





S. 170.







# City of London Entomological & Natural History Society.

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THIS SOCIETY has for its object the diffusion of the science of Natural History, by means of papers, discussions, exhibitions, and the formation of collections for reference. Since its commencement in 1858, a valuable and useful Library has been formed, which comprises, amongst other works, sets of the "Zoologist" (1843—1897), "Entomologist" (Vols. 1—42), "Entomologist's Monthly Magazine" (Vols. 1—44), and the "Entomologist's Record and Journal of Variation" (Vols. 1—20). There is also a collection of British Lepidoptera, and collections of other orders are now in course of formation.

The meetings take place on the first and third Tuesdays in each month, EXCEPT JULY AND AUGUST, from 7.30 to 9.30 p.m., at the London Institution, Finsbury Circus, E.C., which is easily accessible from all parts. Exhibits are made at every meeting, and papers read on various Natural History Subjects, a special feature being the systematic discussion and exhibition of interesting groups of insects, etc.

The Entrance Fee is Two Shillings and Sixpence, and the Annual Subscription Seven Shillings and Sixpence, payable in advance, being fixed at as moderate a sum as is possible, consistent with the proper maintenance of the Society and its work, in order that all may avail themselves of the benefit offered. The Society therefore looks with confidence for the support of all who are interested in the study of Natural History.

The year commences on the first Tuesday in December, but intending members may join at any time, the ballot being taken at the next ordinary meeting after that on which they are proposed.

Further information may be obtained from the corresponding Secretary.



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# TRANSACTIONS

OF THE

CITY OF LONDON

## Entomological & Natural History Society

FOR THE YEAR 1911.



PUBLISHED BY THE  
CITY OF LONDON ENTOMOLOGICAL SOCIETY,

THE LONDON INSTITUTION, FINSBURY CIRCUS, E.C.

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Price Two Shillings.

CITY OF LONDON

# Entomological & Natural History

## SOCIETY,

Established 1858.

MEETINGS HELD AT

# THE LONDON INSTITUTION

## FINSBURY CIRCUS, E.C.

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# TRANSACTIONS

OF THE

## City of London Entomological

AND

## Natural History Society.

PART XXI.

(1911.)



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WITH LIST OF MEMBERS.

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THE SOCIETY'S ROOMS, LONDON INSTITUTION,  
FINSBURY CIRCUS, E.C.

APRIL, 1912.

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 TAUTZ., P. H., 33, North Audley Street, W.  
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 WILLIAMS, H. B., 82, Filey Avenue, Stoke Newington.  
 WILLSDON, A. J., 46, Dover Road, South Wanstead, Essex.  
 WRIGHT, J. A., Grange Road, Bushey, Herts.

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 Hall, Thetford, Norfolk.

*31st December, 1910.*

## REPORTS OF MEETINGS.

December 20th, 1910.—*VANESSA C-ALBUM*.—Mr. H. M. Edelsten, a series bred from Wye Valley ova, 1910.

*LYCENA CORYDON*, ABS., FROM SOUTH DOWNS.—Mrs. Hemming, two suffused ♂s, one partially striate ♀, and two partially obsolete ♂s.

*AMPHIDASYS BETULARIA*—LARVÆ.—Mr. A. W. Mera exhibited some larvæ showing effects of environment in differences in coloring.

*ANGERONA PRUNARIA*.—Mr. C. P. Pickett, a drawer full, showing differences in colour of larvæ, pupæ, and imagines ascribed to rearing the former under different coloured muslins.

DISCUSSION.—Mr. L. B. Prout opened a discussion on "The relative value of environment and heredity as factors in production of local races." Dr. Chapman, Dr. Hodgson, and Messrs. Edelsten, Riches, Shaw, and Willsdon took part in the discussion.

January 3rd, 1911.—NEW MEMBER.—Mr. B. S. Williams, of 77, Durham Road, East Finchley, was elected to membership of the Society.

*ABRAXAS GROSSULARIATA*, AB.—Mr. G. Brooks, a specimen with the usual yellow markings obsolete, and ground colour of all wings deep yellow.

*EPINEPHELE IANIRA*, AB.—Mr. C. L. Collenette, a ♀ taken at Salcombe, 1908, the wings bleached to colour of old ivory with usual fulvous patches only faintly indicated.

*SESLIA SPHEGIFORMIS*, ASSEMBLING.—Mr. G. H. Conquest, a series taken at Brentwood, June, 1895, by assembling with a bred ♀.

LEPIDOPTERA FROM SOUTHEND (ESSEX) DISTRICT.—Mr. Conquest exhibited series of various lepidoptera he had taken, including *Cirrhoedia xerampelina*, August-September, 1904; *Spilodes palealis*, bred from larvæ found in the umbels of *Daucus carota*, September, 1902 and 1905; *Schoenobius gigantellus*, taken at light, June, 1910.

*DIANTHOCIA LUTEAGO* VAR. *BARRETTII*—BRED.—Mr. H. M. Edelsten, specimens bred from Devon, 1910.

*TAPINOSTOLA HELLMANNI*—BRED.—Mr. Edelsten, a series bred from Wicken Fen larvæ, 1910.

*LEUCANIA C-ALBUM*—BRED.—Mr. Edelsten, a specimen bred ab. ovo, 1910.

*MELINIA FLAMMEA*, AB.—Mr. Edelsten, a pale aberration from Horning.

*MELITEA AURINIA*.—Mrs. Hemming, a long captured and bred series from Wiltshire, 1910; several of the bred specimens exhibited a distinct tendency to var. *praeclara*. Dr. G. G. C. Hodgson, a series of *M. aurinia* selected from 113 specimens bred from Wiltshire larvæ in 1910. Wide variation was shown, covering the range that would be displayed in a composite series from such widely separated localities as Kent, Surrey, Isle of Wight, Devon, Glamorgan, West Meath, Cumberland, and Argyle. There was a marked tendency to melanism

in some examples, while in others the black borders tended to obsolescence; some tended to var. *praeclara*, and others showed almost unvaried fulvous coloration. In some specimens the usually constant ochreous blotch in centre of hindwings was replaced by black. Mr. F. B. Cross, *M. aurinia* from Wiltshire and Cumberland, a specimen from the latter district with basal three-fourths of superiors almost entirely black; also *M. athalia* from Devonshire.

ARGYNNIS SELENE.—Mr. A. F. Hemming, a comparative series from Princethorpe (Warwick) and Ashdown (Surrey). The former imagines were much larger than the more normal sized ones from Ashdown. Measurements showed that the largest and smallest ♂, and largest and smallest ♀ from Princethorpe were 8mm., 3mm., 7mm., and 2mm. respectively, wider in wing expanse than corresponding imagines from Ashdown.

HYBRIDS.—Mr. A. W. Mera exhibited hybrids bred from pairing of *Nyssia lapponaria* ♀ and *N. zonaria* ♂.

TRICHIURA CRATEGI, VARS.—Mr. L. W. Newman, dark forms from Selkirk, and pale forms from Lincoln.

PERICALLIA SYRINGARIA.—Mr. Newman, a ♀, the coloration of which approached the reddish coloration of the ♂.

VARIATION OF GNOPHOS OBSCURATA.—Mr. L. B. Prout, a long series from Folkestone, August, 1910, showing considerable range of variation, some ♂s nearly white, some ♀s blackish, many specimens with two black lines very pronounced, and a good proportion of the banded ab. *fasciata* (Prout).

GEOMETRIDÆ FROM VICTORIA, B.C.—Mr. Prout, on behalf of Mr. H. J. Turner, exhibited a box of *Geometridæ* collected by Mr. A. J. Croker, showing close affinity with palæarctic species.

ABRAXAS GROSSULARIATA, ABS.—Mr. J. Riches, a number of more or less aberrant specimens bred 1910 from North London, also a similar exhibit on behalf of Mr. J. P. Mutch.

VANESSA IO, VAR. CYANOSTICTA (RAYNOR).—Mr. V. E. Shaw, three specimens bred from Darenth, August, 1910, also a teratological example from same brood—the right-hand wings being considerably smaller than the left-hand pair.

ASYMMETRICAL ZYGÆNA FILIPENDULÆ.—Mr. V. E. Shaw, a specimen with spots confluent on left wing, right wing being normal, bred from Dover pupa August, 1910.

VANESSA ANTIOPA FROM OAKHAM (RUTLAND).—Mr. P. H. Tautz, a specimen taken inside a shop window on October 20th, 1910, by Mr. A. Hassan.

LUPERINA GUENEEL.—Mr. R. G. Todd, specimens from St. Anne's-on-Sea, 1909.

HYDRILLA PALUSTRIS.—Mr. Todd, a specimen taken at Wicken, 1909.

TAPINOSTOLA CONCOLOR BRED.—Mr. Todd, a short series he had bred *ab ovo* from Northants, 1909.

CÆNOBIA RUFA, ABS.—Mr. Todd, two very dark specimens—apparently a new aberration, same not being identifiable with ab. *fusca*.

LEPIDOPTERA FROM FINCHLEY AND BARNET.—Mr. B. S. Williams, a number of specimens, including a very dark example of *Cosmia*

*trapezina*, also *Plusia moneta*, *Cymatophora duplaris*, *Xylophasia scolopacina*, *Luperina cespitis* and *Cirrhoedia xerampelina*.

January 17th, 1911.—NEW MEMBER.—Mr. G. Brooks, of 28, Hilton Avenue, Friern Barnet, was elected to membership of the Society.

SENTA MARITIMA, VARS.—Mr. S. J. Bell, *S. maritima* var. *bipunctata* and var. *nigro-striata* from Isle of Wight, July, 1909. Mr. C. Capper, *S. maritima*, with vars. *bipunctata*, *nigro-striata*, *wismariensis*, and *combinata* from Isle of Wight.

MELANIC PSILURA MONACHA—BRED.—Mr. C. Capper, specimens bred from wild parents, New Forest, 1910.

CALLIMORPHA HERA.—Mr. C. Capper, series bred 1909 and 1910 from Dawlish, including yellow (ab. *lutescens*) and brick red forms.

LYCENA CORYDON VAR. SEMI-SYNGRAPHA.—Mr. C. Capper, a specimen from Isle of Wight.

XYLOPHILA PRASINANA, AB.—Mr. Capper, a specimen with the transverse lines nearly obsolete.

DIANTHÆCIA CONSPERSA.—Mr. F. B. Cross, specimens from North Cornwall including one very dark, almost unicolorous save for pale marginal line.

DIANTHÆCIA CARPOPHAGA.—Mr. H. M. Edelsten, a long and very variable series bred from Sussex pupæ, the emergence extending from the end of May to mid-August; the specimens ranged from dark well marked to almost white forms with only the stigmata faintly indicated.

ARGYNNIS PAPHIA AND VAR. VALEZINA.—Mrs. C. Hemming, specimens bred 1909 and 1910 from New Forest parents, showing increase of black markings, one ♂ having broad black dashes following the nervures at base of superiors, also var. *valezina* with enlarged black markings and general suffusion.

HESPERIA THAUMAS.—Mr. A. F. Hemming, a series from Sussex, August, 1910, showing two distinct forms occurring together; one with light ground colour and narrow border, and the other with dark ground colour and broad border.

TÆNICAMPA PULVERULENTA VAR. HAGGERTI.—Mr. J. Morris, a specimen taken at Godalming, Surrey.

BOARMIA REPANDATA VAR. NIGRA.—Mr. J. Morris, specimens from Sheffield.

PAPER.—Mr. C. Capper read an interesting paper on his collecting experiences during 1910.

February 7th, 1911.—NEW MEMBER.—Mr. Charles H. Williams, of 36, Dartmouth Street, Westminster, S.W., was elected to membership of the Society.

DECEASE OF MEMBER.—Dr. T. A. Chapman announced, with deep regret, the death of Dr. G. G. C. Hodgson, and proposed that an expression of the meeting's regret at the loss to the Society of an active and highly esteemed member be recorded in the minutes and conveyed to Dr. Hodgson's relatives; the resolution was supported by Mr. L. B. Prout, and duly adopted.

ANTICLEA RUBIDATA.—Mr. S. J. Bell exhibited a series he had bred in 1910 from Isle of Wight ova; the imagines were all of the bright red form.



*SMERINTHUS POPULI*, AB.—Mr. G. Brooks exhibited a specimen, dark brown in colour, taken at Barnet, 1910.

*NOCTUA AUGUR* VAR. *OMEGA* (ESPER).—Mr. V. E. Shaw, a specimen taken at sugar, Finchley, June 28th, 1910. This variety is referred to by Tutt in his *British Noctuae and their Varieties* as a very rare form.

*SESIA CRABRONIFORMIS*.—Mr. L. W. Newman stated that when collecting osier stumps some were found to contain not only full-fed larvæ, but also many young larvæ. The stumps were kept on the concrete floor of a glass-house, and the young larvæ migrated from the small stems to the larger stumps.

PUPATION OF *SESIA CULICIFORMIS*.—Mr. L. W. Newman drew attention to the fact that the larva of this insect pupates head downwards in year old stems of the birch, while larvæ in the stumps of course pupate head upwards.

February 21st, 1911.—Dr. T. A. Chapman, photographs of ♂ appendages of *Scoparia*, also various specimens of the genus to illustrate his remarks on same.

*DASYPOLIA TEMPLI*.—Mr. F. B. Cross, a series bred from pupæ received from Unst, 1910.

*SESIA CRABRONIFORMIS*.—Mr. L. W. Newman, stems showing borings and cappings made by *S. crabroniformis*, some in living and some in dead wood, also stems containing larvæ of the musk beetle, which he said feed side by side with *S. crabroniformis*, and display similar habits.

PAPER.—Dr. T. A. Chapman read a paper entitled "A note on *Scoparia*," showing on an examination of the male appendages that *S. ambigualis* and *S. atomalis* are, as is usually now accepted, one species; that *S. basistrigalis* is a very distinct species, as also is *S. ulmella* from every other British species, but that it is closely related to, possibly a geographical race, of *S. manifestella*. It also appeared that not only English *S. ingrattella*, but also the continental form bearing that name, is a variety (or at times an ab.) of *S. dubitalis*. The British species divide into two sections, "Moss-feeders" and "Root-feeders," with *S. pallida* and *S. crataegella* as not quite typical of either section. These divisions were clearly recognised by Guenée in 1854, but have since been treated with neglect. (The full data on which these conclusions are founded are given in a paper read March 15th, 1911, at Ent. Soc. of London, by Dr. Chapman.)

March 7th, 1911.—EXHIBITION OF COSMIDÆ.—Mr. H. M. Edelsten, specimens from Epping Forest and Enfield. Mr. A. W. Mera, *C. trapezina*, *pyralina*, *diffinis*, and *affinis* from various localities. Mr. B. S. Williams, *C. trapezina* var. *nigra*, Tutt, from Finchley, July, 1910. Mr. P. H. Tautz, fine series of *C. trapezina*, *pyralina*, *diffinis*, and *affinis* from Pinner, Middlesex.

GONOPTERA LIBATRIX.—Mr. J. Riches exhibited several specimens he had found hibernating in a cellar in February, 1911, in a Norfolk village.

DISCUSSION.—Mr. P. H. Tautz opened a discussion on the Cosmiidæ, and his remarks are included in this volume.

March 21st, 1911.—BIRDS' ATTACK ON THE LARVÆ OF *SESIA CRABRONIFORMIS*.—Mr. L. W. Newman showed some stems of willow which had contained larvæ of *S. crabroniformis*; the birds had pecked through about three-quarters of an inch of the wood to get at the larval burrow. In one instance two, and in the other three such holes had been made in the stem before the larva was located. The exhibitor mentioned that a large number of stems had been so treated and that he saw no sign of any such attack on the occasion of a visit made to the same spot a week before.

HYBRID *NYSSIA ZONARIA* ♂ × *N. LAPPONARIA* ♀.—Mr. L. W. Newman, freshly killed specimens he had just bred.

*TÆNIOCAMPA OPINA*.—Mr. P. H. Tautz, a long series bred from Wanstead, 1904 and 1908, all of which were very dark.

*DREPANULIDÆ*.—Mr. A. J. Willsdon exhibited his cabinet-drawer containing long series of all the *Drepanulidæ* (excepting *harpayula*) mostly taken near London.

*OINOPHILA V-FLAVA*.—Mr. V. E. Shaw, an empty pupa case projecting from a wine cork showing that the larva does, at times, pupate in the cork itself.

DISCUSSION.—Mr. A. Willsdon opened a discussion on the *Drepanulidæ* which was taken up by most of the members present.

April 4th, 1911.—DONATIONS.—Mr. V. E. Shaw presented to the Society vol. iv of the *Entomologist's Record*, needed to complete the Society's set of that publication. A vote of thanks was accorded the donor. Dr. Geraldine Hodgson presented a photograph of the late Dr. G. G. C. Hodgson for the Society's Album, and the Secretary was instructed to express the Society's appreciation of the presentation.

RUSH BLOSSOM ATTRACTIVE TO LEPIDOPTERA.—Mr. H. M. Edelsten exhibited a series of *Noctua baja* and *Cidaria immanata* taken on rush blossom at Epping Forest in July, 1910, at a time when sugar was unattractive.

PAPER.—Mr. R. G. Todd read some interesting and informative notes on his collecting experiences during 1910.

April 18th, 1911.—DONATION.—The Librarians announced the receipt from Mr. A. W. Mera of vol. xxii of the *Entomologist's Record*. A vote of thanks was proposed to the donor by Messrs. Shaw and Cross and duly carried.

*LYCENA ALEXIS* VAR. *PERSICA*.—Mr. Huggins exhibited a specimen he had taken at Eastbourne, 1910.

*LYCENA BELLARGUS*, AB.—Mr. Huggins, a ♀ of ♂ coloration from Eastbourne, 1910.

*EUGONIA AUTUMNARIA* (*ALNIARIA*).—Mr. Huggins, a darkly suffused example from Gravesend, 1910.

*ABRAXAS GROSSULARIATA*.—Mr. Huggins, two specimens having black nervures on hindwings, Gravesend, 1910.

**BOMBYX RUBI.**—Mr. J. Riches, 15 bred ♀s, all that emerged from a brood of about 40 larvæ.

**TRIPHÆNA COMES, VARS.**—Mr. V. E. Shaw, a long bred series from Findhorn ova, including vars. *clarki*, *nigrescens*, *pallida*, *rufescens*, *curtisii*, and forms intermediate between *clarki* and *nigrescens*, and *pallida* and *rufescens*.

May 2nd, 1911.—**TRIPHÆNA PRONUBA.**—Mr. G. R. Baldock, a long series from Galley Hill, Essex, 1910. The dark form predominated many specimens showing almost unicolorous blackish-brown superiors. Mr. P. H. Tautz, a long series from Pinner, Hampstead and Studland Bay. The specimens from Pinner included many with gray costal streak, while many of those from Studland Bay showed bright reddish superiors, and one with straw-coloured inferiors. Mr. H. M. Edelsten also exhibited his series from various localities.

**LEPIDOPTERA FROM EXMOOR.**—Mr. J. E. Gardner, a number of lepidoptera taken at Exmoor, August, 1910, including *Xylophasia scolopacina* which was common at ragwort bloom, *Toxocampa craccae*, *Asthena blomeri*, *Abraxas ulmata*, *Triphosa dubitata*, *Cidaria populata*, and a number of micro-lepidoptera, in which he stated that the district seemed particularly rich. Mr. G. H. Heath, also exhibited dark *Gnophos obscurata*, *Cleora glabraria* and *Cidaria silaceata* from the same district.

**HYBRIDS.**—Mr. L. W. Newman exhibited a series of hybrids from pairings of *Nyssia zonaria* ♀ × *Biston hirtaria* ♂, also hybrid ♀ from *N. zonaria* ♂ × *B. hirtaria* ♀ with very narrow and pointed wings.

**SMERINTHUS POPULI.**—Mr. L. W. Newman exhibited *S. populi* var. *pallida*, and a ♀ suffused with pink coloration, also a gynandromorph, one side typical ♂, and the other pink ♀; the body displayed the two colours equally divided, even the legs showing coloration corresponding to that side of the body on which they were situated.

**ANGERONA PRUNARIA LARVÆ.**—Mr. C. P. Pickett, larvæ fed up under various colored muslins. Those fed under white muslin were pale, under pink muslin were of a darker and reddish tint, while those under red muslin were darker still.

**APAMEA OPHIOGRAMMA LARVÆ.**—Mr. J. Riches, larvæ found feeding in roots of Ribbon grass in a North London garden.

**PAPER.**—Mr. J. E. Gardner read some notes on a "Holiday on Exmoor in 1910," and exhibited the insects he had taken there.

May 16th, 1911.—**DONATION.**—The Librarians announced the receipt of a pamphlet entitled, "An Algerian Holiday," from the author, Mr. A. E. Gibbs.

**ENDROMIA VERSICOLOR—RETARDED EMERGENCE.**—Mr. A. W. Mera exhibited specimens bred from pupæ that had passed through two winters.

**PLUSIA MONETA.**—Mr. J. Riches, specimens bred from larvæ collected in North London gardens.

**THYATIRA BATTIS, AB.**—Mr. B. S. Williams exhibited a specimen with the usual pink coloration replaced by olive-brown.

June 6th, 1911.—*BOARMIA CINCTARIA*—LARVÆ.—Mr. A. W. Mera, larvæ reared from New Forest.

*EPIONE APICIARIA*—LARVÆ.—Mr. A. W. Mera, larvæ reared from ova, the hatching of which he stated had extended over so long a period that while some larvæ were practically full-fed there were still a few ova unhatched.

*EUPITHECIA EXTENSARIA*.—Mr. L. B. Prout, specimens bred from larvæ taken at Hunstanton.

*SESIA TIPULIFORMIS*.—Mr. A. J. Willsdon, living specimens from Woodford, Essex.

June 20th, 1911.—*SELENIA ILLUNARIA*, AB.—Mr. H. B. Williams, a specimen with the wings almost unicolorous dark grey, the usual three transverse lines being faintly indicated.

*NOLA CONFUSALIS*.—Mr. H. B. Williams, a series from Epping, 1911, including one very dark specimen.

*ACRONYCTA ALNI*.—Mr. A. W. Mera, specimens bred from Sussex.

KILLING BY "LAUREL BOTTLE" DETRIMENTAL TO COLOUR.—Mr. A. W. Mera exhibited *Geometra papilionaria* of a deep yellow coloration caused by using a "laurel bottle" to kill them.

September 5th, 1911.—DONATION.—The Secretaries announced the receipt of a reprint of his Monograph on *Luperina guenéei* from Mr. H. J. Turner.

DECEASE OF MEMBER.—The President announced the death of Mr. A. Harrison, on August 28th, 1911, and moved that the Society express its regret at the loss it had thereby sustained, and its sympathy with Mrs. Harrison, which resolution was duly adopted.

*LYCÆNA CORYDON*, ABS.—Mr. C. P. Pickett, a series from Royston, including var. *semi-syngrapha*, and two specimens with brown suffused undersides.

*LYCÆNA ARGIOLUS*—THIRD BROOD.—Mr. C. P. Pickett, two specimens from Leytonstone.

September 19th, 1911.—*UROPTERYX SAMBUCARIA*.—Mr. C. P. Pickett, specimens bred in heat, and in a normal temperature, the former being slightly the larger.

*TEPHROSIA CREPUSCULARIA*.—Mr. A. W. Mera exhibited specimens of second broods from Swansea and New Forest, those from the former locality being very dark.

*EMELESIA ALBULATA*.—Mr. F. B. Cross, a series bred from Unst.

*EUGONIA AUTUMNARIA*.—Mr. A. J. Willsdon, a specimen captured at Ramsgate, September 11th, 1911, and a long series of the same species from Dover and Chichester for comparison.

*CATOCOLA NUPTA*, AB.—Mr. B. S. Williams, on behalf of Mr. Bloomfield, exhibited a specimen with the usual red on hindwings replaced by purplish brown; taken at sugar, Finchley, 1911.

*LYCÆNA CORYDON*.—Mr. T. H. L. Grosvenor, a series from the North Downs, including males with broad border on primaries, a ♂ approaching ab. *fowleri*, and one with orange markings on secondaries. A female with left primary cream colour, left secondary cream with

brown stripes, right side normal, and a female with streaks of male colour.

October 3rd, 1911.—*CALAMIA PHRAGMITIDIS*, AB.—Mr. G. Brooks, a specimen from Wicken, with a small black striate spot just below the centre of costal streak.

*LYCÆNA CORYDON*, ABS.—Mr. F. B. Cross, a number of females from South Cambs. showing more or less ♂ coloration on secondaries; also var. *semi-syngrapha*.

*MELANARGIA GALATEA*—BRED.—Mr. C. P. Pickett, a series from larvæ collected at Folkestone and reared in a glass-house; the specimens were large. The most noteworthy examples were:—Uppersides, a ♂ with usual black markings much exaggerated, and another with central area of primaries almost devoid of black; undersides, one ♂ with black markings much reduced and subdued, and two ♂s with the black markings much enlarged, the white colour suffused with a bluish black tinge.

*PIERIS RAPÆ*—THIRD BROOD.—Mr. C. P. Pickett, specimens bred from Leytonstone, including a spotless ♂ and a ♀ with the spots on primaries joined; on the undersides the whole series showed a yellowish ground colour with black scales.

*COLIAS HYALE*.—Mr. C. P. Pickett, specimens from Folkestone, August, 1911.

*PARARGE NEGÆRA*.—Mr. C. P. Pickett, a series from Folkestone, 1911, including a dark suffused ♀.

*AGROTIS RIPÆ*.—Mr. J. Riches, a series from St. Annes-on-Sea, 1910, the specimens being all of a dark form.

*RUMICIA PHLÆAS*, ABS.—Mr. A. J. Willsdon, a number of more or less aberrant forms from Deal district, 1911, including vars. *radiata*, *caeruleopunctata*, *major*, and a specimen with left primary of a pale straw colour.

ABUNDANCE OF LEPIDOPTERA AT LIGHT.—Mr. J. E. Gardner mentioned having observed an extraordinary number of moths round the electric lights in Amherst Park, London, one night in July about midnight. Round one lamp about 60 different species were identified.

October 17th, 1911.—*ABRAXAS GROSSULARIATA*.—Rev. C. R. N. Burrows, a number of aberrations bred 1911 from larvæ mostly collected at Macclesfield and Wallesey; the series included an example of ab. *lacticolor* (Raynor), with black suffusion on basal area of superiors, also ab. *fulcapicata* (Raynor), and specimens showing considerable increase of black markings.

*ZYGÆNIDS*.—Mr. E. A. Cockayne, specimens of *Zygaenids* of doubtful identity, from a colony found in a Berkshire field, which produced both five and six spotted forms in June, 1911.

MICRO-LEPIDOPTERA.—Mr. J. E. Gardner, specimens of *Oedemato-phorus lithodactylus*, *Platyptilia isodactylus*, *Adkinia bipunctidactyla*, and *Amblyptilia cosmодactylus*, and a long and very variable series of *Peronea variegana*, mostly collected in a Clapton garden.

VARIABLE *OEDEMATOPHORUS LITHODACTYLUS*.—Mr. G. H. Heath, a

series from South Wales showing variation in colour parallel to that occurring in *Pterophorus monodactylus*.

*SMERINTHUS POPULI*, ABS.—Mr. L. W. Newman, a long and very variable series bred from selected Bexley parents. The series included two gynandromorphs, of which ten in all were bred ex. 1,000 pupæ, including two showing type on one side, and pink colour on other. The series showed pink tinged forms, cream-coloured forms, and intermediates.

*ANGERONA PRUNARIA*.—Mr. C. P. Pickett, a large number of specimens, mostly from one brood, reared *ab oco* under various colored muslins. The specimens exhibited marked differences in coloration, which the exhibitor claimed to be due to the different environments.

*LYCÆNA CORYDON*, ABS.—Mr. V. E. Shaw, a series taken in S. Cambs., August, 1911, the ♀ specimens being marked with more or less ♂ coloration, also var. *semi-syngrapha* taken at same place.

*TERATOLOGICAL PLUSIA GAMMA*.—Mr. H. B. Williams, a specimen from Little Missenden, Bucks., with right primary dwarfed, and showing a large bleached patch.

*COLIAS EDUSA*.—Mr. A. J. Willsdon, a series from Torquay and Plymouth, including ab. *obsoleta* (Tutt), and ab. *helice* (Hb.).

*COLIAS HYALE*.—Mr. L. W. Newman stated that females he had taken in September, 1911, and kept for ova, showed no disposition to lay, and seemed inclined to hibernate.

*RAPID GROWTH OF VANESSA CARDUI AND SPHINX CONVULVULI LARVÆ*.—Mr. L. W. Newman mentioned that by feeding up the larvæ in a hot-house he had got the former through the larval stage in 21 days, and the latter in 26 days.

November 7th, 1911.—*ORTHOSIA LOTA*.—Dr. T. A. Chapman, three specimens bred from larvæ taken at Amelie les Bains, South France, and fed on *Coriana myrtifolia*—the three insects, all that emerged, were of three different forms, *viz.*, leaden, dark red, and dark fulvous, suggesting the existence of much less uniformity than is found in British specimens, and were especially large, *viz.*, over 40mm.

*ACIDALIA VIRGULARIA* VAR. *BISCHOFFARIA* FROM LONDON.—Mr. G. H. Heath, a specimen of this melanic variety taken at Brockley, London, September 23rd, 1911.

*LYCÆNA ARION*.—Mr. A. W. Mera, a series taken at Bude, July, 1911.

*CERASTIS VACCINII* VAR. *SUFFUSA* (TUTT).—Mr. B. S. Williams, two specimens taken at Finchley, September, 1911.

*EMATURGA ATOMARIA*.—Mr. H. B. Williams, a ♀ specimen with tawny ground colour of ♂, Oxshott, July, 1911.

*PAPER*.—Mr. L. W. Newman being prevented through illness from reading his paper, "Some notes on breeding and collecting during the record season of 1911," had forwarded it to Mr. S. J. Bell to read. (See end of this Vol.).

November 21st, 1911.—*LEPIDOPTERA FROM MUCKING, ESSEX*.—Rev. C. R. N. Burrows exhibited a number of moths he had taken at

sugar during September, including an example of *Xanthia ocellaris*, a melanic *Thera variata*, *Melanippe fluctuata* var. *costorata*, *Xanthia aurago*, *X. gilvago*, *Calamia lutosa*, *Leucania comma* (second brood) and a melanic *Noctua xanthographa*.

VANESSA CARDUI.—Mr. L. W. Newman, a long series bred from ova laid by a Folkestone ♀ on September 2nd. The larvæ were fed up on nettle in a hot-house at a temperature of about 80°, and all the imagines had emerged by October 16th. In a few specimens the large white inner spot on apex of forewings was almost entirely obscured by black scaling while many others showed the same peculiarity in a less pronounced form.

VANESSA IO AND VAR. CYANOSTICTA.—Mr. H. B. Williams, a series bred from larvæ taken at Chalfont on July 8th, including one example of var. *cyanosticta*.

CHESIAS SPARTIATA.—Mr. A. J. Willsdon, a variable series from Wanstead including pale grey, brownish, reddish-fawn and melanic examples.

SESIYA MYOPÆFORMIS.—Mr. A. J. Willsdon, a series taken at rest on the grass at foot of apple trees early in the morning.

MACROGLOSSA STELLATARUM AT LIGHT.—Rev. C. R. N. Burrows recorded the appearance of a specimen at light at Mucking in September.

LYCÆNA ARGIOLUS, THIRD BROOD.—Rev. C. R. N. Burrows mentioned the occurrence of a third brood at Mucking in September.

APPOINTMENT OF AUDITORS.—Messrs. A. J. Willsdon and E. Harris, were appointed to audit the Treasurer's annual account.

December 5th, 1911.—THERA VARIATA AND T. FIRMATA.—Mr. E. A. Cockayne, a series of each from Aberdeenshire both of a light ground colour, together with specimens of Surrey *T. firmata* and Oxfordshire *T. variata* much darker in colour than those from Scotland.

ERASTRIA VENUSTULA—BRED.—Mr. H. M. Edelsten, a series bred from Brentwood ova. The larvæ fed up well on the flowers of various Potentillas, Strawberry and Bramble blossoms, and finished off on lettuce leaves. The species was somewhat difficult to get to oviposit, but from thirty ova 27 specimens were reared. The larvæ made a tough cocoon underground.

LYCÆNA ICARUS.—Mr. H. B. Williams exhibited *L. icarus* ab. *costajuncta* (Tutt), Glamorganshire, 1909, ab. *nigromaculata* (Ckll.), ab. *crassipuncta* (Courv.), ab. *semi-persica* (Tutt), ab. *apicojuncta* (Tutt), also a specimen of ab. *glomerata* (Tutt), showing union of spots forming abs. *melanotoxa* (Marott), *costajuncta* (Tutt), and *basijuncta* (Tutt), the streaks in the latter two cases being extremely short, the spots being almost super-imposed—all from Little Missenden, Bucks.

LYCÆNA ASTRARCHE.—Mr. H. B. Williams, a specimen with obsolescent spotting on underside, and an upperside with certain marginal spots on left wing pallid, Bucks, 1911.

LYCÆNA ASTRARCHE.—Mr. V. E. Shaw, a ♀ specimen with usual red spots on margin of all wings joined, forming a deep red band. Royston, August 7th, 1911.

LYCÆNA ICARUS AB. MELANOTOXA (MAROTT).—Mr. V. E. Shaw, a specimen from Royston, August, 1911.

XANTHIA OCELLARIS—BRED.—Mr. L. W. Newman, a series bred from a captured ♀ taken near Hampton-on-Thames. The series could be divided into three forms, *viz.*, type, a form approaching *X. gilvago* (ab. *intermedia*), and a form approaching *X. fulvago* (ab. *lineago*).

LIMENITIS SYBILLA AB. NIGRINA (WEYMER) AND VAR. ANGUSTATA (STGR.)—Mr. L. W. Newman, specimens taken New Forest, 1896.

VANESSA ANTIOPA.—Mr. L. W. Newman, a specimen taken by Mr. Hills at Folkestone, September, 1911.

NEMEOPIHILA RUSSULA, ABS.—Mr. L. W. Newman, two males without usual black markings on posterior wings bred Folkestone by Mr. Hills.

The result of the election was as follows :—

#### COUNCIL FOR 1912.

PRESIDENT.—Mr. A. W. Mera.

VICE-PRESIDENTS.—Rev. C. R. N. Burrows, Dr. T. A. Chapman, Messrs. F. J. Hanbury and L. B. Prout.

TREASURER.—Mr. S. J. Bell.

CURATORS.—MESSRS. A. J. Willsdon and B. S. Williams.

LIBRARIANS.—MESSRS. F. B. Cross and R. G. Todd.

SECRETARIES.—MESSRS. V. E. Shaw and H. B. Williams.

NON-OFFICIAL MEMBERS.—MESSRS. H. M. Edelsten, J. E. Gardner, G. H. Heath, L. W. Newman and J. Riches.

#### SECRETARIES' REPORT, DECEMBER 5th, 1911.

A swan song is of necessity a somewhat melancholy performance, and it is to be feared that this, which is the official swan song of the present secretaries, is likely to prove no exception to the rule. The average attendance of members once more marks a decline, being 13·25 against 14·5 for 1910, 14·45 in 1909, and 17·05 in 1908; as regards visitors while the last year average of 1·3 has been exactly maintained, such a figure can hardly be regarded as a matter for jubilation. An attempt to bring about some improvement in the attendance has been made by issuing to all members a circular letter, urging the importance of more frequent appearance of members at the meetings; the result however to-date is hardly encouraging, indeed it seems to be limited so far to the return of but one lost sheep to the fold.

Three new members have been elected, while four have resigned, and three alas! have gone over to the great majority, *viz.*: Mr. A. Harrison, at one time a frequent attendant and exhibitor but of whom we had seen little of late, Mr. H. A. King, not often at our meetings, and Dr. G. G. C. Hodgson; the loss of the latter's attractive and interesting personality, ingenious and illuminating deductive reasoning, keen interest, and extensive and informative exhibits is undoubtedly a great blow to the Society.

In the last report attention was drawn to the paucity of the exhibits; it is satisfactory to be able to record that 1911 shows some improvement in this respect despite the smaller attendance. More



scrupulous attention is still required to the reporting secretary's need of detailed notes of exhibits from exhibitors.

The customary three field meetings were held during the summer but the attendance at same was meagre in the extreme; in previous seasons a similar state of affairs has been attributed to ill-luck in the matter of weather but this was certainly not the reason in 1911.

Entries in the Minute Book under the heading "Donations," are somewhat few and far between; to Mr. Mera the Society is once again indebted for the latest complete volume of the "*Entomologist's Record*," while Mr. Shaw presented volume iv. of the same magazine, needed to complete the series in the Society's library.

If a personal note may be permitted in conclusion the Reporting Secretary would like to express his appreciation of members' goodwill and courtesy during his twelve years of office, six as corresponding secretary, and six as reporting secretary; he feels that he is now entitled, if not to complete freedom, at least to transference to an office where he can still be of service to the Society, but under somewhat less exacting conditions; the Corresponding Secretary also makes his bow to members and regrets that he finds that he is not now able to give the work the attention that it merits.

The retiring secretaries wish their successors every success and look forward with confidence to the proverbial results of the use of new brooms and the infusion of new blood.

Details of the programme for the past session are appended as usual.

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|----------------|--|-----------|--------------------------------|
| 1910, Dec. 20. | Discussion—"The relative value of Environment and Heredity as factors in production of Local Races" ... .. | Opened by | L. B. Prout,<br>F.E.S.         |
| 1911, Jan. 3.  | Pocket Box Exhibition.   |           |                                |
| ,, 17.         | Notes on Collecting Experiences in 1910 ... ..   |           | Chas. Capper.                  |
| Feb. 7.        | Holiday Notes from Exmoor ... ..   |           | J. E. Gardner,<br>F.E.S.       |
| ,, 21.         | A Note on "Scoparia" ... ..  |           | Dr. T. A. Chap-<br>man, F.E.S. |
| Mar. 7.        | Exhibition and Discussion—"Cosmiidæ" ... ..  | Opened by | P. H. Tautz,<br>F.E.S.         |
| ,, 21.         | Notes on "Drepanulidæ" ... ..  |           | A. J. Willsdon.                |
| April 4.       | Collecting experiences in 1910 ... ..  |           | R. G. Todd,<br>F.E.S.          |
| ,, 18.         | Special Exhibit—Genus <i>Triphæna</i> .  |           |                                |
| Nov. 7.        | "Notes on Breeding and Collecting during the record summer of 1911" ... ..                                 |           | Mr. L. W. New-<br>man, F.E.S.  |

Nov. 21. Nomination of Executive for 1912.  
 Appointment of Auditors.  
 Special Exhibition and Discussion  
 —“ Clearwings.”

Dec. 5. Annual Meeting. Election of Executive for 1912.

Secretaries' and Treasurer's Reports.

Presidential Address ... .. Mr. A. W. Mera.

S. J. BELL.

T. H. L. GROSVENOR. } *Hon. Secs.*

### TREASURER'S REPORT, DECEMBER 5th, 1911.

#### MORE ADEQUATE SUPPORT OF PUBLICATION FUND IMPERATIVE.

Two years ago, the then Treasurer, Mr. P. H. Tautz, drew the attention of members to the fact that the Society's expenditure had exceeded its income, and it is the unpleasant duty of his present successor to emphasise the fact that this unsatisfactory state of affairs continues.

This excess expenditure, as pointed out by Mr. Tautz, is undoubtedly entirely due to the failure of members, with but few exceptions, to subscribe to the Publication Fund. When it was first decided to embark upon the enterprise of publishing Transactions, it was recognised that it was impossible to meet such expenditure out of the ordinary Funds of the Society; a special Publication Fund was accordingly opened, and was at first loyally supported by the members. The donations thereto have, however, gradually fallen off, until now they represent but a fraction of the cost of printing the Transactions. The result is that for some years past the Society's expenditure has substantially exceeded its income, and the reserve, built up in the years when the cost of the Transactions did not encroach upon the General Funds, has now been practically wiped out.

This fact is clearly demonstrated by the steady decline of the balance at the end of each year. In December, 1908, the Society had in hand £18 2s. 8d.; in December, 1909, £9 5s. 5d.; in December, 1910, £8 11s. 11d. (including £5 transferred from Life Membership Fund on death of a life member); while at the end of the present year (1911) the balance is only £3 19s. 0d. With regard to the latter figure it is true that an extraordinary expenditure has been incurred in the shape of a book-case costing £5 9s. 0d., but on the other hand the cost of the 1910 Transactions was exceptionally low, *viz.*, £8 3s. 0d. as compared with £11 2s. 3d. for 1909, and £16 15s. 6d. for 1908.

The total expenditure in 1911 has been about £34, and the total income about £27 10s. 0d. The Transactions cost £8 3s. 0d. as already stated; the donations to the Publication Fund amounted to only £2, while sales of copies of the publication realised £1 12s. 0d., leaving a deficit of about £4 10s. 0d. to be made up out of the General Funds. The Treasurer is inclined to think that this condition of affairs may be at least in part due to the fact that the existence of the Publication Fund has not been sufficiently advertised, and would suggest that a circular *re* the matter be sent out with the new members' list in the New Year.

Considerable effort has been made to get all subscriptions in before the close of the Society's financial year; six members are still in arrears for a total amount of £3 15s. 0d., but it is doubtful whether even half this amount will ultimately be recovered.

Members must, therefore, face the fact that the Society's income is but little in excess of its normal current expenditure, and, consequently, if the publication of Transactions is to be maintained, as it, of course, must be, more generous and general support (averaging about 5s. per head), must be forthcoming for the Publication Fund. Until such support is assured the Treasurer must of necessity oppose so far as lies in his power, any proposal to incur further expenses in connection with the publication of Transactions.

The details of the annual account are as follows:—

### TREASURER'S ACCOUNT, 1911.

Cr.	GENERAL FUND.		Dr.	
	£	s. d.	£ s. d.	
To Balance brought forward	8	11 0	By Rent, July 31st, 1910, to July 31st, 1911 ..	12 12 0
„ 3 Subscriptions, for 1910, at 7s. 6d. .. ..	1	2 6	„ Bookcase .. ..	5 9 0
„ 2 Subscriptions, for 1911, at 5s. .. ..	0	10 0	„ Printing — Holmesdale Press, .. £2 1s. 0d.	
„ 57 Subscriptions, for 1911, at 7s. 6d. .. ..	21	7 6	„ E. B. Hor- wood & Co. £1 1s. 9d.	3 2 9
„ 1 Subscription, for 1912, at 7s. 6d. .. ..	0	7 6	„ Postages and Petty Exs. Secretaries £2 4s. 3d.	
„ 3 Entrance fees, for 1911, at 2s. 6d. .. ..	0	7 6	„ Treasurer £0 11s. 0d.	2 15 3
„ Interest on Life Member- ship Fund, 1910 ..	0	5 0	„ Insurance .. ..	0 6 3
			„ Magazine subscriptions: “Entomologist,” 1911 .. £0 6s. 0d.	
			„ “Entomologist’s Monthly,” 1911 £0 6s. 0d.	0 12 0
			„ S.E. Union affiliation fee, 1910 .. £0 5s. 0d.	
			„ S.E. Union affiliation fee, 1911 .. £0 5s. 0d.	0 10 0
			„ Binding Magazines ..	0 6 0
			„ Attendance .. ..	0 10 0
			„ Debit Balance Publication Fund .. ..	2 8 9
			„ Balance carried forward	3 19 0
	<u>£32</u>	<u>11 0</u>		<u>£32 11 0</u>

### PUBLICATION FUND.

	£	s. d.		£	s. d.
To Balance brought forward			By Printing Transactions,		
(Reserve against cost of 1909 Transactions) ..	13	4 6	1909 .. ..	11	2 3
„ Donations .. ..	2	0 0	„ Printing Transactions,		
„ Sales .. ..	1	12 0	1910 .. ..	8	3 0
„ Balance transferred to General Fund.. ..	2	8 9			
	<u>£19</u>	<u>5 3</u>		<u>£19</u>	<u>5 3</u>

## LIFE MEMBERSHIP FUND.

	£ s. d.		£ s. d.
To Balance brought forward—		„ By Transfer to General	
Subscriptions (Messrs. A.		Fund .. .. .	0 5 0
E. Gibbs & W. J. Kaye)	10 0 0	„ Balance carried forward	10 0 0
„ Interest for 1910	.. 0 5 0		
	<hr/>		
	£10 5 0		<hr/>
			£10 5 0
			<hr/>

Examined and found correct.

EDWARD HARRIS,  
ALFRED J. WILLSDON, }

*Auditors.*

SIDNEY J. BELL (*Hon. Treas.*)

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PRESIDENTIAL ADDRESS.

Before touching on the Entomological features of the season which has just ended, I must allude to the many losses that the Entomological world has sustained during the past year, through the death of some of its most prominent members.

The year had hardly commenced when we had to lament the death of Mr. J. W. Tutt, and although he had ceased to be a member of our Society for some years before his death, yet in his early collecting days he was a constant attendant at our meetings, and at one period was President of our Society for some years. But apart from any attachment that our Society may claim, he was so universally known and regarded as a man of immense energy and mental attainments, that we all feel that a light has gone out, and that there is a void in the Entomological world which it may take years to fill. Of course his colossal work will remain for all time, but his personality will be sorely missed, particularly by those of us who were in the habit of meeting him at various social entomological gatherings.

Then we have to record the lamentable death of Dr. G. G. C. Hodgson, which occurred on February 3rd. By his death our Society sustained a heavy loss, as we could always rely upon him for extensive exhibits whenever there was any special species of Rhopalocera under discussion, and this, together with his knowledge of the subject, and his kindly manner, were assets which our Society can ill afford to lose.

Again we had a great loss in the death of Mr. Albert Harrison, which occurred on August 28th. Although he was only an occasional attendant at our meetings, as an Entomologist he was widely known, and his hospitality at his home at Woodford has been shared by many of us. To me personally his death is a great loss, as I enjoyed his friendship, and always received a pleasant welcome whenever I took an opportunity of looking at his extensive collection and more particularly at his breeding houses.

Yet another well known Entomologist has passed away. Mr. G. H. Verrall died on September 16th, leaving his great work on "British Flies" unfinished. He also was doubtless known to many of our members, but personally I never had the privilege of his acquaintance.

Our Secretary, as usual, has given you a detailed account of the progress of our Society, and it would be superfluous for me to go over the same ground; therefore I will commence with a few points of interest connected with the Season's collecting.

During April there was nothing to indicate the approach of an unusually hot and early season. About the end of the month I paid a short visit to the neighbourhood of Ashdown Forest, and at that time there appeared quite a dearth of insect life. During a good ramble in the Forest I saw nothing but a hibernated *Vanessa io*, and a single specimen of *Pieris napi*.

By the 22nd of May things bore quite a different aspect, as we had then commenced to enter upon a period of unusual heat, and insect life was extremely abundant. I don't think I ever knew *Drepana cultraria* to be so numerous as it was at that date in Epping Forest. Not that this is by any means an early date, as I have known the species to be in full flight by the 1st of May, but that I believe was in the very hot year of 1868.

On May 26th we had one of our Society's excursions to Clandon, led by Mr. Shaw, and this was the only excursion of the season I was able to join. The list of insects taken was fairly numerous, and the outing was all that could be desired, but the attendance was scanty. The search for the ova of *N. lucina* occupied a considerable time, and the number of ova taken between us was quite large. One of the most interesting captures was a single specimen of *Hepialus velleda*, which was taken at dusk. This insect is generally considered to be one of our Northern species, and the time of appearance is given by Newman as July, whereas this specimen was taken on May 26th; possibly those in the North of England are later. By June 5th the heat was beginning to assert its influence, and most of the insects usually fresh at that time were showing decided signs of wear, while a few others were making an appearance which seemed to me earlier than usual, particularly when compared with the year 1910. For instance, *Eubolia plumbaria* was taken on June 5th this year, whilst in 1910, within a few miles of the same place, I took it on August 19th. But perhaps it was not until July had set in that the full influence of the unusual heat had made its mark on insect life, when many things were a fortnight earlier than in a normal season. On July 2nd *Argynnis aglaia* was fully out in Cornwall, and *Dianthoecia barrettii* and *D. conspersa* were both over. Perhaps some of the most remarkable double broods that have been recorded are those of *Limenitis sibylla* and *Vanessa io*. The former was recorded by Mr. Gervase F. Matthew from the neighbourhood of Dovercourt, and the latter by Mr. W. H. Harwood from Essex; both of these occurrences appear to be very unusual. The *L. sibylla* were seen on September 19th, and it was not a case of isolated specimens, but several were seen about that date.

It may be that collectors do not record their captures as much as formerly, as the number of records in the journals of rarities taken during the year seems below the average, and considering the almost tropical summer we have had, we might well have expected something unusual in that way.

On August 13th there is a note of *Argynnis lathonia* having been

taken at St. Margaret's Bay. A specimen of *M. atropos* was sent to Mr. Burrows alive on June 19th, but only one ovum was obtained. Although this was probably an early immigrant there has been nothing to indicate that a considerable number arrived about that time as the autumnal records of the larvæ are only moderately numerous. *Vanessa antiopa* has been seen in Essex, Kent, and the Isle of Wight, and the records of *Colias hyale* have been quite numerous; the localities extending from Norwich to Porthcawl in South Wales. As usual, the South-Eastern counties have been chiefly favoured, but the species does not seem to have been anything like so abundant as it was in 1900. *Colias edusa* has also put in an appearance in Kent, Essex, and Cornwall, but in considerably fewer numbers than its generally rarer congener *C. hyale*. *Deilephila livornica* has been recorded from Sussex and Cornwall, and one or two specimens of what looked like a second brood have occurred during August in Hampshire and Surrey. This species is generally taken in June or early July. *Sphinx convolvuli* also has been tolerably abundant in the South-Eastern counties. Apparently, there have been no very striking movements in what are looked upon as our migrating species, including *V. cardui* and possibly *V. atalanta*. I saw one *V. cardui* in Cornwall on July 10th, which had all the appearance of having been on the wing a long time and was probably an immigrant. On July 9th I saw in the same place a specimen of *V. atalanta* which was in perfect condition and showed no signs of having travelled.

A very interesting discussion has been going on in the journals as to whether the habits of *V. atalanta* are identical with those of *V. cardui*, so that each year we have to look to foreign arrivals, to keep up our stock of *atalanta*. Personally I have been so accustomed to look upon *atalanta* as indigenous, that the suggestion to the contrary came upon me as quite a surprise, and after reading evidence, for and against, I am still inclined to think that *atalanta* does get through our winter in a wild state, in one stage or another. As far as my observations are concerned I have never seen *atalanta* appear suddenly in anything like large numbers in a worn condition, as is so frequently the case with *cardui*. In fact whenever there has been a year when *atalanta* was a little more abundant than usual, they have always appeared at first in good condition, and it is not a species that varies in point of numbers to any very striking extent. With *cardui* the difference in the abundance of the insect is most marked, as in some years it appears to be entirely absent, and another year it may be in profusion, and I think I am right in saying that in all years of great abundance the arrival of worn specimens has been noticed some month or so before any really fresh specimens have been seen. Although there may be no absolute proof of *atalanta* having been found during hibernation, it is hardly sufficient reason for saying that it never hibernates with us, as we all know how few hibernating insects are found during their period of sleep, and we must still allow the possibility of the larvæ or pupæ surviving our winter, as both larvæ and pupæ have been found very late in the autumn.

There appears to have been this year an effort on the part of *Papilio machaon* to find new pastures. It has been noticed in Hert-

fordshire, Middlesex and twice in Essex, and it will be interesting to note if new colonies are formed in any of these counties. On the continent of Europe the insect is by no means confined to marsh land, as in this country, and there seems no reason why it should be so restricted in its localities with us.

The abundance of *Polyommatus phlaeas* has been very noticeable this summer. In some places it has been in profusion. I came upon it in early August in Sussex, but not in such great numbers as met with in such favoured localities as Deal, and other places along the South Coast. Those that I saw were generally more suffused than usual, which seemed to be a characteristic feature of the season.

Taking the summer throughout it can hardly be called a really productive year for the Lepidopterist, as a very hot summer seems fatal to the larvæ of many species. I have heard of more than one instance of the larvæ of *Abraxas grossulariata* dying off entirely, when sleeved out. Larva beating in Sussex during August proved very unproductive, but probably the want of success may have been owing more from the fatigue of working in a temperature of nearly 90° than from the real absence of larvæ. Still I am inclined to think there was an unusual scarceness. Quite late in the season, during early October, I tried again in the New Forest, but with only very moderate results, the larvæ of *Demas coryli* being perhaps the most abundant. Sugaring in Cornwall during July was absolutely useless. I only tried one evening, when not a single visitor came to the bait; after that I was satisfied to hear the result from others, which was always of the same want of success. It was not because there were no insects about, as I netted *Agrotis lunigera*, and several other species of *Noctuae*, and I also saw quite a number of *Noctua plecta* assembling round a freshly emerged female, which allowed themselves to be taken with the greatest ease. Apparently the reason for sugar losing its attractiveness was owing to the amount of honeydew on the foliage. I noticed the oak leaves everywhere were sticky with honeydew, but otherwise the foliage of that part of Cornwall was most luxuriant and free from anything approaching dirt, so very unlike what I am accustomed to see in the woods for some miles round London. This prevalence of smoke deposit opens up considerable scope for discussion, and to my mind has a distinct bearing on an article in the "*Entomologist*" by Professor R. Meldola entitled "What has become of our British *Satyridæ*." Professor Meldola is by no means dogmatic in his conclusions as to why the *Satyridæ* have not only disappeared from what may be termed the London district, but have also become scarcer in other quarters than those supposed to be affected by urbanisation. There is a hypothesis put forward, as a possible reason for the apparently reduced numbers of our *Satyridæ*, and that is the operation of the "Wild Birds' Preservation Act," in preserving birds that feed on insect larvæ. But I think those of us who have collected for half a century or so, must be of opinion that the decrease, not only in the *Satyridæ*, but of many other species, had set in a long time before the "Wild Birds Preservation Act" had come into operation, and that while some of our wild birds were on the point of extermination our insect fauna was showing very marked decreases. Therefore, the

operation of the act could at most have only slightly accelerated the general decline which had already set in, and even this in point of fact is highly problematical. As to the main fact put forward by Professor Meldola that the *Satyridæ* have decreased, I think all old collectors must fully agree. I perfectly well remember when *aegeria* could be taken at Loughton pretty freely, some 40 years ago, and I have not met with a specimen in that district for at least 35 years, but I am not saying that none have occurred since then. Unfortunately, I have not visited my early collecting grounds for some years past, which were to a great extent in the neighbourhood of Ipswich, but I am convinced that, with the exception of *Limenitis sibylla*, many of the butterflies are much scarcer than they were when I first visited these woods about the year 1865. From that date until 1885 I was a fairly frequent visitor to these parts. Since then I paid one visit in July, 1891, and lastly, in July, 1894. Up to that date there was a most marked decrease in *Argynnis adippe*, *paphia*, *selene*, *Thecla quercus*, and *Apatura iris*, which latter had apparently gone, whereas in 1868 it was abundant; and *Limenitis sibylla* was the only insect which appeared to be more than holding its own. These same woods during the sixties used to produce both *Catocala promissa* and *sponsa*, but I have not heard of either having been taken for many years.

When we refer to somewhat old entomological literature we observe this gradual decadence in the abundance of our butterflies visibly noted. A few instances will suffice. Edward Newman records *Leucophasia sinapis* from Darent, and Birch-wood, Kent, saying they were formerly very abundant. Edward Doubleday records *Melitæa athalia* from Colchester, and W. H. Harwood adds now confined to one wood. J. C. Dale gives a locality for *Lycaena arion* in Hampshire, as formerly taken on the hills near Winchester. Then we have the records of *Lycaena acis*, most of them denoting a great falling off from about the year 1835. T. Parry says in 1835, 1836 and 1837 he could take *acis* in plenty, but has not seen it since. J. C. Dale says, in 1841, formerly in plenty at Glanvilles Wootton, in Dorsetshire, but none have been taken since. Thus we trace the general decrease from that time until the present day, and in my opinion it may be dated from the time of the introduction of Railways into England, and the general use of steam both in our harbours and rivers, as well as on our iron roads. This, together with the immense increase in the consumption of coal for manufacturing purposes, to say nothing of the vast increase of inhabited houses, all pouring forth their quota of smoke must cause far-reaching contamination of our atmosphere. It is pretty clear that with a few exceptions butterflies cannot stand the proximity of towns, and at the present time the remote parts of Cornwall produce a larger number of species than can be found in more populated parts. The difference in the atmosphere around Ipswich at the present day, and at the time when I was a boy, is most marked. Fifty years ago it was comparatively a small country town with very few factories of any kind that produced smoke, and the air was always clear and bright. Now as you approach the town by rail, there is quite a visible thickness in the atmosphere, which spreads far and wide owing to the vastly increased consumption of coal, and to my mind this impurity of the



air is responsible for the decrease, not only in the *Satyridæ*, but of many other genera. These remarks can be applied with still greater force to many of our Northern and Western districts.

This year two additions have come under my notice of the ever-increasing number of Lepidoptera that have developed a melanic tendency. One is that of *Dasychira pudibunda*, which is recorded in the "*Entomologist*" by Major Robertson, and is described as black, and the other is that of *Acidalia virgularia*, which was exhibited by Mr. Heath at one of our meetings. Both these, I believe, are new developments. The explanation of the increase in melanism in many of our Lepidoptera is still held in abeyance by those who are making a special study of the subject, but I think the average entomologist is beginning to see that there is more than one influence at work in the production of melanic specimens. There are those species from the far north of our islands which practically speaking have always been melanic; this may well be attributed to a general hardening of the insect, through stress of weather, as in most cases the insects so affected are not only darker than those reared in a more congenial climate, but are also frequently of a smaller size, such as *Noctua glareosa*, the dark ones here are distinctly smaller. Then the dark form of *Triphaena comes* does not run as large as southerners. *Emmelesia albulata* var. *thules* is another example. Although I should not like to say this reduction in size is absolutely invariable, yet it is sufficiently pronounced to have some bearing on the subject. Then we have other species that have great adaptability to environment, the most noticeable being *Gnophos obscurata*, which can assume almost any hue to suit its surroundings. But the great majority of melanic species are of modern production, and it seems reasonable to assume that the same contaminated atmosphere which is reducing the number of our *Satyridæ* and others, is responsible for the increase of melanism by some action which possibly in time will be satisfactorily explained.

Before concluding, I should like to thank the officers of the Society for their services during the past year. As will be seen, we have had to make important alterations owing to the retirement of some of the officers. I am glad to say that we have been able to secure our late Secretary Mr. Bell's services in another capacity. As already said, our Society has suffered many losses during the last year or two, and in consequence of this we have had to contend with a period of some depression. Therefore it is to the young blood that we look for revival; this, I am happy to say, is in evidence, and I trust that before long the gaps will be filled.

Possibly it might have been better for the Society to have elected another President, but as it seems your desire that I should continue my services for another year, I can only bow to your decision, and we must all do our best to make the meetings as interesting as possible. This can largely be attained by an ample supply of exhibits, which, whether common or otherwise, frequently produce points of interest of an unexpected character.

I will conclude by expressing my warm appreciation of your confidence in once more electing me as your President, and my sincere wish for the prosperity of our Society.

## REPORTS OF FIELD MEETINGS.

MAY 27th, 1911, to Clandon. Leader, V. E. SHAW. Notwithstanding a fine day, the party only consisted of five members and one visitor. About 30 different species were taken, including *Numeria pulreraria*, *Zonosoma porata*, *Emmelesia affinitata*. For an afternoon trip it was pleasing to come across no less than eleven different species of butterflies, viz.: *Euchloe cardamines*, *Pieris brassicae*, *napi*, *rapae*, *Thecla rabi*, *Argynnis euphrosyne*, *Lycaena argiolus*, *icarus*, *Nemeobius lucina*, *Nisoniades tages*, and *Coenonympha pamphilus*. The leader having found a few ova of *N. lucina* on the underside of cowslip and primrose leaves, the party spent about an hour searching for ova, and on counting up whilst waiting for tea at the Silent Pool the number was found to exceed 350, and as some more were found on the return journey, the final number exceeded 400. *Hepialus vellela* at Clandon seems an unusual occurrence, but a specimen was taken at dusk.—V. E. S.

JUNE 17th, 1911, to Effingham. Leader, V. E. SHAW. But five members and two visitors put in an appearance for this outing, which was a most disappointing number, the day being beautifully fine, and the district to be explored most interesting from a lepidopterist's view. It is much to be regretted that our members do not support our few field meetings with more spirit—the excuse put forward in 1910 as to bad weather fails this year.

On arrival at Effingham the party took the road to Witley Ponds, passing through the pine woods some fine *Ellopija fasciaria* (*prosapiaria*), *Macaria liturata*, *Thera variata*, and *Melanthia ocellata* were taken, working through the woods to the heath, a good many *Anarta myrtilli* were walked up, and soon the party were all after this elusive insect, but only a dozen were captured, together with a few *Aspilates strigillaria* and *Acidalia remutaria*. Tea being fixed for six p.m. did not allow of a long stay on the collecting ground, which members were most reluctant to leave.—V. E. S.

JULY 8th, 1911, to Chalfont Road. Leader, H. R. Leach. Eight members joined the last field meeting of the year, but do not appear to have added any new species to the list for this favourite locality, and the member who remained to "sugar" was only rewarded by the appearance of a few common Noctuae.—ED.

## PAPERS READ BEFORE THE SOCIETY.

### NOTES ON THE COSMIIDÆ.

(Read March 7th, 1911, by P. H. TAUTZ, F.E.S.)

In preparing these few notes on the Cosmiidæ, I very quickly came to the conclusion that, as I am only able to treat the group from a collector's and not from a Scientist's point of view, it would be as well to make them as short as possible. I have not for instance attempted any descriptions or discussions of any of the various stages, as I should be quite unable to tell you anything about them that you do not already know, neither have I attempted to make any extracts from books. In this way the evening may be devoted rather to a general discussion and exhibition of the group amongst the members. Generally speaking I look to this evening as one in which I shall be able to teach nothing, but one in which I hope to learn a lot. Having made this frank confession, I will make a start on my few collecting notes, relative to this group of moths, that, in the flattering words of one of our members, "I am going to do my best to mutilate this evening." (This gentleman seems quite full of misgivings as to the result of my to-night's intentions, for he has advised me to hang a notice round my neck asking you "not to shoot as I am doing my best.") The group is of course quite a small one and not difficult to master as a collector, and as you will see by the cabinet drawer that I have brought with me to-night in illustration, I am fairly well represented in all of them; this is principally accounted for by the fact that they are all to be found commonly enough at Pinner, where for six years I have taken three of them freely both at sugar and at light, and the other one more sparingly.

The members of this group, so far as my knowledge of them goes, do not seem to be at all given to melanism, except possibly *C. trapezina* and even then in very rare instances. There is one amongst my extreme forms that is the nearest approach that I possess, or in fact that I have seen, with the exception of one which was exhibited by one of our members, Mr. B. S. Williams, some six weeks back, *viz.*, *v. nigra* (Tutt), taken at Finchley, July, 1910.

I will now deal with them one by one and relate what little I know of them, and leave it to others more able than myself to expound any problematical features that the group may possess.

*C. trapezina*.—From about June 25th, and throughout July, and the first half of August I have taken this insect commonly at sugar, though it has also flown to light pretty freely. In the Pinner district during May and the first half of June the larvæ are nearly every year excessively abundant, and I am of opinion that their cannibalistic tendencies do good rather than harm, by reducing the overwhelming numbers of the larvæ of *C. brumata*, to which they seem to devote the greater part of their attention; this opinion is not exactly original, as I have heard it expressed by most entomologists of my acquaintance. If they ever

do any leaf eating, and I am not prepared to swear to this from my own observation, they do not seem to mind what the leaves are, for I think I have beaten them from every form of tree. In my cabinet drawer will be found two series of this insect, the one on the left is composed of specimens taken at Pinner, or the surrounding district, and they show a considerable amount of variation. I have placed on the right of my cabinet drawer six specimens representing the extreme forms so far as I am acquainted with them; reading from top to bottom of these I should term them:—

No. 1. Unicolorous form in which even the dark spot so constant in the reniform is almost non-existent.

No. 2. Brown banded and brown fringed form.

No. 3. Grey form.

No. 4. Red form.

No. 5. Suffused brown form with melanic tendency.

No. 6. Olivaceous form.

The greyish form seems fairly plentiful, but the red form, of which I have only two, seems to be much less common.

The other series is entirely from the edge of the sea, at Studland Bay, Dorset, and the specimens seem to be more constant in colour and generally of slightly larger build. All this latter series was taken at sugar between August 1st, and August 20th. I do not know of any particularly interesting facts connected with this insect, other than those already mentioned.

Like most collectors, I have recollections of disasters brought about by its larval depredations when introduced into cages with other and more valuable larvæ; I recollect in my first collecting days, when I had the co-operation of my brother, that we suffered quite a lot of losses, until we got to know all about its gentle and affectionate habits towards its fellow creatures, when we completely isolated them in a cage, which we labelled the "Thieves' Kitchen." I fear, however, that this isolation business frequently involved many innocents which in our ignorance we thought looked suspicious.

*C. affinis*.—This insect is extremely abundant in Pinner, and the larvæ are to be beaten in quantities, from the elms all round my house, and in the surrounding fields; I have never beaten it from any other food plant, but have reared a large number of them from larvæ beaten in this manner and the series I am showing to-night is a bred one; I have a great many others, which should any member be short of the species I should be very pleased to hand over. I have never found the least difficulty in rearing them, and have noticed how extremely rare it is to see a crippled specimen.

On a propitious night it will come very freely to sugar, when I am out for its more distinguished congener, *C. pyralina*. With me there is a curious fact in connection with *C. affinis*, in that only on one occasion in five years has it come to light in my house, whereas its aforesaid relative, *C. pyralina*, turns up so freely that I have taken as many as 25 in a night. I have also worked with a lamp and sheet, but have never taken it in this way. The series in my cabinet will be sufficient to demonstrate the amount of variation that it is subject to in my district, and I shall be delighted to avail myself to-night of the

opportunity of seeing whether other forms turn up elsewhere. I have of course taken *C. affinis* in other districts, but not in any quantities, and I have not noticed any variety that calls for comment, except that at Studland Bay during the first half of August, they appear to be, as in the case of *C. trapezina*, slightly larger.

*C. diffinis*.—This member of the group although not being a rarity at Pinner is decidedly less plentiful than *C. affinis* both in larval and imaginal stage, and as it appears right at the end of July, and as I invariably leave for the sea at this time, I do not get much opportunity to work it. I have taken a few larvæ from the elms, and I have also had a few specimens at light, but as my cabinet will show I am not possessed of a full series of it. I notice that ash and oak are given by Wilson as food plants, but I have never succeeded in finding it on either.\*

*C. pyralina*.—This last and most sought after member of the group, I have, ever since I have been at Pinner, taken freely at light, and have found it in this manner most easy of capture, as it arrives without any preliminary and vexatious dodging about, and makes up its mind the moment of its arrival where it wants to go, goes there and settles down as comfortably as a cat before the fire, and apparently goes fast asleep; the only thing that disturbs it is when some other clumsier insect bumps into it in its excitement. When I first went to Pinner, in 1905, I was so much a beginner that I did not know what I was taking and I remember that, coming to the conclusion that it must be the commonest of the group, I set aside quite a number of them to bring up on exchange night, when I received the necessary information as to their true identity, and incidentally did not take any back with me. The earliest date I can find in my diaries for its appearance is July 8th, and there from it continues throughout the month, being most abundant about the 15th to 20th. One interesting point that I may here mention, is that I have never captured a female at light, and in fact, I never took one at all until July, 1910, when I discovered the proper spot to sugar for them, and got some number. I have never beaten a single larva of it to my knowledge from the elms, and I therefore conclude that it does not feed there, but on the fruit trees in the orchards in my immediate vicinity, which out of respect to my neighbours I cannot very well beat. This opinion is endorsed by Owen S. Wilson, who gives pear and plum as the food plants, and by Stainton, though Kirby says it lives between united leaves of elm, but is also found on fruit trees. The question was raised on January 17th, as to whether anyone had succeeded in inducing a female to lay her eggs, and Mr. Newman appeared to be the only member present who had achieved this, though very sparingly; personally I have not, though last year I managed to totally ruin ten beautiful female specimens, taken at sugar, in the attempt. After death I dissected the specimens and found them full of eggs, and as they were taken in a wild state I presume that fertilisation had taken place. I therefore conclude that they require some special circumstance or condition to induce them to

\* Since writing these notes last August, in fact as I remained in Pinner, I was able to do some sugaring in the orchard around me, and I took a long and perfect series of this member of the group.

deposit their ova. I put them free to fly in a good size cage with leaves and bark and twigs of elm and pear and plum, and carefully fed them, but all to no avail; I propose to make the attempt again this year, and should be grateful for any hints on the subject. My cabinet series will show the forms I secure at Pinner, and as I have never taken it elsewhere, or even seen specimens exhibited in juxtaposition to my own, this evening will be valuable I hope in presenting to us the opportunity of so doing. Generally speaking they appear to be of the dark violet-brown form, but some seem to exhibit a tendency to paler colouring, and I have set aside two in the right hand corner of my drawer to demonstrate the extreme forms that I take.

It appears to be very firmly established in that part of Pinner, immediately surrounding my house, and personally I have never taken it elsewhere. I cannot, however, find any mention of Middlesex in any book as being one of its counties.

This, gentlemen, must conclude my remarks anent this very interesting group, and I deeply regret my weakness in handling it, but I trust that it may at least serve the purpose of opening up an interesting discussion, for which this evening is more really set aside.

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## SOME NOTES ON BREEDING AND COLLECTING DURING THE RECORD SEASON OF 1911.

(Read November 7th, 1911, by L. W. NEWMAN, F.E.S.)

During January and February I devoted a considerable time to collecting larvæ of the *Sesiidae*. I found *S. andreniformis* fairly common, but as I had in the past worked it pretty hard I only spent three days, or rather parts of three days, in working for them; the result was not as good as previous years and I therefore left them alone in case I should make them scarcer.

*S. culiciformis* were in thousands in every wood I visited that had been cut the previous winter. I found a considerable number up the young twigs and this is by far the best way to collect them; the tits had been before me, however, and had ripped open the twigs and extracted the juicy morsel from a great many; the stumps were full of holes where the tits had been at them, but by hard work it was easy to collect a great number.

A few hints to those who wish to breed this species may be acceptable. In digging out the larvæ from the stumps many come out of their cocoons. Get a good sized tin, half fill it with sand and fill up with chips of birch, place the larvæ in this and keep moist, stand the tin in a hothouse, and in ten days all will have pupated; the wood should then be removed from tin and laid on damp sand and the imagines will emerge in about a week; I found if left in the tin some could not emerge as they had spun their cocoons on side of the tin and in many instances the pupa head was against the side of the tin. Those in the twigs should be stuck into damp sand, and those which you can get out of stump on a piece of the wood with cocoon intact

laid on damp sand. I know of no easier insect to force, they respond almost at once, and I bred out hundreds in January and February. *S. andreniformis* will force also, but the change to pupa and imago is much slower; if collected in November they will emerge in January as a rule if kept very warm. I forgot to mention I bred seven or eight *culiciformis* with yellow band.

After I had got tired of working *culiciformis* I had a go at *S. bembeciformis*: this I found common in a large bed of *Salix caprea*, it was not as easy work getting these as *andreniformis*, as some of the stems were large and required a good bit of sawing off. One also had to look out not to take the Musk beetle by mistake, as they feed in a very similar way to *S. bembeciformis*. I secured a considerable number in the winter, and it was just as well, as in the spring they were attacked by some bird, and I fear almost cleared out. I never saw such havoc as the birds made, and it is a marvel to me what bird can have done it; the bill must have been very strong, as large stems thicker than ones wrist were torn open just where the larva had spun its cocoon. I exhibited some of the sticks here, and you will no doubt remember them. This insect can be forced also but responds slowly; I did not breed any before March.

I visited Joyden's Wood in February, where *H. leucophaaria* is very common, but only found two or three; several visits produced very few, and I think it was scarce here. In March and April I spent a few days in larvæ searching—in all my favourite spots I found *A. caja*, *villica*, *potatoria*, *L. quercifolia*, *B. quercus* almost *non est* where as a rule they are in hundreds. At last I found a bank where *A. caja* swarmed; I got over 500 in two afternoons, but in no other spot could I find any to speak of—of *A. villica* I did not find half a dozen.

*T. fimbria* in the woods were about as common as usual, and in the other common species I saw no decrease. My collecting now came almost to a stop until August, except for a flying visit for *Pachetra leucophaea* and *Agrotis cinerea* on the night of May 27th. My assistant, two friends and self started off about 8 p.m. loaded with sheets, poles, lamps, etc., and a good supply of food and drink, and we were very glad to get rid of our burden after a twelve miles cycle ride; we rigged up the sheet and amused ourselves collecting *Hipparchia semele* larvæ, and searching for ♀ *A. cinerea* until the sport commenced, which was about 11.45 p.m. By midnight we had quite an admiring crowd, which had been attracted by our lamps from a village a few miles off; five yokels in all came to the light, and seemed very much interested. *P. leucophaea* was scarce, and we only bagged four, which were in the very pink of condition. *A. cinerea* was nothing like as thick as last year, but as nearly all bagged were perfect I think we were a few days early for the crowd; by 3 a.m. we started for home as it was getting light. I could not spare time to pay a second visit.

My next jaunt was a couple of afternoons in June for the larvæ of *Thecla rubi* and *L. argiolus*, which I found in swarms feeding on the berries of dogwood; both larvæ fed side by side, and *L. argiolus* was well attended by ants. I never saw such quantities of these larvæ; I collected over one thousand in the two half days, and I think, without exaggeration, had I cared to work thoroughly for a week, I could have

taken 10,000, also *Eupithecia coronata* larvæ. I quite expected a huge percentage to produce ichneumons, and also a large percentage to appear as imagines in July, but, strange to say, *one* only was stung; only about 20 per cent. emerged in July and the rest are laying over the winter as pupæ.

My next and last half-day's collecting until August was in early July, when I went for *L. aegon*, etc.; I found *aegon* more scarce than I have ever known it, and only took a dozen ♂s in consequence. *Hesperia linea* was common, also *Hipparchia hyperanthus*, but *Epinephele janira* seemed very scarce.

On August 15th I went to Folkestone, as I expected *L. adonis* would be out very early, and I found ♂s in the pink of condition, and ♀s just starting. I bagged a few nice vars., also a few *C. hyale* in a lucerne field. I had to return on the 18th, and my man went down from that day until 21st; he had rather wet and dull days, but secured a few *C. hyale* and a couple of *Vanessa cardui*, also two or three *V. atalanta* and some nice *L. adonis*.

Mr. Bright very much wanted to have a good turn at *adonis* with me, so on Saturday morning (26th) we met at Cannon Street Station; having arrived at Folkestone, and fixed up our rooms, we started off for the hills with lamps and worked for *adonis* vars., getting a few. Sunday proved very dull, so after lunch we took train to Dover and called on Mr. S. Webb, who kindly showed us his wonderful collection (or, rather, part of it); we found him not in the best of health. After a refreshing tea we went back to Folkestone, and in the evening took a turn with the lamps for more *adonis* vars., but came to the conclusion it was slow work compared with daytime, and decided not to go again after dark. On the Monday our serious work commenced, and we did work; we spent eleven to twelve hours a day for a solid week on the hills examining *adonis* for vars., and our labour was fully rewarded, for we got some grand forms, the best of all falling to Mr. Bright; it was a ♂ in splendid condition, striated to the very extreme, in fact it looked as if you had been at work on it with a J pen. I never saw *adonis* in such profusion. We worked in the following manner:—We had three killing bottles each, one of which was used as a stock pot for vars. and extra fine ones; we netted a few and placed in one bottle, then a few more in the next, and then sat down and examined them as soon as stupefied and marked all rejected specimens by taking the tips off the wings and throwing them out; nearly every one came to life in a short time, and we did not then net the same fly over and over again; by the end of the week there were thousands flying about with our "trade mark." About 6 p.m. they settled down for the night, it was then not necessary to bottle them, but we still continued to mark all rejected specimens.

We kept count for a time of the number examined, and I may safely say, without any exaggeration, that I have examined over 8,000 this year.

By September 1st *L. icarus*, third brood, were getting common. Of *V. cardui* I took a few on September 2nd, and got them to lay. I was very struck with the total absence of blue shot ♀s of *adonis* this year. I never saw one with any trace of blue out of the thousands



examined. Last year a large percentage were blue. Purdy told me the spring ♀s were very blue.

*Phlaeas*, third brood, were very early, and well out August 15th to 20th, and continued emerging well on to September. I put in a good many days at them and secured some nice vars.: four with absence of bands, two nice underside vars., and many minor ones; blue spotted specimens were fairly common, also dark ones.

I captured a fine *C. edusa* on September 16th, a ♂, the only one I have seen this year. *Hadena pisi* came to sugar in fine condition on September 15th. This looks like a second brood.

On September 16th, while collecting larvæ of *V. atalanta* which were found in all sizes, some very small, I found several large third brood larvæ of *V. urticae*, these were all small; I reared all, but no vars. emerged. I found the second brood of *urticae* very scarce in the neighbourhood of Bexley, in fact, only one small brood, though I turned out several hundred imagines earlier in the year.

At the end of September I spent my first real week's holiday for over 14 years and a most enjoyable time I had at Bournemouth, as the guest of Mr. Bright, who very kindly devoted nearly every day to taking me about to places of interest, including Swanage, Studland Bay, and the New Forest. I had never been to the latter district before and we had a most enjoyable cycle ride from Bournemouth *via*. Ringwood, Lyndhurst and Brockenhurst; strange to say we met Mr. Morris, who told us there were no Autumn larvæ this year. The following day Mr. Bright was engaged, so though I had made up my mind to be "off" collecting I could not resist taking a "Bignall" and some boxes and finding my way to Brockenhurst, I had no idea where to work and great fears of getting lost, however, I struck off into the Forest and spent the day whacking, and I think there were some larvæ; anyhow I bagged over 500, among them *Demas coryli*, *Dicranura furcula*, *Selenia lunaria*, *Boarmia consortaria*, *Eurymene dolobraria*, *Dasychira pudibunda*, *Hylophila prasinana*, *bicolorana*, *Bupalus piniaria*, *Amphidasys betularia*, *B. roboraria*, *Zonosoma porata*, *punctaria*, and many others. I did not get lost as I struck the railway and by following it got back to Brockenhurst just before dark. My first experience of the New Forest as a collecting ground was decidedly favourable.

I have had more than enough of breeding this year with the thermometer reading 96° in the shade day after day. It is no joke when in a glasshouse and with larvæ to keep from being baked alive. One instance this year of larvæ being baked alive is with *A. grossulariata*, which, though sleeved out in the garden on growing trees, were nearly all killed in August.

In breeding on the huge scale which I do, one expects some surprises, and the greatest of this year is the race of melanic *E. angularia* (*quercinaria*), the parents of which were quite typical. Last year I bred out several hundreds of the London strain and paired some half dozen, all normal specimens; the larvæ were sleeved on oak in the spring and fed up rapidly owing no doubt to the heat, and produced rather under-sized pupæ; from these I bred 40 melanic specimens. The heat was so intense when they were emerging that they would not keep still in the day. Many were rubbed with flying in the day. I spoilt four

pairs for breeding, but nearly all the ova are infertile, though copulation took place.

*R. phlaeas* produced the record for normally-fed larvæ, the period from the hatching of the first ovum to the time of pupation being 21 days; this was during July. The species has been abnormally common in the district this year, far more so than I have ever noticed it before. Second and third broods and partial broods have of course been common; among them I have noted the following:—*M. brassicae*, very common; *R. phlaeas*, a partial fourth brood reared by a friend of mine, larvæ pupated September 17th; *S. populi*, a small percentage at end of July and early August, no more for nearly a month, then more mid-September; two *C. elpenor*, end August; *S. menthastris*, twenty or more August; *S. lubricipeda*, six end of August; *Z. orbicularia*, 80 per cent. of pupæ emerged in August, producing third brood; *P. machaon*, small percentage emerged in August.

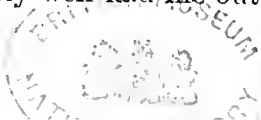
*A. caja* larvæ were collected wild in September in the last skin, but all produced ichneumons.

I obtained ova from *V. cardui* in early September, and as soon as I found they were fertile I started my little hot-house going and kept it up to between 70 and 80 degrees, and by this means and feeding on nettle I reared over 400 grand sized specimens in mid-October; the larvæ in this heat grew very rapidly. No good vars. were bred although several have the largest white spot all clouded over with black like the specimens shown to-night. I obtained a few *Sphinx convulculi* ova, these hatched in seven days and the larvæ fed up in 26 days in the hot-house; they were of great size when full fed; being over 4½" long, all of the dark brown form with white markings. I let each pupate in a separate flower pot; they went well down in the earth, and I kept damp moss on the top and stood the pots in cages right over the hot-water pipes, but there was no sign of their emerging up to October 25th. On that day I turned out one pot and found the pupa at the bottom in an earthen cocoon; it was very lively, but shows no sign of emerging this year. To-day none are out so I expect they intend to lay over the winter as pupæ.

One thing has struck me forcibly this year in breeding and that is the absence of disease among larvæ, when crowded. As a rule when I try to rear several thousand large larvæ such as *C. elpenor*, *S. carpini*, *S. ocellatus*, etc., even though I split them up into as many sleeves or cages as possible, they nearly always get that awful dysentery; this year nothing seemed to kill them. *C. elpenor* were crowded fearfully, I had over 3,000 in one large cage, and the only way to kill them was to tread on them; when the pupæ were dug up we had 3,640 fine pupæ. *Carpini* and *ocellatus* were also very thick; *carpini* suffered a very little, some 100 dying off, but the disease did not spread as is usually the case, and some fine pupæ resulted in sleeves where diseased larvæ died. *Nemcophila plantaginis* have not produced a second brood with me, though the first lot were early.

I think I have now taken up quite enough of your time, and I fear my notes have not been as interesting as they might be.

I shall long remember the wonderful summer of 1911, and I sincerely hope we may not have another quite so hot for a time, as the work pretty well laid me out in July and August.



PRESENTED

29 OCT. 1912



# City of London Entomological & Natural History Society.

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**T**HIS SOCIETY has for its object the diffusion of the science of Natural History, by means of papers, discussions, exhibitions, and the formation of collections for reference. Since its commencement in 1858, a valuable and useful Library has been formed, which comprises, amongst other works, sets of the "Zoologist" (1843—1897), "Entomologist" (Vols. 1—45), "Entomologist's Monthly Magazine" (Vols. 1—47), and the "Entomologist's Record and Journal of Variation" (Vols. 1—23). There is also a collection of British Lepidoptera, and collections of other orders are now in course of formation.

The meetings take place on the first and third Tuesdays in each month, EXCEPT JULY AND AUGUST, from 7.30 to 9.30 p.m., at the London Institution, Finsbury Circus, E.C., which is easily accessible from all parts. Exhibits are made at every meeting, and papers read on various Natural History Subjects, a special feature being the systematic discussion and exhibition of interesting groups of insects, etc.

The Entrance Fee is Two Shillings and Sixpence, and the Annual Subscription Seven Shillings and Sixpence, payable in advance, being fixed at as moderate a sum as is possible, consistent with the proper maintenance of the Society and its work, in order that all may avail themselves of the benefit offered. The Society therefore looks with confidence for the support of all who are interested in the study of Natural History.

The year commences on the first Tuesday in December, but intending members may join at any time, the ballot being taken at the next ordinary meeting after that on which they are proposed.

Further information may be obtained from the corresponding Secretary.

