and after a little practise affected plants may soon be recognised at a distance. The larva never seems to be found in plants growing luxuriantly in ordinary soil. Pupae should be collected in early June; the best situations are the detached rocks at the base of the cliffs. The larva spins a silken tube covered with frass through the solid materials of a tuft of thrift, and projecting an inch or more out of the tuft; in this the larva pupates and through it the pupa works its way before the emergence of the imago. Sometimes the tubes stand out perpendicularly, at other times they are almost horizontal, and they may occur at any angle between. The moths are out during late June and July and fly in the sunshine, particularly during the morning, settling on the thyme and sea thrift flowers. On the south-west coast they are best taken during the first fortnight of July flying along the dry earth walls on which their foodplants occur.

N.B.—These articles on "Collecting Clearwings," with a few small additions and corrections, and the inclusion of four text figures and two plates of photographs, are to be reprinted as *Leaflet* No. 18, which will be announced in the *Bulletin* when ready.—Ed.

PROFESSOR FUNGUS (Copyright by G. S. Kloet)





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LIST OF PUBLICATIONS

October 1945

The following publications and data labels, but not *Bulletins*, are obtainable from the **Publications Sales Manager**, G. A. Roberts, 53 Broadway, Fulford, York, or from the **Hon. Editor**, B. A. Cooper, Dept. of Agriculture, The University, Leeds 2. Cheques and postal orders should be crossed and made payable to the Amateur Entomologists' Society.

Journal, Vol. 5 (64 pp. + 4 pl., 4/6, post 2d). The main articles aim to bring South's "Moths of the British Isles" up to date, discussing 46 species of moth new to this country or on which our knowledge has been much extended. All essential distinguishing features between closely related species are outlined with illustrations of wing-marking and genitalia, and a new method of examining the latter useful to the amateur who has not the facilities for making permanent microscope preparations is described. Details of habitat, distribution, early stages, foodplants, time of appearance, and best mode of capture and rearing are also dealt with. Shorter articles in the same issue discuss collecting, mounting, and photographic technique for butterflies, moths and beetles.

Journal, Vol. 6—the "Silkmoth Rearer's Handbook" (72 pp. + 4 pl., 5/- to members, 10/6 to non-members). A well-illustrated account of the rearing in Britain of the giant silkmoths most suited to our climate. Apart from general advice on purchase, forcing, pairing, egg-laying, hatching, feeding, pupation and emergence, the special characteristics and treatment required for over sixty species are discussed in detail.

Journal, Vol. 8 (48 pp. + 6 pl., 3/6 to members, 5/- to non-members, post 2d). A miscellaneous issue, with articles ranging from books recommended for the library to the technique of the study, rearing and collection of dragonflies, mosquitoes, bugs, micros and some macros, with

details of the making of various sweepnets and a collapsible pattern of butterfly net. (Journal, Vol. 7 is still in the press).

Pamphlet No. 1—"A New System of English Naming for British Macrolepidoptera" (23 pp., 2/6, post 1d). It is here suggested that the use of shorter English names, a common system of "surnames" for scientifically definable groups, the avoidance of misleading titles and names not easily memorised, and the discarding of similar surnames for unrelated species, will greatly ease the task of learning and picturing the species, and the beginner's enthusiasm will correspondingly increase. A checklist of Latin names of British macros, with new and old English names, is included.

Pamphlet No. 2—"The Amateur's Library" (11 pp., 7d, 5/- a doz.) A classified list of 220 reference and stimulant books, graded according to importance and technicality, with brief notes on contents, from which the amateur or school librarian should make their first choices.

Leaflets—The majority are well illustrated by photographs or line drawings. Those priced at 4d post-free are obtainable at 2/6 a doz., those at 7d each being 5/- per doz. No. 1—Beetle Collecting (4d); 2—Setting Lepidoptera (4d); 3—Silkworm Rearing (4d); 11—Collecting Mosquitoes (7d); 12—Collecting Dragonflies (7d); 13—Collecting Micros (4d); 14—Setting Micros (4d); 16—Making a Sweepnet (4d); 17—Making a Stock Pond for the Study of Aquatic Insects (4d). Nos. 4-10, 15, 18 are still in the press.

Data Labels—4½-point (diamond) data labels, the best obtainable, are printed in multiples of 125 of one wording. Printings are made about once a month in winter, less frequently in summer. The price is 10/- per 1000, or 6/- per 500, sex signs being 2/- per 1000.



ANNUAL REPORT—1944-5

INCOME

	£	s	d	£	s	d
	1943-4			1944-5		
Brought forward	30	17	10½	65	10	3
Subscriptions	55	3	6	92	17	1
Post and Donations	42	0	4½	46	18	1½
Journals	43	4	7½	58	5	3
Leaflets	2	15	9	4	2	3
Special Publications ...	48	0	10	26	5	6
Advertisements	3	13	0	0	18	0
Various	—	—	—	0	6	8
	<hr/>			<hr/>		
	225	15	11½	295	3	1½

EXPENDITURE

	£	s	d	£	s	d
	1943-4			1944-5		
Printing Buls.	—	—	—	43	13	0
Printing others	77	3	11½	45	1	0
Blockmaking	44	6	1	12	7	9
Postage	20	7	1½	20	16	2½
Stationery	14	19	0½	4	16	8½
Advertising	1	13	0	2	18	0
Subs. to other Societies	0	7	6	2	3	6
Meetings	—	—	—	6	11	0
Various	1	9	0	0	6	4
Cash in hand and in bank	65	10	3	156	9	7½
	<hr/>			<hr/>		
	225	15	11½	295	3	1½

Audited and found correct,
18/12/1945.

(Signed) B. O. C. GARDINER.
C. F. PARKER.

During the twelve months from April 1st, 1944, to March 31st, 1945, the Society has again shown steady progress. The changeover from duplicated to printed *Bulletins* has proved more expensive than we assumed from the printers' estimate, but the rise in membership has enabled us to approach what we had budgeted for. In 1944-5 we issued two duplicated *Bulletins* of six pages (pp. 69-74) and four printed *Bulletins* of 36 pages (pp. 1-36), compared with seven duplicated *Bulletins* totalling 26 pages in the previous year. Exchange notices in 1944-5 numbered 79, against 61 in 1943-4. Four Leaflets (Nos. 11-14) were published during the year (one the year before), and one Pamphlet (No. 2) as in the previous year.

In the year under discussion the subscription rate for Senior Members was raised from 2/6 to 5/-, and a new type of membership, Affiliate membership, was introduced to encourage school representation. The total subscribing membership rose from 342 to 450 (211-342 in 1943-4), thus almost maintaining the previous year's increase. During the year 136 new members joined, against 147 the year before.

The first General Meeting since the inauguration of the War-time organisation was held on December 30th,

and plans to resume the annual holding of our pre-war Exhibition of Entomological Technique were carried forward.

Vol. 7 Journal, sent to press in January 1943, still not materialising from our very unsatisfactory London printers, work was put in hand for the bringing out, in advance, of the succeeding volume, Vol. 8, which appeared shortly after the close of the financial year.

Income and expenditure show a number of changes as compared with previous years, and a continued rise in the balance in hand has been shown. Much of the income from sale of *Journals*, however, is made up of advance orders for Vols. 7 and 8, which still had to be published and paid for. The large increase in subscriptions is in part due to the increase in membership and in part to the increase in subscription rate, the latter part, however, having the effect of causing many members to reduce their donation proportionately.

The drop in special publications income is due to the fact that sales of Pamphlet No. 1 had fallen off by this year, while No. 2 was not advertised till after the end of the financial year. Sales of data labels were much the same as in the previous year.

On the expenditure side, printing costs are now divided, so that mem-

bers may see at a glance how much expenditure is directly covered by subscriptions (*Bulletins*, advertising, stationery and postage), and how much on more slowly-selling (investment) publications. Blockmaking costs last year included blocks for Vols. 6 and 7, but this year merely include those for Vol. 8 and one or two for the *Bulletin*. The fall in stationery expenditure is due to the changeover from duplicated to printed *Bulletins*, our gross expenditure on these two items together being much higher. Subscriptions to other societies is increased from the SEUSS fee of 7/6 in 1943-4 by the addition of 10/- Associate Membership fee to the School Nature Study Union, 5/- to the Council for the Promotion of Field Studies and an initial donation of £1 1/- to the same organisation, whose hostels we hope will prove of use in particular to the younger members of the AES. A new item of expenditure was incurred in hirings, advertising and materials for the General Meeting and the Exhibition.

There is no doubt that the Society is still greatly handicapped by shortage of capital, which will become more apparent when paper supplies increase and we find ourselves unable to take advantage of this return to better times and to proceed with the publication of several larger and better-illustrated *Handbooks* that are in preparation. We would like from time to time to include colour plates where these are essential to the subject, and it has been suggested that in future donations of £5 or more should be earmarked for this expensive form of illustration. Until we

have sufficient donations in hand, either in the general blockmaking account, which this year shows a fair credit, or by special donations towards coloured plates, we shall not embark upon such luxuries. So we hope that donors will again remember our needs during the coming year. It is not intended at once to increase our rate of expenditure, but for the present and until the supply of materials is easier, to build up a larger working capital to pay for more ambitious works from cash in hand, instead of, as hitherto, out of income, with the fear that if the latter should be less than anticipated, the Editor will have to tide things over from his own pocket.

We again have to thank everyone who has helped the Society during the year. In addition to those Officers who have again devoted so much of their spare time to AES work, we must especially thank Messrs L. S. Beaufoy, L. W. Siggs and Mrs Griselda Cooper, who have addressed and posted off the year's *Bulletins*; Mr K. H. Poole, whose charming drawings have delighted so many members; Mr H. K. Airy Shaw for his assistance with editing and proof-reading; and our anonymous member whose toils have provided data labels for so many notable collections, and, incidentally, the funds to pay for the printing of more *Leaflets*.

BEOWULF A. COOPER
(Hon. Organiser).
D. H. STERLING
(Hon. Secretary).

26/10/1945.

OTHER AES ASSETS

(not mentioned in above report)

Stock of unsold publications, estimated at cost price	£93 16 6
Deposit on Vol. 7 Journal	25 0 0
Blocks for Vol. 7 Journal	21 0 0
Blocks for Vol. 8 Journal	11 7 9
Tilley Lamp (at cost)	2 5 0
Type for printing machine (cost £4 5/-) say	2 0 0
Peacetime Organisation funds	26 2 3

£181 11 6

N.B.—The printing machine used by Society for the printing of data labels is loaned to the Society.

SPECIAL GENERAL MEETING

At the Special General Meeting held in London on December 1st, 1945, it was moved and carried unanimously that the Wartime Organisation of the AES be wound up, the Peacetime Organisation started, and the funds of the two amalgamated forthwith.

The proposed New Constitution was then read paragraph by paragraph, many amendments sent to the Organiser or made by those present being moved and, after discussion, incorporated. The finally amended wording was carried unanimously. The finally approved amendments were tabulated on the duplicated circular sent to members, and will by now have been approved or rejected by postal poll. The final version of the Constitution will be sent to all members with a future *Bulletin*.

The following Council were elected:

Officers

PRESIDENT—E. E. Syms.

VICE-PRESIDENTS—R. J. Collins; L. R. Tesch.

SECRETARY—D. H. Sterling.

TREASURER—R. S. Ferry (taking office 1/1/1946).

EDITOR AND ORGANISER—B. A. Cooper.

ADVERTISING MANAGER—A. M. Walton.

MEETINGS SECRETARY—R. H. Briegel.

YOUTH SECRETARY—R. S. D. Balter.

Councillors

ASSISTANT EDITORS—H. K. Airy Shaw; A. F. O'Farrell.

PUBLICATIONS SALES MANAGER—G. A. Roberts.

OTHER MEMBERS (SENIORS)—E. W. Classey; N. T. Easton; B. O. C. Gardiner; W. D. Hincks.

OTHER MEMBERS (JUNIORS)—Pamela C. Bain; E. L. Martin.

Mr C. B. Pratt, who has better facilities for dealing with AES business, has since come forward, and it is suggested that he should take over from Mr Roberts at the next General Meeting. Meanwhile, he will act as Assistant Business Manager and will keep stocks of all the Society's publications (except Bulletins).

MEMBERSHIP CHANGES

* = Junior Members

† = Affiliate Members

New Members

21 C. W. Henderson, 124 Knightthorpe Road, Loughborough, Leicestershire. (C., Brit. and extot.)

- 40 Eng. Capt. Stanley T. Stidston, R.N., J.P., F.R.E.S., M.S.B.E., Ashe, Ashburton, Newton Abbot, Devon. (L.)
- 66 B. N. Douetil, Wonersh Chase, Wonersh, Guildford, Surrey. (L.)
- 68 Dr T. Norman, 138 Andover Road, Newbury, Berks. (H., L., D., L. parasites)
- 75 Arnold D. Turner, 19 Manor Close, London N.W.9. (L., gen. ent., NH.)
- 154 Major F. H. W. Ross-Lewin, The White House, St Olaves, near Great Yarmouth. (L., O.)
- 162 Miss Marian S. Harry, 17 Briarwood Road, Stoneleigh, Ewell, Surrey. (L.)
- 164 G. H. Hill, 52 Love Lane, Pinner, Mddx. (L.)
- 197 Dr K. G. Blair, Pentwyn, Afton Road, Freshwater, I.O.W. (C., gen. ent.)
- 230 Rev. W. R. F. Addison, Coltishall Rectory, near Norwich, Norfolk. (L.)
- 232 E. B. Britton, Ento. Dept., British Museum (Nat. History), Cromwell Road, London S.W.7. (C.)
- 263 W. P. Seabrook, Branwoods, Gt. Baddow, Chelmsford, Essex. (L.)
- 272 Dr G. H. T. Stovin, Vassars, Langley, Hitchin, Herts. (L.)
- 277 W. H. Storey, c/o Barclays Bank Ltd., 113 High Street, Shoreditch, London E.1. (L.)
- 291 P. M. Sheppard, Westall, Marlborough, Wilts. (L., gen. ent.)
- 302 W. T. Mellows, M.B.E., Ll.B., F.S.A., The Vineyard, Minster Precincts, Peterborough. (L.)
- 306 E. S. Williamson, 29 Redhill Drive, Edgware, Mddx. (ent.)
- 322 H. E. Winsor, Corydon, Cranleigh, Surrey. (L.)
- 323 A. W. Robertson, Ranworth, St Lawrence Drive, Eastcote, Mddx. (E.)
- 332 Dr Elizabeth G. Gray, N. Scotland College of Agriculture, 41½ Union Street, Aberdeen, Scotland. (mycology, B.)
- 342 A. M. P. Thompson, 50 Fullarton Drive, Troon, Ayrshire. (B., P., mic.)
- 382* Miss E. M. Wykes-Sneyd, Locrenton Vean, St Keyne, Liskeard, Cornwall. (L.)
- 419 B. B. Snell, Woodsome, Plymyard Avenue, Bromborough, Cheshire. (L., ML.)
- 431 N. A. Richardson, 20 Bletchley Road, Bletchley, Bucks. (L.)

- 440 Dr O. H. Wild, M.B., 79 Hatherley Road, Cheltenham, Glos. (L.)
- 509 P. D. Mumby, 2 Westfield Road, West Shalford, Cambs. (H., C., ML., D.)
- 517* Miss Y. M. Forrow, 153 Station Road, London N.W.4. (L.)
- 530 John H. Elliot, 45 St Olaves Road, Bootham, York. (H.)
- 835 Mrs V. L. M. Heslop, Bernisdale, Hawk Heath Road, Woking, Surrey. (agric. pests, C.)
- 836 J. Heath, F.R.E.S., Heathcot, Hedle End, Southampton. (L., esp. ML.)
- 837 F. J. Ramsay, Old Manse, Kilbarchan, Renfrewshire, Scotland. (gen. ent.)
- 838* R. F. P. Wright, Pine Glen, Ash, near Aldershot, Hants. (L.)
- 839* G. E. Marks, 228 Castle Road, Bedford. (L., gen. ent.)
- 840* W. Green, 30 Neville Drive, Thornton-le-Fylde, Lancs. (gen. ent.)
- 841 T. D. Goddard, F.R.E.S., Long Hoyle Farm, Heyshott, Midhurst, Sussex. (Brit. and European L.)
- 842 P. Newson, Redheugh, West End Avenue, Guisborough, Yorks. (L.)
- 843 Dr J. A. Walker, Penarul, Parkstone, Dorset. (L., ML.)
- 844 J. Edwards, 81 Hassam Parade, Newcastle, Staffs. (O., D.)
- 845* R. M. Waugh, The Oaks, Rotchell Park, Dumfries, Scotland. (gen. ent., esp. L., moths)
- 846* B. M. Evans, 53 Woodstock Road, St Albans, Herts. (breeding L.)
- 847 S. Dexter, Riverside, St Dogmaels, near Cardigan, S. Wales. (gen. ent.)
- 848 K. E. West, 8 St Loyes Street, Bedford. (L., O., botany, geology)
- 849 B. B. West, 8 St Loyes Street, Bedford. (L., O., botany, geology)
- 850 J. D. C. Boyes, B.Sc., A.R.I.C., A.R.P.S., Wimborne, Millfields, Nantwich, Cheshire. (L., esp. vars. and hybrids)
- 851 L. S. Hodson, Littlestowe, Essendon, Herts. (gen. ent.)
- 852* W. David S. Cotton, Ebbisham, Walton-on-the-Hill, Tadworth, Surrey. (L.)
- 853* A. John S. Cotton, Ebbisham, Walton-on-the-Hill, Tadworth, Surrey. (L.)
- 854* J. T. Dean, Glenilex, Sunnydale Road, Swanage, Dorset. (L., gen. ent.)
- 855 E. C. Read, Stoney Corner, Meopham, Kent. (NH.)
- 856* P. J. Walker, 25 Regal Way, Preston Hill, Harrow, Mddx. (gen. ent.)
- 857 G. W. Bullamore, Woolton Hill, Newbury, Berks. (gen. ent.)
- 858 Rev. K. J. F. Skelton, Glen Villa, Castle Lane, Bolsover, Chesterfield, Derbyshire. (L.)
- 859 W. J. P. Smyly, Holly Bank, Cold Ash, Newbury, Berks. (C.)
- 860* P. G. Hamilton Price, Hambrook House, Charlton Kings, Cheltenham, Glos. (E.)
- 861* R. W. Horton, 56 Guardhouse Road, Radford, Coventry. (L.)
- 862* T. P. Horton, 56 Guardhouse Road, Radford, Coventry. (L.)
- 863 Capt. Dudley G. Marsh, Garrantor, Pigeon Lane, Eddington, Herne Bay, Kent. (L.)
- 864 B. M. P. Thomas, 28 Blenheim Road, London, N.W.8. (L.)
- 865 E. Parker, Feathercombe, Hambleton, Godalming, Surrey. (M.)
- 866 Miss M. E. Jolly, 61 Sunnyside Gardens, Upminster, Essex. (L., gen. ent.)
- 867 E. H. Wild, Splatt Farm, Spaxton, near Bridgwater, Som. (gen. ent., L. esp. wainscots and clearwings, M., vars.)
- 868* E. R. Lake, Hertford Constitutional Club, Lombard House, Hertford. (L.)
- 869 Capt. P. B. Hornblower, M.C., Claverley C. of E. School, Claverley, Wolverhampton. (L.)
- 870 E. F. Gilmour, East View, Pickford Street, Milnsbridge, Huddersfield, Yorks. (C.)
- 871 H. B. Williams, LL.D., F.R.E.S., Croft Point, Bramley, Surrey. (L., genetics)
- 872 Dr Fairfax Bell, c/o D.M.S., Dar Es Salaam, Tanganyika. (R.)
- 873 J. Anderson, 22 Braehead Avenue, Milngavie, Glasgow. (mic.)
- 874 D. Seymour, B.A., Wynton, St Mary's Avenue, Northwood, Mddx. (L.)
- 875* M. T. Laurence, St Albans, New Abbey Road, Dumfries, Scotland. (L.)
- 876 R. D. Pomeroy, Myrtle Cottage, Lancaster Gardens, Beltinge, Herne Bay, Kent. (L.)

- 877 A. E. Curtis, The Cottage, Ilford Estate, Loxwood, near Billingshurst, Sussex. (L., inc. exotics, breeding)
- 878 W. H. Hodge, 72 Cam Causeway, Chesterton, Cambridge. (L.)
- 879 Lieut. G. A. F. Rands, Harlestone, Northampton. (L. esp. hawkmoths, silkmooths, M.)
- 880 M. N. A. Walker, 329 Uxbridge Road, London W.3. (L.)
- 881* Miss P. Briggs, 44 Park Lane, Whitefield, near Manchester. (L., gen. ent.)
- 882 E. L. Swann, 282 Wootton Road, Kings Lynn, Norfolk. (botany, C.)
- 883 W. G. Angus, Principal, Watt Memorial School, Greenock. (C., D.)
- 884 Dr A. A. D. La Touche, 26 South Parade, Southsea, Hants. (spiders)
- 886* A. J. Davies, 17 Copse Hill, London S.W.20. (L.)
- 887† Epsom College Natural History Society. Correspondence to: Hon. Secretary: H. K. Ford, Wilson House, Epsom College, Surrey.
- 888* F. Park, 381 Grangemouth Road, Radford, Coventry. (L.)
- 889 D. F. Harle, The Studio, Strand Street, Sandwich, Kent. (E.)
- 890 Lt. Col. F. C. Fraser, 55 Glenfurness Avenue, Winton, Bournemouth, Hants. (O., Neuroptera, Orthoptera)
- 891* Philip Charles Ensor, 28 Delamere Road, Birmingham 28. (L.)
- 892† Natural History Society, Greenford County School, Ruislip Road, Greenford, Mddx.
- 893 Edward B. Gibson, 6 Croft Terrace, Hebden Bridge, Yorks. (L., C., P., gen. ent.)
- 894 C. J. Harding, B.Sc., 26 Huncliffe Gardens, N. Heaton, Newcastle-on-Tyne, Northumberland. (B.)
- 895 Lieut. I. Parmenter, F.R.E.S., c/o 94 Fairlands Avenue, Thornton Heath, Surrey. (D.)
- 896 P. F. Bird, Hillsbrook, Greenbank Road, Brixham, S. Devon. (L., Neur., H. Parasitica)
- 897* Kenneth G. Smith, 47 Delamere Road, Hall Green, Birmingham 28. (L., gen. ent.)
- 898 R. Vientant, 44 Avenue Georges Pêtre, Brussels, Belgium. (C., H., L.)
- 899 Bernard Verdcourt, B.Sc., 86 Claremont Road, Luton, Beds. (NH.)

- 900 J. L. Palmer, Editor-in-Chief, Western Morning News Co., Ltd., Leicester Harmsworth House, 8-10 Frankfort Street, Plymouth. (gen. ent., phenology)
- 901* P. J. Cousins, Trees, Orchard Road, Old Windsor, Berks. (L., H., agric. ent.)
- 902* W. A. Sands, 26 Leigh Road, London E.10. (L., ML., O.)

Name Omitted in Error from Bulletin 72

- 684 E. F. Wood, 18 Nursery Road, Prestwich, Lancs. (L., ML. and exot.)

Deaths — We regret to have to record the recent deaths of G. Burt (48), F. D. Coote (166) and S. F. Roberts (216).

Membership Total—654 subscribing members.

Change of Address

Corrections to Bulletin 72—Mrs J. M. Adams (508) to: 43 Merchland Road, London, S.E.9. E. A. J. Duffy (200) to: 86 Baldry Gardens, London, S.W.16. Lieut. G. D. S. Greig (10) to: The King's Regiment, H.Q., B.B.C.A.U., A.I.F., Australia. E. J. Henshaw (692) to: 58 Berwyn Grove, Maidstone, Kent. Barbara Hopkins (827*) to: 19 Hillside Road, Harpenden, Herts. J. A. Humphreys (168) to: White Cross Service Station, 155 Reigate Avenue, Sutton Bypass, Sutton, Surrey. J. A. Janes (614) to: Willhayes, Lodge Estate, Tiverton, Devon. C. MacK. Jarvis (650) to: 26 Spenser Road, Bedford. L. C. Lloyd (770) to: Shackerley, Wenlock Road, Shrewsbury. Maj. J. A. Lorimer, R.A.M.C. (576) to: 26 New Road, Haverfordwest, Pembrokeshire, S. Wales. R. I. Lorimer (600) to: 8 Hertford Avenue, London, S.W.14. J. K. Mortimer (522*) to: 28 Argyle Square, Sunderland. E. G. Neal (467) to: Japonica Cottage, Rumwell, Taunton, Som. R. D. Pomeroy (876) to: 14 Highland Avenue, Norwich, Norfolk. L. W. Siggs (243) to: 14 Five Locks Road, Pontnewydd, Newport, Mon. C. C. Townsend (451) to: 68 Gloucester Road, Cheltenham, Glos.

Corrections to previous lists—Prof. Frank Balfour-Browne, F.R.S.E. (340) to: Brocklehurst, Collin, Dumfries. Herbert A. Buckler (334) to: Sutton Bassett, Market Harborough, Leics. J. C. Little (563) to: 70 Lang-

ley Way, West Wickham, Kent. W. F. Lygo (514) to: Forest View, Stamford Road, Kirby Fields, near Leicester. E. Milne-Redhead (685) to: Royal Botanic Gardens, Kew, Surrey.

Corrections to errors in Bulletin 72

—J. D. C. Boyes (850) is interested in *L.*, particularly aberrations and hybrids. Dr P. A. Gorer (676) lives at: The Elms, Fitzroy Park, London, N.6. R. Gorer (659) lives at Little Pett Farm, Bridge, near Canterbury, Kent (phone Bridge 200). Dr H. Henstock (209): Mold is in North Wales.

OBITUARY

We greatly regret having to report the accidental death on September 24th, 1945, of L.A.C. George Burt (No. 48), aged 24. Before joining the R.A.F., Burt had gained his full teacher's certificate and was looking forward to teaching biological subjects on demobilisation. He was a keen observer and breeder with a wide range of interests, having reared from the egg many Dorset grasshoppers and bugs, numerous butterflies and moths and some parasites and aquatic insects. It was his view that the preponderant interest of so many entomologists in collecting and morphology, rather than in the living aspects of bughunting, namely rearing, life-histories, behaviour and ecology, was due to faulty training of the beginner rather than to any greater interest or attraction possessed by the former. He had hoped to be able to help remedy this state of affairs by his own efforts. Entomology has lost an experimentalist and exponent of amateur studies of great promise.

B. A. COOPER.

We have just heard also of the death in action in Italy last December of a pre-war member, Lieut. J. W. Aldrich, Royal Sussex Regt. (No. 161), a keen collector of butterflies.

ADVISORY PANEL

Commander A. A. D. La Touche (884), 26 South Parade, Southsea, Hants., offers his services as Adviser on Spiders. Lieut.-Col. F. C. Fraser (890), 55 Glenfurness Avenue, Winton, Bournemouth, Hants., offers his services as Adviser on Neuroptera, British and Foreign. E. A. J. Duffy (200), Adviser on Beetle Larvae, has moved to: 86 Baldry Gardens, London S.W.16.

MEETINGS

The Exhibition of Apparatus and Technique will be held at Buckingham Gate Central Schools, Victoria, London, on Saturday, March 30th next. Designs for apparatus, the apparatus itself, and any exhibit on entomological technique is particularly wanted. Also offers to give personal demonstrations of technique are specially desired. We would like to see more school exhibits than last year. A competition, details of which are given elsewhere in this issue, will also be judged at the Exhibition. Offers of exhibits and assistance of any kind should be addressed to the Meetings Secretary, R. H. Briegel, 141 Burnt Oak Lane, Sidecup, Kent.

The Annual General Meeting will be held on the evening of the same day, at the same school. Teas will, we hope, be obtainable on the premises.

The Epping Forest Group of the AES will hold meetings in the field during the 1946 season. Details may be obtained from the Local Secretary, C. B. Pratt, 1 West Ham Lane, London E.15, to whom offers to lead field meetings on this side of London should be sent. Please enclose 2½d stamp for reply.

WANTS AND EXCHANGES

E. L. MARTIN (801*) wishes to purchase *AES Bulletins*, Nos. 1-66 inclusive.

B. R. BAKER (361) is anxious to hear from anyone who has collected in S. China, and wishes to purchase a book on Hong Kong butterflies or any descriptive lists of S. China Lepa. Reply to: 2208338, AC1 Baker, B. R., 55100 Mobile Signals Unit, R.A.F., Hong Kong, S.E.A.A.F.

H. RAY (678) wishes to exchange British species of Pugs (genus *Eupithecia*, etc.).

C. BIGNELL PRATT (784) would like to hear from lepidopterists in the Epping Forest district who would assist in the preparation of an up-to-date list of its butterflies and moths by supplying recent records. If an experienced local entomologist already has such a list in preparation, he would instead be pleased to place his records at his disposal.

Correspondence on birds of the Forest and on Epping Forest generally would also be welcomed.

G. D. S. GREIG (10—note address change in this issue), would be glad to hear from members anxious to ob-

tain insect material from Labuan, Sarawak and Borneo, where he is now stationed. He expects to be sent into the mountains in the interior of Sarawak and may be out of postal contact with the outside world for many months, so do not give up hope if reply is slow in coming. Air Mail letters will reach him sooner than any other post.

Dr J. N. PICKARD (599) would like to exchange many species of ova, larvae and pupae of Lepidoptera.

E. F. GILMOUR (870) requires Coleoptera, particularly Longicornia and Cetoniidae, from any part of the world, including Britain. Purchase or exchange.

R. ALDRIDGE (262) is preparing a county list of Lepidoptera taken in Bucks, and would like to receive records of insects taken there, together with date, locality, approximate numbers and any other data of special interest. All localities will be treated as confidential.

Dr FAIRFAX BELL (872) would like to get in touch with members residing in tropical America, Asia or Australia with reference to the exchange of butterflies.

DEREK A. ASHWELL (223) requires, next spring, larvae of the Magpie Moth (*Abraxas grossulariata*), *lacticolor* strain, male *lacticolor* × female *lacticolor*, or male *lacticolor* × normal, preferred.

J. A. JANES (614) wishes to buy the following books: Richard South's "Moths of the British Isles" and "Butterflies of the British Isles," preferably 1939 editions. Also F. W. Frohawk's "Complete Book of British Butterflies."

B. VERDCOURT (899) wishes to obtain information concerning insects or other animals associated with *Cuscuta europaea* L.

F/Lt. P. M. SHEPPARD (291) requires: Poplar Hawk pupae (*S. populi*) in exchange for Privet Hawk (*S. ligustri*), Small Elephant Hawk (*M. norcellus*) or Broad-bordered Beehawk (*H. fuciformis*) pupae.

Mrs FRANCES WAGNER, P.O. Box 5902, G.P.O., San Francisco, Cal., U.S.A., is anxious to buy living eggs or cocoons of the Tussah Silkworm (*Antheraea mylitta*). Will anyone who can supply, or advise her where to apply, please write direct?

Maj. A. N. BRANGHAM (18) requires a second-hand copy of William Morton Wheeler's "Ants" (1910) and Theodore H. Savory's "British Spiders."

WANTED—Exhibits of entomological apparatus and technique, at the AES Exhibition in London on March 31st. Will anyone able to give assistance in any shape or form please communicate with R. H. BRIEGEL, 141 Burnt Oak Lane, Sidcup, Kent. Help make it a success.

ESSAY COMPETITION

Mr Charles King-Smith (159) has kindly presented the Society with three books likely to be of interest to Junior Members. It is proposed to award these as prizes for an essay not exceeding 150 words on "How I took up Entomology." The competition is open to Junior Members only. John Moore (146), the well-known author, has offered to judge the entries, allotting 50 marks for "content" and 50 for "ability to express." Entries should be sent to him at: Orchards, Bredon, near Tewkesbury, Glos., by March 23rd, 1946. Any contributions submitted may be published later in the *Amateur Entomologist* or the *AES Bulletin*.

First Prize: *Butterflies and Moths of the Wayside and Woodland*, by W. J. Stokoe (1939). Second Prize: *A Pocket-book of British Butterflies, Moths and Other Winged Insects*, by Charles A. Hall (1938). Third Prize: *Butterflies and Moths at Home*, sixty photographs from nature by A. Forrester (1907).

SKILL-IN-SETTING COMPETITION

Mr S. G. Abell has very kindly offered a prize for the best case of insects exhibited at the Society's Annual Exhibition to be held in London on March 30th next. The insects must have been collected by the competitor during the year 1945 and set by himself. The age of competitors must not exceed 17 years on December 31st, 1945. Insects may be of any order, or several orders, and not more than sixty specimens may be exhibited.

In judging the exhibits, the following points will be taken into consideration:—

- (1) Condition of specimens.
- (2) Perfection in setting.
- (3) Correct identification and labelling.
- (4) Possession of data labels
- (5) Addition of notes of special interest.
- (6) Age of competitor.

No extra credit will be given for the scarcity of the species exhibited. In this competition Yellow Underwings will be as valuable as Bath Whites — probably more so as they can be in bred condition!

There is no entrance fee for members of the AES. The fee to non-members, members of Affiliate Societies, etc., will be a year's individual subscription to the Society. Each exhibit should bear a label stating the name, address and age of the competitor and a note stating that the insects were collected and set by the competitor during the past season.

The object of the contest is to quicken interest in the practical side of entomology and to stimulate the taking of care in preparing and labelling specimens.

As a first prize, Mr Abell offers Dr E. B. Ford's new book, "Butterflies" (Collins, 1945) and as a second prize one of the Wayside and Woodland Series, published by Fredk. Warne, to be chosen by the winner. If the number and standard of entries is high, further prizes may be awarded. Alternatively, the winners may choose books to equivalent value, to be bought from any firm exhibiting at the meeting. Every competitor will be presented with a brief criticism of his entry.

PARTICULARLY TO JUNIOR AND AFFILIATE MEMBERS

18 Ferncroft Avenue,
London, N.W.3.
January 1st, 1946.

Dear Younger Members,

Firstly I will introduce myself. I have been elected the first Youth Secretary. Having just passed the age-limit for a Junior Member, I am still really a beginner, though I have been collecting for several years; my interests include all aspects of natural history, entomology and microscopy, in fact anything biological.

Now my job as Youth Secretary will be to look after the requirements of the younger members — not particularly stopping at the age of 18 — in every way possible. And as we may not be able to get together as easily as we should like, it is up to you to suggest what it is that you really expect and require, for me to do something about, or to get other members of the Society to do so. In particular, what sort and what size of

publications I am to urge the Editor to provide—though he is dependent as much as you on what members provide in the way of hints and descriptions of apparatus for publication. Again, in our exhibitions and other meetings, we wish to show you the things that you most want to see. We can in part guess these from our own needs and from what you yourselves exhibit, but you may be able to suggest other things which you cannot yourselves provide. So if you know of members with interesting items to exhibit, but who are not pulling their weight, we might be able to do something about it if you tip us the wink. Finally, if we are to produce *Leaflets* especially for our younger members, we must be certain of sales sufficient to pay for them. So please tell your friends about the Society. Let us raise our Junior membership from 151 (October) to 250 by next June. And don't forget to tell your school science master about the AES if you have not already done so.

I hope to be able to provide in future *Bulletins* a section of particular interest to beginners. So let me have your queries and contributions and any suggestions for its contents.

Wishing you a Happy New Year and success in your bughunting.

Your Youth Secretary,

RICHARD BALTER.

SOME NOTES ON PUPA-DIGGING

Many lepidopterists consider pupa-digging so unadventurous and tedious that they never bother to take a trowel with them on their winter walks. But I think I must have had an ancestor who took part (unsuccessfully, I'm afraid) in a gold rush; I have the prospecting spirit, and every time I dig beneath an oak-tree I think I am about to turn up *D. chaonia* (Lunar Marbled Brown). Needless to say I don't, but I sometimes get good things which I shouldn't easily get otherwise—for example, my *conspicillaris* (Silver Cloud) found last winter under elm. Here are a few tips which may help to make the pastime more profitable and less tedious.

Don't waste time digging in clayey or wet soil, or under trees in woodland and coppices. (In woods you will often find pupae most easily under moss on tree stumps.) Isolated trees

and small clumps are best; but sometimes you will do well under trees growing beside streams *if the banks are dry*. I have been most successful under oaks, elms (where lime-hawks are often more plentiful than under lime), poplars, willows (occasionally), and large isolated hawthorns. Ash is generally unprofitable except for *C. xerampelina* (Centre-barred Sallow) but you should search mossy trunks for *C. ligustri* (Coronet) and *E. fraxinata* (Ash Pug). I have never done much good under beech or sycamore, nor found anything under horse-chestnut. (Does any lepidopterous insect feed on this tree?)

Start digging early in the season. Under oak in August you will get as many *E. protea* (Brindled Green) and *D. aprilina* (Merveille du jour)

as you want; the imagines of these species are very difficult to find.

Use a spoon to pick up the pupae when you have exposed them, pack them carefully for the journey home in sterilised moss or cotton wool, and before you put them into your cages examine each with a lens and reject it if it shows any sign of injury or mould. Living pupae can easily be distinguished from dead ones; they are much colder, to the hand, lips, or the tip of the tongue.

Finally, avoid trees surrounded by rabbit-burrows, and do not leave the immediate area of the trees you dig looking like rabbit-burrows. Put back the loose earth, and "replace the divots" as a matter of courtesy to the landlord as well as to the larvae which will pupate in your nicely-prepared bed next season.

JOHN MOORE (146).

PROFESSOR FUNGUS (Copyright by G. S. Kloet)



CURES FOR TROPICAL MOULDS

Since the publication in *Bulletin* 71, pp. 73-4, October 1945, of a request for advice on the cure for those moulds which attack the entomologist's specimens in the tropics, the Editor has received, from Lt. G. D. S. Greig (10), in British North Borneo, a query on exactly the same lines. He writes:

"I have great trouble with mould. We have a very hot humid climate with an annual rainfall of 156 inches here. Everything goes mouldy. What can I do? What, if anything, can be done to prevent this even in a storebox? I can keep butterflies' wings only and have found it useful to set them between thin glass so that both surfaces can be seen. These would be kept as lantern slides are kept, in a long box. I cannot get glass until later on, and I keep the wings in envelopes in the meantime. Would such a collection be rendered valueless or its value be much reduced as a result of my having kept only the wings?"

To these queries three replies have been received. The first, from H. A.

Dade, A.R.C.S., Assistant Director of the Imperial Mycological Institute, Ferry Lane, Kew, Surrey, is the most detailed:

"There are two approaches to control. The first, obvious, and better method is to keep the insects dry, for moulds cannot grow on material with a water content below about 7 per cent. I am familiar with the difficulties of keeping things dry in a very humid climate, but it can be done without excessive trouble. In the Gold Coast forest, in conditions (R.H. 100% all night, rarely below 70-80% for a few hours in the middle of the day) similar to those of Assam, we could keep insect collections free from moulding by stowing the ordinary wooden store-boxes in the usual kind of steel, "airtight," uniform trunks, together with a desiccating agent. This could be calcium chloride in trays or dishes below the boxes; the chloride becomes wet with absorbed moisture, so spillage of the liquid over the boxes must be avoided; the chloride can be repeatedly reactivated by baking to dryness in an oven. A better agent

is *silica gel*, which does not become wet and messy; this also can be re-activated by baking, and if, as is usual, a proportion of the granules are coloured with a cobalt salt, the colour change from blue (dry) to pink (damp) indicates when the gel needs baking. *Silica gel* can be stowed in open tin trays, or, better, in flat perforated tin boxes, above, below, or between the store boxes. I should think that from $\frac{1}{4}$ to $\frac{1}{2}$ lb. per trunk would be adequate. If steel trunks are not available, well-made, tightly-closing wooden boxes would be suitable if they were thoroughly varnished or painted inside, or, better still, lined with tin or zinc, with some kind of rubber or greased leather washer at the lid joint.

"The other method is to use a fungicide, either (a) volatile, in place of creosote, or (b) applied to the insects. There are powerful new substances available, but I cannot tell what their effect on insect colours would be. They might be tried out on worthless specimens. A useful volatile fungicide is a mixture of 75% ethyl cellulose and 25% cresatin, but this may have the same disadvantage as creosote. For direct application, the following are much in use for textiles in the Pacific war zone: shirlan (salicylanilide), and mercaptobenzthiazole; both effective when applied in solution to give a final dry content of 0.5% of the weight of the material treated.

"The usual sulphur, copper, chromium, and mercury compounds, in general use as fungicides, would, I think, be very liable to affect colours.

"I strongly advise your correspondent to attempt dry storage."

T. Bainbrigge Fletcher (52), formerly Imperial Entomologist of India, writes:

"I know the conditions in Shilong, having collected there myself pretty extensively (1916-1929) and have had experience in the preservation of insect specimens in hot damp climates for some thirty years. The best thing that I can recommend is the extensive use of naphthaline. But it is of little use to put a little in a camphor-cell of the ordinary-pattern storebox or to pin a solid lump inside the box. What is wanted is saturation of the air inside the box with naphthaline vapour to prevent the growth of mould spores, which are likely to drop into the box every time that it is opened.

The naphthaline, if procured in lumps or crystals (the latter best), should be crushed into powder and this sifted through a fine sieve, and this fine sieved powder can be placed in the boxes without any fear of injury or, in my experience, colour-change."

Finally, Dr Fairfax Bell (872) advocates the use of a saturated solution of carbolic acid in chloroform as a prevention of mould. The mixture should be poured into the box before the insects are put in. But B. A. Cooper advises care in the use of phenol (carbolic acid) as he has had experience of colour changes in British species caused by lengthy exposure in a relaxing tin moistened with water and too strong a solution of carbolic acid.

PHOTOGRAPHS FOR PLATES

Mr Cooper has asked me what advice he should give to photographers on the preparation of prints for reproduction by means of half-tone plates, which it is hoped to use more frequently in AES publications. He has been sent several pictures of subjects needed for reproduction, but having the fault of over-contrast, which has given them a soot-and-whitewash effect. While the photographer should aim to produce pictures in which the outline and features of the subject are clearly distinguishable, it is a fault to over-emphasise contrast so that the picture does not look like the subject it represents.

I think the only thing for such soot-and-whitewash prints is to scrap them and make fresh ones on a softer grade of paper, and if this does not give soft enough prints there is the "Sterry" process in which the exposed paper is first soaked in a bi-chromate solution and then developed in weak developer, and also the water-bath method in which the paper is immersed for short periods alternately in water and developer. By either of these methods one can produce a soft print from a hard negative on normal paper, but I have never yet had to try them.

For reproduction the best print is one which is slightly lighter than normal, and slightly more contrasty.

The soot-and-whitewash appearance is simply too much contrast, and may be caused in four ways: (1) too much contrast in the subject or between

the subject and surroundings or background; (2) photos taken in a harsh light such as full sunlight or photo-flood are more contrasty than those taken in the shade or on dull days; (3) an exposure on the short side needs overdeveloping to give enough density to print easily, and this overdeveloping gives greater contrast, and, incidentally, increases the grain, which is a serious defect if high-scale enlargements are to be made; (4) printing on too contrasty a grade of paper also increases the soot-and-whitewash effect. Gaslight papers as a rule are less satisfactory than bromide papers.

I had quite a bit of trouble with too much contrast when I was learning my technique. It started because I thought I had to give the shortest possible exposure in case the insect moved, and because I believed what the makers said about the speed of their ultra extra super fast plates. My exposure meter gave 1/200 second at F/16 for normal subjects in June mid-day sunshine, and as for close-up work one has to increase the exposure by $(M + 1)^2$ where M is the magnification; for life-size negatives I gave four times this exposure, i.e. 1/50 sec. at F/16. I found that this gave a very thin negative, so I tried overdeveloping to increase the density, but this gave too much contrast; so then I doubled the exposure and developed normally, which was certainly better.

With the under-water photos of Dragonfly nymphs I had to use a very light background to swamp the reflections, in the glass of the tank, of the bright parts on the front of the camera, so that when I was taking a very dark nymph I got an awful lot of contrast between the nymph and the background. Then one day I made a mistake and forgot to stop down the lens from F/8 to F/16 before exposing, and so had given 1/25 sec. at F/8, which was eight times the theoretically correct exposure. I tried to correct this awful error by cutting down the development time by 20%, and, apart from a slight lack of depth of focus which was hardly noticeable, I got infinitely better negatives than ever before, with a really full range of soft tones.

When I came to photograph Dragonfly imagines I found they wouldn't keep still enough in sunlight for a longish exposure, so I brought them indoors to a dull light, and

found they would stay quite still for minutes or even hours, and because of the weaker light my exposures became something around 4 seconds at F/32. I also found that because the lighting was softer I did not need to overexpose and underdevelop nearly so much to get the contrast I required in the negatives.

In printing one can vary the contrast by using different grades of paper, and to a lesser extent one can increase contrast on a particular grade of paper by developing for a shorter time, about 75% of the usual, in developer of double strength, and also decrease contrast by developing for about 50% longer than normal time in half strength developer, and when enlarging one finds that a condenser-enlarger gives more contrast than one using diffused light.

DEREK A. ASHWELL (223).

(The Editor would be glad to hear from any members who might be able to help to illustrate forthcoming AES publications by means of photographs.—B.A.C.).

REVIEWS

Butterflies, by Dr E. B. Ford (London: Collins, "The New Naturalist" Series, pp. xiv. + 368 + 48 col. pl. + xxiv. half-tone plates, 8½ × 5½ ins., 1945, 16/-) (RSa).

"The New Naturalist" aims at presenting, in a large number of volumes appearing over several years, a complete and up-to-date survey of British Natural History, illustrated by means of the latest developments in colour photography. The editors of the series are James Fisher, the ornithologist; John Gilmour, the botanist; Julian Huxley, and Dudley Stamp. Such names ensure that there will be nothing "amateurish" nor, in the bad sense, "popular" about "The New Naturalist," and that good taste as well as learning will go hand-in-hand.

"Butterflies" gives the series a fine start. It is a lovely book to look at and to handle, and the colour photographs of living specimens are as near perfection as one could expect while the technique is still fairly new. But I think it is necessary to say that this is *not* a popular text-book; there are plenty of those already. Its 350 large pages are packed with information, much of it new or presented for the first time in a book, information about structure

and development, the origin of our classification, senses (the "attractive scent" of the males of fourteen species is differentiated and tabulated), habits and protection, distribution (illustrated by some original maps showing the range of most of our species), dispersal (some excellent stuff on migration), evolution and genetics.

The chapters on the latter subjects are particularly good; that goes without saying, for Dr Ford is Reader in Genetics at Oxford. But again it is fair to warn the beginner that the author makes no compromises in the cause of "popularity"; and if you wish thoroughly to understand these parts of the book you should "brush up your mathematics." It is well worth doing; for Dr Ford suggests a number of very simple experiments in breeding, which could be conducted by any keen collector, the results of which would actually add considerably to the sum of our knowledge in genetics and natural selection: work, for example, on the operation of natural selection on the colour-patterns of such species as the Chalk-hill Blue or the Marsh Fritillary; on the frequency of sex-controlled inheritance in the Silver-washed Fritillary and the Clouded Yellow; and on simple recessives which, surprisingly enough, have only been analysed in four British species. Dr Ford points out, however, that amateurs undertaking experiments of this type should submit their results to a statistician before jumping to conclusions.

Much space is given to the ecology of our British butterflies: another field in which the ordinary collector can conduct useful original research. Science would be the richer if the variety-mongers and the rarity-hunters would devote some of their energies to such work (although I must confess that variety-mongering and rarity-hunting have their place in the scheme of things if regarded, as they should be, simply as *fun*). Science is certainly the richer for books like these, which provide a much-needed stimulus.

JOHN MOORE (146).

I cannot refrain from adding some words of praise after reading this enthralling work. It is a book that has been needed for a long long time, and one that will undoubtedly infuse new zest into the work of many

butterfly-hunters, in the same way that South or Frohawk may have done when we were younger. Now we need a work or works like this on the moths.

Dr Ford has not produced a rehash of the information given in the writings of the above two authors. Nearly everything he describes is new. Every butterfly collector and observer should obtain it for his library *as well as* its forerunners. The book is good value on its coloured plates alone, and the text is in no whit inferior. It is a milestone on the road of entomological literature.

How refreshing it is to read about scientific problems as seen through the eyes of a naturalist. Dr Ford is a collector, yes, but primarily he is a naturalist, as one sees in every page. And the pure collector will realise what he has been missing after reading this volume, and will, it is to be hoped, feel able to advance beyond being but a collector of curios (p. 253).

The colour photographs of *living* insects, by our member Mr S. Beaufoy, are beyond compare; to my mind, they are far more attractive than any photograph, painting or actual example of a *set* specimen can ever be. They make me most dissatisfied with my own puny efforts in back-and-white photography of living specimens. And the plates of set insects, too, are first class, each plate being arranged to show some biological phenomenon, such as the insects inhabiting a particular habitat, migrants, genetics, sexual abnormalities, seasonal forms and temperature experiments, while ten plates illustrate geographical forms of British species. For the pure collector these latter will be the highlight of the book. The printing of data beside the specimens illustrated is a most useful innovation for a popular book.

The black-and-white plates of living insects are not of such good quality, on the whole, and I feel that for many of them it would not have been difficult to have found better pictures. The ecological photographs of typical habitats are particularly interesting. The giving of the same numbers, in one case in Roman, and in the other in Arabic, numerals, to sepia and coloured plates respectively, is very confusing. Line drawings in the text

would have made the meaning clearer in several places.

Whereas John Moore has been impressed by the sections on genetics, I have been most moved by those on ecology and geographical variation and distribution. One may wonder if the fillip which this will undoubtedly give to the collection of such forms may not in certain cases lay colonies of local butterflies more than ever open to spoliation by over-collecting, of which the author speaks sorrowfully on many occasions throughout the book. But very nearly every page contains ideas for observation and experiment by amateurs, and we hope that it will be successful in widening the interests and public spirit of future collectors so that this will never again occur. Perhaps the reverse may once more be attempted, and we may see the pretty little *Araschnia levana* (p. 169) reintroduced to this island, this time with more permanence.

Of course one cannot examine such a work without finding statements to criticise. The remark that the Marbled White (*Melanargia galathea*) "... has long ceased to occur in Yorkshire, where it was once known" (p. 125) cannot be allowed to pass without comment—in at least two localities, one in East Riding, one in North, this species is now common, probably more so than it has been for many years. Similarly, very nearly every distribution reference to "South Yorkshire" applies equally to North Riding. It is most easy, however, as well I realise, to overlook such records, which are frequently published in little read transactions of local societies and Naturalists' Unions.

BOWULF A. COOPER (19).

Some British Moths, by Norman Riley (London and New York: Penguin Books Ltd., King Penguin Books, No. 18, pp. 32 + 16 col. pl., 7½" x 5", 1944, 2/-) (Sa*).

This little book, in common with most of the others in the series, reproduces in reduced size the coloured plates of an early work, in this case *The Aurelian* by Moses Harris, and is prefaced by a pleasing introduction outlining the ways of the moths figured, with a biographical note on their pioneer artist. The volume is quite up to the standard of its predecessors, and should delight a public who rarely see entomological publica-

While two or three statements in the Introduction may be open to criticism, such are almost inevitable in a popular work; so frequently have previous authors, in search of surprises amongst insect life, had recourse to the realms of fancy, that it is a relief to learn that truth can be stranger than fiction.

B. A. COOPER.

QUERY—PAIRING HAWKMOTHS

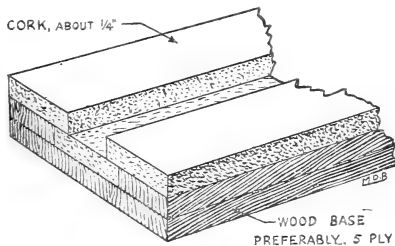
What is the secret in pairing the Spingidae? In May and June of 1945 I hatched out a number of Hawkmoths — Poplar (*S. populi*), Lime (*D. tiliae*), Eyed (*S. ocellata*) and Privet (*S. ligustri*) from pupae. I was hoping to obtain hybrid larvae from a male *ocellata* × female *populi*. To my great disappointment, I could not get any of the moths to pair, let alone the two of different species.

The cage I keep for hatching pupae is not very large, so I thought cramped conditions were preventing pairing; I then transferred a male and female *ligustri* to a good-sized suitcase and left them there for 48 hours. There was no attempt at pairing. To make sure that I had not made a wrong identification of the sexes, I repeated the process several times with different moths of the same species, but with no result. A male and a female *populi* that remained in the cage for a week were equally stubborn and I was forced to kill the males for my collection. The female *populi* that was left alive laid a great quantity of infertile eggs before I let the battered specimens free.

PAUL F. MILNER (521*).

SETTING BOARDS

R. D. Morton's note in *AES Bulletin* 68, p. 47, April 1945, inspires me to describe an even simpler method. I have no rabbit plane and



could not use it if I had. The base of the board is of wood thick enough

to prevent bending—5-ply is satisfactory but not 3-ply. On this are glued two strips of wood with a strip of cork in the middle. If the cork is thin, two strips are advisable. The wooden strips should be as thick as or thicker than the cork. On this are glued two strips of cork overlapping the lower cork strip and leaving a suitable gap for the bodies of the specimens. This is an improvement on wood as ordinary pins can be more easily used in cork. Strips of smooth paper should be pasted, with flour paste so that they can easily be renewed, over the cork. These boards cannot be made in oval section. Why does Mr Morton make his corked groove concave? L. W. SIGGS (243).

(To help keep the body in its correct position it may be advisable to do this; there is then less chance of its slipping.—R.D.M.)

In these days of acute shortage of cork and even more exorbitant price of what there is, I wonder how many members have thought of turning to balsa wood as a substitute for cork. In fact, it is better than raw cork, being softer. This material can generally be obtained from shops that supply parts for model aircraft, such as Hobbies Ltd. Holes can be filled up with a touch of liquid glue and odd pieces of the wood, and then sandpapered flat. The groove is easily scooped out by means of sandpaper wrapped round an ordinary twelve-inch wooden ruler, using a straight edge as a guide.

A. KENNEDY (20).

TWO RECENT ADDITIONS TO THE BRITISH FAUNA

In this wonderful year for migrants, it is not surprising to hear of unusual visitors to Southern England. One of these is a Noctuid moth, *Sedina buettneri* Hering, an Acronyctine previously recorded from Central Europe and entirely new to the British list. Twelve specimens, only one of which was a female, were taken by Dr Blair and Mr Hawkins at Freshwater, I.O.W., between 26th September and 13th October, 1945.

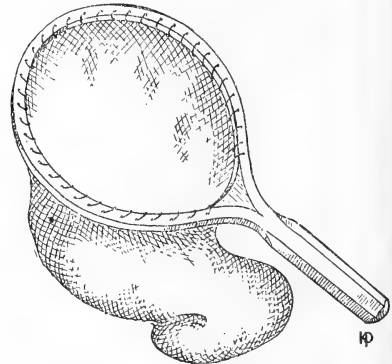
The other is a very large Syrphid fly, somewhat hornet-like, *Volucella zonaria* Poda. This is not strictly new to the British list, but has been regarded as an extremely rare vagrant. Six specimens have been re-

corded in Southern England since 1940, and a similar number during the preceding sixty years. During 1945, however, it has been recorded from the south-eastern coastal counties; there is evidence of its breeding at Bournemouth, Hants, and considerable numbers occurred at ivy bloom at Westgate-on-Sea, Kent, while I was fortunate enough to take a female at Rottingdean, Sussex, in July. Dr B. M. Hobby, in exhibiting and discussing specimens before the Royal Entomological Society, pointed out the possibility that this insect may have now succeeded in establishing itself in the south-east corner of Britain, and all amateur entomologists should therefore be on the look-out for it; it is so unlike other British Syrphids, and so large and striking in appearance, that it is not likely to be overlooked.

A. F. O'FARRELL (58).

BEGINNER'S NET

If any member is looking around for a strong net for a young beginner, I can recommend nothing better than one made from a discarded tennis racquet. It will stand



up to anything! One such served me well for many years, and though I have now graduated to a more collapsible and lighter pattern, I still look back to many days' sport in its company.

WALLACE W. JACKSON (619).

SETTING MICROS WITH A BRISTLE

In *AES Leaflet No. 13*, Arthur Smith advocates the setting of Micros by means of a bristle. Here is a tip that may help users of this method.

Having pinned the insect in the

groove and put the antennae in place with a moist camel-hair brush, put a fine pin in each side of the groove, just in front of the antennae. The bristle can then be placed outside the guide pin, slightly over antenna and wings, parallel and very close to the groove. The guide pin prevents the bristle from slipping down into the groove and causing disaster by taking with it the antennae and wings. This allows a maximum of fringe to be safely covered by the setting papers.

Incidentally, the best bristles I have struck are supplied by the household cat. Choose the shortest from each side and cut them out—don't pull! He won't mind. I have used the same pair of cat's whiskers for twelve years for everything smaller than Pugs.

B. W. WEDDELL (701).

NOTES FROM SHROPSHIRE

After twenty-two years' collecting around Newport, Salop, I last year came across *Eulype hastata* (Argent and Sable) quite commonly on a Moss near here, and it was plentiful again this year. In the last edition of South, Vol. 2, Appendix, it is said that this moth does not feed on bog myrtle, as does *E. subhastata* (Northern Argent and Sable), whose life-history is described by Dr Cockayne in *Amateur Ent.*, Vol. 5 (1941), pp. 29-30. But on April 20th, 1945, I bred it from a larva found between spun leaves of that shrub. The moth was well out in its haunts on May 18th, but I did not notice any there on April 23rd, when my bred male induced me to go and have a look.

I should like also to mention that *Nonagria dissoluta* (Brown-veined Wainscot) var. *dissoluta*, the dark brown form, occurs in Staffordshire. Its local date is a month later than that given in South.

On September 1st, 1945, I took a specimen of the White Ermine (*Spilosoma lubricipeda*) in perfect condition, at light. Is this likely to have been a second brood?

Rev. E. S. LEWIS (373).

22/11/1945.

A PLAGUE OF CATERPILLARS

While on a walking tour of the Lake District, I was on September 1st, 1945, walking up the Valley, Warnscale Bottom, at the head of Buttermere, in Cumberland; the slopes of the valley were covered with bracken and for an area of $\frac{3}{4}$ mile \times $\frac{1}{2}$ mile the

ground was covered with caterpillars. They were easily identified as being of the Broom Moth (*Ceramica pisi* L.) and the White Ermine (*Spilosoma lubricipeda* L.) and there were about ten *lubricipeda* to one *pisi*. There averaged about 20 larvae per square foot, which would give 200,000,000 larvae in that area!

The Broom larvae were just over an inch long and had two chocolate and one white stripe completely down their backs; they were very soft. The Ermine larvae were covered with hairs and were brown with a black line right down their back; their heads were also brown-yellow.

All the bracken was completely defoliated and looked like so much wire. The larvae were walking aimlessly in search of food; they were not quite full fed.

JOHN SHAPLAND (548*).

BUTTERFLIES IN HONG KONG

I have a few notes which may be of interest to members regarding butterflies here in Hong Kong. I am sadly lacking in their specific names, but the following are some I have been able to check.

The most striking butterflies are the Papilionidae, of which there are 15 species; so far I have come upon 8 of them; amongst these is *P. sarpedon*, a very fast flying Swallow-tail, which, even when attracted to the *Lantana* bushes, constantly quivers its wings. Others I have taken include *P. memnon*, *P. clytia*, *P. paris*, and *P. antiphates*.

The most interesting of the Pierids is *Hebomoia glaucippe*, a very large "Orange Tip" which I have taken most easily in the evening as it searches for a resting place in the shrubs on the lower slopes.

D. plexippus was very common at the end of September, and later, as its numbers began to decrease, so another of the family took its place, this being *D. aventina*, a dark brown butterfly giving the same purple effects as our own *A. iris* (Purple Emperor).

Amongst the Lycaenids, the Short-tailed Blue is very common, and, on the hills above Victoria, occurs a very pretty Hairstreak similar to *T. betulae*, but with a greater proportion of orange and with two delicate tails on each hindwing.

The Skippers will prove an interesting family; there are 31 known species, including one very large

species which has the habit of flying at dawn and dusk, and another, the size of our own Large Skipper, with the striking feature of possessing "red eyes."

Actias luna, the Moon Moth, flew into our room to-night; unfortunately, another collector on this unit happened to be in the room at the same time!

In the steep-sided valleys I have visited, the best method of collecting is to take up position by the side of a stream or gully and just wait for the visitors to pass by; they seem to have definite lines of flight, and, so far, this method has proved a far better proposition than chasing everything at random.

B. R. BAKER (361).

2/11/1945.

ADVERTISEMENTS

FOR SALE OR EXCHANGE—

Baker microscope in wooden case; objectives 1", $\frac{2}{3}$ " and $\frac{1}{6}$ "; eyepieces Nos. 2, 4 and 5. Substage Abbé condenser. Price £13 or offer. Seen London. — John Shapland, Imperial College Hostel, Prince Consort Road, London, S.W.7.

FOR SALE, a six-drawer mahogany birds' egg cabinet. Each drawer is compartmented with ply-wood and layered with sawdust, £6. From: Major A. N. Brangham, 11, The Quadrangle, Welwyn Garden City, Herts.

FOR SALE, Collection of British Moths and Butterflies; about 600 specimens of some 310 species in cabinet (45 x 52 x 14 inches) of 45 drawers. Named spaces for another thousand species. Majority collected end of last century, including pair of Black-veined Whites, Large Coppers and Mazarine Blues, etc., in good condition; about 25% of others damaged. May be inspected at Morenish Farm, Killin, Perthshire, by appointment. — Apply Parnell, Churchwalk, Rugby.

JUST PUBLISHED

Volume 7 of the *Amateur Entomologist*, entitled the "Hymenopterist's Handbook" (160 pp. + 2 plates, 180 text figures). A guide to the collecting, mounting, rearing, litera-

ture and study of ants, bees, wasps, sawflies, gallwasps and parasitic Hymenoptera. It includes keys to the families and general information on structure; it discusses the special problems of collecting, each specialist dealing with his own particular group; it describes the construction of observation hives and nests for rearing the various bees and wasps; it makes suggestions for experiments which amateurs can conduct on these groups of insects; and it deals with the photography and microscopical mounting of minute specimens and parts. There are twenty contributors; the work is indexed and provided with a glossary explaining the technical terms encountered. Can the study of the Hymenoptera be popularised? We think it can, and therefore this Handbook has been published. Tell your friends about it.

Price 7/6, post 3d, to members (10/6, post 3d, to non-members) and obtainable from the Assistant Business Manager, C. B. Pratt, 1 West Ham Lane, London, E.15, from whom all other AES publications, data labels, etc., may be ordered.

Vol. 6 of the "*Bulletin of the Amateur Entomologists' Society*," edited by Beowulf A. Cooper, B.Sc., A.R.C.S., Dept. of Agriculture, The University, Leeds 2, to whom all contributions, exchange notices, illustrations, adverts, announcements of change of address, etc., for publication, should be sent. Bulletins are issued free to members. First subscriptions to the AES (5/-, 2/6 to boys and girls aged 17 or under) should be sent to the Hon. Secretary, D. H. Sterling, 36 Estella Avenue, New Malden, Surrey, and subsequently to the Hon. Treasurer, R. S. Ferry, Fulling Mill House, Welwyn, Herts. Data labels and publications of the Society (except Bulletins) may be obtained from the Assistant Business Manager, C. B. Pratt, 1 West Ham Lane, London, E.15, or from the Editor. Membership Application Form, specimen Bulletin and information as to the work and publications of the Society will be sent on receipt of threepence by the Hon. Advertising Secretary, A. M. Walton, F.R.E.S., 275 Croxted Road, London, S.E.21.



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No. 74

BULLETIN

MARCH 1946

ONCE MORE

The Exhibition—Once more spring is arriving with a flourish, and with it the collecting season and the AES Exhibition. Elsewhere in this issue are given details of the type of exhibits and helpers we so much need for this latter function. As it is one of our major recruiting occasions, please bring it to the notice of any of your colleagues who may not already be aware of the interests which it may hold in store. But it is more than this. It is an event at which all the southern or south-eastern members of the Society may meet together and talk over their plans for the coming season, may meet those from other areas, and shake hands with those with whom they have corresponded, but not met, for years. Badges will be issued to all those attending, on which names and membership numbers will be written, to assist recognition. It is hoped that many stewards will come forward to mix with these present, to get to know the members themselves and to introduce them to one another. When we hold so few meetings, we must make the most of what we have. Please help to make it a success, in exhibits, attendance and social contacts. When you get there, look for those bearing the badge "Steward" or other sign of office. For every officer would like to meet those with whom he may have corresponded in the past. Then will be an ideal time to make suggestions for the improvement of the Society's activities, and, even more important, to offer your services so that these suggestions may be carried out. The Annual General Meeting will follow the Exhibition.

New Constitution — With this *Bulletin* every member should receive a copy of the Constitution passed at the Special General Meeting of the Society held on December 1st, 1945. The voting forms received by the Officers on January 31st, 1946, showed a poll of 215 in favour to 2 against.

Advertising Drive — In this issue Mr Tesch makes an appeal for a special effort to increase our total

membership during the coming twelvemonth to a thousand or more. Mr Balter has hopes of increasing the number of Junior members, proportionately, to 250. One of the aims is to stimulate the sales of our publications and so make more and larger and better illustrated works possible. Another is so that local groups in places other than London shall be easier to form, and may be able to hold exhibitions of a like nature in other centres. A proposal that such an exhibition should be held in Leeds in conjunction with the Yorkshire Naturalists' Union and other bodies interested in natural history pursuits in the area, was turned down at their last Annual General Meeting on the ground that it had never been done before, and was too big a task. It is up to the members of the AES to show that it *can* be done, and can be well done at the same time. Let us make our plans now!

Assistants — The Editor is anxious to enrol assistants who may be able to undertake some or all of the work involved in preparing the *Bulletins*. He is frequently away from home for days at a time, and cannot cope with the correspondence and typing involved, though he would be able to undertake jobs requiring less regular attention, which could be taken up during the periods when he is living at home. Offers invited. Also required: A "Chief Adviser" to prepare the annual list of Advisers and notices for each issue of the *Bulletin*, to seek out further Advisers, as well as to deal with queries sent in which do not come quite into the province of any of the existing Advisers. It needs to be someone preferably who has a wide knowledge of entomology in its practical as well as theoretical aspects, and knows a good many specialists (not necessary members of the AES) who might be able to deal with such problems.

Annual Subscription — The 1946 subscription is now due and those who have not yet paid it are asked to do so to Mr R. S. Ferry, or, if ordering publications, to Mr C. B. Pratt (addresses on back page). If it is not

wished to continue membership this year, Mr Ferry would appreciate a postcard to say so, to avoid the trouble and expense of sending further correspondence and publications.

BEOWULF A. COOPER.

15/2/1946.

ADVISORY PANEL

We are pleased to announce the addition of three new Advisers to the Panel this month. L. Parmenter, 94 Fairlands Avenue, Thornton Heath, Surrey, offers to act as Adviser on Diptera. John Cowley, Holywell House, Edington, Bridgwater, Som., offers to provide identification and general advice on Exotic Odonata (dragonflies). Richard Balter, 18 Ferncroft Avenue, London, N.W.3, offers to deal with queries from our younger members. Dr A. A. D. LaTouche, Adviser on Spiders, is now at 13 Park Drive, Harrogate, Yorks.

Richard Balter, who is the AES Youth Secretary, will deal with as many of these queries as possible, and will probably be able to answer more fully than would the specialist advisers on many topics. If the problems are beyond him, they will be passed on to a specialist in the normal way. Junior and Affiliate Members may, of course, still write direct to any of the specialist Advisers, but it is suggested that for the more elementary problems younger members would prefer to write direct to Mr Balter. The queries he receives will enable him to gauge the kinds of article, Leaflet and other publication most needed by younger members. So far, the Society has received relatively few requests for articles on particular subjects. Needless to say, a stamped addressed envelope for reply must be sent with all queries.

The Editor would be particularly glad to have an offer to advise on varieties (not meaning species) of Lepidoptera—he gets frequent queries which he cannot deal with himself and knows no member willing to tackle them. An Adviser on variation could also help him in vetting a number of contributions for publication. He would like, also, to ask Advisers to forward to him, for publication, queries on subjects of general interest, and their replies. There is also a need for a "Chief Adviser," which is discussed in the Editorial.

FORTHCOMING MEETINGS

Below is listed the programme of field and indoor meetings for the year 1946. It is hoped that other members willing to lead small parties of members will send their fixtures to the Meetings Secretary, R. H. Briegel, 141 Burnt Oak Lane, Sidcup, Kent, without delay—it is not too early to send in offers to lead meetings in 1947! The only requirement of the Leader is that he shall agree to be at the rendezvous at the prearranged time, whatever the weather—if no-one else turns up, he is then at liberty to go home if he wishes. It is suggested that it might be a good plan if local societies were to arrange one (not more) "open" or joint field meeting per year; this might benefit the membership of both organisations, and lead to the making of new friendships. It is suggested that where two or three members are in the habit of collecting together they should plan one trip in advance and offer to make it an AES field meeting. It is expected that most meetings will consist of only two or three members, except in the vicinity of towns having a large AES membership, but it is hoped that members will "sample" any held in their vicinity and, if they approve the scheme, themselves offer to lead further expeditions. Please bring sandwich lunch or tea to all meetings. Visitors are invited.

Saturday, March 30th.

AES Exhibition of Apparatus and Collecting Methods

At Buckingham Gate Central Schools, Wilfred Street, London, S.W.1, near Victoria Station. Hall open for receipt of exhibits from 10 a.m. onwards, and the meeting will be declared open at 2 p.m. Tea will be available for those desiring it later in the afternoon. Do not be afraid to exhibit what you think may be commonplace—we want every type of apparatus, living or set insects, common eggs, nymphs, larvae, pupae and adults as well as scarce, books, bee-keeping apparatus, microscopes and cameras, photographs, drawings and paintings and anything else remotely connected with bughunting. We need many more demonstrators to demonstrate the mounting or setting of adult insects, preserving of larvae, making micropreps, taking entomological photographs, degreasing, re-

pairing damaged specimens, identifying dubious insects, and so on. The Society itself cannot provide any exhibits—that is up to the members themselves. Please help make it a success. In order to avoid overlapping, it would be useful if exhibitors could notify Mr Briegel at once what they may be able to provide or do—but if you have not notified him, do not let that deter you from bringing along an exhibit or two. Some tables will be reserved for exhibits by Junior Members and others for exhibits by school societies. There will also be an "Exchange Table" for the exchange of living duplicates, and a competition for Junior members. We shall be most grateful to any members able to loan blackout or other material wherewith to drape the tables to receive the exhibits. Brown paper would be better than nothing.

AES General Meeting

This will follow the Exhibition detailed above, after tea. The agenda will be as follows:

- (1) Minutes of last AGM.
- (2) Election of Officers and Councillors (to replace the retiring third).
- (3) Reports of Officers.

The six retiring Councillors are Messrs R. J. Collins (Vice-president), G. A. Roberts (Business Manager), Pamela Bain (Junior) and E. W. Classey, W. D. Hincks, and A. F. O'Farrell (Senior Councillors).

The following six nominations are put forward by the Council to fill the six vacancies: A. F. O'Farrell (Vice-president), C. B. Pratt (Business Manager), E. W. Classey, R. J. Collins, and J. D. Shapland (Senior Councillors), and one Junior Councillor, still to be nominated.

Further nominations for the vacant Offices must (Rule 15) be made in writing and signed by at least two members. Nominations for seats on the Council other than Offices must be made in the same way by two members, but in addition may be made without notice at the meeting, when, if necessary, a ballot will be held.

Mr. E. E. Syms automatically proceeds to Vice-president, and Mr L. R. Tesch becomes President.

Saturday, April 13th.

Field Meeting to Isle of Wight

Leader: R. W. Watson, South Haven, Stanley Road, Lyminster,

Hants, from whom further details may be obtained (please send stamped addressed envelope). For *cinxia* (Glanville Frit.) larvae.

Easter Monday, April 22nd.

Field Meeting to Ilkley Moor, W. Riding, Yorks.

Leader: R. Procter. For *caesiata* (Grey Mountain Carpet) and other moorland larvae. Meet at White Cross, Guiseley (bus from Leeds) at 12 noon, and walk over Moor.

Sunday, May 5th.

Field Meeting to Loughton Lanes and Epping Forest

AES Epping Forest Group. Meet at Chigwell Lane Stn. at 10.45 a.m. Rendezvous for latecomers: Loughton L.P.T.B. Garage.

Sunday, May 19th.

Field Meeting to Gomshall and Hackhurst Downs, Surrey

Leader: G. C. Holroyd. Slow train 9.27 a.m. from Waterloo, arr. Guildford 10.20, or fast train leaves Waterloo 9.45 a.m., arr. Guildford 10.27. Meet in the Booking Hall. Thence by bus to Gomshall Stn. to meet others who come from Redhill per 10.4 a.m., arr. Gomshall 10.33. Bus from Dorking half hourly. Please drop a p.c. to The Matchbox, Elm-side, Guildford, a week or so before to say how many you are bringing.

Sunday, June 2nd.

Field Meeting to Skipwith Common, E.R., Yorks.

Leader: Eric Ramsden. A car seating four will be travelling from Leeds, via York. Those wishing to attend please send stamped p.c. to Mr Ramsden, 27 Moseley Wood Lane, Cookridge, Leeds, so that more do not ask to attend than can be transported. Anyone going by car who may have a vacant seat please let Mr Ramsden know so that as few as possible may be turned away. If Durham members wish to attend, a car will go from Northallerton, also.

Field Meeting to Warley Common, Essex

Epping Group. Meet at Brentwood Station at 11.15 a.m.

Sunday, June 9th.

Field Meeting to Bookham Common, Surrey

Leader: L. Parmenter (in conjunction with London Natural History

Society). 9.47 a.m. train from Waterloo, arr. Bookham 10.32.

Field Meeting to Ringwood, Hants.

Leader: R. W. Watson. To see *pinastri* (Pine Hawk), etc.

Saturday, June 22nd.

Field Meeting to Langton Woods, N.R., Yorks.

Leader: B. A. Cooper.

Sunday, July 7th.

Field Meeting to Wintry Wood and Gernon Bushes, Essex

Epping Forest Group.

Saturday, July 20th.

Field Meeting to Snilesworth Moor, N.R., Yorks.

Leader: B. A. Cooper.

Early August.

AES Summer Holiday Camp

Details given below.

Sunday, August 4th.

Field Meeting to North Dorset Downs

Leader: R. W. Watson.

Sunday, August 11th.

Field Meeting to Ongar and Fyfield, Essex

Epping Forest Group.

Saturday, August 17th.

Field Meeting to Temple Newsam Woods, near Leeds

Leader: R. Procter.

Sunday, September 8th.

Field Meeting to Hainault Forest, Essex

Epping Forest Group.

Sunday, October 6th.

Field Meeting to Chingford and High Beech, Essex

Epping Forest Group.

WHAT ABOUT A SUMMER CAMP?

Several of our members seem to be interested in the idea, and, indeed, our member, Mr P. Speight, has very kindly offered to organise a Camp in the North from 24th July to 12th August, and suggests Silverdale, Lancs., as a suitable locality. The Society has no equipment of its own (tents, utensils, etc.); will any mem-

bers interested please write immediately and signify their support for the plan, or offer loan of equipment.

A similar Camp has also been suggested for the South in the New Forest area, say, a week or fortnight in May and for a similar period in August. Will any members who have experience in organising or running a camp, who are interested in the possibility of attending such a camp, and also those who have equipment they may be willing to loan, please put forward their offers, addressing their letters to the Meetings Secretary, R. H. Briegel, 141 Burnt Oak Lane, Sidcup, Kent.

One member has kindly offered to loan his own tent, but we want more offers please.

LOCAL AES GROUP

We are pleased to announce the formation of another Group, this time in North West London (Harrow, Pinner, etc.). They held their first meeting on February 7th, and any members who may be interested should communicate direct with the Organiser: Mr M. H. Port, 31 Pinner View, Harrow, Middx., for particulars of further activities.

All interested in a S.E. London Group are kindly requested to communicate with Mr D. F. Cole (644), who has offered to organise it.

R.H.B.

SKILL-IN-SETTING COMPETITION

Mr S. G. Abell has very kindly offered a prize for the best case of insects exhibited at the Society's Annual Exhibition to be held in London on March 30th next. The insects must have been collected by the competitor during the year 1945 and set by himself. The age of competitors must not exceed 17 years on December 31st, 1945. Insects may be of any order, or several orders, and not more than sixty specimens may be exhibited.

In judging the exhibits, the following points will be taken into consideration:—

- (1) Condition of specimens.
- (2) Perfection in setting.
- (3) Correct identification and labelling.
- (4) Data labelling.
- (5) Addition of notes of special interest.
- (6) Age of competitor.

No extra credit will be given for the scarcity of the species exhibited. In this competition Yellow Underwings will be as valuable as Bath Whites — probably more so as they can be in bred condition!

There is no entrance fee for members of the AES. The fee to non-members, members of Affiliate Societies, etc., will be a year's individual subscription to the Society. Each exhibit should bear a label stating the name, address and age of the competitor and a note stating that the insects were collected and set by the competitor during the past season.

The object of the contest is to quicken interest in the practical side of entomology and to stimulate the taking of care in preparing and labelling specimens.

As a first prize, Mr Abell offers Dr E. B. Ford's new book, "Butterflies" (Collins, 1945) and as a second prize one of the Wayside and Woodland Series, published by Fredk. Warne, to be chosen by the winner. If the number and standard of entries is high, further prizes may be awarded. Alternatively, the winners may choose books to equivalent value, to be bought from any firm exhibiting at the meeting. Every competitor will be presented with a brief criticism of his entry.

FOR ESSAYS ON INSECTS

Two prizes, founded by the late Dr William Johnson Walker, are offered annually by the Boston Society of Natural History for the two most acceptable papers written in the English language on a subject chosen by the Board of Trustees of the Society.

Prizes—A prize of sixty dollars may be awarded to the author of the best essay. This award may be increased to one hundred dollars, at the discretion of the judges of the contest, in the case of a paper of exceptional merit. A second prize of fifty dollars will be given only if the next best paper seems worthy of the distinction. No prize will be awarded unless the papers submitted are deemed worthy by the judges.

Eligibility — The competition for these prizes is not in any way restricted.

Subject Matter—The Walker Prizes in Natural History will in 1946 be

awarded for essays on insects. Each paper must be the result of original and unpublished research personally conducted by the author and accompanied by an accurate bibliography and a review of general literature on the subject. All papers must be typewritten and in complete form for publication. Other things being equal, preference may be given to papers showing evidence of preparation especially for this competition.

Authorship — Each paper must be anonymous. It must bear a pseudonym placed in a conspicuous place on the first page. A sealed envelope, also inscribed with this pseudonym, must accompany the manuscript. The contents of this envelope will divulge the identity and address of the author. Anything in the essay which shall furnish proof of the identity of the author shall be considered as debarring the paper from competition.

Closing Date—All competitors must submit their work to the Acting Secretary, Boston Society of Natural History, 234 Berkeley Street, Boston, Massachusetts, before May 1st, 1946.

The Society and the judges assume no responsibility for publication of the winning papers. However, it is understood that authors should not publish their papers until after the announcement of the prize awards at the Annual Meeting of the Society in October 1946.

MARGARET BAKER, *Secretary*.
Boston Society of Natural History,
234 Berkeley Street, Boston,
Massachusetts, U.S.A., October 1945.

Subject for 1947:
Any subject in the field of Fungi.

MEMBERSHIP CHANGES

* = Junior Member

† = Affiliate Member

New Members

- 128 Herbert C. Briers, 12 St Albans Road, London, N.W.5. (L.)
- 156 Miss Olivia Harvey, Port Williams, Nova Scotia, Canada. (L., gen. ent.)
- 468 Major Charles T. Lloyd, 25 Belmont Avenue, New Malden, Surrey. (L., ML., microphotography, ornithology)
- 903 Dr R. Melville, Ph.D., F.L.S., Royal Botanic Gardens, Kew, Surrey. (H., beekeeping, botany)

- 905* J. D. Chynoweth, 2 Cumberland Road, North Harrow, Mddx. (L.)
- 906* B. L. Harris, 34 Delamere Road, Birmingham 28. (L., O.)
- 907 James Duncan, 16 Blair Street, Glasgow, E.2. (gen. and tropical aquarium keeping)
- 908 Alan Dale, B.Sc., 14 Middleborough Road, Coventry, Warwickshire. (beekeeping, NH., gen. ent.)
- 909 E. Gowing-Scopes, Oakhurst, Oakwood Road, Crofton, Orpington, Kent. (L., C.)
- 910 G. A. T. Jeffs, Nuns Holm, Nuns Corner, Grimsby, Lincs. (gen. ent.)
- 911 M. W. Shaw, Harper Adams Agricultural College, Newport, Salop. (agric. ent., esp. fruit pests)
- 912 K. H. Bobe, 182 Kingsground, London, S.E.9. (L.)
- 913* A. Grimwade, 2 Guildford Way, Wallington, Surrey. (L., gen. ent.)
- 914* A. R. Platts, 29 Dene Road, Northwood, Mddx. (L.)
- 915 J. S. Wheatley, 208 Prospect Road, Scarborough, Yorks. (L., O.)
- 916 S. J. Gray, 97A Lynn Road, Ely, Cambs. (gen. ent., esp. C., fleas)
- 917 L. B. Horner, Pinchinthorpe House, near Guisborough, Yorks. (gen. ent.)
- 918* R. J. F. Burleigh, 50 London Road, Stevenage, Herts. (L. esp. R., Sphingidae)
- 919 F./Lt. D. Hutchieson, 8 Howie's Place, Lime Road, Camelon, Falkirk, Scotland. (World R. esp. Brit. and European)
- 920 A. de B. Goodman, 20 Brooklands Avenue, Cambridge. (gen. ent.)
- 921 R. I. C. Spearman, Oaks Bungalow, Oaks Avenue, London, S.E.19. (B., NH., social insects)
- 922* D. J. Siggs, 14 Five Locks Road, Pontnewydd, Newport, Mon. (L.)
- 923 F. J. Hurrell, 46 Goldlay Avenue, Chelmsford, Essex. (L.)
- 924* Miss Margaret E. Morton, Newbridge House, Horner, near Leeds, Yorks. (L., mic.)
- 925* D. A. L. Esslemont, Station House, Woodside, Aberdeen. (L.)
- 926* A. E. Nightingale, 29 Market Square, Ely, Cambs. (L., gen. ent.)

927* Miss Elizabeth Reid, 75 Ainslie Street, Grimsby, Lincs. (gen. ent.)

Resignations — We have received the resignations of Messrs M. P. Siddons (516*) and W. J. Watts (240).

Membership Total — 679 subscribing members.

Change of Address

E. W. Classey (41) to: 5 Carlton Avenue, Feltham, Mddx. K. J. Coghill (430) to: 50 Boardman Street, Eccles, Lancs. S. Coxey (358) to: 17 Mornington Road, Bolton, Lancs. D. W. Empson (780) to: 58 Pitts Lane, Earley, Reading, Berks. A. Horder (85) to: 29 Albany Road, Salisbury, Wilts. J. A. Janes (614) to: 1 Ailsa Terrace, Tiverton, Devon. J. L. Kershaw (418) to: 92 Gloucester Street, Barrow-in-Furness. Dr A. LaTouche (884) to: 13 Park Drive, Harrogate, Yorks. H. A. Peace (680) to: Kiln Road, Hastoe, Tring, Herts. K. H. Poole (133) to: 86 The Crescent, Milton, Weston-super-Mare, Som. Eric Ramsden (130) to: 27 Moseley Wood Lane, Cookridge, Leeds. Royal Naval College Field Club (822+) is now at Eaton, Chester; Hon. Secretary, E. T. Warner. P. Siviter Smith (250) to: 21 Melville Hall, Holly Road, Birmingham 16. S. R. Tailby (636) to: 1 Atlantic Road South, Weston-super-Mare, Som. R. W. Watson (752) to: South Haven, Stanley Road, Lymington, Hants. C. J. Willshee (420) to: 63 Daventry Road, Coventry. J. Wright (609) to: Lakota, Cranmore, near Yarmouth, Isle of Wight.

Correction to last Bulletin—(p. 5, Change of Address, line 24): J. K. Mortimer (522*) should read J. K. Morton (522*).

WANTS AND EXCHANGES

R. ALDRIDGE (262) is preparing a county list of Lepidoptera taken in Bucks. He will appreciate correspondence with members able to furnish lists of species taken in any stage, with data on their distribution, status, dates, and other items of general interest.

R. HARTLAND-ROWE (464*) wishes to obtain Vols. I, II and III of F. V. Theobald's "Monograph of the Culicidae of the World"; also records of mosquitoes found on Wimbledon Common and Putney Heath.

BARBARA HOPKINS (827*) wishes to buy larvae or pupae of the Magpie Moth (*Abraxas grossulariata*) ordinary strain for breeding purposes.

R. C. DYSON (91) wishes to buy "Talking of Moths" and "Moth Hunter's Gossip," both by P. B. M. Allan; published price paid if required, or will exchange southern species of Rhopalocera.

RICHARD VIENJANT (898) would like to correspond with young English members interested in Coleoptera, Hymenoptera and Lepidoptera for the exchange of information, and, eventually, of the insects themselves. Correspondence in English or French.

N. W. HARWOOD (825) wishes to obtain a few larvae of Lappet (*G. quercifolia*) and Cream-spot Tiger (*A. villica*) for the purpose of photography.

P. LOWRY MULLINGS (360) wishes to obtain specimens of all stages of the Bee Louse (*Braula caeca*), *Galleria mellonella* (Large Wax Moth), and *Achroia grisella* (Small Wax Moth).

JOHN MOORE (146) offers the following ova or larvae: *pyramidea* (Copper Underwing), *cucullatella* (Short - cloaked), *caeruleocephala* (Figure of Eight), *pennaria* (Feathered Thorn), *carpini* (Emperor), *libatrix* (Herald), most *Taenio-campids* (Quakers), *vaccinii* (Chestnut), *ligula* (Dark Chestnut); also *L. dispar* (Gipsy) from Italy. Wants: early stages only of many species, some common, especially from the North of England. He also wishes to purchase a paraffin (Tilley preferred) or petrol lamp for moth collecting.

K. H. BOBE (912)—WANTED: *The Amateur Entomologist*, Vol. 4 (1939); "Text Book of British Lepidoptera," by Newman and Leeds.

B. A. COOPER (19) wishes to obtain adults or larvae, preferably alive, of many British clickbeetles (Elateridae) from all parts of the British Isles. Offered in exchange: Elaterids from Yorkshire (carded, living or pickled) or will collect other groups if wants are stated. He requires full data with specimens, and is also interested in Elateridae from overseas. Particularly wanted: living larvae or adults (post in a tin in moist soil or rotted wood) of *Harminius undulatus*, *Corymbites impressus*, *Athous vittatus*.

OLIVIA HARVEY (156) has for exchange the following Canadian insects: very small wasps nests; mud

dauber wasps and cells; harvest flies; dragonflies; damsel flies; 1 katydid; locust; beetles; flies; *Danaus plexippus*; *Papilio turnus*; *Papilio asterias*; *Vanessa carye*; *Argynnis cebele*; *A. atlantis*; *Cercyonis alope*; *C. ariane*; *Polygonia progne*; *P. interrogationis*; *Brenthis myrina*; *Satyrodes eurydice*; *Phyciodes tharos*; 50-60 micros. One or two of each named. Wanted: English material.

J. P. ROBSON (44) has for exchange hibernated larvae of *C. dominula* ab. *bimacula* (Scarlet Tiger); also, set and unset imagines of melanic *T. consonaria* var. *waiensis* (Square Spot). Wanted: many of the rarer species and varieties of Lepidoptera in various stages.

FROM OUR FOUNDER

"Laurel Dene,"

Loose, Maidstone, Kent.
January 1st, 1946.

Dear Fellow Members,

As Founder of the AES and your President-Designate, I feel that I should re-introduce myself to you, so to speak, after an unusually long period of pupation, from which I have emerged with somewhat crumpled wings perhaps, but by no means a cripple. Among the virtues which go to the making of an entomologist, I fancy that patience and long-suffering must rank high, as otherwise you would not have elected me to the highest office in the Society, but would, as my long period of absence from your counsels would have fully justified, have relegated me to the limbo of things forgotten. Though I have been unable, hitherto, to take an active part in the Society, my interest has never flagged, and I can only show my appreciation of this honour by doing all I can, during my coming year of office, to further its interests and extend its activities.

Previous letters of mine, some years ago, outlined the early stages of the Society, and I do not now propose to weary you with a repetition, but for the benefit of those who may only have recently joined, I would say that I founded the Society—as an informal correspondence club—in 1935, in an effort to elucidate many problems which I, as an amateur collector, had failed to solve. Numbers grew, and in about a year we had some 38 members, but unexpected events in my business life then intervened, and compelled me to hand the baby to our

good friends Mr Cooper and Mr Brangham, who thenceforward undertook the upbringing thereof. How well they succeeded is self-evident, and I would here pay tribute to the magnificent work that Mr Cooper and his band of associates have done in raising the puny infant of my days to the sturdy youth of the present time. No words of praise are too high for the unselfish labours they have so willingly given, and no one knows better than I what it has meant in time, thought, expense, and work, and I know you will agree with me that the best—and only—way in which we can in some measure show our gratitude is to exert ourselves, not only to maintain the Society at its present level of efficiency, but if possible to increase its status in the entomological world.

After some eight years or so of unsettled conditions and absence of a permanent home, I have now found the latter—I hope!—and look forward to being able again to take a more active part in the Society's work, as well as to resuming my collecting activities, which means starting from scratch.

When I speak of further progress, I am not necessarily thinking of intellectual and scientific peaks beyond those already attained, as my own feeling is that we do not wish to become yet another of the many learned societies now existent, and, above all, we do not wish to appear to enter into competition with them. What I do mean is the extending of our radius and the inclusion of more members in our circle, particularly in that stratum of entomology for which I first founded the Society—the YOUNG COLLECTOR. We have now the beginnings of a first-class series of Handbooks and other literature eminently adapted to the requirements of youth, and these, together with the advice and help which is always forthcoming from our older and more experienced members, should be of the utmost value to beginners in our hobby. I have yet to find a normal text-book which deals with one-tenth of the matters so exhaustively covered in our publications, and had I had these when first starting collecting, I think my own somewhat dismal record might well have been very different.

All of this, however, costs money, and our only income is from the membership subscriptions, donations

and sales of publications. If we are to keep up the good work that has been so well set under way, we must have more grist to the mill, and I am therefore appealing to *you*, and each and every one of our members, to make every effort to enrol *at least one new member during 1946*, and thus assist both in making our first post-war year a memorable one by a record increase in numbers, and also in placing the exchequer on a sound foundation.

One of the war-time habits which seem likely to remain with us is the fixing of "targets" for different causes, and it is perhaps a good thing that it should, as it creates a definite goal at which to aim. Let us then reach out for a star, and do all we can to capture it. What is the star? It is the *raising of our membership total to ONE THOUSAND by March 30th, 1947!* That is the prize to fall to our united net. So let us go to it!

I understand that a proposal to establish Regional Committees was brought before the Council two years ago, but did not materialise for reasons which were no doubt very sound and practical. This is neither the time nor the place to revive that suggestion (though it finds favour in my sight) but I do feel that if some *local groups* could be formed in different parts of the country, even if on a quite informal basis, they would be most valuable both in giving greater opportunity for personal contact with young collectors and in enrolling new members. In this connection, particular attention might be given to schools—girls' as well as boys'—as entomology is a hobby which one would think would appeal strongly to the fair sex.

Between my young days and the present time there is, I well realise, a great gulf fixed, and there now exist many counter-attractions which were then unknown—wireless, model engineering, aeronautics, motor cycling, pictures, youth clubs, and the like—all of which militate to some extent against the less spectacular collecting and breeding of insects. On the other hand, if a love of this hobby is inborn, I do not think that any other will really take its place, and there must be still a large number of youngsters who would welcome the advantages offered by membership of our Society, without in any way interfering with their activities in any

similar Society to which they may belong. Let us, therefore, make it our business to find them, and, having done that, to keep in touch with them and thus render service not only to them but to the Society itself.

In conclusion, may I say that I shall always be most pleased to hear from, or to meet, any members old or young, and I shall particularly welcome letters from those who feel they can assist in the formation of local groups, as I shall be only too glad to do what I can in such spare time as business permits to assist in co-ordinating effort along these lines, with special reference to the more remote districts of the British Isles.

May I take this opportunity of adding that I am keenly anticipating the next London meeting, at which I hope to make the acquaintance of as many of our members as are able to attend. I am specially anxious to meet the younger generation, and hope that all who can "make the grade" will endeavour to do so.

Ten years ago, my final slogan always used to be "Good hunting," and I cannot better it on this occasion, so that is my wish to you for 1946, combined with the hope that this first year of peace will see our Society exerting an ever-increasing influence in the entomological world.

Yours sincerely,

L. R. TESCH (Founder).

REVIEWS

Check-List of the British Lepidoptera with the English Name of each of the 2299 Species, by I. R. P. Heslop, M.A., F.R.E.S. (London: published for the author by Watkins & Doncaster, pp. 35, 6¼" × 9¼", 1945; 1/9).

This little volume appears to be in the nature of a "follow-up" to the author's earlier and larger work, "New Bilingual Catalogue of the British Lepidoptera" (Watkins & Doncaster, 1938). It is evidently aimed at the same target, viz., any attempt at radical reorganisation of English nomenclature in the light of the user's convenience, and modern knowledge must be sacrificed on the altar of traditional usage. That this is the author's viewpoint is made very clear in his preface. But in spite of himself he has found it necessary to make certain modifications in the direction of logical English nomenclature; e.g., *L. monacha* becomes the "Black-arched Tussock" instead

of the "Black Arches," thus leaving the way clear to use "Black-arches" as a "surname" for the Nolidae. Similarly, *C. ligustri*, formerly the "Coronet," becomes the "Crown," leaving the term "Coronet" as a surname for *H. conspersa* and some of its allies. Had such principles been more widely used this list might have been a valuable contribution to English nomenclature; as it is, the author's prejudices in favour of tradition leave us very largely with "the mixture as before"—and what a mixture! Darts, Rustics, Wainscots, Underwings, Brocades, Waves, Carpets, Rivulets, Umbers and Straws jostle one another in the same mad confusion that has so often proved a headache to the beginner. Some of the worst errors have been removed, but there is still plenty of room for confusion, e.g., the surname "Straw" is used both in Caradrinidae (*Heliothis*) and in Pyralidae (three different cases among the Pyraustinae). Lest all this criticism appear to be wholly destructive, let it be said at once that, in general, a more rational system of English naming seems to have been worked out for what are usually called "Microlepidoptera," and this is no small achievement. Perhaps the greater lucidity of this portion of the work may be due to the comparative lack of those pitfalls of tradition into which the author is so eager to fall when the opportunity offers.

The last word has not been said, however, on the subject of English nomenclature, and future developments may, or may not, justify the passion for "continuity" expressed in the author's preface. It is certain that many of his names are open to severe criticism on the ground of being inappropriate and/or cumbersome. Why call *P. machaon*, which nobody regards as a common species in this country, the "Common Swallowtail"? Why is it essential to be so verbose in naming small Microlepidoptera with mouthfuls like "White-spotted Woodrush Dwarf" or "White-streaked Brown Midget"? Why dub a well-known economic pest like *C. cephalonica* with the name of "Raisin Honey" when it occurs principally upon ground-nuts?

Surely brevity, aptness, logic, and convenience are the only criteria on which to judge English names? If these standards are accepted, then it is to be feared that much of the painstaking work which must have gone

into this publication has been in vain. The reference to "imitators" of this work in the author's preface implies that it must be accepted by all who read it as a standard of perfection worthy of imitation by all would-be English nomenclators. The writer of this review regrets his inability to agree with such an assessment. The work is very well worth one-and-ninepence to interested persons who have that sum to spare, but as a basis for first-rate English nomenclature it can scarcely be said to reach that value.

A. F. O'FARRELL (58).

8/1/46.

Freshwater Biological Association of the British Empire, Scientific Publications.

No. 2. A Key to the British Species of PLECOPTERA (Stoneflies). H. B. N. Hynes. 1940, 39 pp., 14 figs. Post free 1/7.

No. 7. Keys to the British Species of EPHEMEROPTERA. D. E. Kimmins. 1942, 64 pp., 36 figs. Post free 2/7.

No. 8. Keys to the British Species of Aquatic MEGALOPTERA and NEUROPTERA. D. E. Kimmins. 1944, 20 pp., 9 figs. Post free 1/7.

No. 9. The British SIMULIIDAE. John Smart. 1944, 57 pp., 17 figs.

To anyone interested in aquatic insects these publications are invaluable. All are concise and well illustrated and each is written by an expert.

No. 2, PLECOPTERA, relates to the adult insect only and contains a detailed description of a typical Stonefly (*Perla*). Keys are given to Families, Genera and Species. Six pages are devoted to Ecology—geographical distribution (chiefly in the Lake District) and habitats. The pamphlet concludes with 28 references to literature on the subject.

No. 7, EPHEMEROPTERA (Mayflies). This booklet deals with the structure, life-history, methods of collecting and preserving and also a list of the popular names used by anglers. There are keys which enable one to identify the species in the cases of imagines and sub-imagines; keys for the identification of genera in the nymphal stage. The pamphlet concludes with notes on ecology and a short bibliography.

No. 8, Aquatic MEGALOPTERA and NEUROPTERA. In addition to keys for the identification of species of adults, and in some cases of larvae, there are clear and concise descriptions of the life-histories of alderflies, of "spongeflies" (*Sisyra*) and of *Osmylus*. Notes on collecting, preserving, ecology and a bibliography are included.

No. 9. Britain possesses 19 species of SIMULIIDAE, an interesting—and sometimes troublesome—group of Diptera. The pamphlet has keys for the identification of species in the adult, pupal and larval stages and follows a plan already used in the earlier publications. The details of the life-histories provide exceptionally interesting reading.

In conclusion, these booklets can be warmly recommended to anyone wishing to take up the study of these fascinating insects. They may be procured from the Director, Freshwater Biological Association, Wray Castle, Ambleside, Westmorland.

H. WHITEHEAD (810).

Le Collectionneur d'Insectes; comment découvrir, conserver, étudier les insectes by Henry Panneel. Published 1944 by Vigot Frères, 23 rue de l'Ecole-de-Médecine, Paris, with 407 figures by Théo Bouisset.

A little book which may be of some interest to members who wish to combine bughunting with the study of the French language, or to see how their brother collectors in France are equipped. It gives an outline of the principal apparatus and methods used in collecting and preserving most groups of insects; also an outline of the principal subdivisions of each major order, with an indication of typical habitats characteristic of them. The figures of apparatus are fair, though rather small; but the section on habits and classification is spoiled by the attempt to provide a figure showing the general facies of a typical insect of each family. Some of these figures are quite successful, but all are far too small and most are very crude, being characterised by possessing wings in which the venation is replaced by a series of criss-cross lines and shading, or existing only in the "impressionist" imagination of the artist. The general standard of this publication is probably lower than that of most comparable pamphlets produced in this

country (not excluding those of the AES!) but it is interesting as a proof that all the miseries of war and Nazi occupation have not killed the gentle pursuit of bughunting in France.

A. F. O'FARRELL (58).

Proceedings and Transactions of the South London Entomological and Natural History Society, 1944-45 (published by the Society, pp. xxvii + 96 + v pl., 2 being in colour, size $5\frac{1}{2} \times 8\frac{1}{2}$ ", October 1945, 10/-).

Like its immediate predecessors, a great part of the value of the present volume is provided by the excellent coloured plates. The first, depicting the wing-markings of 49 species of the Micro genus *Lithocolletis*, is part of the 28 page article by Stanley N. A. Jacobs on the British species of this genus. This paper is introduced by an outline of life history and wing pattern, continues with a key to the British species and concludes with descriptions of the individual species, with notes on their time of appearance, foodplants, type of mine and British and world distribution; a table of plant species, showing which moths affect each, and the position of their mines, adds to the usefulness of the paper.

The second coloured plate illustrates the wing-marking of 16 and galls of three British species of the Micro genus *Mompha*, as part of an article by S. Wakely, who discusses the habits of the species he has encountered. Both plates are from the excellent paintings by S. N. A. Jacobs. A volume of such keys and notes, illustrated by this style of plate, has long been needed to put the Micros "on the map" for the majority of amateurs, and it is to be hoped that the Society will persevere with its plan to provide such a publication.

Shorter articles in this issue deal with gregarious larvae (Canon T. G. Edwards), mushrooms and toadstools (W. H. Spreadbury), S. African galls (M. Niblett), Red Letter Days (Col. P. A. Cardew), Monk's Wood (H. A. Leeds), and notes on British Plecoptera (E. E. Syms).

B. A. COOPER.

The Bee Craftsman: a short guide to the life story and management of the honey bee, by H. J. Wadey, Editor of *Bee Craft* (A. G. Smith, Bracken Dene, Manor Way, Petts

Wood, Kent, a Bee Craft Book, $7\frac{1}{2} \times 5$ ins., pp. 116 + 8 pl., 3/6 net). (Sa*.)

A lightly written account of the honey bee and modern beekeeping, which should be of interest to both the novice and the older hand in beekeeping, who may find therein both support for many of his fond beliefs and scathing denunciation of yet other of his favoured fancies. *Bee Craft* is a journal somewhat akin to the *Amateur Entomologist*, though it has been running for a quarter of a century, which has found support in unexpected places partly as a result of its progressive viewpoint and partly because of its readers' dissatisfaction with some of its staid and elderly predecessors. While the book contains several useful practical hints which I have not seen elsewhere, it is rather its statement of the author's outlook towards beekeeping and beekeepers that makes it worthy of a place on the entomologist's shelf.

B. A. C.

PAIRING HAWKMOTHS

The following replies have been received in reply to the Query from Paul F. Milner (*Bull.* 73, February 1945, p. 13) on how to pair hawkmoths.

Laotioë populi (Poplar), *Dilina tibiae* (Lime), *Smerinthus ocellatus* (Eyed) and *Sphinx ligustri* (Privet Hawks) pair readily enough if kept in an open cage (one covered with Brussels or mosquito net or gauze) and kept in the OPEN AIR or at an OPEN window.

It is advisable not to put more than one pair or two pairs in the same cage, and the larger the cage the better the chance of success. The breeding of hybrids is always more or less risky. For this purpose one needs two cages: one cage should contain male *ocellatus* and female *populi* and the other cage male *populi* and female *ocellatus*. Both cages should be placed side by side at an open window or out in the open air. Male *populi* pair with female *ocellatus* much more readily than male *ocellatus* and female *populi*, but the pairing *populi* male and *ocellatus* female always seem to lay infertile ova.

Deilephila elenor (Elephant), *D. porcellus* (Small Elephant), *Celerio galii* (Bedstraw) and *C. livornica* (Striped Hawk) pair readily if kept in a fairly large open cage, but de-

posit very few ova unless they are supplied with plenty of fresh foodplant and flowers; the flowers should be painted with honey or syrup every evening just before sunset. If the weather is very hot, the flowers should be syringed slightly with water, just when the moths begin to fly. The better they are fed, the longer they will live and the more ova they will deposit. By well feeding I have kept females alive five to six weeks, depositing ova every evening, and have many times set the females free because they have laid such a quantity of ova that I could not do with any more. One female *M. porcellus*, after living a month and depositing ova every night, paired a second time and lived another month, laying almost as many more eggs. The moths of this group appear to keep developing ova after emerging from the pupa if well fed, but such species as *populi. filiae* and *ocellatus* have the ova already fully developed when they emerge from the pupa.

Hyloicus pinastri (Pine Hawk) pairs readily but *Herse convolvuli* (Convolvulus) and *Daphnis nerii* (Oleander Hawk) are difficult to manage, and it is almost impossible to get *Acherontia atropos* (Death's-head Hawk) to pair. In all my long experience, over sixty years, I have only once succeeded in getting *atropos* to pair and have wasted dozens of specimens in trying to do so.

H. W. HEAD (15).

I have no experience of breeding hawkmoths, but the paper by Head seems to agree with all I have heard. Bytinski-Salz, who had great experience with the Sphingidae, told me it was not necessary to have a female of the species A when trying to pair male A with female of species B. Another point I have heard is that if left together too long, a male tends to get his scent perception apparatus fatigued and that this may result in failure. To prevent it, it is suggested that a male be put in the cage shortly before the female is due to start calling. It is quite likely to be true.

DR E. A. COCKAYNE (238).

FURTHER NOTES ON LIGHT

Here are a few hints which may serve as addenda to Baron de Worms' excellent article on Light in the *Bulletin* for July 1945 (No. 69).

Impedimenta — Vapour lamps require methylated spirits to start them. (Lighter fuel is a workable substitute.) Wadding in a small metal clip is usually provided with the lamp. It is best kept in the methylated in a small screw-top jar.

In addition to your vapour lamp you will require (a) a small hand-lamp, electric or acetylene, to enable you to deal with the situation if your main lamp packs up in a dark and unfamiliar wood, (b) your sheet or sheets, (c) plenty of pillboxes and at least two killing bottles, (d) a net, though you will rarely use it, since most moths can be boxed directly off the sheet.

Unless you have a car, this is a big load to carry; but I find I can stow it easily (plus sugaring equipment and a larva beating tray if required) in a fair-sized rucksack and carry it all on my back.

Make sure that your lamps are filled up with petrol or paraffin before starting out.

Sheets — At the present time, if you pinch the family's sheets you will be extremely unpopular. A good substitute can be made with off-white calico costing two or three coupons. It is advisable to sew lead weights into the corners lest they blow about in a high wind.

Time of Year—Personally I have always done best in spring and autumn. Very early in the spring (March and April) you will get *ridens* (Frosted Green), *flavicornis* (Yellow Horned), *bilunaria* (Early Thorn), *tetralunaria* (Purple Thorn), *bistortata* (Engrailed), *multistrigaria* (Mottled Grey), *carpinata* (Early Tooth-striped), etc. I once took a series of *curtula* (Chocolate Tip) at light on April Fool's day. Even in February on warm nights you will get *pedaria* (Pale Brindled Beauty), *hispidaria* (Small Brindled Beauty), *strataria* (Oak Beauty), *marginaria* (Dotted Border), *aescularia* (March Moth), etc.—on February 15th, 1939, in the Forest of Dean I had as many as 50 *pedaria* on the sheet at once, including many of the fine black ab. *monacharia*. Autumn is excellent for *Thorus*, and as late as November your light will attract *sphinx* (Sprawler), *pennaria* (Feathered Thorn), *plumigera* (Plumed Prominent), *defoliaria* (Mottled Umber), and *populi* (December Moth). In high summer, apart from Geometers, the Prominents will be your princi-

pal quarry. The Coxcomb Prominent (*camelina*) is often abundant, and *fagi* (Lobster) would probably be found much more commonly if more collectors tried light in their local beech woods.

Weather -- As Baron de Worms points out, it is difficult to generalize. On the whole, though, you will save yourself some wasted evenings if you remember that

cyclonic conditions are good, always providing that the temperature doesn't drop much below 50°. anticyclonic conditions are bad.

I don't believe that the moon *per se* is an adverse factor, but a bright full moon is certainly associated as a rule with anticyclonic conditions which are unfavourable. If the night seems generally suitable, but at first nothing comes to the light, don't be tempted to pack up too soon. Many species flight late. You can fill in the interval before they arrive with a bit of sugaring or beating or searching for larvae. It is sometimes worth while to search tree trunks with your handlamp, as just after dusk many species will be found *in cop.* upon them.

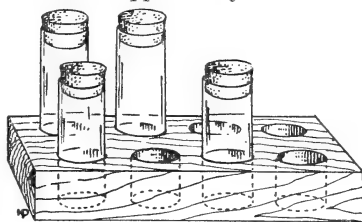
Other Visitors — In the Tropics remember that snakes are inquisitive about lights; in malarial regions reflect that *Anopheles* is positively phototropic. So, alas, are slugs, and it is advisable to shake your sheet thoroughly before you bring it home. A trail of slime up the wall or *Limax* himself upon the breakfast table is not calculated to make entomology popular with wives.

JOHN MOORE (146).

VIAL-HOLDERS

While corked vials are very useful as killing tubes and for storing small living or dead insects, it is always a problem to know what to put them in on arrival home. Useful vial-holders are easily made from thick boarding — my holders are from the sawn off ends of 1-inch planking left after making bookshelves — bored almost through with an appropriate bit. For vials of one inch diameter the hole needs to be at least $1\frac{1}{8}$ ins. wide, and for tubes of less diameter one should leave a play of $\frac{1}{8}$ inch in making them. All vials are not exactly even all round, and some may be slightly larger than the average — and war-time tubes are of very much

poorer quality than those obtainable pre-war, and seem to crack at every conceivable opportunity — often the



mere warmth of the hand will cause them to break. Moreover, the diameter of the holes in the wood will expand and contract to some degree, particularly with the unseasoned wood now provided by the woodyard, and a hole into which the vial slides easily one day may grip it tightly when one wishes to remove it. It is advisable not to make the borings in the wood too close together as this may tend to split some woods and also makes it less easy to pick out the tube required from a large battery. I find it convenient to pin a square card bearing the data relating to the species, date, locality, food, etc., of the contents, on to the cork of each tube, which avoids having to lift the tube up or open it to see what it is.

BEOWULF A. COOPER (19).

QUERY: BREEDING HIRTARIA

Alone among my pupae, *hirtaria* (Brindled Beauty) always dry up. I have tried keeping them in closed airtight tins and in airy puparia frequently damped. The result is always a high rate of loss and many cripples. Can anybody tell me what's wrong?

JOHN MOORE (146).

ECOLOGY OF THE PEARL-BORDERED FRITILLARY

On 12th May 1945 I revisited, for the first time since the war, a favourite hunting ground at the top of Bredon Hill, Worcs.: a plantation of mixed larch, beech and sycamore 500 feet above sea level. I found that the whole plantation, with the exception of the shelterbelt, had been cut down early last year. Rough herbage and scrub were coming up among the stumps. The flora was completely

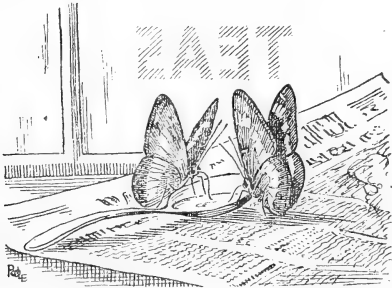
changed, and some plants which I had never seen there before were abundant; on the other hand, ragwort and bugle, previously plentiful in the rides, had unaccountably disappeared. I spotted a fritillary, caught it, and found it was *B. euphrosyne* (Pearl-Bordered). I soon saw several more.

Now I have known the place for 20 years and have collected there at all seasons ever since my schooldays. The nearest habitat I know for *euphrosyne* is 8 miles away; I have never seen it on Bredon before. The assumption is that *euphrosyne* arrived within 15 months of the clearing of the wood. Because of an increased abundance of its foodplant (which, in fact, was not noticeable)? Or because of some other factor? In any case, surprisingly quick work for an insect which is not in my experience much of a traveller.

JOHN MOORE (146).

FEEDING ADULT BUTTERFLIES

First make sure the insect is a female. Then choose a wide window-sill not in the sun and close all the windows, spreading a piece of newspaper on the sill to give the insect a foothold and prevent any spilt food from messing up the sill. Mix a drop of honey—the runny sort—with two drops of water in a teaspoon and lay this on the paper. Then pick up the female, holding all four wings between the thumb and forefinger and place it so that it can put its forelegs (midlegs if one of the Nymphalidae) in the honey, and hold it there until the butterfly has started to feed. The latter will probably uncoil and insert its tongue voluntarily, but if it does not, gently uncoil it with a pin



“ . . . They do you well here, Sybil . . . ”

and insert the tip in the syrup. As soon as it has started to feed, which

can be judged by the movements of the tip of the tongue, you can let go the wings and sit back to watch. Some species feed with the wings closed, others with them open flat, and quite a number show their appreciation of the spread by frequent “kow-towing” with their antennae. The Painted Lady will feed for over half an hour, but splits its meal into five or six courses, coiling up its tongue between each. For small species it is better to put the syrup on a waxed cardboard milk-bottle top, as even a teaspoon is rather too high. After feeding, the female should be sleeved on to the growing foodplant.

DEREK A. ASHWELL (223).

REARING THE WHITE ADMIRAL

I have partially solved the query I sent to the *Bulletin* (No. 66, p. 28, December 1944) about getting *L. camilla* to lay in captivity. Most species lay best in a muslin sleeve in full sunlight but this only kills the White Admiral within 36 hours. Recently I kept one female alive for ten days and obtained 42 ova by placing the sleeve over growing honey-suckle on the north side of and partly under a hazel bush, so that it received only the morning and evening sun. I think one might do even better by using a bush with more open foliage, so that the female gets a little of the mid-day sun. She requires feeding twice daily as she only imbibes for two or three minutes at a sitting, whereas the Painted Lady (*V. cardui*) will lap up my honey and water mixture for half an hour at a time, and need only be fed once a day in sunny weather or every other day in dull weather.

DEREK A. ASHWELL (223).

CATCHING THE FOX MOTH

On June 30th, 1937, I spent the afternoon near Peterboro' trying to net some male Fox moths (*M. rubi*). These were flying in their usual erratic manner, searching for females in a field part of which contained a lot of ant hills and low bramble bushes, and seemed most plentiful in this rough part. At the end of two hours I had chased about 40 males, twice tripped over ant hills and fallen flat on my face, and caught exactly none!

So I gave it up and took to hunting the underside of leaves of the prim-

rose and cowslip plants growing out in the open in the field, for the eggs and young larvae of the Duke of Burgundy (*N. lucina*), and found this a much more profitable and distinctly less hazardous occupation. However when an experienced friend arrived I asked him to catch me a Fox, rather hoping he would also trip up, but I was disappointed. He chose a part of the field where there were no obstacles, and walked briskly up and down sweeping the net from side to side in front of him, and in spite of the fact that the moths did not appear as plentiful in this part of the field, in two minutes presented me with a male. Copying his example I had soon caught several.

D. A. ASHWELL (223).

NOTES FROM SUFFOLK

Early on in 1945 there were hosts of Painted Ladies (*V. cardui*) in this district (Somerleyton, Suffolk). I also saw two pairs of Large Tortoiseshells (*N. polychloros*) and later on there were Commas (*P. c-album*) and Red Admirals (*V. atalanta*). There have been a good number of Humming-bird Hawks (*M. stellatarum*) about. But my trophy for the season was brought to me in the usual jamjar by a girl from the school, who found it difficult to comprehend why I had been so generous with my precious chocolate ration. Inside the jar, opening and shutting its wings, was a lovely Swallowtail Butterfly (*Papilio machaon*). In the autumn I found that the damson-plums and damsons attracted many medium-sized moths when the fruit was a little over-ripe.

Instead of putting my insects actually *inside* the killing bottle, I put a piece of netting over the mouth of a jamjar with the insect inside and turn the whole thing upsidedown on top of the killing bottle. The mouth of the jar fits the mouth of the bottle and when the insect is dead it can be removed easily by just taking off the jar. This saves a lot of time and possible damage to the insect.

LORNA M. LONG (698).

REARING THE GRASS EGGAR

It is generally stated that the rearing of *Lasiocampa trifolii* Schiff. is a matter of considerable difficulty, and that, in spite of the utmost care, the emergence of deformed specimens is a common occurrence.

Eight larvae about $\frac{1}{4}$ " in length, collected upon the Lancashire sand dunes in early May when about half grown, however, survived all metamorphoses producing seven perfect ♀♀ and one ♂ during July of the same year.

The "breeding cage" was the simplest imaginable, consisting of a wooden soap box with top and bottom removed. The cage was placed over coarse-growing lawn grass in a disused part of the garden, with a quarter of the top covered by tacked-on perforated zinc, and the remainder by a loose glass plate. The cage was exposed to direct sunlight—which the caterpillars appeared to enjoy—for the greater part of the day.

When about 1" long, a diet of garden lupin was provided and kept fresh in water-filled bottles sunk among the turf. A lupin diet was found to be superior to wild members of the Leguminosae family. The position of the box was varied from time to time to enclose fresh pasture and new lupin provided daily.

When ready for transformation, a number of shallow grooves were cut in the turf in which pupation proceeded. Cocoons were removed to a breeding cage after about a week, where they remained until the moths emerged.

J. D. BOYES (850).

4/10/1945.

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FOR SALE, 12-drawer second-hand Cabinet, lifting glazed frames. Inside measurements of drawers, 23 $\frac{1}{2}$ " x 12 $\frac{1}{8}$ ". Offers invited. E. Johnson Taylor, Crantock, 25 South Parade, Stockport, Cheshire.

FOR SALE, Books: "Butterflies," by E. B. Ford (published price, 16/-); "Dragonflies of the British Isles" by Cynthia Longfield (published at 10/6). These two books are in absolutely new condition. Also I have "Butterflies of the British Isles" by South, in good second-hand condition. What offers? P. J. Gent, 34 Castle Street, Wellingborough, Northants.

FOR DISPOSAL, a number of Storeboxes, 18" x 18", corked and papered, with camphor cells. What offers? R. W. Parfitt, 1 Dunsdon Avenue, Guildford, Surrey.

JUST PUBLISHED

AES LEAFLET No. 15: "Collecting Het-bugs (Hemiptera-Heteroptera)" (8 pp. + 2 plates, 7d, post-free, 5/- per doz.), a brief guide to the collecting, breeding and mounting of the members of this order. Based, with added text figures and plates and many corrections and text additions, on the articles by E. C. Bedwell, E. T. Daniels and G. B. Walsh, in Vol. 8 of the *Amateur Entomologist*.

AES LEAFLET No. 18: "Collecting Clearwings" (8 pp. + 2 plates, 7d post free, 5/- per doz.), an account of the collecting of Clearwing moths in Britain. Based, with corrections and the addition of text figures and plates, on the notes which appeared in Vol. 6 (1944-45) of the *AES Bulletin*.

Both are obtainable from C. B. Pratt, 1 West Ham Lane, London, E.15.

FOR SALE, "Atlas des Coléoptères de France, Vol. I., Carabes, Staphylins, Dytiques, Scarabées," by Luc Auber, coloured plates by Germaine Boca (Paris, 1945, pp. 83 + 280 coloured figures and 14 text figures). A short guide to the collecting of beetles, written in simple French. The remaining volumes of the series will be published soon. Price 17/-, new.

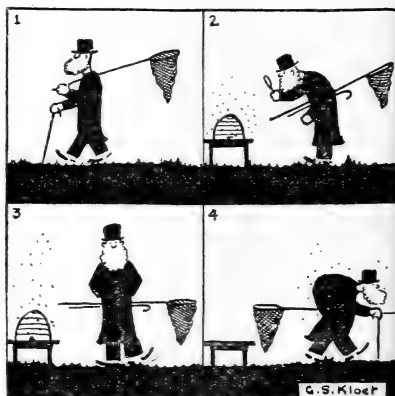
Also, "Atlas des Lépidoptères de France, Vol. I., Rhopalocères," by F. Le Cerf, coloured plates by Roger Métaye (Paris, 1944, pp. 115 + 12 coloured plates and 15 text figures).

Price 17/-, new.

Both are useful guides for anyone visiting France, or interested in the continental fauna, and the coloured plates are exceptionally fine. The text of each covers collecting, mounting and rearing methods, geographical distribution, life-history and habits, variation and internal and external morphology, keys to the families, with sections devoted to each species individually. Proceeds to AES funds. B. A. COOPER, The Vicarage, Northallerton, Yorks.

Vol. 7 of the "Bulletin of the Amateur Entomologists' Society," edited by Beowulf A. Cooper, B.Sc., A.R.C.S., Dept. of Agriculture, The University, Leeds 2, to whom all contributions, exchange notices, illustrations, advts., announcements of change of address, etc., for publication, should be sent. Bulletins are issued free to members. First subscriptions to the AES (5/-, 2/6 to boys and girls aged 17 or under) should be sent to the Hon. Secretary, D. H. Sterling, 36 Estella Avenue, New Malden, Surrey, and subsequently to the Hon. Treasurer, R. S. Ferry, Fulling Mill House, Welwyn, Herts. Data labels and publications of the Society (except Bulletins) may be obtained from the Assistant Business Manager, C. B. Pratt, 1 West Ham Lane, London, E.15, or from the Editor. Membership Application Form, specimen Bulletin and information as to the work and publications of the Society will be sent on receipt of threepence by the Hon. Advertising Secretary, A. M. Walton, F.R.E.S., 275 Croxted Road, London, S.E.21. Offers to form local groups or to lead field meetings should be sent to the Meetings Secretary, R. H. Briegel, 141 Burnt Oak Lane, Sidcup, Kent.

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A believer in long series.



GEOGRAPHICAL LIST OF MEMBERS

Compiled by John Cowley

In the following list members are grouped geographically by counties, and, as far as possible, by what appear to be their nearest large town. It may help you to get into touch with local members not already known to you, or with members who may be able to provide information as to good collecting grounds if you are moving to a new district, or for local excursions or holidays. Even members not interested in the same groups must have much of general entomological interest to exchange.

Addresses and interests of members are listed (in alphabetical order of surnames) in Bulletin 72; those marked 73 or 74 followed by their membership number are new members listed numerically in Bulletins 73 and 74; 73c or 74c indicates a change of address given in these Bulletins.

AUSTRALIA: Greig (73c).

BELGIUM. Brussels: Vienjant (73: 898).

CANADA. Port Williams, N.S.: Miss Harvey (74: 156).

NIGERIA. Lagos: Roche.

SOUTH AFRICA. Johannesburg: Capener.

SYRIA. Beirut: Pauly, Talbot.

TANGANYIKA. Dar-es-Salaam: Bell.

U.S.A. Colorado: Cockerell. Michigan: Hynes. Minnesota: Christianson. New York: Keji, E. J. Smith, Spelman. S. Carolina: Murchie.

ABERDEEN. Aberdeen: D. A. L. Esslemont (74: 925), I. Esslemont, Dr E. G. Gray, W. W. Jackson, Sangster.

AYR. Ardrossan: Pow, Ritchie. Troon: Irvine, Thompson, W. H. Wallace.

BEDFORD. Bedford: Flack, Jarvis (73c), Marks, B. B. West, K. E. West. Leighton Buzzard: Heley.

Luton: Eberlie, P. Taylor, Verd-court (73: 899).

BERKSHIRE. Maidenhead: Crow, Honey, L. Page. Newbury: Bullamore, Lang, Norman, Smyly, H. B. Turner. Reading: Baker, Betts, Empson (74c), Montagu, Rudland, Runge, E. K. Smith, L. H. Williams, Yarrow. Windsor: Barnard, Beer, Cousins (73: 901).

BERWICK. Eyemouth: Fairbairn.

BUCKINGHAM. Amersham: Aldridge. Aylesbury: North. Bletchley: Cripps, N. A. Richardson. Chesham: Entrican. Olney: Bascombe, Bowyer. Slough: Basden, Flint.

CAERNARVON. Bangor: G. E. Thomas.

CAMBRIDGE. Cambridge: G. A. Ford, Goodman (74: 920), Hodge (73: 878), Mumby (73, 509), Pickard, J. E. M. Williams. Ely: S. J. Gray (74: 916), Nightingale (74: 926).

CARDIGAN. Cardigan: Dexter.

CHESHIRE. Birkenhead: Garner, Leonard, Prichard, Snell. Chester: Royal Naval College Field Club (74c), S. G. Smith. Macclesfield: Tonge. Nantwich: Boyes. Northwich: Driver. Stockport: E. J. Taylor. Wilmslow: Kloet, E. W. Robinson.

CORNWALL. Liskeard: Sneyd. Looe: Symington. Penzance: Ellis.

DERBY. Alfreton: J. A. Collins. Chesterfield: Skelton. Derby: Atherly, Cartwright. Glossop: Field Club.

DEVON. Ashburton: Stidston (73: 40). Axminster: Sherlock. Brixham: Bird (73: 896). Budleigh Salterton: W. O. W. Edwards. Exeter: Rowden, Woollatt. Honiton: J. F. Finlay. Newton Abbot: Lees, Le Quesne, Morgan. Paignton: Rev. B. F. Harvey, Milman. Plymouth: Palmer (73: 900). Teignmouth: A. Bradley, Corkill. Tiverton: Janes (74c). Torquay: P. Bennett, Cole-ridge, J. Walker. Totnes: M. J. Bennett, N. C. Bennett, W. A. Martin.

DORSET. Beaminster: Freer. Poole: Otter, Scudamore, J. A. Walker. Swanage: J. T. Dean, Ward.

DUBLIN. **Dublin:** O'Rourke. **Dún Laoghaire:** Goodbody.

DUMFRIES. **Dumfries:** Browne, Laurence, Waugh.

DURHAM. **Barnard Castle:** K. Davies, Robson, Wooff. **Gateshead:** Harrison, Pallister. **Stockton-on-Tees:** Glanfield, N. W. Harwood. **Sunderland:** Coggon, Goodall, Jefferson, J. K. Morton (73c as J. K. Mortimer).

ESSEX. **Barking:** Champion. **Brentwood:** Hodges, Nunn, Readwin, F. S. Smith. **Chelmsford:** Hurrell (74: 923), Seabrook (73: 263). **Colchester:** A. D. L. Cox. **Ilford:** Ness. **Loughton:** Allwood. **Maldon:** Hood. **Romford:** Jolly, Key. **Southend:** Popplewell. **Woodford:** Gregory, Main, Randall.

FIFE. **Leven:** D. B. Scott.

FLINT. **Mold:** Henstock.

GLAMORGAN. **Cardiff:** Dawson, Milner. **Neath:** Snow.

GLOUCESTER. **Bristol:** C. Greenwood, C. K. Smith. **Cheltenham:** Keylock, Marshall, Price, Shapland, Tayler, Townsend (73c), O. H. Wild. **Gloucester:** L. B. Clarke, Peck. **Lydney:** Miss Davis. **Stroud:** T. B. Fletcher, Peacey, A. Richardson. **Tetbury:** Latty, Newton. **Tewkesbury:** J. Moore.

HAMPSHIRE. **Aldershot:** Michael, Moys. **Andover:** James. **Bournemouth:** Broome, S. C. S. Brown, F. C. Fraser (73: 890), Mansfield, Trimmer, H. J. Turner. **Eastleigh:** Holloway, D. S. Horner, D. J. Ray, H. Ray. **Farnborough:** Fluck, Howard. **Lymington:** Maggs, C. H. McLoed, M. McLoed, R. W. Watson (74c). **Lynnhurst:** Jeffreys. **Petersfield:** Miss Gibson, Phillips. **Portsmouth:** Barker, Wills. **Ringwood:** Moody, Praed, Rivolta. **Southampton:** Fassnidge, Heath.

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HERTFORD. **Barnet:** Miss Barnett. **Bishops Stortford:** Ashwell, Craufurd, A. E. Hick. **Cheshunt:** Ridgwell. **Harpenden:** Hopkins (73c), T. J. Lloyd, C. B. Williams. **Hatfield:** Hodson, G. E. Stokes. **Hertford:** Gerard, Lake, D. Parsons. **Hitchin:** Burleigh (74: 918), R. D. Morton, Stovin (73: 272). **Rickmansworth:** Bruce, Davie, Skipper. **St Albans:** Byers, Evans. **Tring:** Benson,

Cockayne, Goodson, Peace (74c). **Watford:** Eyre, Fox, Hughesdon, Marriott, McDonald, P. G. Taylor, Watford Boys' Grammar School Biol. Soc. **Welwyn:** Brangham, Ferry, F. G. Sutton.

HUNTINGDON. **Huntingdon:** Leeds.

INVERNESS. **Aviemore:** P. Harwood.

ISLE OF MAN. **Douglas:** J. P. Watson.

ISLE OF WIGHT. **Yarmouth:** Blair (73: 197), J. Wright (74c).

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LANARK. **Glasgow:** Anderson, J. Duncan (74: 907), Pennock, W. Russell.

LANCASHIRE. **Accrington:** Giddan. **Barrow-in-Furness:** Kershaw (74c). **Blackpool:** Barnes, Brooks, W. Green, Gyselman, Merrill, Speight, Stott. **Bolton:** Broughton, Coxey (74c). **Fleetwood:** H. R. Wallace. **Leigh:** J. A. Robertson. **Liverpool:** Balmer, Curd, Davidson, G. de C. Fraser, Mrs Fraser, Hurter. **Manchester:** Ashmore, Miss Briggs (73: 881), Charlson, Coghill (74c), Ker-rich, Nathan, L. R. Taylor. **Morecambe:** Hodgson. **Prestwich:** Hilton, Wolfenden, Wood (73: 684). **Salford:** Gratton. **Southport:** Dew. **Ulverston:** Birkett. **Warrington:** Broadhurst.

LEICESTER. **Leicester:** Lisney, Lygo, Potter, Shephard, Tozer. **Loughborough:** Hendersson (73: 21). **Market Harborough:** Buckler.

LINCOLN. **Grantham:** Chambers. **Grimby:** Jeffs (74: 910), Reid (74: 927). **Lincoln:** Campbell.

LONDON. **E.1:** Storey (73: 277). **E.10:** Sands (73: 902), T. Stone. **E.11:** D. R. S. Mills, Syms, R. F. Whitworth. **E.15:** Pratt. **E.18:** Leach.

E.C.3: Welti. **N.1:** E. J. Green.
N.2: Simons. **N.5:** Chamberlain.
N.6: P. A. Gorer (73c). **N.8:** Rogers.
N.12: Knight. **N.21:** Vince. **N.22:**
 Colyer. **N.W.3:** Balter, Burnaby,
 Easton, Miss Moore. **N.W.4:** Forrow,
 Webb. **N.W.5:** Briers (74: 128), G.
 F. Walker. **N.W.8:** Outhwick. **N.W.9:**
 Down, A. D. Turner (73: 75).
N.W.11: Saffery. **S.E.3:** Croucher.
S.E.9: Abraham, Mrs J. M. Adams
 (73c), Bobe (74: 912), C. F. Parker.
S.E.12: Heard. **S.E.18:** A. W. Cox,
 Hards. **S.E.19:** Spearman (74: 921).
S.E.21: Dulwich College Nat. Hist.
 Soc., Walton. **S.E.22:** O'Farrell.
S.W.2: T. G. Edwards. **S.W.4:**
 Stretton. **S.W.6:** W. N. Roberts, R.
 Sutton. **S.W.7:** E. B. Britton (73:
 232), R. J. Collins, Tams. **S.W.9:**
 G. K. Durnford, V. Durnford. **S.W.14:**
 R. I. Lorimer (73c). **S.W.15:** Mor-
 timer. **S.W.16:** Christie, Duffy (73c).
S.W.18: F. R. Sutton. **S.W.19:** J.
 D. Bradley, Cardew, Wakeley. **S.W.20:**
 A. J. Davies (73:886), Riley. **W.3:**
 Lindley, M. N. A. Walker (73:880).
W.5: Bevan, Bryant, Hanson, Mull-
 ings. **W.11:** Spoczynska. **W.14:**
 Rowe. **W.C.1:** Miss Edwards.

LONDONDERRY. **Londonderry:**
 Adair.

MIDDLESEX. **Ealing:** Greenford
 County School Nat. Hist. Soc. (73:
 892), Letts, Parr. **Edgware:** Hil-
 liard, Williamson (73: 306). **Enfield:**
 Eagles, Weston. **Feltham:** Classey
 (74c), G. S. Marsh. **Harrow:** Bryer-
 ley, Chynoweth (74: 905), T. W.
 Davis, Harrow School Nat. Hist. Soc.,
 Lee, E. L. Martin, Myall, Port, A.
 W. Robertson (73: 323), Sacred Heart
 High School, A. Seymour, P. J.
 Walker. **Isleworth:** S. G. Abell, T.
 Q. Abell. **Northwood:** Bain, D. Car-
 ter, W. A. Carter, A. R. Platts (74:
 914), J. H. Platts, D. Seymour.
Pinner: Harley, Hill, Saunders.
Ruislip: Bessant. **Uxbridge:** Wall.
Wembley: Field.

MIDLOTHIAN. **Edinburgh:** Beat-
 tie, R. A. L. Finlay, Macnicol.

MONMOUTH. **Monmouth:** R. Lewis.
Newport: Slocombe. **Pontypool:** D.
 J. Sigs (74: 922), L. W. Sigs (73c).

NORFOLK. **Great Yarmouth:** Ross-
 Lewin (73: 154). **King's Lynn:** Day,
 Swann (73: 882). **Norwich:** Addison,
 Daniels, Pomeroy (73c).

NORTHAMPTON. **Kettering:** F.
 A. Adams, H. W. Adams. **Northamp-
 ton:** Rands (73: 879). **Peterborough:**
 Mellows (73: 302), Thornburn.

Towcester: Humphrey. **Welling-
 borough:** Ekins, Gent, Mitten, Payne,
 Miss Robinson, Willis.

NORTHUMBERLAND. **Newcastle-
 on-Tyne:** Harding (73: 894), Nichol-
 son, Sweet.

NOTTINGHAM. **Mansfield:** L. W.
 Taylor. **Nottingham:** K. M. White,
 O. M. White.

OXFORD. **Banbury:** E. M. B.
 Green, Trevor. **Oxford:** Carpenter,
 W. Ramsden. **Watlington:** J. D.
 King.

PEMBROKE. **Haverfordwest:** J.
 A. Lorimer (73c).

RENFREW. **Greenock:** Angus (73:
 883). **Paisley:** McKim, Ramsay.

RUTLAND. **Oakham:** Bates.

SHROPSHIRE. **Ludlow:** A. R.
 King. **Newport:** E. S. Lewis, M. W.
 Shaw (74: 911). **Shrewsbury:** Dar-
 win Society, L. C. Lloyd (73c).

SOMERSET. **Bath:** J. P. H.
 Brown, Rawlings. **Bridgwater:** Cow-
 ley, E. H. Wild. **Bristol:** see
 Gloucestershire. **Bruton:** H. M.
 Jackson. **Burnham-on-Sea:** Luscombe.
Chard: Latter. **Frome:** Cruttwell,
 D. G. Scott. **Minehead:** Bonar, Had-
 den. **Taunton:** Clements, Neal (73c).
Weston-super-Mare: Blathwayt, Had-
 ley, Poole (74c), Tailby (74c).

STAFFORD. **Newcastle - under -
 Lyme:** J. Edwards. **Smethwick:** All-
 away. **Stafford:** N. Taylor. **Wolver-
 hampton:** Hornblower.

STIRLING. **Falkirk:** Hutchieson
 (74: 919).

SUFFOLK. **Ipswich:** S. Beaufoy.
Lowestoft: Long. **Stowmarket:** Chip-
 perfield. **Sudbury:** Deimel.

SURREY. **Camberley:** Richards.
Cranleigh: Kettlewell, S. G. C. Rus-
 sell, Winser. **Croydon:** T. L. Barnett,
 Bean, Parmenter (73: 895). **Dork-
 ing:** Haynes. **Egham:** de Worms.
Epsom: Epsom College Nat. Hist.
 Soc. (73: 887), Goodban, Harry (73:
 162), B. M. P. Thomas. **Farnham:**
 T. Fletcher, R. F. P. Wright. **Godal-
 ming:** E. Parker, H. B. Williams.
Guildford: Douetil (73: 66), Holroyd,
 Parfitt. **Kingston:** Hamerton, C. T.
 Lloyd (74: 468), Sterling. **Purley:**
 Bliss. **Reigate:** A. J. S. Cotton, W.
 D. S. Cotton, Fairclough, Herroun,
 Windsor. **Richmond:** Melville (74:
 903), Redhead, H. K. A. Shaw.
Surbiton: J. S. Burton, M. J. Davies,
 J. C. Wainwright. **Sutton:** T. A.
 Cooper, Humphreys (73c), Last,

Menzies, D. Parsons, J. F. Turner.
Wallington: Boorman, Campion, G. J. Clarke, Collyer, Grimwade (74: 913).
Walton-on-Thames: Pitt. **Woking:** Hellings, Heslop.

SUSSEX. Bognor: Ranwell. **Brighthelm:** Banner, Donne, Dyson, G. J. Eade, W. Eade, H. Parker, Pickett, C. C. Smith, Walder, Wanstall. **Chichester:** Murphy. **Eastbourne:** Brook, Marcon. **East Grinstead:** L. R. Devenish. R. C. Devenish. **Hastings:** Dannreuther. **Hayward's Heath:** Edelsten, Finch. **Heathfield:** Crisp, Hitchens, Murrays School Nat. Hist. Soc. **Horsham:** Curtis (73: 877). **Hove:** see Brighton. **Midhurst:** Goddard. **Shoreham:** Tee.

WARWICK. Alcester: Garstang, Symmons. **Birmingham:** Birch, J. H. Grant, Hammond, B. L. Harris (74: 906), Latham, Manly, E. G. Procter, C. A. Risbridger, M. D. Risbridger, K. G. Smith (73: 897), P. S. Smith (74c), Miss Stone, Thorpe, Timms, C. Wainwright, Ensor (73: 891). **Coventry:** Bray, A. Dale (74: 908), Hiron, R. W. Horton, T. P. Horton, Jordan, Park (73: 888), Patrick, Sills, Willshee (74c). **Solihull:** Allen, R. G. Turner.

WESTMORLAND. Appleby: Bywater. **Windermere:** Michaelson.

WILTSHIRE. Marlborough: Shepard (73: 291). **Salisbury:** Copley, Horder (74c), H. G. Stokes. **Trowbridge:** Weddell.

WORCESTER. Redditch: Wager.

YORKS, EAST RIDING. Hull: C. Brown, S. Duncan.

YORKS, NORTH RIDING. Guisborough: L. B. Horner (74: 917), Newson. **Northallerton:** B. A. Cooper, Mrs Cooper. **Scarborough:** Head, E. P. Hick, Walsh, Wheatley (74: 915).

YORKS, WEST RIDING. Bradford: J. Briggs, Hewson, J. W. Whitworth. **Doncaster:** Hyde, Waddington, A. H. Wright. **Halifax:** Crapnell, E. B. Gibson (73: 893), Sunderlandland. **Harrogate:** La Touche (73: 884, 74c). **Huddersfield:** Braham, Cove, Gilmour, Pearce. **Leeds:** Barham, Mrs Britton, Brooker, Hincks, Kennedy, Large, Miss Morton (74: 924), R. Procter, E. Ramsden (74c), Whitehead. **Sheffield:** W. V. Burton, England. **York:** Elliot, G. A. Roberts, A. Smith.

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PROGRESS

The Exhibition—Again we have to record a very interesting and well-attended Exhibition of Entomological Technique on March 30th last. Our thanks are due to all members and visitors who provided exhibits or otherwise helped to make the meeting a success. Many school parties were again in evidence and several of their leaders commented on the usefulness of this type of exhibition. Five Junior members entered for the Setting Competition, the standard of their entries being so high that all were awarded prizes.

Competitions—Despite the short notice given, fifteen entries were received for the Essay Competition, details of which are given elsewhere. Like the setting competition, considerable interest was aroused, and there can be no doubt that such competitions are worth repeating. Let this be a warning to collectors to take care of their setting this year, so that they can proudly enter their captures at next year's Exhibition. The highest points were allotted in the essay competition to those who wrote simply and straightforwardly, and the setting judges commented particularly on entries which included specimens of the less-easily-set species (though perhaps in far from perfect condition) as well as those which could hardly help being in perfect condition.

Next Exhibition—The Council have decided to hold, on Saturday, September 28th next, from 2-5 p.m., an Exhibition of Living Insects. This will include sections for the display of set insects collected during the season, but it is hoped that the majority of exhibits will bear on living material, plants as well as animals, all stages and orders of insects, drawings, paintings, and photographs of living insects, and experimental and other studies of living insects. It is also hoped to include a "Brains Trust" to debate queries sent in by members, as well as short lectures on different forms of entomological study. Queries should be sent on postcards to B. O. C.

GARDINER, 17 Bramham Gardens, London, S.W.5, those likely to lead to the putting forward of divergent views and experiences being preferred to mere factual questions.

Council Changes—In addition to the Council changes announced in the General Meeting agenda (*Bulletin* 74, p. 19), the following elections have been made:—MEETINGS SECRETARY: Mrs J. M. ADAMS, 43 Merchland Road, London, S.E.9, who replaces R. H. BRIEGEL. Offers to lead field meetings, organise local groups, and assist with exhibitions should now be made to Mrs Adams. ADVERTISING SECRETARY: R. R. BROOME, 47 Keswick Road, Boscombe, Bournemouth, Hants., now replaces A. M. WALTON. Requests for application forms and other AES advertising materials, as well as suggestions for making our work and publications known, should now be sent to Mr Broome. W. A. SANDS was elected to the Council to fill the vacancy for a Junior Member. ASSISTANT EDITOR: B. O. C. GARDINER, 17 Bramham Gardens, London, S.W.5. (note change of address), has been appointed Assistant Editor, and will be in charge of the preparation of *AES Bulletins*—Mr Cooper will continue to deal with general editorial matters, illustrations, and contributions for Leaflets, Journals and printed matter other than *Bulletins*. All contributions for the *Bulletins*, exchange notices, advertisements, announcements of change of address, etc., should now be sent to Mr Gardiner—if thought suitable for other publications they will be forwarded to Mr Cooper.

Correction—We are asked by the Yorkshire Naturalists' Union to correct the impression given in *Bulletin* 74 Editorial that they were not in favour of the proposal for holding a natural history exhibition in their area. Several speakers at their AGM favoured the proposal, which was only rejected because the loose organisation of the Union rendered the proposition unsuitable. They are not opposed to local societies themselves holding such an exhibition. The

Editors will endeavour to enrol the assistance of a less cynical reporter next time!

Funds—Owing to the intensive advertising drive, our having over-spent on last year's *Bulletins* and donations having fallen short of the expected figure, funds are now at a low ebb. It is likely, therefore, that the next few issues of the *Bulletin* will be smaller than their predecessors—4 or 8-page issues—though this will have the merit of ensuring speedier publication and appearance of exchange notices, but the printing of fewer observations. Extra copies of recent issues of the *Bulletins* will now be priced at 9d each, instead of being free to members, as hitherto (each member will still, of course, receive one copy of each issue free of charge). It is also suggested, particularly by members living away from London and unable to attend exhibitions, that the latter should, like our publications, be made self-supporting, by the charging of a small entrance fee at the door, say a shilling for adults and 6d for young people. We should also like to remind members whose subscription for this year is overdue that it should be sent at once if they wish still to receive the *Bulletins*.

B. O. C. GARDINER.
BEOWULF A. COOPER.

(26/4/1946)

THE COMPETITIONS

Setting Competition—There were five entries for this competition for Junior Members. The Competition was judged by Messrs Abell, Cooper and Clasey. The first prize, E. B. Ford's *Butterflies*, was awarded to L. Christie (710). The general standard was considered so high that the other four entrants, I. S. Menzies, R. Bessant, D. Cole and R. J. Kenworthy, were each awarded a consolation prize of a year's subscription to the Society and a 2/6 voucher to spend at the bookstall.

Essay Competition—There were 15 entrants, 11 boys and 4 girls, for this competition, details of which were announced in *Bulletin* 73. The entries were very kindly judged by Mr John Moore, who has awarded the prizes as follows:—First Prize: Daphne Roscoe, aged 15; Second

Prize: P. J. Walker, aged 11; Third Prize: E. R. Lake, aged 14. The following four members deserve honourable mention: Benita Luscombe (14); Margaret E. Morton (14); John Bates (14); David Ray (11). The winning essays will be published later in the *Journal*.

MEMBERS' SUBSCRIPTIONS

Will the two members who sent a subscription of 5/- to the Treasurer in January without enclosing their names and addresses please drop him a line? All others will have received a receipt at the time.

Will the member who at the 1945 exhibition paid his subscription to Mr Hards and did not receive a receipt also drop him a line?

We apologise to the few members who received a request for their subscription after they had already paid in advance.

R. S. FERRY.

Fulling Mill House,
Welwyn, Herts.

ADVISORY PANEL

A. L. Shuffrey (990), Leverstock Green Farm, Hemel Hempstead, Herts., offers his services as Adviser on Colour Photography.

S. G. Castle Russell (119), Stoke-say, Bridge Road, Cranleigh, Surrey, offers his services as Adviser on Varieties of *Rhopalocera*.

MEMBERSHIP CHANGES

† = Affiliate Member
* = Junior Member

New Members

- 88 Dennis E. Ballinger, The Cottage, Canham Road, London, W.3. (L., beekeeping)
- 97 A. J. H. Duke, 107 Kings Mansions, Esplanade, Durban, Natal, S. Africa. (L.)
- 120 W. H. James, 41 Carson Road, London, S.E.21. (L., esp. R., Sphingidae)
- 135 Leslie Raven, 117 Binley Road, Coventry, Warwickshire. (L.)
- 329 J. Wilkinson, B.Sc., A.R.C.S., 30 Marriott Road, Sheffield, 8. (gen. ent., esp. pond life)

- 504 G. T. Hanlon, 6 Arlington Gardens, Ilford, Essex. (L.)
- 560* Daphne Roscoe, South Holworth Cottage, Warmwell, Dorchester, Dorset. (L.)
- 665* Richard Roscoe, Grove Park School, Crowborough, Sussex. (L.)
- 904 D. P. Golding, 517 Foots Cray Road, London, S.E.9. (L.)
- 928 Miss E. L. Britton, Research Station, Long Ashton, Bristol. (gen. ent.)
- 929 F. Stringer, Craig Artro, Llanbedr, Merionethshire, N. Wales. (L., C., H., O.)
- 930 Miss Jean Craig, B.Sc., A.R.I.C., 39 Westbourne Gardens, Glasgow. (L.)
- 931 R. H. Wade, 15 Stanmore Road, Thorpe, Norwich. (L.)
- 932 Miss D. Mary Lamacraft, 62 Dane Valley Road, Margate, Kent. (gen. ent.)
- 933 P. P. Stocker, Waldorf Hotel, Aldwych, London, W.C.2. (L., Brit. & Cont.)
- 934 E. Shearsmith, Carisbrooke, 4 Princes Road, Cleethorpes, Lincs.
- 935 H. Platt, 13 Arcadia Avenue, Brooklands, Cheshire. (P. of L.)
- 936 Miss Ursula Grigg, Bruton House, Mortimer West End, near Reading, Berks. (gen. ent.)
- 937† Sydenham County Secondary School, Dartmouth Road, London, S.E.26. (gen. ent.)
- 938 E. Osborn, 76a Wood Street, Kettering, Northants. (E. of R., colour P.)
- 939 Richard Fox, 2 Queen Street, Retford, Notts. (L., partic. agric.)
- 940* W. G. Tremewan, Wheal Rose, Scorrier, Redruth, Cornwall. (L.)
- 941 L. E. Purvis, One Oak, Hale Road, Hale Barns, Cheshire. (L.)
- 942* G. A. Smith, 14 High View Road, Bramford Road, Ipswich, Suffolk. (L.)
- 943 N. G. Hague, 39 Heath Drive, Potters Bar, Middx. (L., O.)
- 944* Miss Judy A. Horrell, Northwest House, Walkern Road, Stevenage, Herts. (L.)
- 945* Miss Susan M. Horrell, Northwest House, Walkern Road, Stevenage, Herts. (L.)
- 946 C. H. Bingham, 40 Ceres Road, London, S.E.18. (gen. and agric. pests)
- 947* A. D. Wardle, 78 Brandon Road, Binley, Coventry, Warwickshire. (pond and woodland life)
- 948* P. Nobbs, 15 Marsh Lane, Stanmore, Middx. (L., Sphingidae.)
- 949 R. C. Edwards, Arlesey, Pilgrims Way, Westerham, Kent. (gen. ent.)
- 950 J. A. Burgess, 6 Rutford Road, London, S.W.16. (exot. L., ML., H.)
- 951* O. H. Knowles, Furze Reeds, near Midhurst, Sussex. (L.)
- 952 Ernest Lewis, 8 Parry Road, London, S.E.25. (C.)
- 953 Mrs E. G. De Jongh, Gorffwsfa, Llanbedr, Merioneth, N. Wales. (L., beekeeping)
- 954* J. K. Goody, 26 Carr Wood Road, Bramhall, Cheshire. (L., esp. foreign silkmths, C., H., geology, Z., mainly reptiles.)
- 955 J. G. Quinn, The Node, Codicote, Hitchin, Herts. (L.)
- 956 Major Maxwell Knight, O.B.E., F.R.M.S., F.L.S., The Homestead, Park Road, Camberley, Surrey. (aq. ent., L., esp. moths, mic.)
- 957 E. S. Mason, 35 Elmgate Gardens, Edgware, Middx. (C.)
- 958* G. I. Cartwright, 39 Queen Arne's Grove, Ealing, London, W.5. (L.)
- 959* Quentin Bone, 26 Portland Place, Leamington Spa, Warwick. (L., esp. breeding)
- 960* John Haslam, 1020 Bristol Road, Birmingham, 29. (R.)
- 961 Miss B. E. Bayliss, 97 Monk-hams Lane, Woodford Green, Essex. (gen. ent.)
- 962 Dr Bryan P. Beirne, Dept. of Zoology, Trinity College, Dublin, Eire. (L., parasitic H., E. of L., Z.)
- 963* Ian Henry, Caldwell Lodge, Station Road, Marlow, Bucks. (R.)
- 964* E. M. Lothian, Blackhill Cottage, East Hallside, Cambuslang, Glasgow. (L., C.)
- 965* Roy Ticehurst, Music Warehouse, High Street, Heathfield, Sussex. (L.)
- 966* N. J. Austin, Chapel House, High Street, Thorpe-le-Soken, Essex. (L., C., H., Hem., O., ornith., geology, conchology)
- 967 D. B. Capper, 2 Regents Place, Rugby, Warwickshire. (B., econ. ent.)

- 968 D. Rampling, 7 Gainsborough Road, Sudbury, Suffolk. (gen. ent., ornith.)
- 969 Arthur S. Chubb, 78 Southbrook Road, Countess Wear, Exeter, Devon. (NH., L.)
- 970 K. D. Fairey, 4 Grey Street, Carlton, N.S.W., Australia. (C., H., L., gynandromorphs)
- 971* Miss Mary R. Meade, The Rectory, Abinger Common, near Dorking, Surrey. (L.)
- 972 W. D. Daltry, F.R.E.S., M.S.B.E., Bar Hill, Madely, Crewe, Cheshire. (Hem., Neuroptera, Trichoptera, ML., C., H.)
- 973 P. N. Hartley, M.A., Parmiter's School, Cambridge Heath, London, E.2. (C., L.)
- 974 Sister Prudence, St Hilda's School, Wemmergill Hall, Middleton-in-Teesdale, Co. Durham. (gen. ent.)
- 975 E. D. Wiggins, Thornhaugh, Lustleigh, S. Devon. (C., esp. iridescent Phytophaga)
- 976 R. H. Bomback, 46 Woodberry Ave., N. Harrow, Middx. (C.)
- 977 P. Currie, 162 Burdon Lane, Belmont, Sutton, Surrey. (O., H.)
- 978 P. C. Le Masurier, 85 Warren Drive, Tolworth, Surrey. (L.)
- 979* P. Murdy, 193 Coombe Lane, London, S.W.20. (L.)
- 980 J. W. L. Brett, 10 Warwick Road, Boscombe, Bournemouth, Hants. (L.)
- 981 E. C. Thwaites, 13 Burch Road, Rosherville, Northfleet, Kent. (C.)
- 982* W. Byford, 72 Oakdale Road, London, E.11. (L., gen. ent.)
- 983† Kingwell Court School N.H.S., Bradford-on-Avon, Wilts. (Hon. Sec., J. D. Foxtan)
- 984 A. T. Wills, Maple Villa, Broadclose Road, Down Hatherly, near Gloucester. (L.)
- 985 E. W. Bentley, Ph.D., Ministry of Food, University College, Gower Street, London, W.C.1. (H.)
- 986 John A. Freeman, Ph.D., 9 Wendover Road, Bromley, Kent. (stored products ent.)
- 987 C. Morgan, 68 Locarno Avenue, Gillingham, Kent. (O.)
- 988 D. A. Sturdy, B.Sc., 10 Stratton Terrace, Truro, Cornwall. (D., O., agric. ent.)
- 989 C. Garrett-Jones, 15 St Peter's Square, London, W.6. (L., D.)
- 990 A. L. Shuffrey, Leverstock Green Farm, Hemel Hempstead, Herts. (L., P.)
- 991† Bremleyte School, East Grinstead, Sussex. (communications to A. de Cardi)
- 992 Miss J. Braddon, 221 Shraffold Street, Downham, Bromley, Kent. (gen. ent.)
- 993 Miss P. D. Price, 97 Monkham's Lane, Woodford Green, Essex. (gen. ent.)
- 994 Eric J. Crane, Langham Oaks School, Langham, Colchester, Essex. (L., H.)
- 995† Notre Dame High School, Battersea Park Road, London, S.W.8. (communications to M. Finneron)
- 996* J. S. Creasy, 16 Downs View, Isleworth, Middx. (L.)
- 997* A. G. Stoughton-Harris, 75 Mulgrove Road, Sutton, Surrey. (L.)
- 998* Ian Sinclair, 40 Chatham Road, Kingston, Surrey. (NH.)
- 999 Miss N. M. Battiscombe, Ashcombe, Bushetts Grove, Merstham, Surrey. (NH., gen. ent.)
- 1000 G. N. Field, 14 Mitchley Grove, Sanderstead, Surrey. (L.)
- 1001* J. T. Foster, 805 Great West Road, Isleworth, Middx. (L.)
- 1002* J. Ranger, 54 Cherry Crescent, Brentford, Middx. (Locusta, L.)
- 1003* Alan Gibson, 4 Knowle Road, Dartford, Kent. (gen. ent.)
- 1004 G. G. Cavanagh, 40 Priory Hill, Dartford, Kent. (gen. ent.)
- 1005 Mrs Ursula M. Walker, 25 Regal Way, Preston, Harrow, Middx. (gen. ent.)
- 1006 P. Jones, Coplands, Walderslade Avenue, Chatham, Kent. (gen. ent.)
- 1007 T. W. F. Cameron, Highfields, Walderslade, Chatham, Kent. (gen. ent.)
- 1008 A. J. A. Woodcock, 65 Rock Avenue, Gillingham, Kent. (C., esp. Aephaga)
- 1009* R. J. Kenworthy, Fairlight, Stanham Road, Pembury, Kent. (L.)
- 1010 T. N. Kenworthy, Fairlight, Stanham Road, Pembury, Kent. (L.)
- 1011 Miss D. I. Dawson, 10 The Walk, Launceston, Cornwall. (NH.)
- 1012 A. J. Dale, 129 Valetta Road, London, W.3. (gen. NH.)
- 1013† St Edmunds School N.H. Society, St Edmunds School, Hindhead, Surrey.

- 1014 Sidney J. Turner, 40 St Leonards Road, Exeter, Devon. (mic., Arachnida)
- 1015 Miss G. R. Cumber, 23 Wood Lane, Isleworth, Mddx. (L.)
- 1016 R. B. B. Gibbs, 235 Tring Road, Aylesbury, Bucks. (gen. ent.)
- 1017 D. Greenwood, The Grammar School, Glossop. (gen. ent.)
- 1018* William S. Ogden, South Lodge, Reading Road, Cholsey, Berks. (L.)
- 1019† Lord Wandsworth College Scientific Society, Lord Wandsworth College, Long Sutton, near Basingstoke, Hants. (communications to D. H. Brown)
- 1020* J. Cornelius, 29 Grangecliffe Gardens, London, S.E.25. (L.)
- 1021 F. Goodlife, Whitelands, Long Sutton, Basingstoke, Hants. (aq. insects, esp. Dytiscidae (C.), Chloropidae (D.), O.)
- 1022* P. G. Wolfenden, 37 Pembroke Avenue, Surbiton, Surrey. (L.)
- 1023* M. Scott-Upton, 116 Wollaston Road, Irchester, Wellingborough, Northants. (L., O.)
- 1024 Dr R. C. Lowther, Fernleigh, Grange-over-Sands, Lancs. (L., Phenological dates, gen. NH.)
- 1025* D. I. Milne, Oak Tree House, Willesborough, Ashford, Kent. (L., gen. ent., fish)
- 1026 F. H. Lyon, 22 Murray Road, Northwood, Mddx. (L.)
- 1027† Bootham School N.H. Club, Bootham School, York.
- 1028* E. L. R. Taylor, 26 Compton Rise, Pinner, Mddx. (L.)
- 1029* P. T. Bowring, The Tower House, Belle Vue Road, Exmouth, Devon. (gen. ent.)
- 1030 R. R. Wallace, 61 East Avenue, Bournemouth. (L.)
- 1031 R. M. Brown, 13 Morningside, Coventry. (gen. ent.)
- 1032 A. J. Golding, Museum and Public Library, Maidstone, Kent. (gen. ent.)

New Honorary Member — L. R. Tesch (1).

Resignation—Dr E. G. Gray (332).

Membership Total — 790 subscribing members.

Change of Address

S. Charlson (520) to: 34 Carr Bank Street, Atherton, Manchester. B. A. Cooper (19) to: 2 South Parade, Northallerton, Yorks. Mrs G. M. R. Cooper (447) to: 61 Okehampton

Road, London, N.W.10. Nigel T. Easton (370) to: Salby Hall, Welford, near Rugby. B. O. C. Gardiner (225) to: 17 Bramham Gardens, London, S.W.5. G. Gyselman (218) to: 7 Summerhouse Drive, Bexley, Kent. F. L. Hodgson (580) to: 9 Ennerdale Drive, Bolton, Bradford, Yorks. Benita Luscombe (815*) to: Puriton Manor, Bridgwater, Som. E. S. Mason (957) to: 35 Elmgate Gardens, Edgware, Mddx. W. R. Murchie (634) to: Box 203, Sharon, Pennsylvania, U.S.A. Ralph C. Pauly (572) to: 342 So. Third Avenue, Walla Walla, Wash., U.S.A. S. Peck (546) to: Fairview, Newton, Glos. J. D. Shapland (548) to: Military College of Science, 2 Lake Road, Shrivenham, Swindon, Wilts. Joy O. I. Spoczyńska (751) to: 33 Wornington Road, London, W.10. Dr A. A. D. La Touche (884) to: 21 Alwoodley Gardens, Moortown, Leeds. J. A. Walker (843) to: The Old Cottage, Burley Street, Burley, Hants. K. M. White (715) to: Blackpool Corner, Crewkerne Road, Axminster, Devon. B. Wolfenden (712*) to: 104 Milton Road, Heaton Park, Manchester. R. F. P. Wright (838) to: Ardmore, Fernden Lane, Haslemere, Surrey.

TEMPORARY MOUNTANT

A Correction—Dr. C. B. Williams has pointed out that the formula for a temporary mountant for insect material given on p. 149, top, of the "Hymenopterist's Handbook" is incorrect. For "gms." it should read "grains."

FIELD MEETINGS

Sunday, July 7th.

Field Meeting to Epping, Wintry Wood and Gernon Bushes, Essex

Leader: C. B. Pratt. Meet at Epping Station, 11 a.m. Train from Liverpool Street, 9.58 a.m.

July 9th-13th.

South-Eastern Union of Scientific Societies: Jubilee Congress at Tunbridge Wells

Sunday, July 14th.

Field Meeting to Hatfield Forest, Essex

Leader: D. A. Ashwell. Meet 11.15 a.m. at "The Falcon," Bishops

Stortford. Train leaves Liverpool Street, 9.35 a.m., arrives 11.1 a.m., change at Broxbourne. Green Line 'bus leaves "The Falcon," 11.30 a.m., arrives A.A. box, Takely, 11.45 a.m.

Saturday, July 20th.

Field Meeting to Snilesworth Moor, N.R., Yorks.

Leader: B. A. Cooper. Meet at Northallerton Station, 2.30 p.m.

Sunday, July 21st.

Field Meeting to Halling, Kent

Leader: C. H. Hards. Train leaves Charing Cross, 10.40 a.m. (London Bridge, 10.47). Meet Halling Station.

Saturday, July 27th.

Field Meeting to Freshfield, Lancs.

By kind invitation of the Manchester Entomological Society. Leader: G. J. Kerrich. Meet Freshfield Station, 3.20 p.m. Visitors from Manchester or beyond, catch 1.50 p.m. Manchester Victoria Station; half-hourly service from Liverpool or Southport.

Sunday, August 4th.

Field Meeting to Eynsford, Kent

Leader: R. H. Briegel. Meet outside Eynsford Station, 10.45 a.m. Train from Victoria, 9.50 a.m., change Bromley South.

Field Meeting to North Dorset Downs

Leader: R. W. Watson. Meet at Hants. and Dorset 'bus Terminal, Bournemouth, 10 a.m.

Sunday, August 11th.

Field Meeting to Ongar and Fyfield, Essex

Leader: A. R. Ness. Meet at Ongar Station, 11.15 a.m. Train leaves Liverpool Street, 9.58.

Saturday, August 17th.

Field Meeting to Temple Newsam Woods, Leeds, West Riding, Yorks.

Leader: R. Procter. Meet at Halton tram terminus, 2.30 p.m. 20 or 22 tram from Leeds; p.c. to leader, please.

Sunday, September 8th.

Field Meeting to Hainault Forest, Essex

Leader: M. C. Randall. Meet at the "Maypole," Chigwell Row, at

11 a.m. 'Bus from Ilford or train from Liverpool Street to Grange Hill Station, thence by 'bus.

Sunday, October 6th.

Field Meeting to Chingford and High Beach, Epping Forest, Essex

Meet at Chingford Station at 11 a.m. Train from Liverpool Street or 'bus from Ilford or Leyton.

Sandwich lunch and tea to all meetings unless otherwise indicated.

WANTS AND EXCHANGES

J. K. GOODY (954) wishes to exchange larvae and pupae of northern forms of Lepidoptera for southern forms.

J. E. BROUGHTON (437) wishes to obtain literature and specimens relating to veterinary entomology. Particularly wanted: — Tabanidae, Oestridae, Hippoboscidae, tsetse flies, and ticks, mites and lice infesting domestic animals.

E. L. BEAN (115) requires a number of 14" x 10" storeboxes and one or two postal boxes for set specimens.

E. F. GILMOUR (878) wishes to obtain *AES Bulletins* 64-68.

MARCELLA GOODALL (807) is anxious to obtain *AES Bulletin* No. 65.

J. L. KERSHAW (418) wishes to obtain several pupae of *Lasiocampa callunae* (Northern Eggar).

A. J. H. DUKE (97) wishes to purchase a number of large storeboxes.

L. H. WOOLLATT (413) is studying sawflies and would be very grateful of specimens from all regions. Boxes will be returned.

J. K. BATES (814) has fertile ova of Little Thorn (*Cephis advenaria*) and Lime Hawk (*Mimas tiliae*) for exchange. What offers?

P. J. WALKER (856*) requires *AES Bulletins* Nos. 64-67.

J. H. PAYNE (353) has for exchange wild collected larvae of Oak Eggar (*Lasiocampa quercus*), Brown Hairstreak (*Thecla betulae*), and Purple Hairstreak (*Thecla quercus*).

L. B. HORNER (917) offers E. B. Ford's *Butterflies*. Wanted:—Other books, preferably on breeding Lepidoptera.

DR G. V. BULL (160) wants ova of *X. aurago* (Barred Sallow), and offers in exchange ova of *L. trifolii* (Grass Eggar) or *Z. betulae* (Brown Hairstreak).

R. ALDRIDGE (262) is most anxious to enlist the aid of another pair of hands, and a keen assistant, for an overworked entomologist (himself) now collecting in Germany!

B. A. COOPER (19—note change of address) is anxious to obtain click-beetles (Elateridae) from outside Britain, living, carded or papered, with data. Assistance particularly desired from members with the Forces overseas. Tins or tubes will be supplied, and postage refunded. Please state what required in exchange.

DR JAMES N. PICKARD (599) is most anxious to purchase copies of all AES publications now out of print.

J. P. ROBSON (44) has for exchange fine set imagines, and larvae, of the new melanic *T. consonaria* (Square Spot), var. *waiensis*. Wanted: many of the rarer species and varieties of Lepidoptera in various stages.

A. J. SLATTER (131) will be pleased to send material (ova, larvae, imagines) of the Culicidae (*Anopheles* and *Culex*) to anybody interested IF they will please let him have sufficient boxes and tubes. Reply to 13025608, Sgt. A. J. Slatter, 4 Det., I.M.C.C., R.A.M.C., C.M.F.

G. D. GLYNNE JONES (1039), Dept. of Agriculture, The University, Leeds, 2, greatly requires living specimens of Aphididae (aphids), or preserved in 50/50 lactic acid and 90% alcohol. Postage and specimen tubes refunded. Notes regarding hostplant very welcome.

P. D. MUMBY (509) wishes to purchase Vols. 6 and 7 of Lundbeck's *Diptera Danica*.

M. SPELMAN (624) requires unset Lepidoptera from Africa, British Guiana, and Indo-Australian region. Will buy or exchange for North and South American species.

REVIEW

A Check List of British Insects, by G. S. Kloet and W. D. Hincks, with a preface by N. D. Riley; Diptera—Orthorrhapha [pp. 327-377] by R. L. Coe. (Published by the author, 322 Wellington Road North, Heaton Chapel, Stockport; frontispiece + pp. lix + 483 + [12] blank for notes, 8vo., December 1945; 52/6).

As I turn the pages of this book, I am uncertain which of several emotions—awe, gratitude, amazement, excitement, surprise or delight—is uppermost. Certainly before such a *tour de force* the voices of dis-

satisfaction and destructive criticism are silent. In the space of 429 pages, arranged in double-column, there are enumerated 4714 genera and 20,024 species of established British insects, besides 53 genera and 220 species of "casuals." The number of native species alone is over double the number enumerated in the *Systematic Catalogue of British Insects* published by J. F. Stephens in 1829. To have brought to completion an exhaustive and to a large extent critical list of over twenty thousand species in the space of seven (mostly war) years is an achievement of no mean order, and the authors deserve the unqualified congratulations and thanks of every entomologist in this country.

The frontispiece is a facsimile of the title-page of the earliest check-list of British insects, the *Catalogue of British Insects* published by J. R. Forster in 1770. Facing it is a transcription of the introduction to the same work; this is not a facsimile, and the substitution of *f*'s for the old-fashioned initial and medial *s*'s is unfortunate. Forster's pioneer work enumerated just over 1000 species.

In the introductory pages are given an account of the genesis and scope of the present check-list, a brief historical survey of previous British lists (general and special), notes on nomenclature and classification, a very useful 21-page bibliography arranged under orders, and an explanation of the layout and of the signs and abbreviations employed. There is a complete index to all genera and supra-generic groups.

The body of the check-list is admirably laid out, in the clear and unpretentious typography that one has come to associate with the name of Bunclé. The book opens comfortably and lies flat. A good number of synonyms are given, not only of genera and species but of higher groups as well; they are indicated not by difference of type but by indentation of the synonym. Probably more well-known generic synonyms could advantageously have been included without unduly increasing the bulk of the book. Two of the most valuable features of the work are the inclusion of the date of publication of every generic and specific name and the printing of all authorities' names in full (a welcome contrast to such works as Beare's *Catalogue of Coleoptera*). Orders and families are numbered (in Roman and Arabic

respectively), but genera and species are not. Misprints are remarkably few.

This is a work that very few serious entomologists, however young or amateur, can really afford to be without, and one's only regret is that the high price, which was no doubt unavoidable, will place it beyond the reach of many young workers. For those who take delight in accurate labelling and nomenclature, the list will be a constant source of pleasure. It is, of course, not the final word on the nomenclature of any group—even of such comparatively well-worked ones as the Lepidoptera and Coleoptera; on these, however, it will serve to clarify ideas for many who have hitherto had no guides but South and Joy. As regards the Lepidoptera in particular—the group claiming the allegiance of the bulk of our membership—it will provide some suggestive ideas on classification and relationships for those nurtured on South, for the present list is based largely on Meyrick. It is to be hoped that all AES members who can afford the work will buy it, and that those younger members who cannot themselves afford it will give their parents, grandparents, aunts, uncles, and other rich and indulgent relatives, no peace until they present them with it!

H. K. AIRY SHAW (545).

ADVERTISEMENTS

FOREIGN SILK-MOTHS. Through the kindness of friends in America and India, I think I have received sufficient cocoons of the following species to obtain pairings, and hope to offer ova and larvae this summer of: *A. luna*, *A. selene*, *P. cynthia*, *C. promethea*, *T. polyphemus*, *P. cecropia*, *A. io*, and, possibly, two hybrids. Also: *SATURNIA SPINI* and *SATURNIA PYRI*. Full price-list from L. Hugh Newman, F.R.E.S., The Butterfly Farm, Bexley, Kent.

Fertile ova, living larvae, and pupae. Summer list now ready. Larvae *quercifolia* 10/-, *versicolor* 6/-, *carpini* 4/6, *lanestris* 5/-, *dispar*, Gipsy Moth, 5/-; prices per dozen. Set specimens, apparatus and books. Lists free on application. D. E. BALLINGER, The Cottage, Canham Road, London, W.3.

WANTED, Second-hand copy of F. W. Frohawk's Book on British Butterflies. P. T. Bowring, The Tower House, Belle Vue Road, Exmouth.

STOREBOXES. — Standard pattern, 17½" x 12" storeboxes, new, corked and papered, camphor cells. Price 22/6 each. F. W. Kimber, 3 Hatfield Road, Northallerton, Yorks.

RATE: 1d per word, minimum 3/-; copy to be sent to B. O. C. Gardiner.

AES SPECIALITIES

Profits Help the Society to produce more Publications

ENTOMOLOGICAL DATA LABELS. Used in the chief collections. Printed in best style to your requirements. 10/- per 1000, 6/- per 500. **SEX SIGNS**, 2/- per 1000. Send S.A.E. for samples.

MEMBERS' NOTEPAPER. Printed with the Brimstone Butterfly emblem. 50 sheets, 2/6; 100 sheets, 3/9; 250 sheets, 7/6; post free. Send S.A.E. for sample.

MYTINS. Small, neat tins containing P.D.B. in unspillable form. A clean and convenient method of using mite preventative in store boxes. MYTINS were purchased by many members at the AES Exhibition. Sample tin, 6d; six for 1/9; twelve for 3/4; all post free.

All AES PUBLICATIONS and the above specialities from the Hon. Publications Sales Manager, C. Bignell Pratt, 1 West Ham Lane, E.15. REMITTANCE WITH ORDER saves much work and is, therefore, appreciated by the Society's Honorary Officers.

All contributions, exchange notices, adverts., announcements of change of address, etc., for publication in the Bulletin should be sent to the Assistant Editor, Brian O. C. Gardiner, 17 Bramham Gardens, London, S.W.5.

**AES ADVISORY PANEL**

AUGUST 1946

Return Postage—The only requirement of members for the use of the Advisory Panel is that they must enclose stamps to cover cost of return of specimens, or stamped envelope for reply. Otherwise, reply cannot be guaranteed. It will also be of assistance if the membership number of each enquirer is quoted in all enquiries. Unless otherwise stated, advice is only given on the fauna of the British Isles. Enquirers must remember that Advisers are busy people: dead material should be sent during the winter months when evenings are less likely to be occupied with collecting or mounting their own captures. Where large numbers of specimens are to be named, the enquirer should preferably have this done at a Museum, where paid officials are employed to deal with such enquiries. A personal visit, moreover, will usually solicit more information than would be obtained by correspondence.

Labelling—Details of locality, food-plant, date, time and mode of capture and many other details are often essential to identification. All specimens should be labelled with such data, preferably placed on a small card on the same pin as the insect. In all cases details of locality will be treated as confidential.

New Advisers—There are still many subjects not yet covered by the Panel, and volunteers to assist in these departments are much desired. Offers should be sent to the Chief Adviser.

Chief Adviser—D. H. STERLING, 36 Estella Avenue, New Malden, Surrey. In the absence of any suitable Adviser in the following list queries should be sent to the Chief Adviser, who will either deal with them himself or forward to the appropriate authority.

General advice for Junior Members—RICHARD BALZER, 18 Ferncroft Avenue, London N.W.3.

Lepidoptera (Butterflies and moths)
Identification, Macros and Micros—W. L. RUDLAND, 211 Caversham Road, Reading, Berks.

Identification of larvae—E. W. CLASSEY, 5 Carlton Avenue, Feltham, Middx.

Varieties of Rhopalocera — S. G. CASTLE RUSSELL, Stokesay, Bridge Road, Cranleigh, Surrey.

Rearing Silkmoths—FRANCIS G. SUTTON, 58 Blakemere Road, Welwyn Garden City, Herts.

Ecology and genitalia, Macros and Micros—DR. BRYAN P. BEIRNE, Dept. of Zoology, Trinity College, Dublin, Eire.

Distribution and local lists, Macros and Micros—DR. A. A. LISNEY, The Red House, Narborough, near Leicester.

Trichoptera and Ephemeroptera (Caddises and mayflies)

Identification and general advice—H. WHITEHEAD, 3 Barthorpe Avenue, Leeds 7.

Coleoptera (Beetles)

Books and collecting methods—G. B. WALSH, 22 Stepney Drive, Scarborough, Yorks.

Identification, other than of the groups named below—D. TOZER, 98 Copdale Road, Leicester.

Elateridae, identification and general advice—B. A. COOPER, 61 Okehampton Road, London N.W.10.

Halipilidae and Pselaphidae, identification and general advice—REV. E. J. PEARCE, St Teilo's Priory, Church Terrace, Roath, Cardiff.

Waterbeetles, identification and general advice — PROF. F. BALFOUR BROWNE, Brocklehurst, Collin, Dumfries.

Larvae and life-histories — E. A. J. DUFFY, 28 Lansdowne Road, East Croydon, Surrey.

Hymenoptera

Symphyla (Sawflies), identification and general advice—R. B. BENSON, Dept. of Entomology, British Museum (Natural History), Cromwell Road, London S.W.7.

Aculeata (Ants, bees, wasps), identification and general advice—DR I. H. H. YARROW, 7 Redlands Road, Reading, Berks.

Parasitica, identification and general advice—G. J. KERRICH, Manchester Museum, Victoria University, Manchester 13.

Diptera (Flies)

Identification and general advice—L. PARMENTER, 94 Fairlands Avenue, Thornton Heath, Surrey.

Mosquitoes, identification and general advice—E. W. CLASSEY, 5 Carlton Avenue, Feltham, Middx.

Odonata (Dragonflies)

Identification and general advice—A. F. O'FARRELL, 90 Woodwarde Road, London S.E.22.

Identification and general advice on exotic species—JOHN COWLEY, Holywell House, Edington, Bridgwater, Som.

Orthoptera and Dermaptera (Grasshoppers, crickets, roaches, and earwigs)

Identification and general advice—W. D. HINCKS, 46 Gipton Wood Avenue, Leeds 8.

Neuroptera (Alderflies, lacewings, and antlions)

Identification and general advice, British and foreign—LIEUT.-COL. F. C. FRASER, 55 Glenferness Avenue, Winton, Bournemouth, Hants.

Plecoptera (Stoneflies)

Identification and general advice—E. E. SYMS, 22 Woodlands Avenue, London E.11.

Hemiptera-Heteroptera (Het-bugs)

General advice and approximate identification—H. K. AIRY SHAW, Royal Botanic Gardens, Kew, Surrey.

Arachnida (Spiders)

Identification and general advice—DR A. A. D. LA TOUCHE, 21 Alwoodley Gardens, Moortown, Leeds.

Books

General advice — T. BAINBRIGGE FLETCHER, Rodborough Fort, Stroud, Glos.

Microscopy

General advice — M. J. HIRONS, 138 Wyken Avenue, Wyken, Coventry, Warwickshire.

Photography

General advice, not colour photography or cinematography — E. G. NEAL, Japonica Cottage, Rumwell, Taunton, Som.

General technical advice and colour photography — A. L. SHUFFREY, Leverstock Green Farm, Hemel Hempstead, Herts.

Botany

Identification of foodplants — H. K. AIRY SHAW, Royal Botanic Gardens, Kew, Surrey.

Selection, propagation and cultivation of foodplants and floral attractions—R. C. DYSON, 112 Hollingbury Park Avenue, Brighton 6, Sussex.

Pests

Farm and garden pests—B. A. COOPER, 61 Okehampton Road, London N.W.10.

Stored products pests — A. F. O'FARRELL, 90 Woodwarde Road, London S.E.22.

Beekeeping

General advice—J. E. BERRY, School House, Grange-over-Sands, Lancs.

Chemical Matters

General advice—DR H. HENSTOCK, Glengariff, Caerwys, Mold, N. Wales.

Insect Migration

General advice — CAPT. T. DANNREUTHER, Windycroft, Hastings, Sussex.

NOTICE TO ADVISERS

It would be appreciated by the Editor if Advisers would forward any queries likely to be of general interest, if possible with their reply, for publication in the *Bulletin* or *Journal*. Their advice as to what queries are most frequently asked would also be of help in selecting titles of future *Leaflets*, or in improving issues already in print.

B. A. C.



The Amateur Entomologists' Society

MEETING NOTICE No. 4

A CONVERSAZIONE FOR ENTOMOLOGISTS

will be held at Buckingham Gate Central Schools, Wilfred Street, London, S.W.1, on the afternoon of Saturday, September 28th, 1946. The hall will be open for the receipt of exhibits from 10 a.m. onwards, and the meeting will be declared open at 2 p.m. Tea will be available for those desiring it later in the afternoon. The hall must be cleared of all exhibits by 8 p.m.

Although this meeting is organised particularly for the benefit of members, it is hoped that as many visitors as possible will attend and bring exhibits with them. In addition to insects (living and mounted) in every stage of development, drawings, photographs, and any other exhibits of entomological interest are desired.

Members are reminded that all exhibits should be carefully labelled and short notices provided whenever possible.

Besides short talks on different forms of entomological study, it is hoped to include a "Brains Trust" to debate queries sent in by members. But this cannot take place

unless the questions arrive! So please send them to B. O. C. Gardiner, 17 Bramham Gardens, London, S.W.5, to reach him by 21st September 1946. Queries likely to lead to divergence of views or of experience are preferred to merely factual questions.

Remember, please, to bring your surplus stock for the Exchange Stall. Those who come laden will also return laden.

Tell your friends of this exhibition, and help make it a success.

Applications for further copies of this notice, for distribution or posting up on notice-boards, as well as enquiries or offers of help regarding this meeting, should be sent to: Mrs J. M. ADAMS, 43 Merchland Road, London S.E.9.

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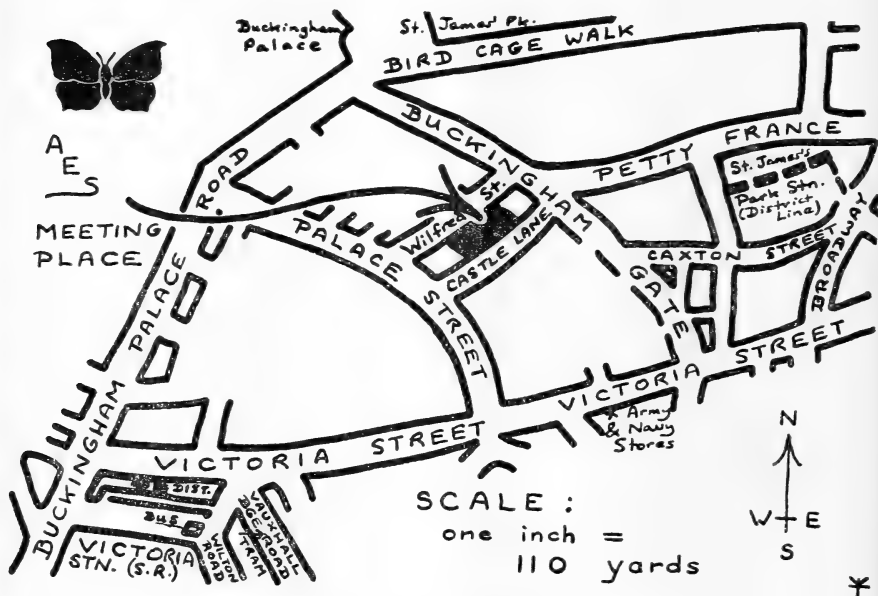
ADMISSION FREE

A collection will be taken to defray the expenses of holding the Exhibition.

SPECIAL GENERAL MEETING

After the Exhibition, a Special General Meeting will be held to amend Paragraph 1 of the AES Constitution and Byelaws to read:

1. **Name**—The name of the Society shall be THE AMATEUR ENTOMOLOGISTS' SOCIETY, and, unless it shall possess any permanent premises, its official address shall be as decided by the Council.



How to Get There

The entrance to the Hall is in Castle Lane. Cars may be parked inside the big gates in Wilfred Street, leaving them in the playground.

UNDERGROUND (District Line) to Victoria Station or St James's Park Station, from King's Cross, St Pancras, Euston, Marylebone, Paddington, Baker Street, and Charing Cross; passengers from Waterloo take a 46 or 10 bus to Army and Navy Stores from York Road, Waterloo. Underground (tube) passengers change at Charing Cross and get on to

the Westbound District to St James's Park Station.

BUS—Take a No. 11 bus from Charing Cross (Strand), or No. 24, 34, or 139 from Tottenham Court Road or Trafalgar Square and alight at Army and Navy Stores. The following buses pass through or terminate at Victoria: 2, 10, 11, 16, 24, 25b, 25c, 29, 36, 38, 38a, 39, 46, 52, 76, 134, and 290.

TRAM—The following trams terminate at Vauxhall Bridge Road, Victoria: 8, 20, 28, 54, 58, 66, and 78.

**EXAMS**

The recent government recommendations on school examination reform may seem at first sight to have little to do with entomology. But there is one matter amongst these suggestions that concerns all naturalists who have to undergo these trials, or whose children or young friends may do so. It is proposed to alter the examination season from June to March, so that holidays may be spread over the whole of the summer instead of being crammed into late July and August.

This plan will meet with the whole-hearted approval of all entomologists. Quite apart from the fact that the mild weather of early spring is, for most people, far more conducive than Midsummer scorch to concentrated thought, the proposal, if adopted, would provide a greater stimulus for out-of-door hobbies than almost any other thing. It is quite wrong that the young naturalist and country-lover should be denied his evenings and week-ends during spring and early summer by having to swat away at theorems and irregular verbs, set books and language vocabularies, dates of battles and parliamentary bills, chemical and physical formulae and lists of towns and rivers. These may be all very well during the dark winter evenings, but he should be free to partake of the freshness of spring, when the opening buds and first flowers are scenting the fragrant air, when bird song is at its height and woods and fields are at their greenest, when a myriad butterflies and caterpillars are awakening from their winter rest, and the countryside can be appreciated before the black clouds of flies and humid heat of high summer reduce its pleasures. The mid-summer examination system is an unjust tax upon natural history hobbies and upon the general appreciation of our heritage—the country in springtime. It would be a disaster if the broadening of secondary education were to mean a reduction in the opportunity of many to see

and love the full beauties of spring faunas and floras.

BEOWULF A. COOPER.

BRIAN O. C. GARDINER.

(28/7/1946)

THE 1947 SUBSCRIPTION

Owing to continued rise in costs, it has become evident that our organisation cannot continue to provide even the present small *Bulletins* on the present rate of subscription. With reluctance the Council have decided that it will be necessary to raise next year's subscription to 10/- (Juniors 5/-). All new members joining after 31st August, and whose subscriptions will automatically cover next year, will therefore be asked to subscribe at the new rate.

The opportunity is being taken of next year resuming our pre-war practice of giving all members both the *Bulletin* and the *Journal* (the *Amateur Entomologist*) as part of the benefits of membership (during the war years, it will be remembered, the *Amateur Entomologist* has been sold to members separately). The *Bulletin*, moreover, is to return to its pre-war frequency of ten per year in order that exchange notices, advertisements and important news items shall appear in print within a relatively short time of receipt.

New applications for membership should, as hitherto, be sent to the Hon. Secretary, at: 36 Estella Avenue, New Malden, Surrey.

D. H. STERLING
(Hon. Secretary).

(21/8/1946)

MEMBERSHIP CHANGES

* = Junior Members

† = Affiliate Members

New Members

- 131 A. J. Slatter, 22 Cedar Road, Teddington, Mddx. (D., esp. *Culicidae*, C.)
- 177 Dr H. Murray, Ashbourne, Clonmel, Co. Tipperary, Eire. (L.)

- 558*G. R. Harding, c/o Lady Campbell, Fordcombe Manor, near Tunbridge Wells, Kent. (L.)
- 1033†Southey Hall Entomologists' Society, Southey Hall School, Fulford, Dunsford, near Exeter.
- 1034 Sinclair Swanson, M.A., Keiss Village, Wick, Caithness. (L., gen. ent.)
- 1035*A. S. Fraser, The Old Mill, Battle, Sussex. (L.)
- 1036 G. B. Collins, 19 Torridge Road, Thornton Heath, Surrey. (gen. ent.)
- 1037*A. Barlow, 10 Fargosford Street, Coventry. (L.)
- 1038 H. Tully, Wellfield, Alnmouth, Northumberland. (C., O.)
- 1039 Miss Cynthia Longfield, 11 Iverna Gardens, London, W.8. (O.)
- 1040 J. H. Johnson, 53 Knighton Street, Heithorne Lane, near Chesterfield, Derbyshire. (C., H.)
- 1041*M. I. Redmayne, 126 Middleton Hall Road, Birmingham, 30. (L., H., P.)
- 1042*J. A. Trinder, Hawcroft, Vicarage Road, Great Cornard, Sudbury, Suffolk. (L.)
- 1043 A. R. Hill, B.Sc., F.R.E.S., 58 Abbotsford Street, Dundee. (insect E., esp. aq., Hem.)
- 1044*J. Green, 61 Ruskin Road, Crewe, Cheshire. (C., gen. ent.)
- 1045 T. H. Ayers, 24 Chada Avenue, Gillingham, Kent. (gen. ent.)
- 1046 G. R. P. Rutter, Bradewick, Thorpe-le-Soken, Essex. (gen. ent., mic., world NH.)
- 1047*R. J. Hobbs, 8 Blaen-Nant Street, Duffryn, Rhondda, near Port Talbot, Glam. (L.)
- 1048*J. C. Beak, 14 Heol yr Afael, Duffryn, Rhondda, near Port Talbot, Glam. (L.)
- 1049 H. Inglesent, Lea Holme, Archer Park, Middleton, Lancs. (bees, anatomy, physiology)
- 1050*Ivor Mitchell, 64 Woodstock Road, Cheylesmore, Coventry. (L.)
- 1051*T. R. E. Southwood, Parrock Manor, Gravesend, Kent. (L., C., Hem.)
- 1052*R. H. G. Turner, 51 Hunter Road, Thornton Heath, Surrey. (L.)
- 1053†Mill Hill School N.H.S., Mill Hill School, London, N.W.7. (Communications to The President, D. M. Hall, M.A., F.Z.S.)
- 1054 Capt. E. G. Toomer, R.A., H.Q., Liguria Liaison Group, A.C., C.M.F. (L., gen. ent.)
- 1055 Dr Jean Leclercq, 41 Rue Prof. Malvoz, Liège, Belgium. (physiological ent., H.)
- 1056 Christopher M. Swaine, B.Sc., F.Z.S., The Lodge, Kingsmoor School, Glossop, Derbyshire. (ornith., O., L., Hem.)
- 1057*J. George, Oaktree Cottage, The Glen, Farnborough Park, Kent. (L.)
- 1058 P. F. O'Neill, Shenstone Training College, near Kidderminster, Worcs. (C.)
- 1059*J. N. Mead, Wyldberrry, Fox Street, Ardleigh, Essex. (L., C., gall causers)
- 1060*D. M. A. Samuels, Heather-Edge, West Moors Road, Fern-down, near Wimbourne, Dorset. (L.)
- 1061 Captain E. H. T. Hubbard, R.N., Conroy House, Mundsley, Norfolk. (L.)
- 1062 G. D. Glynn Jones, B.Sc., 30 Kelso Road, Leeds, 2, Yorks. (Aphididae)
- 1063 H. Ashforth, Groom Cottage, Idlicote, Shipston-on-Strour, Warwickshire. (H.)
- 1064 Frank Raw, The Research Station, Long Ashton, Bristol. (E., esp. soil fauna)
- 1065 H. C. Fountain, Northcourt, Court Lane, London, S.E.21. (L., gen. ent.)
- 1066 Major A. E. Collier, c/o Lloyds Bank Ltd., 6 Pall Mall, London, S.W.1.
- 1067 David R. Hughes, B.Sc., F.G.S., Washerly House, Wolsingham, via Bishop Auckland, Co. Durham. (C., H., L., O., Hem.)
- 1068†Junior Zoological Society of Philadelphia, c/o J. Kenneth Goody, 26 Carr Wood Road, Bramhall, Cheshire.
- 1069*J. F. Luke, Gibbet Oak Farm, Tenterden, Kent. (L.)
- 1070 J. S. Ogden, Argwendon Green Street, Sunbury-on-Thames, Mddx. (L., C.)
- 1071 Miss Beryl Garrard, Principal, Springfield Grange School, Great Missenden, Bucks. (NH.)
- 1072 J. E. Berry, School House, Grange over Sands, Lancs. (H. Aculeata, pollen)
- 1073*Colin B. Thirrell, 104 Vesper Road, Leeds, 5, Yorks. (L.)
- 1074*John C. Haslam, 321 Tring Road, Aylesbury, Bucks. (L.)
- 1075 L. C. Bushby, Curator of Insects, Zoological Society of London, London, N.W.8. (gen. ent.)

- 1076 F. Fincher, Randan Wood, Bromsgrove, Worcs. (Orthoptera, O., R., H.)
- 1077* Peter J. Bromley, 65 Courtland Road, Iffley, Oxford. (Orthoptera, C., H. Parasitica)
- 1078 Albert Chapman, 31 Dulwich Village, London, S.E.21. (C.)
- 1079 W. E. V. Watts, 6 St Marks Road, Pennington, Lymington, Hants. (L.)
- 1080* P. Bampton, Ivy Bank, Tiptoe, Hordle, Hants. (L.)
- 1081† Springfield Grange School, Great Missenden, Bucks. (Communications to Miss B. Garrard.)
- 1082 J. S. Tunnard, Cadgwith, near Helston, Cornwall. (H., esp. Symphyta)
- 1083 T. B. Nichols, Welbeck, Cranfield Park Road, Wickford, Essex. (gen. ent.)
- 1084 K. P. Whitehorn, 205 Hither Green Lane, London, S.E.13. (L.)
- 1085* Cyril A. Robinson, 155 Regent Street, Kettering, Northants.
- 1086* J. Butcher, 1 Sandy Way, Shirley, near Croydon, Surrey. (L., H., Ichneumonidae, O.)
- 1087* Derek R. Read, 21 Princes Street, Kettering, Northants.
- 1088 David W. Hall, Zoology Dept., University College, Dundee. (gen. ent.)
- 1089* A. H. Venison, Noblands, Thundridge, near Ware, Herts. (L., protection of rare R.)
- 1090* J. Burch, 8 Edgworth Road, London, S.E.9. (L.)
- 1091 R. A. Powell, Sergeants' Mess, R.A.F., Chivenor, Barnstaple, Devon. (gen. ent.)
- 1092* R. A. Backholler, London Road, Rynton - on - Dunsmore, near Coventry. (L.)
- 1093* R. J. Tucker, 14 Mile Lane, Chylesmore, Coventry. (L.)
- 1094† Brunswick School Natural History Society, Brunswick, Oathall Road, Haywards Heath, Sussex.
- 1095 D. H. Adams, 2 Park Road, Haywards Heath, Sussex. (C., L., D.)
- 1096 Miss L. W. Dorey, 26 Tamar House, Kennington Lane, London, S.E.11. (gen. ent.)
- 1097* A. Spotswood, 8 Elmfield Road, Davenport, Stockport, Cheshire. (L.)
- 1098 Kenneth L. Palmer, F.R.E.S., F.R.M.S., Meadowlea, Goben, Salop. (L.)
- 1099 A. E. Winter, Langton Lodge, Scotton, near Knaresborough, Yorks. (C., gen. ent., P.)
- 1100* A. F. G. Green, 390 Ewell Road, Surbiton, Surrey. (L.)
- 1101* A. Walker, 329 Uxbridge Road, London, W.3. (gen. ent.)
- 1102 Brig. E. A. Glewne, F.R.E.S., Steepways, Cross Oak Road, Berkhamsted, Herts. (troglobites and troglobites)
- 1103 P. G. Neal, 177 Braemore Road, Goodmayes, Essex.
- 1104 D. Ware, 17 Waldegrave Avenue, Holderness Road, Hull. (larva breeding, ornith.)
- 1105 Miss W. M. Le Fleming, Rayrigg Hall, Windermere, Westmorland. (L.)
- 1106 Arthur W. Muir, Weardale, Knitsley Lane, Consett, Co. Durham. (L.)
- 1107 Ronald Cecil Roots, 41 Second Avenue, Chelmsford, Essex. (L., C., spiders)
- 1108 Frederick S. Rayner, 83 Conway Crescent, Perivale Park, Greenford, Mddx. (L.)
- 1109 John E. Carter, 38 Kennington Road, Fulwood, Preston, Lancs. (H.)
- 1110 L. F. Milton, 41 Marmora Road, Cambridge. (C., biological control)
- 1111 R. M. Dobson, c/o Ministry of Food, Infestation Division, 69 Berkeley Street, Glasgow, C.3. (gen. ent., esp. C.)
- 1112 William Ritson, 12 West Street, Winwick Road, Warrington, Lancs. (ornith., gen. ent., esp. C., Orthoptera)
- 1113 George R. Petty, 106 Kings Road, Rayners Lane, Harrow, Mddx. (gen. ent.)
- 1114 C. F. Fox, 62 Rhoorons Avenue, Hook, near Surbiton, Surrey. (gen. ent., esp. aberration)
- 1115* K. Salkeld, 9 Mulgrave Road, London, W.5. (gen. ent.)
- 1116* M. R. F. Block, Alpha Cottage, Francis Road, Ware, Herts. (gen. ent., esp. L.)
- 1117* Alan P. Major, 21 Tufton Road, Rainham, near Gillingham, Kent. (NH., gen. ent.)
- 1118* M. Locke, 36 Ainsdale Road, London, W.5. (L.)
- 1119 J. F. Graham, Castle Hotel, Bamburgh, Northumberland. (gen. ent.)
- 1120* J. S. Peet, 9 Salisbury Avenue, St Albans, Herts. (L., H., C.)

- 1121 Kenneth W. Ewing, 20 Strand, Topsham, Devon. (L., esp. breeding)
- 1122 H. L. Doulton, 36 Chester Street, Reading. (L.)
- 1123 Henry M. Harcourt, Common Hill House, Alkham, near Dover, Kent. (insect pests)
- 1124 Miss Dorothy J. Jackson, F.L.S., F.R.E.S., North Cliff, St Andrews, Fife. (gen. ent., C., H.)
- 1125* Miss Joan P. Hammerton, 7 Gosford Gardens, Ilford, Essex. (L.)
- 1126 Douglas Martin, 29 Follaton Estate, Totnes, S. Devon. (gen. ent., esp. C.)
- 1127 Miss W. Gamble, 34 Philip Road, Bury St Edmunds, Suffolk. (gen. ent.)
- 1128* A. V. May, 42 Whitehall Gardens, London, E.4. (gen. ent., esp. L.)
- 1129 B. T. Spencer, 63 The Martyres Close, Cheylesmore, Coventry. (L.)
- 1130 The Rev. P. V. M. Allen, The Vicarage, South Bank, Middlesbrough, Yorks. (L.)
- 1131* Miss Pamela L. Gosling, 259A Lee High Road, London, S.E.12. (L.)
- 1132 Dr. D. Livesey Boardman, 40 Scholes Lane, Prestwich, near Manchester. (L., C.)
- 1133* C. M. Perrins, Thursday Cottage, Ember Lane, Esher, Surrey. (L.)
- 1134* F. S. Bennett, 17 Sandall Road, London, W.5.
- 1135 R. A. Lever, 8 Harley Road, London, N.W.3. (gen. ent.)

Omitted in Error from Previous Lists

- 186 H. Spencer, 80 Park Road, Elland, Yorks (L.).
- 216 S. F. Roberts, 410 Woodchurch Road, Oxtou, Birkenhead, Ches. (L.)

Death—We regret to announce the death of our member, Mr H. N. Murphy (593).

Membership Total — 896 subscribing members.

Change of Address

- Lt.-Col. A. N. Brangham (18) to: 9 St Albans Grove, London, W.8.
- C. Brown (704) to: Barmoor House, Scalby, near Scarborough, Yorks.
- A. Chubb (969) to: 11 Parkfield, Topsham, near Exeter, Devon.
- B. A. Cooper (19) and Mrs Cooper (447) to: 18 Hawks Nest Gardens East, Alwoodley, Leeds.
- R. H. Davie

(648*) to: 30 Nightingale Road, Rickmansworth, Herts.

N. W. Harwood (825) to: 37 Stoneyhurst Avenue, Acklam, Middlesbrough, Yorks.

Miss V. Heslop (835) to: Villa Aice-Choko, Route des Dumes, St Jean-de-Luz (B.P.), France.

J. Newton (439) to: 11 Oxleaze Close, Tetbury, Glos.

Rev. E. J. Pearce (796) to: St Teilo's Priory, Church Terrace, Roath, Cardiff.

R. A. Powell (1091) to: 32 Ripon Road, Redcar, Yorks.

Elizabeth Reid (927*) to: Red Lion Hotel, Freeman Street, Grimsby, Lincs.

J. C. Stephens (507*) to: The Quarry, Northleigh, Witney, Oxon.

W. H. Storey (277) to: Fairstead, Long Road, Cambridge.

Correction to Bulletin 76—972, H. W. Daltry, F.R.E.S., M.S.B.E., Bar Hill, Madeley, Crewe. This should read as above and not as printed.

WANTS AND EXCHANGE

THE EDITOR (B. A. Cooper) is anxious to receive short collecting and rearing hints on Macro-Lepidoptera, as well as longer articles, photographs, etc., for inclusion in the next issue of the *Journal*.

J. L. KERSHAW (418) wants a few larvae of *S. ligustri*. Offered, larvae of *S. ocellatus* or please state requirements.

P. A. BETTS (700) offers ova of Pine Hawk (*H. pinastri*). Wanted: larvae of *E. versicolor*, *P. machaon*, or other local or northern species.

B. O. C. GARDINER (225) wants foreign Pyralidae, set or in papers. Offered: British Lepidoptera. He also wishes to buy *The Entomologist*, Vols. 1-12.

R. B. B. GIBBS (1016) has for exchange a large number of Drinker Moth larvae from parents showing variation. What offers?

G. GYSELMAN (218) has for exchange ova or larvae of:—*S. ligustri*, *C. elpenor*, *C. porcellus*, *P. bucephala*, *U. sambucaria*. What offers? Also unset specimens of Elephant Hawk if anyone would like them.

A. J. DAVIES (886) has for exchange young larvae of the Lappet Moth (*G. quercifolia*). What offers?

J. N. PICKARD (599) wishes to exchange many species of ova, larvae and pupae; full list of species available gladly sent on receipt of enquiry and at moment includes larvae of *plantaginis*, *dominula*, *monacha*, *dispar*, *autumnaria*, *betularia*, *buce-*

phala, *lacertinaria*, *jacobaeae* and many others.

A. J. DAWES (886*) offers for exchange larvae of *D. vinula* (Puss Moth), *P. bucephala* (Buff Tip), *B. mori* (Common Silkmoth).

E. R. GARNER (733*) wants South's *Moths of the British Isles*, both volumes; please state price.

D. G. SCOTT (534) would like to purchase a larva cage, new or second-hand.

MISS D. J. JACKSON (1124) wants the following books:—Sladen's *The Humble Bee*; Edward Saunders' *Hymenoptera Aculeata of the British Islands*, with coloured plates; Pearce's *Typical Flies*, series III; Lulhom's *Introduction to Zoology*; Verrall's *British Flies*.

A. J. SLATTER (131) would be pleased to send material of the Culicidae (*Anopheles* and *Culex*), all stages, to anybody interested IF they would please let him have sufficient boxes and tubes.

R. ALDRIDGE (262) has a dozen specimens of Trichoptera to send to anyone interested. Please send postal box. Also a few specimens of Lepidoptera suitable for beginners—send postal box (Junior members only). Also, for exchange: 5 *A. sylvata* (Clouded Magpie), 3 *S. ocellata* (Eyed Hawk), 4 *A. paphia* (Silver-washed Frit.), and ova of *P. dominula* (Scarlet Tiger); wants: many species, some quite common.



BUSINESS RE-OPENING

We learn that Dennis E. Ballinger, The Cottage, Canham Road, London, W.3, recently demobilised, has reopened his business at the above address. His new price-list covers many branches of natural history apparatus and livestock, including butterflies and moths in all stages, nets, setting boards, breeding cages, books, and bee-keeping apparatus.



BLUES AND ANTS

E. W. Classey's enlargement (*AES Bulletin* No. 71, October 1945, pp. 71-2) upon his review of Stokoe and Stovin's "The Caterpillars of the British Butterflies" prompts me to mention a defect by omission in that otherwise useful addition to the "Wayside and Woodland" series.

In discussing *Maculinea arion* L. the Large Blue Butterfly (pp. 127-

130), the authors quote from Frohawk's by now classic discoveries on the symbiosis between *M. arion* and species of *Myrmica* (Hym., *Formicidae*). This reference is so perfunctory, however, that the tyro may be led to believe that *M. arion* might be found with any kind of ant, as long as it nests in the western part of England. As this is by no means true, the following notes may be of assistance, especially at a time when a wider range of specialised reference books is hard to obtain.

There are probably the best part of 70 species, representing 28 genera of *Lycaenidae*, which have been recorded as having caterpillars that are related symbiotically, in one way or another, with ants in different parts of the world. As far as Britain is concerned, the following "Blues" have been recorded with ants:—

Lysandra coridon Poda (Chalkhill Blue) with *Acanthomyops* (*Chthonolasius*) *flavus* F.

Lysandra bellargus Rott. (Adonis Blue) with *Acanthomyops* (*Donisthorpea*) *niger* L.

Maculinea arion L. (Large Blue) with *Myrmica scabrinodis* Nyl., *M. scabrinodis* Nyl. var. *sabuleti* Meinert, and *M. laevinodis* Nyl. (E. B. Ford suggests that *A. (C.) flavus* F. is an unsuitable host, producing a dull-coloured dwarf form of this butterfly).

Plebeius argus (Silver-studded Blue).

Lycaena dispar (Large Copper).

Lycaena phlaeas (Small Copper).

Lampides boeticus (Long-tailed Blue).

Everes argiades (Short-tailed Blue).

Aricia agestis (Brown Argus).

All British *Pieridae* except *Aporia crataegi* (Black-veined White), *Pieris brassicae* (Large White), *Colias croceus* (Clouded Yellow) and *C. hyale* (Pale Clouded Yellow), are attended by ants, although their relationship is somewhat different from that of the *Lycaenidae*, though still trophobiotic. The above-mentioned six species of butterfly are referred to by E. B. Ford* in his "Butterflies" (Collins, 1945). He also advances the argument that *Cupido minimus* (Small

*Ford refers to *Myrmica scabrinoides*, *M. laevinoides*, and *Donisthorpea flava* as host ants. These names appear in no published list; the correct nomenclature will be found in my text above. Dr Ford informs me that a reprint of his book is already in the press, and these errors cannot now be rectified.

Blue) and *Callophrys rubi* (Green Hairstreak) were once attended by ants, as the larvae possess the rudiments of attractive glands.

Polyommatus icarus Rott. (Common Blue) has not been found with ants, as far as I know, but Rayward found by experiment that a larva of this species exuded a fluid to workers of *Acanthomyops* (*Chthonolasius*) *flavus* F., as also did *Lycaena alcon* to *Tetramorium caespitum* L. in an experiment by Chapman. It is interesting to note, *en passant*, that when larvae of the Large Blue were transferred to Kent, in which county this species has never been recorded, they were treated by worker ants to whom the larvae were introduced, in exactly the same way as they had been treated by ants in the region of their capture in the West Country.

The species mentioned above represent the trophobiotic Lepidoptera.

The parasitic, or synoeketic, lepidoptera of Britain are:—

Myrmecozela ochraceella Tgstr. with *Formica rufa* L., and *F. rufa* L. var. *alpina* Sants.

Tineola bisselliella Hml. with *Formica rufa* L.

Brachmia gerronella Zell. with *Acanthomyops* (*Dendrolasius*) *fuliginosus* Latr.

Amphisbatis incongruella Stn. with *Formica exsecta* Nyl. and *F. pratensis* Retz.

Endrosis lactella Schiff. with *Acanthomyops* (*Dendrolasius*) *fuliginosus* Latr.

Our knowledge of the majority of these symbiotic relationships is hazy, and it is only through the work of Frohawk, Chapman, and some others that we have now a clearer conception of the biological inter-relationship of *M. arion* L. and *Myrmica scabrinodis* Nyl. to which Stokoe and Stovin refer.

The lepidopterist searching for the larvae of trophobiotic and synoeketic butterflies should pay particular attention to colonies of *Myrmica scabrinodis* Nyl. and *M. laevinodis* Nyl., while three species of *Acanthomyops* Mayr and *Formica rufa* L. may reward careful investigation. Furthermore, we must go further than just observing what happens in the field, for there is also the historical, evolutionary aspect of this complex relationship, in which the form of symbiosis may have changed, and certain

habits died out, as Ford suggests. This means that a series of experiments with considerable numbers of larvae and ants may well give us fuller information about the way in which the biological necessity and convenience of symbiosis has evolved.

For those who are not well acquainted with the differences between some of the commoner species of ant mentioned in this paper, I append a few notes which set out the main structural differences between them:—

Myrmica scabrinodis Nyl. and *M. laevinodis* Nyl. are not uncommon ants, though somewhat difficult to differentiate; only comparatively recently were they considered to be "good" species, and not just varieties of the type, *Myrmica rubra* L.

Myrmica laevinodis Nyl. is a largish ant, between 4 and 9 mm. in length, reddish yellow in colour, less rugose than the others of this genus. Colour and size are not reliable indicators, however, and the main criterion is to find out if the epinotal spines are not longer than is their basal width, the space between being smooth and shining.

Workers of *M. scabrinodis* Nyl. are sometimes a little smaller, and their colour is more variable, from light reddish-yellow to dark red, with the head and gaster dark brown above, legs and antennae lighter. The epinotal spines are long. The main distinguishing feature is that the scape is bent at right angles at the base, and there is a more or less distinct lateral tooth at the bend. It nests under stones, preferring dry, sandy heaths away from houses, whereas *laevinodis* prefers moist, shady spots, nesting under stones, and in decaying logs, or in fields under cultivation.

Formica rufa L. is the well-known "Wood Ant" which makes mounds of pine needles. It is a large, reddish-brown, active and intelligent ant, roaming singly at a distance from the nest, and it is immediately identified by its habit of turning the gaster up under the body while standing almost erect, in order to squirt formic acid which is often visible to the naked eye.

Acanthomyops (*Dendrolasius*) *fuliginosus* Latr. is found locally in large colonies in decaying tree trunks, manufacturing carton nests in the wood. These ants are jet black, and form long columns to and from the nest which is often well concealed.

Acanthomyops (Chthonolasius) flavus F. is the very common little yellow ant, whose nests resemble mole-hills in fields.

Acanthomyops (Donisthorpea) niger L. is the equally well-known "Brown Garden Ant" which is almost ubiquitous, and during the summer months may be seen indefatigably tending aphids on roses, beans, etc.

If any member has made further observations on this fascinating aspect of symbiosis, I should appreciate hearing from him, as the above notes are not necessarily up-to-date. Furthermore, I would welcome locality data on this subject, and if members would send me the localities in which they have found species of ant, even the commonest, I should be most grateful, as our knowledge of the distribution of the British ants is still far from complete.

One other small point in connection with "The Caterpillars of the British Butterflies" is to emphasise the desirability of publishing synonyms, especially generic ones, which are changed not infrequently, and therefore there is a tendency to confuse the non-specialist in that branch of entomology unless there is an authentic, historical guide to taxonomy.

A. N. BRANGHAM (18).

BURNET PUPATION SITES

In connection with Prof. G. D. H. Carpenter's note in the April 1945 issue (*Bulletin* 68, pp. 42-3), I came across a similar habitat on June 17th, 1945, near Gravesend, Kent. On a coarse-mesh wire fence about 80 yds. long I counted 22 *Zygaena* (? *filipendulae*) cocoons and one larva about to pupate. The conditions of the cocoons were as follows: contents extracted: 16; contents fatally damaged but not extracted: 1; moth emerged: 2; contents destroyed by ichneumons: 1; undamaged: 2. The proportion of casualties due to birds is thus 77.3%, which is higher than the 64.8% observed by Prof. Carpenter. Had it been possible to observe the cocoons over a longer period, however, the figures might have changed.

W. NIALL ROBERTS (77).

19/6/1945.

ASTHMA CAUSED BY FLIES

Several groups of insects, including mayflies, caddises and moths, are known to cause allergic sensitivity in man. In a letter to *Nature* (No.

3988, 6/4/46, p. 441), David Ordman reports thirteen cases of bronchial asthma (two Europeans and eleven Africans) as having been traced to the moth-flies (*Psychoda* spp.) at a trickling sewage filter works in Transvaal, South Africa. The condition was characteristically present in the warmer months of the year and the symptoms occurred during work in the vicinity of the sewage trickling filter beds where masses of *Psychoda alternata* Say accumulate in the shady part of the grounds and in neighbouring buildings. The African patients, in addition, developed attacks at night in their nearby compounds, which were heavily infested with the flies. All the subjects claimed to be symptom-free when on vacation or away from the sewage works. The inhalent allergen in *Psychoda* sensitivity was demonstrated to be the dust resulting from the disintegration of the bodies of the flies, which readily dry and break up.

Eleven of the 35 African employees on the sewage works, who were found to be sufferers from asthma, were submitted to skin tests with *Psychoda* extracts. Five of the patients gave a strongly positive reaction and, in four instances where the passive transfer test could be carried out, the result was positive in two of the cases. In a control group of twelve non-asthmatic African employees, no significant reactions were obtained with the *Psychoda* extracts.

As species of *Psychoda* occur commonly in Great Britain, it is suggested that here is an opportunity for amateur research by those who can recognise the flies which may be of some immediate practical benefit to asthma-sufferers like myself!

B. A. C.

The Psychodidae—Moth Flies—as a family are easily recognised in the field as little flies by their long-haired wings, which they hold in much the same way as a Carpet Moth, and so have a superficial resemblance to small moths. The adults occur commonly in shaded localities near water. At least one species breeds in drain pipes and emerges in bathrooms. One species is the pollinator of our Wild Arum. Exotic species are notorious disease spreaders.

The British species have been studied by Eaton in *Ent. mon. Mag.*, 1893-1898, and by Tonnoir in *Trans.*

Soc. Brit., Ent., 1940. They possess excellent characters for differentiation in the male genitalia and a keen young student could undertake valuable work in preparing a revision of the family or in studying their habits and ecology.

The species *Psychoda alternata* Say has been studied in this country by G. M. Fair—*Sewage Works Journal*, 1934: 6; 966-981. It is abundant on the trickling filter beds of sewage works during the summer and occurs with other species of *Psychoda* in these haunts throughout the year in smaller numbers. Its life cycle is normally 16-20 days.

L. PARMENTER (895).

PACKING FLIES FOR TRANSIT

I often get flies sent me loose in a glass tube; on arrival I find a jumble of heads, wings, legs and bodies from which most of the useful taxonomic bristles have been broken off. It would save much trouble if each fly (and no doubt this applies also to other small insects) were wrapped in tissue paper to protect it from damage.

H. AUDCENT.

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LIST OF MEMBERS

OCTOBER 1946

The highest membership number included in this list is No. 1161.

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The list of Junior Members has been prepared from the Application Forms sent in by members on joining, and comprises everyone aged 17 or less on January 1, 1946.

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Abbreviations

* = Junior Member
 † = Affiliate Member
 agric. = agricultural
 aq. = aquatic
 B. = biology
 C. = Coleoptera (beetles)
 D. = Diptera (flies)
 E. = ecology
 econ. = economic
 ent. = entomology
 esp. = especially
 exot. = exotic
 fw. = freshwater
 gen. = general
 H. = Hymenoptera (ants, bees, wasps, sawflies, parasites)
 Hem. = Hemiptera (bugs)
 Het. = Heteroptera (het-bugs)
 Hom. = Homoptera (hom-bugs)
 L. = Lepidoptera (moths and butterflies)

M. = migration
 mic. = microscopy
 ML. = Microlepidoptera
 NH. = natural history
 O. = Odonata (dragonflies)
 ornith. = ornithology
 P. = photography
 R. = Rhopalocera (butterflies)
 Z. = zoology

Ordinary Members

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 Abell, T. Q. (787*), 154 Thornbury Road, Isleworth, Mddx. (L.)
 Abraham, J. (542), 16 Broad Lawn, London S.E.9. (L.)
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- Eade, W. (374), 8 Nizells Avenue, Hove 2, Sussex. (C., L.)
- Eagles, T. R. (194), 32 Abbey Road, Enfield, Middx. (L.)
- Easton, Nigel T., F.R.E.S. (370), Bishopswood, Sulby Hall, Welford, near Rugby. (L., genetics, NH., P.)
- Eberlie, W. J. D. (70), Brooke House, Crawley Green Road, Luton, Beds. (L., O.)
- Edelsten, H. M., F.R.E.S. (208), Bramble Hill, Balcombe, Sussex. (L.)
- Edwards, J., B.Sc. (844), 81 Hassam Parade, Newcastle, Staffs. (O., D.)
- Edwards, Miss M. (765), College Hall, Malet Street, London W.C.1. (H., L.)
- Edwards, R. C. (949), Arlesey, Pilgrims Way, Westerham, Kent. (gen. ent.)
- Edwards, Canon T. G., M.A., F.Z.S. (754), Holy Trinity Vicarage, London S.W.2. (gen. ent. esp. L.)
- Edwards, Rev. W. O. W., M.A. (570), Moor View, Links Road, Budleigh Salterton, Devon. (L.)
- Ekins, Miss G. M. (642), 17 Croyland Road, Wellingborough, Northants. (gen. ent., botany, ornith., geology).
- Eldridge, Miss H. E. (1160*), 221 Broadwalk, London S.E.3. (L.)
- Elliott, J. H. (530), 45 St Olave's Road, Clifton, York. (H.)
- Ellis, B. W. (772*), The Ship Inn, Mousehole, Penzance, Cornwall. (L.)
- Empson, D. W. (780), 58 Pitts Lane, Earley, Reading. (gen. and econ. ent.)
- England, W. E. (183), 7 Tea Garden Terrace, Sheffield 4. (L.)
- Ensor, P. C. (891*), 28 Delamere Road, Birmingham 28. (L.)
- Entrican, Miss M. C. (764), Heather-ton House School, Chesham Bois, Bucks. (L.)
- Essenhig, F. C. L. (675), Brockhampton Council School, Brington, Worcester. (L.)
- Esslemont, D. A. L. (925*), Station House, Woodside, Aberdeen. (L.)
- Esslemont, I. (775*), 3 Newlands Crescent, Aberdeen. (mosquitoes, water beetles. O.)
- Evans, B. M. (846*), 53 Woodstock Road, St Albans, Herts. (breeding L.)
- Ewing, Kenneth W. (1121), 20 Strand, Topsham, Devon. (L. esp. breeding)
- Fairbairn, W. J., B.Sc. (443), Northfield, St Abbs, Berwickshire. (B., L., conchology)
- Fairclough, R. (528), Blencathra, Deanoak Lane, Leigh, Surrey. (L., ornith.)
- Fairey, K. D. (970), Griffith Street, Charlestown, N.S.W., Australia. (C., H., L., gynandromorphs)
- Fassnidge, W. (293), 4 Bassett Crescent West, Southampton. (ML., Neuroptera, Trichoptera)
- Featherstone, P. (469*), 6 Stafford Road, Tonbridge, Kent. (L., ML., M.)
- Ferry, R. S. (207), Fulling Mill House, Welwyn, Herts. (gen. ent., L.)
- Field, G. N. (1000), 14 Mitchley Grove, Sanderstead, Surrey. (L.)
- Finch, R. (768*), Brownhill, Ashenground Road, Haywards Heath, Sussex. (L. esp. Sphingidae)
- Fincher, F. (1076), Randan Wood, Bromsgrove, Worcs. (Orthoptera, O., R., H.)
- Finlay, J. F. (806*), The Gables, Honiton, Devon. (L.)

- Finlay, Capt. R. A. L., M.B.E. (229),
9 Hermitage Gardens, Edinburgh
10. (gen. ent.)
- Flack, G. S. (767*), 1 Warwick
Avenue, Bedford. (L., O.)
- Fletcher, T. (725), Newlyn, Ash,
Surrey. (gen. ent.)
- Fletcher, T. Bainbrigg, F.R.E.S.
(52), Rodborough Fort, Stroud,
Glos. (L., ML., gen. ent.)
- Flint, J. F. (778*), Eventide, London
Road, Datchet, Bucks. (gen.
ent.)
- Fluck, G. G. (569), Redroof, Reading
Road, Fleet, Hants. (L.)
- Ford, Rev. G. A. (377), Balsham
Rectory, Balsham, Cambs. (L.)
- Ford, R. L. E., F.R.E.S., F.Z.S.
(527), Durfold, Parkhill, Bexley,
Kent. (H.)
- Foster, J. T. (1001*), 805 Great West
Road, Isleworth, Mddx. (L.)
- Fountain, H. C. (1065), Northcourt,
Courtlane, London S.E.21. (L.,
gen. ent.)
- Fox, C. F. (1114), 62 Rhoorons
Avenue, Hook, near Surbiton,
Surrey. (gen. ent. esp. aberration)
- Fox, Richard, J. (939), 2 Queen
Street, Retford, Notts. (L. esp.
agric.)
- Fox, T. H. (105), 226 St Albans
Road, Watford, Herts. (L.
breeding)
- Francis, Brian (1145*), 12 Highbury
Road, Bury St Edmunds, Suffolk.
(H.)
- Fraser, A. S. (1035*), The Old Mill,
Battle, Sussex. (L.)
- Fraser, Lt.-Col. (Retd.) F. C.,
F.R.E.S. (890), 55 Glenferness
Avenue, Winton, Bournemouth,
Hants. (O., Neuroptera, Orthop-
tera)
- Fraser, Mrs G. de C. (457), Warren
Mount, Freshfield, Liverpool. (L.)
- Fraser, G. de C. (621), Warren Mount,
Freshfield, Liverpool. (L., C.)
- Freeman, John A., Ph.D. (986), 9
Wendover Road, Bromley, Kent.
(stored products ent.)
- Freer, Rev. Walter L. (366), Ever-
shot Rectory, Dorset. (L.)
- Gamble, Miss W. (1127), 34 Philip
Road, Bury St Edmunds, Suffolk.
(gen. ent.)
- Gardiner, B. O. C. (225), The Red
House, River-in-Dover, Kent.
(L., gen. ent., Neuroptera)
- Garner, E. R. (733*), 16 Carlow
Road, Prenton, Birkenhead,
Cheshire. (L.)
- Garrard, Miss Beryl (1071), The
Principal, Springfield Grange
School, Great Missenden, Bucks.
(NH.)
- Garstang, Miss D. M., N.D.H. (622),
Studley College, Studley, Warks.
(gen. ent., econ ent., L., H.)
- Gent, P. J. (192), 34 Castle Street,
Wellingborough, Northants. (L.)
- George, J. (1057*), Oaktree Cottage,
The Glen, Farnborough Park,
Kent. (L.)
- Gerard, Hon. R. (359), Blakesware,
Ware, Herts. (L.)
- Gibbs, R. B. B. (1016*), 235 Tring
Road, Aylesbury, Bucks. (gen.
ent.)
- Gibson, Alan J. (1003*), 4 Knowle
Road, Dartford, Kent. (gen.
ent.)
- Gibson, Edward B. (893), 6 Croft Ter-
race, Hebden Bridge, Yorks. (L.,
C., gen. ent., P.)
- Gibson, Miss E. M. (311), Ashcroft,
Station Road, Petersfield, Hants.
(L.)
- Gidman, C. C. (362), 25 Fairclough
Road, Accrington, Lancs. (C.,
L.)
- Gilley, Miss Sylvia (1141), 8 Sydney
Close, London S.W.1. (Neuroptera
esp. Libellulæ, Orthoptera,
D.)
- Gilmour, E. F. (870), East View,
Pickford Street, Milnsbridge,
Huddersfield, Yorks. (C.)
- Glanfield, A. (2), Devoncote, Darlington
Road, Hartburn, Stockton-
on-Tees, Co. Durham. (L. Brit.
and foreign)
- Glewne, Brig. E. A., F.R.E.S. (1102),
Steepways, Cross Oak Road,
Berkhamsted, Herts. (trogloliths
and troglodites)
- Goddard, T. D., F.R.E.S. (841), Long
Hoyle Farm, Heyshott, Midhurst,
Sussex. (L.)
- Golding, A. J., F.S.A. (1032), Museum
and Public Library, Maidstone,
Kent. (gen. ent.)
- Golding, D. P. (904), 517 Footscray
Road, London S.E.9. (L.)
- Goodall, Miss Marcelle D. (807*), 47
Stratford Avenue, Ryhope Road,
Sunderland, Co. Durham. (L.,
aq. ent., garden insects)
- Goodban, B. S. (217), 81 West
Street, Ewell, Epsom, Surrey.
(L.)
- Goodbody, I. M. (484), Warriston,
Glenageary, Co. Dublin, Eire.
(L., H.)
- Goodliffe, F. D. (1021), Whitelands,
Long Sutton, Basingstoke, Hants.
(aq. insects esp. Dytiscidae, D.
esp. Chloropidae, Orthoptera, H.
Parasitica)
- Goodman, A. de B. (920), 20 Brook-
lands Avenue, Cambridge (gen.
ent.)

- Goodson, A. L. (241), 26 Park Road, Tring, Herts. (L.)
- Goody, J. K. (954*), 26 Carr Wood Road, Bramhall, Cheshire. (L. esp. exot. silkmths, C., H., geology, Z. esp. Reptilia)
- Gorer, Dr P. A. (676), The Elms, Fitzroy Park, London N.6. (L. genetics and local variation)
- Gorer, R. (659), Little Pett Farm, Bridge, near Canterbury. (L.)
- Gosling, Miss Pamela L. (1131*), 259a Lee High Road, London S.E.12. (L.)
- Graham, E. W. (1142), Windy Ridge, Little Widbury, Ware, Herts. (L.)
- Graham, J. F. (1119), Castle Hotel, Bamburgh, Northumberland. (gen. ent.)
- Grant, J. H. (330), 74 Coleshill Road, Ward End, Birmingham. (L.)
- Grant, R. M. (163), 31 High Street, Sheerness, Kent. (L.)
- Gratton, J. B. (737*), 8 Cheltenham Crescent, Broughton, Salford 7, Lancs. (L.)
- Gray, S. J. (916), 97a Lynn Road, Ely, Cambs. (gen. ent. esp. C. and fleas)
- Green, A. F. G. (1100*), 390 Ewell Road, Surbiton, Surrey. (L.)
- Green, E. J. (387), 58 Ufton Road, London N.1. (medical ent.)
- Green, E. M. B. (821*), Sherington Rectory, Banbury, Oxon. (L.)
- Green, J. (1044*), 61 Ruskin Road, Crewe, Cheshire. (C., gen. ent.)
- Green, W. (840*), 30 Neville Drive, Thornton-le-Fylde, Lancs. (gen. ent.)
- Greenwood, C. (312), Two Barns, West Town, Bristol. (L.)
- Greenwood, D. (1017), The Grammar School, Glossop, Derby. (gen. ent.)
- Greenwood, R. S. (757*), 22 Maidstone Road, Rochester, Kent. (L.)
- Gregory, D. (769), 21 Fullars Road, London E.18. (gen. ent.)
- Greig, Major G. D. S. (10), 65 Cavendish Drive, Rock Ferry, Cheshire. (L.)
- Grigg, Miss Ursula Mary (936), Bruton House, Mortimer West End, near Reading, Berks. (gen. ent.)
- Grimwade, A. (913*), 2 Guildford Way, Wallington, Surrey. (L., gen. ent.)
- Groombridge, R. M. (1154*), 65 Rock Road, Cambridge. (gen. ent.)
- Gyselman, G. (218), 7 Summerhouse Drive, Bexley, Kent. (L.)
- Haberer, C. F. (1138), 150 Church Road, London S.E.19. (gen. ent.)
- Hadden, N. G. (586), Underway, West Porlock, Som. (L.)
- Hadley, J. H. T. (638), 1 The Shrubbery Terrace, Weston-super-Mare, Som. (L.)
- Hague, N. G. (943), 39 Heath Drive, Potters Bar, Mddx. (L., O.)
- Hale, Miss U. K. (1150), 24 Woodstock Road, St Albans, Herts. (L., ornith.)
- Hall, David W. (1088), Zoology Dept., University College, Dundee. (gen. ent.)
- Hamerton, T. L. (657*), 35 Bodley Road, New Malden, Surrey. (L., C., O.)
- Hammerton, Miss Joan P. (1125*), 7 Gosford Gardens, Ilford, Essex. (L.)
- Hammond, H. E. (423), 16 Elton Grove, Birmingham 27. (ent., L. life-histories)
- Hanlon, G. T. (504), 6 Arlington Gardens, Ilford, Essex. (L.)
- Hanson, S. M. (320), 167 Gunnersbury Park, Popes Lane, London W.5. (L.)
- Harcourt, Henry M. (1123), Common Hill House, Alkham, near Dover, Kent. (insect pests)
- Harding, C. J., B.Sc. (894), 26 Huncliffe Gardens, N. Heaton, Newcastle-on-Tyne, Northumberland. (B.)
- Harding, G. R. (558*), c/o Lady Campbell, Fordcombe Manor, near Tunbridge Wells, Kent. (L.)
- Hards, C. H. (176), 40 Riverdale Road, London S.E.18. (L., mic.)
- Harle, D. F. (889), The Studio, Strand Street, Sandwich, Kent. (E.)
- Harley, J. M. B. (541*), 18 Leighton Avenue, Pinner, Mddx. (L.)
- Harris, A. G. Stoughton- (997*), 75 Mulgrove Road, Sutton, Surrey. (L.)
- Harris, B. L. (906*), 34 Delamere Road, Birmingham 28. (L., O.)
- Harrison, Prof. J. W. Heslop, D.Sc., F.R.S., F.R.E.S. (716), Gavarnie, The Avenue, Birtley, Co. Durham. (gen. ent., L., biogeography)
- Harry, Miss Marian S. (162), 17 Briarwood Road, Stoneleigh, Ewell, Surrey. (L.)
- Hartley, P. N., M.A. (973), Parmiter's School, London E.2. (C., L.)
- Harvey, Rev. B. F. (537), 12 Osney Gardens, Paignton, S. Devon. (L. esp. R., Sphingidae)

- Harvey, Miss Olivia (156), Port Williams, Nova Scotia, Canada. (L., gen. ent.)
- Harwood, N. W. (825), 37 Stoneyhurst Avenue, Acklam, Middlesbrough, Yorks. (L., P.)
- Harwood, P. (273), Loch Alvie Cottage, Aviemore, Inverness-shire. (C., Hem.-Hom., H. Aculeata)
- Haslam, John (960*), 1020 Bristol Road, Birmingham 29. (R.)
- Haslam, John C. (1074*), 321 Tring Road, Aylesbury, Bucks. (L.)
- Haynes, R. F. (834), The Sanctuary, West Humble, Dorking, Surrey. (L., ent., botany)
- Heard, M. J. (595), 36 Exford Road, London S.E.12. (I. esp. genetics)
- Heath, J., F.R.E.S. (836), Heathcot, Hedge End, Southampton. (L. esp. ML.)
- Heley, R. G. (731), Lygoes, Burcott, Wing, Leighton Buzzard, Beds. (L. including exot., botany)
- Hellings, G. E. A. (297), Cripplegate, St Johns Road, Woking, Surrey. (L.)
- Henderson, C. W. (21), 124 Knightthorpe Road, Loughborough, Leics. (C., Brit. and exot.)
- Henry, Ian (963*), Caldwell Lodge, Station Road, Marlow, Bucks. (R.)
- Henshaw, E. J., B.Sc. (692), 58 Berwyn Grove, Maidstone, Kent. (L., horticultural ent.)
- Henstock, Dr H., Ph.D., M.Sc., F.I.C. (209), Glengariff, Caerwys, Mold, N. Wales. (L.)
- Herroun, E. F. (172), North Bank, Yorke Road, Reigate, Surrey. (L.)
- Heslop, Miss V. L. M. (835), Villa Aïce-Choko, Route des Dumes, St Jean-de-Luz (B.P.), France. (agric. insect pests, C.)
- Hewson, F. (601), 23 Thornhill Drive, Shipley, Bradford, Yorks. (L.)
- Hick, A. E. (567), Sherrards, Cricket Field Lane, Bishops Stortford, Herts. (O., H.)
- Hick, E. Pentland, F.R.E.S. (141), Athol House, Fulford Road, Scarborough, Yorks. (exot. L.)
- Hill, A. R., B.Sc., F.R.E.S. (1043), 58 Abbotsford Street, Dundee. (insect E. esp. aq., Hem.)
- Hill, G. H. (164), 52 Love Lane, Pinner, Mddx. (L.)
- Hilliard, R. (99), 5 Oakleigh Gardens, Edgware, Mddx. (L., NH.)
- Hilton, H. (697), 12 Langley Grange, Prestwick, Lancs. (L., ML.)
- Hincks, W. D., M.P.S., F.R.E.S. (531), 46 Gipton Wood Avenue, Leeds 8. (gen. ent., C., Orthoptera, Dermaptera, nomenclature)
- Hirons, M. J. (444), 41 Kelvin Avenue, Wyken, Coventry, Warks. (L., mic.)
- Hitchens, P. E. N. (669), Sicklebank, Horam, Sussex. (L. esp. temperature trials on pupae)
- Hobbs, R. J. (1047*), 8 Blaen-Nant Street, Duffryn, Rhondda, near Port Talbot, Glamorgan. (L.)
- Hodge, W. H. (878), 72 Cam Causeway, Chesterton, Cambridge. (L.)
- Hodges, G. B. (314), 146 Priest's Lane, Shenfield, Essex. (L.)
- Hodgson, F. L. (580), 9 Ennerdale Drive, Bolton, Bradford, Yorks. (L.)
- Hodson, L. S. (851), Littlestowe, Essendon, Herts. (gen. ent.)
- Holden, N. E. S. (1151*), Ingle Nook, Alexandra Road, Abergele, N. Wales.
- Holloway, Paul H. (429), Warwick House, Fair Oak, Eastleigh, Hants. (R.)
- Holroyd, E. M. (1139*), 34 Elmfield Road, Davenport, Stockport, Cheshire. (L.)
- Holroyd, G. C. (253), 8 Elmside, Onslow Village, Guildford, Surrey. (L.)
- Honey, G. W. D. (488*), 101 Delamere Road, London W.5. (R., Brit. and foreign)
- Hood, L. A. (526), 104a High Street, Maldon, Essex. (L.)
- Hopkins, Miss B. A. (827*), 19 Hillside Road, Harpenden, Herts. (L., breeding)
- Horner, A. (85), 29 Albany Road, Salisbury, Wilts. (L., M.)
- Hornblower, Capt. P. B., M.C. (869), Claverley C. of E. School, Claverley, Wolverhampton. (L.)
- Horner, D. S. (699*), 81 Leigh Road, Eastleigh, Hants. (L.)
- Horner, L. B. (917), Pinchinthorpe House, near Guisborough, Yorks. (gen. ent.)
- Horrell, Miss Judy A. (944*), Northwest House, Walkern Road, Stevenage, Herts. (L.)
- Horrell, Miss Susan M. (945*), Northwest House, Walkern Road, Stevenage, Herts. (L.)
- Horton, R. W. (861*), 56 Guardhouse Road, Radford, Coventry. (L.)
- Horton, T. P. (862*), 56 Guardhouse Road, Radford, Coventry. (L.)
- Howard, P. (607), 126 Fleet Road, Fleet, Hants. (L.)
- Hubbard, Capt. E. H. T., R.N. (1061), Conroy House, Mundesley, Norfolk. (L.)

- Hughes, David R., B.Sc., F.G.S. (1067), Washerley House, Wolsingham, via Bishop Auckland, Co. Durham. (C., H., L., O., Hem.)
- Hughesdon, J. (87), 112 Aldenham Road, Bushey, Herts. (L.)
- Humphrey, S. W. (386), Pear Tree House, Roade, Northants. (R.)
- Humphreys, J. A. (168), White Cross Service Station, 155 Reigate Avenue, Sutton Bypass, Sutton, Surrey. (gen. ent.)
- Hurrell, F. J. (923), 46 Goldlay Avenue, Chelmsford, Essex. (L.)
- Hurter, Mrs D. (498), 41 Garston Old Road, Liverpool 19. (L.)
- Hutchison, Flt.-Lt. D. (919), 8 Howie's Place, Lime Road, Camelon, Falkirk, Scotland. (world R. esp. Brit. and European)
- Hyde, G. E., F.R.E.S. (818), 20 Woodhouse Road, Doncaster, Yorks. (L., O., H.)
- Hynes, Mrs Vonta D. P. (686), 92 W. Pitman, Battle Creek, Michigan, U.S.A. (silkmths)
- Inglent, H. (1049), Lea Holme, Archer Park, Middleton, Lancs. (bees, anatomy, physiology)
- Jackson, Miss Dorothy J., F.I.L.S., F.R.E.S. (1124), North Cliff, St Andrews, Fife. (gen. ent., C., H.)
- Jackson, W. W. (619), 18 Belmont Road, Aberdeen, Scotland. (L.)
- James, R. T. H. (626), Sunnyside, Lower Chute, near Andover, Hants. (gen. ent., ornith.)
- James, W. H. (120), 41 Carson Road, London S.E.21. (L. esp. R., Sphingidae)
- Janes, J. A. (614), 1 Ailsa Terrace, Tiverton, Devon. (L.)
- Jarvis, C. MacKechnie, F.L.S. (650), 26 Spenser Road, Bedford. (C., econ. ent.)
- Jefferson, T. W. (242), 37 Riversdale Terrace, Sunderland, Co. Durham. (R.)
- Jeffreys, Dr D. M., M.B., Ch.B. (615), Thrifty Beeches, The Grove, Lyndhurst, Hants. (L., ornith., gen. ent.)
- Jeffs, G. A. T. (910), Nuns Holm, Nuns Corner, Grimsby, Lincs. (gen. ent.)
- Jesper, D. M. (1152), 23 Woodlands Grove, Harrogate, Yorks. (L., C., H., beekeeping)
- Johnson, J. H. (1040), 53 Knighton Street, Heithorne Lane, near Chesterfield, Derbyshire. (C., H.)
- Jolly, Miss M. E. (866), 61 Sunnyside Gardens, Upminster, Essex. (L., gen. ent.)
- Jones, C. Garrett- (989), 15 St Peter's Square, London W.6. (L., D.)
- Jones, G. D. Glynne (1062), Quarry Dene, Weetwood Lane, Leeds 6. (Aphididae)
- Jones, P. (1006), Coplands, Walderslade Road, Chatham, Kent. (gen. ent.)
- Jordan, A. S. (741*), 19 Cornwall Road, Coventry, Warwickshire. (L.)
- Keji, J. A. (571), Albany Hospital Sanatorium, Tudor Road, Albany 3, N.Y., U.S.A. (L. larvae, esp. Saturniidae, Notodontidae, Eucleidae)
- Kemp, J. H. (1161), 29 Woodville Gardens, Ruislip, Mddx. (aq. ent.)
- Kennedy, A. (20), 130 Vesper Road, Leeds 5. (L.)
- Kenworthy, R. J. (1009*), Fairlight, Stanham Road, Pembury, Kent. (L.)
- Kenworthy, T. N. (1010), Fairlight, Stanham Road, Pembury, Kent. (L.)
- Kerrich, G. J., M.A., F.R.E.S. (551), 53 Palatine Road, Manchester 20. (H. Parasitica)
- Kershaw, J. L. (418), 92 Gloucester Street, Barrow-in-Furness, Lancs. (L.)
- Kettlewell, Dr H. B. D., M.A., M.B., B.Chir., M.R.C.S., L.R.C.P., F.R.E.S. (706), Homefield, The Common, Cranleigh, Surrey. (L. genetics)
- King, A. Roland (425), Moor Hall, Ludlow, Salop. (L.)
- King, Capt. J. D., R.A. (485), Brightwell Baldwin, Oxon. (C., agric. pests)
- Kloet, G. S., F.Z.S., F.R.E.S. (477), 8 Knutsford Road, Wilmslow, Cheshire. (gen. ent., nomenclature)
- Knight, John E. (94), Doughton Cottage, Ross-on-Wye, Herefs. (L., rearing)
- Knight, Major Maxwell, O.B.E., F.R.M.S., F.L.S. (956), The Homestead, Park Road, Camberley, Surrey. (aq. insects, moths, mic.)
- Knowles, O. H. (951*), Furze Reeds, near Midhurst, Sussex. (L.)
- Lake, E. R. (868*), Hertford Constitutional Club, Lombard House, Hertford. (L.)
- Lamacraft, Miss D. Mary (932), 62 Dane Valley Road, Margate, Kent. (gen. ent.)
- Lanfear, A. H. (74), 20 South Eastern Road, Ramsgate, Kent. (L.)

- Lang, D. A. (732*), 7 Lyndhurst Drive, Sevenoaks, Kent. (L. esp. R.)
- Large, C. (608), 17 Foundry Approach, Leeds 9. (C.)
- Last, H. R. (117), 12 Winkworth Road, Banstead, Surrey. (L., C.)
- Latham, F. H. (369), 26 Hollie Lucas Road, Birmingham 14. (L.)
- La Touche, Dr A. A. D. (884), 21 Alwoodley Gardens, Moortown, Leeds. (spiders)
- Latter, J. (385), Edenderry, near Chard, Som. (L.)
- Laurence, M. T. (875*), St Albans, New Abbey Road, Dumfries. (L.)
- Leach, D. W. (791), 12 High View Road, London E.18. (gen. ent.)
- Leclercq, Dr Jean (1055), 41 Rue Prof. Malvoz, Liège, Belgium. (physiological ent., H.)
- Leeds, H. A. (282), Wood Walton, Hunts. (L. esp. R. vars.)
- Lees, Frank H. (375), The Gables, Maidencombe, Newton Abbot, S. Devon. (L.)
- Le Fleming, Miss W. M. (1105), Rayrigg Hall, Windermere, Westmorland. (L.)
- Le Masurier, P. C. (978), 85 Warren Drive, Tolworth, Surrey. (L.)
- Lconard, B. G. (96), 29 Storeton Road, Oxtou, Birkenhead. (L., hawk-moths)
- Le Quesne, A. L. (728*), Moorside, Ashburton, Newton Abbott, Devon. (L.)
- Letts, J. K. (506), 183 Windmill Lane, Greenford, Mddx. (mic.)
- Lever, R. A. (1135), 8 Harley Road, London N.W.3. (gen. ent.)
- Lewin, Major F. H. W. Ross- (154), The White House, St Olaves, near Great Yarmouth. (L., O.)
- Lewis, Ernest (952), 8 Parry Road, London S.E. 25. (C.)
- Lewis, Rev. E. S. (373), Forton Rectory, Newport, Salop. (L.)
- Lewis, R. (734), Electric House, Queen Street, Withernsea, E Yorks. (O., botany)
- Lifton, J. (346*), 19 Wheatsheaf Gardens, Sheerness, Kent. (L.)
- Lindley, K. A. (577*), 9 Old Oak Road, London W.3. (L., ornith.)
- Lisnev, A. A., M.A., M.D., F.R.E.S. (315), The Red House, Narborough, Leics. (L., ML.)
- Little, J. C. (563), 70 Langley Way, West Wickham, Kent. (L. including exot.)
- Lloyd, Major Charles T., D.Sc., Ph.D. (468), 25 Belmont Avenue, New Malden, Surrey. (L., ML., micro-photography, ornith.)
- Lloyd, L. C., F.L.S., M.B.O.U. (770), Wenlock Road, Shrewsbury, Shropshire. (E.)
- Lloyd, R. W. (445), Treago Castle, St Weonards, Hereford. (C.)
- Lloyd, T. J. (824*) Hammonds End House, Harpenden, Herts (L.)
- Locke, M. (1118*), 36 Ainsdale Road, London W.5. (L., botany, mic., Z.)
- Long, Miss L. M. (698), White House Farm, Somerleyton, *via* Lowestoft, Suffolk. (L. rearing, gen. ent.)
- Longfield, Miss Cynthia, F.R.E.S. (1039), 11 Iverna Gardens, London W.8. (O.)
- Lorimer, Major J. A. (576), 26 New Road, Haverfordwest, Pemb. (L.)
- Lorimer, R. I. (600), 8 Hertford Avenue, London S.W.14. (L.)
- Lothian, D. M. (964*), Backhill Cottage, East Hallside, Cambuslang, Glasgow. (L., C.)
- Lowther, Dr Richard C. (1024), Fernleigh, Grange-over-Sands, Lancs. (L., phenological dates, gen. NH.)
- Luke, J. F. (1069*), Gibbet Oak Farm, Tenterden, Kent. (L.)
- Luscombe, Miss B. (815*), Puriton Manor, Bridgwater, Som. (L.)
- Lygo, W. F. (514), Forest View, Stamford Road, Kirby Fields, near Leicester. (L.)
- Lyon, F. H. (1026), 22 Murray Road, Northwood, Mddx. (L.)
- Macfarlane, D. (797*), 22 Beechwood Avenue, Chatham, Kent. (L., C., H.)
- Macnicol, Dr D. A. B. (67), 52 St Albans Road, Edinburgh 9. (L., ML., P.)
- Maggs, P. (244), Sibylla, East End, Lymington, Hants. (L.)
- Main, Hugh, B.Sc. (63), 9 Woodside Road, Woodford Wells, Essex. (ent.)
- Major, Alan P. (1117*), 21 Tufton Road, Rainham, near Gillingham, Kent. (NH., gen. ent.)
- Malkin, Dr G. R. (793), Fownhope, Hereford. (L.)
- Manly, G. B. (427), 72 Tenbury Road, Kings Heath, Birmingham. (L.)
- Mansfield, M. J. (134), 5 Chigwell Road, Bournemouth, Hants. (L.)
- Marcon, Rev. J. N. (248), Christchurch Vicarage, Eastbourne, Sussex. (R.)
- Marks, G. F. (839*), 228 Castle Road, Bedford. (L., gen. ent.)
- Marriott, D. F. (705*), 12 Kensington Avenue, Watford, Herts. (L., O.)
- March, Capt. Dudley G. (863), Garrantor, Pigeon Lane, Eddington, Herne Bay, Kent. (L.)

- Marsh, G. S. (833), 17 Harlington Road East, Feltham, Mddx. (bees—*anatomy, physiology, diseases*)
- Marshall, J. F., C.B.E., M.A. (646), 47 London Road, Cheltenham, Glos. (*D. esp. Culicidae*)
- Martin, Douglas (1126), 29 Follaton Estate, Totnes, S. Devon. (*gen. ent., esp. C.*)
- Martin, E. L. (801*), 9 Devonshire Road, Harrow, Mddx. (L., ML., D., H.)
- Martin, W. A. (553), Longcause, Totnes, Devon. (L.)
- May, A. V. (1128*), 42 Whitehall Gardens, London E.4. (*gen. ent. esp. L.*)
- McCrae, A. W. R. (1144*), Oak Lawn, Gordon Avenue, Stanmore, Mddx. (C., L.)
- McDonald, Peter (747*), 114 Queen's Avenue, Watford, Herts. (L.)
- McKim, J., J.P., F.Z.S. (823), 12 Darvel Crescent, Ralston, Paisley. (*botany, fish, Z., marine and fw. B.*)
- McLeod, C. H. (491), Culverlea House, Pennington, Lymington, Hants. (L.)
- McLeod, Sir Murdoch, Bt. (35), Culverlea House, Pennington, Lymington, Hants. (L.)
- Mason, E. S. (957), 35 Elmgate Gardens, Edgware, Mddx. (C.)
- Mead, J. N. (1059*), Wyldberrry, Fox Street, Ardleigh, Essex. (L., C., *gall causers*)
- Meade, Miss Mary R. (971*), The Rectory, Abinger Common, near Dorking, Surrey. (L.)
- Mellows, W. T., M.B.E., Ll.B., F.S.A. (302), The Vineyard, Minister Precincts, Peterborough, Northants. (L.)
- Melrose, Dr M. M., M.D. (723), Wargrave House, St Owen Street, Hereford. (L. *esp. ML.*)
- Melville, Dr R., Ph.D., F.L.S. (903), Royal Botanic Gardens, Kew, Surrey. (H., *beekeeping, botany*)
- Menzies, Ian S. (585*), 98 Sandy Lane, Cheam, Surrey. (L., ML., C., H.)
- Merrill, H. W. (640*), The Marsh, Marsh Road, Thornton-le-Fylde, Lancs. (L.)
- Michael, Peter (748), 56 Cranmore Lane, Aldershot, Hants. (NH., *phenology, M., fishing, ichthyology, research esp. in breeding I.*)
- Michaelson, Capt. C. H., R.N. (436), Great Tower, Windermere, Westmorland. (L.)
- Mills, Miss D. (354), Blendon Preparatory School, Bexley, Kent. (L.)
- Mills, D. R. S. (783*), 19 Colebrooke Drive, London E.11. (L.)
- Milman, P. P. (689), 19 St Michael's Road, Paignton, S. Devon. (L.)
- Milne, D. I. (1025*), Oak Tree House, Willesborough, Ashford, Kent. (L., *gen. ent., fish*)
- Milner, P. F. A. (521), 167 Lake Road West, Cardiff, S. Wales. (L.)
- Milton, L. F. (1110), 41 Marmora Road, Cambridge. (C., *biological control*)
- Mitchell, Ivor (1050*), 64 Woodstock Road, Cheylesmore, Coventry. (L.)
- Moody, N. H. (693), 119 Southampton Road, Ringwood, Hants. (L.)
- Moore, Miss D. T. (476), 18 Church Row, London N.W.3. (B.)
- Moore, John (146), Orchards, Bredon, near Tewkesbury, Glos. (L.)
- Morgan, C. (987), 68 Locarno Avenue, Gillingham, Kent. (O.)
- Morgan, H. G., B.A. (90), Quarry Dene, Weetwood Lane, Leeds 6. (L., *gen. ent.*)
- Morton, J. K. (522), 26 Argyle Square, Sunderland, Co. Durham. (L.)
- Morton, Miss Margaret E. (924*), Newbridge House, Horner, near Leeds, Yorks. (L., *mic.*)
- Morton, R. D. (145), 16 Gray's Lane, Hitchin, Herts. (L., *beekeeping*)
- Moys, C. J. (463), 41 Ayling Lane, Aldershot, Hants. (*ent., botany*)
- Muir, Arthur W. (1106), Weardale, Knitsley Lane, Consett, Co. Durham. (L.)
- Mullings, P. Lowry (360), 20 Grange Park, London W.5. (H., *mic., beekeeping, esp. bee diseases*)
- Mumby, P. D. (509), 2 Westfield Road, Great Shelford, Cambs. (H., C., ML., D.)
- Murchie, W. R. (634), Box 203, Sharon, Pennsylvania, U.S.A. (L., *gen. ent., Z.*)
- Murdy, P. S. (979*), 193 Coombe Lane, London S.W.20. (L.)
- Murray, Dr H. (177), Ashbourne, Clonmel, Co. Tipperary, Eire. (L.)
- Myall, G. R. (800*), 3 Holmdene Avenue, North Harrow, Mddx. (L., C.)
- Nathan, L. (428), 19 Monton Street, Moss-side, Manchester 14. (*ent., L.*)
- Neal, E. G., B.Sc. (467), Japonica Cottage, Rumwell, Taunton, Som. (L., C., *Hem., P.*)
- Neal, P. G. (1103), 177 Braemore Road, Goodmaves, Essex.
- Ness, A. R. (549), 15 Homefield Avenue, Newbury Park, Ilford, Essex. (L.)

- Newhouse, P. W. (1147*), 76 The Avenue, Linthorpe, Middlesbrough, Yorks. (L.)
- Newman, E. C. (652), 5 Shepway Avenue, Maidstone, Kent. (L.)
- Newman, L. Hugh (503), The Butterfly Farm, Bexley, Kent. (L.)
- Newson, P. (842), Ridheugh, West End Avenue, Guisborough, Yorks. (L.)
- Newton, A. H., M.B., Ch.B., F.R.E.S. (1140), Walland Cottage, Charles, near Barnstaple, Devon. (O., C.)
- Newton, J. (439), 11 Oxleaze Close, Tetbury, Glos. (L.)
- Nichols, T. B. (1083), Welbeck, Cranfield Park Road, Wickford, Essex. (gen. ent.)
- Nicholson, G. (33), Nuns Moor Crescent, Newcastle-upon-Tyne. (L.)
- Nightingale, A. E. (926*), 29 Market Square, Ely, Cambs. (L., gen. ent.)
- Nobbs, P. (948*), 15 Marsh Lane, Stanmore, Mddx. (Sphingidae)
- Norman, Dr T. (68), 138 Andover Road, Newbury, Berks. (H., L., D., parasites of L.)
- North, R. S. (654), 41 Buckingham Road, Aylesbury, Bucks. (L.)
- Nunn, C. T. (523), 2 Boyles Court Cottages, Warley, Essex. (L.)
- Nunn, Gordon, M.A., B.Sc., A.R.I.C. (1149), Senior Lecturer in Science, Oakley Training College for Men, Cheltenham, Glos. (gen. ent.)
- O'Farrell, A. F., B.Sc., A.R.C.S., F.R.E.S. (58), 90 Woodwarde Road, London S.E.22. (O., L., D., econ. ent.)
- Ogden, J. S. (1070), Argwendon Green Street, Sunbury-on-Thames, Mddx. (L., C.)
- Ogden, Willam S. (1018*), South Lodge, Reading Road, Cholsey, Berks. (L.)
- O'Neill, P. F. (1058), Shenstone Training College, near Kidderminster, Worcs. (C.)
- O'Rourke, F. J. (191), 45 St Kevins Park, Rathmines, Dublin, Eire. (H.)
- Osborn, E. (938), 76a Wood Street, Kettering, Northants. (E. of R., colour P.)
- Otter, G. W. (475), Southwood, Blandford Road, Broadstone, Dorset. (L., C., Trichoptera)
- Outhwick, Miss M. (792*), c/o Zoological Society, London N.W.8. (L.)
- Page, L. (598), The Gables, Cookham Dean, Berks. (L.)
- Page, R. L. S. (742*), Abbots Gate, Falcon Gardens, Minster, Sheppey, Kent. (gen. ent.)
- Pallister, G. (739*), Panorama, The Avenue, Birtley, Co. Durham. (L.)
- Palmer, J. L. (900), Editor-in-Chief, Western Morning News Co., Ltd., Leicester Harmsworth House, 8, 9 and 10 Frankfort Street, Plymouth. (organisation of entomological and phenological returns)
- Palmer, Kenneth L., F.R.E.S., F.R.M.S. (1098), Meadowlea, Gobowen, Salop. (L.)
- Parfitt, R. W. (525), 1 Dunsdon Avenue, Guildford, Surrey. (L., ML.)
- Park, F. (888*), 381 Grangemouth Road, Radford, Coventry. (L.)
- Parker, C. F. (803), 61 Winchcomb Gardens, London S.E.9. (L., mic.)
- Parker, E. (865), Feathercombe, Hambledon, Godalming, Surrey. (M.)
- Parker, H. (738), 21 Park Way, Southwick, Sussex. (gen. ent., NH.)
- Parmenter, L., F.R.E.S. (895), 94 Fairlands Avenue, Thornton Heath, Surrey. (D.)
- Parr, M. J. (797*), 7 Crawford Gardens, Ruiship Road, Greenford, Mddx. (gen. ent., ornith., fish)
- Parsons, D. (449), Bass Manor School, Broxbourne, Herts. (L.)
- Parsons, D. (763*), 2 Carshalton Place Terrace, Carshalton, Surrey. (L.)
- Patrick, H. H., F.R.H.S., F.R.E.S. (744), 5 Marner Crescent, Radford, Coventry. (insect B., L. vars., mic., gen. ent.)
- Pauly, R. C. (572*), 542 So. Third Avenue, Walla Walla, Wash., U.S.A. (L., breeding)
- Payne, J. H. (353), 10 Ranelagh Road, Wellingborough, Northants. (L.)
- Peace, H. A. (680), Kiln Road, Hastoe, Tring, Herts. (R., bees, wasps)
- Pearce, Rev. E. J., M.A., F.R.E.S. (796), St Teilo's Priory, Church Terrace, Roath, Cardiff. (C. and their distribution, esp. Haliplidae, Pselaphidae)
- Peet, J. S. (1120*), 9 Salisbury Avenue, St Albans, Herts. (L., H., C.)
- Peck, S. (546), Fairview, Norton, Gloucester. (L.)

- Pellatt, J. J. K. (338), 45 Maple Street, Sheerness, Kent. (L.)
- Pennock, E. T. (82), 16 Drive Road, Linthouse, Glasgow S.W.1. (L.)
- Perrins, C. M. (1133*), Thursday Cottage, Ember Lane, Esher, Surrey. (L.)
- Petty, George R. (1113), 106 Kings Road, Rayners Lane, Harrow, Mddx. (gen. ent.)
- Phillips, J. (633*), 27 Lavant Street, Petersfield, Hants. (C., R., ML.)
- Pickard, Dr J. N. (599), Craufurd, Sawston, Cambs. (L. genetics)
- Pickett, A. H., L.D.S., D.M.D. (37), 32a Chatsworth Road, Brighton, Sussex. (L.)
- Pitt, W. S. (670), Wildwood, Silverdale Avenue, Walton-on-Thames, Surrey. (bumblebees)
- Platt, H. (935), 13 Arcadia Avenue, Brooklands, Cheshire. (P. of L.)
- Platts, A. R. (914*), 29 Dene Road, Northwood, Mddx. (L.)
- Platts, J. H. (515*), 29 Dene Road, Northwood, Mddx. (L.)
- Pomeroy, R. D. (876), 14 Highland Avenue, Norwich, Norfolk. (L.)
- Poole, K. H. (133), 86 The Crescent, Milton, Weston - super - Mare, Som. (L.)
- Popplewell, P. B. (819*), 28 Glenhurst Road, Prittlewell, Southend-on-Sea, Essex. (gen. ent., L.)
- Port, M. H. (799*), 31 Pinner View, Harrow, Mddx. (L., Orthoptera)
- Potter, C. W. (214), 10 Fern Rise, Garden City, Humberstone, Leics. (L.)
- Pow, A. (39), 63 Sharpill Road, Saltcoats, Ardrossan, Ayrshire. (L.)
- Powell, R. A. (1091), 32 Ripon Road, Redcar, Yorks. (gen. ent.)
- Praed, Lt.-Col. C. W. Mackworth- (392), Castletop, Burley, Hants. (ent., Z., ornith.)
- Pratt, C. B. (784), 1 West Ham Lane, London E.15. (L.)
- Price, Miss P. D. (993), 97 Monkhams Lane, Woodford Green, Essex. (gen. ent.)
- Price, P. G. Hamilton- (860*), Hambrook House, Charlton Kings, Cheltenham, Glos. (E.)
- Prichard, R. (460), 4 Woodcroft Lane, Behington, Cheshire. (L., ML.)
- Procter, R. (265), 7 Chantrell Grove, York Road, Leeds 9. (L., ML.)
- Prudence, Sister (974), St Hilda's School, Wemmergill Hall, Middleton-in-Teesdale, Co. Durham. (gen. ent.)
- Purvis, L. E. (941), One Oak, Hale Road, Hale Barns, Cheshire. (L.)
- Quinn, J. G. (955), The Node, Codicote, Hitchin, Herts. (L.)
- Rambling, D. (968), 7 Gainsborough Road, Sudbury, Suffolk. (gen. ent., ornith.)
- Ramsay, F. J. (837), Old Manse, Kilbarchan, Renfrewshire. (gen. ent.)
- Ramsden, E. (130), 27 Moseley Wood Lane, Cookridge, Leeds. (L.)
- Ramsden, Dr W. (658), Pembroke College, Oxford. (silk and silk producing animals, esp. silkmoths)
- Randall, M. C. (535), 64 Mount Pleasant Road, Chigwell, Essex. (L.)
- Rands, Lieut. G. A. F. (879), Harlestone, Northampton. (L. esp. hawkmoths, silkmoths, M.)
- Ranger, J. E. A. (1002*), 54 Cherry Crescent, Brentford, Mddx. (locusts, L.)
- Ranwell, D. S. (481), 6 Ellardale Road, Bognor, Sussex. (breeding L.)
- Raven, Leslie (135), 117 Binley Road, Coventry, Warwickshire. (L.)
- Raw, Frank (1064), The Research Station, Long Ashton, Bristol. (E. esp. soil fauna)
- Rawlings, W. G., F.R.E.S., M.B.O.U., F.Z.S. (452), 14 Westfield Park, Bath, Som. (C. and L. in relation to ornith.)
- Ray, D. J. (679*), Mill House Cottage, Bishopstoke, Hants. (ent., R., M., ornith.)
- Ray, H. (678), Mill House Cottage, Bishopstoke, Hants. (phototropic behaviour of insects)
- Rayner, Frederick S. (1108), 83 Conway Crescent, Perivale Park, Greenford, Mddx. (L.)
- Read, Derek R. (1087*), 21 Princes Street, Kettering, Northants.
- Read, E. C. (855), Stonev Corner, Meopham, Kent. (NH.)
- Readwin, B. (820), 36 Warley Hill, Brentwood, Essex. (gen. ent.)
- Redhead, E. Milne- (685), Royal Botanic Gardens, Kew, Surrey. (C., L., Hem.-Het.)
- Redmayne, M. I. (1041*), The Long House, Great Alne, near Alcester, Warks. (L., H., P.)
- Reid, Miss Elizabeth (927*), Red Lion Hotel, Freeman Street, Grimsby, Lincs. (gen. ent.)
- Richards, A. W., M.A., R.Sc. (566), Nether Edge, Chapel Lane, Hawley, near Camberley, Surrey. (L., O., Orthoptera)
- Richardson, Austin (483), Beaudesert Park, Minchinhampton, Glos. (L.)

- Richardson, N. A. (431), 20 Bletchley Road, Bletchley, Bucks. (L.)
- Riley, N. D., F.R.E.S. (885), 7 McKay Road, London S.W.20. (L., gen. ent.)
- Risbridger, C. A. (812), Woodcock Lane, Birmingham 31. (L.)
- Risbridger, M. D. (813*), Woodcock Lane, Birmingham 31. (L.)
- Ritson, William (1112), 12 West Street, Winwick Road, Warrington, Lancs. (ornith., gen. ent. esp. C. and Orthoptera)
- Rivolta, J. R. A. (743), 1 Boundary Lane, St Leonards, near Ringwood, Hants. (L.)
- Roberts, G. A. (448), 53 Broadway, Fulford, York. (gen. ent., L., botany)
- Roberts, S. F. (216), 410 Woodchurch Road, Birkenhead, Cheshire. (L.)
- Roberts, W. N. (77), 48 Bishops Mansions, Bishops Park Road, London S.W.6. (L., gen. ent.)
- Robertson, A. W. (323), Ranworth, St Lawrence Drive, Eastcote, Mddx. (E.)
- Robertson, J. A. (224), 15 Bonnywell Road, Leigh, Lancs. (L.)
- Robinson, Cyril A. (1085*), 155 Regent Street, Kettering, Northants.
- Robinson, E. W. (773), Woodacre, Woodford, Cheshire. (L., C., H.)
- Robson, J. P. (44), 10 Vane Road, Barnard Castle, Co. Durham. (L., ML.)
- Roche, Dr P. J. L. (408), c/o D.M.S., Lagos, Nigeria. (C., Hem.)
- Rogers, Miss P. L. (205), 91 Middle Lane, London N.8. (L., ent., NH.)
- Roots, Ronald Cecil (1107), 41 Second Avenue, Chelmsford, Essex. (L., C., spiders)
- Roscoe, Miss Daphne (560*), South Holworth Cottage, Warmwell, Dorchester, Dorset. (L.)
- Roscoe, Richard (665*), Grove Park School, Crowborough, Sussex. (L.)
- Rowden, A. O. (405), Rydon Crest, Countess Wear, Exeter, Devon. (gen. ent.)
- Rowe, R. C. B. Hartland- (464), 8 Lisgor Terrace, London W.14. (L.)
- Rudland, W. L., F.R.E.S. (249), 211 Caversham Road, Reading, Berks. (L., ML., H.)
- Runge, C. (663), 11 St Andrew's Road, Caversham, Reading. (L., gen. ent.)
- Russell, S. G. Castle (119), 5 Bridge Road, Cranleigh, Surrey. (R. vars.)
- Russell, W. (412), 69 Lochlea Road, Glasgow S.3. (L. camouflage)
- Rutter, G. R. P. (1046), Bradewick, Thorpe-le-Soken, Essex. (gen. ent., mic., world NH.)
- Saffery, C. F. (673), 71 The Ridgeway, London N.W.11. (R.)
- Salkeld, K. (115*), 9 Mulgrave Road, London W.5. (gen. ent.)
- Samuels, D. M. A. (1060*), Heather-Edge, West Moors Road, Fern-down, near Wimborne, Dorset. (L.)
- Sands, W. A. (902*), 26 Leigh Road, London E.10. (L., ML., O.)
- Sangster, D. R. (578), 69 Leadsid Road, Aberdeen, Scotland. (L.)
- Saunders, J. M. K. (618), 27 Canon-bury Avenue, Pinner, Mddx. (R. vars.)
- Scopes, E. Gowing- (909), Oakhurst, Oakwood Road, Crofton, Orping-ton, Kent. (L., C.)
- Scott, D. B. (656), Abernyte, Durham Terrace, Lower Largo, Fife, Scot-land. (L.)
- Scott, D. G. (534*), Byrlton House, Vallis Way, Frome, Som. (L.)
- Scudamore, Miss Amoret F. (562*), Haughton House, Canford Cliffs Avenue, Parkstone, Dorset. (gen. ent.)
- Seabrook, W. P. (263), Branwoods, Great Baddow, Chelmsford, Es-sex. (L.)
- Seymour, A. (790*), 52 Chester Drive, N. Harrow, Mddx. (L., C.)
- Seymour, D., R.A. (874), Wynton, St Mary's Avenue, Northwood, Mddx. (L.)
- Shapland, J. Dee (548), Military Col-lege of Science, 2 Lake Road, Shrivenham, Swindon, Wilts. (L., mic.)
- Shappirio, David G. (1159*), 4811 Seventeenth Street N.W., Wash-ington 11, D.C. U.S.A. (H. esp. Vespoidea, Sphecoidea, Chrysi-doidea)
- Shaw, H. K. Airy, B.A., F.L.S., F.R.E.S. (545), Royal Botanic Gardens, Kew, Surrey. (Hem.-Het., C., E., botany)
- Shaw, M. W. (911), Harper Adams Agricultural College, Newport, Salop. (gen. agric. ent. esp. fruit pests)
- Shearsmith, E. (934), 4 Princes Road, Cleethorpes, Lincs.
- Shephard, G. C. (524), 1 Carisbrooke Road, Leicester. (L.)
- Sheppard, P. M. (291), Westall, Marl-borough, Wilts. (L., gen. ent.)
- Sherlock, R. J. (606*), Pit Orchard, Axminster, Devon. (L.)
- Shield, Donald H. (1156), The Hall, Badwell Ash, Bury St Edmunds, Suffolk. (L.)

- Shuffrey, A. Leir (990), Leverstock Green Farm, Hemel Hempstead, Herts. (L., P.)
- Siggs, D. J. (922*), 14 Five Locks Road, Pontnewydd, Newport, Mon. (L.)
- Siggs, L. W. (243), 14 Five Locks Road, Pontnewydd, Newport, Mon. (L.)
- Sills, F. V. (750), 14 Bede Road, Radford, Coventry, Warks. (L.)
- Simons, R. H. (811*), 28 Aylmer Road, London N.2. (habits, morphology, B., econ. ent.)
- Sinclair, Ian (998*), 40 Chalham Road, Kingstone, Surrey. (NH.)
- Singer, Dr Charles (1148), Kilmarnth, Par, Cornwall. (gen. ent., O., aq. ent.)
- Skelton, Rev. K. J. F. (858), Glen Villa, Castle Lane, Bolsover, Chesterfield, Derbyshire. (L.)
- Skipper, D. J. (637*), 2 Gables Cottage, Chenies Road, Chorley Wood, Herts. (L.)
- Slatter, A. J. (131), 22 Cedar Road, Teddington, Middx. (D. esp. Culi-
cidae, C.)
- Slocombe, E. V. J. (774), 13 Caerllwyn Terrace, Ynysddu, Newport, Mon. (gen. ent.)
- Smith, A. (23), 23 First Avenue, Heworth, York. (L., ML., P., conchology)
- Smith, C. C. (487), 65 Graham Avenue, Brighton 6, Sussex. (ML., M.)
- Smith, C. King (159), Bitton Hill, Bitton, Bristol. (L.)
- Smith, Ellsworth J., M.D. (473), 91 Beach Avenue, Larchmont, N.Y., U.S.A. (rearing insects, tree-
frogs and toads)
- Smith, E. K. (178), 25 Hungerford Drive, Reading, Berks. (L., veterinary ent.)
- Smith, F. Stanley (389), Hatch House, Pilgrim's Hatch, Brentwood, Essex. (L.)
- Smith, G. A. (942*), 14 High View Road, near Bramford Road, Ipswich, Suffolk. (L.)
- Smith, Kenneth G. (897*), 47 Delemere Road, Birmingham 28. (L., gen. ent.)
- Smith, P. Siviter (250), 21 Melville Hall, Holly Road, Birmingham 16. (L., P.)
- Smith, S. Gordon, F.L.S., F.R.E.S. (478), Estyn, Boughton, Chester. (L.)
- Smyly, W. J. P., B.Sc. (859), Holly Bank, Cold Ash, Newbury, Berks. (C.)
- Snell, B. B. (419), Woodsome, Plymyard Avenue, Bromborough, Cheshire. (L., ML.)
- Sneyd, Miss E. M. Wykes- (382), Loconton Vean, St Keyne, Liskeard, Cornwall. (L.)
- Snow, K. J. J. (533*), 86 London Road, Neath, Glam. (C., H., mic.)
- Southwood, T. R. E. (1051*), Parrock Manor, Gravesend, Kent. (L., C., Hem.)
- Spearman, R. I. C. (921), Oaks Bungalow, Oaks Avenue, London S.E.19. (B., NH., social insects)
- Speight, A. J. P. (490*), 49 Blackpool Old Road, Poulton-le-Fylde, Lancs. (L.)
- Spelman, M. (624), 2781 Grand Concourse, New York 58, N.Y., U.S.A. (exot. L.)
- Spencer, B. T. (1129), 63 The Martyres Close, Cheylesmore, Coventry. (L.)
- Spencer, H. (186), 80 Park Road, Elland, Yorks. (L.)
- Spoczyńska, Mrs J. O. I. (751), 33 Wornington Road, London W.10. (L.)
- Spotswood, A. (1097*), 8 Elmfield Road, Davenport, Stockport, Cheshire. (L.)
- Stephen, Frank (1136), 421 New Jersey Avenue, Brooklyn 7, New York, U.S.A. (L., C.)
- Stephens, J. C. (507*), The Quarry, Northleigh, Witney, Oxon. (L.)
- Sterling, D. H. (84), 36 Estella Avenue, New Malden, Surrey. (L.)
- Stidston, Engr. Capt. Stanley T., R.N., J.P., F.R.E.S., M.S.B.E. (40), Ashe, Ashburton, Newton Abbot, Devon. (L.)
- Stocker, P. P. (933), Waldorf Hotel, Aldwych, London W.C.2. (L. Brit. and Cont.)
- Stokes, Capt. G. E. (319), The Brambles, Roe Green, Hatfield, Herts. (L.)
- Stokes, H. G. (828), 12 Roman Road, Salisbury, Wilts. (Orthoptera, O., Hem., gen. ent.)
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- Thirkill, Colin B. (1073*), 104 Vesper Road, Kirkstall, Leeds 5, Yorks. (L.)
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- Tozer, D. (36), 98 Copdale Road, Leicester. (L., C.)
- Tremewan, W. G. (940*), Wheal Rose, Scorrier, Redruth, Cornwall. (L.)
- Trevor, H. P. J. (649), The Nook, Barford St Michael, Oxford. (L.)
- Trimmer, J. (495), 47 Horsa Road, Southbourne, Bournemouth, Hants. (L., H.)
- Trinder, J. A. (1042*), Hawcroft, Vicarage Road, Great Cornard, Sudbury, Suffolk. (L.)
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- Walker, Mrs Ursula M. (1005), 25 Regal Way, Preston, Harrow, Mddx. (gen. ent.)
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- Watson, R. W. (752), South Haven, Stanley Road, Lympington, Hants. (L.)
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- Welti, A., F.R.E.S. (402), 34 Great St. Helens, London E.C.3. (L.)
- West, B. B. (849), 8 St Loyes Street, Bedford. (L., O., botany, geology)
- West, K. E. (848), 8 St Loyes Street, Bedford. (L., O., botany, geology)
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- White, K. M. (715), Blackpool Corner, Crewkerne Road, Axminster, Devon. (H., bionomics, gen. ent.)
- White, O. M. (140), 78 Eastdale Road, Nottingham. (L., O.)
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- Wiggins, E. D. (975), Thornhaugh, Lustleigh, S. Devon. (C. esp. iridescent Phytophaga)
- Wild, E. H. (867), Splatt Farm, Spaxton, near Bridgwater, Som. (gen. ent., L. esp. wainscots and clearwings, M., vars.)

- Wild, Dr O. H., M.B. (440), 79 Hatherley Road, Cheltenham, Glos. (L.)
- Wilkinson, J., B.Sc., A.R.C.S. (329), 90 Carterknowle Road, Sheffield 7. (gen. ent. esp. pond life)
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- Wolfenden, P. G. (1022*), 37 Pembroke Avenue, Surbiton, Surrey. (L.)
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- Wooff, W. R. (721), 9 Marshall Street, Barnard Castle, Co. Durham. (B., NH., L.)
- Wollatt, L. H. (413), 6a The Quadrant, Wonford Road, Exeter, Devon. (gen. ent.)
- Wright, A. H. (355), 25 Markham Avenue, Carcroft, Doncaster, Yorks. (L.)
- Wright, J. (609), Lakota, Cranmore, near Yarmouth, Isle of Wight. (L., C., ornith.)
- Wright, R. F. P. (838*), Ardmore, Fernden Lane, Haslemere, Surrey. (L.)
- Yarrow, I. H. H., M.A., Ph.D., F.R.E.S. (559), 7 Redlands Road, Reading, Berks. (H. Aculeata)

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- Dunsford — Southey Hall Entomologists' Society (1033+), Southey Hall School, Fulford, Dunsford, near Exeter.
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GEOGRAPHICAL KEY

Compiled by John Cowley

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The purpose of the list is to enable you to get into touch with local members who may be able to provide information as to collecting grounds or collections, if you are moving to a new district, or for excursions or holidays. Even members not interested in the same groups must have much of general entomological interest to exchange.

As the full annual list will not, in future, be brought up to date by monthly additions published in the *Bulletin*, up-to-date lists, or rather corrections to this full list, will be supplied by post for members going on holiday or moving to a new district. Obviously, nothing like full lists can be supplied, but lists for single towns or districts may greatly help those needing them. Enquiries should be accompanied by threepence in stamps, and should be sent to J. Cowley, Holywell House, Edington, Bridgwater, Som. Please allow plenty of time for reply.

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Liège: Leclercq.
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FRANCE, B.-P. **St Jean-de-Luz:** Heslop.
NIGERIA. **Lagos:** Roche.
SOUTH AFRICA. **Durban:** Duke.
Johannesburg: Capener.

TANGANYIKA. **Dar-es-Salaam:** Bell.
U.S.A. D.C., Washington: Shapiro. **Michigan, Battle Creek:** Hynes. **New York, Albany:** Keji; **Brooklyn:** Stephen; **Larchmont:** E. J. Smith; **New York:** Spelman. **Pennsylvania, Sharon:** Murchie. **Washington, Walla Walla:** Pauly.

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ANGUS. **Dundee:** Hall, A. R. Hill.
AYR. **Ardrossan:** Pow.

BEDFORD. **Bedford:** Flack, Jarvis, Marks, B. B. West, K. E. West. **Leighton Buzzard:** Heley. **Luton:** Eberlie, P. Taylor, Verdcourt.

BERKSHIRE. **Maidenhead:** Crow, L. Page. **Newbury:** Bullamore, Norman, Smyly, H. B. Turner. **Reading:** Baker, Betts, Dolton, Empson, Grigg, Rudland, Runge, E. K. Smith, L. H. Williams, Yarrow. **Wallingford:** W. S. Ogden. **Windsor:** Barnard, Cousins.

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CAERNARVON. **Bangor:** G. E. Thomas.

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ham: Hughes.

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 wood. **Maldon:** L. A. Hood. **Rom-**
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 son, Milner, Pearce. **Neath:** Snow.
Port Talbot: Beak, Hobbs.

GLOUCESTER. **Berkeley:** J. E.
 M. Williams. **Bristol:** Miss E. L.
 Britton, C. Greenwood, Raw, C. K.
 Smith. **Cheltenham:** Marshall, G.
 Nunn, P. G. H. Price, Tayler, Towns-
 end, O. H. Wild. **Gloucester:** L. B.
 Clarke, J. E. Knight, Peck, Wilks.
Lydney: Miss N. Davis. **Stroud:** T.
 B. Fletcher, A. Richardson. **Tet-**
bury: J. Newton. **Tewkesbury:** J.
 Moore.

HAMPSHIRE. **Aldershot:** Michael,
 Moys. **Andover:** R. T. H. James.
Basingstoke: Goodliffe, Lord Wards-
 worth College Sci. Soc. **Bourne-**

mouth: Brett, Broome, S. C. S.
 Brown, F. C. Fraser, Mansfield,
 Trimmer, H. J. Turner, R. R. Wal-
 lace. **Eastleigh:** Holloway, D. S. Hor-
 ner, D. J. Ray, H. Ray. **Farnborough:**
 Fluck, Howard. **Lymington:** Bampton,
 Maggs, C. H. McLeod, M. McLeod,
 R. W. Watson, Watts. **Lyndhurst:**
 Jeffreys. **Petersfield:** Miss E. M.
 Gibson, Phillips. **Portsmouth:** Bar-
 ker, T. R. Willis. **Ringwood:** Moody,
 Praed, Rivolta, J. A. Walker.

Southampton: Fassnidge, Heath.
HEREFORD. **Bromyard:** Essen-
 high. **Hereford:** Malkin, Melrose.
Kington: Cater. **Ross:** J. E. Knight,
 R. W. Lloyd.

H E R T F O R D. **Berkhamsted:**
 Glewne. **Bishops Stortford:** Ashwell,
 Craufurd, A. E. Hick. **Harpenden:**
 Hopkins, T. J. Lloyd, C. B. Williams.
Hatfield: Hodson, G. E. Stokes.
Hemel Hempstead: Armitage, Shuf-
 frey. **Hertford:** Lake. **Hitchin:** R.
 D. Morton, Quinn, Stovin. **Rick-**
mansworth: Bruce, Davie, Skipper.
St Albans: Byers, Evans, Hale, Peet.
Stevenage: Burleigh, Miss J. A. Hor-
 rell, Miss S. M. Horrell. **Tring:** Ben-
 son, Cockayne, Goodson, Peace.
Ware: Block, Gerard, E. W. Graham,
 D. Parsons (449), Venison. **Wat-**
ford: T. H. Fox, Hughesdon, Mar-
 riott, McDonald, P. G. Taylor, Wat-
 ford Boys' Grammar School Biol.
 Soc. **Welwyn:** Ferry, F. G. Sutton.

HUNTINGDON. **Huntingdon:** Leeds.

INVERNESS. **Aviemore:** P. Har-
 wood.

ISLE OF MAN. **Douglas:** J. P.
 Watson.

ISLE OF WIGHT. **Yarmouth:**
 Blair, J. Wright.

KENT. **Ashford:** Milne. **Bexley:**
 W. E. Dale, R. L. E. Ford, Gyselman,
 Miss D. Mills, L. H. Newman. **Brom-**
ley: Braddon, Freeman, George,
 Little, Scopes, Trundell. **Canter-**
bury: R. Gorer. **Chatham:** Ayers,
 Cameron, R. S. Greenwood, P. Jones,
 Macfarlane, Major, C. Morgan, Tesch,
 Woodcock. **Cranbrook:** Bull. **Dart-**
ford: Cavanagh, A. J. Gibson.
Dover: Gardiner, Harcourt. **Erith:**
 Cole. **Gillingham:** see Chatham.
Gravesend: E. C. Read, Southwood,
 Thwaites. **Herne Bay:** D. G. Marsh.
Maidstone: L. S. Beaufoy, A. J. Gold-
 ing, Henshaw, E. C. Newman, Swan.
Margate: Lamacraft. **Ramsgate:**
 Lanfear. **Rochester:** see Chatham.
Sandwich: Harle. **Sevenoaks:** Lang.
Sheerness: R. M. Grant, Lifton,
 Page, Pellatt. **Sidcup:** Briegel.
Sittingbourne: Calverley. **Tenterden:**
 Luke. **Tonbridge:** Featherstone.

Tunbridge Wells: Adkin, G. R. Harding, R. J. Kenworthy, T. N. Kenworthy. **Westerham:** Brunsden, R. C. Edwards.

LANARK. Glasgow: Anderson, Craig, Dobson, J. Duncan, Lothian, Pennock, W. Russell.

LANCASHIRE. Accrington: Gidman. **Barrow-in-Furness:** Kershaw. **Blackpool:** Barnes, Brooks, W. Green, Merrill, Speight, Stott. **Bolton:** Broughton, Coxe. **Fleetwood:** H. R. Wallace. **Grange over Sands:** Berry, Lowther. **Leigh:** J. A. Robertson. **Liverpool:** Curd, Davidson, G. de C. Fraser, Mrs G. de C. Fraser, Hurter. **Manchester:** Ashmore, Boardman, Miss P. Briggs, Charlson, Coghill, Gratton, Hilton, Inglesent, Kerrich, Nathan, L. R. Taylor, Wolfenden, Wood. **Preston:** J. E. Carter. **Salford:** see Manchester. **Ulverston:** Birkett. **Warlington:** Broadhurst, Ritson.

LEICESTER. Leicester: Lisney, Lygo, Potter, Shephard, Tozer. **Loughborough:** Henderson. **Market Harborough:** Buckler.

LINCOLN. Boston: B. A. Cooper (see London N.W.10). **Grantham:** Chambers. **Grimby:** Jeffs, Reid, Shearsmith. **Lincoln:** Campbell.

LONDON. E.2: Hartley. **E.4:** May. **E.10:** Sands, T. Stone. **E.11:** Byford, D. R. S. Mills, Syms, R. F. Whitworth. **E.15:** Pratt. **E.18:** Gregory, Leach. **E.C.3:** Welti. **N.1:** E. J. Green. **N.2:** Simons. **N.5:** Chamberlain. **N.6:** P. A. Gorer. **N.8:** Rogers. **N.21:** Vince. **N.22:** Colyer. **N.W.3:** Balter, Lever, Miss D. T. Moore. **N.W.4:** Webb. **N.W.5:** Briers, G. F. Walker. **N.W.7:** Mill Hill School Nat. Hist. Soc. **N.W.8:** Bushby, Outhwick, B. M. P. Thomas. **N.W.9:** Down, A. D. Turner. **N.W.10:** B. A. Cooper, Mrs G. M. R. Cooper. **N.W.11:** Saffery. **S.E.1:** Camp-land. **S.E.3:** Croucher, Eldridge. **S.E.9:** Abraham, Mrs J. M. Adams, Bobe, Burch, D. P. Golding, C. F. Parker. **S.E.11:** Dorey. **S.E.12:** Gosling, Heard. **S.W.16:** Whitehorn. **S.E.18:** Bingham, A. W. Cox, Hards. **S.E.19:** Haberer, Spearman. **S.E.21:** Chapman, Dulwich College Nat. Hist. Soc., Fountain, W. H. James, Walton. **S.E.22:** O'Farrell. **S.E.25:** Cornelius, E. Lewis. **S.E.26:** Sydenham County Secondary School. **S.W.1:** Gilley. **S.W.2:** T. G. Edwards. **S.W.4:** Stretton. **S.W.6:** W. N. Roberts, R. Sutton. **S.W.7:** E. B. Britton, R. J. Collins, Tams. **S.W.8:** Notre Dame High School. **S.W.14:** R. I. Lorimer. **S.W.16:**

Burgess, Christie. **S.W.18:** F. R. Sutton. **S.W.19:** Bradley, Wakeley. **S.W.20:** A. J. Davies, Murdy, Riley. **W.3:** Ballinger, A. J. Dale, Lindley, A. Walker, M. N. A. Walker. **W.5:** F. S. Bennett, Bevan, Bryant, G. J. Cartwright, Hanson, Honey, Locke, Mullings, Salkeld. **W.6:** C. G. Jones. **W.8:** Brangham, Longfield. **W.10:** Spoczynska. **W.14:** Rowe. **W.C.1:** Bentley, Miss M. Edwards. **W.C.2:** Stocker.

LONDONDERRY. Londonderry: Adair.

MERIONETH. Harlech: de Jongh, Stringer.

MIDDLESEX. Brentford: Ranger. **Ealing:** Greenford County School Nat. Hist. Soc., Letts, Parr, Rayner. **Edgware:** Hilliard, McCrae, Mason, Nobbs, Williamson. **Enfield:** Eagles. **Feltham:** Classey, G. S. Marsh. **Harrow:** Bomback, Byerley, Chynoweth, T. W. Davis, Harrow School Nat. Hist. Soc., E. L. Martin, Myall, Petty, Port, A. W. Robertson, Sacred Heart High School, A. Seymour, P. J. Walker, Mrs U. M. Walker. **Isleworth:** S. G. Abell, T. Q. Abell, Creasy, Cumber, Foster. **Northwood:** Bain, D. Carter, W. A. Carter, Lyon, A. R. Platts, J. H. Platts, D. Seymour. **Pinner:** Harley, G. H. Hill, Saunders, E. L. R. Taylor. **Potters Bar:** Hague. **Ruislip:** Bessant, Kemp. **Sunbury-on-Thames:** J. S. Ogden. **Teddington:** Slatter. **Uxbridge:** Wall.

MIDLOTHIAN. Edinburgh: Beat-
tie, Finlay, Maenicol.

MONMOUTH. Newport: Slocombe. **Pontypool:** D. J. Sigs, L. W. Sigs. **NORFOLK. Great Yarmouth:** Lewin. **King's Lynn:** Day, Swann. **North Walsham:** Hubbard. **Norwich:** Addison, Daniels, Pomeroy, Wade.

NORTHAMPTON. Kettering: F. A. Adams, H. W. Adams, Osborn, D. R. Read, C. A. Robinson. **Northampton:** Rands. **Peterborough:** Mellows. **Towcester:** Humphrey. **Wellingborough:** Ekins, Gent, Payne, Upton.

NORTHUMBERLAND. Alnwick: Tully. **Belford:** J. F. Graham. **Newcastle-on-Tyne:** C. J. Harding, Nicholson, Sweet.

NOTTINGHAM. Nottingham: O. M. White. **Retford:** R. J. Fox.

OXFORD. Banbury: E. M. B. Green, Trevor. **Oxford:** Bromley, Carpenter, W. Ramsden. **Watlington:** J. D. King. **Witney:** Stephens.

PEMBROKE. Haverfordwest: J. A. Lorimer.

RENFREW. Greenock: Angus. **Paisley:** McKim, Ramsay.

RUTLAND. Oakham: Bates.

SHROPSHIRE. **Ludlow:** A. R. King. **Newport:** E. S. Lewis, M. W. Shaw. **Oswestry:** K. L. Palmer. **Shrewsbury:** Darwin Society, L. C. Lloyd.

SOMERSET. **Bath:** Rawlings. **Bridgwater:** Cowley, Luscombe, E. H. Wild. **Bristol:** see Gloucestershire. **Chard:** Latter. **Frome:** Cruttwell, D. G. Scott. **Minehead:** Hadden. **Taunton:** Clements, E. G. Neal. **Weston-super-Mare:** Blathwayt, Hadley, Poole, Tailby.

STAFFORD. **Newcastle-under-Lyme:** J. Edwards. **Smethwick:** Allaway. **Stafford:** N. Taylor. **Wolverhampton:** Hornblower.

STIRLING. **Falkirk:** Hutchieson.

SUFFOLK. **Bury St Edmunds:** Francis, Gamble, Shield. **Felixstowe:** Bullock. **Ipswich:** S. Beaufoy, G. A. Smith. **Lowestoft:** Long. **Stowmarket:** Chipperfield. **Sudbury:** Deimel, Ramping, Trinder.

SURREY. **Camberley:** M. Knight, Richards. **Cranleigh:** Kettlewell, S. G. C. Russell, Winsor. **Croydon:** T. L. Barnett, Bean, Butcher, G. B. Collins, Duffy, G. N. Field, Parmenter, R. H. G. Turner. **Dorking:** Haynes, Meade. **Egham:** de Worms. **Epsom:** Epsom College Nat. Hist. Soc., Goodban, Harry. **Esher:** Perrins. **Farnham:** T. Fletcher. **Godalming:** E. Parker, H. B. Williams. **Guildford:** Douetil, G. C. Holroyd, Parfitt. **Haslemere:** St Edmund's School Nat. Hist. Soc., R. F. P. Wright. **Horley:** Windsor. **Kingston-on-Thames:** Miss E. Brown, Hamerton, C. T. Lloyd, Sinclair, Sterling. **Purley:** Bliss. **Reigate:** Battiscombe, A. J. S. Cotton, W. D. S. Cotton, Fairclough, Herroun, Whittington. **Richmond:** Melville, Redhead, H. K. A. Shaw. **Surbiton:** I. S. Burton, M. J. Davies, C. F. Fox, A. F. G. Green, Le Masurier, Wolfenden. **Sutton:** T. A. Cooper, Currie, A. G. S. Harris, Humphreys, Last, Menzies, D. Parsons (763), J. F. Turner. **Wallington:** Boorman, Campion, G. J. Clarke, Collyer, Grimwade. **Walton-on-Thames:** Pitt. **Woking:** Hellings.

SUSSEX. **Battle:** A. S. Fraser. **Bognor:** Ranwell. **Brighton:** Banner, Donne, Dyson, G. J. Eade, W. Eade, H. Parker, Pickett, C. C. Smith, Walder, Wanstall. **Crowborough:** R. Roscoe. **Eastbourne:** Brook, Marcon. **East Grinstead:** Bremleyte School, L. R. Devenish, R. C. Devenish.

Hastings: Dannreuther. **Hayward's Heath:** D. H. Adams, Brunswick School Nat. Hist. Soc., Edelsten, Finch. **Heathfield:** Crisp, Hitchens, Murrays School Nat. Hist. Soc., Ticehurst. **Horsham:** Curtis. **Hove:** see Brighton. **Midhurst:** Goddard, Knowles. **Shoreham:** Tee. **Uckfield:** Wedmore.

TIPPERARY. **Clonmel:** Murray.

WARWICK. **Alcester:** Garstang, Redmayne, Symmons. **Birmingham:** Birch, Ensor, J. H. Grant, Hammond, B. L. Harris, J. Haslam, Latham, Manly, C. A. Risbridger, M. D. Risbridger, K. G. Smith, P. S. Smith, Miss O. Stone, Thorpe, Timms, C. Wainwright. **Coventry:** Backholler, Barlow, Bray, R. M. Brown, A. Dale, Hirons, R. W. Horton, T. P. Horton, Jordan, Mitchell, Park, Patrick, Raven, Sills, B. T. Spencer, Tucker, Wardle, Willshee. **Leamington:** Bone. **Rugby:** Capper, Easton. **Shipston-on-Stour:** Ashforth. **Solihull:** D. Allen, R. G. Turner.

WESTMORLAND. **Appleby:** Bywater. **Windermere:** Le Fleming, Michaelson.

WILTSHIRE. **Bradford-on-Avon:** Kingweil Court School Nat. Hist. Soc. **Marlborough:** Sheppard. **Salisbury:** Horder, H. G. Stokes. **Swin-don:** Shapland. **Trowbridge:** Weddell.

WORCESTER. **Bromsgrove:** Fincher. **Kidderminster:** O'Neill. **Red-ditch:** Wager.

YORK, EAST RIDING. **Hull:** S. Duncan, Ware. **Withernsea:** R. Lewis.

YORK, NORTH RIDING. **Guis-borough:** L. B. Horner, Newson. **Middlesbrough:** P. V. M. Allen, N. W. Harwood, Newhouse. **Redcar:** Powell. **Scarborough:** C. Brown, Head, E. P. Hick, Walsh, Wheatley.

YORK, WEST RIDING. **Bradford:** J. Briggs, Hewson, Hodgson. **Doncaster:** Hyde, Waddington, A. H. Wright. **Halifax:** Crapnell, E. B. Gibson, H. Spencer, Sunderland. **Harrogate:** Jesper, Winter. **Hudders-field:** Braham, Core, Gilmour, Waugh. **Leeds:** Barham, Mrs L. M. Britton, Hincks, G. D. G. Jones, Kennedy, Large, La Touche, H. G. Morgan, Miss M. E. Morton, R. Procter, E. Ramsden, Thirkill, Whitehead. **Sheffield:** W. V. Burton, England, Wilkinson. **York:** Bootham School Nat. Hist. Club, Elliot, G. A. Roberts, A. Smith.



THE SPECIAL GENERAL MEETING

AES Constitution—The emendation to the AES Constitution detailed in *Bulletin* 77, p. 48, was duly moved and carried unanimously at the Special General Meeting in London on September 28th. This will be incorporated into the Constitution if approved by a postal vote of members (enclosed with the December *Bulletin*).

Membership Lists—At the same meeting criticism was levelled against the large amount of *Bulletin* space occupied by lists of new members, and it was felt that as this was unlikely to decrease, the space could better be used for entomological notes of wider interest. It was, therefore, moved and carried unanimously that these lists of new members be dropped henceforth from our pages. There will now be only one list of members' names, addresses, and interests published, the full Annual List of members, with geographical key to county distribution. As all new members will be supplied with this, it will now be up to them to contact those in any particular district, instead of *vice-versa*, and as few districts are now entirely without members, this should occasion no great hardship to anyone.

Helpers—Another matter brought out by the discussion at this meeting was our great need for helpers of all types. A desire to include "news" items in our pages was stressed by several speakers. Can we have offers of "Reporters" who will make it their duty to send news from their own area, local group or society, to our pages? We are in need of reporters who will each cover a particular periodical to which they have access, and send us potted and detailed reports and reviews, not merely on complete books, but on sections of books or articles in magazines, research studies, collections, museums, and the like. Have we any readers who can translate foreign languages? If so, they could help us by reporting on interesting items from foreign books and periodicals—and many observations or developments in

technique made on the continent are equally applicable over here. Although regular reports of meetings are generally as dry as dust, individual items from meetings may be of great interest to members not attending the meeting, and for that type of item our pages are open. The one test of any contribution should be: *Will it interest and stimulate readers elsewhere?* Do not worry if your style is crude or verbose—if you have something to say, the Editor will polish it into a concise and readable form—that is what he is there for! Offers to report regularly, with lists of periodicals that you have access to, should be sent to Mr G. R. Myall, who has offered to organise the "news" section, at: 3 Holmdene Avenue, North Harrow, Middlesex.

BEOWULF A. COOPER.

BRIAN O. C. GARDINER.

(28/10/1946.)

WANTS AND EXCHANGES

B. O. C. GARDINER (225) wants foreign Pyralidae, set or in papers. Offered: British Lepidoptera.

DAVID G. SHAPPIRO (1159) wishes to exchange or purchase Hymenoptera, especially Vespoidea, Sphecoidea and Chrysoidea. Will collect any order in America in exchange for above; especially desires European and African material.

G. SMITH (942) has over 100 larvae of the Lappet Moth (*G. quercifolia*) for disposal. What offers?

ALAN P. MAJOR (1117) wants the following books: *Bees, Wasps, Ants and Allied Insects of the British Isles*, by Edward Step; *British Beetles, their Homes and Habits*, by N. Joy; *British Insect Life*, by E. Step. Will buy, or exchange *Fishes of the British Isles* and *Dragonflies of the British Isles*.

A. L. CAPENER (6) would be glad to hear from anyone interested in Homoptera in any part of the world. Would also like to obtain literature dealing with their classification. Has for sale or exchange Spry's *British Coleoptera Delineated* (1840), newly re-bound and in good condition.

J. K. MORTON (522) requires Fowler's *Coleoptera of the British Isles* and Donisthorpe's *Annotated List of the Additions to the British Coleopterous Fauna*.

J. K. GOODY (954) wants Step's *Bees, Wasps and Allied Insects of the British Isles*, Savory's *Spiders and Allied Orders of the British Isles*, and *AES Bulletins* 1-67. Will exchange Maeterlinck's *Life of the White Ant* and several botanical books or will pay cash if prices are stated.

BERNARD VERDCOURT (899) wants both sexes of *Sciapteron tabaniformis* and *Aegeria flaviventris* for genitalia work. Any condition provided that genitalia are intact.

W. J. B. CROTCH (1181), 5b Stanley Crescent, London W.11, offers pupae of *S. pavonia* (Emperor) for *E. versicolor* (Kentish Glory). Also fertile ova of *A. luna* (American Moon Moth) for winter ova of other foreign silk moths (not *B. mori*).

H. K. AIRY SHAW (545) has two spare copies of *Bulletin* No. 73 (Vol. 7, pp. 1-16) for disposal to any junior members wishing to make up sets.

E. G. TOOMER (1054) has made a list of the butterflies of the Italian Riviera, and these are indicated on a map of the area. If any member going to the Riviera would like to borrow the map it may be obtained from B. O. C. Gardiner, 34a Storey's Way, Cambridge.

G. D. S. GRIEG (10) wishes to apologise to all those members who wrote to him and have not had a reply, due to pressure of work.

E. B. WEDMORE (1153), President of the British Bee Keeper's Association, is anxious to be told of *prospective* and proceeding research of interest to bee-keepers. The B.B.K.A. have formed a Research Committee, to act as clearing house for such information.

G. R. P. RUTTER (1046) is interested in electron-microscope research; does anyone know if any investigations on insects are being carried out with the aid of this instrument in Britain?

ALBERT VAN HOEGAERDEN, 73 Rue G. Van Laethem, Evere, Brussels, Belgium, is anxious to obtain 25-30 perfect specimens each of the beetles *Carabus violaceus meyeri* Born, *C. problematicus wockei* Born, and *C. clathratus jansonii* Kr. He can offer specimens of *Carabus splendens* in sp., *C. auronitens* in sp., *C. auronitens*

armoricanus, *C. auronitens quittardi*, *C. auronitens festivus*, *C. auronitens punctato auratus* and *C. auratus*, as well as other Carabids. He would also like to correspond with other collectors of Carabids regarding collecting methods, killing agents, etc., of these insects, and also lists of captures in moles' nests. He is studying the world species of the genera *Carabus* and *Calosoma* and is anxious to learn more of non-Belgian species.

PETER MICHAEL (748) would like to contact members who have bred or reared the Angle Shades Moth (*Phlogophora meticulosa*), particularly from autumn imagines.

DR H. MURRAY (177) is anxious to be recommended a dealer who has exotic insects for sale—Messrs Watkins & Doncaster cannot supply the species required.

JOHN N. MEAD (1059) wishes to obtain approx. 1 doz. each cocoons of Small Eggar (*E. lanestris*), Oak Eggar (*L. quercus*), Grass Eggar (*L. trifolii*), Emperor (*S. pavonia*) and Clover Moth. Please state required price.

M. LOCKE (1118*) often has ova, larvae and pupae of many moths for exchange—please write for list. For temporary exchange on loan—many books on entomological and biological subjects, including Ford's *Butterflies*, South's *Butterflies and Moths* and others. Wanted in particular is Imms's *Textbook of Entomology*. Please write.

SIR MURDOCH McLEOD, Bt. (35), urgently wants *M. athalia* (Heath Fritillary) larvae next April from any county except Kent. Would exchange *M. cinxia* (Glanville Fritillary) larvae or others.

W. E. COLLINSON, 20 Pye Nest Drive, Halifax, Yorks., is anxious to contact members desiring northern species next year. His wants are non-Yorkshire species. At present he can only offer pupae of Northern Eggar (*L. quercus callunae*) for exchange.

EXAMS

In connection with the Editorial comments of *Bulletin* No. 78 (September issue), the Editor has received a letter from the Ministry of Education saying that its content has been duly noted.

OBSERVATIONS

R. GERARD (359) took a specimen of the Queen of Spain Fritillary (*A. lathonia*) at Widford, Herts., on August 28th.

J. E. C. RILEY-IRVING took a specimen of the rare vagrant Syrphid fly, *Volucella zonaria*, on Wimbledon Common on August 25th. A. W. JONES reports having seen it on Wimbledon Common, and J. E. RANGER took two at Brentford, Mddx., on September 15th. [There is strong evidence that this fly has now established itself in this country and it would be worth while to keep a look out for it next year. It is one of our largest flies, but is probably liable to be overlooked, as it bears a strong superficial resemblance to the Hornet, in whose nest it is reported to live.—B. O. C. G.]

R. A. POWELL (1091) took a specimen of the Humming Bird Hawk (*M. stellatorum*) at Redcar, Yorks., on 18th August, and L. B. HORNER (917) also records this species from Yorks. on July 12th.

J. H. PLATTS (515) took a gynandrous specimen of the Green-veined White (*P. napi*) at Shrewsbury on April 16th.

MICHAEL PARR (797*) took a larva of the Swallowtail (*P. machaon*) in Hayling Island, Hants, in September 1945. The specimen emerged this May and is of the Continental race. [There have been several reports of the Swallowtail occurring in the southern counties recently and in all authentic cases the specimens have been of the Continental race.—B. O. C. G.]

PHILIP BAMPTON (1080*) reports having had the good fortune to take a specimen of the Purple Emperor (*Apatura iris*) on 5/8/1946 flying about two feet above the ground over a heath in the New Forest, Hants.

J. H. PLATTS (515*) asks if any member can explain the cause of butterflies having one wing reduced in size. On 5/8/1945 he took at Northwood, Mddx., a male Common Blue (*Polyommatus icarus*) which had its left hindwing reduced in size. In late May of 1945, at Nesscliff, near Shrewsbury, he took a male Wall Butterfly (*Pararge megera*) with its right hindwing reduced in size, and having very small marginal spots on it.

R. HARTLAND-ROWE (464) took a specimen of *Metoeus paradoxus* with

black elytra, from a nest of *Vespa vulgaris* on Wimbledon Common.

R. GORER (659) took a specimen of The Longtailed Blue (*Lampides boeticus*) at Canterbury on 30/10/1945.

M. H. PORT (799*), referring to B. W. Campion's query on the Ruby Tiger (*Phragmatobia fuliginosa*) in *Bulletin* 71 (October 1945), p. 76, records finding a caterpillar of this moth at Harrow on 18/3/45; it spun up on the 15th, and the adult emerged on April 15th. (N.B.—The species has always occurred in the Harrow district, having never been exterminated by town lighting, as it appears to have been nearer to the City.—B. A. C.)

M. H. PORT also reports that during the last week of October, 1945, four specimens of Garden Tiger (*Arctia caja*) emerged, two of which paired and laid about a hundred eggs. The rest of the brood (reared from eggs laid during the first week of July), are hibernating normally. (It was from this brood that Mr Port exhibited specimens at the AES Exhibition on September 28th, 1946, including a very nice specimen having red fringes to all its wings.—B. A. C.)

WALTER R. CALVERLEY (596) describes the capture of moths from the sticky grease bands placed on fruit-trees in autumn. This method is most useful during the winter months for obtaining specimens of the females of the Winter Moth (*Operophtera*) and Umber (*Erannis*), which the bands are placed on the trees specially to entrap. But the specimens must be freshly caught or they will not be suitable for the cabinet. Mr Calverley takes the specimens home with any adhering glue and with a fine brush dipped in hot methylated spirit removes the latter. By this means he has obtained two fine Emeralds, entrapped even in summer.

A. H. WRIGHT (355) reared ninety specimens of the Ailanthus Silkmoth (*Philosamia cynthia*) near Pordenone, N.E. Italy; 2½ weeks later, at Vittorio-Veneto, 20 miles away, males assembled freely to the caged females.

K. G. SMITH (897) writes: I was collecting at Cloweswood, Warks., on 14/4/1946 when my parents told me they had seen a Camberwell Beauty (*Nymphalis antiopa*) flying round the treetops. I was sceptical, but searched about, and while chasing an

early Holly Blue (*Celastrina argiolus*) I saw it fluttering before a patch of sap on a Silver Birch trunk. I rushed at it and secured it without much effort. I showed it to both Mr Allen and Mr Hammond, who confirmed it as a male of this species.

BARBARA HOPKINS (827*) was given some cocoons of the Small Eggar (*Eriogaster lanestris*) reared last year; they were of two colours, white and brown; some of the brown cocoons were rather irregular in shape, and, on opening up two or three of these, she was amazed to find two pupae instead of one inside the cocoons. Is this a common habit with this species?

ADVERTISEMENTS

WANTED URGENTLY—For cash or exchange, pupae of *versicolor* (Kentish Glory). **IN STOCK NOW:** Cocoons of *A. luna* (Moon Moth), 2/9 each; *A. selene*, 3/-; others. Full list on application from: L. Hugh Newman, F.R.E.S., The Butterfly Farm, Bexley, Kent.

FOR SALE, 4th Edition of W. E. Kirby's "Butterflies and Moths of the United Kingdom," in perfect condition, 10/6. P. T. Bowring, The Tower House, Belle Vue Road, Exmouth, Devon.

ENTOMOLOGICAL SUPPLIES—Store Boxes, Setting Boards, Pins, Nets, set specimens of British Lepidoptera. List free. J. WARD (L. Tatchell), 6 High Street, Swanage, Dorset.

READY SHORTLY

LABEL LIST OF BRITISH MACROLEPIDOPTERA (Pamphlet No. 4)—an authoritative and up-to-date list containing both English and

Latin names and authorities, clearly printed on good paper on one side of the paper only; it includes the scientific lists of (a) Corbet, Evans, and Tams (as used in the British Museum collections), (b) Kloet and Hincks, and English names of (c) Cooper and O'Farrell, and (d) Richard South; ideal for labelling collections, exhibits, etc. Price 3/6, post free.

CHECK LIST OF BRITISH MACROLEPIDOPTERA (Pamphlet No. 5)—the same list as the above, printed on both sides of the paper, for use as an exchange or check list. Price 1/6, post free, 9/- per doz. (9d each if bought with the Label List).

JUST PUBLISHED

COLLECTING SAWFLIES, by R. B. Benson (Leaflet No. 4)—An illustrated account (30 drawings, 4 photos) of the collecting and rearing of sawflies, with a book-list and key to the families. Price 1/1, post free; 10/- per doz.

COLLECTING ANTS, by Horace Donisthorpe (Leaflet No. 8)—An account of the collecting and rearing of ants, with a book-list. Price 7d, post free; 5/- per doz.

ENVELOPE SAVERS — Gummed labels printed with the AES emblem and the name and address of the Society. Price 1/3 per packet of 50; 2/- per 100; 4/- per 250; post free.

DATA LABELS—Revised prices—4½ point (diamond) labels, printed in multiples of 125 of one wording; 4-line labels, 12/6 per 1000, 7/- per 500; 3-line labels, 10/- per 1000, 6/- per 500; one-line labels, 8/- per 1000, 5/- per 500; sex signs, 1/- per 200; other labels printed to order.

From: Publications Sales Manager, C. B. Pratt, 1 West Ham Lane, London E.15. **REMITTANCE WITH ORDER PLEASE.**

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A E S

No. 81

BULLETIN

JANUARY 1947

ANNUAL REPORT FOR 1945

(April 1st-December 31st)

INCOME.

	1944-5		1945	
	£	s. d.	£	s. d.
Brought forward	65	10 3	156	9 7½
Subscriptions	92	17 1	73	11 6
Postage and Donations	46	18 1½	7	18 3
Sales of Special Publications	88	13 0	102	10 7
Advertisements	0	18 0	10	0 4
Meetings	—		0	4 3
Various	0	6 8	3	7 7
	£295	3 1½	£354	2 1½

EXPENDITURE.

	1944-5		1945	
	£	s. d.	£	s. d.
Printing Bulls.	43	13 0	17	8 6
Printing Special Publications	45	1 0	47	2 6
Blockmaking	12	7 9	23	11 5
Postage	20	16 2½	30	12 1½
Stationery	4	16 8½	5	13 5
Advertising	2	18 0	2	12 2
Subscriptions to other Societies	2	3 6	0	7 6
Meetings	6	11 0	7	7 0
Various	0	6 4	4	1 10
Cash in hand and in Bank	156	9 7½	215	5 8
	£295	3 1½	£354	2 1½

Audited and found correct,
8/12/1946.

(Signed) S. G. ABELL.
L. F. MILTON.

Owing to the introduction of the new Constitution, the end of the financial year has been brought forward from March 31st to December 31st. In consequence, the "year" here discussed covers but nine months, instead of twelve, as last year.

During the period, members received 5 Bulletins, totalling 66 pages (pp. 37-94 + i-viii), as well as a 6-page supplement to Bulletin 71 and a 4-page cover for the volume; the previous year the figure was 2 duplicated (6 pp.) and 4 printed (36 pp.) issues. Exchange notices numbered 50, against 79 in 1944-5. Vols. 7 and 8 of the Journal appeared during the year (none the year before), as well as two Leaflets (Nos. 16 and 17), of which there were 4 the year before, but no Pamphlets were issued (one the year before).

The total subscribing membership rose from 450 to 613 (342 to 450 in 1944-5), a greater increase than the previous year. During the period, 184 new members joined, against 136 the year before.

An Exhibition of Entomological Technique, the first held since 1939, and a Special General Meeting, took place during the year, and the holding of field meetings were also resumed, with four fixtures.

The general trend of income and expenditure is very similar to that of previous years. The nine-month period under discussion does not include the main subscription and donation-paying period of the year, the first three months, and accordingly the income from these sources is rather lower. As before, expenditure on printing special publications is well below the receipts from their sale, as we were "saving up" to pay for both Vol. 7 and Vol. 8 Journals (bills for which, totalling £218, were received in 1946). The bill for the year's Bulletins also did not arrive till the year 1946, but, as these were later found to have cost about £85, and since subscriptions are expected to cover the costs of printing Bulletins (in 1947 of Journals also), postage, stationery, advertising, with grants to the Investment and Meetings Funds, it was apparent that we were overspending considerably. It was this fact which has since caused us to take the necessary step of raising the annual subscription.

During the year 1946, the Treasurer has introduced a new system of accounting, which greatly simplifies the work involved. A more detailed annual budget of forthcoming years' anticipated expenditure is also to be

prepared well in advance of each year, to prevent such overspending again.

We wish, on behalf of the Society, to thank all who have helped the organisation in any way, those who have given financial help by means of donations and purchases of publications, or who have given up so much of their spare time to AES offices. Apart from the Officers themselves, we are particularly indebted to Mr Siggs and family, who addressed, filled and despatched the Bulletins with such promptitude, Messrs R. Aldridge, E. T. Daniels, E. Lewis, Capt. Michaelson, J. K. Morton and E. Osborn for help with typing, Major B. Gullick who has assisted the Treasurer, Mr J. Cowley for the address indexing, as well as the many other contributors to our pages, exhibitions and other activities not specifically mentioned above.

As usual, we conclude this report with an appeal for the continued support and participation in AES affairs of all members during the coming year. Several of our activities, publications, etc., have not been up to the standard we should have liked owing, partly perhaps to lack of funds; but also largely to lack of sufficient helpers and contributors.

Finally, we wish all members good hunting and interesting discoveries in 1947.

BEOWULF A. COOPER (Hon. Organiser).
D. H. STERLING (Hon. Secretary).
(29/9/1946).

OTHER AES ASSETS

(not mentioned in above report)

Stock of unsold publications, at cost price,	£248	6	2
Type for printing machine,	2	0	0
Peace-time Organisation Funds	26	2	3
	£276	8	5

1946 FIELD MEETINGS

This year 24 Field Meetings were arranged. In response to my request, leaders were good enough to send me their reports from which it was obvious that the meetings had been much enjoyed.

As Field Meetings are one of the best methods of making and cement-

ing entomological friendships, it is hoped that those who have enjoyed leading the outings will offer to do so again; while members who this year joined in the fun without responsibility will next year feel sufficiently confident to be the leader on at least one occasion.

J. M. ADAMS.

THE CONVERSAZIONE

The AES held a successful meeting on Saturday, September 28th, 1946, at Buckingham Gate Central Schools. Several hundred members and friends visited the hall which was crowded with exhibits. These included displays by the "N.W. Group," the "Epping Forest Group," and Dulwich College Nat. Hist. Soc., as well as a large variety of photographs, paintings and living and set insects of many orders in all stages of development, provided by individual members. I particularly wish to thank all members who helped to make the exhibition a success.

During the afternoon Mr Syms gave a talk on "the Neuropteroid Insects;" Mr Balter addressed the juniors; and Mr Airy Shaw spoke on "Food Plants." The afternoon closed with a Brains Trust and Special Meeting.

J. M. ADAMS.

MAJOR CORRECTIONS TO MEMBERSHIP LIST (Bulletin 79)

- Braham, A. C. (809), Sheepbridge Road should read: Sheepbridge Road.
- Bruce, D. J. (786*), for Hants. read: Herts.
- Daltry, H. W. (972), address not changed, but misplaced in Geographical Key; transfer from CHESHIRE (Crewe) to STAFFORD (Newcastle-under-Lyme).
- Parr, M. J. (797*) should be: (779*).
- Salkeld, K. (115*) should read: (1115*).
- Spencer, B. T. (1129) should read: (1129*).
- Stone, T. (365), Lockeridge Road should read: Lockeridge Villa, Shrubland Road.
- Talbot, M. J. R. (384), after address add: By Beirut Bag.
- Willis, T. R. (235), should be: Wills, T. R.
- Wollatt, L. H. (413), should read: Woollatt.

Change of Address

- Ashforth, H. (1063), to: 1A Kenilworth Road, Leamington Spa, Warwicks.
- Britton, Miss E. L. (928), to: N.A.A.S., Bracken Hill, Leigh Woods, Bristol 8.
- Dawson, D. (664), to: 20 Claude Road, Roath, Cardiff, S. Wales.
- Devenish, L. R. (246), to: 33 Buckhurst Way, East Grinstead, Sussex.
- Lever, R. A. (1135), to: Dept. of Agriculture, Kuala Lumpur, Malaya.
- Neal, E. G. (467), to: 2 Bishop's Mead, Kingston Road, Taunton, Som.
- Skelton, Rev. K. J. F. (858), to: 2 Vicars' Close, Wells, Som.

Membership Total—118 subscribing members (17/12/1946).

WANTS AND EXCHANGES

B. O. C. GARDINER (225), 34a Storeys Way, Cambridge, is anxious to obtain *living* examples of agricultural pests. Also Mantidae, Phasmidae and Myrmeleonoidea.

WILLIAM OGDEN (1018), School House, Abingdon School, Abingdon, Berks., wants South's *Butterflies* and *Moths*.

The EDITOR (B. A. COOPER) is anxious to contact a London member who is a shorthand typist, with a view to reproducing condensed accounts of lectures to AES Local Groups in forthcoming issues of the AES Journal.

JOY O. I. SPOCZYNSKA (751), c/o 26 Hillfield Road, London, N.W.6, will purchase and/or exchange live mated females, ova, larvae and pupae of most species of British Lepidoptera, especially Spingidae, Drepanidae, Triphaenidae, Acronyctidae; also wishes to correspond with anyone who has had experience in rearing Pine Hawk (*H. pinastri*) and Spurge Hawk (*D. euphorbiae*) (notes on rearing these would also be worth publishing in our pages—Ed.); she also requires South's *Butterflies* and *Moths* (2 vols.).

H. R. F. BLACK (1116*) has for exchange a few foreign moths and beetles, about a dozen in all, in fair condition. Wanted: one or two pupae of either Oak Eggar (*B. quercus*), Kentish Glory (*E. versicolora*), Black Arches (*L. monacha*), Emperor (*S. pavonia*) or Ground Lackey (*M. castrensis*).

ALAN P. MAJOR (1117*) wants Savory's *Spiders and Allied Orders of the British Isles* and South's *Moths of the British Isles, Vol. I*, both in the Wayside and Woodland Series, published by Warne. Please state price.

RODERICK R. IRWIN, 1005 South Bloomington Street, Streator, Illinois, U.S.A., is anxious to buy specimens of British Lepidoptera, particularly *Papilio machaon* (Swallowtail), *Pieris napi* (Green-Veined White) and *Vanessa io* (Peacock), as well as British books. Please submit lists.

R. F. STERNITZKY, 288 South Montgomery Street, Napa, Calif., U.S.A., is anxious to exchange British Lepidoptera and other insects of a bright colour or curious shape, such as stag beetles. In addition, he needs land and sea shells, corals and native orchid plants of mature age.

JOHN L. SPERRY, 3260 Redwood Drive, Riverside, Calif., U.S.A., is anxious to obtain British Geometridae, up to 8 of a species, in exchange for other, and particularly American Lepidoptera.

ARTHUR H. MOECK, Principal, Eugene Field School, 1226 S. Seventh Street, Milwaukee 4, Wisconsin, U.S.A., is anxious to enlarge his collection of about 15,000 specimens of world Lepidoptera. He has about 5-6000 specimens for exchange, and wishes to obtain new species in any genus, but, in particular, members of genera unrepresented, of which he will supply list

REVIEWS

Varieties of British Butterflies: a selection of rare and interesting specimens of aberrations, including gynandromorphic and homeotic forms; albinism and melanism, by F. W. Frohawk (London and Melbourne: Ward, Lock & Co., pp. 200 including 48 col. pl., 7 × 9½ ins., n.d., f.p. 1938, 42/- net). (Rd.)

This is a re-issue of the 1938 Edition but with new plates (the original ones were destroyed during the war). The text is the original 1938 impression and until one examines the plates there is no way of telling that this is *not* the first edition. The plates are nothing like the standard achieved by the originals and show a marked fuzziness in places. For the earnest collector of varieties, unable to afford the inflated price of the first edition, this re-issue will be worth its price, but for the average collector

who but rarely takes a variety it is an expensive luxury.

B. O. C. GARDINER (225).

Butterflies and Moths in Britain, by Vere Temple (London: Batsford Ltd., British Nature Library, pp. vii + 120 + 10 col. pl. + 95 photo. repro. with 57 text figures, $8\frac{1}{2}'' \times 5\frac{1}{2}''$, winter 1945-6; 12/6) (Sc*).

This, the fourth book in Batsford's British Nature Library series, is on similar lines to its predecessors. It is primarily intended for the young reader, though some of the observations on the courting habits of butterflies will be of interest to the older entomologist.

The book is divided into two parts, the first dealing with the butterflies, the second with the moths. The butterflies are dealt with under their various habitats, while the moths are dealt with under their separate family names. The text is written in easy style and avoids the use of complex scientific terminology.

The ten colour plates, though pleasing to the eye, are hardly accurate as to colour. On Plate I, for instance, the Red Admiral is far too orange in colour, while on Plate VIII I have yet to see a Garden Tiger moth with the forewings of the colour depicted. The photographic reproductions are spoilt both by the varying contrasts and by the lack of uniformity in the scale of enlargement. All would have been better if reproduced natural size, or, in the case of ova, at a uniform enlargement. In several cases there is needless repetition, e.g., in figs. 38 and 39, the same photograph of the eggs of the Painted Lady appears twice, the contrast and enlargement only differing. One or two, such as the Swallowtail, No. 22, are good. Many others, such as the Large Tortoiseshell, No. 35, show marked distortion towards the wing-tips. It would seem that a great many of the photographs were included because they were available rather than because they were good or illustrated the text. The line drawings also suffer from lack of uniformity in scale, though some of those showing the resting and mating habits are particularly charming and similar studies have rarely been published before.

The text, being written simply in the form of a sort of "travel-talk," is interesting enough to stimulate the

enthusiasm of the boy or girl, but a more fitting title for the work would have been "A Picture Book of British Butterflies and Moths."

B. O. C. GARDINER (225).

Talking of Butterflies, Moths and other Fascinating Insects, by L. Hugh Newman (Worcester: Littlebury & Co., pp. 91 + 16 half-tone pl., $5\frac{1}{2}'' \times 8\frac{3}{4}''$, 10/6, n.d) (Sd*).

This little book is a reprint of fifteen talks given by Mr Newman in his well-known series of Children's Hour broadcasts. The work is prefaced by a foreword by Uncle Mac, who says that "Mr Newman, whose honesty is as transparent as the gauze-like wings of a dragon-fly, writes with such keen zest that we cannot question the value of his work."

To those who already know Mr Newman's talks, these chattily-written anecdotes recording an immense variety of astonishing entomological finds and happenings which have occurred to the author himself, will need no introduction. They are written with a boyish enthusiasm which should arouse the interest of non-collectors everywhere. They cover a wide range of topics, mostly on rare butterflies and moths, or those obtainable from his Butterfly Farm, but also containing talks on beetles, spiders, ants and flies.

The talks are not, however, practical enough to be of value to the collector or breeder, though this should not detract from their readability to the non-specialist. Some talks, for example that entitled "Giant Silk Moths from Abroad," are definitely spoilt by the paucity of practical advice which might help anyone stimulated to rear these lovely insects from the egg, as appears to be the purpose of the chapter.

The photographs are for the most part good, though some criticised in the review of Vere Temple's book are here reproduced with the same defects of foreshortening and wrong contrast. Several depict the Newman family at home and on holiday, as well as activities on the Farm. It is a pity the book suffers from the failing so frequent in popular journalism in that the author has many times allowed his enthusiasm to run away with him, and facts which could easily have been verified are exaggerated or wrongly stated; but perhaps this is of little moment in a work of this type. B. A. C.

The Moths and Butterflies of the Formby Area, by G. de C. Fraser (Raven Entomological and Natural History Society, Hon. Sec., B. M. Geary, 27 Dale Street, Liverpool, pp. 12, 8½" x 5½", March 1946; not priced).

This young society, founded in January of last year, has been quick off the mark with regard to its publications, and this list of the species found by Mr Fraser between 1931 and 1945 should be of great interest and value to those collecting in the district. We hope that in future issues it may be possible to enlarge upon such things as the status, variation and habits of the species listed, and so improve its usefulness even more.

B. A. C.

Daily Mail School Aid Publications, Young Britain Educational Series (Daily Mail School Aid Dept., New Carmelite House, London, E.C.4).

Butterflies No. 1, by P. M. Soderberg, with the Life History of the Swallow-tail in pictures by S. Beaufoy (pp. 15, with 15 figs., 7½ x 9½ ins., n.d., 9d).

Butterflies No. 2, by S. and E. M. Beaufoy, with photographs by S. Beaufoy (pp. 31, with 56 figs., 7 x 9½ ins., n.d., 1/6).

Bomba the Bumble Bee, by C. N. Buzzard, with illustrations by J. Yunge-Bateman (pp. 15, with 13 figs., 7 x 9½ ins., n.d., 1/-).

Vinula the Puss Moth Larva—A Caterpillar's Life History from Egg to Chrysalis, by A. Spencer, with photographs by S. Beaufoy (pp. 15, with 17 figs., 7 x 9½ ins., n.d., 1/-).

British Spiders, by Rodney F. Cossar (pp. 19, with 19 figs., 7 x 9½ ins., n.d., 1/-).

These booklets, which are obtainable from bookstalls, deal with the life-histories of the insects named, are well illustrated by photographs and drawings, simply written in language any child can understand, and should prove useful in starting an entomological interest amongst many schoolchildren.

B. A. C.

OUR CONTEMPORARIES CELEBRATE

In their September 1946 issues, two of our senior contemporaries are holding celebrations. That of the *Entomologist* (Editor: N. D. Riley,

7 McKay Road, London, S.W.20) celebrates the appearance of issue No. 1000 of this periodical, which commenced publication in 1840. That of the *Entomologist's Record and Journal of Variation* is in honour of its Editor, Henry J. Turner (25 West Drive, Cheam, Surrey), on the occasion of his ninetieth birthday. To both we offer our congratulations and greetings and send wishes for their continued success.

B. A. C.

HANDLING PUPAE

I have found forceps, as used for handling fragile bird's eggs, to be just the thing required for dealing with pupae of all sizes. The ones I have were obtained new—certainly before the war—for less than one shilling.

P. J. GENT (192).

BUTTERFLY OR MOTH?

"How does one tell the difference between a butterfly and a moth?" is a question one is often asked. Books tell us that butterflies fly by day and moths by night; that butterflies fold their wings over their backs and moths along their bodies; that the antennae of butterflies are clubbed while those of moths are feathered or filiform. But not one of these "rules" can be applied without exceptions, as most collectors know. In my view the difference is simple, yet I have never seen it in print: A butterfly depends on the pattern of the underside of its wings for concealment when at rest, while a moth depends on the pattern of the upper side (of the forewing, at least).

WALTER R. CALVERLEY (596).

Alas, no, there are exceptions to every rule: the Thorn Moths (*Ennomos*, *Deuteronomos*, *Selenia*) more often than not rest butterfly-wise, and the underside is of paramount importance; in the Dingy Skipper (*Erynnis tages*) the upperside is of particular protective value. And in many moths which rest suspended from twigs or leaves, such as the Emperor (*Saturnia pavonia*) or the Plume Moths (Pterophoridae) both surfaces are equally important as camouflage agents. And in the female of the Winter Moths (*Operophtera*), March Moth (*Anisopteryx aescularia*), Umbers (*Hybernia*) and Vapourers (*Orgyia*) it would

be a little difficult to assess the relative merits of upper and underside coloration . . . !—B. A. C.

Dr A. D. Imms separates butterflies from all other Lepidoptera on the following structural characteristics: Second branch of cubital vein absent in both wings; antennae clubbed; frenulum absent; humeral lobe of hindwing greatly developed. All butterflies show at least three of these characters, whilst no moth shows more than two. If one character alone is relied upon, then the male of one species (*Euschemon*) is a frenate moth whilst the female is a butterfly!

B. O. C. GARDINER.

CARDED BEETLES WITH BALSAM-MOUNTED GENITALIA

During morphological studies of adult click-beetles (Elateridae) it was found that the gumming of freshly-removed genitalia directly on to the card on which the adult beetle was mounted was far from satisfactory, as the parts were too opaque to show many of the structures present. On the other hand, when the genitalia were mounted in balsam on separate glass slides, it was a tedious job comparing long series of insects both as regard card mount and slide, and it was easy, when mounting numbers at the same time, to lose the identity of individual genitalia with the specimen from which they were taken.

To overcome this, the following technique was devised; a fair collection of the British species has now been so mounted and its utility fully demonstrated.

The beetles were preferably killed in ethyl acetate or laurel-and-EA and mounted when fully relaxed, or after storage in a laurel or laurel-and-EA tube (often for months, and in some cases years). The beetle was laid on its back and the abdomen gently prised apart from the rest of the beetle (elytra, wings, head and thorax); this and subsequent operations were performed under the binocular microscope with all but the largest species. Next, with the aid of sharp dissecting scissors, forceps, needles or scalpels, the membranous tergites were cut around their margin and lifted off the leathery sternites, together with all body contents, and

placed in a solid watch-glass containing aqueous potash solution. The sternites were then gummed back on to the beetle and the beetle mounted in the usual way, with gum tragacanth mucilage, at the top of a celluloid card of appropriate size (fig. a).

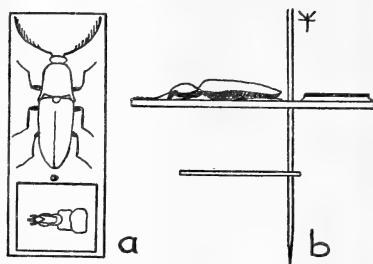


Fig. a—Dorsal view of celluloid-mounted beetle and genitalia, with pinhole placed between; fig. b—side view of mount, showing celluloid bearing gummed beetle (left of pin) and balsam covered by cellophane (right), with data label staged lower down pin.

A pin-hole was then made with a sharp seeker just below the beetle, but above the area of celluloid destined to receive the genitalia. Finally the celluloid carded specimen was pinned, labelled with data and boxed ready for the arrival of the genitalia.

Provided they are well-relaxed, the mounting of previously-carded specimens is generally safe and very easy. The relaxed carded specimens are soaked on water and the beetle floated off, the genitalia removed, after which the sternites are replaced and the beetle remounted. The legs and antennae usually drop into position, and the process is far speedier even than mounting a fresh specimen. Sometimes, in a large specimen it is not easy to remove the abdomen and care has to be taken not to break off the legs (as is also liable to happen with very small specimens, like *Cryptohypnus dermestoides*, even when fresh). With very old specimens, say over 50 years old, or ones that have been badly looked after and have gone mouldy or been attacked by mites, damage is sometimes inevitable even with the greatest care, and fresher examples should, where possible, be dissected in their stead.

All the cleaning, dehydrating and clearing processes, next to be de-

scribed, were carried out in solid watch-glasses, each covered by a glass circle. The genitalia were soaked in potash solution for approximately 24 hours; longer did not matter for many deeply-pigmented species, such as *Corymbites cupreus*, but was unsuitable for the more delicate species, such as *Cryptohypnus dermestoides* or *Limonius minutus*, which became too pale to make good mounts without staining; and the potash solution used was of a strength obtained by dissolving one potassium hydroxide "bead" in a pipetteful of tap-water placed in the watchglass. In this solution the specimens gradually swell up, when unwanted material, fatty-body, gut, tracheae, may be pulled out with fine needles and forceps. My plan has been to retain the two apical normal tergites in both sexes, with the chitinised ovipositor and membranous spermatheca and ducts in the female, and the chitinised male organs and sometimes the gelatinous spermatophores in the male. Any remaining parts are removed while the specimen is still in KOH and thrown away.

The specimen is then placed for one hour or longer consecutively in water, acid 70% alcohol, 90% alcohol, absolute alcohol and clove oil before being ready to mount in balsam. In any of these media, and particularly the earlier stages, further cleaning up and drawing out to show all the parts, may be carried out to ensure a good mount. If absolute alcohol is unobtainable, glacial acetic acid can be used instead, but as it crystallises in cold weather, it is less suitable.

The unchitinised ducts and spermathecae of the females of many species are improved by staining; I have found borax carmine followed by acid alcohol satisfactory, but no doubt any other stain would be as useful. Spermatophores need hardening before staining or mounting, and I regret that I have yet to devise a satisfactory technique for dealing with them.

The specimen is then mounted in thinnish balsam on the lower part of the celluloid card, being covered with a rectangle of thin cellophane moistened with xylol (fig. b). If glass cover-slips can be cut to the requisite size neatly they would no doubt be preferable, as cellophane may occasionally, when the balsam is

too thin, tend to curl upwards at the edges, and wire-springs mounted on needles have to be devised to prevent the mount from becoming uncovered. I mount all my Elaterid genitalia dorsal side uppermost, but in many families this would not be possible or desirable, and the collector must use whatever plan is appropriate. The mounts are sufficiently dry to be sent by post or placed in the collection in about a month.

In carding beetles on Bristol board, the standard rule (AES Leaflet No. 1, *Coleoptera Collecting*, p. 4) is to use cards twice as long as they are broad. My rule with celluloid cards for this type of mount is to use the same sizes as above with a quarter of an inch added to the length. Thus, *Agriotes pallidulus* or a *Cryptohypnus* I would mount on a BB card $\frac{1}{2}$ " \times $\frac{1}{4}$ ", or, with genitalia, on celluloid, $\frac{3}{4}$ " \times $\frac{1}{4}$ "; *Agriotes obscurus*, *Hypnoidus riparius* or *Corymbites incanus* would go on BB $\frac{2}{3}$ " \times $\frac{2}{3}$ " or celluloid 1" \times $\frac{2}{3}$ "; *Corymbites cupreus* or *Laeon murinus* go on 1" \times $\frac{1}{2}$ " BB or $1\frac{1}{4}$ " \times $\frac{1}{2}$ " celluloid. With larger (and particularly foreign) species the additional length may be $\frac{1}{2}$ " or $\frac{3}{4}$ ".

Mounts of this type are used by collectors of several orders and their more general use by coleopterists would do much to help our knowledge of the more obscure species. But mounting is a slow procedure and not suited to the mass-production methods which most collectors have perforce to adopt.

BEOWULF A. COOPER (19).

(20/11/1946.)

I would like to suggest that some students may prefer to use this method for the micro mount on a separate piece of celluloid placed upon the same pin but between the beetle mount and the data label. This enables the micro mount to be sent separately through the post without endangering the beetle mount.

JOHN R. DIBB (1195).

● QUERIES

Last year, when collecting White Admiral (*Limenitis camilla*) imagines in July, I found a half-grown larva, about $\frac{3}{4}$ inch long. A few days later half a dozen ichneumon larvae emerged. Would the small size of the larva be due to the presence of these parasites?

J. BOORMAN (702*).

The question of whether the size and rate of development of a larva is affected by a contained parasite has not, I think, been subjected to experimental proof. Such experiments should present no inherent difficulties; they could be undertaken by anyone who is good at rearing larvae, who is provided with a balance of sufficient accuracy, who is not allergic to statistics, and who has plenty of time.

It is known that a parasite larva only consumes its host's vital organs during its last stages of feeding, and it is observed that a solitary parasite need not be smaller and may even be larger than its host. The impression is that a parasite or parasites which complete their growth in a full-grown larva or pupa of the host do not appreciably affect the size of the host, but that they increase the appetite of the host just as a tapeworm increases a man's appetite. Since the host larva has to eat more, its growth and development are likely to be somewhat delayed. On the other hand, contained parasites which complete their growth in full-grown larvae of Diptera induce pupation in the autumn in species which normally overwinter as larvae and pupate in the spring.

Some parasites, however, complete their growth in half-grown host larvae. This may be a case in point and, in such case it seems more likely that the size of the host would be adversely affected as well as its development delayed.

Now what did you do with the parasites, Mr Boorman? I want them and, in the Hymenopterist's Handbook, I have already explained just how and why.

G. J. KERRICH (551).

A. L. CAPENER (6) would like to know of the best method for preparing Homoptera eggs as microscopic mounts.

K. J. F. SKELTON (858) would like to know if it is possible to prepare an efficient "ersatz" sugaring mixture without using rationed ingredients.

REARING THE WOOD WHITE

When breeding from the first brood of *Leptidea sinapis*, it will be found that those of the resultant pupae which have no pink markings will emerge the following autumn as a

second brood; those with the pink marks will hibernate.

S. G. CASTLE RUSSELL (119).
(27/10/1946.)

NOW IT CAN BE TOLD



I. In 1941 I decided to try Light in the jungle in Trinidad. The local inhabitants tried to dissuade me. "Yo' sho' will be eaten by dem wicked snakes." I wore gaiters, put down my sheet in a clearing, lit my lamp, and waited. The first arrivals were a few Orthoptera. Then a solitary Hawk Moth. And then the most appalling and almost phantasmagoric creatures: beetles, toads, frogs, slugs of improbable dimensions . . . I didn't wait for the snakes. The slugs were enough; their memory will haunt me. I fled.

JOHN MOORE (156).

SWALLOWTAILS

In 1946 over 110 specimens of the Swallowtail (*Papilio machaon*) were recorded from our southern counties and there was some correspondence in *The Times* concerning them. Besides adults, larvae were found feeding on carrot. Most of those identified have proved to be of the French race (*Papilio machaon gorganus*), thus proving that considerable immigration has occurred, while the

finding of larvae, some of which have been successfully reared, proves that this lovely creature can breed here, though whether it can overwinter is doubtful, and further evidence is required.

The British race (*Papilio machaon britannicus*) may be separated from the French (*Papilio machaon gorganus*) by the following points:—the ground colour is a deeper yellow; it is considerably darker, the black lines along the nervures being much heavier; the black submarginal border is broader and becomes wider as it approaches the inner margin.

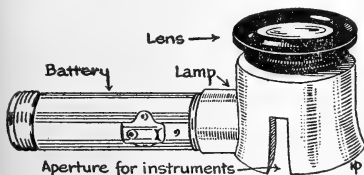
We should be glad if any of our members who come across this butterfly this year would let us know, as information regarding the immigration and breeding of this species here is much required.

In view of the fact that it has been recorded in increasing numbers in recent years, there is always the chance that it may manage to establish itself, as on the Continent the Swallowtail is not a fenland species. If so, it would be a magnificent gain to our southern fauna.

B. O. C. GARDINER (225).

PARTINGTON ILLUMINATED MAGNIFIER

I recently bought a little instrument which greatly simplifies the examination of wing-patterns of Lepidoptera, venation of small insects, and even genitalia of the larger and middle-sized species. It consists of an electric torch let into the side of a bakelite cylinder, with two lenses fixed in a barrel which screws into the top of the cylinder.



The torch illuminates to some 400 times the brilliance of daylight and reveals much that would otherwise be invisible however great the magnification. For example, if you place the instrument flat upon a clean shaven chin you can see the hairs actually *under* the skin! The barrel containing the lenses has an aperture at the

side so that it is possible to work on a specimen (e.g. with a fine needle) while it is under magnification. The magnification of the cheaper model is 30.25 (5.5 dia.). I understand the instrument was originally designed and used by the R.A.F. for research work and inspection of detail. It is called the "Partington Illuminated Magnifier" and is made by Messrs Partington, 168 Tottington Road, Bury, Lancs. The cheaper model (illustrated) costs £3 3s.

JOHN MOORE (156).

DATA LABELS

Several friends of mine have followed the plan indicated in the plates of Ford's "Butterflies" of merely naming the County on their label, rather than the actual locality, village, common or parish in which the specimen is found. This seems a great pity to me, as it loses the individuality of the specimen, the locality and even the day's collecting. For example, I take *N. lucina* (Duke of Burgundy) at Albury and merely to say Herts. is most misleading—it is far from widespread in the county and this should be indicated on the label. By all means name the County in addition to the locality (often there are villages of the same name in more than one county) but, except perhaps with the commonest species there are many reasons for naming the precise spot. I believe that even Dr Ford labels his specimens in full!

R. HILLIARD (99).

Mr R. Hilliard's note has been forwarded to me for comment. I took the trouble to add the county in which every specimen figured in my book "Butterflies" had been captured as such a general indication of distribution served to bring out the main features of geographical variation in the right way. I find it difficult to believe that any collector could regard such brief but helpful notes as the full data of the specimen. These I purposely excluded for three reasons: (1) There was frequently insufficient room for them on the descriptive pages of the plates. (2) In many instances there were good reasons why they should *not* be made public. (3) I did not wish to confuse a simple indication of general distribution with details unnecessary in that place, though these further details must of course be added to the

data label. In future editions I should be wrong to take any other line in this matter. Considering the point of view which I adopted throughout the text of this book, it is remarkable if such a note as Mr Hilliard's is really necessary. Unfortunately, he ends it by saying, "I believe that even Dr Ford labels his specimens in full!" It is possible that on more mature consideration, he may feel dissatisfied with that sentence.

E. B. FORD.

MAKING A SWEEPNET

Mr L. G. F. Waddington has made a smaller and lighter version of the sweepnet whose construction he described in *Amateur Ent.*, Vol. 8: 22-3 (1944), and *AES Leaflet* No. 16 (Making a Sweepnet). It was of a very similar pattern, but had a diameter of 12 ins., and the net was suspended on 38 rings. The handle was only 12 ins. long and made from a flattened strip of wood, perhaps not quite ideal for holding for long periods, but it could quite easily be carved to suit. Although much lighter than its prototype (it weighed 1½ lbs. instead of 4¼ lbs.), it was still rather heavy for most types of use, or for long periods of sweeping. Its merit, like its forerunner, lies in its strength, though, for very heavy sweeping it was perhaps not heavy enough. It is a pattern that should be in the armoury of all entomologists who do a large amount of sweeping.

B. A. C.

NOW IT CAN BE TOLD



II. In 1942 I (being a Fleet Air Arm pilot) was lent to the R.A.F. It was June, I was stationed in Cam-

bridgeshire, and I had never caught a Swallowtail . . . But petrol was short, and although I had a day off I could find no way of getting to Wicken. My C.O. said: "Why not take a Spit?" So I used a mere fifty gallons or so and landed at Ely, where they were rather surprised to see a butterfly-net pulled out of the cockpit of a Spitfire. I hitch-hiked to Wicken, took four *machaon*, a series each of *Bankia argentula* (Silver-barred), and *Hydrelia uncula* (Silver Hook), and some assorted larvae. On the way back, in high spirits, I forgot about the larvae and climbed to 25,000. I had oxygen, but they hadn't. When I landed, as the R.A.F. say, "They'd had it."

JOHN MOORE (156).

THE SMALL ADMIRAL

In *L'Entomologiste* for September-October 1946 (No. 5, p. 211), J. Betz writes about the spread and increasing abundance of *Araschnia levana* in Northern France. The species is best known as a butterfly of Central and particularly Southern France, but of recent years has been increasingly reported from the northern provinces. The species had hitherto been seen only in Northern France in certain wooded places (but by no means in all forests, however), and he had never found it in open country nor in the Roubaix industrial region. This autumn he has taken several examples in his own garden, in the centre of a built-up area. The freshness of the individuals and their habit of flying persistently around the nettle-patches which have considerably increased as a result of lack of cultivation during the war, leads him to suppose that the species is fully adapted to its new environment and will turn up there again another year.

This butterfly is described by E. B. Ford* (*Butterflies*, 1945, pp. 169-70) as a " . . . charming little Vanessid. . . an insect of great interest, since it provides one of the most remarkable known instances of seasonal variation. There are two broods in the year, and the chief difference be-

*We are indebted to Dr Ford for permission to make this quotation from his book.—ED.

tween them is on the upper-side: that appearing in May resembles a Fritillary, being fulvous-brown with black pencillings, while specimens of the second generation, which fly in July, look like small White Admirals, for the wings are blackish and are crossed with an oblique white bar (Plate 35, Figs. 7 and 9, the first brood; Fig. 8, the second brood; Fig. 10 is a rare intermediate, see p. 246). The pattern of the under-side is similar in the two broods, but the colour is much richer in the second generation than in the first, which is the one figured.

"The species feeds on nettle and occurs widely in Europe, even in the north-eastern Departments of France, but it is absent from the north-west of that country. It was introduced into the Forest of Dean, Monmouthshire, about 1912, and a second small colony was also established near Symond's Yat, Herefordshire. It not only survived but increased in numbers for several years, when it was ruthlessly exterminated by a collector (whose identity was widely known) who thought that no foreign butterfly ought to be introduced into Britain. His arbitrary action was an improper one; for he should at least have consulted a considerable body of entomologists, for example the Entomological Society, before taking a step which was by no means his personal business alone and on which many other people had as much right to an opinion as he. For myself, I am inclined to think that the introduction of this insect was less objectionable than the establishment of a British species in a new area. It could not be confused with our native fauna, to which, however, it added an element of decided interest, its remarkable seasonal variation being unlike anything that can be seen here. The butterfly seems able to maintain itself at least in the south-west of England, and I should not object to a further attempt being made to naturalise it in this country."

B. A. C.

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TIME-TABLE FOR 1947 PUBLICATIONS

(excluding Special Publications)

Bulletins	Latest date for receipt of copy.	Latest date for receipt of stop press notices.	Publication date.
February	Dec. 12	Jan. 12	Feb. 1
March	Jan. 12	Feb. 12	Mar. 1
April	Feb. 12	Mar. 12	April 1
May	Mar. 12	April 12	May 1
June	April 12	May 12	June 1
July	May 12	June 12	July 1
August	June 12	July 12	Aug. 1
October	Aug. 12	Sept. 12	Oct. 1
November	Sept. 12	Oct. 12	Nov. 1
December	Oct. 12	Nov. 20	Dec. 15
Membership List	July 1	Sept. 1	Oct. 1
Journal	June 1	July 1	Oct. 1
Subscription Form	—	—	Dec. 1

As the majority of Bulletins will be 4-page issues, the longer contributions will usually be published in the Journal. In order to ensure speedy publication, stop-press items such as exchange notices will not be proof-read.

While it is hoped to despatch issues by the dates quoted, members who have not received their copy should not write to Mr Martin till at least a fortnight later, as we cannot yet tell how close to this programme we shall be able to adhere.

OFFICIAL ADDRESSES

SUBSCRIPTIONS (10/- Seniors, 5/- Juniors) should be sent to Hon. Assistant Treasurer, G. B. HODGES, c/o Westminster Bank, Braintree, Essex. If publications are ordered at the same time, they should be sent to C. B. Pratt.

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OTHER BULLETIN CONTRIBUTIONS, including exchange notices, advertisements and all stop-press items, should be sent to the Assistant (Bulletin) Editor, B. O. C. GARDINER, 34a Storeys Way, Cambridge.

CONTRIBUTIONS for other AES publications, Journal, Leaflets, Handbooks, etc., as well as drawings and photographs for all publications, and offers to type, read proofs, etc., should be sent the Editor, B. A. COOPER, 27 Spilsby Road, Boston, Lincs.

OFFERS to lead field meetings and enquiries regarding meetings should be sent to the Meetings Secretary, Mrs J. M. ADAMS, 43 Merchland Road, London, S.E.9.

NOTICES OF NON-RECEIPT OF PUBLICATIONS listed above, and offers to help with addressing or posting, should be sent to the Publications Despatch Organiser, E. L. MARTIN, 9 Devonshire Road, Harrow, Mddx.



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BULLETIN

No. 82

FEBRUARY 1947

PRESERVATION

The preservation of certain forests, downs and marshes from the evils of the speculative builder and other destructive agencies is of interest to every entomologist. During the war many places of entomological interest were severely damaged. Large areas of woodland have been cut down, aerodromes built in the environs of the New Forest, and coastal areas heavily fortified.

But now that the war is over and post-war reconstruction is afoot, the Conference on Nature Preservation in Post-war Reconstruction has prepared a report (National Nature Preserves and Conservation Areas in England and Wales. Memorandum No. 6. British Museum (Natural History), 3/-) to the Government as to what areas should be set out as National Parks and what places of particular natural interest should be preserved.

Some areas, such as Wicken Fen, are already protected by the National Trust. In addition to these, this memorandum sets out all those areas in England and Wales which the Nature Reserves Investigation Committee considers should be preserved; these have been submitted to the Government. The more support that can be obtained, the more chance there is of the report being accepted. The young entomologist of to-day will be the collector in these areas to-morrow.

Amongst the areas scheduled for preservation, there are many of particular entomological interest. These include the New Forest, that happy hunting ground, Lulworth Cove, the home of the Lulworth Skipper, and Wicken Fen and a large part of the Norfolk Broads, the last surviving homes of the Swallowtail.

Every entomologist should add his support to this scheme of preserving certain areas. As the report states, only .002 per cent of the entire country is scheduled—a percentage that is ridiculously small. If support is not forthcoming now, even that area will not be preserved, and

already many of our rarer insects are in danger of extinction.

B. O. C. GARDINER.
B. A. COOPER.

(1/1/1947.)

RECEIVED

The Editor, B. A. Cooper, has received from its author, Dr William Procter, a copy of the *Biological Survey of the Mount Desert Region Incorporated*, Part VII, The Insect Fauna, with references to methods of capture, foodplants, the flora and other biological features. It is a magnificent work of 566 pages printed on non-austerity paper and type, listing the whole of the insect fauna of Bar Harbor, Maine, U.S.A., records in many places being accompanied by brief notes on foodplant or mode of capture. The book was published for private circulation by the Wistar Institute of Anatomy and Biology, Philadelphia, 1946, and is a model for the production of a condensed faunistic survey. It may be borrowed from the Editor, borrower paying postage both ways.

B. A. C.

ENTOMOLOGICAL FILM SHOW

Several entomological films will be shown, and the Annual General Meeting of the AES will be held, at 3 p.m. on Saturday, March 8, at Kodak Hall, Headstone Drive, Wealdstone, Harrow, Middlesex, under the auspices of the North-West London Group of the AES. Admission free, but a collection will be taken to cover expenses. Visitors are invited to the film show.

CHANGE OF ADDRESS

Mrs Griselda Cooper (447) and B. A. Cooper (19) to: 27 Spilsby Road, Boston, Lincs. B. O. C. Gardiner (225) to: 34a Storeys Way, Cambridge.

COUNCIL CHANGES

At the last Council Meeting, the resignations from the Council of Messrs E. W. Classey and J. D.

Shapland were accepted with regret. Messrs B. J. L. Byerley and G. B. Hodges were co-opted to fill the seats falling vacant.

NEW ADVISERS

We welcome three new advisers who have kindly offered their services:—

Bee-keeping—

D. M. Jesper, Kimarna, Woodlands Grove, Harrogate.

Conchology—

B. Verdcourt, 86 Claremont Road, Luton, Beds.

Scandinavian Lepidoptera—

J. Heath, Heathcot, Hedge End, Southampton.

MORE NOTES ON FRASS

In most cases the colour of the frass which a caterpillar produces depends upon the foodplant and not the type of caterpillar. Up to the time of pupation the Eggar larvae (*B. quercus*) which I was breeding produced frass of a different colour for the different food plants on which they were fed—green for ivy, light greenish brown for bramble and oak and black for hawthorn. I have also found that frass of Privet Hawk larvae (*S. ligustri*) feeding upon holly is greenish brown, contrary to what I put in a previous article (*AES Bull.* No. 66, p. 27, Dec. 1944).

It now seems possible to identify, within limits, the family of the larvae producing the droppings. Faeces showing six distinct longitudinal grooves as well as several circular ones are usually produced by larvae of the Sphingidae and Notodontidae; droppings with six less distinct longitudinal ridges are produced by members of the Lasiocampidae, Saturniidae, Endromidae, Arctiidae and Lymantriidae; faeces with only the circular grooves and no longitudinal ones are produced by the Noctuidae, while frass with no grooves at all is produced by larvae of the butterflies, Geometridae, Brepidae and larger Micros.

These rules never apply to caterpillars in the first instar but always to those in the last instar. When larvae are young they always produce frass of the undifferentiated (Geometrid) type. For example, in *Arctia caia* (Garden Tiger), the frass does not become differentiated until

after the larva has gone through its last moult. *Lasiocampa quercus* produces differentiated frass during its fourth instar and onwards to the last.



Types of caterpillar frass: (a) Sphingid type, with hind end of pellet "squeezed" to a smaller diameter; (b) Notodontid type, with both ends alike; (c) Noctuid type; (d) undifferentiated type. In types a and b, secondary grooves between the longitudinal grooves, are sometimes present, as in *Mimas tiliae* (Lime Hawk).

I was interested to find that the frass would place *Demas coryli* (Nut-tree Tussock) in the same frass-group as the other Tussocks (Lymantriidae) and not with the Noctuidae, with which this species is placed by South. But I really have not seen sufficient examples of each family to generalise with confidence as to their true validity.

I have found the knowledge that the Sphingidae produce frass with six ridges very useful when searching for caterpillars of the Narrow-bordered Beehawk (*Hemaris tityus*) on the Devils-bit Scabious. The sawfly larvae that feed on the same plant grow quite large but produce frass of the Noctuid type. When looking over the plants and one sees a lot of frass about, one glance is sufficient to show whether it is worth searching carefully for the beehawk larva or not.

These remarks are based upon an examination of the following species: SPHINGIDAE: *pinastri*, *ligustri*, *populi*, *ocellatus*, *tiliae*, *tityus*, *stellatarum*, *elpenor* and *porcellus*. NOTODONTIDAE: *vinula*, *hermelina*, *tremula*, *gnoma*, *ziezac*, *dromedarius*, *capucina*, *palpina*, *bucephala* and *curtula*. LYMANTRIIDAE: *antiqua*, *pubibunda*, *similis* and *monacha*. LASIOCAMPIDAE: *neustria*, *populi*, *quercus* and *v. callunae*, *rubi* and *potatoria*. ENDROMIDAE: *versicolor*. SATURNIIDAE: *paronia*. ARCTIIDAE: *lutea*, *lubricipeda*, *fuliginosa* and *caia*. AGROTIDAE (NOCTUIDAE): ACROVETINAE: *leporina*, *aceris*, *megacephala*, *psi*, *rumicis*; AGROTINAE: *exclamatoris*, *pronuba*, *brassicae*, *persicariae*; HADENINAE: *bicruris*, *psi*, *oxyacanthae*, *aprilina*, *maura*, *trapezina*, *circellaris*; CUCULLINAE: *exoleta*.

verbasci, umbratica, libatrix; Plusiinae: *pulchrina, tripartita*; Hypeninae: *parthenias*.

GEOMETRIDAE: Hemitheinae: *papilionaria, chrysoprasaria, aestivaria*; Sterrhinae: a number of unidentified examples; Larentiinae: *brumata, dilutata, dodoneata, sobinata*; Geometrinae: *grossulariata, fasciaria, margaritaria, tetralunaria, syringaria, bidentata, pennaria, elinguaru, prunaria, sambucaria, luteolata, defoliaria, pedaria, lapponaria, strutaria, betularia, lichenaria* and *pinaria*. ZYGAENIDAE: *loniceriae* and *filipendulae*. COSSIDAE: *cossus*. AEGERIIDAE: *sphēciformis* and *andreaeformis*.

I have been unable to examine still very many larvae including those of the Hepialidae and most other Micro families, so I should be glad to hear from others who could supply or loan specimens of the larvae or frass of the less common families and genera.

IAN S. MENZIES (585*).

REVIEWS

London's Natural History, by R. S. R. Fitter (London: Collins, "the New Naturalist" Series, No. 3, pp. xii. + 282 + 40 col. pl. + XXXII half-tone pl., with 11 maps as text figures, 8½ × 5¼ ins., 1945, 16s net). (Sc.).

This volume is as admirably printed and illustrated as its predecessor, Ford's "Butterflies" (reviewed in *Bulletin* 73, pp. 11-13). It is an ecological survey of the wild life of the London area, past and present, and is based on the development of human settlement on the site of London, from the Flood onwards, and its effects on plant and bird life. Unfortunately the historical outlook dominates the biological, though Mr Fitter has gone to great pains, by quotation and statistic, to present this with interest and imagination.

To the entomologist, however, the book will be rather a disappointment. Whereas Ford's book presents the reader, on every other page, with unsolved mysteries and problems for him to work at and unravel, Fitter writes from the point of view of the chronicler and tabulator, and fails to provide this stimulus. Covering a wider field, the book is inevitably selective in its subject matter, but it is a great pity that insect life should be so scantily discussed. Surely entomologists are as numerous amongst the population of London as

ornithologists, even if they are not so amongst the membership of the London Natural History Society!

There are a thousand and one ecological problems connected with metropolitan insect life that would interest the amateur and stimulate him to constructive effort. The later, more purely ecological, chapters, suggest a few lines of study, but only touch upon an enthralling topic. The effect of light upon the selection of night-flying species, the effect of the planting of alternate host-plants in gardens on the abundance of aphids and other insects, the effect of protection from north or south exposure by walls, fences and buildings, the removal of dead wood and the pruning of trees and shrubs, the existence of weedy gardens dotted about amongst well dug and weeded ones, are all factors tending to produce a different insect fauna in town from that of wild or cultivated country. And the inter-relationships of these selected populations may differ widely from those in rural areas. Why, despite drainage, do so many maritime species occur in London gardens? The interesting problem of melanism is passed over in a single paragraph (p. 182), and many of the most interesting melanic species, whose proportion in the whole population varies greatly from one part of London to another, are not even mentioned. The abundance of bricks and mortar and of wooden fences, and the trampled soil in gardens and parks has a great effect on the fauna of fossorial and solitary Hymenoptera and other hole-dwellers. The entomological succession in the colonisation of waste land, gardens, greens and granaries is just as interesting as the plant or bird succession. Cycles of scarcity and abundance, and the effect of wet and dry seasons, even of sun and cloud, are very different, for some species, from what they are in the country, and these and many more factors might have been discussed. We cannot but regret the omission, from the list of natural history societies (Appendix E, p. 259), of our own organisation, which exists to widen the interests of the less advanced student, for whom presumably this work also is intended.

We hope that some of these omissions may be remedied in later editions of the present work, and that future ecological books in this series may deal more fully with insect life and ecology.

B. A. C.

Of Ants and Men by Caryl P. Haskins, Ph.D. [London: Allen & Unwin Ltd., pp. vii + 244 + 15 pl., 1945: 12/6 net.] (Sa.).

Here is a book which tackles bravely the slippery problem of comparing the social structure of the ant world with that of man. It succeeds, because the author does not carry analogy too far, nor does he do more than hint at parallels between the social organisations of different types of ant and those of human construction. Thus, Dr Haskins avoids the traps into which fell his more renowned precursors, such as Forel and Maeterlinck. In brief, he avoids anthropomorphism, and makes his chronicle the more striking by describing lucidly the evolution of ant colonies in terms of adaptation, need, and convenience. In particular, he explains the differences in social evolution between the "primitive" Ponerine and the "civilised" Formicine ants. In common with anyone who has studied the habits of ants, he is drawn to the question "Fascism or Communism" (Chapter VII), but wisely leaves the reader to draw his own conclusions. The phenomena of Fascism and Communism cannot be understood in terms of observation in nature (i.e., from animals without consciousness, and with different goal-strivings from the human organism).

Since modern entomology, in common with many other sciences, is tending in the direction of a dynamic interpretation of structure and function, as opposed to the older concept of static observation, this book makes a valuable, readable contribution to our understanding of group life in the insect world. It should appeal to the non-myrmecologist and broaden his outlook upon the "first principles" of insect behaviour; even the sociologist would not be wasting his time by reading "Of Ants and Men."

A. N. BRANGHAM (18).

WANTS AND EXCHANGES

J. P. SHAW (1204), Brimpton House, Kelvedon, Essex, has for exchange pupae of Puss Moth (*D. vinula*) and Eyed Hawk (*S. ocellatus*).

SIR MURDOCH McLEOD (35), Culverlea House, Pennington, Lymington, Hants, wants British and Foreign Skippers (Hesperiidae). Full data essential. Exchange British Butterflies or buy.

JOHN D. CHYNOWETH (905*), 2 Cumberland Road, North Harrow, Middx., wants a few pupae of small Elephant Hawk (*D. porcellus*). Offered: larvae of Drinker Moth (*C. potatoaria*) prone to yellow variation, or state wants.

K. H. BOBE (912), 182 Kingsground, Eltham, London, S.E.9, would like to contact members interested in the genetics of and effect of temperature on Lepidoptera.

PETER MICHAEL (748), 56 Cranmore Lane, Aldershot, would be glad to learn of unusual foodplants and colour forms of the Angleshades (*P. meticulousa*).

J. COWLEY (771), Holywell House, Edington, Bridgwater, Som., wants to buy R. J. Tillyard's *The Biology of Dragonflies*.

K. H. BOBE (912), 182 Kingsground, Eltham, London S.E.9, has for sale or exchange:—*British Bloodsucking Flies* by Edwards, Oldroyd and Smart; *British Flies*, Vol. I. by Theobald.

B. W. ADKIN (556), Highfield, Pembury, Tunbridge Wells, Kent, wishes to receive British records of the white vars. of the Heath and Glanville Fritillaries (*M. athalia*, *cinxia*), the cream vars. of the Silver-washed, Dark Green, and High Brown Fritillaries (*A. paphia*, *aglaia*, *adippe*), and var. *iole* of the Purple Emperor (*A. iris*).

E. W. SMITH (1207), 93 Craithie Road, Doncaster, Yorks., wishes to obtain a Bignell Beating Tray; please send details of condition, price, etc. Would offer a Buckler's tray, condition as new, in part exchange, if preferred. This is too large of general use, he finds.

ADVERTISEMENTS

ENTOMOLOGICAL SUPPLIES— Store Boxes, Setting Boards, Pins, Nets, set specimens of British Lepidoptera. List free. J. WARD (L. Tatchell), 6 High Street, Swanage, Dorset.

FOR SALE (cash only, no exchange can be considered): Plain Deal Insect Cabinet, 44" x 45" x 18½", 30 drawers 20" x 17" x 2½", dustproof lifting glazed frames. Also mixed assortment of British Lepidoptera contained in above. Offers to: A. F. O'Farrell, 90 Woodwarde Road, London, S.E.22 (phone Gipsy Hill 0742).

**ANNUAL GENERAL MEETING**

This will be held immediately after the Entomological Film Show (described elsewhere in this issue) at approximately 4.15 p.m., at Kodak Hall, Headstone Drive, Wealdstone, Harrow, Middx., on Saturday, March 8th, 1947. The agenda is as follows:—

- (1) Minutes of last AGM.
- (2) Election of Officers and Councillors (to replace those retiring).
- (3) Election of Auditors.
- (4) Reports of Officers.
- (5) Any other business.

The Councillors who have retired during the year, or who are now due to retire, are as follows:—E. E. Syms (Vice-President), A. F. O'Farrell (Vice-President), D. H. Sterling (Hon. Secretary), R. S. Ferry (Hon. Treasurer), R. S. Balter (Youth Secretary), E. W. Classey and J. D. Shapland.

To fill these vacancies, the Council wish to nominate as President Mr S. G. Abell; Mr Tesch, now President, automatically becomes Vice-President; Mr H. K. Airy Shaw (Vice-President); S. M. Hanson (Hon. Secretary); D. H. Sterling (Hon. Treasurer); N. T. Easton (Youth Secretary); E. Lewis (Publicity Secretary), leaving Mr Broome (Assistant Publicity Secretary) as a Councillor; and Messrs E. E. Syms, G. R. Myall, G. B. Hodges (Assistant Treasurer) and B. J. L. Byerley as Councillors. This leaves Mrs Adams and Messrs Cooper, Pratt, Gardiner, Martin and Sands filling the remaining seats on the Council, and unaffected by the reshuffle.

Further nominations for the vacant Offices must (Rule 15) be made in writing and signed by at least two members. Nominations for seats on the Council other than Officers must be made in the same way by two members, but in addition may be made without notice at the meeting, when, if necessary, a ballot will be held.

1947 FIELD MEETINGS

Sunday, March 9th.

Eynsford, Kent

Leader: A. W. Cox, 16 Raymere Gardens, Plumstead, S.E.18; s.a.e. to leader for details.

Sunday, April 13th.

Northwood, Mddx.

Leader: F. H. Lyon. Meet outside Northwood Station (*not* Northwood Hills) on upside at 11.0 a.m. Train leaves Baker Street 10.10, arrives 10.51. Bring lunch; tea provided.

The Birmingham Natural History and Photographic Society has very kindly invited AES members in their area to join their field meetings. Details may be obtained from G. B. Manley, 72 Tenbury Road, Kings Heath, Birmingham 14.

NEW HONORARY MEMBERS

We have pleasure in announcing the election as Honorary Members of Hugh Main (AES No. 63) and Henry J. Turner (Editor of the *Entomologist's Record*).

CHANGES OF ADDRESS

Bennett, F. S. (1134*) to: 58 Beechmount Avenue, London W.7.
Coghill, K. J. (430) to: Bredon, The Grove, Rowlands Gill, Co. Durham.
Cousins, P. J. (901*) to: Westward, Arthur Road, Wokingham, Berks.
Currie, P. W. E. (977) to: 102 Burdon Lane, Belmont, Sutton, Surrey.
Ellis, B. W. (772*) to: 7 Lagrowda Terrace, St Just, Penzance, Cornwall.
Empson, D. W. (780) to: NAAS, 7 Redlands Road, Reading, Berks.
Horder, A. (85) to: 43 Cranston Street, Penicuik, Midlothian, Scotland.
King, A. R. (425) to: Walworth House, Thirlestaine Road, Cheltenham, Glos.
King, Capt. J. D. (485) to: 54 Hartley Old Road, Purley, Surrey.
Michaelson, Capt. C. H. (436) to: Blakeholme Farm, Newby Bridge, Ulverston, Lancs.

Morgan, H. G. (90) to: NAAS, Bracken Hill, Leigh Woods, Bristol 8.

Address Unknown—Bulletins sent to Capt. E. G. Toomer, R.A. (1054), at the address given in Bulletin 79, have been returned as "untraceable." We have no other address. Will any member who knows Capt. Toomer please contact Mr J. Cowley, Address Indexer, Holywell House, Edington, Bridgwater, Som.

Membership Total—955 subscribing members (6/2/1947).

WANTS AND EXCHANGES

B. A. COOPER (19), "Elater," 27 Spilsby Road, Boston, Lincs., is willing to collect S. Lincolnshire insects, particularly saltmarsh species, in exchange for Elaterid larvae or beetles, with data, from other parts of Britain, or of the world. Please write first.

SIR MURDOCH McLEOD (35), Culverlea House, Pennington, Lyminster, Hants., wants British and foreign Skippers (Hesperiidae). Full data essential. Exchange British Butterflies, or buy.

COMPETITIONS

The success of last year's Setting Competition, held at the Spring AES Exhibition, was such that it has been decided to hold a similar contest this year. There will this year be two classes, one for Lepidoptera and one for Other Orders. A first and a second prize will be awarded in each class, and members may enter for both classes, but shall not be eligible for two prizes. The competition will be held at the Society's Exhibition, which is to be held in London on Saturday, August 9th, 1947. Only insects set by the exhibitor during the twelve months preceding that meeting may be entered.

In judging the exhibits, the following points will be taken into consideration: condition of specimens; perfection in setting; full and neat data labelling; correct identification; the addition of notes of special interest; age of competitor. No extra credit will be given for the scarcity of the specimens exhibited. Yellow Underwings will be as valuable as Bath Whites—probably more so, as they can be in bred condition.

B. A. C.

An eight-drawer entomological cabinet has been offered to the Society as a prize for a Leaflet or Pamphlet for the Society to publish. The matter is thrown open to members for consideration. Details of the competition, time limit, etc., will be announced when details have been decided. An essential for any AES publication is that the work may be expected to have a moderate sale to members or outside. A longish period, say two years, to allow adequate time for research, will probably be allowed for preparation. What Leaflets do you think are still needed, and what are you prepared to work at?

MARCH MOTH-HUNTING

March properly begins the entomological year. Of course, you can collect the frail wind-blown Early Moth (*rupicaprarria*) off the hawthorn hedges in January, catch the Pale Brindled Beauty (*pedaria*) and Small Brindled Beauty (*hispidaria*) at light in February, and find the Spring Usher (*leucophaearia*) on the tree-trunks and the Dotted Border (*marginaria*) on the hedgerows as soon as there is the least breath of spring. But these are mere *hors d'œuvres*; in March the eager bughunter gets down to the main dish, which consists of sallowing, sugaring, collecting at light and sweeping for larvae.

The Quakers (*Orthosia*) will come to the "pussy-willows" as soon as they are properly in flower. It is important not to miss the female bushes, with their green flowers undusted with gold, as these often swarm with moths. The commonest visitors are Small Quaker (*pulverulenta*), Common Quaker (*stabilis*), Clouded Drab (*incerta*) and Hebrew Character (*gothica*). (Look out for the var. *gothicina* of the last species.) You may also get Lead-coloured Drab (*populeti*) and Powdered Quaker (*gracilis*), with the beautifully variable Twin-spotted Quaker (*munda*), which, however, often prefers sugar to sallow. Take care not to overlook the pretty little Blossom Underwing (*miniosa*), which by lamplight can be mistaken for *pulverulenta*. The Pine Beauty (*griseo-variegata*) and the White-marked (*leucographa*) are more local, but often common where they occur. The Orange Upper Wing (*croceago*) sometimes turns up at sallow and the hibernated females are well worth keeping for eggs.

The visitors to your sugar will include many hibernated species and if you want to breed these look out for the females; you can expect the Satellite (*satellitica*), Chestnuts (*vaccinii* and *ligula*) and the Herald (*libatrix*). The rare Dotted Chestnut (*rubiginea*) is a spring sugaring prize. The Tawny Pinion (*semitrunnea*), the Pale Pinion (*socia*) and the Grey Shoulder-knot (*ornitopus*) come to sugar as well as sawfly, and their females lay readily in captivity. Incidentally, points-free treacle is quite easy to get: borrow a few pints of molasses from a dairy-farmer! Don't forget to add a drop of rum to the warm treacle just before you put it on the trees.

Larva sweeping by night is most profitable in the spring and most of the larvae you take will give you little trouble, being nearly full-fed. A few hibernated larvae can be found by day, and those of the Ruby Tiger (*fuliginosa*) are well worth looking for if you want a bred species of this lovely little moth. Caterpillars of the Garden Tiger (*caja*) will also begin to feed in March if the weather is fairly warm.

On mild nights in March when there is a damp air, light attracts the Yellow-horned (*flavicornis*) in birchwoods, Frosted Green (*ridens*) and Oak Beauty (*strataria*) where there are oaks, and several Geometers, the Engrailed (*bistortata*), Mottled Grey (*multistrigaria*), Early Thorn (*bilunaria*) and the Purple Thorn (*tetralunaria*), which, however, is very local.

In early spring it is scarcely worth while to take out the net by day. The few butterflies on the wing are hibernators (Comma, Small Tortoiseshell, Red Admiral, Peacock and Brimstone) and are almost always in bad condition. The Small White and the Green-veined, the Speckled Wood and occasionally the Holly Blue, may appear before the end of March. But, generally speaking, a pillbox is all the collector need carry on his early spring walks, and he should keep his eye on the tree-trunks and fences for Oak Beauty (*strataria*)—low down on oak-trunks—Spring Usher (*leucophaearia*)—also on oaks, but conveniently at eye-level—March Moth (*aescularia*), Early Grey (*areola*)—which is fond of telegraph-poles—and Brindled Pug (*abbreviata*). Tree-trunks are also worth searching at night for the wingless females of

such species as Spring Usher, Dotted Border and Small Brindled Beauty, which can all be found *in cop.* within the first hour or two of darkness.

JOHN MOORE (156).

BEETLE COLLECTING IN SPRING

Spring and early summer is generally considered the best season for collecting this order. Beetles are, of course, to be taken throughout the year, but the beginning of April sees the collector really setting to work.

April is an excellent month for water beetles (*Hydradephaga* and *Palpicornia*) and many will be found now which become scarce or absent later in the year.

The curious little weevil *Tanyphyrus lemnae* which is attached to duckweed in ponds can be taken. Being very small and sluggish, it is easily overlooked among a mass of duckweed in the net. On warm days it may sometimes be obtained by sweeping grass growing out of the water in shallow ponds, and on their edges.

On sunny days, many species—especially Carabidae and Staphylinidae—will be seen running on bare ground, or found by overturning stones in all situations.

Pebbles on banks of streams will nearly always yield many kinds of *Anchomenus* and *Bembidium* in large numbers, and many kinds of Staphylinidae will be seen running on muddy banks—especially of the genera *Stenus* and *Trogophloeus*, and *Dryops* (*Dryopidae*), while stamping on the banks will cause the species of *Heterocera* (*Heteroceridae*) to leave their burrows.

The first warm days of April are sure to arouse hoards of dung beetles to come forth from hibernation. Some of the species of *Aphodius* will be found swarming in the droppings or horses and cattle, while *Geotrupes* will be present in deep burrows beneath it and will need digging for. In the southern half of the country the much smaller *Anthophagi* may be taken locally. The species of *Cercyon* and its allies are sure to be seen in myriads, as well as numerous Staphylinidae. Most of the latter are extremely active, but *Staphylinus pubescens* often has a habit of remaining quite still when exposed in horse dung, and owing to its protective colouration is easily overlooked.

Perhaps the best month of the year is May, when, if the weather is reasonably warm, many good things may be taken.

Sweeping flowering hedge-sides and the borders of woods will yield beetles in profusion. Hedge-sides with an abundance of flowering hogweed (*Heracleum*) and hedge parsley (*Caucalis*) are most attractive. On road side verges near Huntingdon where this latter plant was in masses, I once swept a large number of the local little Longicorn *Phytoecia cylindrica* and also got *Oedemera nobilis* and *Malachius marginellus*. The masses of May blossom around woods are perhaps best of all. Many choice species, especially in the Elateridae, Longicornia, Heteromera and Curculionidae can thus be taken, and large areas of woodland such as the New Forest are especially good.

By beating hawthorn in woodlands in Northants, I have taken local beetles such as *Osphyra bipunctata*, *Ichnomera coerulea*, *Mordellistena abdominalis*, *Molorchus umbellatarum* and *Oppilo mollis*. Flowering dogwood, privet and wayfaring tree are also excellent.

Every kind of tree and plant will have its attendant beetles and nothing should be neglected when beating. Pines often produce numbers of bark-boring weevils, Coccinellidae and some small species of Heteromera, while *Molorchus minor* is often beaten from the dead branches.

Breaking up dead or decaying logs, branches and stumps often gives better results now than later on. Many pupae are sometimes found in April and early May. These should be carefully placed in a tin containing soft wood mould and kept under as natural conditions as possible. Care must be taken to keep them neither too dry nor yet too damp, lest mould ensue.

The examination of fungi is more often carried on in autumn than in spring, but the fine Anthribid beetle *Platyrhinus latirostris* is more common in April and May than later, and recently I have found many in Northants and elsewhere on *Daldinia concentrica*, a fungus growing on dead ash trees.

An excellent means of taking many good species in the latter half of May is by shaking the litter (the rotting remains of reeds, leaves and moss) which often covers the muddy

ground around margins of large lakes and reservoirs. This should be shaken over a beating tray or large piece of cloth. Around our Leicestershire reservoirs I have thus taken *Bembidium clarki*, *Bagous lutosus*, *B. limosus*, *Prasocuris phellandrii*, *Lathrobium quadratum* and *L. filiforme*, *Bryaxis longicornis* and *Reichenbachia forsulata*, while running on the mud I have taken *Anchomenus livens*, *A. viduus*, *Blethisa multipunctata*, *Chlaenius nigricornis*, *Stenolophus vespertinus* and many more.

Coastal sandhills are perhaps more productive in May and quite a number of interesting Heteromera and weevils can be found crawling among marram grass on warm days, while in many places the large weevil *Cleonus nebulosus* can be found on thistles or dislodged by shaking the plants and searching the ground beneath.

Much more could be said, but the above general and very incomplete remarks may perhaps be of use to the beginner in Coleoptera collecting.

D. TOZER (36).

OBSERVATIONS AFTER INSECTICIDE TRIALS

A most interesting article entitled "DDT and the balance of Nature," written by Dr V. B. Wigglesworth, Director of the Agricultural Research Council Unit of Insect Physiology, and Reader in Entomology at Cambridge University, is published in a recent issue of the *Atlantic Monthly* (Dec. 1945, pp. 107-113); it should be of interest to a great many of our members, not only for its exposition of the development and usefulness of this insecticide, but also for its wider implications and suggestions for studies by the amateur.

The problem of controlling pests by means of insecticides has for many years occupied the full attention of economic entomologists, chemists and insect physiologists, who have in rapid succession followed laboratory experiments by field trials and field trials by recommendations to the general public. For the most part this has led to no untoward economic consequences. But the discovery of more powerful and relatively cheap insecticides such as DDT and gammexane has thrown light on possible dangers of upsetting the

balance in a population between pests, parasites, and predators. It has already been shown that the spraying of DDT on to peach trees to kill the caterpillars of the Oriental Fruit Moth is even more effective in killing the parasite than the pest. "We know that DDT is not much good for killing the woolly aphid," says Dr Wigglesworth, "but it is a wonderful insecticide against the *Aphelinus* parasite that normally keeps the numbers of woolly aphid down. Already it has been observed that orchards containing woolly aphid, when they have been sprayed with DDT, have developed outbreaks of this pest such as had never been seen before."

"The same thing has happened with the fruit tree red spider. In orchards where this mite has normally been kept within reasonable bounds by the enemies that prey upon it, trees have been literally scarlet with the red spiders after being sprayed with DDT."

Now this sort of thing, of course, is at once spotted by the economic entomologist. But there may be other upsets of the balance of Nature resulting from the use of such insecticides in which he is not interested and consequently may overlook or, at least, fail to record. And this is where the amateur comes in. He, as a rule, is a student of a wide range of species, within an order even if not of all insect life, and he may be better placed to observe such changes as occur in a population that has been subjected to insecticidal unbalance. He can record what takes place to species of no economic importance, to the feeders on weeds and dead leaves, to the bark dwellers and burrowers in the soil, to the flies, moths and bees that chance to come in contact with the dusts or sprays. For ecological studies of this type may be of great scientific value.

"When DDT is applied to a small area of woodland it will not matter very much if almost complete destruction of insect life results: the area will soon be colonized again from the surrounding woods," writes Dr Wigglesworth. But will it? Many species may be able to do so, but by no means all can manage it, at least quickly. When a colony of the Large Blue Butterfly (*Maculinea arion*) has been exterminated, does it spread from surrounding colonies? Under most British circumstances, the answer is no. The same goes for

many beetles and members of other groups not active on the wing. By no means every suitable habitat contains the species that could survive there. It is for the amateur to increase our knowledge of the colonisation and spread of species by utilising the opportunity which such large-scale spraying may present him with (however lamentable he may regard such an event in his collecting preserves).

Another form of study may interest students of genetics. Where an area has been sterilised of a local species, absent from immediately surrounding areas, the very few survivors, or fewer colonists from outside, may tend to multiply subsequently (if the spraying is not repeated) till they approach or surpass their former numbers. If there is little competition a much larger proportion of each brood may survive than otherwise would, and variants which would otherwise be eliminated in the rigorous struggle for existence may survive to reproduce their kind. This should provide an opportunity, not only for the collector to discover unusual aberrations more commonly than hitherto, but also, if he has an eye for statistics, to carry out a most interesting ecological investigation. Spraying and dusting of orchards, forests and field crops are here to stay, whether we like them or not, and we must not be despondent and lose sight of the opportunities they provide.

B. A. COOPER.

28/10/1946.

REVIEW

Proceedings and Transactions of the South London Entomological and Natural History Society, 1945-46. (Published by the Society, pp. xxix. + 132 + 10 plain + 1 col. plate, 8½" × 5½", November 1946, 15/-.)

This issue is well up to the usual standard of the Society and contains another article illustrated with a coloured plate on the micros: "The Psychidae" by L. T. Ford. It should be possible by its aid to identify most of the males, but as all species are not illustrated it is a pity no key is given for identification. It is also a pity that the names given in the text do not agree with those on the plate, e.g., *Whittleia reticella* (text) is *Whittleia retiella* (plate)

and *Bankesia staintoni* (text) is *Talaeoporia staintoni* (plate). The notes on life history and times of appearance and distribution are good and will be of great value to anyone interested in this intriguing family.

Physiology of Insects (T. R. Eagles) contains just enough information to stimulate the amateur to further endeavour in this interesting subject.

Other articles in the issue are:—Some External Aspects of the bodies of Diptera (H. W. Andrews); Nature Rambles with a Camera (W. H. Spreadbury), which is illustrated with six very fine plates; The Louse in Literature (Leonard G. Hulls); On the Economy of the Oak Marble Gall (K. G. Blair); A War-time Visit to West Africa (Commander G. W. Harper); British Mosquitoes (E. W. Classey); Collecting Notes on the British Staphylinidae (H. R. Last); finally, there is a photograph and memorial notice of our late President, Mr F. D. Coote. From this imposing array of papers it will be seen that this issue contains something of interest to everyone and something to suit every taste.

B. O. C. GARDINER (225).

MAKING DO

"Utility" is still the watch-word, and "making do," therefore, as imperative as ever. Many items and materials in great demand remain unobtainable; so we have to improvise.

Good fabrics for breeding cages do not come the way of everyone, but quite passable stuff can be procured if one is prepared to look for it. I recently picked up, in a local market and for a very modest sum, one or two very handy pieces of muslin; while some old black chiffon, reluctantly discarded by a female relative, came in very handy, indeed, especially for replacing jar-covers. I find that *dark green or black* chiffon wants a lot of beating as a material for rearing receptacles. Usually it is durable and offers good visibility, although it bleaches when exposed to sunshine. For cages containing fair-sized larvae, medical gauze may fill a temporary gap; but it is not so durable, and holes soon appear when the material has stretched a little.

I do a lot of my breeding in jars. Most species take to them readily enough, and though some writers frown on their use, I find the results

satisfactory; indeed, some species do better in jars than in other containers. Condensation on the glass affords just the right amount of moisture; furthermore, one can see what is going on all the time. Very small jars may be used to house eggs or very young larvae; as the larvae grow they should be transferred to larger jars. Overcrowding *must* be avoided. Better have too few than too many in a jar.

Preserving jars are excellent for rearing both caterpillars and dragon-fly nymphs. Cover the tops with chiffon, muslin or gauze, held on by a ring of thick string; elastic bands are not a good idea as they may flick or snap in removing them and you may lose some of your larvae. To give added height to your jars, cross over two half ovals of hat wire and fasten the lower ends to the neck of the jar; these act as frames to support the fabric cover.

Meat-paste pots, small medical bottles and capsule phials, face-cream jars, scent bottles—these are just a few of the things I am using as food-plant containers. Sufficient cotton-wool or rag must be wrapped round the stems of the pabulum to prevent the larvae from falling into the water and drowning.

If using wooden or thick cardboard boxes for rearing caterpillars, cut out *at least* one side and substitute muslin or chiffon in its stead. Affix a piece of clear glass to the front and ensure light and visibility as well as fresh air.

I keep my cages and jars under the outside edge of a glass loggia facing north, and find that the insects thrive accordingly. They get sufficient sunshine and moisture, without an overdose of either.

PETER MICHAEL (748).

ABNORMAL EMPEROR COCOON

All moth collectors will be familiar with the "non-return valve" exit which the Emperor Moth (*S. pavonia*) larva spins into its cocoon. I find that one which spun last year in captivity has made a cocoon with a valve at each end. It would be interesting to hear if other members have come across this phenomenon. If exceptional, I will exhibit the cocoon on the next convenient occasion.

W. J. B. CROUCH (1181).

REARING THE ORANGE TIP

The young larvae of *Anthocharis cardamines* will devour any eggs of their own species with which they come into contact. They will also attack the pupae when they are soft, and eat holes through them. Not more than two or three should be kept together. Personally I have never succeeded in rearing more than a small number of this species owing to its cannibalistic habit. Mr Head, of Scarborough, who used to supply large numbers of pupae, told me that he kept the larvae in a large cage fifty feet square, containing the growing foodplant; we are not all able to erect cages of that size. however!

S. G. CASTLE RUSSELL (119).
(27/10/1946.)

STOP PRESS

A. SMITH (23), 23 First Avenue, Heworth, York, wants Joy's Beetles, 2 vols.; state price. Also the following insects: *neurica*, *musculosa*, *lucens*, *simulans*, *depuncta*, *achilleae*, *scoliaeformis*, *formicaeformis*, *flaviventris*, *centonalis*, *fascelina*, *viridata*, *humiliata*, *lapidata*; can offer other species in exchange, also micros.

P. J. GENT (192), 34 Castle Street, Wellingborough, Northants., is organising the collection of hints on distribution, collecting and rearing of Macros for incorporation into the new edition of Tutt's "Practical Hints." He asks for volunteers prepared to work through the manuscripts adding notes thereto, forwarding them promptly as soon as done with on to the next reader; hints on *breeding* each species particularly wanted. Offers only (not hints) should be sent to Mr Gent as soon as possible. All contributions will be fully acknowledged.

THE PARKINGTON ILLUMINATED MAGNIFIER—With reference to this apparatus, described by John Moore in Bulletin 81 (p. 93), leaflets giving further information can be obtained from the Hon. Sec. of the AES, S. M. Hanson, 167 Gunnersbury Park, London, W.5. Members are particularly urged to send their orders to Mr Hanson, as by doing so they will be benefiting the Society. Two models are available: Battery type (as illustrated in Bul. 81):

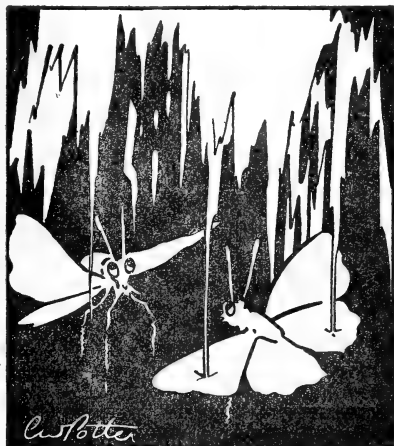
£3 3s, and transformer unit type, 200/230 volt A.C., at £4 13s.

URGENTLY WANTED by the Editor, for use in the "Coleopterist's Handbook," photographs of beetle habitats, varying from distant views (hills, moors, lakes, marshes, sand-dunes, quarries, riversides) to more-restricted places (woods, ponds, pools, shrubs, attractive flowers, flood-refuse, dung, carrion, fungi, shingle, rotten wood, peeling bark, mole-hills, birds' nests, ants' nests), and any other situations in which beetles breed, collect or hide. Also any other photos of interest to beetle-students, apparatus, parasites or predators, ova, larvae, pupae or adults, photomicrographs, etc. Write to B. A. COOPER, "Elater," 27 Spilsby Road, Boston, Lincs., who would like to hear from any member with a camera who would be prepared to snap particular habitats later in the season.

SWALLOWTAILS

A CORRECTION—For 1946 read 1945.

Contributions for the Bulletin should be sent to B. O. C. GARDINER, 34a Storey's Way, Cambridge.



" We really ought to have gone South this winter—I never bargained for fuel cuts in this kind of weather."



The Amateur Entomologists' Society

MEETING NOTICE No. 5

AN ENTOMOLOGICAL FILM SHOW

will be held (electricity cuts permitting) at Kodak Hall, Headstone Drive, Wealdstone, Harrow, Middx., at 2.30 p.m. on the afternoon of Saturday, March 8th, 1947.

**ADMISSION FREE:
VISITORS INVITED**

How to Get There

HARROW AND WEALDSTONE STATION (LMS and Bakerloo from Broad St., Euston, Willesden Junct. and Elephant and Castle).

158 to Wealdstone (five mins. ride).

HARROW ON THE HILL STATION (Metropolitan Line from Baker Street), thence by buses 114 and

RAYNERS LANE STATION (Piccadilly Line from Arnos Grove), thence 230 bus to door.

Bus 18 also runs to Wealdstone from Wembley and Edgware.

THE FILMS

will be selected from the following:—

LIFE ON THE WESTERN MARSHES. A natural history colour film of the marshes of West Canada.

ARACHNIDA. External features of the body followed by a study of the habits including different methods of web building and catching food.

LIFE CYCLE OF THE SAWFLY. Shows the life cycle from the laying of the eggs between the leaf to the final emergence of the adult insect.

DRAGONFLIES. Life cycle.

THE EMPEROR MOTH. Complete life cycle. The making of the cocoon shown in detail.

LOOPER CATERPILLARS. Shows the camouflage used by caterpillars to conceal themselves. The shedding of the skin and turning into pupa and finally appearing as a moth.

VEGETABLE INSECTS. A new Canadian colour film on insect pests.

THE APHIS. A study of Green and Black Fly.

DECIDUOUS BEETLES.

THE BLOWFLY. Shows the complete life cycle from egg laying to the emergence of the adult insect.

BEEES. A new Russian film.

The AES are indebted to:—

The Kodak Entomological Society,
The Kodak Works Photographic Society,

and Mr D. Stewart of The Council of the Scientific Film Association for making this Show possible.



AES MEETINGS IN 1947

In this issue we publish the fixture list of this year's AES meetings. It is hoped that these will be well attended both by the experienced and by the novice so that the one may take hints in the best technique from the other. In particular, as fixtures, and invitations to the meetings of others, now cover a wide area, it is hoped that members on holiday, or coming from a distance, will avail themselves of the arrangements—meetings of distant entomologists cannot be too many, and, with field meetings in the past being arranged by *local* societies, most collecting friendships, except among specialists, have rather tended to be parochial. Visitors are invited to all meetings.

Members in the Birmingham area are reminded that they are invited by the Birmingham N.H. and P. Society to join in their outings. Details may be obtained from G. B. Manley, Hon. Sec., 72 Tenbury Road, Kings Heath, Birmingham 14.

Members are invited by the London Natural History Society to join in the survey of Bookham Common on the second Sunday in each month.

Members interested in field meetings in Hampshire are invited to communicate with Mr R. W. Watson, South Haven, Stanley Road, Lymington, Hants.

Members interested in field meetings in the Cambridge area are invited to communicate with B. O. C. Gardiner, 34a Storeys Way, Cambridge.

The 1947 Congress of the South Eastern Union of Scientific Societies will be held at Brighton, 14th-19th July 1947, under the presidency of Prof. F. Balfour-Browne, F.R.S.E. AES members are invited to attend. Details from Hon. Gen. Sec., H. M. Montford, 23 Mountside, Guildford, Surrey.

April 13—Northwood, Mddx.

May 4—Canvey Island, Essex.

„ 10—Puckham Woods, Glos.

- May 10—Batchworth Heath, Herts.
„ 11—Hebden Valley, Yorks.
„ 11—Farningham Woods, Kent.
„ 17—Temple Newsam, Yorks.
„ 17—City Bombed Site, London.
„ 18—Petts Wood, Kent.
„ 18—Hackhurst Downs, Surrey.
„ 24—Lydney, Glos.
„ 25—Wrotham, Kent.
„ 25—Quy Fen, Cambridge.
- June 1—Skipwith Common, Yorks.
„ 1—Warley, Essex.
„ 1—Brighton, Sussex.
„ 4—Whixall Moss, Shropshire.
„ 8—Bookham Common, Surrey.
„ 8—St Albans District, Herts.
„ 8—Wendover Hills, Bucks.
„ 14—Cranham Woods, Glos.
„ 22—Apiary of Twickenham and Thames Valley Beekeepers' Association, Isleworth, Mddx.
„ 25—Mr Ballinger's Butterfly Farm, London.
„ 28—City Bombed Site, London.
„ 29—Copse Wood, Mddx.
„ 29—Hainault Forest, Essex.
- July 6—Sheerness, Kent.
„ 13—Hodgemoor Wood, Bucks.
„ 14-19—Seuss Congress, Brighton, Sussex.
„ 19—Leverstock Green, Herts.
„ 20—Hatfield Forest, Essex.
„ 20—Wrotham, Kent.
„ 23—Mr Newman's Butterfly Farm, Kent.
- July 27—Farningham Woods, Kent.
- Aug. 2—Widford and Wareside, Herts.
„ 3—Halling, Kent.
„ 9—AES Annual Exhibition, London (indoors).
„ 10—Blackheath, near Guildford, Surrey.
„ 24—Little Blakenham, Suffolk.
„ 31—Epping, Essex.
- Sept. 7—Orford, Kent.

Members desiring to attend field meetings may obtain complete list, with all particulars, on application to Mrs J. M. Adams, 43 Merchland Road, New Eltham S.E.9., enclosing 2½d stamp for reply.

PRACTICAL HINTS

During the war, Dr E. A. Cockayne, Dr D. A. B. MacNicol and Sir Murdoch McLeod put in a great deal of work in compiling into a single volume, species by species, the hints given in J. W. Tutt's "Practical Hints for the Field Lepidopterist" (1901-8). These have now been typed out and await the incorporation of further additions which members may be able to contribute. It is particularly desired to add notes on rearing each species in captivity, on pairing the adults, on obtaining full quotas of eggs, on feeding, hibernating and pupation, and on obtaining satisfactory emergences. It is also hoped to enrol compilers who have access to sets of one or more of the entomological periodicals, who will add suitable hints from these, and so increase the usefulness of the work. Offers to assist, or contributions for inclusion, should be sent to P. J. Gent, 34 Castle Street, Wellingborough, Northants.

Introductory chapters are to deal with the use and making of apparatus, collecting and rearing technique, mounting, books and papers of reference, and experimental studies of interest to the amateur. Both drawings, or ideas for drawings or cartoons, and photographs, are also much in need. Can you help in any way? Please help to make this a first-rate issue by letting us have anything of practical value to the amateur student of the Lepidoptera.

BEOWULF A. COOPER.

(8/9/1946.)

WANTS AND EXCHANGES

J. K. GOODY (954*), Weldon, Carr Wood Road, Bramhall, Ches., wants books by Ditmars and E. W. Teale, also books dealing with Orchids, Cacti and greenhouse plants. Offers Joy's *British Beetles* and books on biology. Wanted also:—Orchids, Cacti, and other foreign plants, Slow-worms and Grass snakes, for cash or exchange.

JAMES A. RANGER (1002*), 54 Cherry Crescent, Brentford, Middx., has 150 named Canadian moths in papers, with full data for exchange. Wanted named butterflies from any country except Great Britain and N. America.

DOUGLAS P. MOORE (1194), Sunnydell Cottage, Westcar Lane, Heresham, Surrey, wants pupae of Small Elephant Hawk (*D. porcellus*) and would like to get in touch with members, especially abroad, who could

supply him with ova of the rarer Hawk Moths:—*Convolvulus* (*H. convolvuli*), Spurge (*C. euphorbiae*), Bedstraw (*C. galii*), Striped (*C. livornica*), Silver-striped (*H. celerio*), and Oleander (*D. nerii*). Will buy or exchange.

F. FINCHER (1076), Randan Wood, Woodcote, Bromsgrove, Worcs., wants to buy the following books:—M. Burr, *Grasshoppers and their Allies*; W. J. Lucas, *Monograph of the British Orthoptera*; F. J. Killington, *Monograph of the British Neuroptera*.

J. A. ROBERTSON (224), 15 Bonnywell Road, Leigh, Lancs., wants Merrick's *Revised Handbook of British Lepidoptera*.

C. A. L. KENNARD (1192), 4 Cranstock Road, London S.E.6, desires to buy a book on Australian butterflies, e.g., *What Butterfly is That?* by G. E. Waterhouse.

N. W. HARWOOD (825), 37 Stoneyhurst Avenue, Acklam, Middlesbrough, Yorks., has for exchange larvae of Wood Tiger (*plantaginis*) and Northern Eggar (*callunae*), ready late April or early May; wants—larvae of Cream-spot Tiger (*villica*), Jersey Tiger (*quadripunctaria*) or other southern species.

B. A. COOPER (19), 27 Spilsby Road, Boston, Lincs., has for exchange *Life by the Seashore* (Dr Marion Newbigin, revised by Richard Elmhirst, 1931) and *A First German Course for Science Students* (H. G. Fiedler and F. E. Sandbach, 1942), both in perfect condition. Wanted—*The Insect Legion* (Burr), *The Variation of Animals in Nature* (Robson and Richards), *Principles of Insect Morphology* (Snodgrass), *Bees, Wasps, Ants and Allied Insects of British Isles* (Step). Exchange or buy. Also overseas and British Elateridae, especially living specimens of genus *Elater* (except *balteatus*).

P. T. BOWRING, The Tower House, Belle Vue Road, Exmouth, Devon, has E. B. Ford's "Butterflies" for exchange.

J. H. JOHNSON (1040), 53 Knighton Street, Hephthorne Lane, near Chesterfield, has the following books for sale or exchange:—Bentham and Hooker, *Handbook of the British Flora*; Fitch, *Illustrations of the British Flora*; J. H. Bell, *Methods of Moth Collecting*. Required:—Norman Joy, *British Beetles, their Homes and Habits*, and Fowler, *Coleoptera of the British Isles*.

R. TUCKER (1093*), 14 Mile Lane, Cheylesmore, Coventry, requires AES Bulletins 70 and 71 and larvae or pupae of the Magpie Moth (*A. grossulariata*).

RONALD C. ROOTS (1107), 41 Second Avenue, Chelmsford, Essex, would like to contact members interested in the regeneration of lost parts (Holo-morphism) in Insects, Mammals, etc., with a view to research.

W. J. B. CROUCH (1181), 5b Stanley Crescent, London W.11, hopes to have ova of Emperor Moth (*S. pavonia*), Ailanthus Silkmoth (*P. cynthia*) and wintered larvae of Oak Eggar (*L. quercus callunae*) (Cornish type) to exchange for ova or larvae of Eyed Hawk (*S. ocellata*), Privet Hawk (*S. ligustri*), Grass Eggar (*L. trifolii*), Small Eggar (*E. lanestris*), Kentish Glory (*E. versicolora*), or some exotic moth.

L. S. HODSON (851), Littlestowe, Essendon, Herts. (phone: Essendon 384), would like to get in touch with a collector to work the Hatfield-Hertford area, and occasionally other parts of Herts., for recording the butterflies and moths of this area to The Herts. Nat. Hist. Soc.

G. A. MAVROMOUSTAKIS, 232 St Andrew's Street, Limassol, Cyprus, is ready to supply insect collections of all orders from Cyprus. He is particularly interested in bees.

DOUGLAS C. FERGUSON, Box 617, Armdale P.O., Halifax, Nova Scotia, Canada, wishes to obtain good specimens of British Lepidoptera, either by purchase or exchange for N. American Lepidoptera. He is particularly interested in the butterflies, Sphingidae, Saturniidae, Arctiidae, Notodontidae and the genus *Catocala*.

CHANGES OF ADDRESS

S. G. and T. Q. Abell (76 and 787*) to: 121 Thornbury Road, Isleworth, Mddx. J. P. T. Boorman (702*) to: 20 Park Road, Wallington, Surrey. Field Club, Royal Naval College (822+) to: Dartmouth, Devon (Hon. Sec.: N. R. Hall). F. Fincher (1076) to: Randan Wood, Woodcote, Bromsgrove, Wores. R. L. E. Ford (527) to: 51 Parkhill Road, Bexley, Kent. C. J. Harding (894) to: The County School, Llandrindod Wells, Radnorshire. P. Harwood (273) to: Ardinch, Kincaig, Inverness-shire. Mrs Vonta D. P. Hynes (686) to: 152 Meachem Avenue, Battle Creek, Mich., U.S.A. J. A. Keji (571) to: Biggs Memorial Hospital, Ithaca,

N.Y., U.S.A. D. Martin (1126): to Forester Training School, Park End, Lydney, Glos. W. L. Rudland (249) to: 16 Mansfield Road, Reading, Berks. L. W. Siggs (243) to: 5 Grove Road, Pontnewynydd, Pontypool, Mon. M. Scott-Upton (1023*) to: c/o Mr A. E. Taylor, 178 Oxlade Drive, New Farm, Brisbane, Queensland, Australia. J. R. Wager (181) to: 704 Coventry Road, Small Heath, Birmingham 10. A. T. Wilks (984) to: 7 All Saints Road, Gloucester.

Membership Total—979 subscribing members (28/2/1947).

APRIL MOTH HUNTING.

As I write this, the season looks like being a very late one; though it is astonishing how quickly a mild spell will restore the seasonal balance and bring out, only a few days later than their normal time, the species which are already formed within their pupae. But this won't be much good for larvae until well into April and sweeping won't be worth while in the early part of the month—it will be difficult to find the herbage to sweep!

There are very few day-flying species out in April, and a net is scarcely needed unless you want to catch Orangetips (*A. cardamines*) (they appear about the 15th in Southern England), the Whites (*Pieridae*), Holly Blues (*C. argiolus*), or hibernated Vanessids. Comma Butterflies (*P. c-album*) are worth taking for eggs if you want to breed a series—caterpillars are very easy to rear on red currant.

A number of hibernated moths also repay keeping for ova, e.g. the very variable Marbled Tortrix (*S. revayana*), Autumn Green Carpet (*C. miata*), Buttoned Snout (*H. rostralis*), Pale Pinion (*L. socia*), Red Sword Grass (*C. vetusta*), Red Green Carpet (*C. siterata*), which can sometimes be obtained from the willows.

Tree trunk searching is good for the sharp-eyed. On the trunks in April you may find Brindled Beauty (*L. hirtaria*)—often plentiful in London Parks and sometimes found in cop—Barred Umber (*A. pulveraria*), generally sitting low down on oaks, Marbled Pug (*E. irriguata*), Mottled Grey (*M. multistrigaria*). The latter comes to light (males only). In addition you may see at night Purple Thorn (*S. tetralunaria*), Shoulder Stripe (*A. badiata*) (which may also be found by searching wild rose bushes after dark), Frosted Green

(*P. ridens*), and Scarce Prominent (*O. carmelita*). The sallows, of course, will provide the usual Quakers (*Orthosia*) as long as they are attractive.

There are a few rare and local species which are well worth searching for in April. Silver Cloud (*X. conspicillaris*) may turn out to be more frequent than is generally believed in the triangle formed by Gloucestershire, Worcestershire, and Herefordshire. It likes to sit on palings; Malvern is a good locality. Incidentally its food-plant doesn't seem to be known with absolute certainty. On the coast, in the north-west and in some Scottish islands, Belted Beauty (*N. zonaria*) is locally abundant, and at Rannoch you may find Netted Mountain (*F. carbonaria*), Rannoch Brindled Beauty (*P. lapponaria*) and Rannoch Sprawler (*B. nebeculosa*). Kentish Glory (*E. versicolora*) flies by day, very locally, in certain birch woods. Wyre Forest, in Worcestershire, is a place where I have often taken it. The males can, as a rule, be assembled to a freshly-hatched female, and if she happens to be a Scottish lass (most of the pupae sold by the dealers are Scottish) they will be equally pleased. Unless you have a female to attract them they are almost impossible to catch, except perhaps by a person who can do the hundred yards in ten seconds through birch scrub on a steep hillside! Orange Underwing (*B. parthenias*) is often found with Kentish Glory (and is out at the same time) but it flies very high and to catch a good series you need to be not only a sprinter but a giant. Light Orange Underwing (*B. notha*) is another high flyer and is found where there is plenty of Aspen.

Larvae, as I said, are likely to be late; but there are two interesting species which may be found by searching on honeysuckle—White Admiral (*L. camilla*) and Broad-bordered Bee Hawk (*H. fuciformis*)—and the honeysuckle is one of the earliest shrubs to unfold its leaves.

JOHN MOORE (156).

QUERY

Can any member tell me how to prevent, or at least to retard, the fading and yellowing of the green pigments of the Emeralds (Geometridae, Hemiteinae)? DR D. A. B. MACNICOL.

TETRIX SUBULATA IN MDDX.

JAMES A. RANGER (1002*) took two female specimens of the Orthopteron *Tetrix subulata* at Osterley, Mddx. Neither Lucas nor Burr record this species from this county, and Mr Ranger would be glad to hear of further Middlesex records of this species.

JUST PUBLISHED

LABEL LIST OF BRITISH BUTTERFLIES, giving scientific and English names of British Rhopalocera (Pamphlet No. 6). Price 4d post-free; 2/6 per dozen.

LEAFLET No. 19 — CARDED BEETLES WITH BALSAM-MOUNTED GENITALIA, by B. A. Cooper (2 pp., 2 figs., 4d post-free).

All published AES Leaflets and Pamphlet No. 2 (The Amateur's Library), one copy of each, a total of 100 pages and 11 plates. Price 5/- post-free.

These and other AES PUBLICATIONS and DATA LABELS from C. BIGNELL PRATT, 1 West Ham Lane, London, E.15. Remittance with order please.

ADVERTISEMENTS

ENTOMOLOGICAL SUPPLIES—Store Boxes, Setting Boards, Pins, Nets, set specimens of British Lepidoptera. List free. J. WARD (L. Tatchell), 6 High Street, Swanage, Dorset.

FOR SALE (or Exchange)—Poplar Hawk: Ova 9d, Larvae 2/- and 3/-. Eyed Hawk: Ova 1/-, Larvae 2/- and 3/6. Lime Hawk: Ova, 1/-, Larvae 2/- and 3/6. Lappet Moth: Larvae 3/-. Emperor Moth: Ova 1/3, Larvae 2/- and 3/6. Puss Moth: Ova 9d, Larvae 1/9 and 3/-. Ailanthus Silkmoth: Ova 1/6, Larvae 2/6 and 4/6. Robin Moth: Ova 2/6, Larvae 4/- and 7/-. All prices per dozen. Post free. A. J. DAVIES, 17 Copse Hill, London S.W.20.

FOR SALE—Two second-hand Insect Cabinets, good condition; one 12-drawer, 17" x 15"; one 8-drawer, 16 $\frac{1}{4}$ " x 10". Both air-tight lifting glazed frames. R. C. EDWARDS, Arlesey, Westerham, Kent.



EDITORIAL

AGM—Owing to the electricity cuts, the Annual General Meeting of the Society was held at Harrow on March 8th at 3 p.m., before the film show instead of after it, as advertised. The business proceeded as outlined in the agenda given in Bulletin 83 (p. 101), with the exception that Mr M. H. Port was elected Youth Secretary in place of Mr N. T. Easton, who had asked not to be nominated for this post. The remaining nominees were elected *en bloc*. Our member, Mr P. C. LeMasurier, Chartered Accountant, very kindly offered to audit the Society's accounts for the past year free of charge. Many interesting films were shown at the succeeding film show, which lasted about two hours. Owing to the disastrous weather, attendance was lower than had been anticipated, at about 70 members and visitors.

1000 MEMBERS—As we go to press we receive word from Mr Hanson, the new Secretary, that we have now, after deducting recent resignations, passed the thousand mark. We believe that we are the first entomological society in Britain to achieve this distinction, and we hope that our growth and influence will not end there. We shall still be glad of offers of aid from members in many directions to help forward our activities.

1947 SUBSCRIPTION—The period of grace allowed for receipt of the current year's subscription has now expired, and we would remind those few members who are still behind that subs., as well as donations, should be sent to G. B. HODGES, Assistant Treasurer, c/o Westminster Bank, Braintree, Essex. If publications are ordered at the same time, remittances should be sent to C. B. PRATT, 1 West Ham Lane, London E.15. We have an ambitious publication programme for this year, and shall need all the support we can get to carry it through. It would be of assistance if those wishing to resign their membership this year would drop a p.c. to Mr S. M. Hanson, 167

Gunnerbury Park, London W.5 to say so.

BEOWULF A. COOPER.
BRIAN O. C. GARDINER.

(4/4/1947)

ERRATA

The following errors in AES *Pamphlets* Nos. 4 and 5 have been pointed out, and will be corrected in an erratum slip now in the press for incorporation in all remaining copies, and sent to those who have already purchased the volumes.

P. 14, species 4-6, *Aporophyla* is wrongly spelt *Aporophila*; p. 18, *Citria lutea*, should bear South's name "Pink-Barred Sallow" in addition to that given; p. 32, the species *Aegeria sphaeciformis* Schiff. (White-Barred Clearwing) should follow *A. scoliaeformis* (Chestnut-Tailed Clearwing).

CHANGES OF ADDRESS

S. Dexter (847) to: Rosevean, Constantine Bay, near Padstow, Cornwall. A. J. H. Duke (97) to: 86 Strubens Road, Mowbray, Cape Town, S. Africa. Dr P. A. Gorer (676) to: Flat 44, Abbey Lodge, Park Road, London N.W.8. G. B. Hodges (314) to: 12 London Road, Braintree, Essex. Flt./Lt. D. Hutchison (919) to: 68 Muirhall Road, Larbert, Stirlingshire. Dr J. Leclercq (1055) to: Laboratoires de Biochimie de l'Université de Liège, 17 Place Delcour, Liège, Belgium. I. S. Menzies (585) to: Eden Roc, Florida Road, Ferring-by-Sea, Sussex. R. A. Powell (1091) to: 226 Coatham Road, Redcar, Yorks. F. Raw (1064) to: N.A.A.S., Bracken Hill, Leigh Woods, Bristol 8. S. F. Roberts (216) to: 29 Holliers Hill, Bexhill-on-Sea, Sussex. D. J. (922*) and L. W. (243) Siggs to: 5 Grove Road, Pontnewynydd, Pontypool, Mon. Miss S. Symmons (623) to: c/o Natural History Dept., Marischal College, Aberdeen. E. Thompson (1208) to: 15 Coal Pit Lane, Carlinghow, Batley, Yorks.

Corrections to Bulletin 79—J. H. Johnson (1040), in address, for Hei-

thorne Lane, read Hephthorne Lane. Miss M. Outhwick (792) should be Miss M. D. Southwick.

Address Unknown—Lieut. G. A. F. Rands (879). We have no other address than that given in *Bull.* 79, from which letters have been returned by the G.P.O. Will any member able to help, please contact Mr J. Cowley, Holywell House, Edington, Bridgewater, Som.

Death of Honorary Member—We greatly regret to announce the death on March 20th of our Honorary Member, Mr H. W. Head, aged 81. Our sympathy goes out to his wife and niece. We hope to include an obituary notice in the annual *Journal*.

Membership Total—1004 subscribing members (31/3/1947).

WANTS AND EXCHANGES

K. H. BOBE (912), 182 Kings-ground, London S.E.9, would like to obtain *living* females of the following butterflies:—Scotch Argus (*E. aethiops*); Mountain Ringlet (*E. epiphron*); Large Heath (*C. tullia*); Brown Argus (*A. agestis artaxerxes*); Chequered Skipper (*C. palaemon*).

F. S. DYSON (1247*), Meadow View, Meadow Lane, Long Eaton, Notts., would like to exchange H. F. Barnes' *Gall Midges* (2 vols.) for any book on Beetles.

A. POW (39), 63 Sharphill Road, Saltcoats, Ayrshire, is anxious to obtain second-hand microscope slides of entomological and botanical subjects.

W. J. B. CROUCH (1181), 5B Stanley Crescent, London W.11, wishes to enlist the co-operation of members and school groups to provide him with accurate data on the larvae of the Emperor Moth (*Saturnia pavonia*): (1) names of foodplants on which larvae are found feeding in the wild; (2) foodplants accepted in captivity; (3) relative numbers of each wart-type larvae found feeding on any plant given under (1); (4) numbers of each wart-type larvae reared from any one pairing. The three wart-types he distinguishes as (a) pink or heliotrope, including all the shades of heather flowers, very rarely being so deep a purple as to merit the term "blackish"; (b) yellow, varying to green-yellow on the one hand and brownish on the other; (c) white. He would be pleased to correspond with any members interested in this species in any way.

D. S. S. STEUART (1224), 11 Charlotte Street, Perth, Scotland, wants to purchase larvae of the following Hawk Moths, British or Foreign:—*Convolvulus* (*S. convolvuli*), Oleander (*D. neri*), Privet (*S. ligustri*), Lime (*M. tiliae*), Poplar (*S. populi*), Eyed (*S. ocellatus*), Elephant (*C. elpenor*), Small Elephant (*C. porcellus*); also of Garden Tiger (*A. caja*) and larvae or pupae of Cream-Spot Tiger (*A. villica*).

N. M. BAILEY (1230), 33 Parliament Street, Bury, Lancs., wants South's *Butterflies of the British Isles* and Longfield's *Dragonflies of the British Isles*.

SINCLAIR SWANSON (1034), Keiss Village, Wick, Caithness, has for exchange larvae of Northern Eggar (*L. quercus callunae*) and other Northern species. Wanted:—Early stages of many Southern species (please send list).

E. CARTWRIGHT TIMMS (547), 524a Moseley Road, Birmingham 12, requires a few specimens of *Stomoxys calcitrans*, male and female. Will exchange with Syrphidae.

P. S. MURDY (979), 193 Coombe Lane, West Wimbledon, S.W.20, wishes to purchase F. W. Frohawk's *Complete Book of British Butterflies*, good photos of British butterflies, and a 30-40 drawer mahogany cabinet.

M. SPELMAN (624), 2781 Grand Concourse, New York 58, N.Y., U.S.A., wants Seitz, *Macrolepidoptera of the World*, vol. ix; C. Antram, *Butterflies of India*, and G. A. Waterhouse, *What Butterfly is That?* Will buy or exchange for North and South American butterflies.

BEEKEEPING NOTES

The weather of the past year has brought disaster to many beekeepers. From all over the country have come reports of losses through starvation. On the Moors many colonies were lost in August, and many more have suffered since as a result of their then losing all the brood, meaning that many of the bees going into winter would already be ageing. I hope that after last year's experience more food will be left on the hives, or even fed to them, as a safety measure before the bees are transported to the Moors.

I am collecting information on the effect of last summer's scarcity of pollen and nectar, and the exceptionally long period of confinement to the

hive through snow this winter, on individual colonies, and would appreciate it if members would send me details on the behaviour of hives of their acquaintance, thus: Strength of colony on last autumn examination; approx. date of this; was queen breeding then? amount of natural food in hive; amount of syrup fed; was candy used as a supplement? was artificial pollen fed this spring? age of queen; colour of bees (dark or yellow); if dysentery has occurred; if acarine disease present in district, and whether this has increased or diminished; if it is present, what treatment was used, when, and degree of success; percentage of winter losses; condition of stock at first examination this spring. If not a beekeeper yourself, no doubt you will have a competent beekeeper in your district who will help you to be as accurate as possible. There is still a lot to be learnt in beekeeping. My address is 23 Woodlands Grove, Harrogate, Yorks.

Have you ever thought of keeping bees? The fear of being stung is usually the greatest deterrent, but once you have taken the plunge you soon get over that. I was scared stiff when I started, but bees are not usually aggressive if handled properly.

Buy a good guide book: the one by W. Herrod Hempsall (*The Beekeeper's Guide to the management of bees in movable comb hives*, 1943) is very good and the price is only 4/-. Read it. Read it again. Join your local Beekeepers' Association; I expect there will be one in or near your district. Attend lectures and demonstrations and meet other beekeepers there. They, like entomologists, are very helpful fellows and when you get your bees will help you to stand on your own feet.

There is a lot of research work in connection with beekeeping just waiting for the keen entomologist. What about it? Remember you are an entomologist and possibly your knowledge will give you an advantage over many beekeepers. The latter need more naturalists in their ranks.

D. M. JESPER (1152).

OVIPOSITION OF THE WOOD WHITE

On 2nd June 1945 I caught several female *Leptidea sinapis* at Newent, Glos., and brought them home alive in

pill-boxes. This species does not batter itself about if placed in a pill-box, as has been generally supposed, that is, provided the box is kept reasonably still. On June 4th I placed nine females out in a cage (the same cage as that used for *M. stelararum*) with a quantity of the yellow meadow pea (*Lathyrus pratensis*), which is very similar to the tuberous pea (*L. montanus*) on which this species usually deposits. Before placing them in the cage I had fed them on syrup by uncoiling their proboscides and placing the tips in dilute sugar solution, while they were settled on the table. Within the next two days they laid over 60 eggs. I found it a good plan to sprinkle the netting of the cage with the sugar solution; the butterflies could be seen feeding on the drops whenever the sun shone. Care must be taken, however, not to spray the food-plant, for if the solution gets on the eggs it is liable to kill them. In this case I did get the solution on some of the eggs, with the result that only 30 hatched.

Sunshine is very necessary if butterflies are required to lay. As long as the cage is well aerated it may safely be placed in full sunshine. But this is a very unwise procedure if the cage has any glass sides, as it will get overheated. It is best not to use a cage with glass sides at all.

I consider that it is always worth while trying to obtain eggs from even a scarce butterfly or moth, if I happen to obtain a female. If I fail I lose one specimen; if I succeed I will usually gain many specimens in first-class condition—but I don't mean with species such as *L. arion*, where you have to introduce the larvae to a formicarium!

IAN S. MENZIES (585*).

COUSIN GERMAN MOTH

The larva of this moth (*Triphaena sobrina*) may be found during May in its Scottish haunts by searching small birch bushes at night, in sheltered places at 700-750 feet altitude. Clumps of bushes 3-6 feet high, growing among heather, are best, but it also occurs on bushes in thick woods. It is usually found feeding 2-3 feet from the ground, and in May is in its last or last-but-one instar. Many are ichneumonated.

DR D. A. B. MACNICOL (67).

GLANVILLE FRITILLARY

A notice by N. D. Riley, Secretary of the Committee for the Protection of British Insects, in our contemporaries calls for the protection of *Melitaea cinxia* (Glanville Fritillary), which only exists in restricted areas on our South Coast, particularly the Isle of Wight. The Committee earnestly desires that the practice of collecting and removing larvae of this species in numbers to distant parts of the country must be discontinued. Although easy, this collection of caterpillars is a source of extreme danger to the continued existence of the insect in these islands, since larvae if taken small are difficult to rear and, in any case, the surplus imagines cannot reproduce their kind unless liberated in their chosen localities. If entomologists are desirous of breeding the insect in numbers they should arrange for this to be carried out in the Isle of Wight, so that the perfect insects not required may be liberated on their breeding grounds. Doing so would go far to increase the numbers of this species, since the larvae would be protected from their enemies during a critical stage of their history.

B. A. C.

BREEDING THE MARSH FRITILLARY

When rearing young larvae emerged from hibernation, watch carefully for the appearance of ichneumons. If not destroyed either as larvae or pupae, they will pair and sting the *aurinia* larvae still feeding. Usually the ichneumon larvae emerge from, and pupate on, the body of the butterfly larvae, but occasionally wander and pupate in a crevice of the cage where they are difficult to see. There are almost certain to be stung larvae when collected from the wild and even when bred entirely in confinement, ichneumon flies will obtain entrance into cages when the doors are opened for feeding and other purposes. In fact the writer has seen them flying around his head when changing the foodplant.

The larvae of the butterfly will not commence to feed at once after hibernation, and appear to be content to warm themselves in the sun. They will feed equally well on devil's bit,

field and garden scabious, honey-suckle and snowberry, and should be kept out of doors in places where they can get the maximum of sunshine.

The larvae are sometimes subject to great mortality from disease which appears after pupation. At other times they are quite free from disease and a large percentage of imagines can be reared.

S. G. CASTLE RUSSELL (119).



"Sorry I can't come out collecting today, Frank. A new Label List has just come out. I must keep my collection up-to-date"

N.B.—"The Label List of British Butterflies" (4d), and "Label List of British Macrolepidoptera" (3/6) and the "Check List of British Macrolepidoptera" (1/6) are now ready. They are the best and most up-to-date lists obtainable. No lepidopterist should be without a copy.

ADVERTISEMENTS

Offers of goods for sale cannot be accepted for the free Exchanges section. Advertising rate: 1d per word, minimum 3/-.

LIVING OVA, LARVAE and PUPAE available throughout the year of British and foreign Lepidoptera. Write for list to: L. N. and R. N. BAXTER, 16 Bective Road, Forest Gate, London E.7.

FOR SALE—British Moths, J. W. Tutt; London's Natural History, R. S. R. Fitter; Butterflies and Moths in Britain, Vere Temple; Nature and Camera, O. G. Pike. — R. PHEBY, 45 Willrose Crescent, Abbey Wood, London S.E.2.

**THE AES EXHIBITION**

The L.C.C. have notified us that we shall be unable to have the Buckingham Gate hall for August 9th, as announced in Bull. 83, p. 102, and Bull. 84, p. 109. Instead, it will be held a fortnight earlier, on Saturday, July 26th, 1947. Copies of the notice advertising the meeting, for posting up in schools, etc., may be obtained from Mrs Adams.

WANTS AND EXCHANGES

F. W. GREENWOOD (1280), Solefields Lodge, Sevenoaks, Kent, has for exchange ova or larvae of *Notodonta ziczac* (Pebble Prominent).

P. R. PHEBEY, 45 Willrose Crescent, Abbey Wood, London S.E.2, has for exchange larvae of Twin-spotted Quaker (*O. munda*) and Yellow-horned Moth (*A. flavicornis*). Wanted:—Larvae of Oak (*L. quercus*) and Northern Eggar (*L. quercus callunae*) or pupae of other moths.

S. FRETWELL (1225), 121 Highbury Quadrant, Highbury, London N.5, would like to contact a nearby fellow-member interested in silk moths.

D. E. BALLINGER (88), 5 Canham Road, Acton, London W.3, wants for cash or exchange, ova, larvae and pupae of British Lepidoptera, larvae of Giant Silk Moths, and any foreign larvae.

JAMES A. RANGER (1002*), 54 Cherry Crescent, Brentford, Mddx., requires living or dead specimens, with full data, of Long-horned Grasshoppers (Tettigoniidae). Box and postage refunded, or state wants.

D. G. SHAPPIRO (1159*), 4811 Seventeenth Street N.W., Washington 11, D.C., U.S.A., desires wasps (Hymenoptera:—Vespoidea, Sphecoidea and Chryidoidea) of the world, for cash or exchange. He will collect other orders to exchange.

A. J. ROUDIER (1294), 27 Albert Road, Withington, Manchester 20, wants vols. 1-4 of the *AES Journal*.

P. R. PHEBEY, 45 Willrose Crescent, Abbey Wood, London S.E.2, has for exchange larvae of Ruby Tiger (*P. fuliginosa*); Emperor (*S. pavonia*); ova of Poplar Hawk (*L. populi*) and

Drinker Moth (*C. potatoria*). Wanted:—British Longicorns, or nearly full-grown larvae, or pupae of Lepidoptera.

M. LOCKE (1118*) has for exchange the following livestock:—*L. capucina* (Coxcomb Prom.), *N. ziczac* (Pebble Prom.), *D. vinula* (Puss), *L. populi* (Poplar Hawk), *S. ocellatus* (Eyed Hawk), *D. tiliae* (Lime Hawk), *B. roboraria* (Great Oak Beauty), *P. betularia* (Peppered), *L. hirtaria* (Brindled Beauty), *O. sambucaria* (Swallowtailed), *O. antiqua* (Vapourer) and large quantities of *S. pavonia* (Emperor Moth). Specimens not wanted in return, but help in re-establishing his stock when his National Service is completed is desired.

ERRATUM

An additional error in AES Pamphlets Nos. 4 and 5 has been pointed out, and is being incorporated in the printed erratum slip. Page 10, add after *E. griseola* the species: *Eilema lurideola* Zincken (Common Footman).

MEETINGS

Sunday, June 22nd.

Apiary at Isleworth, Mddx.

By kind permission of the Twickenham and Thames Valley Beekeepers' Association. At 3 p.m. in the garden of St Bridget's Rectory, Twickenham Road, Isleworth—37 bus from Richmond or Hounslow, 667 trolleybus from Hammersmith, Hampton Court and Twickenham, all pass the door. Bring a bee-veil (a large butterfly-net-bag and a wide-brimmed hat will do excellently). A full afternoon is promised with field laboratory complete with microscopes and microbiologist as well as possibly a lecturer on reasonable beekeeping. Tea obtainable.

THE PYRALIDAE

The Pyrales are a group of moths which tend to be neglected generally, being classed among the so-called Microlepidoptera. This is a great

pity. In size they are on the whole larger than the general run of Micros, Tineids and Tortrices, and the majority are quite as large as, and even larger than, many of the *Geometridae*, such as the Waves (*Sterrhinae*) and Pugs (*Eupithecia*). Identification is no more difficult, except perhaps in the case of the *Scopariinae*.

The beginner will often catch the Pyrales. Many are conspicuous, and are often to be seen in the daytime. These include most of the Pyraustidae, such as the Mother-of-Pearl (*N. ruralis*), which is frequently common on nettles, and the Purple and Gold (*P. aurata*), which is often common on thyme and mint, and flies in bright sun. Around ponds will be found the pretty China-Marks (*C. lemnata*) and (*N. nymphaeata*). These moths are extremely interesting, as they have larvae which live under water and feed on *Potamogeton* and other waterweeds.

Anyone who has walked through grass can hardly fail to have noticed the Grass Moths (Crambidae). They take short flights when disturbed, alighting on the grass-stems with the wings folded round the body in a typical manner.

Many of the Pyrales fly at dusk and in this way the Garden Pebble (*P. forficalis*) and Bordered Straw (*P. prunalis*) may be taken. The very beautiful Plume moths (*Pterophoridae*) also fly at dusk and the pure white plume moth (*P. pentadactyla*) can often be seen flitting ghost-like through the gardens and along grassy banks.

The Pyrales are one of the most important economic groups of the lepidoptera and one responsible for much damage. The Flour Moth (*E. kühniella*) and its allies are a great source of trouble to millers. The webs spun by the larvae clog up the machinery as well as spoiling the flour. The Indian meal moth (*Plodia interpunctella*) also causes much damage and loss. The Meal and Tabby moths (*Pyralis* and *Aglossa*) are also troublesome in stored products. Beekeepers are sometimes troubled by the wax moths (*G. mellonella* and *A. grisella*), whose larvae feed on the wax combs.

Perhaps one of the chief difficulties to the study of the Pyrales is the lack of a book dealing with them on the lines of "South." The beginner catches some of these moths and

proudly sets them; but, alas! when the time comes to name them he or she either finds no mention of them in South, or mere mention by name with a few species illustrated as in W. E. Kirby. He then gives them up in disgust and delegates them as micros. The Pyrales are an interesting and important group, and an up-to-date book on the lines of South is a great desideratum.

Of the books existing the following are useful:—E. Meyrick, *Revised Handbook of British Lepidoptera*. Fairly up to date and giving a complete dichotomous key, not only to the Pyrales but to all British Lepidoptera. It suffers from the fact that descriptions are brief, rather technical and difficult for a beginner to follow. J. Leech, *British Pyrales* (1886). Though out of date it contains hand-coloured plates of all species then known—it was also published with plain plates—and gives times of appearance and short descriptions of most larvae. J. W. Tutt, *Monograph of the British Pterophoridae* (?1890). Out of date but gives much miscellaneous information. H. E. Hinton, A. S. Corbet and W. H. T. Tams, *Insect Pests of Food* (1943). A Ministry of Food publication, being a reprint of two papers from *The Bulletin of Entomological Research and Proceedings of the Zoological Society of London* (B). Deals with all the economic species. Dichotomous key, detailed description of larvae, and plates and figures of wing venation and genitalia. W. van Deurs, *Der Pyralider* (1942). A recent Danish publication having black and white plates of some 120 of the 200 British species, but does not deal with the plume moths.

B. O. C. GARDINER (225).

THE YORKSHIRE NATURALISTS' TRUST

A body known as the Yorkshire Naturalists' Trust Limited has recently been formed to establish and maintain sanctuaries for the preservation of wild life, particularly of rare or unusual character. They have started well by benefiting from the generous gift of a large part of that historic collecting ground Askham Bog, and it is hoped to acquire further nature reserves as time goes on. Considerable funds will be needed to make possible the purchase and care

of all such property, and support is asked from every member of the public willing to become a Member of the Trust by payment of not less than £10 for Life Membership or not less than 10/- per annum for Ordinary Membership. We can heartily commend this worthy project to support by all members of the AES. Application forms, and copies of the Prospectus giving details of Askham Bog and its wild life, may be obtained from the Hon. Sec., Y. N. T., The Yorkshire Museum, York.

B. A. C.

SILKWORM ATTRACTANT

A note in the *C.I.O.S. Report*, 29: 35, on German Science, says that Dr Butenandt, of the Hygienisches Institut, Tübingen, has been working on the attractant secreted by the female Silkworm Moth (*Bombyx mori*). He has isolated this substance and finds it to be a fat-soluble nitrogen-free alcohol, readily soluble in petroleum ether.

It is absolutely specific to the one species of moth, and only one or two molecules are needed to stimulate the male of the same species, while even a high concentration has no effect on males of other species.

He believes that, physiologically, this is one of the most active compounds known, and hopes that, when the chemistry is cleared up, it will be possible, by minor chemical alterations, to produce substances specific for other species of moth.

HENRY G. MORGAN (90).

CADDISES AT FLOWERS

While collecting flies swarming round ivy blossom at Boxmoor, Herts., on 30/9/1946, a hot sunny day, I found a single male imago of *Limnophilus lunatus* Curtis. This was distinctly seen feeding on the flower's nectar. Previous records of caddises on definite plants would appear to be very scanty. McLachlan in his monograph (1874-80) states that the insects feed on nectar and are frequently taken at sugar. Döhler has shown that caddises which have fed on a diet of sugar solution live for a longer period of time than those fed on water alone. Mosely (*Brit. Cadd. Flies*, p. 7) mentions observing a French species sipping the nectar of a large gentian. Imms (*Gen. Textbook of Ent.*, p. 411) states that 'a few visit flowers' and that 'they have seldom been observed

in the act of feeding.' Much more would be known if entomologists would keep a watch for instances of feeding by caddises. I wish to thank Mr Whitehead for naming the specimen for me.

BERNARD VERDCOURT (899).

(Postscript — Several species of caddis, which had come to light at Alwoodley, Leeds, last autumn, were boxed under upturned tumbler. The first few lived less than 24 hours each, until I hit upon the plan of feeding water, which they would drink greedily, and live for several days on no further sustenance.—B. A. C.)

DDT AND THE INSECT COLLECTION

An article by Frank C. Fletcher with this title appears in *Ward's Natural Science Bulletin*, Vol. 20 (2), p. 32, November 1946. It describes the difficulty Ward's Natural Science Establishment experienced from pests, particularly Dermestid beetles, in their collections of dried insects, despite annual replenishment of the naphthalene and paradichlorobenzene in each storebox or drawer. In spite of these precautions, new infestations would be apparent in the course of a few months. This was especially noticeable towards the end of the war, when it was necessary to employ white tar naphthalene in place of the purer product formerly obtainable. The later substance is far less efficient as a repellent than the earlier.

During 1945 10% DDT solution was sprayed on walls and ceilings to control flies, and, as a considerable quantity of the liquid left over was sprayed inside the drying cabinet, on the tops and backs of the racks holding the drawers and boxes, and especially the space beneath the racks where, over a considerable period, much dust had accumulated, and where a permanent population of these pests must have been maintained. The following winter and spring no Dermestid infestations of any extent were discovered, and infested boxes were so few that the customary annual fumigation with paradichlorobenzene was dispensed with in the spring of 1946. Further laboratory experiments in the control of cabinet pests by DDT are now in progress at Massachusetts State College, under the direction of Dr H. L. Sweetman.

B. A. C.

JOYS OF COLLECTING

Taken all round I prefer day collecting to night collecting, since one can observe the beauties of Nature in general, and can observe the ways of the objects one studies. Its pleasures bring a feeling of content lacking from more specialised activities. In going over my collection in the winter evenings, the sight of each specimen brings back a memory of some small adventure—how in catching



one particular specimen I caught my foot in a rabbit hole and landed in some nettles (to the intense joy of my friend), or how another specimen was the sole capture on another day when I returned home wet through and chilled to the marrow. It is those little things of life that one enjoys remembering, and the collection serves but as the reminder. It is a great hobby, bughunting!

WALTER R. CALVERLEY (596).

JUST PUBLISHED

MEMBERS' NOTEPAPER—An improved design, headed with the AES emblem and the title: "From Member No. of the Amateur Entomologists' Society." 50 sheets, 2/6; 100 sheets, 3/9; 250 sheets, 7/6.

This, as well as other AES publications, gummed economy labels, data labels, etc., obtainable from C. B. PRATT, 1 West Ham Lane, London E.15.

LIST OF AES PUBLICATIONS—A new AES Prospectus and Illustrated List of Publications has just been issued. Send 1d stamp for copy. If specimen *Bulletin* and membership form required as well (e.g., for a prospective member), please send 3d in stamps to: R. R. BROOME, 47 Keswick Road, Boscombe, Bournemouth, Hants.

ADVERTISEMENT

OVA—Lime Hawk, 2/-; Elephant Hawk, 2/6; Poplar Hawk, 1/6; Privet Hawk, 3/-; Emperor, 2/-; Puss, 1/6. Priced per dozen.

LARVAE—Hop Dog, 3/6; Satin Moth, 3/6; Lappet, 6/-; Small Eggar, 5/-; Garden Tiger, 3/-; Scalloped Hazel, 2/6; Lackey, 2/6; Yellow Horned, 2/-; March Moth, 2/-; Pale Brindled Beauty, 2/6; Dusky Thorn, 2/-; December Moth, 2/-; Oak Beauty, 3/-; Pale Brindled Beauty (Melanic), 4/-; Gipsy Moth, 1/6; Silkworm, 1/6. Priced per dozen.

SECOND-HAND BOOKS—British Moths, by Newman, 2 volumes, 24/-; British Butterflies, by Newman, 1 volume, 12/6; The Biology of Insects (needs re-binding), by G. Carpenter, 7/6; Insects: Their Structure and Life, by G. Carpenter, 15/-; Diversions of a Naturalist, by Sir R. Lankester, 10/-.

SECOND-HAND APPARATUS—Zinc collecting boxes (small), 2 only, 2/6 each; zinc collecting boxes (medium), 2 only, 3/3 each; setting box (store box type), containing 10 oval boards, 21/-.

IN STOCK NOW—Polyporus Strip, 6d per packet, post 2½d; New Store Boxes, 10" x 8", 11/6, post 9d; New Store Boxes, 13" x 9", 14/6, post 9d. Post and packing—Ova, 3d; Larvae, 4d; Second-hand Books—prices include postage. Full lists on request.—**DENNIS E. BALLINGER**, Entomologist, The Cottage, 5 Canham Road, ACTON, W.3.



AES



No. 89

BULLETIN

JANUARY 1948

S O S FOR HELPERS

As members will have noticed, there have been unfortunate delays in the appearance of AES publications. This has been due, principally, to lack of helpers consequent upon the change of job, or reduction in spare time, of those freely giving of their leisure hours hitherto, and who hope to do so later when their affairs pick up. The Society is in need of helpers of all kinds, but especially so in the Editorial and Treasurer's departments. Have you any minutes, evenings or week-ends you might be able to spare to make our organisation watertight? If so, please drop a line to Mr S. M. Hanson, 167 Gunnersbury Park, London, W.5. On Editorial matters, offers to read proofs or contribute articles, reviews, drawings, photographs or other direct aid towards our publications, please write to B. A. Cooper, 27 Spilsby Road, Boston, Lincs. Thank you.

COUNCIL CHANGES

At the Council meeting of 25th October 1947, Mrs L. Cooper, 61 Okehampton Road, London, N.W.10, was appointed Hon. Treasurer in place of Mr D. H. Sterling, who is expecting to go overseas shortly. Mr S. M. Hanson, 167 Gunnersbury Park, London, W.5, was appointed Organiser in place of Mr B. A. Cooper, who has had to give up owing to business demands on his time. Mr E. Lewis, 8 Parry Road, London, S.E.25, was appointed Publications Despatch Organiser in place of Mr E. L. Martin, who resigned owing to pressure of other work.

BULLETIN EDITOR

At the Council Meeting of the AES of January 10th, the resignation of B. O. C. Gardiner from the post of Assistant (Bulletin) Editor was accepted with regret. Mr Gardiner has not at present the time to make a success of this publication, though he hopes to remain a frequent contributor. B. A. Cooper agreed to resume the Editorship of the Bulletin temporarily, until such times as a competent successor could be found, on the understanding that he will have lit-

tle or no time for AES work, for business reasons, during the summer months.

This is expounded at length to indicate the urgency of our need to find someone capable of giving this publication the attention it deserves. We have approached several members (and some non-members), but each has given the same answer—they would have liked to accept, but have not the time at the moment. Whom have we missed, who has sufficient experience, twelve-month-round enthusiasm and organising ability, and access to reference books or libraries?

We would prefer a lepidopterist with wide interests outside this order, a typewriter or access to one, and an attitude of great tolerance both towards the veriest novice and the most learned amongst us! We cannot hope to provide everything for everybody, but we must print something for everyone, even though space means that it has to be concise and rather severely pruned. Someone with access to London (for Council meetings) would be preferred, but, obviously, someone methodical and experienced elsewhere would be preferred to a Londoner whose issues were irregular and lacking in variety! Have we any offers? Perhaps anyone interested would communicate with Mr Cooper, 27 Spilsby Road, Boston, Lincs.

THE JOURNAL

The 1947 *Journal* and the annual *Membership List* and *List of Advisers* were late in going to press, and will be sent to all members early in 1948. Contributions for the *Bulletin* and all other AES publications, including photos and drawings, should be sent to B. A. Cooper, 27 Spilsby Road, Boston, Lincs. All kinds of articles are greatly needed.

1948 SUBSCRIPTION

The 1948 subscription (10/- Seniors, 5/- Juniors—members aged 17 or under on January 1st, 1948) is now due. As mentioned above, owing to unavoidable circumstances, some of the publications due to members under

their 1947 subscription are still in the press, and will be sent as soon as possible to all those who have paid their subscription for that year (even if they do not wish to remain members during 1948). Subscriptions should be sent to the Assistant Treasurer, G. B. HODGES, Westminster Bank, Braintree, Essex. Cheques, postal orders, etc., should be crossed and made payable to the Amateur Entomologists' Society. If publications are ordered at the same time, payment and order should be sent to C. B. PRATT, 1 West Ham Lane, London, E.15.

BEOWULF A. COOPER.

(11/1/1948).

AUSTRALIAN BRANCH OF THE AES

Our first Australian member, Mr K. D. Fairey, announces that he is trying to form an Australian branch of the Amateur Entomologists' Society. We see from the membership list that we now have several other members "on the other side," and we hope that contacts between us will continue to increase. Mr Fairey says that they intend to commence with the publication, as our English Society did, of duplicated *Bulletins*, and wish to reproduce some of the hints on apparatus and collecting technique from our own pages. We wish them success in their efforts, and hope that we may

be of more practical aid to them as time goes on. If any members can send Mr Fairey, Griffiths Street, Charlestown, N.S.W., Australia, the addresses of any Australian entomologists or others who might be interested in the Branch, he would be very grateful. The Council have also agreed to send Mr Fairey, for the use of the Branch, all AES publications, as they are issued, with permission for them to reproduce (with references) anything they wish therefrom. And we should be pleased to receive all their issues as they appear, as they may be able to teach us not a little.

SWISS ENTOMOLOGISTS

We have also added the Swiss organisation "Pro Juventute" to our list of recipients of our publications. Under the leadership of Dr R. Loeliger a junior organisation for the study of butterfly migration has been formed, and is issuing duplicated *Bulletins*, written in German, to its supporters. We hope to be able to quote from these in future issues. A great many members answered Dr Loeliger's request for correspondents (*Bulletin* 88), and these names have been passed on to him, though we fear that the list may include more names than he at present has correspondents for.

B. A. C.



"Don't bother with it now . . . we're only after butterflies on this trip." (Drawn by L. B. Clarke)

ANNUAL GENERAL MEETING

This will be held at 5 p.m., after the Exhibition, at Buckingham Gate Central Schools, Wilfred Street, S.W.1, on Saturday, March 20th. The agenda is as follows:—

- (1) Minutes of last AGM.
- (2) Election of Officers and Councillors to replace those retiring.
- (3) Election of Auditors.
- (4) Reports of Officers.
- (5) Any other business.

The following members have been nominated by the Council to fill the vacancies (marked *), caused by retirement or resignation, on the Council; the remainder are not due for re-election this year:—

OFFICERS:

President: H. K. Airy Shaw.
 Vice-Presidents: S. G. Abell and C. B. Pratt*.
 Secretary: S. M. Hanson.
 Editor: B. A. Cooper.
 Treasurer: Mrs L. Cooper*.
 Meetings Secretary: Mrs J. M. Adams*.
 Publicity Secretary: E. Lewis.
 Youth Secretary: M. H. Port.

EX-OFFICIO:

R. R. Broome (Assistant Publicity Secretary).
 B. J. L. Byerley.
 G. J. Cartwright*.
 W. J. B. Crotch*.
 D. Golding*.
 G. B. Hodges (Assistant Treasurer).
 G. R. Myall (Assistant (News) Editor).
 E. E. Syms.
 L. R. Tesch*.

Further nominations for any of the vacant offices must (Rule 15) be made in writing and signed by at least two members; nominations for seats on the Council other than Officers must be made in the same way by two members, but, in addition, may be made without notice at the meeting, when, if necessary, a ballot will be held.

ANNUAL REPORT FOR 1946

Upon my taking office as Treasurer at the beginning of 1946, it was decided to reorganise the system of accounting by AES officers, so that I should, at any instant, be able to give the Council a complete statement of income, expenditure, or cash in the bank. With the growth in size of the Society's membership, and the consequent handling of Society's funds by many more helpers, this had become increasingly difficult under the former system, with resultant delays both in the preparation of accounts for audit and the ability to authorise the Editor how much he might spend on blocks or printing at any particular time. Special accounting forms for both income and expenditure were printed, through the co-operation and generosity of Mr C. B. Pratt, and the claim forms will, no doubt, be familiar to those members who have incurred expenditure on the AES behalf when claiming refund. The new system is both simple to operate and based on sound present-day commercial practice, and should eliminate any hold-ups resulting from future changes in the office of Hon. Treasurer.

It was also decided to present this year's financial accounts in a much more complete and detailed form than hitherto, for the guidance of the Council in planning its future operations. Space does not permit of the publication of the whole report, the most important excerpts from which are, however, given below. Previous years' accounts (c.f. the 1945 report, *AES Bulletin*, No. 81, January 1947, pp. 85-86) were presented in the form of a receipts and expenditure account; while this was satisfactory during our early days, it did not give a full picture of our whole position, as it included no balance-sheet; and as we are publishing largely on credit—spending more during the year than we had in the bank at any moment during that time—a complete balance-sheet was necessary to avoid our overspending our income. The present balance-sheet includes the items of stock in hand, sundry creditors (printing supplied but not yet paid for), subscriptions paid in advance, and payments in advance (deposits for printing not yet supplied to the Society), not shown hitherto, and should enable a true picture to be formed of our exact position.

RECEIPTS AND PAYMENTS ACCOUNT

for the year ended 31st December 1946

RECEIPTS

Cash at bank (1st January 1946)	£187 8 6
Cash in hand	27 17 2
Subscriptions, 1946	155 11 5
Subscriptions, 1947	45 0 2
Subscriptions, 1948 (and onwards)	4 10 0
Publications	212 16 2
Postages prepaid	6 0 11
Advertising (sales)	7 18 5
Donations	63 4 4
Trustee A/cc.	27 0 3

 £737 7 4

Balance, b/d. (Cash at bank, 1st
January 1947) £194 19 7

PAYMENTS

Publications	£361 3 1
Postages	80 3 8
Advertising (including blocks and Questionnaire re Direc- tory of Natural History Societies)	41 2 3
Stationery	51 16 3
Exhibitions	6 10 0
Outward Subscriptions	1 2 6
General (cheque book)	0 10 0

 £542 7 9

Balance, c/d. being cash at
bank, 31st December 1946) ... 194 19 7

 £737 7 4
INCOME AND EXPENDITURE ACCOUNT

for the year ended 31st December 1946

EXPENDITURE

Stock of Publications and Sta- tionery at 1st January 1946	£252 1 10
Postages, Carriage, etc.	79 2 0
Blocks	35 5 10
Stationery	47 8 7
Exhibitions	6 10 0
Outward Subscriptions	1 2 6

 £421 10 9

Balance, transferred to General
Income and Expenditure
Account 308 15 9

 £730 6 6
INCOME

Subscriptions:—	
Received in 1945	£10 12 6
Received in 1946	155 11 5
	£166 3 11
Donations	63 4 4
Publications	212 16 2
General	29 8 9

 £471 13 2

Stock of Publications and Sta-
tionery at 31st December 1946 258 13 4

 £730 6 6
BALANCE SHEET AS AT 31st DECEMBER 1946**LIABILITIES**

General Income and Expendi- ture Accounts	£308 15 9
Sundry Creditors:—	
T. Buncl & Co. Ltd.	92 7 3
Subscriptions Paid in advance:—	
1947	£46 10 2
1948, etc.	7 10 0
	54 0 2

 £455 3 2
ASSETS

Cash at Bank	£194 19 7
Cash in hand	—
Sundry Debtors:—	
D. H. Sterling	£0 17 2
C. B. Pratt	0 13 1
	1 10 3
Stock valued at cost:—	
Publications	£217 14 4
Stationery	41 9 0
	258 13 4

 £455 3 2

Audited and found correct.
19/4/1947.

(Signed) P. LEMASURIER
(Chartered Accountant).

COMPARISON, 1945 AND 1946

It will be seen that, although the cash at bank and in hand now stands at £194 19s 7d, against £215 5s 8d a year before, the Society is in a very much firmer position. This is due to the fact that no *Journals* or *Hand-books* were published in 1946, and the bills for Vols. 7 and 8 of the *Journal*,

still outstanding on December 31st, 1945, have been paid during the year. The Society's assets as at 31st December 1946 exceeded liabilities to the extent of £308 15s 9d, a position £177 11s 2d better than that shown at the corresponding date in 1945:—

	As at 31st Dec. 1945.	As at 31st Dec. 1946.
Cash at bank and in hand	£215 5 8	£194 19 7
Stock (publications, at cost price) £248 6 2		
Stock (stationery) 1 15 8		
Stock (type) 2 0 0		
	£252 1 10	
Less sundry creditors:—		
T. Buncle & Co. Ltd. £186 18 4		
C. A. Brock Ltd. 190 11 0		
Expenses to officers 0 11 4		
	£378 0 8	
Less subscriptions paid in advance	252 1 10	258 13 4
	£467 7 6	£453 12 11
Plus deposits (payments in advance)		
	378 0 8	92 7 3
	£89 6 10	£361 5 8
	15 2 6	54 0 2
Plus Peacetime AES Trustee Fund	£74 4 4	£307 5 6
	30 0 0	1 10 3
	£104 4 4	£308 15 9
	27 0 3	
	£131 4 7	131 4 7
		£177 11 2

The funds of the Pre-war Society, placed in deposit account in 1939, under the Trusteeship of Dr G. V. Bull and N. D. Riley, had increased from £26 2s 3d (the figure given in Bulletin 81) to £27 0s 3d, and are now again incorporated in the general funds (Receipts and Payments A/cc.).

Although the year has shown a marking time as far as the issue of new publications is concerned, the standard of *Bulletins* issued has been maintained, and the arrears of the previous year's two large publications has been made up. The increased subscription for 1947, though it may result in some falling off in membership initially, should ensure that finances remain on a sound basis in these times of inflation.

It is with regret that I have, for business reasons, to relinquish the post of Hon. Treasurer, which Lieut. D. H. Sterling, R.A.P.C., has agreed to take over temporarily, although, as he is eligible for posting overseas, the Society is still hoping to find a member, with considerable experience of accounting, who could undertake

this more permanently. I wish also to thank Major B. Gullick for his constant assistance and the preparation of the accounts, and Mr P. Lemasurier, who conducted the audit.

R. S. FERRY.

(26/6/1947)

THE ANNUAL REPORT, 1946, GENERAL STATISTICS

This year 1946 was a full twelve-month year, and compares with the nine-month year of 1945, due to the revision of the Society's financial year consequent upon the introduction of the new Constitution.

During the period, members received 8 *Bulletins*, totalling 84 pages (pp. 1-84), against 5 *Bulletins* of 66 pages the year before. Exchange notices numbered 83, against 50 in 1945. No *Journals* were issued during the year (two the year before), as well as 4 *Leaflets* (Nos. 4, 8, 15 and 18), of which there were 2 the year before, and one *Pamphlet* (No. 3), against none in 1945.

The total subscribing membership rose from 613 to 918 (450-613 in 1945), the largest increase we have yet experienced. During the year 343 new members joined, against 184 the year before.

Two Exhibitions were held in London (only one in 1945), the March meeting being devoted to apparatus and technique, and the September one being primarily for the exhibition of specimens; 24 meetings were held, a great increase over the 4 of 1945.

The great increase in membership has meant a considerable increase in the work involved to all helpers, from the Hon. Secretary in enrolling them, the addressors who send out the *Bulletins* down to the Advisory Panel who answer their enquiries. Our thanks are more than ever due to all officers and helpers, therefore, without whom we could not carry on. Our main worry, that we have not enough helpers, we hope will sort itself out, and we do, once more, appeal for any kind of assistance that members can give.

BROWLIE A. COOPER (Hon. Organiser).
(6/3/1947)

ESSAY COMPETITIONS

I. — FOR JUNIORS

The AES Council has decided to offer an annual prize of one guinea for the best essay written by a Junior Member, on a subject to be chosen by the Council. If the essays are of sufficient merit, further prizes may be awarded.

The essay should average 600-750 words in length. The author should indicate his age, as this will be weighed in the judging; other points which will be considered are:—

Interest aroused in the reader.

Technical correctness.

Literary merits.

The subject for 1948 is "My Best Day in the Field." Entries should be submitted by not later than 31st December 1948 to the Youth Secretary, 31 Pinner View, Harrow, Middx.

M. H. PORT.

II. — FOR ALL AGES

The AES is also holding an essay competition open to entomologists of all ages. The subject is an essay of 6000 to 8000 words, suitable for publication as a Leaflet, on the "Conservation of Insect Life in

Britain." Its purpose is to outline present-day trends in the extermination of insect habitats by urban development, cultivation, felling, mining and drainage, and to point out the need for action to safeguard our already small list of rich areas. It should discuss the dangers, through overcollecting, to individual species, quoting instances from the past of insects wiped out in habitats in which they were once common. It should discuss the various organisations which are participating in the work of Protection, and refer to the principal reports where fuller information may be gleaned. It should be written in a style that may appeal to all entomologists, and should endeavour both to warn the careless collector and stimulate and guide the individual into taking what action he can to safeguard the future. By encouraging collecting, the AES holds a big responsibility to all naturalists to ensure that our heritage is respected; it is our duty to see that a knowledge of conservation is made more widespread than in the past.

As a first prize, Mrs Burt, in memory of her son, G. Burt, killed in September 1945, is offering a nine-drawer entomological cabinet; as second prize, W. R. Calverley is offering a copy, in new condition, of C. B. Williams' "The Migration of Butterflies" (Oliver and Boyd, 21s). If the standard of contributions is high enough, further prizes may be awarded by the Society. It is hoped to publish a Leaflet, illustrated by photographs and drawings or graphs, from the winning essay, or from excerpts of the essays submitted. The closing date for contributions, which should be sent to B. A. Cooper, 27 Spilsby Road, Boston, Lincs., is December 31st 1948. B. A. C.

FIELD MEETINGS

1947 ————— 1948

During 1947 AES members had the opportunity of attending any of the 42 Field Meetings announced in the *Bulletin* and held between May 4th and September 28th.

In spite of the fact that many members showed their interest by applying to the Meetings Secretary for complete lists, the outings were usually poorly attended. This is attributed to the fact that in the majority of cases each leader had to be approached separately for details.

To obviate this difficulty next year, it has been decided to ask leaders of field meetings to give only the place, date and time of meeting. As these must be published early for the convenience of all, it will be impossible to give train times and other details, and members will have to rely on their own resources.

The Council of the AES does feel that outdoor meetings should form a vital part of the activities of any Society interested in Natural History, so those who would care to go out with a few other entomologists are earnestly asked to communicate with the Meetings Secretary, Mrs J. M. Adams, 43 Merchland Rd., London, S.E.9, preferably during February or at latest during March.

J. M. ADAMS.

CHANGES OF ADDRESS

(up to 15th October 1947)

- Bailey, N. M. (1230) to: Hill Crest, Ash Grove, Limefield, Bury, Lancs.
- Bird, P. F. (896) to: 9 Highbury Villas, Cotham, Bristol, 2.
- Bobe, K. H. (912) to: 19 Hengist Road, London, S.E.12.
- Brandham, B. F. (1227*) to: 14 Veda Road, London, S.E.13.
- Britton, Mrs L. M. (108) to: 10 Sandringham Road, Parkstone, Dorset.
- Bullock, J. A. (1158*) to: 43 Leyborne Park, Kew Gardens, Richmond, Surrey.
- Dutton, P. W. (1268*) to: Ashcroft, Malvern Road, Staunton, near Gloucester.
- Empson, D. W. (780) to: N.A.A.S., Chiltern Court, St Peter's Avenue, Caversham, Reading, Berks.
- Flint, J. F. (778*) to: 42 Glenleigh Park Road, Bexhill-on-Sea, Sussex.
- Fraser, A. (1262) to: The Haven Annexe, Marine Parade, Tankerton, Kent.
- Freeman, J. A. (986) to: 41 Cumberland Road, Bromley, Kent.
- Heath, J. (836) to: 117 Ditton Fields, Cambridge.
- Hincks, W. D. (531) to: 19 Whitefield, Heaton Norris, Stockport, Ches.
- James, R. T. H. (626) to: Grove Cottage, Chute Cadley, Andover, Hants.
- Jarvis, C. MacKechnie (650) to: 50 Adelaide Square, Bedford.
- Jones, C. Garrett (989) to: 6 Pembroke Court, Edwardes Square, London, W.8.
- Kelly, Miss D. (1190*) to: 17 Kelvin Court, Kensington Park Road, London, W.11.
- Kennard, C. H. L. (1192*) to: 79 Macleay Street, Potts Point, Sydney, N.S.W., Australia.
- Kerrich, G. J. (551) to: Heath Crest, Westcott, Dorking, Surrey.
- Le Fleming, Miss W. M. (1105) to: 73 Warwick Road, London, S.W.5.
- Lewis, Rev. E. S. (373) to: Berwyn, Rhuddlan, Flintshire.
- Lorimer, Dr J. A. (576) to: Roycroft, King's Avenue, Buckhurst Hill, Essex.
- Lyon, F. H. (1026) to: Great Bradley, Withypool, Minehead, Som.
- Molyneux, W. Hunking- (1297) to: Greenhill, Afonwen, Caerwys, Flintshire.
- O'Farrell, A. F. (58) to: New England University College, Armidale, N.S.W., Australia.
- Page, Miss B. (1321) to: The Gables, Cookham Dean, Berks.
- Parfitt, R. W. (525) to: 4 Brind Park Terrace, Sandhurst, Camberley, Surrey.
- Ramsden, E. (130) to: Flat No. 1, Glenburn, Calverley Lane, Horsforth, near Leeds.
- Roudier, A. J. (1294) to: 6 Square Georges Lesage, Paris 12e, France.
- Sargent, H. B. (1189) to: Rose Cottage, Breage, Helston, Cornwall.
- Scott, D. B. (656) to: Westhaven, Drummochy, Largo, Fife.
- Shappirio, D. G. (1159) to: Greene House, East Quadrangle, Ann Arbor, Mich., U.S.A.
- Shuffrey, A. L. (990) to: 3 Hillside Cottages, Leverstock Green, Hemel Hempstead, Herts.
- Sherlock, R. J. (606) to: Stentwood House, Dunkeswell, near Honiton, Devon.
- Tailby, S. R. (636), to: 32 Greenfield Avenue, Tolworth, Surrey.
- Talbot, M. J. R. (384) to: Froyle Place, Alton, Hants.
- Trimmer, J. (495) to: Brocksford Hall, Doveridge, Derbyshire.
- Walker, Dr J. A. (843) to: Highfield House, Hillfield, Cheddar, Som.
- Wedmore, E. B. (1153) to: 68 Brassey Avenue, Hampden Park, Eastbourne, Sussex.
- Wharry, C. D. L. (1265) to: 35 Wetherby Mansions, Earls Court Square, London, S.W.5.
- Wild, E. H. (867) to: 28 York Road, Selsdon, Surrey.

THE DORMANT SEASON

Winter need not be the season of inactivity for the collector and breeder that it is for many of us. Although outside activity is at its minimum, there are a great many indoor jobs which must be done now to save time during the busy season. The long period of sojourning indoors, with bad weather and bad colds, can have a wonderfully stimulating effect on our energy and enthusiasm when spring again takes us out into the woods and moors; the time we have spent in reading and planning, in studying the collections of others and in contacting fellow spirits, cannot fail to bear fruit in increased skill and knowledge, and the utilisation of opportunities which might otherwise have been missed.

The Past Year's Collection—The happy days of last summer are not over when the year's harvest is moved off the setting-boards into the store-box. There are bound to be specimens that we are a little uncertain about as to their identity, or others that we have left to label up during the off-season. Every specimen, in good or bad condition, if it is worth keeping, should be labelled with date and place of capture (including county) before putting into the collection. If bred, the name of the foodplant is often useful. Many collectors like to include their own name and initials, so that they can in later years recognise their own exchanges in other people's collections or in museums. All this data should be written in Indian ink on a small neat label beneath the specimen, and not solely in a notebook, with only a numeral to recognise the specimen by. Printed data labels, such as supplied by the AFS, increase the speed and neatness of labelling, and should be ordered well before the season begins.

Doubtful Specimens—The novice is bound to have some specimens about which he is doubtful as to their species. More often than not he has one or two wrongly named, which will only be noticed when his knowledge increases, or when another collector spots them. Contact with other collectors and visits to museums will remedy this as mere reading can never do. But even the more experienced collector may have his problem captures. Before publishing any record as new to a district, the captor should take great care to ensure that

its identity is beyond doubt. This is not always easy, particularly among the less studied orders. With the Lepidoptera an examination of the genitalia will often confirm a doubtful point. The books by F. N. Pierce and his associates are well illustrated and should decide the issue with nearly every species. With males, the technique of brushing off the scales at the tip of the abdomen, described by W. H. T. Tams in the *Amateur Entomologist*, Vol. 5, pp. 1-20, should be all that is required. With the females it is more usually necessary to make a permanent balsam preparation, as described on pp. 33-38 of the same issue. Of the moths regarded by South as single species and now known to consist of two or more species, those most usually wrongly named in collections are the Marbled Minor (*Procus strigilis*), Flounced Rustic (*Luperina testacea*), the Ear Moth (*Hydraecia oculea* = *nictitans*), Brown-veined Wainscot (*Nonagria dissoluta*), Marbled Clover (*Heliothis dipsacea*), The Lead Belle (*Ortholitha mucronata* = *plumbaria*), Treble Bar (*Anaitis plagiata*), Common Marbled Carpet (*Dysstroma truncata*), Grey Pine Carpet (*Thera obeliscata*), November Moth (*Oporinia dilutata*), Sharp-Angled Carpet (*Eunhyia unangulata*), The Engrailed (*Ectromis bistortata*) and the Currant Clearwing (*Aegeria tipuliformis*). If you have any of these species in your collection it may well be that you have another, more recently discovered, species in your series as well, and it would certainly repay you to consult Mr Tams's article to make sure. Dr F. A. Cockayne, in the same issue, discusses the habits and distribution of these twin species (pp. 21-30), which are also illustrated by drawings and photographs. Much has still to be learnt about the range, in Britain, of many of these interesting moths.

Pests—No collection will remain free of insect or mould pests for long unless steps are taken to protect it. Pest-tight cabinets and storeboxes do not give an absolute protection, as the pests can be introduced on specimens straight off the setting-boards, or on insects obtained by exchange. If pests are present, pour on to the cork of the container a saturated solution of naphthalene in benzene (or other solvent), and close the box up for several days. This may be repeated later in case any unhatched eggs have been missed. Every

box should be replenished regularly—preferably oftener than every winter—with a supply of paradichlorobenzene crystals (PDB), or this substance melted together with naphthalene (which evaporates more slowly). The “Mytins” sold by the AES serve the same purpose. The use of a DDT spray is very helpful against ingress of museum beetles and clothes moths, but will not kill their larvae, or mites or mould. Mouldy specimens can be cured by painting with a solution of carbolic acid dissolved in spirit, but if the infection is bad it is often better to start anew. Prevention, by keeping the cabinets in a dry place, replacing the lids of boxes as soon as specimens to be examined have been taken out, and by removing any specimens as soon as they show signs of attack, is the only satisfactory remedy. I am told that it is most difficult by any means to keep clear of mould when one lives in a prefab! Dimethyl phthallate (DMP) is claimed to be an excellent miticide and insecticide, but I have as yet no reports as to its utility in the insect collection. Such notes would be most welcome in our pages.

Apparatus—Now is the time to mend torn nets and broken cages, and to buy or get ready any new apparatus for the busy season. Home-made apparatus has its drawbacks, but I always found it paid to save money on apparatus that could be made and to spend it on those items that I could not make or borrow satisfactorily. In the essential category I regard good reference books and well-fitting storeboxes. Other needfuls that should be laid in before the commencement of the season are a sufficient supply of pins and setting boards, a hand-lens and setting tape, printed data labels, nets, sweepnets and beating trays.

Foodplants—Now is the time to prepare your food-supply for the next breeding season. Those with gardens should now order their stock of thornless blackberries, for sleeving, or violets for potting-up, or *Buddleia variabilis*, to attract next year's migrants. This last should be in every lepidopterist's garden. It is not too late to take cuttings from poplar or willow or ivy, or to divide up the Michaelmas Daisy. It will be too late to bemoan your lack of feedingstuffs when your Elephant-Hawk larvae are just beginning to hatch!

Outdoors there is not a lot to be done now. Flood-refuse and sifted leaf-mould or moss can repay the collector of beetles and bugs, and, for the lepidopterist, pupa-digging has its bright moments—if one is lucky. In fine weather, exploring woodland paths and sheep-tracks can be most stimulating, and often enables one to make better use of the warmer days to come. And when it's wet, the companionship of another collector or a book and the fireside can conjure up visions of the joys of the chase or the thrill of a new capture in the net!

B. A. C.

(11/1/1948)

HONEYBEES IN 1947

I have been able to prepare the following notes, as a sequel to my article in the May issue (*Bulletin* 85, p. 114), from observations kindly sent me by members, as well as from Beekeepers' Association sources.

The two main causes of loss during the winter of 1946-47 were, first, lack of young bees for overwintering, and, secondly, lack of food. With some exceptions, colonies with young queens came through better than those with old ones. Many colonies died out despite ample stores, suggesting lack of breeding the previous autumn. District losses varied, but were greater in the North than in the South.

In my own district (Harrogate), losses were about equal between bees kept in WBC hives and National hives. Losses from acarine disease were probably more serious than beekeepers realised. Losses were also caused by mice, snow, floods, and particularly by carelessness in leaving queen excluders in position during the winter, thus causing the queen to remain below, starving, when the bees migrated upwards for food.

The only case of dysentery that I investigated was due to acarine disease.

Where all the summer honey was left on and the sugar supplement was fed in the autumn, the bees came through well. Bees wintered best on a brood chamber plus a shallow super, or, where the food supply was adequate, on a double brood chamber.

It will be seen that although the wet summer and autumn, followed by the severe winter, were responsible for some losses, improper beekeeping was at least as great a cause of loss. Much could have been avoided if only

the beekeeper had thought a little more about the welfare of his bees, and taken the simple precautions set out in any guide book.

Colonies which wintered built up well in the late spring, but a lot were too weak in condition to take advantage of the first nectar flow. The earliest information I have of a swarm is May 13th, at Long Sutton, Hants. Swarming was very prevalent, at least in the North, this past summer, and Nature has refilled a lot of empty hives. The season up to August was below normal in the North, but the heather honey crop was exceptionally good, takes of 100-200 lbs. of honey per colony from the heather alone being quite common. The fruit and sycamore crop here was good, but the bees were too weak on the whole to take proper advantage of the favourable conditions. The clover flow was spoilt by a cold week when the flowers were at their best, and when the weather changed for the better the flowers did not yield nectar abundantly. Elsewhere in the country the drought severely reduced honey yields from the later crops.

D. M. JESPER (1152).

POISONING OF HONEYBEES

The poisoning of honeybees by sprays and dusts is becoming a menace to beekeepers in many areas as a result of the increasing use of insecticides and weedkillers on farms and gardens. Poisoning may occur when (1) fruit blossom is sprayed against insect pests; (2) certain chemicals are used in the control of weeds (especially when charlock is in flower); (3) cruciferous crops, and particularly mustard, are grown for seed and sprayed or dusted with insecticides while they are in flower.

An attempt is now being made by the Bee Research Department of Rothamsted Experimental Station, in collaboration with the Bee Advisory Department of the National Agricultural Advisory Service (Ministry of Agriculture and Fisheries) to determine the incidence of honeybee poisoning in England and Wales, and the co-operation of beekeepers and other entomologists is greatly desired.

Diagnosis—The following points may serve as a useful guide in diagnosing bee poisoning:—(a) The sudden loss of large numbers of flying bees is often indicated, on opening the hive, by the presence of an unusually

high proportion of brood to bees; some of this brood may be chilled; (b) the sudden appearance of large numbers of dead and crawling bees in front of the hive may indicate that toxic substances have been used near the apiary and poisoned pollen is being brought into the hive; dead brood may be present in the hive.

Procedure—When serious symptoms are noticed, the case should be reported as soon as possible to the Chief Bee Advisory Officer, N.A.A.S., Rothamsted Lodge, Hatching Green, Harpenden, Herts., giving as detailed information as possible. This should include the exact location, the number of colonies affected, and any information on the use of toxic sprays or dusts in the neighbourhood with the dates of application and weather conditions (if these can be ascertained). If possible, a large sample of dead or crawling bees (at least a hundred) should be sent, with a piece of dead brood, if any is present.

It would be appreciated in very serious cases if immediate notification could be made by telephone to Harpenden 4056. The importance of giving as much information as possible with the minimum of delay cannot be overemphasised. When possible, a visit will be made to the apiary site.

WANTS AND EXCHANGES

DR E. A. COCKAYNE (238), 8 High Street, Tring, Herts., requires pupae of the Purple Thorn (*Selenia tetralunaria*) for experimental work. Cash or exchange.

DEREK A. ASHWELL (223), 34 North Street, Bishops Stortford, Herts., requires pupae of the reddish-brown variety of the Peppered Moth (*Pachys betularia*). Offered:—Hibernated larvae of Magpie Moth (*Abraxas grossulariata*) which will give a proportion of females of var. *lacticolor* and possibly var. *varleyata* in either sex and var. *exquisita* females.

T. G. BLAKE (1376), 20 Crown Lane, Streatham Common, S.W.16, has Stick Insect ova to exchange for Butterflies and Moths.

B. O. C. GARDINER (225), 34A Storeys Way, Cambridge, wants *Insects and Climate* by B. P. Uvarov; *Genitalia of the Pyralids* by Pierce and Metcalf; *Revised Handbook of British Lepidoptera* by E. Meyrick; *Histological and Illustrative Methods for Entomologists* by H. Eltringham.

Will buy or exchange other books. Please state wants.

P. G. TAYLOR (719), 51 Woodland Drive, Watford, Herts., will give twice published price for *A Moth Hunter's Gossip* by P. B. M. Allan (in new condition). Also wanted, *AES Bulletins* 32-63 and *AES* publications prior to Journal 32. Offered in exchange for these or other books:—*Butterflies*, and *Moths of the British Isles* by R. South (3 vols.) and *Manual of British Butterflies and Moths* by H. T. Stainton. Also he has a considerable number of Geometridae for exchange.

J. A. DALE (1203), The Old Vicarage, Hatfield, Herts., has pupae of Indian Moon Moth (*Actias selene*) to exchange for other silk-moth pupae.

A. J. ROUDIER (1294), 6 Square G. Lesage, Paris 12, France, has various French beetles for exchange, including *Carabus auroniensis guettardi*; *C. problematicus arvensis*; *Agonodromius quadripunctatus*. Wanted:—Varieties of British Carabs.

M. LOCKE (1118), 36 Ainsdale Road, London, W.5, has for exchange larvae of Lappet (*G. quercifolia*) and Lilac Beauty (*A. syringaria*).

J. BOORMAN (702*), 20 Park Road, Wallington, Surrey, has a large number of Gipsy Moth (*Lymantria dispar*) ova for exchange.

DR JEAN LECLERCQ (1055), Laboratoire de Biochimie, 17 Place Delcour, Liège, Belgium, (1) requires eggs or pupae of butterflies or moths, for large scale breedings in order to analyse the blood of caterpillars; other insects available in sufficient numbers would be of interest; (2) wants to buy or exchange Ichneumonidae or Crabronidae of the world.

R. M. PICKARD (1341), Post Office, Coningsby, Lincoln, requires exchanges in Foreign Lepidoptera for English specimens and also wishes to buy a 20 or 30 drawer cabinet.

E. W. SMITH (1207), 93 Craithie Road, Doncaster, wishes to obtain a few pupae of the following species:—

Lime Hawk (*M. tiliae*), Small Elephant Hawk (*D. porcellus*), Small Eggar (*E. lanestris*), Kentish Glory (*B. versicolora*), also ova of Plumed Prominent (*P. plumigera*). For exchange Kirby's "Butterflies and Moths of Europe" in good condition. Wishes to obtain the two early editions of South's Moths (prior to 1939 publication), also Frohawk's "Complete Book of British Butterflies."

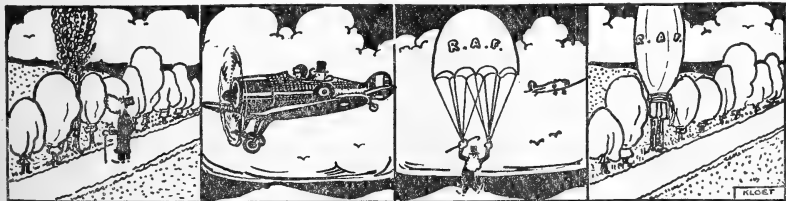
P. GANDELL (1173), 103 Brunswick Road, Ealing, W.5, has the following pupae for disposal:—Pebble Prominent, Eyed Hawk, Poplar Hawk, Emperor; also some setting boards.

J. R. BRUNSDON (759), Westminster Bank House, Westerham, Kent, has for exchange an 8-drawer solid oak birds egg cabinet, drawers 12" x 12" x 2", in two rows, naphthalene cells. Wanted—a small insect cabinet.

J. K. BATES (814*), Welland Terrace, Barrowden, near Oakham, Rutland, is anxious to receive members' records of Clearwing Moths (Aegeriidae); for empty pupa cases, preserved or living adults (set or unset), he offers in exchange *C. palaemon* (Chequered Skipper) in the spring, or would pay cash.

SIR MURDOCH MCLEOD, Bt. (35), Culverlea House, Pennington, Lymington, Hants., is anxious to obtain, by purchase or exchange, the following species: Must have authentic British data label or origin. *L. dispar*, *E. argiades*, and *C. boeticus*; with New Forest data only: *M. athalia*, *L. sinapis* and *A. crataegi*. Also preserved British Rhopalocera ova, larvae or pupae. For exchange, many authentic British *N. antiopa*, *A. lathonia*, *P. daphidice* and *A. crataegi* (Kent). Also many other types and forms. Please write to above address.

W. J. WATTS (240), 42 Bramerton Road, Beckenham, Kent, wishes to obtain a book showing good pictures of butterfly larvae, if possible in exchange for Step's "Bees, Wasps, and Ants" and Donisthorpe's "British Ants."



PROFESSOR FUNGUS.

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INSECT ORDERS

(continued from page 130)

Order V

Dermoptera (Earwigs)

These are elongate insects and can at once be distinguished from any other order by the horny forceps (except in parasitic forms) situated at the end of the abdomen. The function of these organs is obscure, but seems to be that of defence or offence. The forewings are modified into very short tegmina, under which the more or less semi-circular hindwings are folded. Of particular interest in this order is the fact that the female broods over her eggs like a hen, being one of the few insects to show any brooding instincts. Earwigs are omnivorous feeders. Some are parasitic. These are small and do not possess the characteristic forceps of the majority of earwigs.

The order Dermoptera is divided into three sub-orders:—

I. Forficulina (Earwigs). These are free-living non-parasitic forms. Wings are usually present. The forceps are well developed. Nine species of this sub-order occur in England, but none of the two following parasitic sub-orders.

II. Arixenina. These are apterous and ectoparasitic. The eggs are very small. The forceps are arched and hairy and not horny. The female gives birth to live nymphs. Only two species are known and these live on Bats.

III. Hemimerina. No forceps but long straight cerci present. Eyes and wings both absent. Only one species is known and this is ectoparasitic on a rat (*Cricetomys gambianus*). The female, as in the Arixenina, also gives birth to live young.

(To be continued)

B. O. C. GARDINER (225).

●

QUERIES

P. G. TAYLOR (719) wants to know an infallible difference between the moths Dotted Border (*Erannis marginaria*) and Mottled Umber (*E. defoliaria*) without involving him in a detailed genital examination?

R. E. VAUGHAN ROBERTS (1410) enquires whether the frequency of wing-beats (i.e. the musical note) of the female *Culex pipiens* has been calculated, and, if so, what is it? This touches on the question of humming and buzzing in insects in general.

Have we any musicians or insect physiologists who could write us an article on this interesting topic—are all hums accidental, or do they also perform some useful function, such as distance-perception? B. A. C.

J. H. PAYNE (353) asks whether any member can advise the best method to clear pear-trees of green-fly; at present the trees are sleeved with unmovable larvae!

K. D. FAIREY (970) asks where he can find details of how to make a handy and efficient light-trap that can be left unattended all night.

M. LOCKE (118), writes (10/12/47): This year I bred a half-and-half gynandromorph of the Vapour Moth (*Orgyia antiqua*) from among several thousand others. I am anxious to find out about any others which have occurred in the past; all those I know of had male wings and a female body.

●

PAIRING HAWKMOTHS

Further to the experiences related in the *AES Bulletin* (pp. 13, 27, and 131, Vol. 7), I have had no difficulty in pairing *Mimas tiliae* (Lime), *Laothoe populi* (Poplar), *Smerinthus ocellata* (Eyed) and *Sphinx ligustri* (Privet Hawks) which I find pair readily in a well-ventilated cage out of doors. The cage I use measures 12" x 10" x 10", with three sides of perforated zinc, front glazed and top wood.

If a freshly-emerged female of *tiliae*, *populi* or *ocellata* is placed in one of the cages anywhere the species is known to occur (such as in any part of London), males will assemble, and if one (or two at the most—one is usually sufficient) is put in with the female, pairing will take place nine times out of ten. I have found as many as fifteen male *ocellata* resting on and around the cage the following morning, and almost as large figures with *tiliae* and *populi*; I have not, however, had males of *ligustri* assemble to a caged female in my garden, but have had them pair with success on introducing a bred male to the cage.

An alternative method is to tether a female in a suitable spot, which I have usually found successful with *Deilephila elpenor* (Elephant) and *D. porcellus* (Small Elephant Hawk), though I have not tried pairing either in a cage. I understand that *Hyloicus pinastri* (Pine Hawk) will pair readily in a cage.

When using a cage, it is not necessary to insert any foodplant; after pairing, place the female in a cardboard box covered with muslin; the ova will mostly be laid on the box, and this can be cut up for convenience in storing until they hatch. It has been shown that many species will lay a greater number of eggs when the moths are given flowers to hover over and feed on, but for the amateur, who can only cope with relatively small numbers of larvae, this is unnecessary.

C. H. HARDS (176).

(4/1/1948)

During the war, collecting being curtailed somewhat in this district (Wellingborough, Northants), I dabbled with the method of tethering females by means of a harness of cotton, and putting them in a suitable locality by tying this to a bush at a suitable time in the evening, and visiting the spot the next morning. The species used were *D. tiliae* (Lime Hawk), *G. quercifolia* (Lappet) and *Biston betularia* (Peppered Moth). In all cases, about ten, it was 100% successful—possibly I was lucky!

J. H. PAYNE (353).

I was surprised to read of Mrs Spoczynska's bad results (*Bull.* 88, p. 131) in pairing captive Sphingidae. My own experiences with *S. ligustri* (Privet Hawk) and *S. ocellata* (Eyed Hawk) have been very successful. I simply left the imagines in a largish room—12 ft. x 12 ft.—with no foodplant, and have successfully mated many pairs. I usually have the curtains closed to prevent the males from battering themselves against the windows, and with this precaution the males are in perfect condition for my collection after they have mated. The *ocellata* remain *in cop.* usually until the next night, after which the females will lay *fertile ova* anywhere.

On three occasions with *ocellata* and once with *ligustri*, having only single female specimens available, I have put them in the open, perfectly free, and in the morning they have been found happily *in cop.*, with the minimum of trouble to me. Of course, this plan cannot be adopted by most people, who experience difficulty in getting pairings *because* they live in areas where their insects do not occur wild, or wish to pair selected varietal specimens together, and not with any old roaming male.

I have also mated *Harpyia hermelina* (Poplar Kitten), *Notodonta dromedarius* (Iron Prominent) and *Gastropacha quercifolia* (Lappet) in my room.

I suspect that some of Mrs Spoczynska's trouble may be through her having had insufficient imagines available. As P. B. M. Allan has pointed out at length in his "Talking of Moths," a female moth will not mate with any unmated male that comes along, but seems to select one of the right age. I have had this trouble with *dromedarius*, but have not noticed it with the Hawks. On one occasion I had five female and six male *ocellata* together and next morning had five pairs *in cop.*

G. G. CAVANAGH (1004).

(11/1/1948)

MITES ON BUTTERFLIES

Referring to the small red *Belauantium* mite which is found on various butterflies, I should like to add to the list of hosts the following: Common Blue (*Polyommatus icarus*), Chalkhill Blue (*Lysandra coridon*) and the Adonis Blue (*Lysandra bellargus*). These were noted during the season 1947, and, as in the previous reports, also on chalky soil.

PETER J. GENT (192).

(11/1/1948)

NOTES AND OBSERVATIONS

T. R. E. SOUTHWOOD (1051*) has two interesting captures to record. The first is a specimen of the waterbug *Gerris rufoscutellatus* in an ornamental pond at Gravesend, Kent, in 1943. It was in the company of a large number of the smaller *G. lacustris* and is a new record for Kent. The second is the capture, at the confluence of the Medway and Bourne rivers, of two specimens of the beetle *Strangalia quadrifasciata*. The first specimen was caught on 31st July, and the second on the 27th August 1946.

J. B. BRUNSDON (759*) writes as follows:—"With regard to the article on Abnormal Emperor Cocoon (*AES Bulletin* 83, p. 106), I once collected a large fullgrown larva. Having no other box available I put it in a match box, in which it only just fitted. On returning home I found that the foundations of the cocoon had been made and only removed the outer cover of the box with difficulty. Afterwards the cocoon was found to have every appearance of two exits. On opening it, however, it was ob-

vium that one end had been sealed internally."

JOHN E. KNIGHT (94), on the same subject, says that in his case *no* outlet was constructed. As it was obvious that the moth would be unable to emerge he opened one end, but the pupa died. He goes on to say that it will be interesting to see if Mr Crotch's example will emerge, and if this unusual characteristic would show itself in its progeny.

JAMES A. RANGER (1002*) took about a dozen larvae of the beetle *Prionus coriarius* round the roots of decayed birch stumps on Wisley Common, Surrey, on 13th April 1947.

J. K. BATES (814*) records the capture at Morcott, Rutland, of a male *Colias hyale* (Pale Clouded Yellow), on August 20th, 1947, while a friend took a female of the same species at the same place on October 12th. *C. croceus* (Clouded Yellow) was common in the district during the year, more so in September than the previous month.

R. G. CAVE (1338) records the capture by him in Warwickshire of *Argynnis paphia* (Silver-Washed Fritillary) var. *valezina*. On July 12th, 1947, he took one in Wappenbury Woods, two more being observed at the same time. He saw another there the following day, and again on July 21st, on which day he took one at Bubbenthal. This is the first record he has of this fine butterfly in that area.

ERNEST G. NEAL (467) reports having seen a Swallowtail Butterfly (*Papilio machaon*) flying over rough land behind the cliffs near Deal,



..... These so-and-so mirages!

(drawn by C. W. Potter)

Kent, on 1st August 1947, evidently a migrant.

J. R. BRUNSDON (759) records that between August 12th and October 10th he took 35 specimens of the Pale Clouded Yellow (*C. hyale*) at Westeham. All were taken in lucerne fields. Included in his catch were a mutation with an extra cell to the right forewing, and three var. *inversa* of the female. He also succeeded in breeding this species from the egg; one female has so far emerged and the remainder gone into hibernation.

ADVERTISEMENTS

W. WATTS, 42 Bramerton Road, Beckenham, Kent, has a collection of about one thousand different species of accurately named beetles to dispose of. Any offers, please?

FOR SALE—Insects of the British Woodlands, by R. Neil Chrystal, 12/6; Fishes of the British Isles, by Travis Jenkins, 12/6; both as new.—ALAN P. MAJOR, 21 Tufton Road, nr. Gillingham, Kent.

FOR SALE—Egg cases of Praying Mantis (U.S.A.), price 4/6 each, plus 6d packing, etc., on any number. Each contains hundreds of eggs (hatch in spring).—J. K. GOODY, 26 Carr Wood Road, Bramhall, Ches.

FOR SALE—Frohawk's "Complete Book of British Butterflies," £4; Tutt's "Hints," 3 vols. complete, £3 10s; also many other books, apparatus, etc. Send s.a.e. for lists.—R. ALDRIDGE, Aprillis, New Road, Amersham, Bucks.

FOR SALE—Insect cabinet, 18 drawers, 16" x 16" x 2", lifting glazed frames, mahogany throughout, with door, originally purchased from Messrs Watkins & Doncaster. This cabinet contains a representative collection of British butterflies, and many species of British moths. The cabinet may be viewed at 49 Sherwood Street, Reading, Berks. Offers over £35.—B. R. BAKER, 2 St Saviours Terrace, Field Road, Reading, Berks.

ENTOMOLOGICAL SUPPLIES—Store boxes, setting boards, pins, nets, set specimens of British Lepidoptera. List free. J. WARD (L. Tatchell), 6 High Street, Swanage, Dorset.

The **MONOGRAPH OF L. CORIDON** and Addenda (Price £2 10/-, post free, direct from The Richmond Hill Printing Works, Ltd., Yelverton Road, Bournemouth, Hampshire) provides a life-long interest in the English Aberrations of the Chalk-hill, Common, Adonis, Silver-studded and Small Blues, Brown Argus and Small Copper Butterflies. Magnificently produced and strongly bound, it contains 18 plates, 402 figures (96 in colour), 144 pages, 10½ × 8 inches. To avoid disappointment **ORDER PROMPTLY** as Edition is limited to 400 books.

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WANTED — Resident Confidential Private Secretary (Woman), naturalist, typist, and able to drive if possible. The post would involve life in country very attractive to naturalist, with fair amount of travel about the country and to London. Write, stating experience and salary required:—**Sir MURDOCH M'LEOD, Bt.**, Culverlea House, Pennington, Lymington, Hants.

Vol. 7 of the *Bulletin of the "Amateur Entomologists' Society"*, edited by B. A. Cooper, 27 Spilsby Road, Boston, Lincs., to whom all contributions, exchange notices, advertisements, illustrations or offers of typing or proof reading help should be sent. Subscriptions of present members (10/-, 5/- to those aged 17 and under) and donations should be sent to G. B. Hodges, Assistant Treasurer, c/o Westminster Bank, Braintree, Essex, except where publications are ordered at the same time, when they should be addressed to C. B. Pratt, Publications Sales Manager, 1 West Ham Lane, London, E.15. New applications for membership should be sent to S. M. Hanson, Hon. Secretary,

167 Gunnersbury Park, London, W.5. A specimen Bulletin and list of AES publications may be obtained, price threepence from R. R. Broome, Assistant Publicity Secretary, 47 Keswick Road, Boscombe, Bournemouth, Hants. Offers to lead field meetings should be sent to Mrs J. M. Adams, Meetings Secretary, 43 Merchland Road, London, S.E.9. Notification of change of address should be made to J. Cowley, Address Indexer, Holywell House, Edington, Bridgwater, Som.

AES PUBLICATIONS

February 1948

JOURNALS AND PAMPHLETS

ENTOMOLOGIE PRATIQUE: Préparation et Conservation de Collections d'Insectes, by G. Colas (pp. 79, with 62 figs.), 7/6. A first-class account, in simple French, of all mounting and preservation techniques in common use on the Continent.

Journal, Vol. 5 (64 pp. + 4 pl., 4/6, post 2d). The main articles aim to bring South's "Moths of the British Isles" up to date, discussing 46 species of moth new to this country or on which our knowledge has been much extended. All essential distinguishing features between closely related species are outlined with illustrations of wing-marking and genitalia, and a new method of examining the latter useful to the amateur who has not the facilities for making permanent microscope preparations is described. Details of habitat, distribution, early stages, foodplants, time of appearance, and best mode of capture and rearing are also dealt with.

Journal, Vol. 6—the "Silkmoth Rearer's Handbook" (72 pp. + 4 pl., 5/2 to members, 10/8 to non-members). A well-illustrated account of the rearing in Britain of the giant silkmoths most suited to our climate.

Journal, Vol. 7—the "Hymenopterist's Handbook" (160 pp. + 2 pl., 7/10 to members, 10/10 to non-members). A guide to the study, collecting, rearing, killing, and mounting of ants, bees, wasps, sawflies, gallwasps, and parasites. Many rearing devices are figured, and the keys to the families are well illustrated. Simple experiments on wild and honey bees are described, with accounts of the application of microscopy and photomicrography to the study of the order.

Journal, Vol. 8 (48 pp. + 6 pl., 3/6 to members, 5/- to non-members, post 2d). Articles range from books recommended for the library to the technique of the study, rearing and collection of dragonflies, mosquitoes, bugs, micros and some macros, with details of the making of various sweepnets and a collapsible pattern of butterfly net.

Pamphlet No. 2—"The Amateur's Library" (11 pp., 7d, 5/- a doz.) A classified list of 220 reference and stimulant books, graded according to importance and technicality, with brief notes on contents, from which the amateur or school librarian should be able to make their first choices.

Pamphlet No. 3—"Constitution and Byelaws of the Society" (4 pp., 4d).

LABEL LISTS

These lists are the clearest and most up-to-date obtainable. No lepidopterist can afford to be without them. Everyone should keep the naming of his collection and reference books up-to-date.

Pamphlet No. 4—"Label List of British Macrolepidoptera" (32 pp., 3/6). An authoritative list containing both English and Latin names and authorities, clearly printed on gold paper on one side of the paper only; it includes the scientific lists of (a) Evans and Tams (as used in the British Museum collections), (b) Kloet and Hincks (from *A Check List of British Insects* (1946)), and English names of (c) Cooper and O'Farrell, and (d) Richard South; ideal for labelling collections, exhibits, etc.

Pamphlet No. 5—"Check List of British Macrolepidoptera" (32 pp., 1/6, 9/- per doz., 9d each if bought with Pamphlet No. 4). The same list as the last, but printed on both sides of the paper, for use as an exchange or check list.

Pamphlet No. 6—"Label List of British Butterflies" (4 pp., 4d, 2/6 per doz.). A label list of native Rhopalocera, without synonyms, but giving scientific and English names.

DIRECTORY OF NATURAL HISTORY SOCIETIES

Pamphlet No. 7—"Directory of Natural History Societies" (160 pp., 7/6). A guide to over 600 natural his-

tory societies in Britain, giving their addresses, areas covered, subscription, membership, subjects covered by library, meetings or collections, date and periodicity of meetings, publications, and other information. Worth recommending to naturalists other than entomologists, should be in every Society's library and public library.

LEAFLETS

The majority are well illustrated by photographs or line drawings. Those priced at 4d post-free are obtainable at 2/6 a doz., those at 7d each being 5/- per doz.

- 1—Beetle Collecting (4d).
- 2—Setting Lepidoptera (4d).
- 3—Silkworm Rearing (4d).
- 4—Collecting Sawflies (7d).
- 8—Collecting Ants (7d).
- 10—Experiments with Bees (7d).
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- 13—Collecting Micros (4d).
- 14—Setting Micros (4d).
- 15—Collecting Heteroptera (Heteroptera) (7d).
- 16—Making a Sweepnet (4d).
- 17—Making a Stock Pond for the Study of Aquatic Insects (4d).
- 18—Collecting Clearwings (7d).
- 19—Carded Beetles with Balsam-Mounted Genitalia (4d).
- 20—Preserving Caterpillars (1/1).

One copy of each Leaflet, and Pamphlet No. 2, totalling 100 pages + 11 plates: 5/-.

MISCELLANEOUS

Data Labels — 4½ point (diamond) data labels, the best obtainable, are printed in multiples of 125 of one wording. 4-line labels, 12/6 per 1000 (7/- per 500); 3-line labels, 10/- per 1000 (6/- per 500); one-line labels, 8/- per 1000 (5/- per 500); sex signs, 1/- per 200 (both sexes); other labels printed to order.

Members' Notepaper—(1) Headed with the Brimstone Butterfly emblem; (2) headed with emblem and the title: "From Member No. of the Amateur Entomologists' Society." 50 sheets, 2/6; 100 sheets, 3/9; 250 sheets, 7/6.

Envelope Savers — Gummed "economy" labels printed with the AES emblem and name and address of the Society: 2/- per 100, 3/6 per 200.

Mytans—Small tins of unspillable PDB mite-preventative, for store-boxes. Sample tin, 6d; six for 1/9; twelve for 3/4.



AES

No. 90

BULLETIN

FEBRUARY 1948

A DIRECTORY OF AMATEUR ENTOMOLOGISTS

(including amateurs and professionals who have the interests of amateur entomology at heart)

DECEMBER 1947Compiled by **JOHN COWLEY**

from the List of Members of the Amateur Entomologists' Society

The addresses given below are those home or permanent addresses from which AES communications will be forwarded to any temporary abode (e.g., school or military address) of members likely to move about. Members are asked to notify the **Address Indexer**, John Cowley, Holywell House, Edington, Bridgwater, Som., of their change of permanent address, so that the Poster's card-index, by which *Bulletins* are addressed and from which this list is compiled, may be kept up to date. Members having other biological interests than those given here are also asked to send him details, for guidance in recommending suitable correspondents to new members.

The list of Junior Members has been prepared from the Application Forms sent in by members on joining, and comprises everyone aged 17 or less on January 1, 1947.

Members are asked to mention their membership number, given in brackets after their name and initials, in all AES correspondence.

The highest membership number included in this list is No. 1419.

Abbreviations

* = Junior Member
† = Affiliate Member
agric. = agricultural
aq. = aquatic
B. = biology
C. = Coleoptera (beetles)
D. = Diptera (flies)
E. = ecology

econ. = economic
ent. = entomology
esp. = especially
exot. = exotic
fw. = freshwater
gen. = general
H. = Hymenoptera (ants, bees, wasps, sawflies, parasites)
Hem. = Hemiptera (bugs)
Het. = Heteroptera (het-bugs)
Hom. = Homoptera (hom-bugs)
L. = Macrolepidoptera (moths and butterflies)
M. = migration
mic. = microscopy
ML. = Microlepidoptera
NH. = natural history
O. = Odonata (dragonflies)
ornith. = ornithology
P. = photography
R. = Rhopalocera (butterflies)
Z. = zoology

Ordinary Members

Abell, S. G. (76), 121 Thornbury Road, Isleworth, Middx. (L.)
Abell, T. Q. (787*), 121 Thornbury Road, Isleworth, Middx. (L.)
Abraham, J. (542), 16 Broad Lawn, London S.E.9. (L.)
Adams, D. H. (1095), 2 Park Road, Haywards Heath, Sussex. (C., L., D.)
Adams, F. A. (267), 8 Wellingborough Road, Broughton, Kettering, Northants. (gen. ent.)
Adams, H. W. (510), 14 Scott Road, Kettering, Northants. (L.)
Adams, Mrs J. M., B.Sc., F.Z.S. (508), 43 Merchland Road, London S.E.9. (B.)

- Adams, R. W. (1237), 32 Moor Park Road, Northwood, Mddx. (L.)
- Addison, Rev. W. R. F. (230), Coltishall Rectory, near Norwich, Norfolk. (L.)
- Adkin, B. W., F.R.E.S. (556), Highfield, Pembury, Tunbridge Wells, Kent. (L.)
- Alderton, R. F. (1170), Glen Cottage, Butlers Dene Road, Woldingham, Surrey.
- Aldridge, R. V. (262), Aprillis, New Road, Amersham - on - the - Hill, Bucks. (L.)
- Allaway, J. (349), 22 Lightwood Hill, Warley, Smethwick, Staffs. (L.)
- Allen, D., F.R.P.S., F.R.E.S., F.R.S.A. (711), 698 Warwick Road, Solihull, Warks. (H., L.)
- Allen, Rev. P. V. M. (1130), The Vicarage, South Bank, Middlesbrough, Yorks. (L.)
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- Anderson, J. (873), 22 Braehead Avenue, Milngavie, Glasgow. (mic.)
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- Ashforth, H., F.R.E.S. (1063), 1a Kenilworth Road, Leamington Spa, Warks. (H.)
- Ashmore, J. S. D. (826*), 10 Barnfield, Urmston, Lancs. (L., C.)
- Ashwell, D. A. (223), 34 North Street, Bishops Stortford, Herts. (L., O., P.)
- Atherly, Miss M. W. (655), 43 Farley Road, Derby. (L.)
- Atkinson, R. S., F.R.A.S. (1336), 46 White Hill Avenue, Barnsley, Yorks. (C., L., B., NH.)
- Austin, N. J. (966*), Chapel House, High Street, Thorpe-le-Soken, Essex. (L., C., H., Hem., O., ornith., geology, conchology)
- Ayers, T. H. (1045), 24 Chada Avenue, Gillingham, Kent. (gen. ent.)
- Backholler, R. A. (1092*), London Road, Rynnton-on-Dunsmore, near Coventry. (L.)
- Bailey, N. M. (1230*), Hill Crest, Ash Grove, Limefield, Bury, Lancs. (L., gen. ent., botany, ornith.)
- Bain, Miss P. C. (492), St Boswell's, Dene Road, Northwood, Mddx. (L., rearing, NH.)
- Baker, B. R. (361), 2 St Saviour's Terrace, Field Road, Reading, Berks. (L.)
- Ballard, W. T. (1245), 68 Merewood Road, Barnehurst, Kent. (L.)
- Ballinger, Dennis E. (88), The Cottage, 5 Canham Road, London W.3. (L., beekeeping)
- Balter, R. S. D. (455), 18 Ferncroft Avenue, London N.W.3. (B., mic., breeding L.)
- Bampton, P. (1080*), Ivy Bank, Tip-toe, Hordle, Hants. (L.)
- Banner, Dr J. V. (103), 41 Varndeian Gardens, Brighton 6, Sussex. (L.)
- Bantock, A. M. G. (1162*), Governor's House, H.M. Prison, Welford Road, Leicester. (L.)
- Barbrook, G. M. (1164), 23 Eric Street, Oldham, Lancs. (gen. ent. esp. L. (British and foreign), pond life).
- Barham, M. J. D. (459), 17 St Martin's Grove, Leeds 7, Yorks. (L.)
- Barker, Miss E. G. (662), The Training College, Portsmouth, Hants. (B., beekeeping)
- Barlow, A. (1037*), 10/10 Fargosford Street, Coventry. (L.)
- Barnard, P. (761*), 12 St Leonard's Avenue, Windsor, Berks. (L., mic.)
- Barnes, A. (500), 22 Colchester Road, Blackpool, Lancs. (L.)
- Barnett, T. L. (281), 31 Littleheath Road, Selsdon, Surrey. (L.)
- Bascombe, V. H. D. (574), Denham Lodge Annexe, near Olney, Bucks. (L., esp. R.)
- Basden, E. B. (550), Budleigh, Farnham Royal, Bucks. (ent., breeding)
- Bashford, D. J. (1320*), 16 Appold Street, Erith, Kent. (L., H.)
- Bates, J. K. (814*), Welland Terrace, Barrowden, near Oakham, Rutland. (N.H., esp. L.)
- Battersby, Dr A. W. M. (1337), Royston, Leegomery Road, Wellington, Salop. (H., L.)
- Battiscombe, Miss N. M. (999), Ashcombe, Bushetts Grove, Merstham, Surrey. (N.H., gen. ent.)
- Baxter, A. L. (1277*), 118 Hunter House Road, Sheffield 11. (L.)
- Baxter, R. (1267*), 16 Bective Road, London E.7. (L.)
- Bayliss, Miss B. E. (961), 97 Monk-hams Lane, Woodford Green, Essex. (gen. ent.)
- Baynes, E. S. A., F.R.E.S. (1221), 69 Merrion Square, Dublin E.17. (L., gen. ent.)

- Beak, J. C. (1048), 14 Heol yr Afael, Duffryn, Rhondda, near Port Talbot, Glam. (L.)
- Bean, E. L. (115), 121 Queens Road, West Croydon, Surrey. (L.)
- Beattie, I. S. (142), 21 Stirling Road, Edinburgh 5. (L.)
- Beaufoy, L. S., M.A. (628), 54 Bower Mount Road, Maidstone, Kent. (breeding L., NH.)
- Beaufoy, S., B.Sc., A.M.I.E.E., F.R.P.S. (627), 98 Tuddenham Road, Ipswich, Suffolk. (L.)
- Becher, Lt.-Col. L. E. (1214), Newstead, Charterhouse Road, Godalming, Surrey. (L., gen. ent.)
- Bedingfield, Miss J. F. (1309), 161 Colin Crescent, London N.W.9. (L.)
- Beebee, A. O. (1382*), 13 Jesson Road, Walsall, Staffs. (L.)
- Beirne, Dr Bryan P. (962), Dept. of Zoology, Trinity College, Dublin, Eire. (L., parasitic H., E. 'of L., Z.)
- Bell, Dr Fairfax (872), c/o D.M.S., Dar es Salaam, Tanganyika. (R.)
- Bell, H. G. Lydgate- (1176), 28 Hastings Way, Croxley Green, Herts. (L.)
- Benjamin, P. (1178*), Linden Hotel, 19 Woodside Terrace, Charing Cross, Glasgow C.3. (L.)
- Bennett, F. S. (1134*), 58 Beechmount Avenue, London W.7.
- Bennett, M. J. (830*), Leechwell Cottage, Totnes, Devon. (L.)
- Bennett, N. Chaplin (544), 37 Fore Street, Totnes, Devon. (L., NH., ornith.)
- Benson, R. B., M.A., F.R.E.S. (543), Zoological Museum, Tring, Herts. (H., esp. sawflies, Brit. fauna and flora, biogeography)
- Bentley, E. W., Ph.D. (985), c/o Ministry of Agriculture, 58 High Holborn, London W.C.1. (H.)
- Berry, J. E. (1072), School House, Grange over Sands, Lancs. (H. Aculeata, pollen)
- Besley, A. P. (1308), Staplegrove, Carrwood Road, Bramhall, Ches. (H.)
- Bessant, Richard M. (367), 831 Field End Road, Ruislip, Mddx. (gen. ent., esp. C.)
- Best, A. A. (1202), 131 Woodham Lane, New Haw, Weybridge, Surrey. (L.)
- Betts, P. A. (700*), 28 Kidmore Road, Caversham, Reading, Berks. (L., H. Aculeata)
- Bevan, Miss P. (536), 75 Grange Road, London W.5 (L., mic.)
- Bing, R. C. (1171*), Lansdowne Arms Hotel, Calne, Wilts. (L., mic., chemistry)
- Bingham, C. H. (946), 40 Ceres Road, London S.E.18. (gen. and agric. ent.)
- Birch, L. (683), 225 Coleshill Road, Ward End, Birmingham 8. (L.)
- Bird, P. F. (896), c/o Mrs Farquharson, 9 Highbury Villas, Cotham, Bristol 2. (L., O., H. Parasitica)
- Birkett, Dr N. L. (583), The Cottage, Kilner Park, Ulverston, Lancs. (L., ML., physiology)
- Blair, Dr K. G. (197), Pentwyn, Afton Road, Freshwater, I.O.W. (C. gen. ent.)
- Blake, T. G. (1376*), 20 Crown Lane Gardens, London, S.W.16. (L.)
- Bland, S. E. (1328), 20 North Street, Exeter, Devon. (H.)
- Blank, T. H. (1385), Burderop Park Training College, Swindon, Wilts. (gen. ent.)
- Blasdale, P. (1381), Brooklyn, The Ash, Wombwell, Yorks. (L., C.)
- Blathwayt, C. S. H., M.A. (651), 27 South Road, Weston-super-Mare, Som. (L.)
- Bliss, A. (287), 4 Monahan Avenue, Purley, Surrey. (L.)
- Block, M. R. F. (1116*). Alpha Cottage, Francis Road, Ware, Herts. (gen. ent. esp. L.)
- Boardman, Dr D. Livesey (1132), 40 Scholes Lane, Prestwich, near Manchester, Lancs. (L., C.)
- Bobe, K. H. (912), 19 Hengist Road, London, S.E.12. (L.)
- Bomback, R. H. (976), 46 Woodberry Avenue, North Harrow, Mddx. (C.)
- Bone, Quentin (959*), 26 Portland Place, Leamington Spa, Warks. (L., esp. breeding)
- Boon, C. O. (1266), 49 South Court Avenue, Dorchester, Dorset. (gen. ent.)
- Boorman, J. P. T. (702*), 20 Park Road, Wallington, Surrey. (L.)
- Bowring, P. T. (1029), The Tower House, Belle Vue Road, Exmouth, Devon. (gen. ent.)
- Boyes, J. D. C., B.Sc., A.R.I.C., A.R.P.S. (850), Wimborne, Millfields, Nantwich, Ches. (L., esp. vars. and hybrids)
- Bradley, A. (219), 5 Alberta Mansions, Teignmouth, Devon. (L.)
- Bradley, J. D. (195), 15 Ridley Road, London S.W.19. (L.)
- Bradley, P. L. (1360), 1 Holland Walk, Stanmore, Mddx. (L., H.)

- Braham, A. C., F.Z.S., F.R.E.S. (809), 66 Sheepridge Road, Huddersfield, Yorks. (gen. ent., C., Arachnology, NH., B.)
- Brandham, B. F. (1227*), 14 Veda Road, London S.E.13. (L.)
- Brantham, A. Norman (18), 9 St Alban's Grove, London W.8. (Ants)
- Brett, J. W. L. (980), 10 Warwick Road, Boscombe, Bournemouth, Hants. (L.)
- Briegel, R. H. (539), 141 Burnt Oak Lane, Sidcup, Kent. (L.)
- Briers, Herbert C. (128), 12 St Albans Road, Highgate Road, London N.W.5. (L.)
- Briggs, J. (832), 15 Frimley Drive, Little Horton, Bradford, Yorks. (L., C.)
- Briggs, Miss P. (881*), 44 Park Lane, Whitefield, nr. Manchester. (L., gen. ent.)
- Britton, E. B. (232), Dept. of Entomology, British Museum (Nat. Hist.), Cromwell Road, London S.W.7. (C.)
- Britton, Miss E. L., B.Sc. (928), Ministry of Agriculture and Fisheries, N.A.A.S., Bracken Hill, Leigh Woods, Bristol 8. (gen. and econ. ent., NH., E., ornith.)
- Britton, Mrs L. M. (108), 10 Sandringham Road, Parkstone, Dorset. (L.)
- Brixey, Miss A. (1364*), 33 Cranmore Avenue, Osterley, Isleworth, Mddx. (L.)
- Bromley, P. J. (1077*), 65 Courtland Road, Ifley, Oxford. (Orthoptera, C., H. Parasitica)
- Brook, C. J. (776), 10 Southdown Avenue, Coppice Estate, Lower Willingdon, Sussex. (C.)
- Brooks, M. J. (639*), 77 Rossall Road, Cleveleys, Lancs. (L.)
- Broome, R. R., F.L.S., F.R.E.S. (653), 47 Keswick Road, Boscombe, Bournemouth, Hants. (Salmon and trout fisheries, botany, aq. ent.)
- Broughton, J. E. (437), 14 Easedale Road, Heaton, Bolton, Lancs. (L., rearing).
- Brown, C., B.Sc., M.Ed. (704), Bar-moor House, Scalby, nr. Scarborough, Yorks. (L.)
- Brown, Miss E. (602), 6 Effingham Lodge, Surbiton Crescent, Kingston-on-Thames, Surrey. (gen. ent., aq. insects)
- Brown, J. B. Gilpin- (1298), Church Knowle, nr. Wareham, Dorset. (Orthoptera)
- Brown, R. M. (1031), 13 Morningside, Coventry. (gen. ent.)
- Browne, Prof. F. Balfour-, F.R.S.E. (340), Brocklehurst, Collin, Dumfries. (gen. ent., aq. C.)
- Bruce, D. J. (786), 12 Shepherd's Way, Rickmansworth, Herts. (L., C.)
- Brunsdon, J. R. (759*), Westminster Bank House, Westerham, Kent. (L. esp. breeding)
- Bryant, D. C. (512*), 107 Delamere Road, London W.5. (R.)
- Buck, W. F. A. (1331*), Tudor House, London Road, Maidstone, Kent. (L., silkmths)
- Buckler, H. A. (334), Sutton Bassett, Market Harborough, Leics. (L., ML.)
- Buckley, A. (1215), 412 Leeds Road, Dewsbury, Yorks. (L.)
- Bull, Dr G. V. (160), White Gables, Sandhurst, Kent. (L.)
- Bullamore, G. W. (857), Woolton Hill, Newbury, Berks. (gen. ent.)
- Bullock, A. A. (1186), Royal Botanic Gardens, Kew, Surrey. (gen. ent.)
- Bullock, J. A. (1158*), 43 Leybourne Park, Kew Gardens, Richmond, Surrey. (C.)
- Burch, J. (1090*), 8 Edgeworth Road, London S.E.9. (L.)
- Burgess, J. A. (950), 6 Rutford Road, London S.W.16. (Exot. L. and ML., exot. H.)
- Burleigh, R. J. F. (918*), 50 London Road, Stevenage, Herts. (L. esp. R., Sphingidae)
- Burnard, C. V. W., F.R.E.S., A.M.I.N.A. (1271), Kitcombe Farm, Farringdon, nr. Alton, Hants. (L.)
- Burton, I. S. (798*), 36 Regent Road, Surbiton, Surrey. (gen. ent. esp. L.)
- Burton, P. J. (1199), 1 Marine Parade, Lowestoft. (L.)
- Burton, W. V. (179), 18 Terminus Road, Sheffield 7. (L.)
- Bushby, L. C. (1075), Curator of Insects, Zoological Society of London, London N.W.8. (gen. ent.)
- Byerley, B. J. L. (788), 48 Elmgrove Road, Harrow, Mddx. (C.)
- Byers, F. W. (137), 59 Gurney Court Road, St Albans, Herts. (L.)
- Byford, W. J. (982*), 72 Oakdale Road, London E.11. (L., gen. ent.)
- Bywater, H. C. I. (432), Sandal Cottage, Appleby, Westmorland. (L., Neuropt., O., C.)
- Calverley, W. R. (596), 267 Park Road, Sittingbourne, Kent. (Insect B., mic., chemistry, biol. drawing).

- Cameron, T. W. F. (1007), Highfields, Walderslade, Chatham, Kent. (gen. ent.)
- Campbell, J. D. (718), Bleak House, Navenby, Lincoln. (L.)
- Campion, B. W. (762*), 13 Guy Road, Wallington, Surrey. (L.)
- Campland, M. P. M. (1146), Guy's Hospital Medical School, London S.E.1. (L., C.)
- Capener, A. L. (6), St George's Home for Boys, P.O. Cleveland, Johannesburg, S. Africa. (Hom. except Aphididae and Coccidae, Myrmeleionidae, gen. ent.)
- Capper, D. B. (967), 2 Regents Place, Rugby, Warks. (B., econ. ent.)
- Carpenter, Prof. G. D. Hale, M.B.E., D.M. (666), Hope Department of Entomology, University Museum, Oxford. (Bionomics)
- Carr, R. W. D. (1175), Hillcrest, Totteridge Lane, London N.20. (L.)
- Carter, D. (758*), 11 Bourne End Road, Northwood, Mddx. (C., esp. Geodephaga, NH.)
- Carter, J. E. (1109), 38 Kennington Road, Fulwood, Preston, Lancs. (H.)
- Carter, W. A. (717), 11 Bourne End Road, Northwood, Mddx. (Acarina)
- Cartwright, G. J. (958*), 39 Queen Anne's Grove, London W.5. (L.)
- Cartwright, H. B. S. (390), The Rectory, Kegworth, nr. Derby. (L.)
- Caruana, J. (1363*), 93 Tarxien Road, Pawla, Malta G.C. (L., Pentatomidae)
- Cater, H. R. St Clair (587), Hergest Mill, Kington, Herefords. (O., silkmths)
- Cavanagh, G. G. (1004), 40 Priory Hill, Dartford, Kent. (gen. ent.)
- Cave, R. G. (1338*), 16 Round Street, Rugby, Warks. (L.)
- Chamberlain, Miss E. (674), 94 Gillespie Road, London N.5.
- Chambers, A. E. C. (450), 36 Watergate, Grantham, Lincs. (L.)
- Champion, A. F. (777*), 1 Cornwall Close, Barking, Essex. (L.)
- Chandler, C. J. (1325), Church Lane, Horsted/Keynes, nr. Haywards Heath, Sussex. (H.)
- Charlson, S. (520), 34 Carr Bank Street, Atherton, Manchester. (ML., M.)
- Chipperfield, H. E. (64), 27 Chilton Avenue, Stowmarket, Suffolk. (L.)
- Christie, L. (710*), 65 Rowan Road, London S.W.16. (L.)
- Chubb, A. S. (969), 11 Parkfield, Topsham, nr. Exeter, Devon. (NH., L.)
- Chynoweth, J. D. (905*), 2 Cumberland Road, North Harrow, Mddx. (L.)
- Clark, D. J. (1369*), 39 Welch Road, Southsea, Hants. (O., H.)
- Clark, Mrs R. E. (1251), 24 Vincam Close, Whitton, Mddx. (H.)
- Clarke, G. J. (579*), 3 Harcourt Road, Wallington, Surrey. (L.)
- Clarke, Mrs G. M. (1332), 9 Cresswell Way, London N.21. (silkmths)
- Clarke, L. B. (157), Turkey Hall, Eldersfield, Glos. (L., bee-keeping, agric. ent.)
- Classey, E. W., F.R.E.S. (41), 5 Carlton Avenue, Feltham, Mddx. (L., mosquitoes)
- Clements, A. N. (505), 9 Clifford Avenue, Taunton, Som. (D., econ. ent., gen. ent.)
- Clinton, E. C. Pelham- (1399), Horner Vale, Porlock, Som. (L.)
- Cochayne, B. T. (1260), 12 Salisbury Road, Andover, Hants. (H., gen. ent.)
- Cochrane, R. C. (1253), 14 Eaton Gardens, Hove, Sussex. (L.)
- Coggon, J. G. (582), 20 Oswald Street, Millfield, Sunderland, Co. Durham. (L.)
- Coghill, K. J., B.Sc. (430), Bredon, The Grove, Rowlands Gill, Co. Durham. (gen. ent.)
- Cole, D. F. (644*), 79 Manor Road, Erith, Kent. (rearing L.)
- Collier, Major A. E. (1066), c/o Lloyds Bank, 6 Pall Mall, London S.W.1.
- Collier, Miss J. (1323*), 11 Greenbank Road, Darlington, Co. Durham. (gen. ent. esp. L.)
- Collins, G. B. (1036), 19 Torridge Road, Thornton Heath, Surrey. (gen. ent.)
- Collins, J. A. (753*), Brooklyn, Flowerlys Lane, Alfreton, Derbyshire. (agric. and gen. ent.)
- Collins, R. J., F.R.E.S. (256), Dept. of Entomology, British Museum (Nat. Hist.), Cromwell Road, London S.W.7. (L. esp. World Geometridae)
- Collinson, W. E. (247), 20 Pye Nest Drive, Halifax. (L. esp. Bombyces)
- Collyer, N. A. B. (132), 27 Guildford Way, Wallington, Surrey. (L.)
- Colyer, C. N., F.I.A.C., F.R.E.S. (404), 8 Canning Court, Newnham Road, London N.22. (D.)

- Cook, J. H. (1348), 197 Ladywood Road, Birmingham 16. (L., aq. insects)
- Cooper, B.A., B.Sc., A.R.C.S. (19), 27 Spilsby Road, Boston, Lincs. (gen. ent., L., M., E., econ. ent., C. esp. Elateridae)
- Cooper, Mrs G. M. R., B.Sc. (447), 27 Spilsby Road, Boston, Lincs. (B.)
- Cooper, Mrs L. d'O. (1408), 61 Okehampton Road, London N.W.10. (gen. ent.)
- Corkill, A. G. L. (805*), Greencroft, Shute Hill, Bishopsteignton, Devon. (L.)
- Cornelius, J. A. (1020), 29 Grangecliffe Gardens, London S.E.25. (L.)
- Cousins, P. J. (901*), Westward, Arthur Road, Wokingham, Berks. (L., H., agric. ent.)
- Cove, Miss I. M., B.Sc. (612), Avery Hill Training College, Sandy Mount, Crosland Moor, Huddersfield, Yorks. (B., gen. ent.)
- Cowley, J., M.A., F.R.E.S. (771), Holywell House, Edington, Bridgewater, Som. (O. of World, D., H.)
- Cox, A. D. L. (749), Edale, Ipswich Road, Colchester, Essex. (C.)
- Cox, A. W. (283), 16 Raymere Gardens, London S.E.18. (L.)
- Cox, C. J. (1357*), 78 Wellington Road, Bush Hill Park, Enfield, Mddx. (L.)
- Coxey, S. (358), 17 Mornington Road, Bolton, Lancs. (L.)
- Craig, Miss J. C. D., B.Sc., A.R.I.C. (930), 39 Westbourne Gardens, Glasgow. (L.)
- Crane, E. J. (994), Langham Oaks School, Langham, Colchester, Essex. (L., H.)
- Crapnell, V. S. (829), 51 The Grove, Hipperholme, nr. Halifax, Yorks. (gen. ent., ornith.)
- Craufurd, C. (677), Denny, Galloway Road, Bishop's Stortford, Herts. (L.)
- Cripps, C. H., B.A. (730), Bull's Head Farm, Eakley Lanes, Stoke Goldington, Bletchley, Bucks. (L., esp. R.)
- Crisp, E. (668), High Street, Heathfield, Sussex. (gen. ent.)
- Crotch, W. J. B., M.A., A.K.C. (1181), 5b Stanley Crescent, London W.11. (L. esp. Saturniidae, Bombycidae, Spingidae)
- Croucher, J. A. (671), 6 Westbrook Road, London S.E.3. (L.)
- Crow, P. N. (393), Heathcote, Cookham Dean, Berks. (L.)
- Cruttwell, G. H. W. (118), Rowden House, Frome, Som. (L.)
- Cumber, Miss G. R. (1015*), 23 Wood Lane, Isleworth, Mddx. (L.)
- Cunningham, D. (1233), 42 Rae Street, Dumfries. (L., botany)
- Curd, O., F.Z.S. (129), Elsinore, Whiston Lane, Prescott, Lancs. (L.)
- Currie, P. W. E. (977), 102 Burdon Lane, Belmont, Sutton, Surrey. (O., H.)
- Curtis, A. E. (877), The Cottage, Ilford Estate, Loxwood, nr. Billingshurst, Sussex. (L., including exot., breeding)
- Dale, A., B.Sc. (908), 14 Middleborough Road, Coventry. (bee-keeping, NH., gen. ent.)
- Dale, A. J. (1012), 129 Valetta Road, London W.3. (gen. NH.)
- Dale, J. A. (1206*), The Old Vicarage, Hatfield, Herts. (gen. ent.)
- Dale, W. E. (42), 54 Baldwyns Park, Bexley, Kent. (L.)
- Daltry, H. W., F.R.E.S., M.S.B.E. (972), Bar Hill, Madeley, Crewe. (Hem., Neuroptera, Trichoptera, ML., C., H.)
- Daniels, E. T. (53), 334 Dereham Road, Norwich, Norfolk. (O., Hem.-Het.)
- Dannreuther, Capt. T., R.N. (60), Windycroft, Hastings, Sussex. (M.)
- Davidson, A. R. (575), 2 Foster Road, Formby, Liverpool. (gen. ent., L.)
- Davie, R. H. (648*), 30 Nightingale Road, Rickmansworth, Herts. (L.)
- Davies, G. M. (1394*), Glencarn, Gorsley, Ross-on-Wye, Herefordshire. (C., D.)
- Davies, M. J. (760*), 277 Surbiton Hill Park, Surbiton, Surrey. (C., esp. Geodephaga)
- Davis, Miss N. (681*), 17 High Street, Aylburton, nr. Lydney, Glos. (L.)
- Davis, T. W. (766), 43 Parkside Way, North Harrow, Mddx. (Mosquitoes, mic.)
- Dawes, A. J. (886*), 17 Cope Hill, London, S.W.20. (L.)
- Dawson, D. (664), 6 Elam Road, Llanishen, Cardiff, S. Wales. (horticultural ent.)
- Dawson, Miss D. I. (1011), 10 The Walk, Launceston, Cornwall. (NH.)
- Day, G. V. (29), Furlong Road, Stoke Ferry, Kings Lynn, Norfolk. (L.)
- Deacon, G. E. (1290), Brundall, Norwich, Norfolk. (gen. ent.)

- Dean, J. T. (854*), Glenilex, Sunnysdale Road, Swanage, Dorset. (L., gen. ent.)
- Dean, Miss B. A. (1377*), Sherwood, Greendene, East Horsley, Surrey. (L., O.)
- Dean, Miss J. M. (1378*), Sherwood, Greendene, East Horsley, Surrey. (L.)
- Deimel, I. R. (410), Iona, Bures Road, Great Cornard, Sudbury, Suffolk. (L.)
- de Jongh, Mrs E. G. (953), Gorffwsfa, Llanbedr, Merionethshire. (L., beekeeping)
- Devenish, L. R. (246), 33 Buckhurst Way, East Grinstead, Sussex. (L., gen. ent.)
- de Worms, Baron C., Ph.D., F.R.E.S. (260), 26 Common Close, Horsell, Surrey. (L.)
- Dexter, S. (847), Rosevean, Constantine Bay, nr. Padstow, Cornwall. (gen. ent.)
- Dibb, J. R., F.R.E.S. (1195), 30 Plantation Road, Wollaton, Nottingham. (C., H., Ephemeroptera)
- Disley, D. R. (1391*), 9 Grosvenor Road, London E.10. (L.)
- Dobson, R. M. (1111), c/o Ministry of Food, Infestation Division, 69 Berkeley Street, Glasgow C.3. (gen. ent. esp. C.)
- Dolton, H. L. (1122), 36 Chester Street, Reading, Berks. (L.)
- Dore, R. G. J. (1299*), Greenstead, High Street, Thorpe-le-Soken, Essex. (L.)
- Dorey, Miss L. W. (1096), 26 Tamar House, Kennington Lane, London S.E.11. (gen. ent.)
- Dormer, P. G. D., M.B., B.Ch. (228), 71 High Street, Ashford, Kent. (mic.)
- Douetil, B. N. (66), Wonersh Chase, Wonersh, nr. Guildford, Surrey. (L.)
- Down, C. (59), 7 Mersham Drive, London N.W.9. (L.)
- Driver, H., B.Sc. (557), 16 The Crescent, London Road, Northwich, Ches. (L., ML., H., beekeeping)
- Duffy, E. A. J., F.R.E.S. (200), 28 Lansdowne Road, East Croydon, Surrey. (C. esp. C. larvae, aq. ent.)
- Dujardin, F. (1404), 25 rue Guiglia, Nice, Alpes Maritimes, France (L.)
- Duke, A. J. H. (97), 86 Strubens Road, Mowbray, Cape Town, S. Africa. (L.)
- Duncan, J. (907), 16 Blair Street, Glasgow E.2. (gen. and tropical aquarium keeping)
- Duncan, S. (280), Lone Pine, Anlaby, Yorks. (L.)
- Durham, J. (1174), 62 Reigate Road, Brighton 5, Sussex. (NH.)
- Durrant, K. C. (1375), The Holmes, Theatre Street, East Dereham, Norfolk. (gen. ent. esp. D.)
- Durrant, W. J. (1196), 11 Hazel Bank, Tolworth, Surrey. (D., O., C.)
- Dutton, Miss P. R. (1306*), Ashcroft, Malvern Road, Staunton, nr. Gloucester. (gen. ent. esp. C.)
- Dutton, P. W. (1268*), Ashcroft, Malvern Road, Staunton, nr. Gloucester. (gen. ent.)
- Dyer, J. L. (1274*), 120 Shipbourne Road, Tonbridge, Kent. (L., H., C.)
- Dyson, F. S. (1247*), Meadow View, Meadow Lane, Long Eaton, Notts. (gen. ent.)
- Dyson, R. C., N.D.H., F.R.E.S. (91), 112 Hollingbury Park Avenue, Brighton 6, Sussex. (L., foodplants)
- Eade, A. (1185*), 199 Lynmouth Avenue, Stonecot Hill, Morden, Surrey. (L.)
- Eade, G. J. (190), 3 Rutland Road, Hove 3, Sussex. (L.)
- Eade, W. (374), 8 Nizells Avenue, Hove 2, Sussex. (C., L.)
- Eagles, T. R. (194), 32 Abbey Road, Enfield, Middx. (L.)
- Earl, B. C. A. (1388*), 2 South Park, Loose Road, Maidstone, Kent. (L.)
- Easton, N. T., F.R.E.S. (370), Bishopswood, Sulby Hall, Welford, nr. Rugby. (L., genetics, NH., P.)
- Eberlie, W. J. D. (70), Brooke House, Crawley Green Road, Luton, Beds. (L., O.)
- Edelsten, H. M., F.R.E.S. (208), Bramble Hill, Balcombe, Sussex. (L.)
- Edwards, J., B.Sc. (844), 81 Hassam Parade, Newcastle, Staffs. (O., D.)
- Edwards, Miss M. (765), College Hall, Malet Street, London W.C.1. (H., L.)
- Edwards, M. S. (1191*), 22 Copers Cope Road, Beckenham, Kent. (L.)
- Edwards, R. C. (949), Arlesey, Pilgrims Way, Westerham, Kent. (gen. ent.)
- Edwards, Canon T. G., M.A., F.Z.S. (754), Holy Trinity Vicarage, London, S.W.2. (gen. ent. esp. L.)

- Edwards, Rev. W. O. W., M.A. (570), Moor View, Links Road, Budleigh Salterton, Devon. (L.)
- Ekins, Miss G. M. (642), 17 Croyland Road, Wellingborough, Northants. (gen. ent., botany, ornith., geology)
- Eldridge, Miss H. E. (1160*), 221 Broadwalk, London S.E.3. (L.)
- Eley, R. (1201), c/o Mr Ruddock, Hall Cottages, Nowton, nr. Bury St Edmunds, Suffolk. (L., Heterocera)
- Elliott, J. H. (530), 45 St Olave's Road, Clifton, York. (H.)
- Ellis, B. W. (772*), 7 Lagrowda Terrace, St Just, Penzance, Cornwall. (L.)
- Ellis, J. E. (1255), 31 Manor Wood Road, Purley, Surrey. (L., D.)
- Ellison, W. M. (1318*), 40b Victoria Road, Scarborough, Yorks. (L.)
- Elphick, F. G. H. (1415), 11a Broad Way, Southall, Mddx. (L., O.)
- Emmet, A. M., M.B.E., M.A. (1379), St Edward's School, Oxford. (L.)
- Empson, D. W. (780), N.A.A.S., Chiltern Court, St Peter's Avenue, Caversham, Reading, Berks. (gen. and econ. ent.)
- England, W. E. (183), 7 Tea Garden Terrace, Sheffield 4. (L.)
- Ensor, P. C. (891*), 28 Delamere Road, Birmingham 28. (L.)
- Entrican, Miss M. C. (764), Heather-ton House School, Chesham Bois, Bucks. (L.)
- Essenhigh, F. C. L. (675), Brockhampton Council School, Bringsty, Worcester. (L.)
- Esslemont, D. A. L. (925*), Station House, Woodside, Aberdeen. (L.)
- Esslemont, I. (775*), 3 Newlands Crescent, Aberdeen. (mosquitoes, water beetles, O.)
- Evans, B. M. (846*), 53 Woodstock Road, St Albans, Herts. (breeding L.)
- Ewing, K. W. (1121), 20 Strand, Topsham, Devon. (L. esp. breeding)
- Fairbairn, W. J., B.Sc. (443), Northfields, St Abbs, Berwicks. (B., L., conchology)
- Fairclough, R. (528), Blencathra, Deanoak Lane, Leigh, Surrey. (L., ornith.)
- Fairey, K. D. (970), Griffith Street, Charlestown, N.S.W., Australia. (C., H., L. gynandromorphs)
- Fassnidge, W. (293), 4 Bassett Crescent West, Southampton. (ML., Neuroptera, Trichoptera)
- Fearnhough, T. D. (47), 25 Ramsey Road, Sheffield 10.
- Ferguson, E. A. (1311), 1213 Bellflower Avenue S.W., Canton 4, Ohio, U.S.A. (L.)
- Ferry, R. S. (207), Fulling Mill House, Welwyn, Herts. (gen. ent., L.)
- Fidler, Dr J. H. (1256), 2 Fulford Court, Naburn Lane, York. (Trichoptera, Aphididae)
- Field, G. N. (1000), 14 Mitchley Grove, Sanderstead, Surrey. (L.)
- Finch, R. (768*), Brownhill, Ashen-ground Road, Haywards Heath, Sussex. (L. esp. Spingidae)
- Finch, S. K. (1203), Tokat House, Sible Hedingham, Essex. (H.)
- Fincher, F. (1076), Randan Wood, Woodcote, Bromsgrove, Worcs. (Orthoptera, O., R., H.)
- Finlay, J. F. (806), The Gables, Honiton, Devon. (L.)
- Finlay, Capt. R. A. L., M.B.E. (229), 9 Hermitage Gardens, Edinburgh 10. (gen. ent.)
- Firth, J. Digby, F.S.A. (1210), 347 Otley Road, Leeds 6. (gen. ent.)
- Fisher, J. M., M.A. (1305), Old Rectory, Ashton, Northampton. (L.)
- Fisher, W. A. (1344), 60 Beresford Avenue, Tolworth, Surbiton, Surrey. (C.)
- Flack, G. S. (767), 1 Warwick Avenue, Bedford. (L., O.)
- Fletcher, T. (725), Newlynds, Ash, Surrey. (gen. ent.)
- Fletcher, T. Bainbrigge, F.R.E.S. (52), Rodborough Fort, Stroud, Glos. (L., ML., gen. ent.)
- Flint, J. F. (778*), 42 Glenleigh Park Road, Bexhill-on-Sea, Sussex. (ants)
- Fluck, G. G. (569), Redroof, Reading Road, Fleet, Hants. (L.)
- Ford, Rev. G. A. (377), Balsham Rectory, Balsham, Cambs. (L.)
- Ford, R. L. E., F.R.E.S., F.Z.S. (527), 51 Parkhill Road, Bexley, Kent. (H.)
- Foster, J. T. (1001*), 805 Great West Road, Isleworth, Mddx. (L.)
- Fountain, H. C. (1065), Northcourt, Court Lane, London S.E.21. (L., gen. ent.)
- Fox, C. F. (1114), 62 Rhoorons Avenue, Hook, nr. Surbiton, Surrey. (gen. ent. esp. aberration)
- Fox, R. J. (939), 2 Queen Street, Retford, Notts. (L. esp. agric.)
- Fox, T. H. (105), 226 St Albans Road, Watford, Herts. (L., breeding)
- Francis, B. (1145), 12 Highbury Road, Bury St Edmunds, Suffolk. (H.)

- Fraser, A. (1262), The Haven Annexe, Marine Parade, Tankerton, Kent. (C.)
- Fraser, A. S. (1035*), The Old Mill, Battle, Sussex. (L.)
- Fraser, Lt.-Col. F. C., F.R.E.S. (890), 55 Glenferness Avenue, Winton, Bournemouth, Hants. (O., Neuroptera, Orthoptera)
- Fraser, G. de C. (621), Warren Mount, Freshfield, Liverpool. (L., C.)
- Freeman, J. A., Ph.D. (986), 41 Cumberland Road, Bromley, Kent. (stored products ent.)
- Fretwell, S. (1225), 121 Highbury Quadrant, London N.5. (rearing silkmoths and hawkmoths)
- Frost, G. J. (1304*), 17 Crofton Road, Ipswich, Suffolk. (L., C., D.)
- Gamble, Miss W. (1127), 34 Philip Road, Bury St Edmunds, Suffolk. (gen. ent.)
- Gandell, P. (1173*), 103 Brunswick Road, London W.5. (gen. ent.)
- Garbe, G. (1252), 62 Marlborough Road, Harrow, Middx. (H.)
- Gardiner, B. O. C. (225), 34A Storeys Way, Cambridge. (L., gen. ent., Neuroptera)
- Garner, E. R. (733*), 16 Carlow Road, Prenton, Birkenhead, Ches. (L.)
- Garrard, Miss B. (1071), The Principal, Springfield Grange School, Great Missenden, Bucks. (NH.)
- Garstang, Miss D. M., N.D.H. (622), Studley College, Studley, Warks. (gen. ent., econ. ent., L., H.)
- Gay, P. A. (1393*), School House, Hartbury, Gloucester. (L., C., D., H.)
- Gent, P. J. (192), 34 Castle Street, Wellingborough, Northants. (L.)
- George, J. (1057*), Oaktree Cottage, The Glen, Farnborough Park, Kent. (L.)
- George, R. S. (1402), 109 Tuffley Avenue, Gloucester. (B.)
- Gerard, Hon. R. (359), Blakesware, Ware, Herts. (L.)
- Gibbs, G. (1212*), Tree Tops, Muritai Road, Eastbourne, Wellington, New Zealand. (gen. ent.)
- Gibbs, R. B. B. (1016*), 235 Tring Road, Aylesbury, Bucks. (L., O., NH., silkmoths)
- Gibson, A. J. (1003*), 4 Knowle Road, Dartford, Kent. (gen. ent.)
- Gibson, Miss E. M. (311), Ashcroft, Station Road, Petersfield, Hants. (L.)
- Gidman, C. C. (362), 25 Fairclough Road, Accrington, Lancs. (L., C.)
- Gillard, R. (1361), 47 California Crescent, Scratby, Great Yarmouth, Norfolk. (agric. ent.)
- Gilmour, E. F., F.R.E.S. (870), East View, Pickford Street, Milnsbridge, Huddersfield, Yorks. (C. esp. Longicornia of world)
- Goddard, T. D., F.R.E.S. (841), Long Hoyle Farm, Heyshott, Midhurst, Sussex. (L.)
- Golby, W. A. (1412), 136 Milner Road, Birmingham 29. (gen. ent.)
- Golding, A. J., F.S.A. (1032), Museum and Public Library, Maidstone, Kent. (gen. ent.)
- Golding, D. P. (904), 517 Foots Cray Road, London S.E.9. (L.)
- Golding, Mrs E. M. (1168), 517 Foots Cray Road, London S.E.9. (L.)
- Goodall, Miss M. D. (807), 47 Stratford Avenue, Ryhope Road, Sunderland, Co. Durham. (L., aq. ent., garden insects)
- Goodban, B. S. (217), 81 West Street, Ewell, Epsom, Surrey. (L.)
- Goodbody, I. M. (484), Warriston, Glengearry, Co. Dublin, Eire. (L., H.)
- Goodliffe, F. D. (1021), Whitelands, Long Sutton, Basingstoke, Hants. (aq. insects esp. Dytiscidae, D. esp. Chloropidae, Orthoptera, parasitic H.)
- Goodman, A. de B. (920), 20 Brooklands Avenue, Cambridge. (gen. ent.)
- Goodson, A. L. (241), 26 Park Road, Tring, Herts. (L.)
- Goody, J. K. (954*), 26 Carr Wood Road, Bramhall, Ches. (L. breeding esp. exot. Saturniidae, tropical aquaria, herpetology, exot. botany)
- Gorer, Dr P. A. (676), Flat 44, Abbey Lodge, Park Road, London N.W.8. (L. genetics and local variation)
- Gorer, R. (659), Little Pett Farm, Bridge, nr. Canterbury, Kent. (L.)
- Gosling, Miss P. L. (1131*), 259A Lee High Road, London S.E.12. (L.)
- Goulding, D. (1291*), 81 New Street, New Mills, nr. Stockport, Ches. (gen. ent. esp. L.)
- Gower, K. C. (1416*), 107 Essella Road, Ashford, Kent. (L.)
- Graham, E. W. (1142), Windy Ridge, Little Widbury, Ware, Herts. (L.)
- Grant, F. T. (276), 37 Old Road West, Gravesend, Kent. (C., L.)

- Grant, J. H., F.R.E.S. (330), 74 Coleshill Road, Ward End, Birmingham. (L.)
- Grant, R. M. (163), 31 High Street, Sheerness, Kent. (L.)
- Gratton, J. B. (737*), 8 Cheltenham Crescent, Salford 7, Lancs. (L.)
- Gray, S. J. (916), 97a Lynn Road, Ely, Cambs. (gen. ent. esp. C. and fleas)
- Green, A. F. G. (1100*), 390 Ewell Road, Surbiton, Surrey. (L.)
- Green, E. J. (387), 58 Ufton Road, London N.1. (medical ent.)
- Green, J. (1044), 61 Ruskin Road, Crewe, Ches. (C., gen. ent.)
- Green, W. (840*), 30 Neville Drive, Thornton-le-Fylde, Lancs. (gen. ent.)
- Greenwood, C. (312), Two Barns, West Town, Bristol. (L.)
- Greenwood, F. D. (1280), Solefield Lodge, Sevenoaks, Kent. (L.)
- Greenwood, R. S. (757*), 22 Maidstone Road, Rochester, Kent. (L.)
- Gregory, D. (769), 21 Fullars Road, London E.18. (gen. ent.)
- Greig, Major G. D. S. (10), 29 Highcroft Avenue, Bebington, Wirral, Ches. (L.)
- Griffiths, G. (1217), Adwy Goch, Blaenau Festiniog, Merionethshire. (gen. ent., parasites)
- Griffiths, L. (1240), 132 Blackburn Road, Accrington, Lancs. (gen. ent.)
- Grimwade, A. (913*), 2 Guildford Way, Wallington, Surrey. (L., gen. ent.)
- Gunton, Major H. C., F.R.E.S., F.R.M.S. (73), Rathgar, Gerrards Cross, Bucks. (phenological aspects of ent.)
- Haberer, C. F. (1138), 150 Church Road, London S.E.19. (gen. ent.)
- Hadden, N. G. (586), Underway, West Porlock, Somerset. (L.)
- Haddock, Miss M. J. (1303), Bracken Hill, North Road, Leigh Woods, Bristol 8. (C., gen. ent.)
- Haggett, G. M. (1200), 1 Torton Hill, Arundel, Sussex. (L., gen. ent.)
- Hague, N. G. (943), 39 Heath Drive, Potters Bar, Mddx. (L., O.)
- Hale, Miss U. K. (1150), 24 Woodstock Road, St Albans, Herts. (L., ornith.)
- Hall, D. W. (1088), Zoology Dept., University College, Dundee. (gen. ent.)
- Ham, B. J. (1327), Mona, Kings Saltern Road, Lyminster, Hants. (L.)
- Hamblyn, E. L. (1258*), 18 Penygroes Road, Rhiwbince, Cardiff, Glam. (L., H., aq. insects)
- Hammond, H. E. (423), 16 Elton Grove, Birmingham 27. (ent., L. life-histories)
- Hanlon, G. T. (504), 6 Arlington Gardens, Ilford, Essex. (L.)
- Hanson, S. M. (320), 167 Gunnersbury Park, Popes Lane, London W.5. (L.)
- Harcourt, H. M. (1123), Common Hill House, Alkham, nr. Dover, Kent. (insect pests)
- Harding, C. J., B.Sc. (894), The County School, Llandrindod Wells, Radnorshire. (B.)
- Harding, G. R. (558*), c/o Lady Campbell, Fordcombe Manor, nr. Tunbridge Wells, Kent. (L.)
- Hardman, J. A. (1234*), 10 Hands Lane, Bury Road, Rochdale, Lancs. (gen. ent., L., ML., NH., botany, ornith.)
- Hards, C. H. (176), 40 Riverdale Road, London S.E.18. (L., mic.)
- Harle, D. F. (889), The Studio, Strand Street, Sandwich, Kent. (E.)
- Harley, J. M. B. (541), 18 Leighton Avenue, Pinner, Mddx. (L.)
- Harmer, S. H. (1283), 9 Sketty Road, Enfield, Mddx. (L.)
- Harper, Comdr. G. W., R.N. (1169), Bramblewood, Bushby Avenue, Rustington, Sussex. (L., gen. ent.)
- Harris, A. G. Stoughton- (997*), 75 Mulgrove Road, Sutton, Surrey. (L.)
- Harris, B. L. (906*), 34 Delamere Road, Birmingham 28. (L., O.)
- Harrison, Prof. J. W. Heslop, D.Sc., F.R.S., F.R.E.S. (716), Gavarnie, The Avenue, Birtley, Co. Durham. (gen. ent., L., biogeography)
- Harry, Miss M. S. (162), 17 Briarwood Road, Stoneleigh, Ewell, Surrey. (L.)
- Hartley, P. N., M.A. (973), Parmiter's School, London E.2. (C., L.)
- Harvey, Rev. B. F. (537), 12 Osney Gardens, Paignton, Devon. (L. esp. R., Sphingidae)
- Harvey, Miss O. (156), Port Williams, Nova Scotia, Canada. (L., gen. ent.)
- Harwood, N. W. (825), 37 Stoneyhurst Avenue, Acklam, Middlesbrough, Yorks. (L., P.)
- Harwood, P. (273), Ardinsh, Kin-craig, Inverness-shire. (C., Hom., H. Aculeata)

- Haslam, J. (960*), 1020 Bristol Road, Birmingham 29. (R.)
- Haslam, J. C. (1074*), 321 Tring Road, Aylesbury, Bucks. (L.)
- Haynes, R. F. (834), The Sanctuary, West Humble, Dorking, Surrey. (L., ent., botany)
- Heard, M. J. (595), 36 Exford Road, London S.E.12. (L. esp. genetics)
- Heath, J., F.R.E.S. (836), 117 Ditton Fields, Cambridge. (L. esp. ML.)
- Heley, R. G. (731), Lygoes, Burcott, Wing, Leighton Buzzard, Beds. (L. including exot., botany)
- Hellings, G. E. A. (297), 49 Wheatshaf Close, Woking, Surrey. (L.)
- Henderson, C. W. (21), 124 Knightthorpe Road, Loughborough, Leics. (C., Brit. and exot.)
- Henry, I. (963*), Caldwell Lodge, Station Road, Marlow, Bucks. (R.)
- Henshaw, E. J., B.Sc. (692), 58 Berwyn Grove, Maidstone, Kent. (L. and horticultural ent.)
- Henstock, Dr H., Ph.D., M.Sc., F.I.C. (209), Glengariff, Caerwys, Mold, N. Wales. (L.)
- Herroun, E. F. (172), North Bank, Yorke Road, Reigate, Surrey. (L.)
- Heslop, Miss V. L. M. (835), Villa Aice-Choko, Route des Dunes, St Jean-de-Luz, B.P., France. (agric. insect pests, C.)
- Hewson, F. (601), 23 Thornhill Drive, Shipley, Bradford, Yorks. (L.)
- Hick, A. E. (567), Sherrards, Cricket Field Lane, Bishop's Stortford, Herts. (O., H.)
- Hick, E. P., F.R.E.S. (141), Athol House, Fulford Road, Scarborough, Yorks. (exot. L.)
- Hill, A. R., B.Sc., F.R.E.S. (1043), 58 Abbotsford Street, Dundee. (insect E. esp. aq., Hem.)
- Hill, G. H. (164), 52 Love Lane, Pinner, Mddx. (L.)
- Hilliard, R. (99), 5 Oakleigh Gardens, Edgware, Mddx. (L., NH.)
- Hilton, H. (697), 12 Langley Grange, Prestwich, Lancs. (L., ML.)
- Hincks, W. D., M.P.S., F.R.E.S. (531), 19 Whitefield, Heaton Norris, Stockport, Ches. (gen. ent., C., Orthoptera, Dermaptera, nomenclature)
- Hindmarsh, H. K. (1389), P.O. Kinangop, Kenya, E. Africa. (L.)
- Hirons, M. J. (444), 41 Kelvin Avenue, Wyken, Coventry, Warks. (L., mic.)
- Hitchens, P. E. N. (669), Sicklebanc, Horam, Sussex. (L. esp. temperature trials on pupae)
- Hobbs, R. J. (1047), 8 Blaen-Nant Street, Duffryn, Rhondda, nr. Port Talbot, Glam. (L.)
- Hodge, W. H. (878), 72 Cam Causeway, Chesterton, Cambridge. (L.)
- Hodges, G. B. (314), 12 London Road, Braintree, Essex. (L.)
- Hodgson, F. L. (580), 9 Ennerdale Drive, Bolton, Bradford, Yorks. (L.)
- Hodson, E. V. (1392), 42 Priory Road, West Bridgford, Nottingham. (L.)
- Hodson, L. S. (851), Littlestowe, Essendon, Herts. (gen. ent.)
- Holden, N. E. S. (1151*), Ingle Nook, Alexandra Road, Abergele, N. Wales.
- Holloway, P. H. (429), Warwick House, Fair Oak, Eastleigh, Hants. (R.)
- Holmes, A. E. (1188), 15 Halifax Road, Scapegoat Hill, Huddersfield, Yorks. (bees, gen. ent.)
- Holmes, A. M. (1198*), 72 Jesson Road, Walsall, Staffs. (L.)
- Holroyd, E. M. (1139*), 34 Elmfield Road, Davenport, Stockport, Ches. (L.)
- Holroyd, G. C. (253), 8 Elmside, Onslow Village, Guildford, Surrey. (L.)
- Hood, L. A. (526), 104a High Street, Maldon, Essex. (L.)
- Hopkins, Miss B. A. (827), 19 Hillside Road, Harpenden, Herts. (L. breeding)
- Hopkins, W. J. (1353*), Kettle Green Farm, Much Hadham, Herts. (gen. ent. esp. O., C.)
- Horner, A. (85), 43 Cranston Street, Penicuik, Midlothian. (L., M.)
- Hornblower, Capt. P. B., M.C. (869), Claverley C. of E. School, Claverley, Wolverhampton. (L.)
- Horner, D. S. (699*), 81 Leigh Road, Eastleigh, Hants. (L.)
- Horner, L. B. (917), Pinchinthorpe House, nr. Guisborough, Yorks. (gen. ent.)
- Horrell, Miss J. A. (944*), North-west House, Walkern Road, Stevenage, Herts. (L.)
- Horrell, Miss S. M. (945*), North-west House, Walkern Road, Stevenage, Herts. (L.)
- Horton, R. W. (861*), 56 Guardhouse Road, Radford, Coventry. (L.)
- Horton, T. P. (862*), 56 Guardhouse Road, Radford, Coventry. (L.)

- Howard, P. (607), 126 Fleet Road, Fleet, Hants. (L.)
- Howard, R. W. (363), Highgrove, Stapehill, Wimborne, Dorset. (gen. ent., NH.)
- Hubbard, Capt. E. H. T., R.N. (1061), Conroy House, Mundesley, Norfolk. (L.)
- Hughes, D. R., B.Sc., F.G.S. (1067), Wakerley House, Wolsingham, via Bishop Auckland, Co. Durham. (C., H., L., O., Hem.)
- Hughesdon, J. (87), 112 Aldenham Road, Bushey, Herts. (L.)
- Humphrey, S. W. (386), Pear Tree House, Roade, Northants. (R.)
- Humphreys, J. A. (168), White Cross Service Station, 155 Reigate Avenue, Sutton Bypass, Sutton, Surrey. (gen. ent.)
- Hurrell, F. J. (923), 46 Goldlay Avenue, Chelmsford, Essex. (L.)
- Hutchison, Flt./Lt. D. (919), 68 Muirhall Road, Larbert, Stirlingshire. (world R. esp. Brit. and European)
- Hyatt, K. H. (1411*), 50 Heather Road, London S.E.12. (L.)
- Hyde, G. E., F.R.E.S. (818), 20 Woodhouse Road, Doncaster, Yorks. (L., O., H.)
- Hynes, Mrs V. D. P. (686), 152 Meachem Avenue, Battle Creek, Michigan, U.S.A. (silkmoths)
- Inglesent, H. (1049), Lea Holme, Archer Park, Middleton, Lancs. (bees, anatomy and physiology)
- Irving, J. E. C. Riley- (331), 137 Beaufort Street, London S.W.3. (D. Syrphidae, Trichoptera)
- Irwin, R. R. (1220), 1005 South Bloomington Street, Streator, Illinois, U.S.A. (R.)
- Ison, C. H. (1343), 47 Orford Road, London E.17. (gen. ent. esp. Saturniidae, mic., P. including photomicroscopy)
- Jackman, L. A. J. (1371), Bayswater, Cockington Lane, Preston, Paignton, Devon. (L., O.)
- Jackson, Miss D. J., F.L.S., F.R.E.S. (1124), North Cliff, St Andrews, Fife. (gen. ent., C., H.)
- Jackson, S. M. (1269), 15 Westbourne Road, Selby, Yorks. (L.)
- Jackson, W. W. (619), 18 Belmont Road, Aberdeen. (L.)
- James, R. T. H. (628), Grove Cottage, Chute Cadley, nr. Andover, Hants. (gen. ent., ornith.)
- James, W. H. (120), 41 Carson Road, London S.E.21. (L. esp. R., Sphingidae)
- Janes, J. A. (614), 1 Ailsa Terrace, Tiverton, Devon. (L.)
- Jaques, F. A. (1314), 58 Clifton Gardens, London N.W.11. (gen. ent., P.)
- Jarvis, C. MacKechnie, F.L.S. (650), 50 Adelaide Square, Bedford. (C., econ. ent.)
- Jefferson, T. W. (242), 37 Riversdale Terrace, Sunderland, Co. Durham. (R.)
- Jeffreys, Dr D. M., M.B., B.Ch. (615), Thrifty Beeches, The Grove, Lyndhurst, Hants. (L., ornith., gen. ent.)
- Jeffer, G. A. T. (910), Nuns Holm, Nuns Corner, Grimsby, Lincs. (gen. ent.)
- Jesper, D. M. (1152), 23 Woodlands Grove, Harrogate, Yorks. (L., C., H., beekeeping)
- Johnson, J. H. (1040), 53 Knighton Street, Heptthorne Lane, nr. Chesterfield, Derbyshire. (C., H.)
- Jones, A. W. (1165*), 99 Ashmore Road, London W.9. (D.)
- Jones, C. Garrett- (989), 6 Pembroke Court, Edwardes Square, London W.3. (L., D.)
- Jones, G. D. Glynne (1062), Quarry Dene, Weetwood Lane, Leeds 6. (Aphididae)
- Jones, M. (1384*), 21 Deerbrook Road, London S.E.24.
- Jones, P. (1006), Coplands, Walderslade Road, Chatham, Kent. (gen. ent.)
- Jordan, A. S. (741), 19 Cornwall Road, Coventry, Warks. (L.)
- Keji, J. A. (571), Biggs Memorial Hospital, Ithaca, N.Y., U.S.A. (L. larvae, esp. Saturniidae, Notodontidae, Eucleidae)
- Kelly, Miss D. (1190*), 17 Kelvin Court, Kensington Park Road, London W.11. (L. esp. breeding)
- Kemp, J. H. (1161), 29 Woodville Gardens, Ruislip, Mddx. (aq. insects)
- Kennard, C. H. L. (1192*), 79 Macleay Street, Potts Point, Sydney, N.S.W., Australia. (L.)
- Kennard, D. N. (1193*), 4 Crantock Road, London S.E.6. (L.)
- Kennedy, A. (20), 130 Vesper Road, Leeds 5. (L.)
- Kenworthy, R. J. (1009*), Fairlight, Stanham Road, Pembury, Kent. (L.)
- Kenworthy, T. N. (1010), Fairlight, Stanham Road, Pembury, Kent. (L.)

- Kerrich, G. J., M.A., F.R.E.S. (551), Heath Crest, Westcott, Dorking, Surrey. (H. Parasitica)
- Kershaw, J. L. (418), 92 Gloucester Street, Barrow-in-Furness, Lancs. (L.)
- Kettlewell, Dr H. B. D., M.A., M.B., B.Chir., M.R.C.S., L.R.C.P., F.R.E.S. (706), Homefield, The Common, Cranleigh, Surrey. (L. genetics)
- King, A. R. (425), Walworth House, Thirlestaine Road, Cheltenham, Glos. (L.)
- King, Capt. J. D., R.A. (485), 54 Hartley Old Road, Purley, Surrey. (gen. ent.)
- Kinsey, F. J., L.D.S. (1232), 6 Cloverdale Road, Macclesfield, Ches. (C., H.)
- Kloet, G. S., F.Z.S., F.R.E.S. (477), 8 Knutsford Road, Wilmslow, Ches. (gen. ent., nomenclature)
- Knight, J. E. (94), Doughton Cottage, Ross-on-Wye, Herefs. (L. rearing)
- Knight, Major M., O.B.E., F.R.M.S., F.L.S. (956), The Homestead, Park Road, Camberley, Surrey. (aq. insects, moths, mic.)
- Knowles, O. H. (951*), Furze Reeds, nr. Midhurst, Sussex. (L.)
- Lake, E. R. (868*), Hertford Constitutional Club, Lombard House, Hertford. (L.)
- Lamacraft, Miss D. M. (932), 62 Dane Valley Road, Margate, Kent. (gen. ent.)
- Lanfear, A. H. (74), 20 South Eastern Road, Ramsgate, Kent. (L.)
- Lang, D. A. (732*), 7 Lyndhurst Drive, Sevenoaks, Kent. (L. esp. R.)
- Langley, R. (1273), 100 Wickham Lane, London S.E.2. (H., hawk-moths)
- Large, C. (608), 17 Foundry Approach, Leeds 9. (C.)
- Last, H. R. (117), 12 Winkworth Road, Banstead, Surrey. (C. esp. Brit. and exot. Staphylinidae)
- Latham, F. H. (369), 26 Hollie Lucas Road, Birmingham 14. (L.)
- La Touche, Dr A. A. D. (884), 21 Alwoodley Gardens, Moortown, Leeds. (spiders)
- Laurence, M. T. (875*), St Albans, New Abbey Road, Dumfries. (L.)
- Lawday, H. A. R. (1352), Lee Abbey, Lynton, Devon. (H., Aphid diseases, pest control)
- Leach, D. W. (791), 12 High View Road, London E.18. (gen. ent.)
- Leclercq, Dr J. (1055), Laboratoires de Biochimie de l'Université de Liège, 17 Place Delcour, Liège, Belgium. (physiological ent., H.)
- Leeds, H. A. (282), Wood Walton, Hunts. (L. esp. R. vars.)
- Lees, F. H. (375), The Gables, Maidencombe, Newton Abbot, Devon. (L.)
- Le Fleming, Miss W. M. (1105), 32 Trebovir Road, London S.W.17. (L.)
- Le Masurier, P. C. (978), 85 Warren Drive, Tolworth, Surrey. (L.)
- Leonard, B. G. (96), 29 Storeton Road, Oxtou, Birkenhead. (L. hawkmoths)
- Letts, J. K. (506), 183 Windmill Lane, Greenford, Mddx. (mic.)
- Lever, R. A. (1135), Dept. of Agriculture, Kuala Lumpur, Malaya. (gen. ent.)
- Lewin, Major F. H. W. Ross- (154), The White House, St Olaves, nr. Great Yarmouth. (L., O.)
- Lewis, E. (952), 8 Parry Road, London S.E.25. (C.)
- Lewis, Rev. E. S. (373), Berwyn, Rhuddlan, Flintshire. (L.)
- Lewis, R. (734), Electric House, Queen Street, Withernsea, Yorks. (O., botany)
- Lifton, J. (346*), 19 Wheatsheaf Gardens, Sheerness, Kent. (L.)
- Lindley, K. A. (577), 9 Old Oak Road, London W.3. (L., ornith.)
- Lisney, A. A., M.A., M.D., F.R.E.S. (315), 66 Monmouth Road, Dorchester, Dorset. (L., ML.)
- Little, J. C. (563), 70 Langley Way, West Wickham, Kent. (L. including exot.)
- Littlewood, F. (1167), 34 Aynam Road, Kendal, Westmorland. (L.)
- Llewellyn, J. M. (1249*), 200 Heathwood Road, Cardiff. (C.)
- Lloyd, Major C. T., D.Sc., Ph.D. (468), 25 Belmont Avenue, New Malden, Surrey. (L., ML., microphotography, ornith.)
- Lloyd, L. C., F.L.S., M.B.O.U. (770), Shackerley, Wenlock Road, Shrewsbury, Shropshire. (E.)
- Lloyd, R. W. (445), Treago Castle, St Weonards, Hereford. (C.)
- Lloyd, T. J. (824), Hammonds End House, Harpenden, Herts. (L.)
- Locke, M. (1118*), 36 Ainsdale Road, London W.5. (L., botany, mic., Z.)
- Long, Miss L. M. (698), White House Farm, Somerleyton, via Lowestoft, Suffolk. (L. rearing, gen. ent.)

- Longfield, Miss C., F.R.E.S. (1039), 11 Iverna Gardens, London W.8. (O.)
- Lorimer, Dr J. A. (576), Roycroft, King's Avenue, Buckhurst Hill, Essex. (L.)
- Lorimer, R. I. (600), Braeside, Pine Grove, London N.20. (L.)
- Lothian, D. M. (964*), Backhill Cottage, East Hallside, Cambuslang, Glasgow. (L., C.)
- Lowther, Dr R. C. (1024), Fernleigh, Grange-over-Sands, Lancs. (L., phenological dates, gen. NH.)
- Luke, J. F. (1069*), Gibbet Oak Farm, Tenterden, Kent. (L.)
- Luscombe, Miss B. (815*), Puriton Manor, Bridgwater, Som. (L.)
- Lygo, W. F. (514), Forest View, Stanford Road, Kirby Fields, nr. Leicester. (L.)
- Lyon, F. H. (1026), Great Bradley, Withypool, Minehead, Som. (L.)
- Macfarlane, D. (797*), 22 Beechwood Avenue, Chatham, Kent. (L., C., H.)
- Maclaurin, A. M. (1282), Oldhallhouse, Kilmacollm, Renfrewshire. (gen. ent.)
- Macnicol, Dr D. A. B. (67), 52 St Albans Road, Edinburgh 9. (L., ML., P.)
- Maggs, P. (244), Sibylla, East End, Lymington, Hants. (L.)
- Major, A. P. (1117*), 21 Tufton Road, Rainham, nr. Gillingham, Kent. (NH., gen. ent.)
- Malkin, Dr G. R. (793), Fownhope, Hereford. (L.)
- Manly, G. B. (427), 72 Tenbury Road, Kings Heath, Birmingham. (L.)
- Manning, F. J. (1342), Training College for Teachers, Alsager, Stoke-on-Trent. (H.)
- Mansfield, M. J. (134), 5 Chigwell Road, Bournemouth, Hants. (gen. ent.)
- Marchant, T. J. (1239*), 86 Dereham Road, Barking, Essex. (L.)
- Marriott, D. E. (705*), 12 Kensington Avenue, Watford, Herts. (L., O.)
- Marsden, P. D. (1292*), 126 Firs Lane, London N.21. (L.)
- Marsh, Capt. D. G. (863), Gara-Tor, Pigeon Lane, Eddington, Herne Bay, Kent. (L.)
- Marsh, G. S. (833), 17 Harlington Road East, Feltham, Mddx. (bees—atomy, physiology, diseases)
- Marshall, J. F., C.B.E., M.A. (646), 47 London Road, Cheltenham, Glos. (D. esp. Culicidae)
- Marshall, J. G. S. (1317), Millwater House, Ripley, Woking, Surrey. (gen. ent.)
- Marshallsay, F. C. (1272*), 23 High Street, Fordington, Dorchester, Dorset. (L., C., H.)
- Marson, J. E., F.Z.S., F.R.E.S. (1390), 35 High Park Drive, Heaton, Bradford, Yorks. (pond life, mic., spiders)
- Martin, D. (1126), Forester Training School, Park End, Lydney, Glos. (gen. ent. esp. C.)
- Martin, E. L. (801*), 9 Devonshire Road, Harrow, Mddx. (L. esp. ML., Trichoptera)
- Martin, W. A. (553), Longcause, Totnes, Devon. (L.)
- Mason, E. S. (957), 35 Elmgate Gardens, Edgware, Mddx. (C.)
- Matthews, C. T. (1312*), 39 Spring Grove, Loughton, Essex. (L.)
- Mavromoustakis, G. A. (1288), 232 St Andrew's Street, Limassol, Cyprus. (gen. ent.)
- May, A. V. (1128*), 42 Whitehall Gardens, London E.4. (gen. ent. esp. L.)
- Maycock, A. G. (1261), Manager, Pest Control (Central Africa) Ltd., P.O. Box 316, Bulawayo, Southern Rhodesia. (gen. ent.)
- Maynard, Miss J. (1187), Homeleigh, Chertsey Road, Old Byfleet, Surrey. (gen. ent.)
- McCartyne, G. (1347), Beechgrove, Kirkpatrick Durham, by Castle-Douglas, Kirkcudbrightshire. (H.)
- McCrae, A. W. R. (1144*), Oak Lawn, Gordon Avenue, Stanmore, Mddx. (C., L.)
- McCurdy, Dr J. M., M.R.C.S., L.R.C.P. (1270), 161 Wigan Road, Ashton in Makerfield, Lancs. (L.)
- McDonald, P. (747*), 65 Glenwood Avenue, Harrow, Mddx. (L.)
- McKim, J., J.P., F.Z.S. (823), 12 Darvel Crescent, Ralston, Paisley. (botany, fish, Z., marine and fw. B.)
- McLeod, C. H. (491), Culverlea House, Pennington, Lymington, Hants. (L.)
- McLeod, Sir Murdoch, Bt. (35), Culverlea House, Pennington, Lymington, Hants. (L.)
- Mead, J. N. (1059*), Wyldberrry, Fox Street, Ardleigh, Essex. (L., C., gall causers)
- Meade, Miss M. R. (971*), The Rectory, Abinger Common, nr. Dorking, Surrey. (L.)

- Mellor, D. J. (1372*), 74 Prince of Wales Road, Coventry, Warks. (L.)
- Mellows, W. T., M.B.E., LL.B., F.S.A. (302), The Vineyard, Minster Precincts, Peterborough, Northants. (L.)
- Melrose, Dr M. M., M.D. (723), Wargrave House, St Owen Street, Hereford. (L. esp. ML.)
- Melville, Dr R., Ph.D., F.L.S. (903), Royal Botanic Gardens, Kew, Surrey. (H., beekeeping, botany)
- Menzies, I. S. (585), Eden Roc, Florida Road, Ferring-by-Sea, Sussex. (L., ML., C., H.)
- Merrill, H. W. (640), The Marsh, Marsh Road, Thornton-le-Fylde, Lancs. (L.)
- Metcalf, D. F. (1182*), 64 Fore Street, Hertford, Herts. (L. esp. breeding)
- Michael, P. (748), 56 Cranmore Lane, Aldershot, Hants. (NH., phenology, M., fishing and ichthyology, research esp. in breeding L.)
- Michaelis, H. N. (1216), 10 Didsbury Park, Manchester 20. (L. including Indian R.)
- Michaelson, Capt. C. H., R.N. (436), Blakeholme Farm, Newby Bridge, Ulverston, Lancs. (L.)
- Millard, W. J. (80), 8 York Place, Clifton, Bristol 8. (gen. ent., L., pond life)
- Miller, F. C. (1223), 7 Gabriels Hill, Maidstone, Kent. (L.)
- Miller, M. C. (1231*), 7 Gabriels Hill, Maidstone, Kent. (L.)
- Miller, S. W. (1287), 5 Bedford Terrace, Portobello, Midlothian. (L., C.)
- Mills, Miss D. (354), Blendon Preparatory School, Bexley, Kent. (L.)
- Mills, D. R. S. (783*), 19 Colebrooke Drive, London E.11. (L.)
- Mills, H. C. (1228), Thornycroft, Greenway, Hutton Mount, nr. Brentwood, Essex. (H., L.)
- Milman, P. P. (689), 19 St Michael's Road, Paignton, Devon. (L.)
- Milne, D. I. (1025*), Oak Tree House, Willesborough, Ashford, Kent. (L., gen. ent., fish)
- Milner, P. F. A. (521), 167 Lake Road West, Cardiff. (L.)
- Milton, L. F. (1110), 41 Marmora Road, Cambridge. (C., biological control)
- Mitchell, I. (1050*), 64 Woodstock Road, Cheylesmore, Coventry. (L.)
- Moeck, A. H. (1326), 301 East Armour Avenue, Milwaukee, Wisconsin, U.S.A. (gen. ent.)
- Molyneux, S. R. (1180), 158 Astonville Street, London S.W.18. (gen. ent. esp. C.)
- Molyneux, W. Hunking- (1297), Greenhill, Afonwen, Caerwys, Flintshire. (gen. ent.)
- Moody, N. H. (693), 119 Southampton Road, Ringwood, Hants. (L.)
- Moore, D. M. (1248*), Thom Hill House, Prospect Place, Barnard Castle, Co. Durham. (L., gen. ent.)
- Moore, D. R. (1194), Sunnyside Cottage, Westcar Lane, Hersham, Walton-on-Thames, Surrey. (L.)
- Moore, J. (146), Orchards, Bredon, nr. Tewkesbury, Glos. (L.)
- Moreton, N. (1257), Norina, Butcroft, Walsall Road, Darlaston, Staffs. (L.)
- Morgan, C. (987), 68 Locarno Avenue, Gillingham, Kent. (O.)
- Morgan, H. G. M.A. (90), N.A.A.S., Bracken Hill, Leigh Woods, Bristol 8. (Hem. esp. aphides and aq. Het., E., gen., econ., and agric. ent.)
- Morgans, W. K. (1183*), Blue Ridge, Beacon Hill, Hindhead, Surrey. (L.)
- Morton, J. K. (522), 26 Argyle Square, Sunderland, Co. Durham. (L.)
- Morton, Miss M. E. (924*), Newbridge House, Horner, nr. Leeds, Yorks. (L., mic.)
- Morton, R. D. (145), 16 Gray's Lane, Hitchin, Herts. (L., beekeeping)
- Moseley, L. A. T. (1264*), 44 Hawthorne Avenue, Rainham Mark, Gillingham, Kent. (L.)
- Moss, B. T. M. (1335), 12 The Bungalows, Windmill Road, Halstead, Essex. (H., L.)
- Muir, A. W. (1106), Weardale, Knitsley Lane, Consett, Co. Durham. (L.)
- Mullings, P. L. (360), 20 Grange Park, London W.5. (H., mic., beekeeping, esp. bee diseases)
- Mumby, P. D. (509), 2 Westfield Road, Great Shelford, Cambs. (H., C., ML., D.)
- Murchie, W. R. (634), Box 203, Sharon, Pennsylvania, U.S.A. (L., gen. ent., Z.)
- Murdy, P. S. (979*), 193 Coombe Lane, London S.W.20. (L.)
- Murray, Dr H. (177), Ashbourne, Clonmel, Co. Tipperary, Eire. (L.)

- Myall, G. R. (800*), 3 Holmdene Avenue, North Harrow, Mddx. (L., C.)
- Nathan, L. (428), 19 Monton Street, Moss-side, Manchester 14. (ent., L.)
- Neal, E. G., B.Sc. (467), 2 Bishop's Mead, Kingston Road, Taunton, Som. (L., C., Hem., P.)
- Neal, P. G. (1103*), 177 Braemore Road, Goodmayes, Essex. (L.)
- Ness, A. R. (549), 15 Homefield Avenue, Newbury Park, Ilford, Essex. (L.)
- Nestel, B. L. (1362*), 31 Filey Avenue, London N.16. (gen. ent., L.)
- Newhouse, P. W. (1147*), 76 The Avenue, Linthorpe, Middlesbrough, Yorks. (L.)
- Newman, E. C. (652), 5 Shepway Avenue, Maidstone, Kent. (L.)
- Newman, L. H. (503), The Butterfly Farm, Bexley, Kent. (L.)
- Newson, P. (842), Ridheugh, West End Avenue, Guisborough, Yorks. (L.)
- Newton, A. H., M.B., Ch.B., F.R.E.S. (1140), Walland Cottage, Charles, nr. Barnstaple, Devon. (O., C.)
- Newton, J. (439), 11 Oxleaze Close, Tetbury, Glos. (L.)
- Nichols, T. B. (1083), De Novo, Cranfield Park Road, Wickford, Essex. (gen. ent.)
- Nicholson, G. (33), Nuns Moor Crescent, Newcastle-upon-Tyne. (L.)
- Nightingale, A. E. (926*), 29 Market Square, Ely, Cambs. (L., gen. ent.)
- Nissen, L. C. (1386*), Fronheulog, Llanfrothen, Penrhyndeudraeth, Merioneth. (L., C.)
- Nixon, G. A. (1246*), 27 Heyscroft Road, Manchester 20. (L., C.)
- Nobbs, P. (948*), 15 Marsh Lane, Stanmore, Mddx. (Sphingidae)
- Norman, Dr T. (68), Seleng T.E., Seleng-Hat P.O., Upper Assam, India. (H., L., D., parasites of L.)
- North, R. S. (654), 41 Buckingham Road, Aylesbury, Bucks. (L.)
- Nunn, C. T. (523), 2 Boyles Court Cottages, Warley, Essex. (L.)
- Nunn, G., M.A., B.Sc., A.R.I.C. (1149), Senior Lecturer in Science, Oakley Training College for Men, Cheltenham, Glos. (gen. ent.)
- O'Farrell, A. F., B.Sc., A.R.C.S., F.R.E.S. (58), New England University College, Armidale, N.S.W., Australia. (O., L., D., econ. ent.)
- Ogden, J. S. (1070), Argwendon, Green Street, Sunbury-on-Thames, Mddx. (L., C.)
- Ogden, W. S. (1018*), South Lodge, Reading Road, Cholsey, Berks. (L.)
- Ogston, D. (1351*), Glencairn, Ridgway, London S.W.19. (L.)
- O'Neill, P. F. (1058), Shenstone Training College, nr. Kidderminster, Worcs. (C.)
- Ormerod, S. Horton- (1370), 7 North Road, West Kirby, Wirral, Ches. (arachnology)
- O'Rourke, F. J. (191), 45 St Kevin's Park, Rathmines, Dublin, Eire. (H.)
- Osborn, E. (938), 76a Wood Street, Kettering, Northants. (E. of R., colour P.)
- Osborne, P. J. (1340*), 116 Bulan Road, Headington, Oxford. (H.)
- Otter, G. W. (475), Southwood, Blandford Road, Broadstone, Dorset. (L., C., Trichoptera)
- Owen, D. F. (1330*), 3 Lockmead Road, London S.E.13. (L.)
- Owers, D. E. (1319), No. 14062095, Pte. Owers D. E., Royal Sussex Regt., H.Q. Coy., 28 Training Bn., Palace Bks., Holywood, Belfast, N. Ireland. (L., C., O.)
- Owston, E. (1334*), 26 Raleigh Street, Scarborough, Yorks. (L.)
- Page, Miss B. (1321), The Gables, Cookham Dean, Berks. (L., ornith.)
- Page, E. S. (598), The Gables, Cookham Dean, Berks. (L.)
- Page, R. L. S. (742*), Abbots Gate, Falcon Gardens, Minster, Sheppey, Kent. (gen. ent.)
- Pallister, G. (739*), Panorama, The Avenue, Birtley, Co. Durham. (L.)
- Palmer, J. J. (900), Editor-in-Chief, Western Morning News Co. Ltd., Leicester Harmsworth House, 8-10 Frankfort Street, Plymouth. (organisation of entomological and phenological returns)
- Palmer, K. L., F.R.E.S., F.R.M.S. (1098), Meadowlea, Gobowen, Salop. (L.)
- Parfitt, R. W. (525), 4 Brind Park Terrace, Sandhurst, Camberley, Surrey. (L., ML.)
- Park, F. (888), 381 Grangemouth Road, Radford, Coventry. (L.)

- Park, F. B. (1329), 7 The Chilterns, Brighton Road, Sutton, Surrey. (H.)
- Parker, C. F. (803), 61 Winchcomb Gardens, London S.E.9. (L., mic.)
- Parker, E. (865), Feathercombe, Hambledon, Godalming, Surrey. (M.)
- Parker, G. H. (1397), 11 Bristol Road, Gloucester. (gen. ent.)
- Parker, H. (738), 21 Park Way, Southwick, Sussex. (gen. ent., NH.)
- Parmenter, L., F.R.E.S. (895), 94 Fairlands Avenue, Thornton Heath, Surrey. (D.)
- Parr, M. J. (779*), 7 Crawford Gardens, Ruislip Road, Greenford, Mddx. (gen. ent., ornith., fish)
- Parsons, D. (763*), 2 Carshalton Place Terrace, Carshalton, Surrey. (L.)
- Patrick, H. H., F.R.H.S., F.R.E.S. (744), 5 Marner Crescent, Radford, Coventry, Works. (insect B., L. vars., mic., gen. ent.)
- Pauly, R. C. (572*), 342 South Third Avenue, Walla Walla, Wash., U.S.A. (L. breeding)
- Payne, J. H. (353), 10 Ranelagh Road, Wellingborough, Northants. (L.)
- Peace, H. A., F.R.E.S., F.R.M.S. (680), Kiln Road, Hastoe, Tring, Herts. (R., bees, wasps, mic., pollen)
- Pearce, Rev. E. J., M.A., F.R.E.S. (796), St Teilo's Priory, Church Terrace, Roath, Cardiff. (C. and their distribution, esp. Haliplidae, Pselaphidae)
- Pearce, R. H. (1229*), Woodlands, St George's Hill, Bathampton, Bath, Som. (L.)
- Peck, S. (546), Fairview, Norton, Glos. (L.)
- Peel, D. H. (1218*), 7 Bushway, Dagenham, Essex. (British and exot. R.)
- Peet, J. S. (1120*), 9 Salisbury Avenue, St Albans, Herts. (L., H., C.)
- Pellatt, J. J. K. (338), 45 Maple Street, Sheerness, Kent. (L.)
- Pennock, E. T. (82), 16 Drive Road, Linthouse, Glasgow S.W.1. (L.)
- Perkins, P. C. (1339*), 7 Gunter Grove, Burnt Oak, Edgware, Mddx. (L.)
- Perrins, C. M. (1133*), Thursday Cottage, Ember Lane, Esher, Surrey. (L.)
- Petty, G. R. (1113), 106 Kings Road, Rayners Lane, Harrow, Mddx. (gen. ent.)
- Phebey, P. R. (1293*), Manor Farm House, Hauxton, Cambs. (L., H., C.)
- Phipps, D. J. (1417*), 170 Ladywell Road, London S.E.13. (L.)
- Pickard, Dr J. N. (599), Craufurd, Sawston, Cambs. (L., genetics)
- Pickering, E. C. (1243), 31 Alexandra Drive, Surbiton, Surrey. (H.)
- Pickett, A. H., L.D.S., D.M.D. (37), 32a Chatsworth Road, Brighton, Sussex. (L.)
- Pierpoint, W. (1226), Woodlane End, Adlington, Macclesfield, Ches. (silkmoths)
- Pitman, J. R. (1278*), 42 Surrey Grove, Sutton, Surrey. (L.)
- Pitt, W. S. (670), Wildwood, Silverdale Avenue, Walton-on-Thames, Surrey. (bumblebees)
- Platt, H. (935), 13 Arcadia Avenue, Brooklands, Ches. (P. of L.)
- Platts, A. R. (914*), 29 Dene Road, Northwood, Mddx. (L.)
- Platts, J. H. (515*), 29 Dene Road, Northwood, Mddx. (L.)
- Platts, T. L. (1275*), 3 Brooklane, Hackenthorpe, nr. Sheffield, Yorks. (C.)
- Pomeroy, R. D. (876), 14 Highland Avenue, Norwich, Norfolk. (L.)
- Poole, K. H. (133), 86 The Crescent, Milton, Weston - super - Mare, Som. (L.)
- Popplewell, P. B. (819*), 28 Glenhurst Road, Prittlewell, Southend-on-Sea, Essex. (gen. ent., L.)
- Port, M. H. (799*), 31 Pinner View, Harrow, Mddx. (L., Orthoptera)
- Potter, C. W. (214), 10 Fern Rise, Garden City, Humberstone, Leicester. (L.)
- Pow, A. (39), 63 Sharpill Road, Saltcoats, Ardrossan, Ayrshire. (L.)
- Powell, R. A. (1091), 226 Coatham Road, Redcar, Yorks. (gen. ent.)
- Praed, Lt.-Col. C. W. Mackworth- (392), Castletop, Burley, Hants. (ent., Z., ornith.)
- Pratt, C. B. (784), 1 West Ham Lane, London E.15. (L.)
- Price, Miss P. D. (993), 97 Monkams Lane, Woodford Green, Essex. (gen. ent.)
- Price, P. G. Hamilton- (860*), Hambrook House, Charlton Kings, Cheltenham, Glos. (E.)
- Prichard, R. (460), 4 Woodcroft Lane, Bebington, Ches. (L., ML.)

- Procter, R. (265), 7 Chantrell Grove, York Road, Leeds 9. (L., ML.)
- Prudence, Sister (974), St Hilda's School, Wemmergill Hall, Middleton-in-Teesdale, Co. Durham. (gen. ent.)
- Purvis, L. E. (941), One Oak, Hale Road, Hale Barns, Ches. (L.)
- Putnam, C. D. (1383*), Davenants, Sible Hedingham, Halstead, Essex. (gen. ent.)
- Quinn, J. G. (955), The Node, Codicote, Hitchin, Herts. (L.)
- Quinn, M. (1219*), 111 Cecily Road, Cheylesmore, Coventry, Warks. (L.)
- Ralph, J. E. G. (1177), 48 Teapot Lane, Aylesford, Kent. (gen. ent.)
- Rampling, D. (968), 7 Gainsborough Road, Sudbury, Suffolk. (gen. ent., ornith.)
- Ramsay, F. J. (837), Old Manse, Kilbarchan, Renfrewshire. (gen. ent.)
- Ramsden, E. (130), Flat No. 1, Glenburn, Calverley Lane, Horsforth, nr. Leeds. (L.)
- Randall, M. C. (535), 64 Mount Pleasant Road, Chigwell, Essex. (L.)
- Rands, Lt. G. A. F. (879); believed to be overseas, but address unknown. (L. esp. hawkmoths, silkmths, M.)
- Ranger, J. E. A. (1002*), 54 Cherry Crescent, Brentford, Mddx. (Locusts, L.)
- Ranwell, D. S. (481), 6 Ellardale Road, Bognor, Sussex. (breeding L.)
- Raven, L. (135), 117 Binley Road, Coventry, Warks. (L.)
- Raw, F. (1064), N.A.A.S., Bracken Hill, Leigh Woods, Bristol 8. (E. esp. soil fauna)
- Rawlings, W. G., F.R.E.S., M.B.O.U., F.Z.S. (452), 14 Westfield Park, Bath, Som. (C. and L. in relation to ornith.)
- Ray, D. J. (679*), Mill House Cottage, Bishopstoke, Hants. (ent., R., M., ornith.)
- Ray, H. (678), Mill House Cottage, Bishopstoke, Hants. (phototropic behaviour of insects)
- Raybould, J. N. (1302*), 8 Ember Farm Avenue, East Molesey, Surrey. (gen. ent.)
- Rayner, F. S. (1108), 83 Conway Crescent, Perivale Park, Greenford, Mddx. (L.)
- Read, D. B. (1087*), 21 Princes Street, Kettering, Northants.
- Read, E. C. (855), Stoney Corner, Meopham, Kent. (NH.)
- Readwin, B. (820), 36 Warley Hill, Brentwood, Essex. (gen. ent.)
- Redfern, H. L. (1279), 105 Circular Road, Birmingham 27. (L., H.)
- Redhead, E. Milne- (685), 7 Ashley Gardens, Petersham, Surrey. (C., L., Hem.-Het.)
- Redmayne, M. I. (1041), The Long House, Great Alne, nr. Alcester, Warks. (L., H., P.)
- Rees, D. A. (1184*), 98 Eden Way, Beckenham, Kent. (L.)
- Reid, Miss E. (927*), Red Lion Hotel, Freeman Street, Grimsby, Lincs. (gen. ent.)
- Reynolds, W. E. (1350*), 8 Clifton Road, Squires Lane, London N.3. (L.)
- Richards, A. W., M.A., B.Sc. (566), Nether Edge, Chapel Lane, Hawley, nr. Camberley, Surrey. (L., O., Orthoptera)
- Richardson, A. (483), Beaudesert Park, Minchinhampton, Glos. (L.)
- Richardson, N. A. (431), 20 Bletchley Road, Bletchley, Bucks. (L.)
- Rickard, R. M. (1341), High Street, Coningsby, Lincs. (L.)
- Riley, N. D., F.R.E.S. (885), 7 McKay Road, London S.W.20. (L., gen. ent.)
- Risbridger, C. A. (812), Woodcock Lane, Birmingham 31. (L.)
- Risbridger, M. D. (813*), Woodcock Lane, Birmingham 31. (L.)
- Ritson, W. (1112), 12 West Street, Winwick Road, Warrington, Lancs. (ornith., gen. ent. esp. C. and Orthoptera)
- Rivolta, J. R. A. (743), 1 Boundary Lane, St Leonards, nr. Ringwood, Hants. (L.)
- Roberts, G. A. (448), 53 Broadway, Fulford, York. (gen. ent., L., botany)
- Roberts, R. E. Vaughan- (1410), Llys Athro, Llanarmon-yn-Iâl, Mold, Flint. (L., H., gen. ent.)
- Roberts, S. F. (216), 29 Holliers Hill, Bexhill-on-Sea, Sussex. (L.)
- Roberts, W. N. (77), 48 Bishops Mansions, Bishops Park Road, London S.W.6. (L., gen. ent.)
- Robertson, A. W. (323), Ranworth, St Lawrence Drive, Eastcote, Mddx. (E.)
- Robertson, J. A. (224), The Gardens, Rotherby, Melton Mowbray, Leics. (L.)
- Robinson, C. A. (1085*), 155 Regent Street, Kettering, Northants. (L., C., O.)

- Robinson, Miss D. E. (1295*), 14 Whitwood Terrace, Whitwood, nr. Normanton, Yorks. (L.)
- Robinson, E. W. (773), Woodacre, Woodford, Ches. (L., C., H.)
- Robson, J. P. (44), 10 Vane Road, Barnard Castle, Co. Durham. (L., ML.)
- Roche, Dr P. J. L. (408), c/o D.M.S., Lagos, Nigeria. (C., Hem.)
- Rogers, L. N. Norris- (1238), Alstone, Beckford, Glos. (gen. ent.)
- Rogers, Miss P. L. (205), 91 Middle Lane, London N.8. (L., ent., NH.)
- Rogerson, S. (1398*), 10 Shelley Avenue, Sutton Trust Estate, Hull. (L.)
- Roots, R. C. (1107), 41 Second Avenue, Chelmsford, Essex. (B.)
- Roscoe, Miss Mavis (560*), South Holwell Cottage, Warmwell, Dorchester, Dorset. (L.)
- Roudier, A. J. (1294), 6 Square Georges Lesage, Paris 12e, France. (C., L.)
- Rouse, G. D. (1211), Laurel Cottage, Lyndhurst, Hants. (C., gen. ent.)
- Row, Capt. A. W. H. (1316), 3 Down Road, Rodwell, Weymouth, Dorset. (L., C., H.)
- Rowden, A. O. (405), Rydon Crest, Countess Wear, Exeter, Devon. (gen. ent.)
- Rowe, R. C. B. Hartland- (464), 8 Lisgor Terrace, London W.14. (L.)
- Rudland, W. L., F.R.E.S. (249), 16 Mansfield Road, Reading, Berks. (L., ML., H.)
- Runge, C. (663), 11 St Andrew's Road, Caversham, Reading, Berks. (L., gen. ent.)
- Russell, S. G. Castle (119), 5 Bridge Road, Cranleigh, Surrey. (R. vars.)
- Russell, W. (412), 69 Lochlea Road, Glasgow S.3. (L. camouflage)
- Rutter, G. R. P. (1046), Bradewick, Thorpe-le-Soken, Essex. (gen. ent., mic., world NH.)
- Saffery, C. F. (673), 71 The Ridgeway, London N.W.11. (R.)
- Salkeld, K. (1115*), 9 Mulgrave Road, London W.5. (gen. ent.)
- Samuels, D. M. A. (1060*), Heather-Edge, West Moors Road, Fern-down, nr. Wimborne, Dorset. (L.)
- Sands, W. A. (902*), 26 Leigh Road, London E.10. (L., ML., O.)
- Sangster, D. R. (578), 69 Leadsid Road, Aberdeen. (L.)
- Sargent, H. B. (1189), Rose Cottage, Breage, Helston, Cornwall. (breeding L. and county flora)
- Saunders, J. M. K. (618), 27 Canonbury Avenue, Pinner, Mddx. (R. vars.)
- Saunders, S. D. (1250*), 27 Canonbury Avenue, Pinner, Mddx. (gen. ent.)
- Saunt, J. W. (1242), 65 Victoria Road, East Cowes, Isle of Wight. (D., H.)
- Scopes, E. Gowing- (909), Oakhurst, Oakwood Road, Crofton, Orpington, Kent. (L., C.)
- Scott, D. B. (656), Westhaven, Drumochy, Largo, Fifeshire. (L.)
- Scott, D. G. (534), Byrlton House, Vallis Way, Frome, Som. (L.)
- Scott, P. (1163*), 28 Cragside Crescent, Hawksworth Estate, Leeds 5.
- Scott, W. (1403), 6 Crocketts Avenue, Crocketts Road, Birmingham 21. (R.)
- Scudamore, Miss A. F. (562*), Haughton House, Canford Cliffs Avenue, Parkstone, Dorset. (gen. ent.)
- Seabrook, W. P. (263), Branwoods, Great Baddow, Chelmsford, Essex. (L.)
- Sexton, E. T. (1367), 48 Ravenscourt Gardens, London W.6. (gen. ent.)
- Seymour, A. (790), 52 Chester Drive, North Harrow, Mddx. (L., C.)
- Seymour, D., B.A. (874), Wynton, St Mary's Avenue, Northwood, Mddx. (L.)
- Shapland, J. D. (548), Military College of Science, 2 Lake Road, Shrivenham, Swindon, Wilts. (L., mic.)
- Shappirio, D. G. (1159*), Greene House, East Quadrangle, Ann Arbor, Michigan, U.S.A. (H. esp. Vespoidea, Sphecoidea, Chrysidioidea)
- Shaw, H. K. Airy, B.A.; F.L.S., F.R.E.S. (545), Royal Botanic Gardens, Kew, Surrey. (Hem.-Het., C., E., botany)
- Shaw, J. P. (1204), Brimpton House, Kelvedon, Essex. (L.)
- Shaw, M. W. (911), Harper Adams Agricultural College, Newport, Salop. (gen. agric. ent. esp. fruit pests)
- Shearsmith, E. (934), 4 Princes Road, Cleethorpes, Lincs.
- Shephard, G. C. (524), 1 Carisbrooke Road, Leicester. (L.)

- Shephard, W. J. M. (1285*), Thornhill, Upper Bitterne Road, Bitterne, Southampton, Hants. (L.)
- Sheppard, P. M. (291), Westall, Marlborough, Wilts. (L., gen. ent.)
- Sherlock, R. J. (606*), Stentwood House, Dunkeswell, nr. Honiton, Devon. (L.)
- Shield, D. H. (1156), The Hall, Badwell Ash, Bury St Edmunds, Suffolk. (L.)
- Shuffrey, A. L. (990), 3 Hillside Cottages, Leverstock Green, Hemel Hempstead, Herts. (L., P.)
- Siggs, D. J. (922*), 5 Grove Road, Pontnewynydd, Pontypool, Mon. (L.)
- Siggs, L. W. (243), 5 Grove Road, Pontnewynydd, Pontypool, Mon. (L.)
- Sills, F. V. (750), 14 Bede Road, Radford, Coventry, Warks. (L.)
- Silvester, O. D. (1179*), 4 Claremount Road, Cheadle Hulme, Ches. (H., L.)
- Simons, R. H. (811), 28 Aylmer Road, London N.2. (habits, morphology, B., econ. ent.)
- Sinclair, I. (998*), 40 Chalham Road, Kingston, Surrey. (NH.)
- Skelton, Rev. K. J. F. (858), 15 Vicars' Close, Wells, Som. (L.)
- Skipper, D. J. (637*), 2 Gables Cottage, Chenies Road, Chorley Wood, Herts. (L.)
- Slatter, A. J. (131), 22 Cedar Road, Teddington, Middx. (D. esp. Culicidae, C.)
- Smale, G. B. (1276*), 1 Common Field Road, Banstead, Surrey. (L., C., O., silkmoths)
- Small, H. M. (1349), Stones Cottages, Skellingthorpe, Lincs. (L., O.)
- Smith, A. (23), 23 First Avenue, Heworth, York. (L., ML., P., conchology)
- Smith, C. King (159), Bitton Hill, Bitton, Bristol. (L.)
- Smith, D. J. (1324*), 16 Roylesden Crescent, Chester Road North, Sutton Coldfield, nr. Birmingham. (L., C., D.)
- Smith, Ellsworth J., M.D. (473), 91 Beach Avenue, Larchmont, N.Y., U.S.A. (rearing insects, tree-frogs and toads)
- Smith, E. K. (178), 25 Hungerford Drive, Reading, Berks. (L., veterinary ent.)
- Smith, E. W. (1207), 93 Craithie Road, Town Moor, Doncaster, Yorks. (L.)
- Smith, F. Stanley (389), Hatch House, Pilgrim's Hatch, Brentwood, Essex. (L.)
- Smith, G. (1406), Furzehill, Fordingbridge, Hants.
- Smith, G. A. (942*), 14 High View Road, nr. Bramford Road, Ipswich, Suffolk. (L.)
- Smith, H. A. G. (1407), Whincroft Lodge, Hindhead, Surrey.
- Smith, K. G. (897), 47 Delamere Road, Birmingham 28. (D., L., gen. ent., NH., B.)
- Smith, K. J. (1289*), 21 The Mount, Cheylesmore, Coventry, Warks. (L.)
- Smith, P. Siviter (250), 21 Melville Hall, Holly Road, Birmingham 16. (L., P.)
- Smith, S. Gordon, F.L.S., F.R.E.S. (478), Estyn, Boughton, Chester. (L.)
- Smyly, W. J. P., B.Sc. (859), Holly Bank, Cold Ash, Newbury, Berks. (C.)
- Snell, B. B. (419), Woodsome, Plymwood Avenue, Bromborough, Ches. (L., ML.)
- Southwick, Miss M. D. (792), c/o Zoological Society, Regent's Park, London N.W.8. (L.)
- Southwood, T. R. E. (1051*), Parrock Manor, Old Road East, Gravesend, Kent. (L., C., Hem.)
- Spearman, R. I. C. (921), Oaks Bungalow, Oaks Avenue, London S.E.19. (B., NH., social insects)
- Speight, A. J. P. (490*), 49 Blackpool Old Road, Poulton-le-Flyde, Lancs. (L.)
- Spelman, M. (624), 2781 Grand Concourse, New York 58, N.Y., U.S.A. (exot. L.)
- Spencer, B. T. (1129*), 63 The Martyres Close, Cheylesmore, Coventry, Warks. (L.)
- Spencer, H. (186), 80 Park Road, Elland, Yorks. (L.)
- Spink, G. F. (1356*), 237 Leigham Court Road, London S.W.16. (C.)
- Spezzyńska, Mrs J. O. I. (751), 33 Wornington Road, London W.10. (L.)
- Spotswood, A. (1097*), 8 Elmfield Road, Davenport, Stockport, Ches. (L.)
- Spragg, P. W. (1419*), 34 Summerfield Road, Chesterfield, Derbyshire. (L.)
- Stainer, D. (1315), Salisbury House, St Thomas' Hill, Canterbury, Kent. (R.)

- Staley, H. F. (1313), 21 Coleraine Road, Birmingham 22a. (L., gen. ent.)
- Stead, P. J. (1296*), 43 Roseberry Road, Middlesbrough, Yorks. (L.)
- Steel, J. A. (1333*), 127 King George's Road, Ware, Herts. (L.)
- Stephen, F. (1136), 421 New Jersey Avenue, Brooklyn 7, N.Y., U.S.A. (L., C.)
- Stephens, J. C. (507), The Quarry, Northleigh, Witney, Oxon. (L.)
- Sterling, Lt. D. H. (84), 36 Stella Avenue, New Malden, Surrey. (L.)
- Steuart, D. S. Spens, M.Sc. (1224), 11 Charlotte Street, Perth. (vars. and hybridism of Sphingidae and Arctiidae)
- Stidson, Engr. Capt. S. T., R.N., J.P., F.R.E.S., M.S.B.E. (40), Ashe, Ashburton, Newton Abbot, Devon. (L.)
- Stocker, P. P. (933), Waldorf Hotel, Aldwych, London W.C.2. (L. Brit. and continental)
- Stokes, Capt. G. E. (319), The Brambles, Roe Green, Hatfield, Herts. (L.)
- Stokes, H. G. (828), 12 Roman Road, Salisbury, Wilts. (Hem., C.)
- Stone, Miss O. (740*), 32 St Agnes Road, Birmingham 13. (L.)
- Stone, T. (365), Lockeridge Villa, Shrubland Road, London E.10. (L. parasites)
- Storer, T. A. (1254*), 18 Kitling Greaves Lane, Horninglow, Burton-on-Trent. (L. genetics, silkmoths)
- Storey, W. H. (277), Fairstead, Long Road, Cambridge. (L.)
- Stott, B. G. (641), 10 Trafalgar Road, Blackpool, Lancs. (L.)
- Stretton, D. R. (564), 133 Kings Avenue, London S.W.4. (L.)
- Stringer, F. R. P. (929), Craig Artro, Llanbedr, Merionethshire. (L., C., H., O.)
- Stuart, B. A. Worthington- (1365), 51 Albemarle Road, Beckenham, Kent. (R.)
- Stuart, Mrs E. Worthington- (1366), 51 Albemarle Road, Beckenham, Kent. (R., hawkmoths)
- Sturdy, D. A., B.Sc. (988), 10 Stratton Terrace, Truro, Cornwall. (D., O., agric. ent.)
- Suffield, N. L. (1157), 8 Park Place West, Sunderland, Co. Durham. (gen. ent.)
- Sunderland, S. (727), Cragg Mount, Midgheole Road, Hebden Bridge, Yorks. (C.)
- Sutton, F. G. (403), 58 Blakemere Road, Welwyn Garden City, Herts. (gen. B., ornith., gen. ent., silkmoths)
- Sutton, F. R. (538), 42 Fairfield Drive, London S.W.18. (L.)
- Sutton, R. (722), 20 Ongar Road, London S.W.6. (NH. esp. L.)
- Swain, A. M. (1409), 253 Crescent Drive, Petts Wood, Kent. (L.)
- Swain, E. A. (1418), 253 Crescent Drive, Petts Wood, Kent. (L.)
- Swaine, C. M., B.Sc., F.Z.S. (1056), The Lodge, Kingsmoor School, Glossop, Derbyshire. (ornith., O., L., Hem.)
- Swan, B. M. (1137*), The Old Vicarage, Linton, nr. Maidstone, Kent. (gen. ent.)
- Swann, E. L. (882), 282 Wootton Road, King's Lynn, Norfolk. (botany, C.)
- Swanson, S., M.A. (1034), Keiss Village, Wick, Caithness. (L., gen. ent.)
- Sweet, G. (831*), 9 Bruce Gardens, Fenham, Newcastle-on-Tyne. (L.)
- Swinbourne, P. W. (1368*), 35 Eastway, London E.9. (L.)
- Symmons, Miss S., B.Sc. (623), c/o Natural History Dept., Marischal College, Aberdeen. (gen. ent. esp. H.)
- Syms, E. E., F.R.E.S. (406), 22 Woodlands Avenue, London E.11. (P., all orders, breeding)
- Tailby, S. R., B.Sc., A.R.I.C. (636), 32 Greenfield Avenue, Tolworth, Surrey. (L.)
- Talbot, M. J. R. (384), Froyle Place, Alton, Hants. (L.)
- Taylor, A. G. (433), Whiteshoots Hill, Bourton-on-the-Water, Cheltenham, Glos. (gen. ent.)
- Taylor, E. Johnson (446), 25 South Parade, Stockport, Ches. (L.)
- Taylor, E. L. R. (1028*), 26 Compton Rise, Pinner, Mddx. (L.)
- Taylor, L. R. (441), 325 Abbey Hey Lane, Manchester 18. (L.)
- Taylor, M. J. (1209*), 51 Grange Road, Kenton, Harrow, Mddx. (L.)
- Taylor, Lieut. N., B.Sc., R.E. (688), 2 The Oaks, Walton-on-the-Hill, Stafford. (L.)
- Taylor, P. (350), 12 Manton Drive, Luton, Beds. (R.)
- Taylor, P. G. (719), 51 Woodland Drive, Watford, Herts. (L., C., agric. pests, temperate and tropical)
- Tee, D. E. H. (610*), The Cottage, Small Dole, Sussex. (gen. ent.)

- Tennent, Dr J. N. (1396), 4 Clairmont Gardens, Glasgow C.3. (H.)
- Thirkill, C. B. (1073*), 104 Vesper Road, Kirkstall, Leeds 5. (L.)
- Thomas, B. M. P. (864), 28 Blenheim Road, London N.W.8. (L.)
- Thomas, G. E., B.Sc. (694), School of Agriculture, U.C.N.W., Memorial Buildings, Bangor, Caern. (gen. ent., econ. ent., Hem.)
- Thompson, E. (1208), 15 Coal Pit Lane, Carlinghow, Batley, Yorks. (C., H., botany)
- Thornton, J. N. (1413), 123 Otley Old Road, Leeds 6. (L., H.)
- Thorp, R. W. T., B.A. (1259), Rose Lea, Alnmouth, Northumberland. (mic.)
- Thorpe, H. J. (482), 11 Egghill Lane, Birmingham 31. (L., C., ornith.)
- Thwaites, E. C. (981), 13 Burch Road, Rosherville, Northfleet, Kent. (C.)
- Ticehurst, R. C. (965*), The Music Warehouse, High Street, Heathfield, Sussex. (L.)
- Tilbury, R. (1244), 25 Wheatsheaf Close, Woking, Surrey. (L.)
- Timms, E. Cartwright (547), 524a Moseley Road, Birmingham 12. (D.)
- Todd, A. (1197), Wesley Villa, Thornley, Durham. (gen. ent.)
- Tonge, A. E. (274), Ashville, Trafford Road, Alderley Edge, Ches. (L.)
- Townsend, C. C. (451), 68 Gloucester Road, Cheltenham, Glos. (C., O., Hem.-Het., botany)
- Tozer, D. (36), 98 Copdale Road, Leicester. (L., C.)
- Tremewan, W. G. (940*), Wheal Rose, Scorrier, Redruth, Cornwall. (L.)
- Trevor, H. P. J. (649), The Nook, Barford St Michael, Oxford. (L.)
- Tribbeck, R. A. (1322), Weston, Titchfield Road, Stubbington, nr. Fareham, Hants. (gen. ent. esp. C., E.)
- Trimmer, J. (495), Brocksford Hall, Doveridge, Derbyshire. (L., H.)
- Trinder, J. A. (1042*), Hawcroft, Vicarage Road, Great Cornard, Sudbury, Suffolk. (L.)
- Trought, T. (1373), Brookland, Tysoe, Warks. (L.)
- Trundell, E. E. J. (690), 6 Arragon Gardens, West Wickham, Kent. (ent. esp. L.)
- Tucker, R. J. (1093*), 14 Mile Lane, Chelyesmore, Coventry. (L.)
- Tuddenham, M. (1374*), 16 Beresford Avenue, London W.7. (L.)
- Tully, H. (1038), Wellfield, Alnmouth, Northumberland. (C., O.)
- Tunnard, J. S. (1082), Bosulow, Newbridge, Penzance, Cornwall. (H. Symphyta)
- Turner, A. D. (75), 19 Manor Close, London N.W.9. (L., gen. ent., NH.)
- Turner, H. B. (341), Malverleys, Newbury, Berks. (L.)
- Turner, H. J. (696), 33 Pine Avenue West, Southbourne, Bournemouth, Hants. (L.)
- Turner, J. Fincham (288), 17 Litchfield Avenue, Morden, Surrey. (L.)
- Turner, J. W. (1401), 18 Fox Covert Road, Werrington, Peterborough, Northants. (L.)
- Turner, R. G. (620), 18 Four Ashes Road, Bentley Heath, Knowle, Warks. (H.)
- Turner, R. H. G. (1052), 51 Hunter Road, Thornton Heath, Surrey. (L.)
- Turner, S. J. (1014), 40 St Leonards Road, Exeter, Devon. (mic., Arachnida)
- Twyford, H. S. (1205), 52 Purley Oaks Road, Sanderstead, Surrey. (gen. ent.)
- Ure, M. (1354*), Woodlands, Seymour Court Road, Marlow, Bucks. (L.)
- Valentine, A. (1301), 2 Vicar's Close, Wells, Som. (L.)
- Vardy, C. R. (1414*), 65 Stanton Road, Millbrook, Southampton, Hants. (gen. ent.)
- Venison, A. H. (1089*), Noblands, Thundridge, nr. Ware, Herts. (L., protection of rare R.)
- Verdcourt, B., B.Sc. (899), 86 Claremont Road, Luton, Beds. (NH.)
- Vieujant, R. (898), 44 Avenue Georges Pêtre, Brussels, Belgium. (C., H., L.)
- Vince, A. A. P. (588), 14 Church Hill, London N.21. (L., aq. C., glass-house pests)
- Waddington, L. G. F. (169), 9 Rose Hill Rise, Bessacarr, Doncaster, Yorks. (L.)
- Wade, D. (1104), 17 Waldegrave Avenue, Holderness Road, Hull. (breeding L., ornith.)
- Wager, J. R. (181), 704 Coventry Road, Birmingham 10. (L. esp. R.)
- Wainwright, C., B.Sc. (755), 216 St Bernard's Road, Birmingham 27. (L.)

- Wakely, Sir Leonard D. (561), 37 Marryat Road, London S.W.19. (L.)
- Walder, W. (102), 79 Livingstone Road, Hove 3, Sussex. (L.)
- Walker, A. (1101*), 329 Uxbridge Road, London W.3. (gen. ent.)
- Walker, G. F., F.Z.S. (816), 1 Leighton Road, London N.W.5. (L.)
- Walker, J. (22), 7 Mount Hermon Road, Windsor Road, Torquay, Devon. (L.)
- Walker, Dr J. A. (843), Highfield House, Hillfield, Cheddar, Som. (L., ML.)
- Walker, M. N. A. (880), 329 Uxbridge Road, London W.3. (L.)
- Walker, P. J. (856*), 25 Regal Way, Preston Hill, Harrow, Mddx. (gen. ent.)
- Walker, Mrs U. M. (1005), 25 Regal Way, Preston, Harrow, Mddx. (gen. ent.)
- Wall, G. (554), 57 Willow Crescent, Willowbank, Denham, Uxbridge, Mddx. (L., C., ornith.)
- Wallace, H. R. (318), 115 Abercrombie Road, Fleetwood, Lancs. (L.)
- Wallace, R. R. (1030), 61 East Avenue, Bournemouth, Hants. (L.)
- Walsh, G. B., B.Sc. (24), 22 Stepney Drive, Scarborough, Yorks. (C., B., Hem.)
- Walton, A. M. (426), 275 Croxted Road, London S.E.21. (L.)
- Wanstall, P. J. (465), 54 Matlock Road, Brighton 5, Sussex. (R., mosquitoes)
- Ward, E. A. J. (709), 6 High Street, Swanage, Dorset. (L.)
- Wardle, A. D. (947*), 78 Brandon Road, Binley, Coventry, Works. (pond and woodland life)
- Warren, B. B. (1358*), 16 Ruskin Walk, London S.E.24. (C., L.)
- Watson, J. P. (519), Fieldhead, Crosby, Isle of Man. (L.)
- Watson, R. W. (752), South Haven, Stanley Road, Lyminster, Hants. (L.)
- Watts, W. E. V. (1079), 6 St Mark's Road, Pennington, Lyminster, Hants. (L.)
- Waugh, R. M. (845*), 332 Newsom Road, Huddersfield, Yorks. (gen. ent., esp. L., moths)
- Webb, H. E. (736), 20 Audley Road, London N.W.4. (L.)
- Weddell, B. W. (701), 13 The Halve, Trowbridge, Wilts. (L., ML.)
- Welti, A., F.R.E.S. (402), 34 Great St Helens, London E.C.3. (L.)
- West, B. B. (849), 8 St Loyes Street, Bedford. (L., O., botany, geology)
- West, K. E. (848), 8 St Loyes Street, Bedford. (L., O., botany, geology)
- Whalley, P. (1310*), 22 St Seirols Road, Llandudno, Caernarvonshire. (L.)
- Wharry, C. D. L., F.Z.S. (1265), 35 Wetherby Mansions, Earls Court Square, London S.W.5. (photomicrography, microphotography)
- Wheatley, J. S. (915), 208 Prospect Road, Scarborough, Yorks. (L., O.)
- Whicher, L. S., F.R.E.S., A.R.Ae.S. (1345), 6 Chisholm Road, Richmond, Surrey. (C.)
- White, K. M. (715), Blackpool Corner, Crewkerne Road, Axminster, Devon. (H., bionomics, gen. ent.)
- White, O. M. (140), 78 Eastdale Road, Nottingham. (D.)
- Whitehead, H., B.Sc. (810), 3 Barthorpe Avenue, Leeds 7. (aq. ent., Trichoptera, Plecoptera)
- Whitehorn, K. P. (1084), 12 Kingscourt Road, London S.W.16. (L.)
- Whittington, R. M. (1143*), Toongahra, Castlefield Road, Reigate, Surrey. (L.)
- Whitworth, R. F., N.D.H. (682), 16 Seagry Road, London E.11. (agric. ent., esp. L., D.)
- Wicks, B. J. (1380*), 13 Alderney Avenue, Hounslow, Mddx. (L.)
- Wiggins, E. D. (975), Thornhaugh, Lustleigh, Devon. (C. esp. iridescent Phytophaga)
- Wild, E. H. (867), 28 York Road, Selsdon, Surrey. (gen. ent., L. esp. wainscots and clearwings, M., vars.)
- Wilkinson, J., B.Sc., A.R.C.S. (329), 90 Carterknowle Road, Sheffield 7. (gen. ent. esp. pond life)
- Wilks, A. T. (984), 7 All Saints Road, Gloucester. (L.)
- Williams, B. P. (1236*), 36 Brian Avenue, Sanderstead, Surrey. (L.)
- Williams, H. B., LL.D., F.R.E.S. (871), Croft Point, Bramley, Surrey. (genetics, L.)
- Williams, J. E. Miles (462), Berkeley, Glos. (aq. ent., Apterygota, E., insect physiology, botany)
- Williams, J. P. (1235*), 36 Brian Avenue, Sanderstead, Surrey. (L.)

- Williams, L. H. (703*), 10 Lower Armour Road, Tilehurst, Reading, Berks. (gen. ent., botany, ornith.)
- Williamson, E. S. (306), 29 Redhill Drive, Edgware, Mddx. (ent.)
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urban district or market town (when
there is no larger town nearby).
Where there is a conurbation of
two or more towns, e.g., Brighton and
Hove, or Chatham, Gillingham and
Rochester, only one main entry is
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(if not London) and district.

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MIDDLESEX. **Brentford:** Ranger. **Ealing:** Greenford County School Nat. Hist. Soc., Letts, Parr, Rayner. **Edgware:** P. L. Bradley, Hilliard, Mason, McCrae, Nobbs, Perkins, E. S. Williamson. **Enfield:** C. J. Cox, Eagles, Enfield Grammar School Ent. Soc., Harmer. **Feltham:** Classey, G. S. Marsh. **Harrow:** Bombback, Byerley, Chynoweth, T. W. Davis, Garbe, Harrow School Nat. Hist. Soc., Kodak Recreation Soc. Ent. Section, E. L. Martin, McDonald, Myall, Petty, Port, A. W. Robertson, Sacred Heart High School, A. Seymour, M. J. Taylor, P. J. Walker, Mrs U. M.

Walker, Miss F. E. M. Williamson. **Hounslow:** Mrs R. E. Clark, Wicks. **Isleworth:** S. G. Abell, T. Q. Abell, Brixey, Cumber, Foster. **Northwood:** R. W. Adams, Bain, D. Carter, W. A. Carter, A. R. Platts, J. H. Platts, D. Seymour. **Pinner:** Harley, G. H. Hill, J. M. K. Saunders, S. D. Saunders, E. L. R. Taylor. **Potters Bar:** Hague. **Ruislip:** Bessant, Kemp. **Southall:** Elphick. **Sunbury-on-Thames:** J. S. Ogden. **Teddington:** Slatter. **Uxbridge:** Wall.

MIDLOTHIAN. **Edinburgh:** Beat- tie, Finlay, Macnicol, S. W. Miller, **Penicuik:** Horder.

MONMOUTH. **Pontypool:** D. J. Siggs, L. W. Siggs.

NORFOLK. **Dereham:** K. C. Durrant. **Great Yarmouth:** Gillard, Lewin. **King's Lynn:** Day, Swann. **North Walsham:** Hubbard. **Norwich:** Addison, Daniels, Deacon, Pomeroy.

NORTHAMPTON. **Kettering:** F. A. Adams, H. W. Adams, Osborn, D. R. Read, C. A. Robinson. **Northampton:** J. M. Fisher, Rands. **Oundle:** Oundle School Nat. Hist. Soc. **Peterborough:** Mellows, J. W. Turner. **Towcester:** Humphrey. **Wellingborough:** Ekins, Gent, Payne.

NORTHUMBERLAND. **Alnwick:** Thorp, Tully. **Newcastle-on-Tyne** (see also Gateshead, Durham): Nicholson, Sweet.

NOTTINGHAM. **Nottingham:** Dibb, E. V. Hodson, O. M. White. **Retford:** R. J. Fox.

OXFORD. **Banbury:** Trevor. **Oxford:** Bromley, Carpenter, Emmet, Osborne, St Edward's School, Wolvercote Council School. **Witney:** Stephens.

PERTH. **Perth:** Steuart.

RADNOR. **Llandrindod Wells:** C. J. Harding.

RENFREW. **Greenock:** Angus, Maclaurin. **Paisley:** McKim, Ramsay.

RUTLAND. **Oakham:** Bates.

SHROPSHIRE. **Newport:** M. W. Shaw, Winslow. **Oswestry:** K. L. Palmer. **Shrewsbury:** Darwin Society, L. C. Lloyd. **Wellington:** Battersby.

SOMERSET. **Bath:** R. H. Pearce, Rawlings. **Bridgwater:** Cowley, Luscombe. **Bristol:** see Gloucestershire. **Cheddar:** Dr J. A. Walker. **Dulverton:** Lyon. **Frome:** Cruttwell, D. G. Scott. **Minehead:** Clinton, Hadden. **Taunton:** Clements, E. G. Neal. **Wells:** Skelton, Valentine. **Weston-super-Mare:** Blathwayt, Poole.

STAFFORD. **Burton - on - Trent:** Storer. **Newcastle - under - Lyme:** Daltry, J. Edwards. **Smethwick:**

Allaway. **Stafford:** Lt. N. Taylor. **Stoke-on-Trent:** Manning. **Uttoxeter:** Trimmer. **Walsall:** Beebee, A. M. Holmes. **Wednesbury:** Moreton. **Wolverhampton:** Hornblower.

STIRLING. **Falkirk:** Hutchison.

SUFFOLK. **Bury St Edmunds:** Francis, Eley, Gamble, Shield. **Ipswich:** S. Beaufoy, Frost, G. A. Smith. **Lowestoft:** P. J. Burton, Long. **Stowmarket:** Chipperfield.

Sudbury: Deimel, Rampling, Trinder.

SURREY. **Camberley:** Major M. Knight, Parfitt, Richards. **Cater-**

ham: Alderton. **Cranleigh:** Kettle-

well, S. G. C. Russell, Winsler. **Croy-**

don: Barnett, Bean, G. B. Collins, Duffy, Field, Parmenter, R. H. G.

Turner, Twyford, E. H. Wild, B. P.

Williams, J. P. Williams. **Dorking:**

Haynes, Kerrich, Meade. **Epsom:**

Epsom College Nat. Hist. Soc., Good-

ban, Harry. **Esher:** Perrins. **Farn-**

ham: T. Fletcher. **Godalming:**

Becher, E. Parker, H. B. Williams.

Guildford: Douetil, G. C. Holroyd.

Haslemere: Morgans, St Edmunds

School Nat. Hist. Soc., H. A. G.

Smith, R. F. P. Wright. **Horley:**

Windsor. **Kingston-on-Thames:** Miss

E. Brown, Major C. T. Lloyd, Sin-

clair, Sterling. **Leatherhead:** Miss B.

A. Dean, Miss J. M. Dean. **Purley:**

Bliss, J. E. Ellis, Capt. J. D. King.

Reigate: Battscombe, Fairclough,

Herroun, Whittington. **Richmond:**

A. A. Bullock, J. A. Bullock,

Melville, Redhead, H. K. A. Shaw,

Whicher. **Surbiton:** I. S. Burton, M.

J. Davies, W. J. Durrant, W. A.

Fisher, C. F. Fox, A. F. G. Green,

Le Masurier, Pickering, Raybould,

Tailby, Wolfenden. **Sutton:** Currie,

A. G. S. Harris, Humphreys, Last,

F. B. Park, D. Parsons, Pitman,

Smale, H. J. Turner†, J. F. Turner.

Wallington: Boorman, Campion, G. J.

Clarke, Collyer, Grimwade. **Walton-**

on-Thames: D. R. Moore, Pitt. **Wey-**

bridge: Best, Maynard. **Wimbledon:**

A. Eade. **Woking:** de Worms, Hell-

ings, J. G. S. Marshall, Tilbury.

SUSSEX. **Arundel:** Haggett.

Battle: A. S. Fraser. **Bexhill:** Flint,

S. F. Roberts. **Bognor:** Ranwell.

Brighton: Banner, Cochrane, Durham.

R. C. Dyson, G. J. Eade, W. Eade,

H. Parker, Pickett, Walder, Wanstall.

Eastburne: Brook. **East Grinstead:**

Bremleyte School, L. R. Devenish.

Hastings: Dannreuther. **Haywards**

Heath: D. H. Adams, Brunswick

School Nat. Hist. Soc., Chandler,

Edelsten, R. Finch. **Heathfield:**

Crisp, Hitchens, Murrays School Nat.

Hist. Soc., Ticehurst. **Horsham:** Cur-

tis. **Hove:** see Brighton. **Little-**

hampton: Harper. **Midhurst:** God-

dard, Knowles. **Shoreham:** Tee.

Worthing: Menzies.

TIPPERARY. **Clonmel:** Murray.

WARWICK. **Alcester:** Garstang,

Redmayne. **Birmingham:** Birch,

Cook, Ensor, Golby, J. H. Grant,

Hammond, B. L. Harris, J. Haslam,

Latham, Manly, Redfern, C. A.

Risbridger, M. D. Risbridger, W.

Scott, K. G. Smith, P. S. Smith,

Staley, Miss O. Stone, Thorpe, Timms,

Wager, C. Wainwright. **Coventry:**

Backholler, Barlow, R. M. Brown, A.

Dale, Hirons, R. W. Horton, T. P.

Horton, Jordan, Mellor, Mitchell,

F. Park, Patrick, M. Quinn, Raven,

Sills, K. J. Smith, B. T. Spencer,

Tucker, Wardle, Willshee. **Kinoton:**

Trought. **Leamington:** Ashforth,

Bone. **Rugby:** Capper, Cave, Easton.

Solihull: D. Allen, R. G. Turner.

Sutton Coldfield: D. J. Smith.

WESTMORLAND. **Appleby:** By-

water. **Kendal:** Littlewood.

WILTSHIRE. **Bradford-on-Avon:**

Kingwell Court School Nat. Hist. Soc.

Calne: Bing. **Marlborough:** Shep-

pard. **Salisbury:** H. G. Stokes.

Swindon: Blank, Shapland. **Trow-**

bridge: Weddell.

WORCESTER. **Bromsgrove:** Fin-

cher. **Kidderminster:** O'Neill.

YORK, EAST RIDING. **Hull:**

S. Duncan, Rogerson, Wade.

Withernsea: R. Lewis.

YORK, NORTH RIDING. **Guis-**

borough: L. B. Horner, Newson.

Middlesbrough: Rev. P. V. M. Allen,

N. W. Harwood, Newhouse, Stead.

Redcar: Powell. **Scarborough:** C.

Brown, Ellison, E. P. Hick, Owston,

Walsh, Wheatley.

YORK, WEST RIDING. **Barnsley:**

Atkinson, Blasdale. **Bradford:** J.

Briggs, Hewson, Hodgson, Marson.

Dewsbury: Buckley, Thompson. **Don-**

caster: Hyde, E. W. Smith, Wadding-

ton, A. H. Wright. **Halifax:** Collinson,

Crapnell, H. Spencer, Sunderland.

Harrogate: Jesper, Winter. **Hudders-**

field: Braham, Cove, Gilmour, A. E.

Holmes, Waugh. **Leeds:** Barham,

Coldcotes Beetle Club, Firth, G. D.

G. Jones, Kennedy, Large, La Touche,

Miss M. E. Morton, R. Procter, E.

Ramsden, P. Scott, Thirkill, Thorn-

ton, Whitehead. **Selby:** S. M. Jack-

son. **Sheffield:** A. L. Baxter, W. V.

Burton, England, Fearnough, T. L.

Platts, Wilkinson. **Wakefield:** Miss

D. E. Robinson, Wyers. **York:**

Bootham School Nat. Hist. Club,

Elliot, G. A. Roberts, A. Smith.

AES ADVISORY PANEL**FEBRUARY 1948**

Return Postage—The only requirement of members for the use of the Advisory Panel is that they must enclose stamps to cover cost of return of specimens, or stamped envelope for reply. Otherwise, reply cannot be guaranteed. It will also be of assistance if the membership number of each enquirer is quoted in all enquiries. Unless otherwise stated, advice is only given on the fauna of the British Isles. Enquirers must remember that Advisers are busy people: dead material should be sent during the winter months when evenings are less likely to be occupied with collecting or mounting their own captures. Where large numbers of specimens are to be named, the enquirer should preferably have this done at a Museum, where paid officials are employed to deal with such enquiries. A personal visit, moreover, will usually solicit more information than would be obtained by correspondence.

Labelling—Details of locality, food-plant, date, time and mode of capture and many other details are often essential to identification. All specimens should be labelled with such data, preferably placed on a small card on the same pin as the insect. In all cases details of locality will be treated as confidential.

New Advisers—There are still many subjects not yet covered by the Panel, and volunteers to assist in these departments are much desired. Offers should be sent to the Chief Adviser.

Chief Adviser—S. M. HANSON, 167 Gunnersbury Park, London W.5. In the absence of any suitable Adviser in the following list queries should be sent to the Chief Adviser, who will either deal with them himself or forward to the appropriate authority.

General Advice for Junior Members—M. H. PORT, 31 Pinner View, Harrow, Mddx.

Lepidoptera (Butterflies and moths)
 Identification, Macros and Micros—W. L. RUDLAND, 211 Caversham Road, Reading, Berks.
 Identification of Macro larvae—H. E. HAMMOND, 16 Elton Grove, Birmingham 27. (N.B.—Away 20/7/48-4/8/48 and 10/9/48-20/9/48).

Varieties of Rhopalocera — S. G. CASTLE RUSSELL, Stokesay, Bridge Road, Cranleigh, Surrey.

Rearing Silkmoths—FRANCIS G. SUTTON, 58 Blakemere Road, Welwyn Garden City, Herts.

Ecology and genitalia, Macros and Micros — DR BRYAN P. BEIRNE, Dept. of Zoology, Trinity College, Dublin, Eire.

Distribution and local lists, Macros and Micros—DR. A. A. LISNEY, 68 Monmouth Road, Dorchester, Dorset.

Trichoptera and Ephemeroptera (Caddises and mayflies)

Identification and general advice—H. WHITEHEAD, 3 Barthorpe Avenue, Leeds 7.

Coleoptera (Beetles)

Books and collecting methods—G. B. WALSH, 22 Stepney Drive, Scarborough, Yorks.

Identification, other than of the groups named below—D. TOZER, 98 Copdale Road, Leicester.

Elateridae, identification and general advice—B. A. COOPER, 27 Spilsby Road, Boston, Lincs.

Halipilidae and Pselaphidae, identification and general advice—REV. E. J. PEARCE, St Teilo's Priory, Church Terrace, Roath, Cardiff.

Waterbeetles, identification and general advice — PROF. F. BALFOUR BROWNE, Brocklehurst, Collin, Dumfries.

Larvae and life-histories — E. A. J. DUFFY, 28 Lansdowne Road, East Croydon, Surrey.

Hymenoptera

Symphyta (Sawflies), identification and general advice—R. B. BENSON, Dept. of Entomology, British Museum (Natural History), Cromwell Road, London S.W.7.

Aculeata (Ants, bees, wasps), identification and general advice—DR I. H. H. YARROW, N.A.A.S., Chiltern Court, St Peter's Avenue, Caversham, Reading, Berks.

Parasitica, identification and general advice—G. J. KERRICH, Heath Crest, Westcott, Dorking, Surrey.

Diptera (Flies)

Identification and general advice—L. PARMENTER, 94 Fairlands Avenue, Thornton Heath, Surrey.

Mosquitoes, identification and general advice—E. W. CLASSEY, 5 Carlton Avenue, Feltham, Mddx.

Odonata (Dragonflies)

Identification and general advice, British and foreign—**JOHN COWLEY**, Holywell House, Edington, Bridgewater, Som.

Orthoptera and Dermaptera (Grasshoppers, crickets, roaches, and earwigs)

Identification and general advice, British and foreign—**W. D. HINCKS**, 19 Whitefield, Heaton Norris, Stockport, Cheshire.

Megaloptera and Neuroptera (Alderflies, lacewings, and antlions)

Identification and general advice, British and foreign—**LIEUT.-COL. F. C. FRASER**, 55 Glenferness Avenue, Winton, Bournemouth, Hants.

Plecoptera (Stoneflies)

Identification and general advice—**E. E. SYMS**, 22 Woodlands Avenue, London E.11.

Hemiptera-Heteroptera (Het-bugs)

General advice and approximate identification—**H. K. AIRY SHAW**, Royal Botanic Gardens, Kew, Surrey.

Myriapoda (Centipedes and millipedes)

General advice — **D. G. BROWN**, Sandown Cottage, Monkton Combe, Bath, Som.

Arachnida (Spiders)

Identification and general advice—**DR A. A. D. LA TOUCHE**, 21 Alwoodley Gardens, Moortown, Leeds.

Mollusca

Identification, freshwater and marine — **B. VERDCOURT**, 86 Claremont Road, Luton, Beds.

Books

General advice—**E. E. SYMS**, 22 Woodlands Avenue, London E.11.
Beekeeping — **GEORGE MCCARTNEY**, Beechgrove, Kirkpatrick-Durham, by Castle Douglas, Scotland.

Microscopy

General advice — **M. J. HIRONS**, 138 Wyken Avenue, Wyken, Coventry, Warwickshire.
See also "Photography" section.

Photography

General advice, not colour photography or cinematography — **E. G. NEAL**, 2 Bishop's Mead, Kingston Road, Taunton, Som.

General technical advice and colour photography — **A. L. SHUFFREY**, 3 Hillside Cottages, Leverstock Green, Hemel Hempstead, Herts.

Photomicrography—**J. E. MARSON**, 35 High Park Drive, Heaton, Bradford, Yorks.

Cinematography — **D. GOLDING**, 517 Footscray Road, London S.E.9.

Botany

Identification of foodplants — **H. K. AIRY SHAW**, Royal Botanic Gardens, Kew, Surrey.

Selection, propagation and cultivation of foodplants and floral attractions—**R. C. DYSON**, 112 Hollingbury Park Avenue, Brighton 6, Sussex.

Pests

Farm and garden pests—**B. A. COOPER**, 27 Spilsby Road, Boston, Lincs.

Stored products pests—**DR J. A. FREEMAN**, 41 Cumberland Road, Bromley, Kent.

Beekeeping

General advice—**J. E. BERRY**, School House, Grange-over-Sands, Lancs., and **D. M. JESPER**, 23 Woodlands Grove, Harrogate, Yorks.

See also "Books" section.

Chemical Matters

General advice—**DR H. HENSTOCK**, Glengariff, Caerwys, Mold, N. Wales.

Insect Migration

General advice — **CAPT. T. DANNREUTHER**, Windycroft, Hastings, Sussex.

NOTICE TO ADVISERS

It would be appreciated by the Editor if Advisers would forward any queries likely to be of general interest, if possible with their reply, for publication in the *Bulletin* or *Journal*. Their advice as to what queries are most frequently asked would also be of help in selecting titles of future *Leaflets*, or in improving issues already in print.



AES



No. 91

BULLETIN

MARCH-MAY 1948

PROGRESS REPORT

The AGM of the Society was held, as advertised, in London on March 20th last. The Council nominations listed in Bulletin 89, p. 139, were moved and duly elected, with the exception that Mrs L. Cooper had asked not to be nominated in the event of a competent substitute coming forward. In her place, therefore, Mr P. Lemasurier was elected Hon. Treasurer. Mr T. Stone, Chartered Secretary, was elected Auditor of the Society's accounts for the past year.

Discussion which followed centred upon the ever-present need for helpers, and particularly for editorial assistance. This latter stumbling-block has now, we feel, been satisfactorily overcome, and from No. 92 onwards *Bulletins* will be edited by Mr Trevor Trought, M.A., F.R.E.S. (1373), who has very kindly volunteered for this, the heaviest task in the Society. As he has largely worked overseas until recent years, Mr Trought asks to be forgiven if his practical knowledge of the British fauna may not always be too profound, but hopes to carry through with the aid of the various AES Advisers so as to produce issues up to the standard of those of eighteen months ago. Perhaps it is in some ways an advantage that he has for the past five years been taking up again his boyhood hobby of bug-hunting, as this will enable him to feel more closely the needs of the less advanced collector, for whom we exist primarily to help. We hope that members will assist Mr Trought to the best of their ability by supplying him with all sorts of material. As further aid to the prompt production of issues, it was decided to cut out such ephemeral items as Wants and Exchanges notices, and other stop-press items, which often involve last-minute changes in the arrangement of the *Bulletin*, and to issue these with changes of address, Council and Editorial notices, in a duplicated Exchange Sheet. This has the added advantage that if a strict timetable is published and adhered to, members may see in print exchange

notices posted off only fourteen days previously. These circulars will be sent out at the beginning of July, October, March and May, whether or no the printed *Bulletin* had been received by that date, and should greatly increase the value of the exchange service provided. Although *Bulletins* would be somewhat smaller in volume, their usefulness would be immensely increased by the omission of non-entomological matters and a return to reasonable regularity and punctuality! We ask members at least to give the new system a trial and judge it by its merits.

BEOWULF A. COOPER.

INSECT POPULATIONS OF FLOWER-HEADS

In a recent number of the American *National Geographic Magazine* there was published a remarkable and beautifully illustrated article by Prof. James G. Needham entitled "An insect community lives in flower heads" (1946, *Nat. Geogr. Mag.*, 90 (3): 340-356, tt. I-VIII). Studying the insect community associated with the flower-heads of *Bidens pilosa*—a Composite related to our own bur-marigolds—in Florida, Prof. Needham found no fewer than 40 different kinds of insects living either in, on, or around them. A gall-midge (Cecidomyiidae) forms galls in the outer disc-flowers; the larvae of three kinds of fruit-flies (Trypetidae and Agromyzidae) eat the developing seeds of the central disc-flowers; the larvae of five small Phaloniid, or related, moths, devour the flower-buds, young seeds, midge-galls, and even midge pupae; several Macrolepidoptera, including two Geometers with "camouflaged" larvae rather like our own *Euchloris smaragdaria* (Essex Emerald) live among the heads, feeding on the older corollas; many minute species of thrips and mites are constantly present in and among the florets; colonies of aphids and mealy-bugs cluster on the stems below the flower-heads, and are tended by ants and preyed on by hover-fly larvae (Syrphidae); spiders and "ambush-bugs" (Hemiptera-Heteroptera) lie

in wait for their prey among the flower-heads; four kinds of Tachinid flies with carnivorous larvae prey on the Trypetid and Agromyzid larvae; a tiny red midge-larva acts as a kind of scavenger among the seeds damaged by the other species; and a score of hymenopterous parasites (*Braconidae*, etc.) parasitize the gall-midges.

The study of a complex, interdependent insect-community such as this would be a valuable and fascinating occupation for the summer months for anyone possessed of a good supply of patience, perseverance, and ingenuity. A single plant-species, reasonably common in the observer's immediate neighbourhood, should be selected. The *Compositae* undoubtedly offer the best prospects, and, of these, probably the thistles (*Cirsium* and *Carduus*), knapweeds (*Centaurea*) and burdocks (*Arctium*) would be the most suitable. But almost every species of British plant has its own special insects. Some of these are well known; many undoubtedly remain to be discovered. AES members wanting to do something "different" might well consider this as a possible field for original research. It would be of value in connection with the British Ecological Society's *Biological Flora of the British Isles*, now in course of publication, which aims to include details of all the more important insect feeders and pollinators associated with each plant species, and it would give the investigator an invaluable insight into an interesting and neglected branch of insect bionomics.

H. K. AIRY SHAW (545).

PERMIT TO COLLECT

Dear Sir,—Can you publish the enclosed letter which I received last summer from Lady Stanley. Her estate is the only place I no of for Orange-tips and Pearl-bordered Frits.

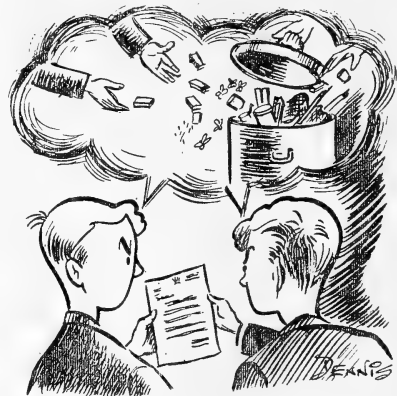
Lady Stanley's estate is situated opposite Keston Ponds. It is a mass expanse of wooded land. There is a stream running through it which many dragonflies frequent. Through the woods runs two roads, one leads to the keeper's house, the other to Lady Stanley's house.

We have caught many Butterflies along these roads. After visiting the place for the third time, we found out from a postman whose property it belong to.

After that we wrote a letter to Lady Stanley asking her wether we

could go in her estate to catch Butterflies. We received the enclose.

Perhaps we are only boys but we thought that we should at least received a kind letter telling us we could not go in.



... when you receive letters of this kind you are inclined to be discouraged . . ."

We would very much like this to go in the *Bulletin* to show other collectors that it is still very difficult to find good hunting grounds, and when you receive letters of this kind you are inclined to be discouraged from collecting.—Yours truly, C. H. I. Kennard (1192*) and D. N. Kennard (1193*).

(17/4/1947)

"Holwood, Keston, Kent,
13th June 1946.

"Lady Stanley has received your letter, but owing to some boys doing a lot of damage on the estate, it has been found necessary to stop all boys going into Lake Woods, and the police might arrest you if you went in.—Yours faithfully, E. Brooks, secretary.

"To C. H. L. Kennard."

REST-HARROW MOTH COLONIES

It has come to the notice of the Protection Committee of the Royal Entomological Society of London that at the moment there exists one or two isolated colonies of *Aplasta ononaria* in this country, perhaps resulting from migrant parents. Entomologists are asked, if they happen on these colonies, to refrain from disturbing them or taking specimens, and to do their utmost to preserve them.

N. D. RILEY, *Honorary Secretary.*

SLEEVING MATERIALS

I expect that members will already have discovered the uses to which the Nylon Aeroplane Wind Socks (some white, others brown), now selling in the second-hand shops at 1/6 each, may be put. About three feet long and tapered, they appear good value



"... good value for sleeving material ..."

for sleeving material, and also for butterfly, sweep or water nets. If members should experience difficulty in obtaining them, I shall be pleased to help as there is a shop selling them at the bottom of the High Street, Gravesend.

E. C. READ (855).

(15/8/47)

BREEDING THE GROUND LACKEY

I have had for the first time some larvae of the Ground Lackey (*Malacosoma castrensis*), and think a few notes on these may be of use to members with still less experience of them. Thirty-two were found on June 28 on sea lavender (*Limonium*) and short marsh grass nearby. The weather had cleared after heavy rain, but the sun was not out, otherwise three of us, in an hour's search, would, doubtless, have found many more. All were in the last skin and some nearly full-fed. On reaching home (on the Essex coast) the larvae at once began to eat plum and rose; but during the first night they were very restless, walking all over the twigs in their two cages and continually falling to the floor. Their uneasiness also made itself evident, for a day or so, in an irritable twitching. But then they settled down completely and fed well on plum. When resting they assembled at the ends of the twigs in groups of from two to five, sometimes lying across

each other in affectionate postures. I gave them a great deal of air and sunshine as recommended, and while in Essex (till July 5) I sprinkled them and their food daily with sea-water; after returning to our suburb I did the same, but less regularly, with ordinary water with a pinch of table salt in it. All the larvae but three span up, some singly, some in twos and threes, the first cocoon being formed on July 1, the last on July 18.

F. H. LYON (1026).

(21/7/47)

STARWORT MOTH LARVAE

Larvae of the Starwort (*Cucullia asteris*), found on goldenrod, immediately began to feed on the leaves of Michaelmas daisy, but when stems of a garden variety of goldenrod in flower were put into the cage, they deserted the Michaelmas daisy and fed voraciously on the flowers of the goldenrod. When I looked at the caterpillars, as a rule every one in sight was eating, and the talc sides of the cage and the leaves below were covered with the "crumbs" they had made—tiny scraps of the goldenrod flowers. The larvae also ate the leaves of the garden goldenrod and nibbled the stems. When these caterpillars were taken (July 31st) the wild goldenrod was for the most part not yet in flower, and the green and yellow larvae, sitting well up on the stems with head downward, were quite easy to see. But in the cage, among the flowers of the garden goldenrod, they were much less easy to find.

F. H. LYON (1026).

(9/8/1947)

DRAGONFLY WING PRINTS

Take a piece of celluloid (or similar material) and cut to quarter-plate size ($4\frac{1}{4} \times 3\frac{1}{4}$ "). Then, on the bottom, write the name of the insect and any other relevant information. Black marking ink is best for this. On an old, cleaned quarter-plate plate, place the wings. Then place the celluloid, writing side towards the glass, on top. The corners should now be stuck together with a piece of gummed paper. The preparation can now be treated as a photographic negative. The celluloid surface should be placed next to the printing paper, which can then be exposed and developed in the usual way.

B. O. C. GARDINER (225).

PRECOCIOUS GARDEN TIGER

I found a female Garden Tiger (*A. caja*) in good condition, though not newly emerged, at Wilmslow near Manchester on November 15th, 1947. The insect was quite lively in spite of the fact that the previous week had been very cold, the temperature being below freezing most of the time.

M. LOCKE (1118*).

(10/12/47)

A WHITE CHRISTMAS

In spite of December being almost at an end, some of my relations assured me that they still had a large number of larvae of the Large White Butterfly (*Pieris brassicae*) in their garden at Gatland Estate, Kent, feeding on the leaves of Kale and Winter Cabbage. I now have several full-fed larvae in my possession. I should imagine that the extremely warm summer which we had this year must have caused a late brood.

B. EARL (1388*).

(27/12/47)

(T. R. WILLS (235) also reports having seen *P. brassicae* larvae feeding on cabbage on December 12th at Portsmouth.)

THE 1947 SEASON

I have had a very good season and have been very successful in breeding. I got a female Garden Tiger Moth (*Arctia caja*) with completely brown forewings and the hindwings yellow with the blue "eye-spots" nearly obliterating the yellow background. I managed to get a pairing with a typical male and have quite a nice lot of larvae in hibernation. I also have some Northern Eggar (*Lasiocampa quercus callunae*) pupae from spring ova. A very quick "feed up" indeed.

NICHOLAS WYERS (1241).

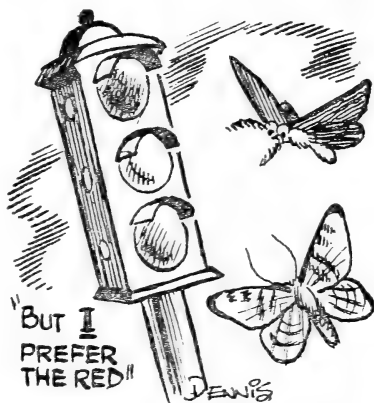
(21/11/47)

COLOURED LIGHTS IN A LIGHT-TRAP.

In order to see if lights of different colours had different powers of attraction for insects I attempted a simple experiment with my light-trap here at Cleveland, Johannesburg, South Africa. Although the results are too few to be statistically significant, I feel, after about seven weeks (in the summer) of changing the colours in sequence each night, that results are so definite it is unnecessary

to carry on any longer. Here is a summary of the totals caught:—

	Watt.	Nights.	Total catch
Red	40	7	4
Green	40	8	56
Orange	40	7	11
Blue	40	7	57
Ordinary ...	60	10	289



One night about 100 ants were caught, which are included in this latter total. Of course all the bulbs used were of the incandescent filament type, which means that the colours were obtained by the coloured glass filtering out the colours not seen (but in fact still being radiated by the filament within). The result, of course, was that, although all the tinted bulbs were rated as 40-watt bulbs, the actual candle-power emitted by the red bulb was a mere fraction of that emitted by any other colour, and the other colours were much less than a "white" bulb of equivalent wattage.

A. L. CAPENER (6).

(1/1/46)

CADDISES AT FLOWERS

With reference to Bernard Verd-court's note in *Bull.* 86, p. 119, it may be of interest that on one or two occasions I have noticed caddises at flowers. Unfortunately I cannot trace a record of the plants concerned, but I think michaelmas daisy was one of them. Caddis-flies, of course, sometimes turn up at light, and I have also taken them in garden traps "baited" with sugar-substitute (e.g., heavily diluted fruit-juice solutions) and similar concoctions.

PETER MICHAEL (748).

THE PERFECT DEGREASING AGENT

I think I have made a really useful discovery which will be of great value to collectors: I think I have at last found the best degreasing agent, namely trichlorethylene.



"... Immerse the insect for 4-5 hours ..."

I purchased a quantity to get rid of the tar deposit in the tank of a car I had bought; it was a failure as such; but in a series of experiments on greasy moths I found it quick and, so far as I can tell, absolutely effective: it has benzene, petrol, ether, chloroform and Fullers' earth whacked to a frazzle; it is also relatively cheap—1/6 a pound from Boots. Immerse the insect for 4-5 hours, pin in a slight draught and it is dry in five minutes, unstained and fresh looking.

Bathe in it and it will take all the fat from your marrow.

It has revolutionised all my *Non-agria typhae* (Bulrush Wainscot).

L. G. F. WADDINGTON (169).
(18/9/45)

LOCALITIES AND THE DISTRIBUTION OF INSECTS

I was very interested in E. W. Classey's note on collecting in "famous" localities in *AES Bulletin* No. 69 as I have had the experience of collecting some really interesting Coleoptera in the district around my home, which as far as I know has never been worked. One beetle new to the British Isles was actually taken in my own garden!

I feel that much good work could be done by amateur entomologists if they concentrated on collecting in their own home counties, if these have not already been worked. Many

county floras have been written in recent years chiefly by amateur botanists, but little appears to have been done in respect of the insect fauna of our counties. What is needed is something similar to G. C. Druce's *Comital Flora of the British Isles* which gives the distribution of the Flowering Plants and Vascular Cryptogams in the British Isles. Admittedly such a book soon becomes out of date, since new records and additions are made practically every day, but it can be kept up to date by publishing annual lists of additions. I admit that to carry out such a task for the insect fauna of the British Isles would require much time and energy, but a start could be made by publishing the distribution of some of the smaller groups and by the publication of new records as they are made, and I think the *AES Bulletin* would be the best journal in which amateurs could publish their records. In this way the AES would then serve a two-fold purpose, that of encouraging new and young workers in entomology and that of publishing information of first rate importance.

I feel that a medium is needed through which members of the Amateur Entomologists' Society can publish the results of their researches. The Botanical Society of the British Isles, of which I am a member, devotes a section of its Annual Reports to the publication of Plant Records made by members during the previous year's collecting. Records abstracted from other Journals are also included and in this way a more or less complete list of new county and other records and additions to the flora of the British Isles, made each year, is compiled. If such a section were to be started in the *AES Bulletin* many young entomologists would, I think, be encouraged to collect in less known areas and thereby increase our knowledge of the distribution of insects in the British Isles.

R. LEWIS (734).

(This is the sort of material the Ed. wishes to receive for publication.)

PUPATION OF CINNABAR MOTH IN CAPTIVITY

In the wild state *Callimorpha jacobaeae* usually pupates either in the soil or in debris or refuse on the surface. In 1946 I obtained some wild larvae and split them into two lots, both reared in glass jars. To begin

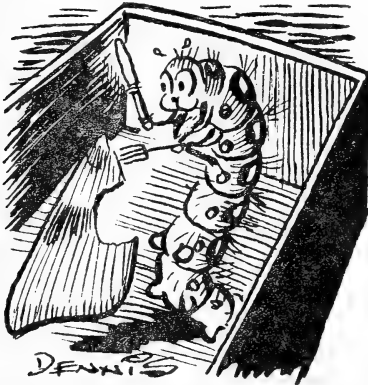
with I refrained from providing earth or debris. The first larva promptly pupated well up among the leaves of the foodplant (ragwort). I then added earth and dried leaves to both containers, but, rather to my surprise, with one or two exceptions the remaining larvae followed the example of the first and span up in their foodplant, in most cases well towards the top. A correspondent stated that his larvae invariably pupated among debris on the surface of the ground, adding that "in winter I have often found them (i.e., pupae) under stones and sometimes under loose bark on old trees." How do your Cinnabar caterpillars pupate?

PETER MICHAEL (748).

56 Cranmore Lane, Aldershot,
Hants., 24/9/1946.

A CANNIBAL LARVA

One day this summer a non-entomological friend of mine brought to me (in a match box) a Burnished Brass Moth (*Plusia chrysitis*) and a Knot Grass Dagger (*Apatele rumicis*) caterpillar. I left it in the box, with the



"... was just finishing the last wing of the moth."

moth, overnight. Imagine my surprise when, the following morning, on looking in the box the larva was just finishing the last wing of the moth. Indeed it had practically consumed the entire moth.

NICHOLAS WYERS (1241).

(2/12/47)

THE VALUE OF CORRESPONDENCE

Personal contact between individuals, we know, leads to the solu-

tion of many problems and often paves the way for lasting friendships calculated to prove profitable in more senses than one. If this is true in the broad sense, it applies with equal cogency where amateur entomology is concerned; hence the emphasis placed by the AES and kindred organizations on field outings, meetings, and other functions which provide opportunities for members with similar interests to "get together" for their mutual benefit.

But personal contact is not always practicable. Nevertheless, when distance or other factors preclude it, there is no reason why the next best kind of liaison or co-operation—the written word—should not take its place. Correspondence can bridge the gap between lepidopterists in Portsmouth and Perth, coleopterists in Northolt and Northampton; and not even a broad expanse of the deepest ocean can prevent the ardent collector in South Wales from swapping material and views with his fellow enthusiast in New South Wales.

Admitted, letter-writing is an art, and not all of us are good at it; moreover, many people confess to being bad correspondents—though in a good many instances this may be tantamount to a tacit admission of laziness or disinclination to attempt something different! Just the same, if you've never tried your hand at establishing and maintaining liaison with colleagues, whether near or far-off, in this way before, why not give it a trial some time? A good circle of correspondents, regularly and faithfully attended to, may help you more than you can guess in the pursuit of your favourite hobby or special study. From them you can acquire fresh knowledge, to say nothing of detailed information—e.g., in respect of particular districts or specific habitats—of a kind not always to be found in reference books or other publications; undoubtedly you will find—possibly to your surprise—that you, in your turn, are able to impart items that are new or, in any event, of value to others, and therefore welcomed by your newly-gained entomologist friends.

I think I can claim to be every bit as busy as the next man; perhaps more so than many. Yet I always contrive to find time to correspond with a very large number of brother bug-hunters in various parts of these



The value of correspondence.

islands, as well as one or two abroad. They have taught me a lot, and I am grateful for what I have learned from them; in return I have not failed to proffer such assistance as I have been able.

Entomological friendships seem to have a way of surviving, and I have no doubt that more than one reader could tell of pen friendships that have persisted for many years, perhaps decades, despite the fact that the correspondents concerned rarely, if ever, met. History can give us many examples of such lasting friendships in other realms—and amateur entomologists could do much worse than emulate these historic examples in their own particular spheres of activity.

PETER MICHAEL (748).

OBITUARY

J. H. GRANT (330) was one of the leading Birmingham entomologists and belonged to six entomological and microscopical societies. He collected all sections of the Lepidoptera from Micros to Exotics and his knowledge was very great. Throughout the years I knew him his great joy was the encouragement of the younger generation in the hobby. In addition to the large amount of time he devoted to his studies of all natural history, he could always find time to give both help and specimens to the younger people. We shall miss him sorely, and the AES has lost a member who very truly followed out the Society's principle of encouragement of the younger generation.

H. E. HAMMOND (423).

REVIEWS

Lepidoptera 1946 (Copenhagen: *Journal of the Lepidopterists' Society*; pp. 32, 1 plate, 9" x 6").

This is the first number of the *Journal* of a new society founded in 1941, whose aims, as stated on pp. 1-3, are similar to those of the AES, except that their activities are restricted to the one Order. A local list of macros taken in a wooded district of N.W. Zealand runs to some two-and-a-half pp. This is followed by a report on some of the more interesting meetings held during 1945-46. These included talks on the genera *Arctia* and *Colias*, the Clearwings and a zoological expedition to Iceland.

A review of Stokoe's *The Caterpillars of the British Butterflies* occupies two-and-a-half pp. and is followed by a short mention of N. D. Riley's *Some British Moths*. Then follows another list of species, this time from a wooded district on the western outskirts of Copenhagen. The remaining ten pages are taken up with a description of the life-histories and distribution of 25 species new to the Danish list published by Hoffmeyer and Knudsen in 1938 (*De danske Storsommerfugle*). These new species are illustrated by excellent black and white half-tone photos. This article is a very useful one since it collects together descriptions and records previously scattered throughout the various other journals.

This little journal is very well produced, although a more economical use of the space available could have been made. It is printed on good quality paper in excellent type. As the first effort of a very young organisation it is a very commendable achievement.

J. HEATH (836).

(23/1/47)

Daily Mail School Aid Publications

(Daily Mail School Aid Department, New Carmelite House, London E.C.4).

We have recently received from the above a set of six photographic cards, 6 x 4 ins., by our member, Mr S. Beaufoy, depicting various stages, from egg to adult, of (i) the Common Blue Butterfly; (ii) the Small Tortoiseshell Butterfly; (iii) the Large White Butterfly (two cards); (iv) the Emperor Moth (two cards).

The photographs are some of the best we have seen, and far surpass those in many—we can almost say all—books. By their aid a school-boy or girl should have no difficulty in identifying the stages of the insects

depicted, and at the same time get a grasp of their habits and metamorphosis. By a comparison of two cards, for instance, it can easily be seen that the Large White is gregarious in all stages while the Common Blue is solitary.

We heartily recommend these cards to members: to our younger ones for the way the subject is presented, and to the others for the excellent photography.

B. O. C. GARDINER (225).

Contributions to the Biology of the Aquatic Moth *Acentropus niveus* (Oliv.) by Prof. Dr Kaj Berg. (*Vidensk. Medd. fra Dansk naturh. Foren.*, Bd. 105, 1941. 3 Charts, 11 photographs, 33 line drawings, 80 pp. 9" x 6", English text).

Prior to the publication of this paper no accurate, detailed account of the life history of this aquatic species had been given by any author. Dr Kaj Berg, who is Director of the Freshwater Biological Laboratory of the University of Copenhagen, has, however, carried out intensive research into the life history of this species, a very detailed account of which he has given in this paper. All salient points in his account are well illustrated by the numerous line drawings and photographs, together with tables wherever quantitative measurements have been made.

The larvae occur chiefly on *Elodea canadensis* at depths of from 3 to 9 ft. The young larvae frequently burrow into the stems of the foodplant, but later form external cases from the leaves of the plant. Their case building, hibernation, intake of nourishment, respiration, and movements are described.

The much discussed question of the number of broods has been adequately answered by a series of weighing experiments with the larvae, from which it has been possible to prove that this species is only single brooded.

Dr Berg continues with a description of the pupae and their cases; the development stage at which the wing reducing factors assert themselves being discussed.

The males may be found during day-time resting in moist places on the shores of the lakes, near the surface of the water, from the end of June until the beginning of September.

Pairing which is of very short duration, takes place at night, on the surface of the water and at a consider-

able distance from land. The swarming period is long, June to September, although the life of the individual is short, about two days.

Normally the female is rudimentarily winged and remains beneath the surface of the water, swimming energetically by means of the middle- and hind-legs. The eggs are laid on submerged vegetation and shortly after depositing the female dies. Fully-winged females are, states the author, of very rare occurrence and have only been found towards the end of the swarming period. The factors controlling the production of fully winged females require further investigation, but Dr Berg suggests that the development of these forms is dependent on optimal external conditions, namely high temperature and abundant food.

At the end of this important paper a very complete two-page bibliography is given. J. HEATH (836).
(20/1/47)

WHERE TO WRITE

Articles, drawings, etc., for the *Bulletin*: to: TREVOR TROUGHT, Brookland, Tysoe, Warwickshire.

Articles, drawings, etc., for other AES publications to: B. A. COOPER, 27 Spilsby Road, Boston, Lines.

Exchange Notices and advertisements to: E. LEWIS, 8 Parry Road, London S.E.25. (To reach him by 15th February, April, June and September.)

Notice of change of address to: J. COWLEY, Holywell House, Edington, Bridgwater, Som.

Subscriptions to: G. B. HODGES, 12 London Road, Baintree, Essex.

Requests for publications to: C. B. PRATT, 1 West Ham Lane, London E.15.

Offers to lead field meetings, exhibit, etc., to: D. P. GOLDING, 43 Merchland Road, London S.E.9.

Requests for literature for prospective members to: E. LEWIS, 8 Parry Road, London S.E.25.

Applications for new membership to: S. M. HANSON, 167 Gunnersbury Park, London W.5. Also offers of help with AES work, and suggestions for improvements in our organisation.

Silkmoth Rearing's Handbook. Data for the revised issue to: W. J. B. CROTCH, 5b Stanley Crescent, London W.11.



AES



No. 92

BULLETIN

JUNE-JULY 1948

TRANSPLANTING OF LOCAL INSECTS

The Committee for the Protection of British Insects of the Royal Entomological Society of London has recently had under consideration the desirability of keeping records of attempts to introduce British Insects into new habitats. It is believed that many entomologists have made experiments of this nature which are nowhere recorded and may, therefore, confuse local records. The Committee would welcome information concerning activities of this kind so that it may be filed in the Society's rooms, where it would be treated as confidential and made available only for approved investigations.

N. D. RILEY, Honorary Secretary.

The importance of the above notice cannot be over-emphasised. Dr E. B. Ford, in his book, *Butterflies* (p. 165), says that introductions are to be recommended "only in exceptional circumstances" and "under the auspices of some representative body." There is, also, danger from involuntary introduction, through careless breeders allowing the escape of larvae or imagines. Mr P. G. Taylor (719) reports such a case, where a male Gipsy Moth (*Lymantria dispar*) was taken in a light trap which was being used for population studies. Fortunately, as he said, "the species was in this case conspicuously rare enough to excite intolerable suspicion, and the moth was eventually traced to a point within half-a-mile, where it was being bred extensively and not very carefully."

ASSOCIATION OF SCHOOL NATURAL HISTORY SOCIETIES

We note with interest that this Association, originating in a suggestion by Sir Frederick Keeble in the Canterbury Schools' NHS Cornwall Report, 1945, has now come into being. The idea of such a body was strongly supported at the time by the AES (see *Bulletin* 71, p. 67). The staff and pupils of the King's School, Canterbury, who have been the moving spirits in the venture, are

to be congratulated on their initiative. The Chairman is Mr Brian Vesey-Fitzgerald, and the Secretary is Mr David Stainer, of Salisbury House, St Thomas' Hill, Canterbury. Membership is open to all boys' and girls' secondary schools possessing natural history societies; minimum annual subscription is one guinea per school. We understand that about 40 schools have so far joined. It is proposed to issue an annual *Journal*, containing reports from member schools, and the possibility of holding annual camps in areas of special interest is under consideration. The AGM will be held as far as possible at a different school each year. We would make the suggestion that it might be advantageous to both parties if some kind of liaison could be established between the Association and the School Nature Study Union—an organization which has done and is doing much excellent work for the primary schools. We wish the new Association every success.

H. K. AIRY SHAW (545).

SOME NOTES ON THE VESTAL MOTH (*RHODOMETRA SACRARIA*)

Close examination of specimens of this rare vagrant moth taken in N.W. Kent during 1947 has revealed three distinct forms. The first is the typical, which has the oblique stripe of the forewings a crimson colour. I have three of these and find two more in a series taken by K. H. Hyatt at the same locality. The second has the stripe brownish and this seems referable as ab. *labda* Cramer. I have eight of these in my collection and K. H. Hyatt has four. Thirdly, I have a single female specimen which is slightly larger than the rest, has the ground colour of the forewings considerably darker, and has a blackish oblique stripe. This seems to be a slight variation of ab. *atri-fasciaria* Stefan. To sum up, of eighteen specimens taken in 1947, four are of the typical form, twelve are ab. *labda* and one ab. *atri-fasciaria*.

I might mention here that *R. sacrararia* appeared in fair numbers in clover fields at the Eynsford district

of Kent during 1947, with all the usual migrant species present, including many Pale Clouded Yellows (*Colias hyale*). Apparently they are not attracted to any flowers, but would fly up in the bright sunshine when clumps of clover and grass were carefully and systematically beaten. The moth is very delicate and it seems advisable to take specimens home alive in pill boxes rather than kill them in the field, so soon do their wings become stiff. Our attempts to obtain ova were unsuccessful, this probably being due to the fact that the moths were generally fairly fresh.

It seems worthy to record here that one was taken at dusk on a bombed-site at Blackheath on 19th September 1947. This is well within the boundary of London and must surely be an exceptional record for that county. Four hundred Silver-Ys (*Plusia gamma*) were counted on the same night at the same locality, but not one other species of *Heterocera*.

D. F. OWEN (1330*).

IMPORTANT

Will members of the AES please note that no further orders for the Partington Illuminated Magnifier can be accepted. S. M. HANSON.

July 5th, 1948.

BUFF ERMINE OVERWINTERING AS LARVA

In 1947 I reared a number of *Spilosoma lutea* larvae from ova laid by a wild female; these pupated in the normal way, from mid-August onwards. On 28th September, however, I took a solitary (half-grown) larva which failed to pupate; indeed, it was still in the larval state on 27th March 1948. It was then active, but died shortly afterwards.

PETER MICHAEL (748).

It looks as if your "Buff Ermine" larva was another species—probably the Ruby Tiger (*Phragmatobia fuliginosa*)!—B. A. C.

BOOKS ON ENTOMOLOGY

I purchase Books, Local Lists, Libraries. When writing please quote Titles, Dates, Condition.

E. W. CLASSEY,

5 Carlton Avenue, Feltham, Middlesex.

AUGUSTE-HENRI FOREL: 1848-1931

This year, 1948, marks the centenary of the birth of Auguste-Henri Forel, and it is fitting that a tribute should be paid to the memory of a very great man, the magnitude of whose achievements are often forgotten, perhaps by virtue of the very diversity of his interests. For, in his time, Forel reached the highest eminence in five distinct faculties: psychiatry, education, pacifism, teetotalism, and: by no means least, entomology.

He was born at Morges, in the canton of Vaud, Switzerland, in 1848. Because he was a lonely, unhappy and weakly child, he found solitary consolation in the observation of ants in his father's garden, and, by the time he was in his teens, he had digested the books on the subject of the habits of ants, which were available to him, and he began experiments of his own. By the age of 22, he had written his famous book, *The Ants of Switzerland*, followed later by *The Senses of Insects*, and his greatest work of all, *The Social World of the Ants*, in which he blended acute scientific observation with all the child-like love for and wonder at nature, a simplicity of outlook which never deserted him, even in the period of his greatest international fame. Forel studied medicine at the University of Zürich, and did original research upon the brain; and was, indeed, the first to make a series of brain sections which led to new discoveries in the field of neurology. For many years he was the director of the large mental asylum at Burghölzli, the "Colney Hatch" of Switzerland, and it was there that he wrote the classic work of the nineteenth century on hypnotism, a method of treatment which he used with success upon difficult mental cases. During periods of leave, he travelled in America, Africa, the Near East, Russia and South America, always studying ants, describing their habits, and naming new species. He was an outstanding taxonomist.

While at Burghölzli, Forel came in contact with the Blue Templars, a small but active group of religiously-minded people who converted chronic drinkers to temperance. Forel, impressed by their results, but denying in his own mind the religious validity of their tenets—for he sought always

the demonstrable scientific *rationale* of a problem—joined the movement, gave up drinking himself, and became its guiding force over many years.

Equally passionately, he crusaded for sexual enlightenment, and wrote his *The Sexual Question*, which may still be bought in new editions in one of a dozen languages.

Forel had had some experience of war in 1870-71, for he had been a Swiss medical volunteer in France during the winter of the Franco-Prussian war. This visit to the battlefields did not last long, for he was sent back home on the orders of the Prussian general besieging Belfort, who looked with suspicion upon the French-speaking Swiss doctor. Yet the experience burned itself upon Forel's mind, and created in him a hatred of warfare. With the outbreak of the first world war, Forel was already elderly, and had suffered a stroke which had paralysed his right arm, and, at first, he felt that the war was of no particular concern to him, a neutral and a scientist. It was not long before the reports of misery on every hand drew him out of his seclusion and ant studies, and he actively denounced the war, castigating Germans and Allies with impartiality, exposing their arrogant nationalism, their propaganda lies, their cruelty and debasing of human dignity and intellectual rationalism. He met Ford, and organised a United Europe movement in Holland and the Scandinavian countries. He was a friend of Lunatscharsky, later to be the Minister of Education in the Bolshevik government, and in him Forel pinned much of his hope for an enlightened new world and international amity. These hopes were dashed, but his optimistic spirit went on working for his ultimate goal of peace. The last phase of his life shows him turning to religion; he joined the Baha'i movement, which had originated in Persia a hundred years before. In it, Forel believed to have discovered the true ethic, rid of dogma and priests, and motivated by humanitarian principles. That seemed to be the socialist ethic which he had sought.

In 1931, this indefatigable champion of science and social justice died. Much of what he believed has been swept aside by fresh discoveries and new ideologies. He had believed, in common with many men of the nineteenth century, that rational enlightenment would be the salvation of the world. To this end he cham-

pioned Darwin, who had written admiringly to the Swiss entomologist, and he fought stubbornly against psycho-analysis. What Forel stood for in the world of psychology has now been swept aside by the discoveries of psycho-analysis, for better or for worse. As an entomologist, his name is perpetuated by the naming of genus and species of ants after him. He lived at a time when there were outstanding myrmecologists—Satschi in Tunisia, Emery in Italy, Wheeler in America, Mayr in Austria, Brün in Czechoslovakia, and, not least, Donisthorpe in this country, the last living link with the great investigators into the miraculous social world of the ants.

The last passage of Auguste-Henri Forel's testament is worthy of reproduction (my translation) since it sums up his attitude to life:—

“Above all, do not weep over me and do not mourn, neither externally nor in your hearts. From to-day on, be happy; if possible, forget my errors and my sins; broaden and improve upon those things I was able to create. May each one of you, in his own manner, add to the building of a better and happier condition for mankind. We, who have passed away, cannot change the past; you who live can form the future ahead. Take courage and go to work!”

A. N. BRANGHAM (18).

BETLE COLLECTING IN JULY

Although beating and sweeping no longer yields the hoards of beetles generally met with in May and early June, much useful work may still be accomplished, as some of our largest and finest beetles appear during July. In almost every lane throughout the country we shall see numbers of *Rhagonycha fulva* Scop. (Cantharidae) on flower heads. It much resembles some species of *Cantharis* and is easily recognised by the black apex to the elytra.

In the same family of beetles, *Axinotarsus ruficollis* Ol., a gaily coloured little fellow, may sometimes be swept commonly, but very locally, in grassy spots in southern woodlands. I once took it commonly in a very small area in Sherwood Forest. *Silis ruficollis* F. (also much like a *Cantharis*) and *Anthocomus rufus* Herbst (a very attractive and brightly-coloured little species) may likewise be taken by

sweeping, these occurring in fen country among reeds.

Amphimallus solstitialis L. (Scarabaeidae), commonly known as the Small Summer Chafer, often occurs in abundance in southern districts. The beetle flies around trees in warm sunny weather, and its larva feeds at the roots of grass.

Where there are plenty of oaks, in southern districts, our largest native beetle, the Stag (*Lucanus cervus* L.) is often abundant. It usually flies in the evening. The London area and the New Forest are particularly good areas for this species.

Another of our finest beetles, the Musk (*Aromia moschata* L.) (Cerambycidae) may be found throughout July. It is generally a sluggish creature, and must be looked for at rest on the stems of osier willows and on sallows where these grow in very damp localities. Sometimes the males will fly during bright sunshine, and the lepidopterist's sugar has an attraction for it.

NOW IT CAN BE TOLD

On D-Day, being grounded, I had a job with a beach party. Instead of the blood, sweat and tears we had expected, we had a more or less peaceful landing, with few casualties, and



"... I collected five frightened huns and a Cream-spot Tiger ..."

by four o'clock in the afternoon, reconnoitring the village of Arromanches-les-Bains, I collected five frightened Huns and a specimen of *Arctia villica* (Cream-Spot Tiger), newly-hatched, sitting on a post.

JOHN MOORE (156).

MY COLLECTION

I am an American ex-school-teacher, now Mrs Vonta D. Purdun Hynes, a married woman with a home, a husband, a son ten years old and a daughter eight years old. Entomology is an intense hobby with me. I spend every minute I can snatch with it. The summer of 1945 was the first real earnest growing from egg I had done. Mr J. A. Keji (571) sent some eggs, and so highly recommended the advantages of raising your own specimens from ova, I tried it! Being my first attempt, so many things happened to them, one after the other, I didn't have very good luck. *The Silkmoth Rearer's Handbook* was a welcome guide. It's thumb-worn and notated already, and many's the time I was thankful for it. But I don't much care to raise large numbers, and shall raise only those I bump into on our rambles and field trips, and to add to my collection. My aim is to make the best and most complete collection of the moths and butterflies of the area.

I sketch and watercolor larva stages and pupae, only to complete the life histories of my specimens, or to illustrate some article I am writing, and these probably none too well, as I surmise. I work for an artistic effect mostly, and my own enjoyment thereof.

I have made up several Riker Mounts or, rather, Explanatory Mounts. These I take to the various schools, and am asked to give talks to stimulate interest in the pupils at their Science hour. Just recently, I was invited to show my collection at a faculty-meeting, and talk of experiences and such, as so many of the teachers have no experience of the practical side of science teaching.

What are you doing in England along this line? Is it much encouraged in the schools? Do you have a permanent program of such? Is it included in the Science program of the 1st to 8th grades?

I started collecting with no very definite aim, but having been a teacher, I guess, always a teacher! The schools like the idea, and I find my time encroached upon, with less and less time for the collection. But it is fun being Battle Creek's "Butterfly and Moth Lady."

I collect any moths that happen my way. Took fifteen Clearwings (in Britain called Beehawks) last summer, of which five were *Hemaris*



“ . . . Battle Creek’s ‘Butterfly and Moth Lady.’ ”

thysbe and ten *axillaris*, feeding in the bright sunlight at *Phlox* flowers, in my rock-garden. Caught with a can (this is a glass jar with a metal top) they have a funny little way of backing up when about to take flight. So hold the jar just a little way behind them, and capture is easy. When captured, they buzzed angrily like the bees they resemble.

I was thankful for the *AES Leaflet*, “Collecting Clearwings,” for this is the family I know practically nothing about. At the Faculty Meeting, the question was brought up: Is the Clearwing a true Moth? Well, frankly, I had taken Holland’s *Moth Book* as a guide, and I think he assumed it was! I now remember Gene Stratton Porter, whose *Moths of the Limberlost* questioned this classification. What do AES members think?

In July my first year I caught a *Euparthenos nubilis*. I moved the ferns by the garden wall, and he shifted slightly. He looked like the wall he lit upon, and I just cupped my hand over him. I understand it is a bit rare in collections, it surely isn’t plentiful around here.

On April 24th, Mr Keji sent 32 *Catocala unijuga* ova, 33 *C. cara*, and 32 *C. amatrix* ova. I had never worked with raising larvae from ova before. Such minute, hair-like littlelings frightened and awed me really. I turned the garage into a vivarium and did my best. It evidently wasn’t enough. One doggone thing after another took toll of them and a two weeks’ vacation to our cottage with no one to attend them, simply finished them. I find I don’t particularly

like working the larva stage! I like the field trips and rambles in the open best. Being confined to a hot garage in hot weather, attending a mess of larvae, is not my idea of a relaxing hobby! Being a wife and mother and sometimes extra teacher, I just haven’t the time.



“ . . . not my idea of a relaxing hobby! ”

Last summer I reared some “Polys” as we call them (*Telea polyphemus*), the Eyed Silkmoth. One female, placed on the window sill in the kitchen, called fourteen males the first night, eleven the second, and seven the third, but never mated. I disagree with the *Silkmoth Rearer’s Handbook* about where the Polys are found; here, in America, never once have I myself found them on the ground, but always securely fastened to a tree or bush. In all my experience with the Polys this bit of information in the *Handbook*, from breeders’ experience in Britain, does not coincide with my known-knowledge of them in the wild over here.

VONTA D. PURDUN HYNES (686).
 (“The Battle Creek ‘Butterfly and Moth Lady’”).

THE WOOD WHITE

On 8th May 1948, at Aldershot, I was gratified to see a Wood White (*Leptidea sinapis*) near a wooded locality where the species was at one time tolerably common, but from which it disappeared a long time ago. I believe this butterfly is re-establishing itself in former haunts in Hants and Surrey, but this was the first living specimen I had seen here for many years.

PETER MICHAEL (748).
 (15/5/1948).

LIVING FAST

What a tremendous evolutionary step forward was made by the warm-blooded animals, who can maintain an internal "climate" to suit their living-processes! Insects on the contrary have their rates of living changed by variations in the external temperature, a fact which the amateur naturalist can turn to account when he wants to photograph a lively insect. Reduce its temperature sharply and it will pose for you before it recovers from the torpor produced by the cold.

The following study of the larvae of the Emperor Moth (*Saturnia pavonia*) is not cited for its intrinsic scientific interest, but in the hope that it may stimulate other members with stop-watches (or even ordinary watches) to make more sustained and precise observations for record. It is in such ways that the mere amateur may advance entomological science, or the school-group can practise a scientific technique.

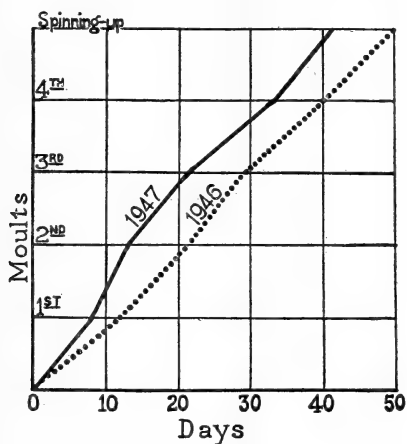


Fig. 1.

Timetable of the moulting of *Saturnia pavonia* larvae reared under identical conditions in 1946 and 1947.

The graph at figure 1 represents the average life-history of one small group of larvae reared in 1946 and of another group bred in 1947. The number of days from hatching, through four moults to cocoon-spinning are shown to be respectively 50 and 41. Why the difference? In both years the larvae were continuously supplied with an abundance of fresh food; the breeding cages were identical, the situation in respect of light the same and the

length of daylight the same (the 1946 caterpillars hatched on 1st May, the 1947 group on 2nd May). The answer undoubtedly lies in the difference of temperature.

From data kindly supplied by the Meteorological Office it is possible to point out that, whereas during the 1946 period the maximum day temperature in my district did not exceed 70° F., and the longest spell of days with maxima over 60° F. was nine, in the 1947 period a spell of ten days occurred with temperatures above 70° F., and the highest maximum reached was 91° F. Over the whole period of larval life the 1947 maxima were 7° higher on the average than in 1946, and the mean temperature for day and night very much higher.

The 1947 caterpillar completed its growth in 18% less time than the 1946 larva by reason of faster living. This is borne out by timed observation of the rhythm of activity and quiescence. At 55-60° F. the average caterpillar ate for twenty minutes, entered a digestive coma for twenty minutes, excreted and ate again. At 75° F. the eating period was reduced to fifteen minutes, but the sleepy period to ten. Moreover, in the higher temperature the motions of the head and jaws were quickened. At the lower range the average time taken to eat up a swathe of leaf about two centimetres in chord was 18 seconds: at 75° F. and over it was only nine or 10 seconds.

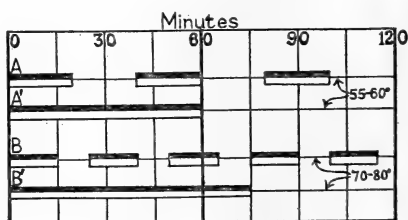


Fig. 2.

Histogram showing the relation of active periods to quiescence in larva of *Saturnia pavonia*, at different temperatures.

These two rates of living are represented by the lines A and B on the chart at figure 2. It is amusing to speculate which of the two sets of caterpillars would, if they were conscious of the passage of time, feel the older when the urge to spin arrived. The lines A' and B', which merely represent the aggregation of the active periods shown by A and B out of a

given period of two hours, reveal that the 1947 larvae were longer awake than their predecessors and would have a longer sensation of living, although by human reckoning they lived nine days less. So for insects it is the hotter the faster, the warmer the more crowded life. The same factor is revealed by a study of ants and bees.

W. J. B. CROUCH (1181).

CAMBERWELL BEAUTY HIBERNATING

Whilst moving a pile of wood in my garden (Stanmore, Middx.) on 15th February 1948, I discovered a male Camberwell Beauty (*Nymphalis antiopa*) clinging to the bottom side of a log. I touched it and it fell to the ground, but after a few minutes it regained its upright position.

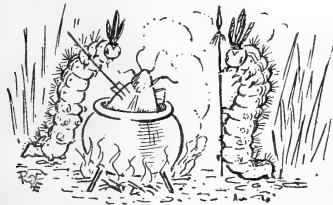
It was duly installed in a cage in a shed and remained quiescent until March 12th, when the warm spell brought it out of hibernation. March 15th, a very warm day for March, induced extreme activity, so the specimen was killed and set before it battered itself about any more.

R. HILLIARD (99).

(29/3/1948).

CANNIBALS?

I had a batch of Feathered Thorn Moth (*Colotois pennaria*) ova which started to emerge on 12th March, and continued doing so for eight days. They fed impartially on rose, lilac, and crab-apple, and although the larvae are feeding up very well,



"A cannibal larva."

their numbers have consistently decreased from about a hundred down to forty. As far as I can judge, the tins in which they are kept are escape-proof, so suspect cannibalism. Unfortunately, I haven't yet caught one in the act.

R. HILLIARD (99).

(29/3/1948).

INSECT STUDY AT A FIELD CENTRE

By J. H. P. SANKEY, Assistant
Warden, Flatford Mill.

You don't often have the pleasure of seeing a couple of Camberwell Beauties in a garden. This happened at Flatford Mill Field Centre last year. It was an even greater pleasure to welcome between 40 and 50 amateur entomologists (many of these school boys and girls) who came at various times during the season to study insects at first hand in the field. Collecting insects is not really studying them, but *some* collecting has to be done, and it is just as interesting to study flies, beetles, plant bugs, grasshoppers, caddis flies and other neglected orders, as to confine oneself to the customary butterflies and moths. Serious insect study involves a great many aspects of entomology: life histories, social tendencies, protective coloration, distribution, adaptation to surroundings and relationship to plants as well as the various methods of sampling and assessing numbers. We try to encourage this wider approach at Flatford Mill. We *do* expect you to have an interest in your subject—presumably you would not wish to go to a Field Centre if you hadn't—but expert knowledge is certainly not required.

The surrounding terrain includes deciduous and coniferous woodlands, thickets, hedgerows, meadows and arable land. Salt marsh lies bordering an estuary close at hand, and freshwater habitats include both ponds and running water. The river Stour runs under the Mill walls and tides run up to the Mill Pool. The number of insects of various kinds found in these habitats is amazing. We show you where to look and what to look for, and, equally important, how to interpret and present the evidence you find. You are shown how to tackle insect problems in a scientific way, and, although it is serious natural history, you will not find it tedious or regimented in any way. We also show you how to look, for observation is one of the very first things a field naturalist has to learn. There are tricks of the trade, too: the various ways of trapping insects at night; taking sample counts of insect populations, the use of the Berlese funnel, beating tray and so on. These are the kinds of things we show you.

As much time as possible is spent in the field. Sandwich lunches are provided and students do not usually come home again until 4 o'clock. Setting out specimens from the day's catch, identifications, and writing up results, are done after tea in the laboratories which are well equipped with the necessary apparatus. In addition there is a well-stocked library, and the Warden and Assistant Warden are always ready to help. If you so wish, you can work on your own: research workers often take advantage of this. There are, on the other hand, a number of special "weeks" and courses arranged for those who are not so familiar with the subject. Emphasis is laid upon the relationship of insects with other groups — as in the Plant-Insect Borderline Course (August 14-21), and insects always come into the picture in general and water biology work. Weeks and special courses usually run from Saturday to Saturday, the day when other students are also asked, whenever possible, to come and leave. The following list gives those periods which are likely to be of interest to the amateur entomologist:

August 14-21—Plant-Insect Borderline Course.

August 21-28—Water Biology Course (mainly Estuarine).

September 13-20—General Biology Course.

October 16-23—Autumn Biology Week.

Apart from the study of insects under these conditions, students meet other people, not only of their own particular interests, but also botanists, geographers, ornithologists, artists and others. Discussion and exchange of views is inevitable, and such mingling of interests goes a long way towards breaking down those artificial barriers between the various departments of science—and, indeed, between science and art. The value of this is fully recognised and every encouragement is given, both in the field, where mixed teams are set mixed problems, and indoors in the forum of a comfortable Common Room. Many of the fifteen hundred students who have been at Flatford in the past two years come again and again. Or they may go to one of three other Field Centres established by the Council for the Promotion of Field Studies: *Juniper Hall*, Mickleham, Surrey; *Malham Tarn*, Settle, Yorks; *Dale Fort*, Haverfordwest,

Pembrokeshire. The address of *Flatford Mill Field Centre* is East Bergholt, nr. Colchester, Essex. Particulars can be obtained direct from the *Wardens* of each of these Field Centres, or from the Central Office, Council for the Promotion of Field Studies, 10 Exhibition Road, London, S.W.7.

EMPEROR MOTH ASSEMBLED IN LONDON

C. H. Ison (1343), of 47 Orford Road, London, E.17, sends the following report of a surprise assembling in his gardens:—

At 12 noon on 19th April 1948, a male and female *Saturnia pavonia* emerged in the breeding cage in my garden, but no pairing followed.

At 5 p.m., on looking out of the window, a male was seen flying around the cage. Thinking my daughter had left the cage door open and allowed it to escape, I grabbed a net and dashed out to capture it. Imagine my surprise when it was found to be a rather worn wild specimen assembled to the freshly emerged female.

At 5.30 p.m. another male arrived. This was in perfect condition.

I have never seen *S. pavonia* in the district, and the nearest likely locality would be about 4½-5 miles away (Loughton, Essex).

So cheer up, town dwellers! You never know your luck!

By the way, about pairing. Can any expert explain why neither the freshly emerged nor the assembled males paired with this female? Eventually this female was paired at 4 p.m. on the 21st with a male that had emerged at 10 a.m. on that day. She laid 280 ova.

C. H. Ison (1343).

AN APPROACH TO CLOSE-UP PHOTOGRAPHY

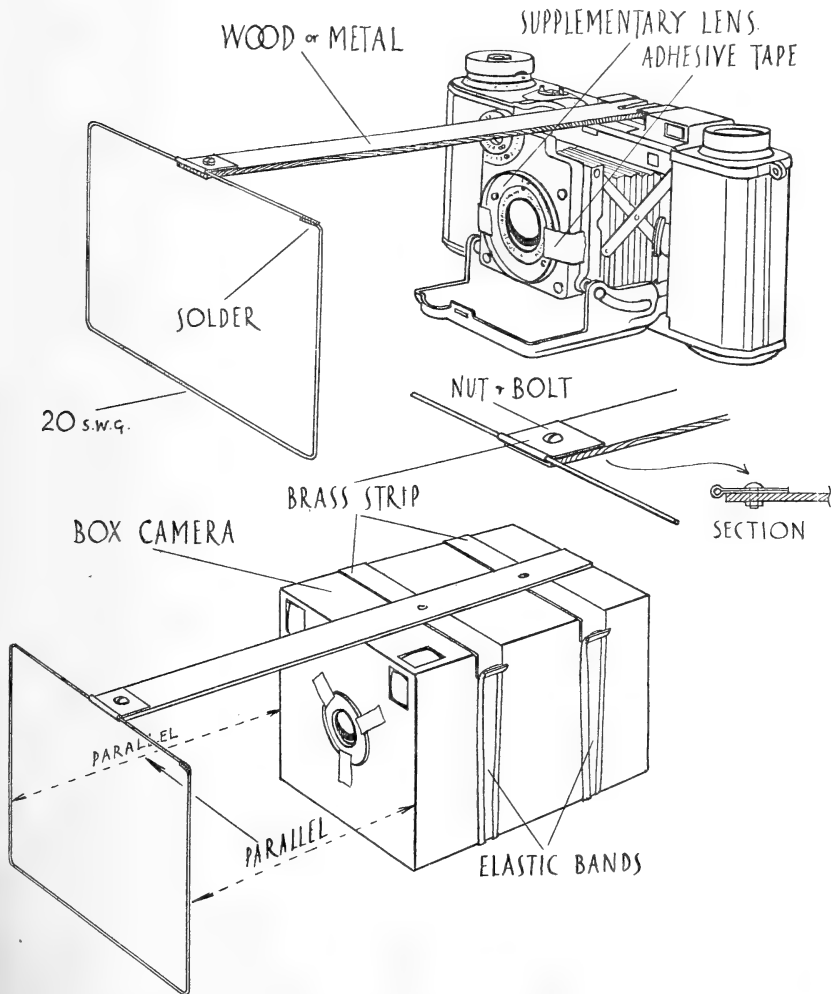
There must be a number of members who would like to take "close-ups" of insects, flowers, etc., but have only box cameras or V.P. Kodaks or cameras with fixed focus. However, to overcome this, a supplementary lens of say 6" to 10" focal length will be suitable and should cost round about 9/-, perhaps cheaper, and if you are really keen I think it's worth the outlay. This lens can be fixed temporarily over your own by means of adhesive tape or a tapered tube made from passe-

partout or any other method which will prove secure. Now take the back of your camera off and place a piece of ground glass or tracing paper where your film would normally be—open your shutter and set your lens to its largest stop—the camera should be firmly fixed so that when you have focussed correctly on your object you can measure the distance exactly. The next step is to make a wire frame the same proportions (not size) of your film and see that this frame comes outside your ground glass screen size. When this frame

is attached to your camera by a strip of wood or wire it will be exactly the same distance you measured; be sure to get this dead accurate as *everything* depends on it.

This frame should be detachable and, if possible, collapsible. Piano wire, I think, is most suitable, and if the frame size is drawn out on paper first it will make things much easier as it will enable you to lay your wire on it to get it exact before you solder the join which should be on the corner. See sketch below.

D. P. GOLDING (905).

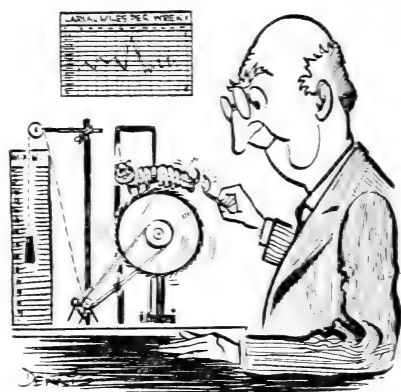


REVIEWS

Simple Experiments with Insects, by Dr H. Kalmus (London: Heinemann, pp. xii + 132, with 39 line figs., 1948, 7/6).

This little book is just what any amateur with a bent towards experimental work in insect physiology and behaviour has been needing. The experiments chosen cover a wide field and few require apparatus which is not to be found in any breeder's "den" or attic. The experiments total 104 in all, and in the majority the experimenter may vary individual details and species involved to show further facts of insect behaviour. They deal with the following subjects: metabolism, digestion, breathing, locomotion, skin, senses, gravity, temperature, reactions to light, growth and development, behaviour, and technique. There are short appendices dealing with the rearing of the insects most frequently discussed (fruit-flies, stick-insects, flour moths, ladybirds, meal-worms and bluebottles), as well as how to obtain carbon dioxide, and make an etherizer or a killing bottle. A good bibliography and short index conclude the book: the comprehensive bibliography suffers from the fact that the titles of the papers listed are not given, and the fact that the majority of articles referred to are in German may perhaps reduce its value to English-speaking amateurs. The style of writing is simple, and although a number of technicalities are introduced, their meaning should be made obvious by the subject matter. The book should prove of much value and interest to every kind of entomologist, be he already an experimentalist or be he photographer, collector, artist, breeder, or nature lover.

The chapter on Metabolism, for example, contains experiments to investigate the drying up of soil *Collembola* away from moisture, the production of water by insects, light-production by glow-worms, the mineral requirements of fruitflies, the breeding of these flies on milk, the immobilisation of insects by chilling and heating, the making insects active by human breath, the survival of adult insects on sugar and water, the presence of calcium carbonate in the Malpighian tubes of flies, the recovery of insects from cyanide



"Simple experiments with insects."

poisoning and the killing of flies with cigarette smoke.

It is a pity that some of the species beloved of the amateur had not been substituted for many of the standard laboratory guineapigs. Not every wife would approve her husband experimenting on the dining-room table with a pig louse (expt. 48), nor every mother approve her son breeding quantities of blowfly larvae in his bedroom (expt. 64). This laboratory worker's lack of understanding of the attitude of the typical amateur perhaps detracts from the appeal of the book, which, according to the Preface, is designed to "meet a demand from amateurs of all types." It is claimed that "The beetle collecting enthusiast, however, is usually considered rather ridiculous by his fellow citizens . . . He still clings to the old technique of collecting, preserving and labelling (as well as he can) in what is really a hopeless competition with the big museums." Are we, then, to believe that turning a test-tube in the attic may be thought (by old Cheeryface next door) any less ridiculous than breeding a bevy of beetles in the garden shed? And is the amateur, trying out some of the oft-repeated experiments in this book, assumed to be in more "hopeful" competition with university laboratories than his fellow bug-fan, sprinting over the Downs after a Fritillary, is in competition with the big museums? No—there is one thing common to all *amateurs*, as the derivation of the word suggests, and that is their fondness for the subject of their choice. Dr Kalmus

loves his experimenting, every bit as much as does the office-worker who finds escape in wood and hedgerow, in his rearing-cage, library and cabinet. But there is no reason why more collectors should not come to appreciate some of the intricacies of experimental work, stimulated by the author's enthusiasm. And so we recommend this interesting little book to readers of all ages.

It is not difficult to find places where the editing has slipped up. But such faults should not detract from the usefulness of a book that can do much towards increasing the interest in a branch of amateur entomological activity that has all too few devotees.

B. A. C.

Nature Lover — the Magazine of the Countryside (London: Staples Press Ltd., January 1948 issue—Vol. 5, No. 1— $8\frac{1}{2}$ ins. x $5\frac{1}{2}$ ins., pp. 48, 1/3.

We were agreeably surprised to see the *Nature Lover* in its new format—a very much more attractive production than its pre-war forerunner. The clear type, smooth paper, small page, double column per page, and well-reproduced half-tone illustrations are what every magazine of this type should aim at producing.

The style of the contributions is popular, but not dully so, though perhaps in some places the journalistic touch may seem out of place to the factual nature-lover. The contributions in this January number cover a wide field, dealing with the night sky; ponies of Britain; thoughts on browsing through seed catalogues; jottings from a butterfly collector's diary; the habits of the badger; British seashore shells; thatch; off-the-ration meals (sampling strange animal meats); the birds of Lundy Island; silkmoths (illustrated by three very nice unacknowledged photographs, we imagine by Walter J. Murray); and some book reviews. These latter would be more valuable if they were signed by their authors. Altogether an attractively got up number worthy of the magazine.

B. A. C.

PAIRING HAWK MOTHS

Referring to the letter from Mrs Spoczynska (751), in *AES Bulletin*, No. 88, I can offer a few observations on mating various newly-emerged Sphingidae. My experi-

ences relate to *tiliae* and *populi* in past years and to *ocellata* in more recent times.

The pupae are kept through the winter in a large cylindrical metal container, covered with a muslin top. The sides of this container are lined with scrap lino, with the rough side toward the inside of the container. A number of fairly slender twigs and sticks reach from the base to the top. The pupae rest on sterilised soil and moss and the whole container remains during the winter in an outdoor asbestos garage-type shed, kept well away from any direct light. With this arrangement excellent results have been obtained. During the summer of 1945 a female *ocellata* was obtained. This insect laid some 100 eggs. About 60 larvae pupated from these and the following seasons literally hundreds of larvae were bred.

The essential points in my opinion are:—

1. Plenty of rough surfaces up which to climb, at the time of actual emerging.
2. Almost dark conditions.
3. No unnecessary disturbing of insects.

I hope that these remarks will prove of interest to your correspondent.

W. J. DURRANT (1196).

QUERIES

We would draw members' attention once more to the queries which have been published in previous issues, very few of which seem to draw replies into the editorial postbag. In particular, R. E. Vaughan Roberts' enquiry (*Bulletin* 89, p. 148, Jan. 1948) should provide food for thought—and observation—during the com-



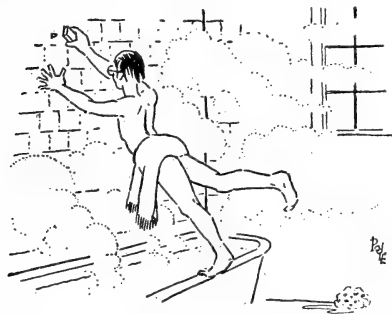
ing season. Why do mosquitoes carry their own air-raid sirens on their blood-sucking expeditions—and does the pitch rise as

they approach—or only as they depart full and contented? And is the note any guide to where to swat? It is well known that the "song" of bees varies markedly with their activity, age and even sex. Can any member inform us on the vocal characteristics of drones and butterflies (as the popular press seems more enlightened about their ecological behaviour). Have any insects been shown to emit sounds other than to attract their own kind (grasshoppers and crickets) or to scare away other animals (possibly the Death's Head Hawkmoth, wasps and mimicking hoverflies). Surely this is unwise in gnats, clegs and warbles? Bats have been shown to use a distance perception system akin to radar, and stridulatory organs are well developed in many nocturnal moths found in this country, possibly for the same purpose. Have we any sound-engineers who could investigate this subject?

B. A. C.

AN UNCOMMON MICRO

I was about to take a bath, late one night last autumn; the window was open to let the steam escape, and the ceiling light was shining across an adjoining nursery garden. As I stepped into the bath, I noticed a little white moth that had settled on the window jamb. It was an insect with satiny wings that shone



brightly in the light. I thereupon darted into an adjoining room, clad principally in spectacles, grabbed a receptacle and secured the moth. It was a specimen of *Margarona unionalis* in perfect condition, and its identity was confirmed by Mr H. C. Huggins the following morning.

DENNIS SMITH.

(16/1/1948)

NOTES AND OBSERVATIONS

H. G. BINNING (1427) records that a Humming-bird Hawk Moth (*M. stellatarum*) was seen feeding on Spanish Iris in the open market at Newport (Mon.) on 14th February 1948, and a fine specimen of the Herald Moth (*Scoliopteryx libatrix*) was taken on 18th February.

D. WADE (1104) reports the capture of a Large Tortoiseshell near Hull on 24th April 1948, at 5 p.m. He suspected that they were in the locality as long ago as 1945. He also caught a Holly Blue (*Celastrina argiolus*) on 7th May and a hibernated Comma (*Polygonia c-album*) on 8th May.

PAUL H. HOLLOWAY (429) captured a perfect female *A. cardamines* ab. *lasthenia* on 16th May 1948, in the New Forest. This is the female equivalent of the male figured in Frohawk's *Varieties* taken in Essex in 1911.

WHERE TO WRITE

Articles, drawings, etc., for the *Bulletin* to: TREVOR TROUGHT, Brookland, Tysoe, Warwickshire.

Articles, drawings, etc., for other AES publications to: B. A. COOPER, 27 Spilsby Road, Boston, Lincs.

Exchange Notices and advertisements to: E. LEWIS, 8 Parry Road, London S.E.25. (To reach him by 15th February, April, June and September.)

Notice of change of address to: J. COWLEY, Holywell House, Edington, Bridgwater, Som.

Subscriptions to: G. B. HODGES, 12 London Road, Braintree, Essex.

Requests for publications to: C. B. PRATT, 1 West Ham Lane, London E.15.

Offers to lead field meetings, exhibit, etc., to: D. P. GOLDING, 43 Merchland Road, London S.E.9.

Requests for literature for prospective members to: E. LEWIS, 8 Parry Road, London S.E.25.

Applications for new membership to: S. M. HANSON, 167 Gunnersbury Park, London W.5. Also offers of help with AES work, and suggestions for improvements in our organisation.

Silkmoth Rearing's Handbook. Data for the revised issue to: W. J. B. CROTCH, 5b Stanley Crescent, London W.11.



SUBSCRIPTIONS

The 1948 subscriptions were due on 1st January, 1948.
HAVE YOU PAID YOURS ?

If not, please send it along at once to Mrs L. Cooper,
1 Okehampton Road, London N.W.10. Prompt payment will
save your committee a great deal of worry and unnecessary
correspondence.

EXCHANGE NOTICE

N.W.Harwood (825), 37 Stoneyhurst Avenue, Acklam,
Middlesbrough, Yorks, offers larvae of P.plantagineus var.
ospita, second brood, not hibernating. Ready August.
Wants: other southern species, mainly larvae.

CORRECTIONS TO BULLETIN 90

CHANGES OF ADDRESS

- Ashmore J.S.D.(826^x): Ward's End Farm, Adlington, Acclesfield, Ches.
- Basden E.B.(550): Institute of Animal Genetics, West Mains Road, Edinburgh 9.
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- Christie I.(710): Station House, London Road, Hackbridge, Wallington, Surrey.
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- Cruttwell H.W.(118): Old Ford House, Frome, Som.
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- Edwards Rev.W.O.W.(570): 1 Westbourne Terrace, Budleigh Salterton, Devon.
- Gibson Miss E.M.(311): 54 Station Road, Petersfield, Hants.

Greenwood C.(312): Guiting Power, Cheltenham, Glos.
Hamblyn E.L.(1258): 357 Caerphilly Road, Cardiff, Glam.
Harding C.J.(894): BM/NEWT, London W.C.1. Haynes R.F.
 (834): Lyndhurst, Brockham Lane, Betchworth, Surrey.
Heath J.(836): 61 Mowbray Road, Cambridge. Holmes A.M.
 (1198^x): c/o Universal Conduits Ltd, Bath St, Walsall,
 Staffs. Horder A.(85): Ivy Cottage, Coombe, Shaftesbury,
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 borough, Yorks. Jones C.Garrett-(989), Houseboat Hilara,
 c/o Rye House Farm, Hoddesdon, Herts. Jones G.D.G.(1062):
 Bee Research Dept., Rothamstead Experimental Station,
 Harpenden, Herts. Morgan H.G.(90): Staplake Mount, Star-
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Ormerod S.Horton-(1370): 17 Kenwood Road, Moss Bank Park,
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 University of Beirut, Beirut, Lebanon Republic. Richard-
son N.A.(431): 12 Drayton Road, Bletchley, Bucks. Shaw
J.P.(1204): 49 The Avenue, Beckenham, Kent. Shaw M.W.
 (911): Ministry of Agriculture & Fisheries, Entomology
 Dept., Woodthorne, Wergs Road, Tettenhall, Staffs.
Stone Miss O.M.(740^x): Flat No.3, 10 Greenaway Gardens,
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 Repton Road, Orpington, Kent. Smith E.K.(178): 38 Weyhill
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 Red Locust Control Service, Abercorn, N.Rhodesia. White-
horn K.P.(1084): 205 Hither Green Lane, London S.E.13.
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 Portsmouth, Hants. Yarrow I.H.H.(559): N.A.A.S., Chiltern
 Court, St Peter's Avenue, Caversham, Reading, Berks.

The addresses of the following members are unknown:
 if any members can supply them, will they kindly write to
 the Address Indexer, Mr John Cowley, Holywell House,
 Edington, Bridgwater, Somerset ?

Abraham J.(542). Cove Miss I.M.(612). Edwards M.S.
 (1191^x). Humphreys J.A.(168). Quinn J.G.(955). Rands.
 Lieut. G.A.F.(879).

DECEASED

Gibson E.B.(893). Grant J.H.(330). Main H.
 (63), Honorary Member. Pierpoint W.(1226). Swinbourne
 R.W.(1368^x).



AES



No. 93

BULLETIN

AUG.-SEPT. 1948

EDITORIAL

Contributions to the Bulletin should be short and snappy. So should an Editorial. The new Editor will do his best to maintain and improve the standard of the Bulletin but this will also depend on the co-operation of contributors in sending him short, accurate and interesting copy. The next issue of the Wants and Exchanges Sheet will have a note for contributors, showing how they can help.

Mistakes will occur—we can hope they will not be many. Will readers point them out with sympathy?

INSECT ORDERS

(Continued from p. 148)

Order VI

PLECOPTERA (*Stone flies*)

This is a small, rather obscure and primitive Order. The adults are soft-bodied, of moderate size, with fairly long antennae and cerci. Mouth-parts are adapted for biting. The larvae are aquatic and prefer fast-running streams with stony beds; this makes them difficult to rear, even in an aerated aquarium. The larvae of the *Perlidae* are partly carnivorous, those of the other families are vegetable feeders.

Although this order was originally included among the Neuroptera (presumably because of the aquatic larvae), the adults bear more resemblance in general structure to the Orthoptera, except that both pairs of wings are adapted for flying. The wing venation tends to be specialised and the anal lobe of the hindwing is well developed.

These insects inhabit the borders of streams and well-aerated ponds and fly very little. They can be found settled on the herbage and are sometimes sought by trout fishermen for bait.

The female, which does not possess an ovipositor, drops her eggs in the water and the nymph takes about a year to develop. Over twenty instars have been recorded. Breathing is by means of gills, their position be-

ing dependent on the family. The adult only lives for a few days and is never found far from its larval habitat.

There are 32 British species distributed among six families:—the *Taeniopterygidae*, *Nemouridae*, *Leuctridae*, *Capniidae*, *Perlodidae*, and *Perlidae*. There is little literature on the subject and some confusion as to the exact position of some species. Many life-histories are unknown. Classification is difficult and is based mainly on wing venation, cerci and antennae.

B. O. C. GARDINER (225).

TO KEEP WOODY FOOD-PLANTS FRESH IN WATER

The *mature* foliage of Sallow keeps well in water. If young foliage is essential, pick soft young shoots before they become woody and immerse deeply (say four-fifths) in water, leaves and all. But avoid long leggy growths. Keep in shade and in a cool atmosphere. Change water as frequently as possible and cut stem under water each time (only a few millimetres need be cut off), to remove wound seal and bacterial film. Woody branches should be split up for several inches, or the ends hammered out.

Some *willows* (not *sallows*) will grow in water, if given sufficient light—not direct sunshine.

The effect of putting charcoal in the water is worth trying. It is used for keeping grapes fresh and is effective for several *months*. The effect of brushing the stems with dilute "Milton," "Voltas," or other chlorine-containing disinfectant should also be tried. The branches are then placed in water in the ordinary way. This should diminish bacterial development on the cut surface.

H. K. AIRY SHAW (545).

ABUNDANCE OF PEACOCK BUTTERFLIES AFTER HIBERNATION

I have been struck this spring by the unusual abundance of Peacock

Butterflies (*N. io*), which has been about 5 times as common as usual over the whole of this district (Bredon Hill). Below are my observations on the comparative abundance of hibernating and other species following the contrasting winters of 1947 (severe) and 1948 (mild). These might provide useful data about the effects of climate on our hibernating species.

	1947	1948
Peacock		
× $\frac{1}{2}$ average	× 5 average	
Small Tortoiseshell	average	× $\frac{1}{2}$ average
Brimstone	average	slightly above av.
Comma	average	average
Green-veined White	average	× $\frac{3}{4}$ average
Large White	× 2 average	slightly below av.
Holly Blue	× 2 average	slightly below av.

JOHN MOORE (146).

SETTING MATERIALS

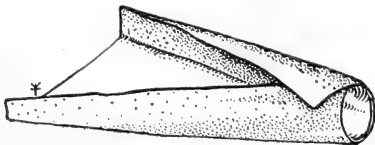
If the photo-sensitive emulsion is washed off old film negatives and radiographs—if obtainable—with *hot* water, the remaining cellulose acetate base will be found an excellent medium for setting Lepidoptera, being perfectly smooth, transparent and semi-rigid.

P. G. TAYLOR (719).

TIPS ON COLLECTION AND PRESERVATION

I collect all orders of insects, but mainly beetles (*Coleoptera*), and specialize in ladybirds (*Coccinellidae*) and weevils (*Rhynchophora*), although I have only a few of the latter.

Home-made apparatus—I believe in practicability before respectability, preferring to buy nothing if I can possibly make it. By this method alone can I manage to bring the costs of "bug collecting" down within my reach; the price of apparatus is, to my mind, very high.



The Tronel.

The Tronel—For catching many insects on the ground I have invented the "tronel"; it is made from a piece of tin bent as shown. The insect is brushed into the large end of the tronel with a small brush or even a stiff feather, a container is held below the hole at the other end, and the tronel is tilted up and given a sharp tap to dislodge the insect into it. Even caterpillars can be caught in this way.

Containers—I find that empty 12-bore cartridge cases fitted with a cork make very good containers. I also prefer match-boxes to glass-bottomed pillboxes as the former can be inverted over the insect and then gently closed. Pillbox lids are so constructed as to allow the insect to escape when first put in or when taken out. If the insect caught in the match-box is very agile, the data can be written on a small piece of paper and slipped into the box and then box and all put into the killing jar.

Gum—For gum I use the following formula. It can be made up at most chemists.

Pulv. Tragacanth ... 10 grains.
Gum Arabic 3 grains.
Sp. Vini Meth. 30 minims.
Water to one ounce.

Brush—I find that a hen's feather cut with a broad end applies the gum better than a brush, as the gum seems to come off the feather better than off a brush.



The Mounting Feather.

Card—I mount all insects on cards except *Odonata*, *Neuroptera*, *Mecoptera*, and *Lepidoptera*.

Data—I like to keep a book with all the data and "gen" in it as most of the cards are too small to put on all I want. I have index letters on the cards below the specimens and in the book. I have found that specimens can be easily damaged if they are taken out to read data written on the underside of the cards.

Storage—I make cabinets from old wireless cabinets with shelves of Essex boarding; nails with heads cut off make good brackets for the shelves, which are between $1\frac{3}{4}$ " and 3" apart.

Fleet, Hants. (L.)
Brighton 6,



Newport, Mon. (L.)
Newport. (L.)
Bloxwich; Walsall,

aisley, Renfrews.
Som. (L.)
tage, Monkton



Marischal College,
Avenue, Brighton

Riverside,

Prestwich,

heriff Highway,

1 Crescent, Watford,

do Estoril, Casal

uthall, Mddx. (L.)

rive, Stanmore,

London S.E.2. (L.)

ne, Dartford, Kent (L.)

nd Park East,

more, Lymington,

ort, Hants. (gen. ent.)

ell, Surrey (gen. ent.)

- J. COWLEY (771)



SUPPLEMENT

CORRECTIONS

Cameron T. V.

B.A.(19): add F.R.E.S. Da
M.I.P.A., F.H.H.S. Dobson
of Food read c/o Ministry
(423): add F.R.E.S., alte
ent., life-histories of L.
alter to Forbes Mrs W.M.
London S.W.5. Rogers L.M

FINAL NOTICE - U

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further Bulletins will
subscription remains un
P.C.Le Masurier, 85 Wa
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Sterling Lt.D.H. (84): no
add to interests (Englis
ature). Taylor P.G. (719)
ests to (L., agric. pests,
studies). Trought T. (137)
on-Avon, Kingwell Court
communications to Headma
College Nat.Hist.Soc. (69
Sec., 15 Bamfield Avenue
University Copyright Off
right Libraries, 4 Great

NEW MEMBERS (t

- 240 Watts W.J., 42 Bra Road, Fe
(C., L.)
- 1102 Glennie Brig.E.A., ways, Cro
Berkhamsted, Her oglophila
- 1420^x Claridge M.F., 117 Railway Te
Warks. (L.)
- 1421 Lockington N.A., 2 Fort Gam
N.W.4. (C., H.)
- 1422 Jones G.C., Welfie Bert Park
Worcs. (L., C.)
- 1423^x Ika, Miss N.O., c/ Basin,

BULLETIN 90 (Continued)

(107): add Dr. Cooper
 (664): add F.L.S.,
 (1111): for c/o Ministry
 of Agriculture, Hammond H.E.
 rests to (L., M.L., C.,
Fleming Miss W.M. (1105):
Fleming, 32 Trebovir Road,
 (1238): add Major.

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ive, Tolworth, Surrey.

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iley, Croydon, Surrey.

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February 1948)

Road, Beckenham, Kent.

eways, Cross Oak Road,

(Troglodites, troglodytes)

Railway Terrace, Rugby,

Beaufort Gardens, London

Albert Park Road, Malvern

Mrs A. Basse, H.M. Customs,

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Brimstone	average	× ½ av
Comma	average	slightly
Green-veined White	average	av
Large White	× 2 average	slightly
Holly Blue	× 2 average	slightly

JOHN MOOR

SETTING MATERIA

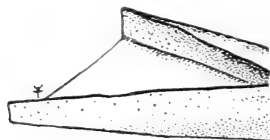
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P. G. TAYLOR

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The Tronel.

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1424 Dening J.C., Dinorben B
1425^x Wheater R.J., 13 Carden
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1427 Binning H.G., 13 Graig
1428^x Wiggin A.J., 172 Ingram
Staffs. (L.)
1429 McNally P., 11 Tennant
1430^x Heaman J.C., Gulland, D
1431 Brown D.G., B.Sc., Sand
Combe, Bath, Som. (g
1432^x Allan R.M., Entomology
Aberdeen. (gen. ent.)
1433^x Elliott D.M., 1 Upper W
6, Sussex. (L.)
1434 Sperry J.L., 3260 Redwo
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1442^x Showler A.J., 24 Howart
1443 Rivers C.F., 250 Shephe
1444 Benson R.H., Denehurst,
Newcastle-on-Tyne 7.
1445 Farwell I.G., The Haven
Hants. (L.)
1446 Anderson W.G., 8 Holly S
1447^x Cloake G.A., 339 London

Pests—If a specimen is attacked by mould or mites, and if the attack has not gone too far, I find that immersion in meths. generally cures it. D.D.T. spray is not very strong and leaves a sticky film.

Killing agent—I use crushed laurel leaves as my sole killing agent. I have not yet tried ethyl acetate.

Remounting—If the gum described above is used, a little meths. run round the specimen on its card will free it without making it too wet or relaxed.

Collecting — Good sources for Coleoptera and other orders are under old sacks that have been left out in the open for some time, and on and under refuse along the high tide marks beside back-waters and



“... under refuse along the high tide marks ...”

creeks. I hope that this article has given other beginners some useful hints and I wish you all the best of luck in your efforts to “make do and mend!”

N. AUSTIN (966*).

(8/7/47).

A HOLIDAY IN BRITTANY

As I had the good fortune to visit Paramé, near St Malo, Brittany, last summer (1947) I thought other members might be interested in the various types of Lepidoptera I saw there.

After the Large White (*P. brassicae*) the commonest species were the Red Admiral (*V. atalanta*), Clouded Yellow (*C. croceus*), and Small White (*P. napi*). The Red Admirals were especially common on *Buddleia*, on bomb-sites, and the ivy-blossom which had opened very early. The Clouded Yellows were all in bad condition until about the 6th September, when apparently a new brood appeared.

Painted Ladies (*V. cardui*), Peacocks (*N. io*), Walls (*P. megera*), Speckled Woods (*P. aegeria*), Gray-

lings (*E. semele*), Gatekeepers (*M. tithonus*), Meadow Browns (*M. jurtina*), Brown Argus (*A. agestis*), Common Blues (*P. icarus*), Small Coppers (*L. phlaeas*) and Brimstones (*G. rhamnii*) were all common in lucerne fields and meadows.

The Walls were lighter than British specimens and the Brown Argus and Common Blues much larger.

Common English species, like the Small Tortoiseshell (*A. urticae*), Comma (*P. c-album*) and Small Heath (*C. pamphilus*) were rare, only two of each being seen.

Long-tailed Blues (*L. boeticus*) were fairly common but were extremely difficult to capture as they fly very fast, zigzagging over fields and hedges.

Queen of Spain Fritillaries (*A. lathonia*) were infrequent. I only saw two, both in good condition. Pale Clouded Yellows (*C. hyale*) were common but generally in bad condition. I saw females on two occasions, ovipositing on lucerne.

I only saw one species not found in England—*Carcharodus oleiae* (Esp.) which is called Hespère de la Maure by the French.

The Humming-bird Hawk Moth (*M. stellatarum*) was excessively common everywhere on Valerian and Honeysuckle. I saw four Convulvulus Hawk Moths (*H. convolvuli*) but only managed to secure one.

M. J. PARR (779*).

PLANTS THAT WILL ATTRACT LEPIDOPTERA

I know from practical experience that the following plants are excellent for insect attraction:

Buddleia Davidii (syn. *variabilis*)—

The best named varieties should be used such as *magnifica*, *superba* or *veitchiana*, in preference to any old seedling now so common on bombed sites.

Buddleia, “Golden Glow”—A later flowering hybrid, useful in Sept. and Oct.; also another hybrid “Moonlight.”

Lavandula—All species of Lavender are good.

Ivy—All ivy flowers are excellent, more especially the tree ivy and particularly one named *Hedera colchica* var. *arborescens*.

Veronica—All types of Veronicas, although most of the shrubby species are not hardy, particularly in the north, but in the

south the following usually overwinter: *speciosa*, *coelestinum*, *Andersonii*, *Traversii*, *salicifolia*. The herbaceous types are a fair attraction.

Privet—The flowers of *Ligustrum ovalifolium* and *L. vulgare* are excellent, as also are the rarer and larger leaved types such as *lucidum*, *japonicum* and *amurensis*.

Sallow—Probably all the *Salix* are useful; some of the best species are *S. caprea*, *alba*, *pruinosa*, *cinerea*, and perhaps the ornamental varieties like *vitellina*, *babylonica*, *britzensis*, etc.

Aster—All forms of Michaelmas Daisies, but choose some of the modern improved single named varieties; any of the *Amellus* type are splendid. All the Chinese bedding *Asters*, *Callistephus chinensis*, are fine.

Erigeron, *Helenium*, *Solidago* — All varieties of these herbaceous plants are good. *Erigeron* is useful for earlier flowering.

Achillea eupatorium — A useful and effective plant.

Dahlia—All varieties, preferably the singles.

Zinnia—Quite useful.

Nicotiana affinis—This seems to be better than the crimson types.

Mathiola bicornis—Useful for moths.

Marigold—*Tagetes patula* and *T. erecta*, French and African Marigolds respectively, form considerable attraction.

Annual Chrysanthemum—Quite good.

Sweet Scabious—Quite good.

Centranthus ruber—An excellent attraction.

Erica mediterranea—Heaths are useful, this one is early.

Armeria—Any of the cultivated types of thrift will do.

Sedum spectabile—One of the best attractions.

R. C. DYSON (91).

MITES ON BUTTERFLIES

May I add to my note (*Bull.* 88, p. 130) regarding the parasites infesting Lepidoptera, as by chance I have obtained *The Spiders and Allied Orders of the British Isles*, by T. H. Savory, from the local library, from which I read that the red larva of a largish mite, *Belaustium (Ritteria) nemorum*, is often found on the Crane Fly. I have found no mention of butterflies or moths being infested, but note is also made of a

species of "False-Scorpion," viz. *Chernes nodosus*, which frequently holds on to the legs of flies and harvestmen. This species is said to frequent vegetable refuse and manure heaps in gardens.

I suggest that the parasite noted on Lepidoptera is probably the larva of *B. nemorum* or an allied species.

From the same source I learn that the "harvesters" that attack persons in the autumn are the larvae of one or more species of mites coming within the sub-order *Trombidiiiformes*.

G. C. HOLROYD (253).

BREEDING THE GROUND LACKEY

To my note on this (*Bull.* 91, p. 191) I would add a postscript. Emergences proved very disappointing—only 8 (all males) from July 31st to August 9th. Some ten cocoons produced parasitic flies (Tachinids); several contained larvae which had failed to pupate. About half-a-dozen intact cocoons I have not opened but I have not read that *M. castrensis* lies over. I do not think these poor results affect my note on the treatment of the larvae, as nearly all spun up; but it may be that *castrensis* larvae are best not transferred from the air of the saltings (at any rate to the London area) until quite or nearly full fed. A number of Emperor larvae transferred at the same time did badly; more than half died in the last skin.

F. H. LYON (1026).

REARING FOX MOTH CATERPILLARS

Having tried several times to rear the larvae of the Fox Moth (*M. rubi*) with little success, I decided to have one more try on different lines.

I made a cage 15" × 15" × 12" of asbestos-cement sheeting on a wooden framework, with a glazed door. Into this I fitted a standard lampholder and a 40 watt lamp, a control thermostat and a Max.-Min. Fahr. thermometer.

A layer of sand one inch deep was placed in the cage and on this some sterilised moss and tufts of heather. The thermostat, set at 85° F., gave a range of 78° F. to 91° F.

Mr N. T. Easton (370) sent me about 30 larvae which arrived mid-January 1947, after having been sub-

jected to a couple of hard frosts. These were put in the cage and the heat turned on. For two days the larvae sat on the heather and then commenced to spin up. In a week all had pupated.

My own larvae were left out of doors until the end of the great frost. They were then brought in and after a day at normal room temperature were put in the cage. They immediately buried themselves in the sand and remained there for 9 days. After this they came up in ones and twos and began to spin up. Once you can induce them to pupate you can be sure of practically 100% moths in due course.

A shallow jar containing water covered by gauze was placed in the cage to maintain humidity and the heather was occasionally sprayed with tepid water.

In the past I had tried nearly every other known method to try and get them to pupate and could get them through the winter, only to have them come up in March to wander about for several days and then die. Note that it is essential that the larvae are subjected to one or two hard frosts before attempting to force them.

C. H. HARDS (176).

MAINLY IN FLEET STREET

A member has sent us the following cutting from the *London Star* of March 1st, 1948, entitled "Spring Wings". The italics are ours.

"Hikers on the Sussex Downs have seen an unusually large number of early butterflies, *mainly Fritillaries and Meadow Browns.*

"They are presumably hibernates from last autumn, as it is early for butterflies to be seen in any number even in the south.

High-spot among the discoveries was on allotments in the Dyke-road. Two perfect female specimens of the magnificently coloured Peacock butterfly feeding on groundsel were joined by a male."

DO BUTTERFLIES FLY AT NIGHT?

With reference to the note in *Bulletin* 87, p. 127, July 1947, I agree that the Red Admiral Butterfly (*Vanessa atalanta*) certainly flies at night at times. During the 1892-93 summer holidays, at Tavistock, Devon, I treacled with strong black treacle

the stem of a huge elm close to the garden; after the first few nights, when the treacle had soaked into the bark, Red Admirals arrived during the day; and then one, and later two and three turned up *after dark* to the newly put-on treacle. I found one at least already imbibing the treacle on my first visit after dark, and later two and three, which remained till my last visits between 10.30 and 11 p.m., G.M.T. But although the Peacock (*Nymphalis io*), Small Tortoiseshell (*Aglais urticae*) and large Fritillaries (*Argynnis* spp.) were common round that country house, not one of the latter turned up to the treacle.

FREDERICK D. WELCH,
Dalesford, Hartley, Dartford, Kent.

PERILS OF BUTTERFLY-COLLECTING

"Sheltered lanes, etc. . . are the accredited haunts of the Large Skipper (*Hesperia sylvanus*) but with the exception of one or two isolated specimens, *the writer has always taken it right in the midst of thick clumps of*



yellow gorse." From *Butterfly and Moth Collecting*, Anonymous, 3rd ed., The Bazaar Exchange and Mart. Italics ours.

JOHN MOORE (146).

NIGHT AIR

During 1938 I spent a holiday in Kent. The first night collecting at light produced *Stauropus fagi* (Lobster Moth) and *Tethea fluctuosa* (Satin Carpet) in such abundance that I decided to make it my headquarters for my holiday night collecting. Subsequent nights produced

such a quantity of good things that my storage boxes were soon full.

The second night saw me there in the company of a relative who is a huge man possessed of some sixteen stone of aldermanic corporation. All went well for some time, until a noctuid moth of large size hit him in the face and caused him to sit down suddenly in a patch of brambles. After heaving himself up he was alarmed to discover that the poor moth was sitting on his arm. I suppose I should have explained to him that moths do not sting. But to see a sixteen stone man careering round the clearing, scared out of his wits



... scared out of his wits by a moth "

by a moth, calling for me to remove it, was too rich to spoil.

The next night I ventured forth alone. I am not of a nervous disposition, but soon felt it was a most eerie night with thunder about. Who does not know the curious feeling one has when alone in a wood at 2 a.m. and all is still, with the flicker of lightning and the dull growl of thunder in the distance? A small animal occasionally scampered near at hand and an owl gave out its mournful cry at intervals. After a while a gentle breeze began to disturb the leaves and the creaking of the timber-tops added still more tension to the electrical atmosphere, until I had just about had enough for one night and was about to return to the car.

Suddenly, I felt a sharp rap on my shoulder and a deep growly voice in my ear said, "Hey—what's the game?" It took me some seconds to recover from the shock. It proved to be the local "copper," who, seeing



"... I felt a sharp rap on my shoulder..."

the tottering state to which he had reduced me, was profuse in his apologies. The next night found him not only wielding a net on my behalf, but sharing a flask of tea and a box of cigarettes.

That wood is now no more, but the new growth is steadily covering the scars of war.

H. E. HAMMOND (423).

DON'T LOSE YOUR HEAD!

One Monday morning in September 1947 a boy came to me at school and told me that a friend of his had given him a *Convolvulus Hawk Moth* (*Herse convolvuli*). I was rather sceptical, but later in the day two more boys brought me a specimen of the moth, which they had found in a nearby park. When I got home that evening, I thought it over and decided to try my luck at a nearby patch of tobacco plants.

At dusk I sallied forth, armed with net, killing bottle and very high hopes. When I got to the patch of flowers, the first thing I saw was a *convolvuli* hovering over the blossoms and prodding its long tongue into the flowers. I am afraid that I lost my head, for I took a wild swipe, missed, and away went my *convolvuli*.

The following night I went back. Sure enough, there was the moth, looking like a bat hovering over the flowers. This time I tried different tactics. I fixed my eyes on a single spray of blossoms and waited. In about five minutes the moth flew into these and with a quick stroke of



"... I fixed my eyes on a single spray of blossoms and waited..."

the net I had it! This time I had brought a bottle of benzine with me, and it was but a few moments' work to pour some of this on to the moth in the net. It killed the moth immediately and in a quarter of an hour had evaporated completely, leaving the moth quite well relaxed and in perfect condition. Killing it in this way saved it from flapping about in the killing bottle and damaging itself. When I look at that specimen in my collection now, one thought goes through my head—if you see a bug you want, don't lose your head; keep cool and you'll get it.

J. BOORMAN (702*).

(2/1/48).

NOTES AND OBSERVATIONS

The Rev. W. O. W. Edwards (570) reports that in 1947 he captured 27 specimens of the Vestal Moth (*R. sacralia*) in East Devon, 21 males and 6 females—12 in the daytime and 15 at dusk. The yellow form of this moth could easily be overlooked or mistaken for the Yellow Belle (*A. ochrearia*) unless it is caught and examined. The specimens were caught on some very rough ground, covered with sheep's sorrel and the like. They are easily disturbed in the daytime but only one was seen to fly in the sunshine. They fly at dusk and sometimes come to light. The females are smaller than the males and have simple antennae. The male's antennae are pectinated two-thirds of their length—and then are simple to their extremities.

A. P. Major (1117*) writing from Rainham, near Gillingham, Kent, reports that he captured a Green Hairstreak (*Collophrys rubi*) on Queen Down Warren, the first seen in that area, on May 16th, 1948. On Whit Monday (May 17th) he saw five more, and he now hopes it will establish it-

self. The Marbled White (*Melanargia galathea*) appeared for the first time also on the Warren last year, around one clump of knapweed. The White Admiral (*Limenitis camilla*) appeared in two places on the Warren and a female at Rainham, but the woods where they were seen have been cut down.

Miss D. M. Garstang (622) reports that a student found a newly-emerged Cinnabar Moth (*Callimorpha jacobaeae*) in the glasshouses at Studley College, Warwickshire, on March 8th, 1948. She asks whether this is not exceptionally early. (*The Cinnabar under natural conditions flies at the end of May and in June. This specimen would have been forced into an early emergence by the glasshouse conditions.*—Ed.)

Alan I. Gibson (1003*) reports that in a small garden in a built-up area of Dartford, Kent, he took on May 15th, 1945, a Humming-bird Hawk Moth (*M. stellatarum*) and on Sept. 10th, 1945, a Convolvulus Hawk Moth (*H. convolvuli*).

R. A. Powell (1091) collected a larva of the Red Admiral (*V. atalanta*) on the 15th Sept. 1946, which pupated on the 19th Sept. and emerged on Dec. 6th, 1946.

INSECT PHYSIOLOGY

The *Institut Français du Royaume-Uni* announced some months ago that it had established a Science Library. By the courtesy of the Librarian, I have been able to look over at home a quantity of entomological literature issued in France during the occupation and more recently. The most interesting item is the fourteenth book of a series *Savoir en histoire naturelle*, entitled *Ce qu'il faut savoir sur la vie de l'insecte: physiologie et biologie*, by R. Chauvin, published in 1943 by Paul Lechevalier, Paris. In the spirit of our own New Naturalist series, the author sets out to show the amateur what part he can play in the pursuit of knowledge without access to laboratories and with simple experimental apparatus. His initial chapter is devoted to describing some elementary principles of techniques for studying the biology of insects, especially in the fields of physiology, genetics, experimental psychology, and biochemistry. Later he deals with these at greater length, revealing a familiarity with a great deal of British work. He quotes the estab-

ishment of a conditioned reflex in *Telea polyphemus*; he tabulates the major resemblances and differences between the ants and the termites. The book is full of interesting matter and the drawings in the text are generally of a higher standard than one had learnt to expect in popular French books.

Technical biochemists will also not wish to miss the September-October 1947 issue of *L'Année biologique*, which contains a long article by J. Timon-David on the pigments of insects, embellished with diagrams of the molecular structures. Among the many remarkable things noticed is the phenomenal increase in flavine-content in the course of the metamorphosis of the Privet Hawk Moth.

W. J. B. CROUCH (1181).

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LABEL LIST (3/6) and Check List (1/6) of British Lepidoptera (together 4/3). Label List of British Butterflies (4d). The Hymenopterists' Handbook (10/10) [To members, 7/10]. Experiments with Bees (AES Leaflet No. 10, recently published), 7d each; 5/- per dozen.

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Silkmoth Reaver's Handbook. Data for the revised issue to: W. J. B. CROUCH, 5b Stanley Crescent, London W.11.



CORRECTIONS TO BULLETIN 90 (Continued)

Cameron T.W.F.(1007): add Dr. Cooper
B.A.(19): add F.R.E.S. Dawson D.(664): add F.L.S.,
M.I.P.A., F.R.H.S. Dobson R.M.(1111): for c/o Ministry
of Food read c/o Ministry of Agriculture. Hammond H.E.
(423): add F.R.E.S., alter interests to (L., M., C.,
ent., life-histories of L.). Le Fleming Miss W.M.(1105):
alter to Forbes Mrs W.M. le Fleming-, 32 Trebovir Road,
London S.W.5. Rogers L.N.Norris-(1238): add Major.

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subscription remains unpaid. Hon. Treasurer:
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ature). Taylor P.G.(719): add F.R.E.S., alter inter-
ests to (L., agric. pests, B., E., M., phototropy, population
studies). Trought T.(1373): add M.A., F.R.E.S. Bradford-
on-Avon, Kingwell Court School Nat.Hist.Soc. (983†):
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S



No. 94

BULLETIN

OCTOBER 1948

INVITATION TO HAMPSTEAD HEATH

The Hampstead Scientific Society is carrying out a thorough survey of the Heath's flora and fauna for another publication on the subject. Their first volume was published in 1913. Researchers are wanted for all the entomological Orders. It is emphasized that the Heath with its highly varied vegetation is now entirely enclosed and of vast ecological importance therefore. Anyone who would be willing to work on the Heath or who has access to records of Heath fauna is cordially invited to contact the Hon. Organizing Secretary of the Society's biological section, John D. Hillaby, F.R.E.S. (1492), of 1 Tanza Road, London, N.W.3; telephone, Hampstead 4626. Comprehensive check lists are the first consideration and researchers, as parties or individuals, can be supplied with maps, guides and local information. Beginners are reminded that the Society has adopted a system of external referees—experts who will classify and comment on the specimens of those who wish to essay the more unusual Orders. Everyone can be assured of a welcome.

J. D. HILLABY (1492).

A CHANCE FOR AMATEURS

"It . . . makes one wish that our entomologists would devote more space in their books to the fascinating ways of such little lives. One does not suggest the deletion of necessary taxonomy; but it is disappointing to find too frequently in the work of great entomologists: 'Nothing is known of its habits.' Why do they not set to work to unravel these fascinating but puzzling stories, so that they may feed the hungry nature-lover with more substantial food? We go to their books asking for bread and are given pages of tedious classification with scarcely an item of human appeal. Such are invaluable to the specialist but of little use to the ordinary nature-lover.

"Is it a matter for wonder that boys and men sheer off entomology at a time when entomology is of such vital interest . . . ? If a boy's interest be captured he will soon seek more technical knowledge. We want our entomologists sometimes to unbend—not *too* much Fabre and Mæterlinck—but with quiet stories that will impress by their very simplicity."

The above extract from an article by Edith Coleman, in *The Victorian Naturalist* [lxiii (10), 210 (February 1947)] will arouse the amateur's sympathy and at the same time encourage him or her to record those observations on the living insect which every amateur makes but so frequently fails to write down.

A RARE VARIETY OF THE POPLAR HAWK

At the Royal Entomological Society's meeting on July 7th, 1948, P. G. Taylor (719) exhibited a variety of the Poplar Hawk (*L. populi* var. *pallida*) which had emerged from a pupa from a chance red-spotted larva found in July 1947 near Watford. Tutt comments that this is very rare in both sexes. The character is a recessive and has no connection with the red-spotted nature of the larva, which was a strange coincidence.

A USEFUL KILLING AGENT

In the Rothamsted light traps we use tetra-chlor-ethane as a killing agent. It is easy to use, a small quantity being poured on to plaster of Paris in the killing bottles. The plaster absorbs it and allows it to evaporate at a convenient rate. It is very cheap and may be obtained by the gallon drum from Murphy's of Wheathampstead or from Boots'. It does not damage any colours, as a vapour, and leaves specimens better relaxed than anything I have tried yet.

P. G. TAYLOR (719).

CHICKEN FEED

Wyre Forest in Worcestershire has been the scene of many of my butterfly hunts. On one occasion three of us went there for the day after *Brenthis selene* (Small Pearl-Bordered Fritillary). The hunting was good and the day all that could be desired, but hot as only Wyre Forest can be. After our very long walk it was a relief to approach the cottage where it was our custom to take tea, which was served up in a huge enamelled teapot holding about half-a-gallon. Half-a-dozen cups of tea is my average after a day in Wyre.



... taking his second bite . . .

The last slice of delicious farmhouse bread and butter fell to the lot of one of my companions and he was slowly and appreciatively masticating the first bite from it when, with a loud cackling and flapping of wings, a large hen dashed over our legs, skilfully seized the delicious and badly-needed slice just as our companion was taking his second bite, and tore off, pursued by a host of its kind. We still chuckle over the incident.

H. E. HAMMOND (423).

THE PALE CLOUDED YELLOW

Last year (1947) was a great "hyale" year. The dryness and warmth of the summer had been ideal for larval development and, no doubt, the east winds earlier in the year helped migration.

Having examined about sixty specimens during a fortnight in August, in a coastal district of Kent, I learnt quite a lot about them. Although sixty is a large number, not

one would have been seen without looking in the right places. Early on, at any rate, they stay in the lucerne fields, and it is there you must look first. Go round the countryside and note the lucerne fields in the district, including those where young plants for next year's crop are pushing up between the stubble of this year's corn crop. It is in the latter where females may be found laying.

They emerged extremely early and I'm wondering if my taking three on August 4th is an early record. Previously I have never seen them before the 18th; and all my specimens were seen before this date. I do not know if they went on emerging after that time, as I left the district.

It does not matter if the crop has been cut for hay and it does not need to be in flower. I prefer the close-cut field, as you can walk about in it without doing any damage. By walking methodically over a field that looks quite barren you can often put up the females, which do not fly much. Neither sex will fly unless the sun is shining.

When seen it is worth following the males quietly round the field until they settle. If you slash at them and miss, they will fly madly away at a great speed and probably not settle again for half a mile or more. I followed one male round a field for what seemed an interminable time; it would not settle, but was obviously quartering the field for a female. I kept a few yards behind it. Suddenly it dived to the ground and settled, and I put my net over . . . three! It had found a pair of *hyale*, *in cop*. This female laid quite well in captivity.

When the field is full of whites, it is difficult at first to pick out the female *C. hyale*. When the latter flies strongly, its fast, low, purposeful flight is very different from the fluttering of the whites, but, when laying, it only flutters a few yards before settling again. It is worth remembering that whites often settle with their wings half open; *C. hyale* never does, but has them tight shut. You can tell them from *C. croceus* var. *helice*, as the latter has much more black, especially on the hindwings. Strange to say, this is quite easy to see on the wing if you are reasonably close.

The books seem to suggest that it is not possible to rear *C. hyale* from eggs of the late brood, as they hibernate as larvae and the winter is too damp and cold for them.

E. G. NEAL (467).

THE LARGE TORTOISESHELL

A Large Tortoiseshell (*N. poly-chloros*) was seen near Watford on March 26th, 1948. In Ford's *Butterflies* the Large Tortoiseshell is said to have become very rare about 1903 and to be well-established only in the eastern part of Suffolk and north Essex. It may be that this observation is a further indication that the species—like the Comma, White Admiral, Wall Butterfly, etc.—is extending its range.

THE AMERICAN PAINTED LADY

The records of the appearances of the American Painted Lady (*Vanessa huntera* Fab.) in the British Isles are as follows:—

1823—Haverford West, S. Wales.

Undated in Dale Collection, Oxford.

1876—September 20, Luccombe, Isle of Wight.

1905—August 26, Torpoint, Devon.

1929—August 12, Timoleague, Co. Cork.

1942—September 24, Walkhampton, Plymouth.

There is no record of how these few vagrants got here, either from the United States of America or from Teneriffe, where it is scarce but easily distinguished by its brighter colour with five blue spots in the hindwings and by its steadier flight. It is illustrated in colour on Plate 2 of *Butterflies and Moths of Teneriffe*, 1894, by Mrs A. E. Holt-White (L. Reeve & Co.).

The late J. J. Walker also had five additional records reported to him from Ireland in August 1929, but this was not confirmed in 1936 when Lt.-Col. C. Donovan published his *Catalogue of the Macrolepidoptera of Ireland* (E. J. Burrow & Co.).

In September 1919 some dozens of *V. huntera* were recorded migrating from Long Island, U.S.A., with the Monarch, *Danaus plexippus*, and dragonflies. There are many British records of the Monarch reaching the British Isles and having been met at sea in the Atlantic, so "flying the Atlantic" is not improbable, though

V. huntera has never been reported at sea.

T. DANNREUTHER (60).

NOTES AND OBSERVATIONS

E. OWSTON (1334*) saw 8 specimens of the Comma (*P. c-album*) in late March 1948, feeding on Sallow in the Scarborough district. Writing on 23rd July 1948, he thinks the Six-Spot and the Narrow-Bordered Five-Spot Burnets (*Z. filipendulae* and *Z. lonicera*) are showing considerable variation this year. He has taken a *Z. lonicera* with the spots united, an unusual variety.



"That's nothing—ours were out in June!"

P. G. TAYLOR (719) found larvae of the Elephant Hawk Moth (*D. elpenor*) feeding, in the wild state, on the two Balsams, orange and yellow (*Impatiens biflora* or *I. noli-me-tangere*), in preference to the Great Hairy Willow-herb (*Epilobium hirsutum*) or the Water Bedstraw (*Galium palustre*). He says that Dr H. B. D. Kettlewell (706) has found the same. He has only seen it referred to as a food-plant twice in print, both in very old copies of the *Entomologist*. On 16th May 1948 he found at Tring a female Pale Tussock (*D. pudibunda*) sitting on a live twig of Douglas Fir with a batch of ova behind her. Although there was no deciduous tree for a matter of thirty yards, the young larvae would not eat Douglas Fir, but ravened on hazel! On 18th June, near Atherfield Point, I.O.W., he found, within a few yards of the sea, a specimen of a rare bee (*Eucera longicornis*) with antennae as long as itself.

The following abstracts from the *Entomologist*, Vol. 15, 1882-1883, are of interest:—

Page 73. A. B. Farn. Diseases of Lepidopterous Larvae.—Most prevalent disease is *Flacherie*, which attacks nearly fully-fed and apparently healthy larvae. The attacked caterpillars stretch themselves out on their food-plants or cage and go limp and flaccid, finally turning black and putrefying. This disease is due to overcrowding, defective aeration, too high humidity, or too succulent food. A dry atmosphere and a good current of air are essential to the well-being of the larvae. A high humidity in the breeding cage can be corrected by placing in it a dish of quick lime, covered with muslin. *Flacherie* is contagious.

Page 117. Tugwell. Some *E. versicolor* (Kentish Glory) larvae were attacked with diarrhoea when nearly full grown. They were very sick, but they were treated by holding each larva under a tap of cold water and gently brushing with a camel hair paint brush so as to cleanse them thoroughly, and then rinsing in the stream of dripping water. On placing on clean, dry food they recovered completely and pupated later with success.

Pages 61 and 107. Fowler. The best method of killing beetles is by throwing boiling water over them—they should not be thrown into the water, as many species spread their wings whilst falling and are thus rendered useless as cabinet specimens.

For setting the smaller species of beetles, brushes made from the pinion feathers of woodcock and snipe are ideal as they are hard and come to a very fine point.

Some of the rarer species of beetles can be obtained by baiting moss with sugar and placing it in a hole in the ground.

A heap of cut grass makes an excellent trap for Coleoptera. Hot beds are very productive hunting grounds. Beetles that live in cracks in river sides may be procured by throwing water against the banks which they inhabit. The mock flood sends the beetles out of hiding and they can be easily captured.

Page 167. J. D. V. Kane. Visitors to Ragwort bloom are dark: Diptera—*Tipulae*, *Culicidae*, *Asilidae*—a few Coleoptera, earwigs, wood-

lice, sand flies, centipedes, a small newt and a frog.

REVIEW

Butterfly Migration by C. B. Williams, Sc.D.. Young Britain Educational Series. (London: The Daily Mail Publishing House, pp. 18; 1/-).

This booklet was published in January 1948. It is written in non-technical language, primarily, of course, for schools; but is full of information that every amateur entomologist should—in fact, *must*—know. The distinguished author is the greatest expert in the world on the subject.

He starts with paragraphs on what migration is, what evidence there is for it and what insects migrate. Thereafter he confines his account to migrants in these islands and tells what is known of the Monarch or Milkweed Butterfly, the Painted Lady and the Large Cabbage White. A map on p. 4 gives the distribution of occurrences of the Monarch in England and Ireland up to 1939 and shows that anyone may *hope* one day to see this in his own locality, even near London (one was recorded this year at Gerrard's Cross, for example), though the South Coast is, somewhat naturally, the most favoured. Information on the remaining dozen butterfly migrants is more briefly noted.

The author then discusses some questions to which answers cannot yet be given—"How do they find their Way?" "Reasons for Migration," "Methods of Study," and, of interest to all, "How You Can Help." Everyone can help. As Dr Williams says, ". . . what we know is nothing compared with what we don't know and every observation, if it is recorded as *exactly as possible, without exaggeration or minimising*, is bound to be of use in the long run."

In these days of quizzes, we should all be able to answer the questions in the "Butterfly Migration Quiz" on p. 15.

The booklet is well illustrated with some very good photographs by the author and S. Beaufoy. As would be expected, errors and misprints are difficult to find, though it is thought that "Dover Cliffs" at the top of p. 11 should read "Durdle Door Cliffs (Dorset)." T. T.



AES



No. 95

BULLETIN

NOVEMBER 1948

IMMIGRANT INSECTS: SCHEDULES OF DAILY OBSERVATIONS REQUIRED

In 1947 when the regular seasonal immigrant insects spread all over the British Isles in unusual abundance, only 90 schedules were kept by volunteers for the 148 vice-counties and nearly all came from stations in the south of England. To redress the balance it is hoped that AES members living in any of the vice-counties listed herein, from which no schedule was sent in, will ask for forms from the Hon. Secretary, Insect Immigration Committee, Windycroft, Hastings, to fill in from their own observations or ask members of a School Natural History Society in their vice-county to volunteer to record. Far north, insects are scarcer than in the south, but observations are of more importance as they show the range from year to year.

In southern counties schedules are required from:—Somerset North, Wiltshire North and South, Dorset, Isle of Wight, Essex South, Hertfordshire, Oxford, Suffolk West, Norfolk East and West, Cambridge, Bedford, Huntingdon, Gloucester East, Monmouth, Hereford, Worcester, Salop, and Scilly Isles.

In Wales—Glamorgan, Brecon, Radnor, Cardigan, Montgomery, Merioneth, Carnarvon, Anglesey.

In northern English Counties—Lincoln North, Nottingham, Cheshire, Lancashire South, Mid and North, Yorkshire S.E., N.E., S.W., Mid W., N.W.; Northumberland South, Cheviotland, Westmorland, Cumberland.

In Scotland *all* vice-counties except Berwickshire, Edinburgh, Caithness, and the Shetlands.

In Ireland *all* vice-counties except Cork South and Tyrone.

Lepidopterists who have kept diaries of observations may be able to complete a schedule form for 1948 though it is known that in most areas figures will be scanty. It is hoped that the extension of the scheme outlined by the 1947 deficiencies will be remedied by volunteers to record in 1949. (Capt.) T. DANNREUTHER (60).
2/9/1948.

Some AES members already keep schedules for the Insect Immigration Committee. I am sure this appeal from Captain Dannreuther will meet with a ready response from other members—particularly in the North—who are prepared and able to undertake the regular observations and regular noting required for satisfactory records. As a volunteer observer myself, I can assure members that the work is of constant interest.

The Editor.

LOCALITIES AND THE DISTRIBUTION OF INSECTS

Articles in the *Bulletin*, from time to time, raise different aspects of the basic problem "Why do we collect?" I propose to look at this question from the amateur's point of view. Professional entomologists and "semi-professionals" know the answer, as they *do* have some definite aim. But does the amateur always have an equally precise objective? There is, in most people, an instinctive urge to collect something; butterflies and moths are beautiful objects, so, on that ground alone, they are obviously suitable for collection. To the seeing eye, beetles, sawflies, dragonflies and so on are equally beautiful. But there is one difference between collecting insects and, say, pictures, miniatures, pound-notes or stamps; all these latter are or can be beautiful, but they are not "alive." The killing of a rare insect may result eventually in its extinction, whereas the acquisition of a rare picture or a pound-note has no effect whatever on the future supply.

Thus the amateur should consider whether his object is merely the amassing of rarities or whether he cannot have some goal which goes beyond this. R. Lewis (734) in *Bull. 91* suggests working less well known areas and the compilation of County and local distribution lists. J. D. Hillaby (1492) in *Bull. 94* gives an example of still more restricted collecting for a stated scientific object. E. W. Classey (41), in a forcible

article in *Bull.* 69, mentions what can be done in one's own garden.

Dr Julian Huxley's first words in his foreword to the *Directory of Natural History Societies* (AES Pamphlet No. 7, just published) are:

—“ In no country in the world have amateur naturalists made such important contributions to biological knowledge over such a long period as in Great Britain.” To continue these contributions, each one in his degree, should still be the amateur's rôle. It does not contribute to knowledge to travel to a known locality, where a rare butterfly or moth can be picked up with no trouble. But it does help if, in a limited area, a written record of regular observations is kept. I, personally, would start in a small way, with one or two parishes or a circle of three or four miles radius from a given point. Each year the interest increases, for it is surprising—and exciting—how the presence of unsuspected species is revealed and new records accrue. Furthermore, these records will have a scientific value. So let every amateur have his “target”—to use the current slang—and collect objectively. It will not be long before he finds others of like mind nearby, and perhaps the seed of a new local Natural History Society may be sown.

T. T.

EYED HAWK MOTH ASSEMBLING

Having read with interest the article by Mr C. H. Ison in *Bull.* No. 92 on “Emperor Moth assembled in London” I wondered if a similar experience I have recently had in Earl's Court, S.W.5, would be of interest to readers.

On June 16th of this year 2 female Eyed Hawk Moths (*S. ocellata*) emerged from pupae in a zinc breeding cage in my bedroom on the window sill. The night they emerged, my brother—who was spending the week-end with my mother and making use of the room in my absence—was awakened by loud banging sounds coming from the direction of the breeding cage. On getting up to investigate (at 2 o'clock in the morning) he discovered a male Eyed Hawk battering against the perforated zinc in an effort to try and find a way into the cage. My brother was able to catch the moth in perfect condition. The interesting and rather

amazing part of this is that the cage was on the window sill against the window, which was only three inches open and on the top storey, four flights up.

The nearest locality where these moths can be obtained, I believe, is Putney Common, about five miles away, where I took several caterpillars feeding on willow last year.

Mrs W. M. LE F. FORBES (1105).



“ Member No. 5555* has called, sir, with some *daplidice* larvae for you.”

BREEDING CAGE TIP

When making cages you will find that by edging the muslin sides with insulating tape (*Fig. 1*) fraying and tearing will be prevented.

BARBARA HOPKINS (837).

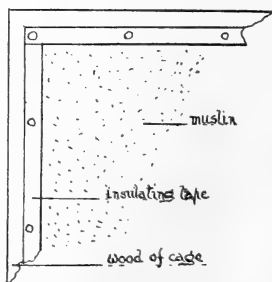
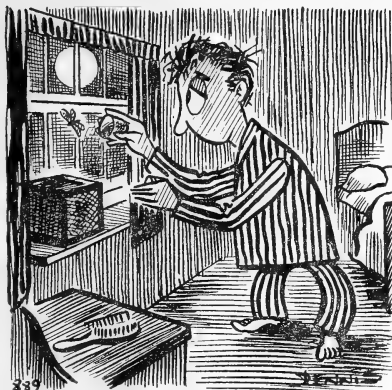


Fig. 1.

ASSEMBLING AND MATING OF OAK EGGARS

The note on the Emperor Moth (*Bull.* 92, p. 204) prompts me to send details of the assembling and mating



... in perfect condition ...

of Oak Eggars, though my own experience is not strictly comparable with that of C. H. Ison, since my home (on the outskirts of a fair-sized town) is but a few minutes' walk from heaths where *Lasiocampa quercus* and its relatives abound.

A bred female, retained in a large cage in my loggia, assembled on the evening of its emergence (26/7/48), or early the following morning, a wild male, and during the next two days several more wild males turned up, the last appearing on the evening of 28/7/48. All males were introduced into the cage on arrival, and some of the earlier arrivals attempted to pair with the bred female, but were ignored. The last, however, quickly approached the female and was accepted without further ado; pairing commenced about 8.45 p.m. (B.S.T.) and lasted for about half-an-hour, perhaps longer.

Incidentally, oviposition had commenced before this successful mating took place and, as anticipated, some eggs proved infertile. However, many more eggs were deposited subsequently (a few of these, by the way, adhered to the sides of the cage, though the majority were broadcast in the usual way), and these yielded a large number of larvae. A bred male from the same brood as that which produced the female emerged on 2/8/48 but did not attempt to approach the female, which died on 4/8/48. Both of these insects were "second-year" moths: their life-cycles will be dealt with later.

All the literature I have read, coupled with my own breeding and other experience, points to definite

selectivity so far as the choice of a mate by the female Oak Eggar is concerned. One inevitably recalls Fabre's fascinating studies of insect behaviour—and ponders the many intriguing points that yet remain to be elucidated. The life-span of the adult female Oak Eggar is relatively short; yet, so far as I can see, my moth chose to begin depositing sterile ova rather than mate with a male that did not meet with her particular requirements.

What are those requirements? Well, here is plenty of scope for further and intensive research!

PETER MICHAEL (748).

NOTES AND OBSERVATIONS

G. B. COLLINS (1036), referring to the Hymenopterist's Handbook (*The Amateur Entomologist*, Vol. 7, pp. 55-81, 1943), writes: "A plan of mine, which it does not mention, is to bring the bees home alive and keep them in a cool and shady place for a day or two, in a jam-jar, with plenty of crumpled filter-paper which is very slightly moistened. Under these conditions the bees usually clean themselves up and remove much of their coating of pollen. This improves their appearance in a collection and facilitates identification."

L. B. HORNER (917), writing from Guisborough, North Yorkshire, says: "Coming back from a bug-hunting expedition on the evening of September 13th, I was passing through the gardens at the rear of some houses when I was asked by one of my neighbours if I'd have a look at a cabbage in his garden. He said he thought a hen had been at it, it was so chewed up. On looking under the leaves we found a full-grown Elephant Hawk (*D. elpenor*) larva, much to my surprise, there being no Willow Herb or Bedstraw within a mile or so. I examined all the other plants in his garden but found no more Elephant Hawk larvae."

M. LOCKE (1118) notes that he has found several larvae of the Peppered Moth (*B. betularia*) feeding on Michaelmas Daisy in the Ealing district. He asks if this is not an unusual food-plant. The larvae were all of the green form, while those he had found on trees were invariably dark in colour.

JOHN E. KNIGHT (94) sends the following three notes:

(a) *Brenthis euphrosyne* (Pearl-bordered Fritillary). Two females were placed in a cage made of mosquito netting, stood in the sun, and provided with a small vase of violet leaves and aubrietia flowers. They laid indiscriminately on both. In due course the ova hatched but only one larva attempted to feed and this died within a few weeks, having made a very little growth. Can anyone suggest a successful method of breeding this species?

(b) *Vanessa io* (Peacock). On the 4th July 1947 Mr F. Sutton and myself witnessed the "migration" of full-fed Peacock larvae from a clump of Stinging Nettle. The time was 4.30 p.m. (D.B.S.T.) and the day fine. The nettles were bordered by a grassy track across which the larvae marched singly and in twos and threes. The movement lasted about an hour. We pill-boxed a number separately and they all hung up to pupate the next day. Very few were parasitised.

(c) On the 25th August 1947 Mr F. R. Sutton and I observed a female *Colias croceus* var. *helice* (Clouded Yellow) flying on the slopes of the Black Mountains in Wales at the height of 2000 ft. Mr Sutton gave chase and captured the specimen.

M. J. Parr (779*) is sure from his own observations that there were three broods of the Wall Butterfly (*P. megera*) in 1947—May; July-August; late September-late October. The last specimen was seen in the district (Greenford, Middlesex) on Oct. 25th. A Clouded Yellow (*C. croceus*) was seen on Oct. 20th, and *L. phlaeas*, on Michaelmas Daisy, on Oct. 21st.

REARING FOX MOTH CATERPILLARS

In my article (*Bull.* 93) I omitted to correct the figures of temperature range to conform with my final experiment. I hope readers will accept my apology.

Having found that the thermostat first used gave too great a fluctuation in temperature, resulting in the insects failing to emerge after pupation, a more accurate thermostat was obtained, which maintained the temperature constant to within half a degree Fahrenheit. When set at 70° F., successful results were obtained.

CHARLES H. HARDS (176).

A USEFUL KILLING AGENT

It must be noted that tetra-chloroethane, described under the above heading in *Bull.* 94 is, in addition to being poisonous, also highly inflammable. The usual precautions must therefore be taken when using it.

Ed.

VAR. ALBA

To take var. *alba* of the Small Copper Butterfly (*Lycæna phlaeas*) is always an event, but when one captures this insect in the back garden, in a wilderness of bricks and mortar like Birmingham, the happening may almost be described as a National Event. I have rarely moved so fast as when this did happen. In my garden, I saw approaching me what appeared to be a Garden Carpet (*Xanthorhoe fluctuata*). Impressed by its curious flight, I watched for it to settle and, cautiously approaching, saw it was a perfect var. *alba* of *L. phlaeas*. Dashing indoors I grabbed a net and speedily returned to the spot where it had settled. It had, of course, gone climbing to the top of the air-raid shelter to secure a larger field of observation. I disturbed it from some grass and saw it rapidly fly over the fence on to the nearby railway bank. I followed post-haste, surmounted the fence—nearly—but caught my trousers on the top, and went sprawling, leaving the seat of my "bags" on the offending spike. Var. *alba* took the opportunity to flee with all haste and I saw it rapidly disappear in the distance.

Disconsolately, I prepared to recross the fence, but just then the little wretch decided to return, and as I turned it flashed past me in a great hurry. I immediately gave chase, my tattered "bags" flapping in the breeze, until, after about 50 yards' frantic chase, I netted my prize and gloatingly examined the little treasure.

What I had not observed was the entertainment I was affording a crowd of factory workers, who had gathered on the road opposite, to observe my curious behaviour. I had a great ovation as the chase terminated, and, believe me, I could not back into my garden quickly enough. I was left in no doubts of the enter-

tainment value of my rear view (var. *alba*)! Was I red?—I ask you!!

H. E. HAMMOND (423).



var. *alba*.

BREEDING THE LAPPET MOTH

R. B. B. Gibbs (1016*) describes his methods of breeding the Lappet Moth (*Gastropacha quercifolia*), which he has found completely satisfactory. He uses a small room, facing north-east, which has an average temperature of 65° F. in summer and about 40° F. in winter. He says: "I am lucky in one respect, and that is I've never had any trouble with females emerging days before any male appears, and laying quantities of infertile ova. The females, in the cool temperature of the room, usually wait for as many as four days before they start to lay. On the windows I have placed thin, white muslin. It is on this that the moths pair and very often lay masses of ova. I have found this light muslin best, as the wings and legs of the moths do not get so damaged as on other material."

The females must be watched to prevent their laying eggs on the windows. "I can assure you it's quite a job picking each egg off the windows!"

He does not sleeve the larvae or put them in jam-jars; but puts long sprays (2½'-3') of the food-plant, hawthorn, in narrow-necked bottles of water, so keeping them fresh for a longer time. Nothing special is done about hibernation of the larvae, beyond placing the food-plants on the floor in a dark corner, well away from the windows or doors. The draughts from these affect the larvae unpleasantly. Early in the next spring,

hawthorn branches with buds appearing are collected, brought indoors, and forced into leaf. When they are fully out, the hibernating larvae are placed on them and the room temperature raised *gradually* by a smokeless oilstove or preferably an electric fire. "After this is done, there is very little else to do, except to keep an eye on the larvae and, now and again, heat up the room when its temperature begins to fall. When the time comes round for cocoon spinning, it is best to place any larvae that begin getting restless apart from the others on dry dead branches which have plenty of forks and Y-shaped joints." When they have spun up, they are left undisturbed till they emerge. He says: "I am lucky in one respect . . ."—but that is where we came in!

PRESERVATION FROM PESTS

Finding some specimens in a drawer infested with the flour beetle (*Tribolium castaneum*) I substituted some Gammexane (also known as benzene hexachloride or "666") for the naphthalene in the drawer. Within three days numbers of the beetles were lying on their backs in obvious distress and within a week all were dead. No further sign of them has now been noticed for three months.

Into another drawer, also supplied with Gammexane, a dozen museum beetles (*Anthrenus*) were introduced. Within a week these were also dead.

On another occasion a storebox, heavily infested with *Anthrenus*, was sprayed with a 5% solution of DDT in benzene. A careful examination 10 days later showed no living specimens but plenty of dead ones.

In view of the above results I have now substituted Gammexane for naphthalene in all my drawers; those that do not possess naphthalene cells have been sprayed with a 5% solution of DDT in benzene. In a closed drawer this should remain effective for a minimum of at least a year. A test of spraying the insects as well has shown no ill effects or noticeable deposit. It should, however, be noted that *pure* DDT and *pure* benzene were used. The commercial sprays on the market tend to leave a marked deposit or decolorization. The reason that DDT was used in the spray in preference to Gammexane is because Gammexane

is much more volatile than DDT and will evaporate from a sprayed surface in a week or so.

So far as I know neither Gammexane nor DDT give the slightest protection from mites or mould.

I am continuing with my investigations on this subject and would be glad to hear from anyone else who is using either Gammexane or DDT to protect his collection from pests.

B. O. C. GARDINER (225).

CAMBERWELL BEAUTY

The late F. W. Frohawk wrote of the Camberwell Beauty (*Nymphalis antiopa*):—"Those that survive hibernation reappear the following spring . . . it apparently does not migrate to this country in the spring . . . The hibernated specimens occur, as a rule, only singly and in widely-separated localities. This prevents the sexes from finding each other . . . The life of this lovely butterfly extends over ten months . . . I kept one alive until June 30th, being in captivity exactly three months." (*Complete Book of British Butterflies*, 1934, pp. 164-8.) It was reported in *Country Life* of April 30th (p. 888) that Mr Wright at Bexley, Kent, on April 11th, 1948, took a pair of Camberwell Beauties actually in copula. They separated in his net and the female laid ova on willow but the latter, unfortunately, proved infertile. From February 9th to that date fourteen specimens had been reported hibernating in England or Scotland and since the Bexley couple the following have been recorded:—April 12, Ashford, Kent; April 15, Ruislip; April 16, Wirral, Cheshire, and Riding Mill, Northumberland; April 26, Deal, Kent, and Ifold, W. Sussex; May 17, near Wye, Kent; June 11, Battle, Sussex; and, lastly, August 19, Letchworth. As August and September are the commonest months for fresh immigrants to arrive from Scandinavia, it is hoped that others will be recorded. The Letchworth specimen was seen by a boy who recognised the species from an illustration. If it had been captured with the borders still cream-coloured it might well have been bred in England, but so far no larva or pupa has ever been found wild. The 22 hibernating here is a record.

(CAPT.) T. DANNREUTHER (60).

2/9/48.



. . . this lovely butterfly . . . !

TWO MICROS

Sylepta (Notarcha) ruralis: The larvae were found on the common stinging nettle. They were 25 mm. long when fully-grown. They have a smooth skin which is a bright emerald green. They live in shelters, in much the same way as some *Vanessid* butterflies. The pupae are shiny in colour. When the imagines emerge, they fly about and beat themselves against the side of the box.

Cacoecia (Tortrix) pronubana: When nearly full-grown the larva is about 16 mm. long and is light green with a pale greenish-brown head. It produces a thread with which it can climb like a spider. When touched it will wriggle about in all directions. It can also crawl backwards as quickly as if it were crawling forward. The pupa at first is green changing to brownish-black, is dull black, and is 10 mm. long. One larva pupated on the stem of *Euonymus* on which they fed. The rest built cocoons of the same. These were of the same structure as those used by the larvae for feeding in.

W. G. TREMEWAN (940*).

MELANIC MOTHS

It would be interesting to ascertain whether melanistic varieties of moths have been more plentiful than usual this season. I have not had time to keep a check on numbers, but it seems to me that melanic or near-melanic forms have cropped up very frequently. Have other members any comments? The position in re-

spect of the "Minors," especially, might be worth noting.

PETER MICHAEL (748).

8/9/1948.

NOVEMBER COLLECTING

During this month, field work begins to slacken off and members turn their attention to clearing up the season's work, labelling, bringing notes up to date, writing articles for the *Bulletin* and so on.

There is, of course, pupa-digging to be done, for those who like it. John Moore's article in *Bull.* 73 (February 1946) would convert the most hardened cynic. November is a good time to start, for there are other pupa-diggers on the job—moles and rooks, for example—and it is definitely the case that the early bird gets the "worm" here.

At light, most of the moths are of the commoner species:—Feathered Thorn, November Moth, Mottled Umber, Scarce Umber, The Sprawler, The December Moth, with maybe a belated Beaded Chestnut, Setaceous Hebrew Character or Angleshades. If you are lucky or in the right locality the Plumed Prominent (*P. plumigera*)

or the Gem (*Nycterosea obstipata*) might reward you.

Notes are to be made this month on "last appearances," particularly of immigrant species. In both 1946 and 1947 the Painted Lady and the Humming-bird Hawk Moth were seen in November.

A tip worth remembering, if you have no good specimen of the wingless females of the Mottled Umber or the Winter Moth, is that these are caught on the sticky bands round fruit trees. These are not much good for the collection, of course, but if removed carefully they will often lay fertile eggs. Females can then be bred; by far the best way of getting them!

Larvae are not commonly met with, but after a warm day the examination of the long grass in an orchard or similar spot will often show grass-feeders come up for an outing, before returning to their winter quarters. It is not easy to get these to carry through, however, when brought away from their natural surroundings and it may be better to mark the spot for examination in February or early March.

T. T.

THE TIMES OF METAMORPHOSIS IN SOME MOTHS

The table below has been compiled from data sent in by F. K. Goody (934*). It must not be forgotten that these changes depend to some extent on the weather, as has been shown by W. J. B. Crotch (1181) in *Bull.* 92, in his article, "Living Fast."

TABLE SHOWING PERIOD IN DAYS FROM EGG TO PUPA AND PUPA TO EMERGENCE.

	Food-plant.	Ova hatched.	First larva pupated.	First moth emerged.	Hatching to pupation. Days.	Pupation to emergence. Days.
Red Underwing						
<i>C. nupta</i>	Poplar.	30/4/46	3/7/46	12/8/46	65	40
Gipsy Moth (foreign)						
<i>L. dispar</i>	Hawthorn.	30/3/46	28/6/46	20/7/46	69	22
Emperor Moth						
<i>S. pavonia</i>	Sallow.	9/5/46	8/7/46	—	61	—
Magpie Moth						
<i>A. grossulariata</i>	Sallow.	—	30/5/46	27/6/46	—	28
Drinker Moth						
<i>P. potatoria</i>	Grasses.	—	30/5/46	3/7/46	—	34
Five-spot Burnet						
<i>Z. trifolii</i>	Clover.	—	31/5/46	1/7/46	—	31
Puss Moth						
<i>C. vinula</i>	Sallow.	28/5/46	5/8/46	—	69	—
Yellowtail						
<i>E. similis</i>	Hawthorn.	—	13/6/46	8/7/46	—	25
Poplar Hawk						
<i>L. populi</i>	Poplar.	27/5/46	21/7/46	—	55	—

THE HOLLY BLUE IN THE SCARBOROUGH DISTRICT

The following notes about the Holly Blue (*C. argiolus*) may be of interest to readers, especially those in the North.

In August 1947 I took three poor specimens and three larvae, which, unfortunately, dried up after pupating. On May 15th 1948, I took four perfect specimens, two males and two females. On May 16th I saw three flying and on May 17th I saw five specimens together, all flying round ivy.

There seems no doubt that this insect, which is usually scarce, has started to breed here.

As I am serving in the R.A.F. and have not been able to manage leave this month, I do not know whether there is a September brood.

W. M. ELLISON (1318).

6/9/1948.

REVIEWS

Butterfly Miracles and Mysteries by Bernard Acworth. (London: Eyre & Spottiswoode, xii + 260, coloured frontis.: illustrated by line block in text. $8\frac{1}{4} \times 5\frac{1}{2}$. 1947. 12/6).

Captain Acworth undoubtedly has a very persuasive method of writing and putting over his theories. The unfortunate part is that his theories depart so radically from the *proven* truth. For instance, he regards the Chalk-hill and Adonis Blues as being the same species. Has he ever examined the genitalia? He states that botanists should use butterflies as an aid to botanical classification. Whilst speaking of the caterpillar (on page 39) he makes the statement: ". . . that it is almost literally a crawling leaf."

In view of the stress laid by the author on the egg as a means of classification, we feel that it is a pity that some of the illustrations of the egg are so crude (e.g. that of the Silver-spotted Skipper).

The life-history data, compiled from various authorities, are questioned by the author and are sometimes misleading.

We do *not* recommend this book to the amateur unless he wishes to be amused. He will be led sadly astray on many points which have been proved beyond all doubt by the life-time researches of many able men.

BRIAN O. C. GARDINER (225).

Sixth Annual Report, Essex Beekeepers' Association.

The following extracts from this report are of interest:—

The 1947 honey harvest was good—97 members recorded over 100 lbs. of honey per colony. Most of the honey was on the light side in colour, excellent in quality and of good flavour. Prime swarms were fewer in number and later in coming out than usual. Winter losses were very severe. The main sources of nectar were in the following order:—1, Fruit; 2, Lime; 3, White Clover; 4, Blackberry; 5, Red Clover (second cut); 6, Hawthorn.

Woodpeckers attacked and pierced several holes in two hives at Colchester and a similar happening is reported from Audley End.

Pollen of unusual colours have been observed, described as "Brilliant Kingfisher Blue" and "Brilliant Rosy-Mauve."

There is an interesting table giving variations in hive weight during the season.

AES PUBLICATIONS

LABEL LIST (3/6) and Check List (1/6) of British Lepidoptera (together 4/3). Label List of British Butterflies (4d). The Hymenopterists' Handbook (10/10) [To members, 7/10]. Experiments with Bees (AES Leaflet No. 10, recently published), 7d each; 5/- per dozen.

DATA LABELS— $4\frac{1}{2}$ point (diamond) labels are printed in multiples of 125 for one wording. 4-line, 12/6 per 1000 (7/- per 500); 3-line, 10/- per 1000 (5/- per 500); sex signs, 1/- per 200. Other labels can be printed to members' requirements.

These, and other AES Publications, may be obtained from the Publications Sales Manager, C. B. PRATT, 1 West Ham Lane, London, E.15.

BOOKS ON ENTOMOLOGY

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E. W. CLASSEY,
5 Carlton Avenue, Feltham,
Middlesex.

WILL MEMBERS PLEASE HELP ?

2nd October, 1948.

I have just been appointed as Science Master at the St John's County Girls' School, Canterbury, to introduce the subject. Naturally, I find myself devoid of the usual accumulation of material that fills the established school laboratory, and I would like anything that members feel that they can spare which might be useful in acquainting the children with the insect life of this country. Naturally I shall be only too pleased to acknowledge any gifts which may be made to us. I'm afraid that we have nothing that we can offer in exchange except our thanks and gratitude.

R.S.GEORGE (1402)

St John's County Girls' School, Canterbury, Kent.

ADDENDA TO EXCHANGE LIST No. 2LEPIDOPTERA

J.R.BRUNSDON (759^x), Westminster Bank House, Westerham, Kent, has pupae of P. napae from dark Irish stock. Will exchange for Scottish and other vars. or forms.

CAPTAIN D.M.BAKER (1511), R.A.O.C., Ordnance Directorate, G.H.Q., M.E.L.F., wants, by purchase or by exchange for these or other insects:

COLEOPTERA

Cicindelidae, particularly Distipsidera and australasian Cicindela (spec. Horn's Gr. XIV); Platypodinae; Indo-Chinese Paratrichius (Cetoninae, Trichiini).

HYMENOPTERA

Apoidea: Crocisa, Ctenoplectra, Nomia,
Coelioxys, Anthophora and related genera, from all
regions.

Sphecoidea: Bembex, Oxybelus.

BOOKS

Zander E., Pollengestaltung und Herkunft-
bestimmung bei Blütenhonig, Berlin 1935; Bischoff
H., Monographie der Mutilliden Afrikas, Arch.Natg.
Berlin 86, Abt. A, Heft 1-5, pp. 1-830, 1920;
Thomson J., Arcana Naturae, Paris; von Dalla Torre
K.W., Catalogus Hymenopterorum, 1892-1902, 10 vols;
Guenée A., Les Entomologistes Peints par Eux-mêmes,
Rennes, 1934.

COLEOPTERA

DR S. MAULIK, Department of Entomology,
British Museum (Natural History), Cromwell Road,
London S.W.7, requires larvae of British Chrysom-
elidae, and would like to get in touch with members
who breed them, or who can supply any data on
bionomics.

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AES



No. 96

BULLETIN

DECEMBER 1948

ESSAY COMPETITION FOR JUNIORS

The AES Council offers an annual prize of ONE GUINEA for the best essay written by a Junior Member, on a topic chosen by the Council. Further prizes may be awarded if the essays are of sufficient merit.

The essay should be 600-750 words in length. The author should indicate his age, as this will be weighed in the judging. Other points which will be considered are:—

The interest aroused in the reader.
Technical correctness.
Literary merits.

The SUBJECT for 1948 is: "My Best Day in the Field."

Entries should be submitted to the Youth Secretary, 31 Pinner View, Harrow, Middx., marked "Essay Competition." NOT LATER than 31st DECEMBER 1948.

EDITOR'S NOTES

This is the last number of Vol. 7 (the second "printed volume") of the *Bulletin* of the Amateur Entomologists' Society. Volume 8 will start on 1st January 1949, with *Bulletin* No. 97.

Annual subscriptions are also due on January 1st 1949. It will help officials of the Society, if members will pay their subscriptions promptly.

The Editor hopes that, during the winter, members will take the opportunity of writing up observations, short articles and other contributions to the *Bulletin*. Junior members in particular are encouraged to try their hand.

It will save the Editor a good deal of time if each contributor will be so good as to count the number of words in their articles—the number of words in each article always has to be counted, in order to estimate the amount of space it will take. Each contribution will be acknowledged.

THE OAK EGGAR

Amateur breeders in the South should not assume as a matter of course that, because some authorities have laid it down, *callunae* in the north will always complete a two-year cycle, and *quercus* in the southern counties one year only. As South points out, the position may be reversed: one can never tell.

All my breeding has been done in the south, and I have not yet attempted to breed or rear *callunae*; but I have confirmed, to my own satisfaction, that *quercus* may go the full length of a two-year cycle and I imagine many other breeders have had similar experiences.

Here is a case in point. Eggs laid by a bred female about 21.7.46 produced larvae from 29.8.46 onwards; surviving caterpillars hibernated throughout the winter 1946-47 and resumed feeding the following April.

The first of two remaining larvae completed its cocoon by 22.7.47, but did not emerge until 28.7.48—over a year afterwards. This was a female; a male, which had spun up a little later, emerged on 2.8.48. (*Bull.*, 35, p. 222.)

Points noted: Moths of either sex may go over to the second year. The full life-cycle may extend over two years (egg 21.7.46—death of adult moth 4/8.48); the stages in this particular experiment were:—ovum, about one calendar month; larva, 11 months; pupa, 12 months; imago, 9-10 days. Life of imago, it will be observed, is very brief compared with larval and pupal spans.

Longevity and life-cycle studies are of absorbing interest; yet many tyros, and possibly not a few old hands, I am convinced, find themselves incapable of bringing sufficient patience to bear on the admittedly somewhat tedious work involved. Yet much remains to be learned; and amateurs have as good a chance as any of unravelling these tangled skeins.

PETER MICHAEL (748).

SPRING ABUNDANCE OF PEACOCKS

Mr John Moore's remarks in *Bulletin* 93 on the relative abundance or scarcity of Peacock Butterflies (*Nymphalis io*) and other species after winters of different severities, call for further observations.

To assess whether a species which hibernates as an imago has a better survival rate through a hard or a mild winter surely one must first compare the numbers seen in one spring *not* with the numbers seen in another SPRING, but with the numbers seen in the previous AUTUMN, and so obtain a survival rate for comparison with the survival rates for other winters.

May I suggest that the very definite abundance of Peacock butterflies this last spring (1948) may have been due more to the unusually high number which entered hibernation last autumn, rather than to a higher survival rate.

This summer, in my garden, the Peacock larvae have been heavily attacked by a parasitic Tachinid fly—six larvae collected when nearly full grown produced 1 butterfly and 5 Tachinid flies—and this autumn the number of butterflies to be seen in my garden is well below the average, and I venture to suggest that, whatever the winter, Peacocks will be scarce in my garden next spring.

A different method of estimating the effect of the winter on the survival of the Large White (*Pieris brassicae*) would have to be used, for the late autumn larvae and hibernating pupae are often heavily parasitised. A further complication occurs with the Holly Blue (*Celastrina argiolus*), for this species is often only partially double-brooded, so that the hibernating pupae may be from either the spring or summer butterflies.

D. A. ASHWELL (223).

1/10/48.

MOULD

A correspondent has recently asked my advice about this troublesome complaint. It appears that in damp houses fragile-winged geometers often develop mould so severely that it means destruction of the wings when removed from the boards. This can be entirely prevented if the boards are well rubbed with finely powdered naphthalene before setting. The close

fit of the wings to the boards prevents the naphthalene evaporating too rapidly and no mould can form till this happens. It is also a good preventive against depredations by mites, which are very fond of setting houses and boards.

The boards when not in use, should be kept in a container which is as nearly airtight as possible, and a wad of cottonwool soaked in formaldehyde placed in one corner.

If mould should get into a box of fragile geometers, cleaning them up can be a risky and usually unsuccessful experiment; but if a wad soaked in formaldehyde is used, it will not only prevent mould, but will, by the action of the fumes, remove most of, and in some cases all, the mould from the insects. I have treated a box of 500 "pugs" in this manner and after a year no sign of mould remains.

Formaldehyde is also useful in preventing springing after setting; before removing the insects from the boards, expose them to the fumes; but remember that insects thus treated cannot afterwards be relaxed.

H. E. HAMMOND (423).

NOTES AND OBSERVATIONS

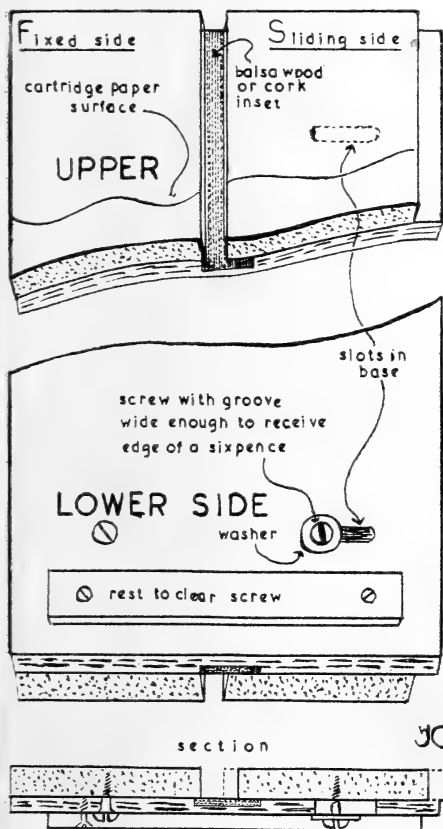
Miss Barbara Hopkins (827) records an interesting observation made recently. "A *Plusia gamma* larva which had just moulted to the fourth and last instar was observed eating its cast skin. The larva was isolated and its faeces examined. A large and pale piece of frass was found to contain the cast cuticle, which seemed to be unaltered by its journey through the gut. That a larva should eat its sloughed epicuticle is rather puzzling as recent work has shown that the substances which are of use to the larva are reabsorbed by the body before the skin is cast."

P. F. Bird (896) records that on July 26th 1948 he captured, examined and released a single specimen of the Large Tortoiseshell (*N. polychloros*) at Brixham, S. Devon. It was feeding at flowers of purple Buddleia in a garden. He says, "I do not know how to sex this species when alive, but took it to be a female because of the stoutness of the abdomen. I left the district the next day, so could not watch for further specimens."

[A record from so far west as this is not usual these days: see *Bull.* 94, p. 219.—ED.]

A VARIABLE SETTINGBOARD

It was when I was a boy (I will not say how long ago!) that I came across the idea of a variable setting-board in an American schoolbook on entomology: but I had no occasion to make and use one until I took up the study of exotic silkmoths as a result of reading our AES *Handbook*. The great variations of wing-span and body-breadth of the Saturniid moths and, more significantly, the variability of the proportions of one to the other, make the use of standard setting boards very difficult.



The three boards which I have made have proved to be so satisfactory that it occurs to me that other members may be interested. The diagram which accompanies this note is, I hope, self explanatory. A good width for the whole is 9" (4" sides with maximum of 1" groove) and length 18".

It should also be said that I use glass, not pins and pointers or pins and strips, to keep the wings in set positions. Glass microscope slides are ideal, but strips cut from a broken window-pane to varying lengths, say, 1½", 2", 2½", x ¼" wide, will do. These are weighty enough to hold the wings where you have placed them and enable you to see at a glance whether there is any crumpling or irregularity below.

Neither the Editor nor I must be held responsible if junior members create their own broken panes by the use of a football or otherwise; parents will find that a gift box of plain micro-slides is much cheaper!

W. J. B. CROTCH (1181).

ADDITION TO ADVISORY PANEL

Many of our members, whilst stationed in India during their period of military service, must have collected butterflies in their spare time. The problem of identification is a difficult one, and with this in mind, we particularly welcome Mr R. E. R. Parsons, F.R.E.S. (1512), Barton Holt, Kintbury, Berks., who, after spending many years in India, has finally undertaken to identify species of butterflies (except *Lycaenidae* and *Hesperiidae*) from that country, with particular reference to N.E. India.

S. M. HANSON.

A "COMMANDO" CATERPILLAR

One day in August as I was walking home in the rain, I saw something yellow lying in a pool by the roadside; so, being inquisitive, I went closer to inspect the "what-ever-it-was."

It turned out to be a fully-grown Goat Moth larva (*Cossus cossus*); so having nothing better to put it in, I sacrificed my handkerchief and contemplated having to "sniff" the next three miles.

Later, when I reached home, I told the family what I had found and pulled out my handkerchief to show them, but lo—he was not to be found safe in the folds of my handkerchief, but doing a Commando course over my trouser leg. Safely secured—so I thought—in a good strong cardboard box, with some wood-shavings and an old rotten log to keep him happy. I left him for the night.

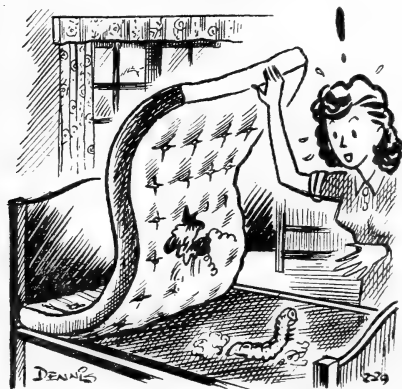
The next day to my horror I found that there was a neat little hole, a little larger than a sixpence, in the side of my box. For I had forgotten that if he had a taste for chewing through wood, he might have a taste for cardboard as well.

Nowhere could he be found, the household was disrupted, as they had seen the thing the night before and expressed their displeasure, with cries of "How could you let that brute escape?" I went on searching, but to no avail. A week later a member of the family turned a mattress and underneath, between the mattress and the bed, was—the escapee; apparently none the worse for being slept on six nights in succession. He had sampled the mattress and the stuffing and had just started to see what the wood at the end of the bed was like, when he was found by the disgusted owner.

This time he was put back in a *tin*, just to make quite sure that he would not escape again. The happy ending to the story is that during July of the next year, there appeared an outsize in female Goat Moths—so that it wasn't a "he" after all!

Afterthought:—"What is a female Commando called?" And anyway, never put her in a cardboard box.

J. A. DALE (1206).



None the worse for being slept on.

AES ANNOUNCEMENT

While carrying out winter work on your collection you will certainly need one or more of the following AES specialities.

LABEL LIST OF BRITISH MACRO-LEPIDOPTERA, 32 pp., 3/6. Printed on one side of the paper, it

includes (a) Evans and Tams' scientific names; (b) Kloet and Hincks' scientific names; (c) Cooper and O'Farrell's English names; (d) South's English names.

CHECK LIST OF BRITISH LEPIDOPTERA, 32 pp., 1/6 (9d if ordered with the Label List). The same as the Label List, but printed on both sides of the paper.

DATA LABELS—4½ point (diamond) type, are printed to any wording, 4-line labels, 12/6 per 1000 (7/- per 500); 3-line labels, 10/- per 1000 (6/- per 500). Not less than 125 of one wording. Send stamp for sample.

MYTINS. Small tins of unspillable PDB mite preventive. For use (with lid removed) in store boxes or drawers which lack camphor cells. Sample tin, 6d; 6 for 1/9; 12 for 3/4—post free.

All the above are distributed, for the AES, by Mr C. BIGNELL PRATT, 1 West Ham Lane, London E.15.

WHERE TO WRITE

Articles, drawings, etc., for the Bulletin to: TREVOR TROUGHT, Brookland, Tysoe, Warwickshire.

Articles, drawings, etc., for other AES publications to: B. A. COOPER, 27 Spilsby Road, Boston, Lincs.

Exchange Notices and advertisements to: E. LEWIS, 8 Parry Road, London S.E.25. (To reach him by 15th February, April, June and September.)

Notice of change of address to: J. COWLEY, Holywell House, Edington, Bridgwater, Som.

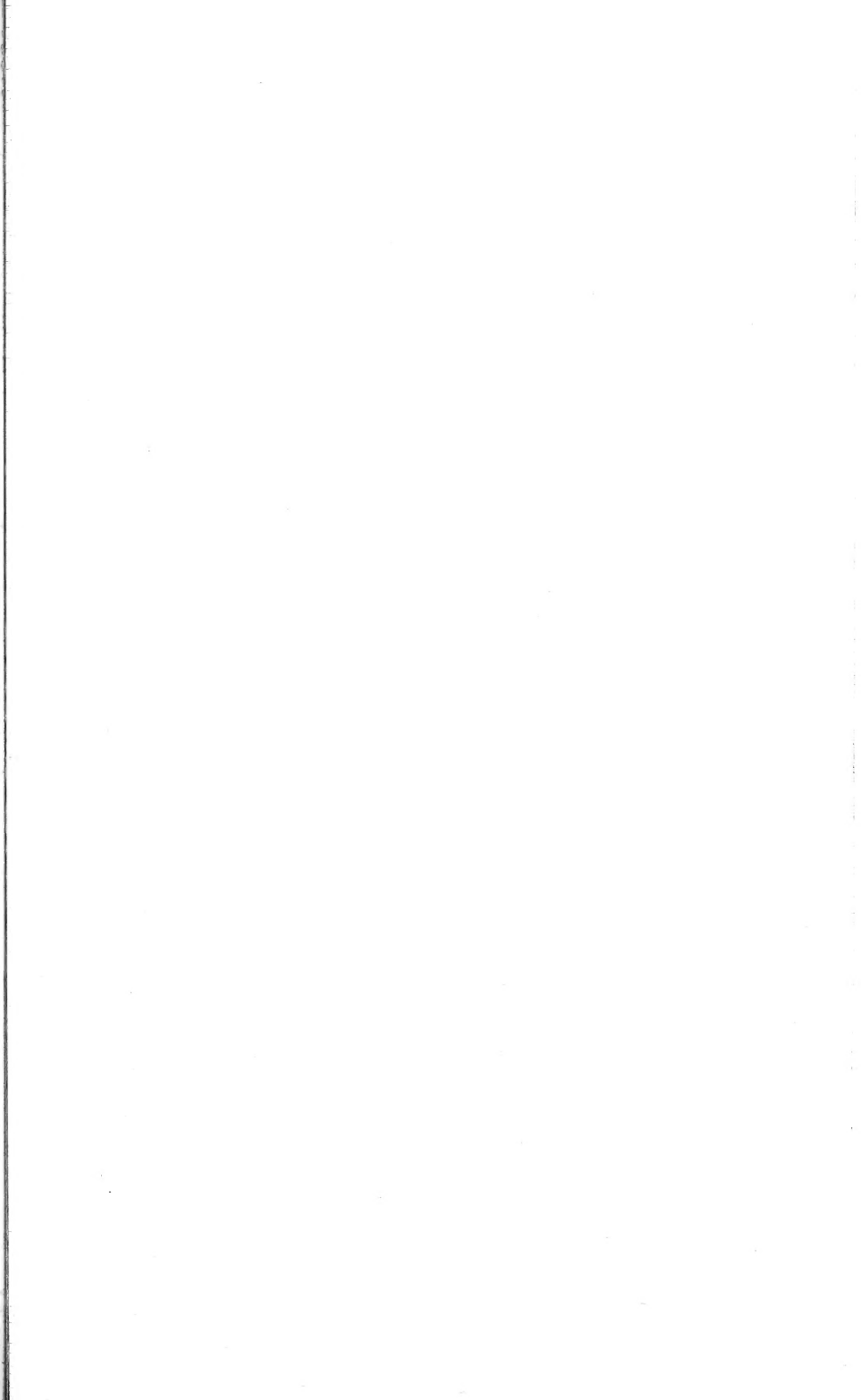
Subscriptions to: G. B. HODGES, 12 London Road, Braintree, Essex.

Offers to lead field meetings, exhibit, etc., to: D. P. GOLDING, 51½ Foots Cray Road, New Eltham, London S.E.9.

Requests for literature for prospective members to: E. LEWIS, 8 Parry Road, London S.E.25.

Applications for new membership to: S. M. HANSON, 167 Gunnersbury Park, London W.5. Also offers of help with AES work, and suggestions for improvements in our organization.

Silkmoth Rearer's Handbook. Data for the revised issue to: W. J. B. CROTCH, 5b Stanley Crescent, London W.11.





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