



PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB.

EDITED BY B. PICKMAN MANN.

Vol. I.]

Cambridge, Mass., May, 1874.

[No. 1.

Introductory.

THE CAMBRIDGE ENTOMOLOGICAL CLUB was formed January 9, 1874, by the following persons, who met at Dr. Hagen's house, No. 7 Putnam Street, Cambridge, Massachusetts, namely: Messrs. E. P. Austin, Edward Burgess, G. R. Crotch, of Cambridge, England, George Dimmock, J. H. Emerton, Dr. H. A. Hagen, Messrs. Samuel Henshaw, B. P. Mann, H. K. Morrison, J. C. Munro, of Lexington, Dr. A. S. Packard, of Salem, Messrs. Eugene Schwarz, and S. H. Scudder. It has since added to its number Messrs. J. A. Allen, Walter Faxon, A. W. Gould, Prof. C. E. Hamlin, Messrs. Holmes Hinkley, H. G. Hubbard, Baron C. R. Osten Sacken, Messrs. F. G. Sanborn, G. D. Smith, P. S. Sprague, Roland Thaxter, of Newtonville, and C. P. Whitney, of Milford, N. H.

At the fourth monthly meeting, held April 10, 1874, the Club decided to undertake the publication of a monthly organ, to be called PSYCHE. This organ will contain such parts of the proceedings of the Club as seem to be of general interest, biological contributions upon Arthropoda from any competent person, lists of captures, with time and locality, miscellaneous entomological information, and especially a BIBLIOGRAPHICAL RECORD, in which last a list will be given of all writings upon Entomology published in North America, and of all foreign writings upon North American Entomology, from the beginning of the year 1874, with a brief note of the contents of each. For the greater perfection of this list, authors and societies are requested to forward their works to the editor at the earliest date possible.

Each number will contain at least four pages, and as soon as the returns are sufficient to make it possible, a greater number of pages will be given. The subscription price in

North America will be one dollar a year. Subscribers abroad can send their subscriptions in available postage stamps, to the amount of five shillings, six francs, or one and two-thirds thalers for each subscription. Subscriptions must in all cases be paid in advance to the editor.

Address: B. PICKMAN MANN,
 EDITOR OF PSYCHE,
 Cambridge, Massachusetts, U. S. A.

English Names for Butterflies.

THE natural objects which attract most attention among all classes are birds, butterflies, and flowers. In England, the native species of all these groups have received common English names; and no doubt many persons have thus acquired a good knowledge of Natural History who might have been repelled by scientific Greek or Latin compounds. In our own country all the common birds and flowers have also received such names, and it is my belief that the study of butterflies would be far more popular, if they also had common names. There would be an advantage, too, in this, for *Antiopa* would be the *Camberwell Beauty* all the same, however fiercely men wrangled over *Papilio vs. Vanessa* as its proper adjunct!

In PSYCHE, then, as its appropriate place, we print the following list of names proposed for New England butterflies, using as a basis on the scientific side, the names of my Revision. Account is taken of all names that have been proposed by Gosse and others, and they are retained unless special reasons prevent.

1. *Eneis semidea*.—The White Mountain butterfly.
 Harris called it the Mountain butterfly.
2. *Eneis Jutta*.—The arctic Satyr.
3. *Enodia Portlandia*.—The Pearly-eye.
 This is the name given by Gosse.
4. *Minois Alope*.—The blue-eyed Grayling.
 Gosse called it the Blue-eyed Ringlet, but it is rather a Grayling than a Ringlet in English parlance.
5. *Minois Nephele*.—The dull-eyed Grayling.
6. *Argus Eurydice*.—The eyed Brown.
 This is Gosse's name.

7. *Megisto Eurytus*.—The little wood Satyr.
Gosse named it the dusky Argus, but it is not an Argus.

8. *Megisto Phocion*.—The Georgian Satyr.

In allusion to the place from which it was first described, and whence only it was for a long while known. S. H. Scudder.

BIBLIOGRAPHICAL RECORD.

In this Record we shall indicate by an asterisk (*) that the correctness of the title which is given has been verified by our own examination.

In the beginning, at least, it will not be practicable to observe a chronological order, but the contents of one periodical after another will be brought up to date, and separate works will be noticed as they are met with.

B. Pickman Mann.

The Proceedings of the Boston Society of Natural History, vol. xvi, as far as p. 208, contain the following entomological matter:

Statement of work done on the Society's collections of insects, crustacea, &c., during the past year. p. 7, 8.

* 1. A. S. PACKARD, JR., M. D. Catalogue of the Phalænidae of California. No. 2. p. 13–40, with a photographic plate (i) of twenty-five figures.

Characterizes the fauna of California (including Oregon and Nevada); compares this with the fauna of Europe, north-eastern Asia, and north-eastern America; attempts to account for the relations of the fauna. Describes four new genera and twenty-six new species; also one new species from New York and one from Panama; enumerates thirty-four species.

* 2. A. S. PACKARD. Occurrence of Rare and New Myriapods in Massachusetts. p. 111.

Scolopendrella Americana Pack.; its bearing upon the relation of the Myriapods and Hexapods. *Polyxenus fasciculatus* Say.

* 3. S. H. SCUDDER. Verbal communications upon a portrait of John Abbot, a collection of orthopterological illustrations, and an English fossil insect of doubtful determination. p. 112. Upon a collection of Abbot's drawings, p. 117.

* 4. S. H. SCUDDER. Examination of some recent remarks by Mr. Meldola upon *Iphiclides Ajax* (*Papilio Ajax* Auct.) p. 117–119.

Correction of the conclusions arrived at by Mr. M. in the Ann. and Mag. Nat. Hist., xii, 301–307, regarding the applicability of the case of the different broods of *I. Ajax* to exemplify the amount of substance-waste undergone by insects in the pupal state.

* 5. S. H. SCUDDER. On the food-plant (sedges) and habits of *Eneis semidea*; on the habits of *Æ. Aello*. p. 119.

* 6. A. S. PACKARD. On the transformations of the common house fly, with notes on allied forms. p. 136–150, with a triple plate (iii) of embryological and transitional details.

Musca domestica, Calliphora vomitoria, Sarcophaga carnaria, Stomoxys calcitrans.

* 7. B. PICKMAN MANN. Description of a monstrous female imago of *Anisopteryx pometaria*, with remarks on the pupa. p. 163–165.

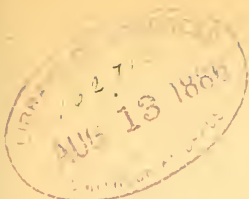
Female with aborted wings and pectinated antennæ; female pupæ have wing-cases, but no wings.

Interesting Capture.

ON April 19 I took at Hyde Park a hibernated specimen of *Nymphalis Milberti* Godt. This species, common as it is in the northern part of New England, is extremely rare near Boston, which seems to be very near its southern limit, although single specimens have been recorded as taken as far south as Long Island and Philadelphia. I know of but one specimen having been observed in Connecticut, but in Massachusetts, west of Boston, several have been taken at Springfield, Williamstown, and other localities. As we go north it becomes very abundant, and in New Hampshire, Canada, and northern New York, it is one of the commonest species. I have caught at Binghamton, N. Y., as many as twenty-five or thirty specimens in the course of an hour. *H. K. Morrison.*

HENTZ'S SPIDERS.—The papers on Araneidæ of the United States, published many years ago in the Boston Journal of Natural History and elsewhere, are to be collected and reprinted in a single volume by the Boston Society of Natural History, and edited by the Secretary, Mr. Edward Burgess. The work will be published in June, and will contain about one hundred pages and nineteen plates, including two new plates, mostly of structural details, by Emerton, and all the old ones, either from the original copperplates or heliotype reproductions. Mr. Emerton will also contribute notes upon the species.

B. Pickman Mann.



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Vol. I.]

Cambridge, Mass., June, 1874.

[No. 2.

Notes on the Habits of *Magdalinus armicollis* Say.

EARLY in April, 1873, the full-grown larvæ of *Magdalinus armicollis* Say, were found abundantly throughout Cambridge, Mass., under the bark of Elm. The burrows were about an inch and a half long, running generally with the grain, and in the cambium layer throughout their entire length. From the cell at the end an exit pierced the bark as far as the thin outer layer. The beetles usually attacked the upper branches, but several small elms were found with the bark of the trunk undermined nearly to the ground. Occasional specimens were found associated with *Superda tridentata* and *Synchroa punctata* in the thick bark of full-grown trunks.¹

By the middle of April the larvæ showed signs of transforming; by the end of the month most of them had completed the change into pupa, and the imagos appeared in about eighteen days. From May 1st to May 18th the following changes took place:

1. The eyes and mandibles turned black, and the extremities of the wing-pads became bluish.
2. The thorax became reddish-brown, and the snout very dark brown or red.
3. The pupa-skin was cast off, and the wings and elytra straightened out.
4. The wings were folded under the elytra, and began to darken, showing a rectangular spot through each elytron.
5. The thorax darkened on the sides in two oval patches, leaving a line between, which gradually faded out; the spots on the elytra spread uniformly over their surfaces, leaving only their tips, which with the head were the last to become black.

The jet-black imagos emerged in great numbers from May

18th to May 28th, and sparingly during the first half of June. Owing probably to continued dry weather many imagos were unable to leave the bark, and occasionally one of the last to emerge was found with permanently dull-red elytra and thorax, or more commonly among the small males, with black thorax and red elytra. The imago varies from 3 to 6.25 millim. in length. The first pairs coupled, or showed signs of coupling, May 20th. The genitals were not kept continuously in contact, but a light touch was given at very regular intervals of two seconds, during which the male tapped the sides of the female with the tibiæ of the fore pair of legs.

The principal parasite observed was a Chalcid, probably belonging to the genus *Storthygocerus* Ratz., 1.5 to 2.5 millim. in length, which preys upon the larva of *Magdalinus*, and completes its transformations in advance of the beetle. It pupates about the first of May, the imagos appear about the 13th of the month, and by the first of June another brood of larvæ appears preying upon the few pupæ of *Magdalinus* which have not yet transformed. Two other parasites upon the larva of *Magdalinus* appear to be ichneumonids, one of which transforms within the larva-skin of its host, and the other weaves a pupa-case of its own. The imagos of the last two parasites do not appear before July, and were not observed.

H. G. Hubbard.

1. Ratzburg (*Forst-Insecten*, I, 2te Aufl. p. 125. Taf. IV fig. 3.) describes the habits of *M. violaceus* Linn. living under the bark of Pine on small branches or young trees, and notes also *M. aterrimus* Fabr. as living in a similar manner upon *Ulmus campestris* of Europe. (l. c. p. 125.)

A very careful description, with figures, of *M. carbonarius* Fabr. living on *Pinus maritima*, is given by E. Perris (*Annales de la Soc. Ent. de France*, 1856, p. 253 et seq.)

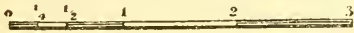
Say, (*M. armicollis* Say, *Journ. Acad. Nat. Sci. Philad.*, III, 1823, p. 312) has described only the red form, probably immature males. His *M. barbatus* (*Descr. of Curc. of N. Am.*, 1831, p. 6.) is probably the variation with red elytra and black thorax (all small immature males). It seems also that *M. pallidus* Say. (l. c. p. 7.) must be referred to this species.

ENTOMOLOGICAL EXCURSION TO MT. WASHINGTON.—Some of the members of the Club, with other entomologists, will spend several weeks this summer on Mt. Washington, in a camp one-fourth of a mile below the Half-Way House, and two hundred feet from the carriage road. They expect to leave Boston June 25. Other entomologists are invited to join the party.

B. Pickman Mann.

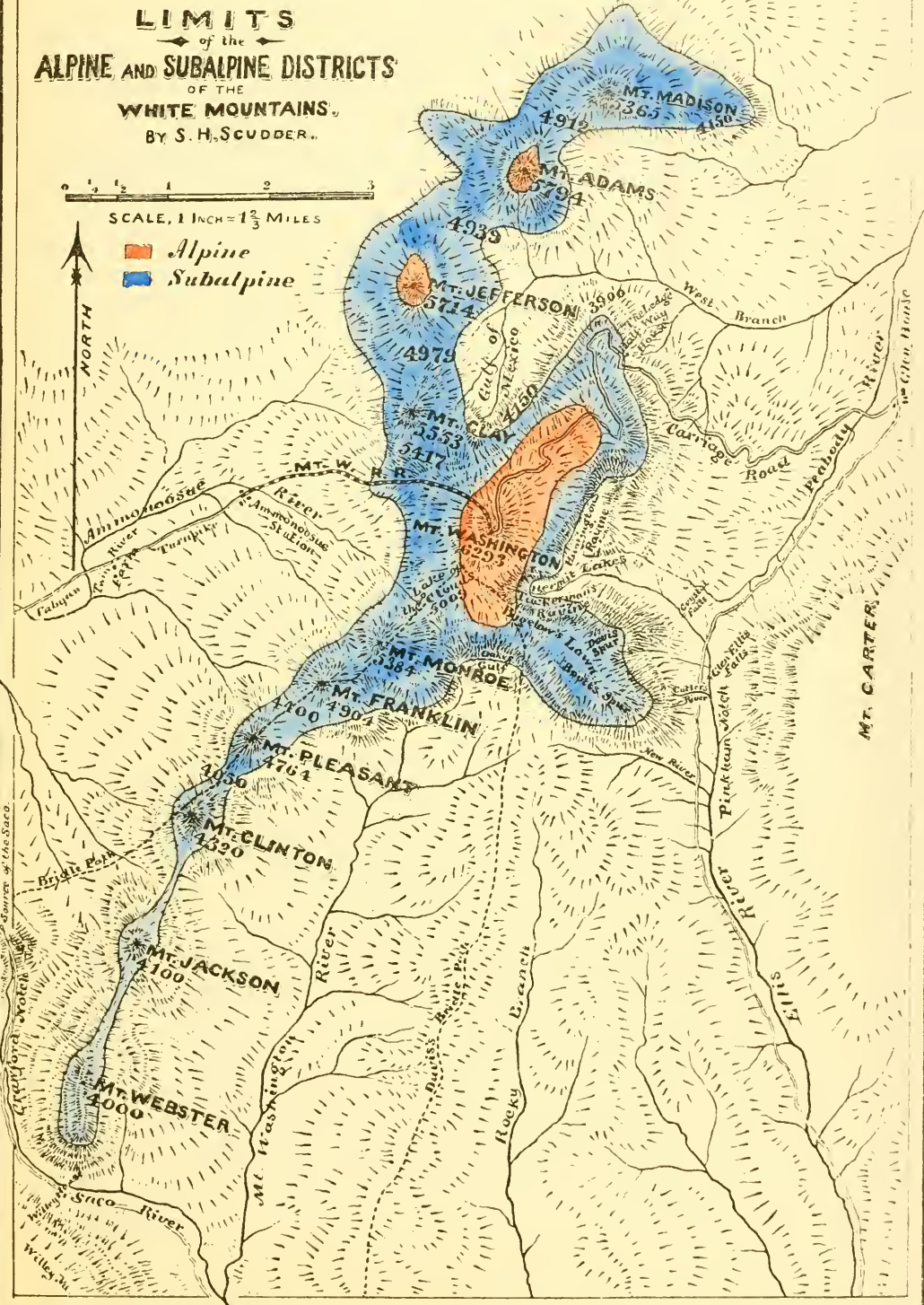
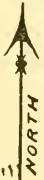
PLATE C.

LIMITS
of the
ALPINE AND SUBALPINE DISTRICTS
OF THE
WHITE MOUNTAINS.
BY S. H. SCUDDER.



SCALE, 1 INCH = 1 2/3 MILES

- Alpine
- Subalpine



Source of the Data

MT. CARTER

Collecting in the White Mountains.

Year after year, entomologists seek the summits of the White Mountains of New Hampshire in search of rare insects, and the number now known from that region is so great that catalogues have already become necessary. Very few persons, however, have attempted to separate collections obtained on the extreme heights from those obtained on the lower plateaus of the barren region, or at the heads of ravines; yet there are two well defined districts above the forest limits, and although most insects found above the trees are common to both regions, specimens of one should not be mingled with those of the other.

With a view of inducing those who visit the mountains this summer to help in the formation of distinctive alpine and subalpine lists, we offer (by the kind permission of Professor Charles H. Hitchcock of the New Hampshire Geological Survey) the accompanying map of the White Mountains, in which the alpine district is colored red and the subalpine blue. The subalpine district is the region of the dwarfed spruce, and includes the heads of the deepest ravines; the alpine is characterized by naked, broken masses of rock, excepting on the level spots, where sedges conceal them. *Eneis semidea* is confined to this highest district. Samuel H. Scudder.

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Authors and societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists. B. Pickman Mann.

(Continued from page 4.)

* 8. S. H. SCUDDER. A Hesperian, in which ocelli are present. p. 165-166.

Lerema Accius ♂ and *L. Pattenii* ♂ have a frontal ocellus; *L. Accius* ♀ has three frontal ocellar points; *L. Hianna* has no ocellus; compared with ocelli of *Heterocera*.

* 9. H. K. MORRISON. New North American Lepidoptera. p. 194-203.

Describes seven new species of Phalænidæ.

* 10. B. P. MANN. Explanation of the "Corrigenda" to a communication in these Proceedings, vol. xv, pp. 381-384, entitled: *Anisopteryx vernata* distinguished from *A. pometaria*. p. 204-[209.]

The names of the two species were reversed erroneously in accordance with current tradition; critical sketch of some articles on Canker worms, with notes from Harris's MSS.

Nos. 11 and 12 are from Littell's Living Age, vol. cxx (new series, vol. v):

* 11. *Chambers' Journal*. About Amber. p. 244-247.

Nature of amber; insects &c. contained in it.

* 12. *Hardwicke's Science Gossip*. A New Enemy. p. 639-640.

Potato-beetles in North America; migrations and habits of *Doryphora 10-punctata* [meaning *D. 10-lineata*].

* 13. A. E. VERRILL, in *American Journal of Science and Arts*, vol. cvii (ser. 3, vol. vii), p. 131.

Intertidal insects found on the coast of Maine.

* 14. TRUSTEES of Museum of Comparative Zoology, in *Annual Report for 1873*, p. 6.

Baron Osten-Sacken takes charge of diptera; deposits his collection.

* 15. DR. H. A. HAGEN. Report on the Articulates. *Annu. Rep. Mus. Comp. Zool. for 1873*, p. 16-19.

List of accessions and statement of work done during the year.

* 16. *The New England Farmer*, vol. liii (new ser., vol. xxix), contains the following, and Nos. 17, 18.

No. 1. Means against wood-lice; bots in horses, and remedies. No. 4. Remedies for worms in the kidney of hogs. No. 5. Precaution against canker worms; remedies for lice on cattle; destruction of onions by thrips. No. 6. Grasshoppers hatched by warm weather in January at Putney, Vt. No. 7. Disappearance of lice on calves in presence of sheep. No. 8. Means against the borer at the roots of trees; allegory of the origin of the name "Chrysalides." No. 9. Means against insects on house plants. No. 10. Calomel as a cure for lice on cattle or horses. No. 11. Means against apple tree borers; means against *Tineæ*; means against insects in general. No. 12. Peach tree borers, bee-hives. No. 13. "Vegetable wax"; means against tent-caterpillars, and resulting success.

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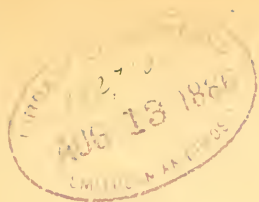
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Vol. I.]

Cambridge, Mass., July, 1874.

[No. 3.

Vernacular Names for Butterflies.

It may be that in England the native species of all classes of birds, butterflies, and flowers (and, I trust, of fishes likewise) have received common English names.

My experience is that in continental countries of Europe a great many species, such as come under most frequent observation of the public, have their common names and often three or four different names at a time, each according to provincialisms. A popular name of a fish is of acknowledged utility in a market, and could not be very well supplanted by a scientific one, yet without their scientific names being ascertained, there would be little comparison possible between markets West and East and those of Europe. The popular name under which a plant or butterfly is known cannot but have a charm even for a scientific searcher, and ought to be remembered by him and promulgated in print. But his task is to popularize science by utilizing such names, and by them to lead amateurs to awaken to the advantages of scientific nomenclature as one that is not provincial, nor exclusively English, but cosmological.

Amateurs cannot possibly take much interest until they begin to bring things into groups by their own observations of similarities, and later with scientific assistance into genera.

I want to have genuine popular names (be they ever so local, as "Camberwell Beauty" for a butterfly that ranges all over Europe and over America to California) distinguished from names that are created more or less arbitrarily, or by merely translating scientific double names into the vernacular. The adoption and promulgation of these latter ones seems to me of very doubtful policy, as they do not harmonize with the originally popular names and may create, in an amateur's

mind, a greater difficulty of grouping the specimens. A White Mountain butterfly (par excellence), a dull-eyed and a blue-eyed Grayling, an arctic Satyr, &c., &c., and Camberwell Beauty would lead soon to misunderstandings which could not be disentangled.

With reference to the latter, I ask, who here would willingly adopt such a name for the *Antiopa* of California?! Every person from Germany greets it here as "Trauermantel" (mourning cloak), and may ask, perhaps, how is it called in English? Could I answer? So with "Atalanta." The same as at home, our "Admiral?!" How shall I name for them our five *Papiliones*, whom they all know as "Swallow-tails?" Philenor I name for them the green Swallow-tail.

Finally, let us remember and always print the "popular" names, as a by-gift, but let us abstain from trying to create popular names, if it were even by translating the whole of Kirby's Catalogue into the vernacular.

To show that I myself am a lover of popular names, to which I always lend an attentive ear, I make free to add these following genuine ones, and to ask permission to report more from time to time, when memory serves me:

British Blondes, for the two *Cænonymphas*;

Buckeye, for *Junonia Cœnia*.

James Behrens.

English Names for Butterflies.

(Continued from page 3.)

9. *Danaus Plexippus*.—The Monarch.

D'Urban calls it the Storm Fritillary, but it is not a Fritillary. Gosse called it the Archippus, but this is not its proper name. It is one of the largest of our butterflies, and rules a vast domain.

10. *Basilarchia Disippe*.—The Viceroy.

This name is suggested from its mimicry of the preceding species.

11. *Basilarchia Astyanax*.—The red-spotted Purple.

This name was proposed by Gosse.

12. *Basilarchia Arthemis*.—The banded Purple.

Also proposed by Gosse.

13. *Doxocopa Herse*.—The tawny Emperor.

The species of this group are termed Emperors in England.

14. *Polygonia interrogationis*.—The Violet-tip.

A name well proposed by Gosse.

15. *Polygonia Comma*.—The orange Comma.

Proposed by Gosse.

16. *Polygonia Faunus*.—The green Comma.

Proposed by Gosse, in allusion to the green tinge on the under surface of both sexes, but especially of the male.

17. *Polygonia Progne*.—The gray Comma.

Also proposed by Gosse.

18. *Nymphalis J-album*.—The Compton Tortoise.

Found abundantly by Gosse, in Compton, Canada, and thus named by him. S. H. Scudder.

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(Continued from page 8.)

* 17. GEO. W. FLAGG *et al.* Lice on sheep. No. 9.

Trichodectes sphærocephalus (= *Pediculus ovis*); description, habits, remedies. *Hyphobosca crina* [= *Hippobosca ovina* [?]]; habits; description.

* 18. SUBSCRIBER *et al.* Bark Lice. No. 12.

Coccus on rose bushes; remedies. Extract from Harris's Rep. Insects Mass. injur. veg., 1841, p. 199-201; history and habits of Coccus.

Nos. 19 to 25 are from the Bulletin of the Buffalo Society of Natural Sciences, vol. i.

* 19. S. H. SCUDDER. The two principal groups of Urbi-colæ. (Hesperidae auct.) p. 195-196.

Division of the family into two tribes: Hesperides and Astyci.

* 20. S. H. SCUDDER. Note on the species of Glaucopsyche from eastern North America. p. 197-198.

Synonymy of *G. Lygdamus* and of *G. "Pembina"* = *Couperi*.

* 21. L. F. HARVEY, M. D. New Phalaenoid Moths. p. 262-265, with one plate (xi).

Describes one new genus and three new species of Bombyces, and three (two new) species of Geometræ; all figured.

* 22. J. L. LeConte, M. D. Notes on the species of Pasi-machus. p. 266-275.

Synopsis of the eleven United States species, with notes and synonyms; description of one new species.

* 23. H. K. MORRISON. Description of two new Noctuidæ from the Atlantic District. p. 274-275.

* 24. L. F. HARVEY. Rectification of Treitschke's use of Hübner's generic term "Cymatophora." p. 276-278.

The Geometrid genus "Boarmia" must resume the name Cymatophora; the Noctuid genus "Cymatophora" must be called Bombycia, and Cymatophorinæ become Bombyciæ. Arrangement of the eight European species of Bombyciæ, tribe Pavidæ, with remarks on two (?) American species of the tribe.

* 25. A. R. GROTE. Determination of Brazilian Sphingidae collected by Mr. Charles Linden. p. 279-281.

List of fifteen species from the Amazonas, with notes.

* 26. J. A. LINTNER. Entomological Contributions. No. III. From the Twenty-sixth Annual Report on the New York State Museum of Natural History, for the year 1872. Printed in advance of the Report. Albany, May, 1874. 8vo. p. 113-192, with two photographic plates (i, ii) containing twenty figures.

On the larvæ of *Eudryas unio* and 3 allied forms, fig. 1-5; transformations of 3 Bombyciæ; descriptions of the larvæ of 6 Bombyciæ, fig. 6, 7, and 6 Noctuidæ; notes on 23 Bombyciæ, fig. 8-11, and 22 Noctuidæ, etc., fig. 12; on the relative abundance of various Rhopalocera in 1858 and 1859; descriptions of 2 new species of Cucullia, fig. 13, 14, with notes and 20 photographic figures of 12 species; calendar of 46 New York Rhopalocera for part of 1871, of 196 New York Heterocera for 1872 and prior; description of a convenient insect case; index.

ARREST OF DEVELOPMENT. Mr. B. P. Mann has recently received from Florida a caterpillar of "*Papilio Cresphontes*," in which the front pair of prolegs is greatly aborted. The under surface of the third abdominal segment bears a pair of slight mammiform elevations, each with a sessile crescent of hooklets; these can scarcely ever be brought into use, yet they are as well developed as usual, and the markings on the side of the prolegs show that no part is actually wanting, only all the fleshy parts are excessively short. The caterpillar is apparently in the final stage, but unfortunately arrived in a dying condition. S. H. Scudder.

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Vol. I.]

Cambridge, Mass., August, 1874.

[No. 4.

Early Spring Butterflies at the White Mountains.

DURING four sunny days (June 2-5) spent in the Glen this spring, in a search for butterflies, the following species were noticed. The wild cherries were just blossoming.

Basilarchia Disippe. Two or three larvæ were seen on poplar, of just the same size as others of the next species near them.

Basilarchia Arthemis. The caterpillars were found not uncommon upon the black birch; one upon poplar, on the same twig with *Disippe*. All had left their hibernacula, which precisely resemble those of the preceding species, and had moulted at least once; the first moult almost invariably takes place on their emerging from winter quarters, as proved by the pellicle left upon the tip of the leaf forming the hibernaculum. As search for the caterpillar was the principal object of my visit, I must have examined nearly five thousand plants of black birch; the result proves that the eggs are laid almost exclusively upon horizontally extended branches of small plants not more than two or three feet high, skirting the road-side, so that the caterpillars must almost invariably be buried in snow the winter through. The caterpillars are generally lighter colored than those of the preceding species, but resemble them wonderfully. The first caterpillar changed to chrysalis the night of June 7th, and emerged the morning of the 18th.

Polygona Faunus. The butterfly was very abundant, the males far exceeding the females in number; the latter were apparently not yet prepared to deposit their eggs.

Polygona gracilis. This butterfly was rather common, and what is strange, many more females than males were taken; they could not be induced to lay eggs under muslin during my

short visit, and died just after the journey home. One left behind in a muslin bag, on willow, was found a week afterward, by Mr. Whitney, to have died without depositing.

Polygona Progne. A single female was taken; it has never before been found in this region.

Nymphalis J-album. One or two specimens only were seen on the 4th, apparently just out of winter quarters; they appear later, I believe, than other hibernating Præfecti, and these were seen on the sunny side of a barn, which had probably served as their winter refuge.

Papilio Antiopa. Half a dozen specimens were seen.

Aglais Milberti. A single female was taken.

S. H. Scudder.

ENTOMOLOGICAL EXCURSION TO WAVERLEY.—On the 7th of May the members of the Club, to the number of half a dozen, made an excursion to the vicinity of Waverley. The day proved unfavorable, as there was a raw wind which kept the insects out of sight, and, very little was accomplished.

Of Coleoptera very few specimens were taken, and those of common species, the most noteworthy being a specimen of *Badister notatus*, a species which is rare in this vicinity, and *Dicælus elongatus*, common about Waverley, though rare elsewhere in the vicinity of Boston.

Of Lepidoptera Mr. Morrison obtained a perfect specimen of *Anticlea vasiliata* Guen., a species not common in this vicinity.

Caterpillars of *Basilarchia Disippe* were obtained on three species of willows, either eating the catkins for want of leaves, or still concealed in their hibernacula. The observations of the party showed that they hibernate both in the second and third stages, and that each makes a winter abode of just the size of its body, into which it crawls head foremost, and which it must vacate in the spring by a retreating movement. The caterpillar moults very soon after re-appearing, and one was found nearly half grown upon a twig still bearing only catkins.

E. P. Austin.

VERNACULAR NAMES FOR BUTTERFLIES.—EDITOR PSYCHE: I very much approve of Mr. Scudder's list of vernacular names for our butterflies. Permit me to stand sponsor in your columns for the following:

Calephelis borealis. — The large Metal-mark.

Calephelis punila. — The small Metal-mark.

Feniseca Tarquinus. — The Wanderer.

Aug. R. Grote.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 12.)

* 27. *Le Naturaliste Canadien*, vol. vi, contains the following, and Nos. 28 to 32, all without signature, and presumably by the Editor, l'Abbé Provancher.

Obituary notice of Dr. F. E. Melsheimer. p. 19-20; obituary notice of Mr. L. J. R. Agassiz. p. 22-24; history and announcement of the intended publication of a work on the entomological fauna of Canada, with a figure of the larva of *Attacus Cecropia*. p. 65-68, fig. 2; review of the Report of the Entomological Society of the Province of Ontario for 1873, and query concerning *Oberca tripunctata*. p. 122-124; on the behavior of tamed insects, showing intelligence. p. 159.

* 28. *Les Ichneumonides de Québec, avec description de plusieurs espèces nouvelles.* (suite.) p. 29-32; p. 55-63; p. 78-81; p. 103-107; p. 143-151; p. 173-179.

Description of 24 genera, 111 (74 new) species; synopsis of 93 species in 11 genera.

* 29. *Petite Faune entomologique du Canada.* (suite.) p. 48-55; p. 72-77.

Description of 17 genera, 20 species Staphylinidæ; of 2 genera, 12 species Histeridæ; of 1 genus, 1 species Scaphidiidæ.

* 30. *Vers à soie d'Amérique. L'Attaque Cecropia.* *Attacus Cecropia*, Linné. p. 114-122, fig. 3, with one plate (i).

Description, habits; enemies. Availability for the production of silk.

* 31. *La Clisiocampe d'Amérique ou Chenille à tente.* *Clisiocampa Americana*, Harris. p. 138-143, fig. 4, 5.

Description, habits, means against them. *Clisiocampa sylvatica*. *Loxotania* sp. making tents.

* 32. *La Chenille du Gadellier.* *Nematus ventricosus*, Klug. p. 186-192, fig. 6-8.

History, description, habits, enemies.

* 33. *The Massachusetts Ploughman*, vol. xxxiii, contains the following, and Nos. 34 to 38.

No. 15 (1679). New mode for destroying canker worms; remedies for the Phylloxera in France. No. 16 (1680). Means against the enemies of the cranberry crop. No. 18 (1682). Insect infesting grass lands; the sheep maggot. No. 19 (1683). Recipes for worms in horses. No. 20 (1685). Ailanthus wood a protection against moths. No. 21 (1686). Means against

Phylloxera. No. 23 (1688). Trades of animals. No. 26 (1691). To destroy lice on cattle; means against wood-lice. No. 29 (1694). Maggots as poultry food. No. 32 (1697). Do bees make honey?; foul brood in hives. No. 33 (1698). Honey-bees become savage by isolation. No. 35 (1700). To save egg plants from insects. No. 38 (1702). Ravages of "grasshoppers" in Iowa and Minnesota.

List of Lepidoptera collected at Cliffondale and Wyoming, Mass., May 30, 1874.

At the excursion of the Cambridge Entomological Club to Cliffondale and Wyoming, Mass., on the 30th of May, 1874, the following species of butterflies and moths were taken by the various members of the party.

Argynnis bellona Fabr. The first brood just appearing.

Thecla damon Cram. Three perfect specimens ♂ ♀ of this rare species taken on high ground, near cedar.

Thecla augusta Westw. One poor specimen.

Chrysophanus americana D'Urb.

Lycena comytas Godt. First brood.

" *neglecta* Edw.

Nisoniades juvenalis Fabr.

" *brizo* Boisd. Lec.

" *icelus* Lintn.

Actinotia ramulosa Guen. A very strongly marked variety, taken under loose bark, by Mr. Dimmock.

Ypsia undularis Drury. Two fine specimens, under bark.

Lithacodia bellicula Hb. Common.

Lozogramma difluaria Walk. Very common, particularly in low meadows. Nearly forty specimens taken.

Lozogramma deterrenta Guen. Rare, not in the same localities as difluaria, but on high land.

Fidonia truncataria Walk. Two specimens.

Macaria unimodaria Morr. One specimen; a rare species.

Corycia vestaliata Guen. Common; near birch.

" *biseriata* Pack. One specimen only, in a low, swampy wood.

H. K. Morrison.

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Advertisements will be inserted on reasonable terms.

Address communications: Editor of PSYCHE, Cambridge, Mass., U. S. A.

No. 3. was issued July 11, 1874.

PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB.

EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., September, 1874. [No. 5.

List of Coleoptera collected in the vicinity of Cliftondale, Mass., June 12, 1873.

At the entomological excursion to the vicinity of Cliftondale, Mass., on the 12th of June, 1873, so many species of beetles were found that it was thought a list of them might not prove uninteresting. This list includes all the species taken by the party, Messrs. Austin, Emerton, Moody, Munro and Henshaw. The numbers prefixed to the species are those of Crotch's Catalogue. Many common species could probably be added, had the list been contemplated at the time of collecting.

30.	<i>Cicindela 12-guttata</i> Dej.	2917.	<i>Scymnus haemorrhous</i> Lec.
106.	<i>Notiophilus sibiricus</i> Mots. ?	2919.	“ <i>collaris</i> Mels.
350.	<i>Lebia pumila</i> Dej.	3138.	<i>Saprinus assimilis</i> Payk.
354.	“ <i>ornata</i> Say (<i>axillaris</i> Dej.)	3268.	<i>Aphodius granarius</i> Linn.
503.	<i>Platynus ruficornis</i> Lec.	3415.	<i>Dichelonycha elongatula</i> Sch.
976.	<i>Stenolophus conjunctus</i> Say.	3426.	“ <i>albicollis</i> Burm.
1183.	<i>Cnemidolus 12-punctatus</i> Say (<i>muticus</i> Lec.)	3593.	<i>Cotalpa lanigera</i> Linn.
1213.	<i>Hydroporus granarius</i> Aubé.	3734.	<i>Melanophila Drummondi</i> Kirby.
1405.	<i>Gyrinus borealis</i> Aubé.	3747.	<i>Chrysobothris femorata</i> Lec.
1529.	<i>Cercyon limbatum</i> Mannh. ?	3809.	<i>Agrilus otiosus</i> Say.
1945.	<i>Stenus flavicornis</i> Er.	3836.	<i>Taphrocerus gracilis</i> Say.
2318.	<i>Sacium fasciatum</i> Say.	3838.	<i>Bruchys ovata</i> Web.
2387.	<i>Latridius pumilus</i> Mels.	3841.	“ <i>erosa</i> Mels. (<i>terminans</i> † Lap.)
2395.	<i>Dermestes nubilus</i> Say.	3845.	<i>Pachyscelus laevigatus</i> Say.
2417.	<i>Trogoderma pallipes</i> Ziegl. ?	3952.	<i>Cardiophorus gagates</i> Er.
2430.	<i>Anthrenus varius</i> Fabr.	4022.	<i>Elater hepaticus</i> Mels.
2506.	<i>Languria Mozardi</i> Latr.	4026.	“ <i>fuscatus</i> Mels.
2598.	<i>Læmophilus biguttatus</i> Say.	4028.	“ <i>pedalis</i> Cand.
2629.	<i>Synchita nigripennis</i> Lec.	4037.	“ <i>miniipennis</i> Lec.
2705.	<i>Trizagus unicolor</i> Say.	4042.	“ <i>rubricus</i> Say.
2710.	<i>Cercus abdominalis</i> Er.	4122.	<i>Dolopius lateralis</i> Esch. (<i>pau-per</i> Lec.)
2788.	<i>Pityoplagus 4-guttatus</i> Fabr. (<i>fasciatus</i> Oliv.)	4124.	<i>Beiarmon bigeminatus</i> Rand.
2845.	<i>Coccinella trifasciata</i> Linn.		Generally quite rare in this vicinity, but this year it has been taken quite abundantly, the first time for many seasons.
2867.	<i>Psyllobora 20-maculata</i> Say.		
2894.	<i>Hyperaspis undulata</i> Say (<i>elegans</i> Muls.)		
2906.	<i>Scymnus terminatus</i> Say ?		

4144. *Melanotus Leonardi* Lec. This is thought to be the first instance of the capture of this species in Massachusetts. Leconte records it (Trans. Amer. Phil. Soc., Vol. x, new series, p. 475) from New Hampshire, Georgia, and Pennsylvania. A closely allied species was collected by Mr. Austin upon alders in the vicinity of Mt. Tom (*M. tenicollis* Lec.) described from Philadelphia, which is thought to be new to the fauna of New England.
4187. *Limonium confusum* Lec. (*anes-cens* Lec.)
4193. *Limonium quercinum* Say.
4197. " *basillaris* Say.
- Of the last two species the former has generally been found to be very abundant and the other quite rare, but this year (1873) *basillaris* has been the more abundant of the two.
4253. *Sericosomus silaceus* Say.
4308. *Corymbites medianus* Germ.
4313. " *hieroglyphicus* Say.
4325. " *metallicus* Payk. (*nitidulus* Lec.)
4326. *Corymbites inflatus* Say.
4163. *Melanotus americanus* Hbst.

Samuel Henshaw.

Early Spring Butterflies at the White Mountains.

(Continued from page 14.)

Limnæcia Harrisii. Last autumn I found the young caterpillars swarming upon *Diplopappus umbellatus*, at several points on the Glen road; in other places on the same road where *Diplopappus* grew, none could be found. This spring they were found in precisely the same localities as last autumn, and were absent from the others, proving that they must hibernate in close proximity to their birth place. They hibernate in their penultimate stage, probably in curled up dead leaves, and though several may be found on one plant in the spring, they do not then associate nor spin a web; when about to moult, the caterpillars leave the plant and retire to a dead stick or leaf for the change, and then return to their pasture ground. They were also found in great numbers on *Diplopappus* growing on the hill side beyond the foot bridge over the Androscoggin at Gorham. The first to change to chrysalis did so June 6th and emerged June 19th.

Euphydryas Phaeton. The caterpillars were found in considerable numbers in just as advanced a stage as those of the previous species, upon *Lonicera ciliata*; as they were found only upon this plant, and in many different places, this is doubtless its proper spring food; they fed in confinement on other species of *Lonicera*. The first butterfly emerged June 25th, after 17½ days in chrysalis. Not a single caterpillar of this or the preceding species or of *Arthemis* was found to be parasitized.

Cyaniris Lucia. Hundreds were seen every day, though no females were seen the first day, and but very few at all; they were easily taken with the fingers. The female was noticed in two or three instances, on the 5th, hovering about a particular species of plant by the roadside; this was brought away for identification, but unfortunately lost.

Ganoris rapæ. Both sexes plenty and fresh, but almost exclusively confined to the neighborhood of houses or the high road, in contradistinction to the habits of the next species.

Ganoris oleracea. A few fresh specimens of both sexes were taken; the butterfly seemed to confine its wanderings to open places in the woods and to forsaken roads through them, seldom occurring in the same haunts with the last species.

Euphœades Glaucus. Two or three specimens were seen on the 5th, none before; this day was much warmer than any of the previous, and doubtless was their birth-day.

Erynnis Iclus. A single specimen was seen on the 2d; three or four seen and captured on the 3d, all males; on the 4th they were common and a single female taken; on the 5th nearly a hundred were seen and several of those captured were females.

S. H. Scudder.

BIBLIOGRAPHICAL RECORD.

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B. Pickman Mann.

(Continued from page 16.)

* 34. B. P. MANN. A remedy for the Currant Worm and the Hop Louse. No. 19 (1683).

Nematus ventricosus, Ellopiæ ribearia, Aphis humuli.

* 35. L. S. RICHARDS. The Worm and the Ant. No. 26 (1691).

Habitations, colonies, habits and wars of ants.

* 36. EDITOR. Cranberry Culture. No 37 (1701).

Habits of the vine worm (*Achylopera vacciniana*) and the fruit worm (*Tortrix?* sp?).

* 37. *Western Farmer.* The Plum Curculio. No. 37 (1701).

Description?; habits; means against them.

* 38. EDITOR. The Plum Crop. No. 37 (1701).

Portions of (?) Harris' *Insects injur. veg.*, 1862, p. 529-530, on *Selandria cerasi*, and *ibid.*, l. c. p. 75-76, on *Rhynchænus nenuphar*; means against the latter.

* 39. C. V. RILEY, STATE ENTOMOLOGIST. Sixth Annual Report on the Noxious, Beneficial, and other Insects, of the State of Missouri, made to the State Board of Agriculture, pursuant to an appropriation for this purpose from the Legislature of the State. Jefferson City, 1874. 8vo. pg. 169, xi, with 55 figures in the text.

Preface. Notes of the year on *Carpocapsa pomonella*, *Doryphora decemlineata*, fig. 1, *Anomys xyliua*, *Anisopteryx vernata* and *A. pometaria*.

Insects injurious to the Grape-vine, viz.: 1st. Statement of all that is known of *Phylloxera vastatrix* (fig. 2-8) at the present time, including a synopsis of the true grape-vines of the United States, with remarks, by Dr. G. Engelmann, and treatises upon the susceptibility of different species and varieties of vines to the Phylloxera disease; upon means against and enemies of the Phylloxera, especially the following enemies: *Thrips phylloxeræ* n. sp. (? fig. 9), *Chrysopa plorabunda* (? fig. 10), *Coccinella* sp., fig. 11, *Syrphus* sp., fig. 12, 13, *Anthocoris insidiosus*, fig. 14, *Pipiza radicum*, fig. 15, *Tyroglyphus phylloxeræ*, fig. 16. 2d. Distinguishing characters of *Psychomorpha epimenis*, fig. 20, 21, *Eulryas grata*, fig. 22, 23, *Eu. unio*, fig. 24, and *Alypia octomaculata*, fig. 25. Passing remarks upon related species.

Chapters upon *Corynetes rufipes*, fig. 26, *Asopia costalis*, fig. 28, *Ægeria acerni*, fig. 29, *Æ. rubi*, n. sp., fig. 30, *Eupsalis minuta*, fig. 31, *Blepharida rhois*, fig. 33, *Tiphia inornata*, fig. 34, *Coscinoptera dominicana*, fig. 36, *Pronuba yuccasella*, fig. 38, *Apatura Lycaon*, fig. 39, 40, and *A. Herse*, fig. 41, 42, *Microcentrus retinervis*, fig. 43-47, *Phaneroptera curvicauda*, fig. 50, 51, *Platyphyllum concavum*, fig. 52-54, and *Phylloptera oblongifolia*, fig. 55.

Passing remarks upon other species, especially *Dermestes lardarius*, fig. 27, a Tenebrionid, fig. 32, *Leptus irritans* and *L. americanus*, fig. on p. 122, *Lachnosterna quercina*, fig. 35, *Chlamys plicata*, fig. 37; and more in detail upon *Hoplophora arctata*, fig. 17, *Phylloxera Rileyi*, fig. 18, 19, *Antigaster mirabilis*, fig. 48, 49.

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PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB.

EDITED BY B. PICKMAN MANN.

Vol. I.]

Cambridge, Mass., October, 1874.

[No. 6.

On an Appendage of the male *Leucartia acraea*.

Having occasion recently to examine the male genitalia of this species, I was surprised, on pressing the abdomen forcibly to show the parts, to see project from between the lower part of the horny base of the claspers and the flap of skin which in most species is closely adherent to it, two long, singular organs, which I believe have not before been noticed.

They spring from the base of a pouch which is concealed between the last segments of the body, and formed by the continuation of the external skin. When fully distended they are symmetrical, and curve gently downward and outward in the shape of a horn. They are each about 20 millim. in length, and at the base 2 millim. in diameter, gradually diminishing in thickness to the apex, which is obtuse.

The color of these organs and of the pouch is pale yellow, and the former are clothed with long (3 millim.) fine, sparsely scattered hair. Their distention is accomplished by the muscular contraction of the walls of an internal sac with which they communicate, and which forces into them a yellow, strongly scented fluid. They have no external outlet, nor is this fluid secreted through the pores of the pouch; its only function in connection with them seems to be to fill and expand them.

Although I have examined a large number of living specimens, only one gave me the opportunity of watching the voluntary protrusion of this appendage. The operation was interesting. The abdomen was slightly contracted, opening the orifice of the pouch, from which projected two tufts of black fine hair; as the fluid forced its way out, the hairs, commencing at the base, separated and stood erect; the empty skin, bearing the constantly diminishing tuft, was quickly

pushed on. The latter soon became a mere pencil, and when the skin was entirely filled it had disappeared. It remained distended a few seconds, and was then withdrawn; this was repeated several times in rapid succession.

After discovering these organs in acraea, I examined every species of Lepidoptera captured, in the hope of finding analogous ones in them. I was successful in the following three species: *Danais erippus* Cr., *Agrotis plecta* Linn., and *Euplexia lucipara* Linn. In the former the organs, though much smaller than in acraea, were similar in form, and also clothed with scattered fine hair. But their position was very different; they were situated above, and one on each side of the anal parts, instead of beneath them. In *plecta* and *lucipara* they were in precisely the same position as in acraea, but entirely dissimilar in form. In *plecta* they consisted, when distended, of a single, short (1.5 millim.) protuberance, thickly clothed and concealed by a dense bush of fine radiating hair; it returned into the abdomen in the same manner as in acraea.

This structure is peculiar to the male sex, and is presumably connected in some way with the act of generation. As all the species which possess it are common, it is to be hoped that next season observations will be made upon it, which will help to determine its true function.

H. K. Morrison.

List of Coleoptera collected in the vicinity of Cliftondale, Mass., June 12, 1873.

(Continued from page 18.)

4378.	<i>Eurypogon niger</i> Mels.	4576.	<i>Collops tricolor</i> Say.
	Usually rare, but taken	4618.	<i>Pseudebæus oblitus</i> Lec.
	quite abundantly this season.	4726.	<i>Thanasimus nigrifrons</i> Say.
4388.	<i>Cyphon pallipes</i> Lec.	4740.	“ <i>thoracicus</i> Oliv.
4390.	“ <i>piceus</i> Lec.	4754.	<i>Hylnocera humeralis</i> Say.
4396.	“ <i>collaris</i> Guér.	4810.	<i>Eucrala humeralis</i> Mels.
4450.	<i>Photinus corruscus</i> Linn.	4927.	<i>Asemum moestum</i> Hald.
4453.	“ <i>nigricans</i> Say.	4937.	<i>Criocephalus australis</i> Lec.
4457.	“ <i>angulatus</i> Lec.		Rare in this vicinity.
4466.	“ <i>marginellus</i> Lec.	4948.	<i>Phymatodes variabilis</i> Fabr.
4499.	<i>Podabrus rugosulus</i> Lec.	4952.	“ <i>varius</i> Fabr.
4520.	<i>Telephorus carolinus</i> Fabr.	4960.	<i>Callidium antennatum</i> Newm.
4523.	“ <i>rectus</i> Mels?	5047.	<i>Molorchus bimaculatus</i> Say.
4533.	“ <i>frazini</i> Say.	5135.	<i>Neoclytus erythrocephalus</i> F.
4536.	“ <i>rotundicollis</i> Say.	5141.	<i>Clytanthus ruficola</i> Oliv.
4548.	“ <i>bilineatus</i> Say.	5236.	<i>Leptura lineola</i> Say.

5253. *Leptura zebra* Oliv. (*nitens* Forst.) 5861. *Edionychis 6-maculata* Ill.
 5297. " *mutabilis* Newm. 5904. *Orchestris vittata* Fabr. (*striolata* Ill.)
 5318. *Psenocerus supernotatus* Say. 5913. *Dibolia ærea* Mels.
 5355. *Leptostylus macula* Say. 5928. *Crepilodera Helxines* Linn.
 5388. *Pogonocherus mixtus* Hald. (*nana* Say.)
 5418. *Saperda lateralis* Fabr. 5933. *Epitrix cucumeris* Harris.
 5421. " *concolor* Lec. 5962a. *Odontota rosea* Web. var. *inæqualis* Web.
 5532. *Donacia Kirbyi* Lec. 6390. *Isomira 4-striata* Coup.
 5554. *Lema trilineata* Oliv. 6408. *Arthromacra ænea* Say.
 5575. *Chlamys plicata* Fabr. 6445. *Corphyra collaris* Say (*impressa* Say.)
 5578a. *Exema conspersa* Mannh. var. *dispar* Lec. 6534. *Canifa pallipes* Mels.
 5579. *Monachus saponatus* Fabr. 6541. *Synchroa punctata* Newm.
 5588. *Cryptocephalus lituratus* F. 6546. *Melandrya striata* Say.
 5609. " *notatus* Fabr. 6583. *Anaspis rufa* Say.
 5633. *Pachybrachys carbonarius* Illd. 6624. *Mordellistena picicornis* Lec.
 5638. " *subfasciatus* Illd. 6677. *Emmenalia limbata* Fabr.
 5668. *Xanthonia 10-notata* Say. 6719. *Macrobasis unicolor* Kirby
 5671. *Heteraspis pubescens* Mels. (*Fabricii* Lec.)
 5693. *Chalcoparia globosa* Oliv. 6747. *Epicauta pensylvanica* DeG.
 5694b. *Paria 6-notata* Say var. 7084. *Rhynchites bicolor* Fabr.
 4-notata Say. 7124. *Anthonomus suturalis* Lec.
 5722. *Chrysomela clivicollis* Kirby (*erythropterus* Say.)
 (*trimaculata* † Fabr.) 7145. *Conotrachelus nenuphar* Hb.
 5738. *Chrysomela lunata* Fabr. 7211. *Baris nigrinus* Say.
 (*hybrida* Say.) 7351. *Xyleborus xylographus* Say.
 5777. *Phyllobrotica discoidea* Fab. 7426. *Dendrocinus aculeatus* Say.
 5820. *Galerucella tuberculata* Say.
 5858. *Edionychis miniata* Fabr.

In addition to the above one hundred and thirty-five species, about thirty new or undetermined species were taken. Samuel Henshaw.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists. B. Pickman Mann.

(Continued from page 20.)

* 40. E. T. CRESSON. Descriptions of Mexican Ichneumonidae. Proceedings of the Academy of Natural Sciences of Philadelphia for 1873. [p. 104-176;] p. 374-413.

Describes 4 subgenera of Ichneumon, and four of Mesostenus, 2 new genera (*Nonnus*, *Toxophoroides* = ? *Lycorina*), and 210 new species; enumerates 295 species.

* 41. J. H. RIDINGS. Philadelphia Agency for the sale of Entomological specimens. Price Lists.

Coleoptera, 72 species. No. 1. Choice Coleoptera, 133 species. No. 2. Coleoptera, 200 species. No. 3. Coleoptera collected on the Pacific Slope

of the United States, 392 species; Coleoptera from various parts of the U. S., 161 sp.; Lepidoptera, 77 species.

* 42. RICHARD H. STRETCH. Illustrations of the Zygænidæ and Bombycidæ of North America. Vol. I. Part 1 to 9. July, 1872 to Dec., 1873. [San Francisco, (Cal.) June 1st, 1872 — February, 1874.] 8vo. pg. vii, iv, 242, with 12 figures in the text, and ten colored plates (1-10) containing 167 figures.

Title and index; preface. 42 Zygænidæ enumerated, 37 described and figured, belonging to 16 genera; 92 Bombycidæ enumerated, 76 described and figured, belonging to 34 genera.

* 43. G. R. CROTCH, M.A. Check List of the Coleoptera of America, north of Mexico. Salem, Mass., Naturalists' Agency, 1873 [1874]. 8vo. pg. 136.

Enumerates "7450" [7456] species exclusive of varieties, belonging to 1484 genera and 83 families; index of genera.

* 44. The American Naturalist, vol. viii, as far as p. 384, contains the following, and Nos. 45 to 63.

Notice of Thomas' Synopsis of the Acrididæ of North America (1873), p. 53-54; of Lubbock's Monograph of the Collembola and Thysanura (1873), p. 54-55; of part of Packard's contributions to Hayden's 6th Annual Report of the U. S. Geological Survey of the Territories (1873), p. 219-220, fig. 62-68; of Girard's Les Insectes (1873), by S. H. S., p. 221-222; of vol. i, parts 8 and 9 (last) of Stretch's Illustrations of the Zygænidæ and Bombycidæ of North America (1874), p. 223; of Crotch's Check List of the Coleoptera of America north of Mexico (1874), p. 303; of the intended republication of Hentz's papers on North American Spiders, p. 319.¹ Obituary notice of Prof. Louis Agassiz, p. 62-63.

* 45. P. GENNADIUS. A new Ægerian Maple Borer. p. 57-58.

Description and habits of *Trochillum acericolum*. [See below, No. 48.]

¹ The paragraph on this subject at the foot of page 4 of PSYCHE was inserted by another hand in my absence. B. P. M.

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PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB.

EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., November, 1874. [No. 7.

Summer Butterflies at the White Mountains.

I am indebted to Mr. Scudder for the privilege of examining the advance sheets of his forthcoming paper on "The Distribution of the Insects in New Hampshire." His labors on the mountain fauna have been so thorough that nearly all its characteristic features have been recorded, at least so far as the Diurnal Lepidoptera and Orthoptera are concerned. Still the collections made during the excursion of the Cambridge Entomological Club to Mt. Washington, from June 26 to July 11, this year, show the occurrence of one new form, and furnish data for the determination of the time of appearance and relative abundance of many others. The following is a list of the butterflies taken at that time.

Eneis semidea Say. Nothing new was discovered in regard to this species. The first specimens appeared about July 1st, and in a few days it became very abundant. Specimens were taken as low down as Sanborn's camp, or about the middle of Mr. Scudder's sub-alpine region. As *semidea* was the only butterfly captured in numbers, which has its habitat on the upper portion of the mountain, but little can be produced, as far as the Diurnals are concerned, either in favor of, or against the presence of two distinct faunal areas above the tree line; but in a list of the Noctuidæ to appear in a future number of PSYCHE, I have some observations to offer on the distribution of the moths, which bear on this point.

Enodia eurydice Linn. Two specimens captured in low swampy fields, — one below the first saw mill, on June 29, another near the Glen House, on July 2.

Phyciodes tharos Drury. Common in the Glen.

Phyciodes harrisii Scudd. This species was found inhabiting

the same restricted localities in which Mr. Scudder observed the larvæ in the spring. From June 27 to July 4 the imagines were emerging, and in fine condition. After this date many poor ones began to be found.

Phyciodes nycteis Doubl. & Hew. Two in very poor condition were taken on July 2, on the Glen road, about one mile before the second saw-mill.

Melitæa phaeton Drury. Found abundantly on July 4, in a swamp situated on the Glen road, about four miles from Gorham. On July 5 specimens were also taken just above the Glen House, in a similar locality.

Argynnis myrina Cram. More or less common in swamps in the valley.

Argynnis montinus Scudd. A specimen which I have not seen, probably of this species, was caught above the Half Way House, by Mr. Dimmock on July 12, after the rest of the party had gone.

Argynnis atlantis Edw. Began to appear about June 29, and in a few days became common. It was taken throughout the valley, and about two miles up the mountain.

H. K. Morrison.

(To be continued.)

NOVELTIES IN AMHERST, MASS.— So far as known, the following species have not been taken hitherto in this vicinity: *Vanessa cardui*, ♀, July 28th, and both sexes afterward. *Junonia coenia*, ♀, July 25th, on thistles—alar expanse 1.80; ♂, somewhat worn, Aug. 4th, caught flying after severe chase—al. ex. 1.90; several others seen on roads. *Euptoieta claudia*, ♀, on thistles, Aug. 3d—al. ex. 2.40. *Cyaniris* sp?, ♀, on Mt. Holyoke, June 25th—like *neglecta*, but uniform dusky gray beneath, a lighter shade edging the spots, and preceding the crescents; above, dusky gray in place of white. *Cyaniris* sp?, ♂, Pelham hills, Aug. 17th—like *neglecta*, except the primaries above are much deeper blue, mixed with dusky. Neither of these is *lucia*, nor agrees satisfactorily with named specimens of *violacea* from W. H. Edwards. In regard to *violacea*, I have a ♂ specimen, dated June 1, found here. *Achalarus Lycidas*, ♂, on Mt. Holyoke, June 25th. *Pholisora Catullus*, ♂, in June: not rare on and after July 30. *Anthomastor Leonardus*, 4 ♂, mentioned only as early for the species as recorded, Pelham hills, Aug. 17th. Prof. S. H. Peabody has taken *Amblyscirtes Samoset* and *Poanes Massasoit* in this place, one specimen of each. H. W. Parker.

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Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 24.)

- * 46. THEO. B. COMSTOCK, B.S. p. 76-77.

Peculiar faunal characteristics of the Yellowstone National Park, and their supposed explanation; advantages for study in the Park.

- * 47. W. G. FARLOW, M.D. p. 113.

Flowers of *Aconitum septentrionale* perforated by an insect.

- * 48. C. V. RILEY. A new (?) *Ægeria* Maple Borer. p. 123-124.

Trochilium acericolum = *Ægeria acerni*. [See above, No. 45.]

- * 49. W. G. BEAL. The Fertilization of Gentians by Humble Bees. p. 180-181, p. 226.

Actions of *Bombus* sp.? upon flowers of *Gentiana Andrewsii* and *G. crinita*; variety of contrivances by which insects fertilize flowers.

- * 50. C. V. RILEY and A. S. PACKARD, JR. Entomology in Missouri. p. 181-188.

Discussion on the number of segments in the head of an insect; on classification; on *Mytilaspis pomicorticis* Riley.

- * 51. C. V. RILEY. Economic Entomology. p. 189-190.

Demand for more attention to, and better representation of the agricultural interests of the country. Inadequacy of measures propounded for the wholesale destruction of noxious insects.

- * 52. C. V. RILEY. The Habits of *Polistes* and *Pelopæus*. p. 229-231.

- * 53. T. G. GENTRY. Notes on the Plant Lice. p. 231-233.

Time of occurrence and functions of winged and wingless forms; difference and cause of production of the sexes.

- * 54. F. E. L. BEAL. "Assembling" among Moths. p. 234-236.

Attraction of male *Attacus Promethea* moths to females in secluded and unnatural places.

- * 55. Prof. A. M. Mayer. Organs of Hearing in Insects. p. 236-237.

Diverse action of the variously long fibres of the antennæ of the male mosquito under the impulse of different sound-vibrations, coming in different directions.

* 56. A. S. PACKARD, JR. Occurrence of *Telea polyphemus* in California. — A correction. p. 243-244.

Correction of No. 1 of this Record (applying in part to Amer. Nat., vol. vii, p. 454). *Telea polyphemus* does occur along the Pacific coast; "*Gorytodes uncanaria* Guen." = *Platea Californiaria* H.-Sch.; *G. trilinearia* Pack. = *P. trilinearia*.

* 57. S. H. SCUDDER. The Natural History of a Polymorphic Butterfly. p. 257-266.

Distribution, food-plants, forms, seasons, habits and enemies of *Iphioides Ajax*. [See this Record, No. 4.]

* 58. A. S. PACKARD, JR. Nature's Means of limiting the numbers of Insects. p. 270-282.

List of some birds, insects, and other animals which eat insects; prolificacy of injurious insects; importance of insect-enemies, and means of promoting their action.

* 59. S. H. SCUDDER. The Preservation of Caterpillars by Inflation. p. 321-326, fig. 76-77.

Directions for preparing larvæ for the cabinet by inflating and drying their emptied pellicles.

* 60. DR. OSCAR LOEW. The Honey-ants. p. 365-366.
Habitations, honey-holders and honey of *Myrmecocystus Mexicanus*.

BUTTERFLIES ATTRACTED BY LAMP-LIGHT. — By permission of the keeper, I recently visited Sankaty Light, Nantucket, to collect moths. Unfortunately the night was clear, though only starlight, and between eight and nine o'clock only two moths (Noctuids) came to the lantern. Since then, however, on the cloudy and unusually warm night of Sept. 11th, insects were so numerous as to give the keepers much trouble by obstructing the flow of the oil in the lamp; and the under keeper, Mr. Frank B. Murphy, came afterward to see me, bringing a tin box containing a dozen living specimens of *Nymphalis J-album* taken at night in the lantern, saying that these had given most trouble; *hundreds had flown into the lantern*. I do not recollect to have heard a similar instance of the attraction of butterflies to light. Sankaty is a powerful flash light, and is visible over a great part of the island.

S. H. Scudder.

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PSYCHE.

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EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., December, 1874. [No. 8.

List of Sphingidae taken about Newton, Mass.

I have taken the following species of Sphingidae in Newton or Newtonville during the years 1872, 1873 and 1874. The names are those of Mr. Grote's Catalogue in the Bulletin of the Buffalo Society of Natural Sciences, vol. i, p. 17-28. A list of the principal attractions of the moths, as far as known, is added. The references in heavy type indicate especial attractions.

Hemaris diffinis. May 28 - June 15. Not common. **C, E.**

Haemorrhagia gracilis. May 20 - June 11; July 19 - 29.
Not common. **B, C, D.**

H. Thysbe. June 7 - 13. Very common. **C, D, E.**

Aellopos Titan. July 13. But one specimen. **F.**

Thyreus Abbotii. May 29 - June 8. Common. **B, D, G.**

Amphion Nessus. May 28 - June 15. Rare. **B, C, D, E, G.**

Deilephila Chamaenerii. June 10 - July 20. Not common. **A, B, C, D, F.**

D. lineata. June 10 - 19, Sept. 7. Not common. **A, B, H.**

Dupo vitis. June 10 and 16. But two specimens. **B.**

Philampelus Pandorus. July 11 - 20. Rare. **A.**

P. Achemon. July 13 - 18. Rarer. **A.**

Metopsilus Tersa. August 19. But one specimen. **H.**

Darapsa Choerilus. June 10 - July 20. Common. **A, B, C, L.**

D. versicolor. July 2, 14 and 18. But three specimens. **A.**

D. Myron. June 19 - July 3. Common. **L.**

Paonias excaecatus. June 5 - July 2. Common. **L.**

P. myops. July 14 - 16. Rare. **L.**

Calasymbolus Astylus. July 8 and 10. But two specimens. **L.**

Smerinthus geminatus. Aug. 1 - 5. Rare. **L.**

Laothoe modesta. I have raised but one pair, from a larva and a pupa.

- Cressonia juglandis*. July 25 - 29. Rather rare. L.
Ceratonia Amyntor. June 20 - July 9. Common. L.
Daremma undulosa. June 14 - July 2. Not common. L.
Macrosila Carolina. July 7 - 25. Not common. A.
M. Celeus. July 7 - 29. Very common. A, L.
M. cingulata Clem. July 17. But one specimen. L.
Sphinx drupiferarum. June 3 - July 19. Very common.
 A, B, C, D, L.
S. kalmiae. June 3 - July 19. Common. A, B, C, L.
S. Chersis. June 3 - July 19. Common. A, B, C, L.
Lethia Gordius. June 3 - July 19. Very common. A, B, C, D.
L. luscitiosa. July 2 - 13. Rare. A.
Dolba Hylaeus. June 9 - July 20. Common. A, B, C.
Ellema Harrisii. June 18 - July 11. Rare. L.
 A. White Swamp-Honeysuckle (*Azalea viscosa* L.).
 B. White Honeysuckle (*Lonicera Caprifolium* L.).
 C. Wild Pink (*Silene Pennsylvanica* Michx.).
 D. Sweet Rocket (*Hesperis matronalis* L.).
 E. Rhodora (*Rhodora Canadensis* L.).
 F. Larkspur (*Delphinium azureum* Michx.).
 G. Persian Lilac (*Syringa Persica* Willd.).
 H. Dwarf Phlox (*Phlox Drummondii* Hook.).
 L. Lamp-light. Roland Thaxter.

ON THE OCCURRENCE OF COCHINEAL IN THE NORTHERN UNITED STATES. — In the northwestern part of Nebraska and the adjacent part of Dakota, are large areas thickly covered with several species of Cactaceae, on which I was surprised to find Cochineal in considerable quantities. As red paint is a favorite article of use among the Indians, I inquired of several men who were familiar with the Indians of the plains, both Sioux and Pawnees, if the Indians made use of the cochineal, but none of them had ever seen or heard of its use.

At that time the fact of the occurrence of this insect in such high latitudes was quite new to me, nor have I since seen any statement in print of its occurrence in the United States, except in Southern California, though I have learned from collectors that it is not uncommon in Kansas and southwards. I have therefore thought a brief notice of the fact might be acceptable.

The occurrence of this insect in such a region suggests a possible industry at some future time, when the Great West shall be settled up, as in this region very little can be cultivated, and if cochineal can be produced it may be worth trying.

E. P. Austin.

English Names for Butterflies.

(Continued from page 11.)

19. *Papilio Antiopa*.—The Camberwell Beauty.

The well known English name, worth importing, although local, and having a special significance for England only. It has also been called the Mourning Cloak, an expressive name, but translated from the German.

20. *Aglais Milberti*.—The nettle Tortoise-shell.

Called Milbert's butterfly by Harris, and the forked butterfly by Gosse, the last in allusion to the name given by Say. The caterpillar feeds, as is well known, on nettle.

21. *Vanessa Atalanta*.—The red Admiral.

The English name.

22. *Vanessa Huntera*.—The painted Beauty.

A name well proposed by Gosse, indicating its relation to the next species. Harris simply called it Hunter's butterfly.

23. *Vanessa cardui*.—The painted Lady.

The English name for this cosmopolitan butterfly. Harris called it the thistle butterfly.

24. *Junonia Cœnia*.—The Buckeye.

Mr. Behrens says this is an English name for this insect. I have never heard of it, and give it only on his testimony.

S. H. Scudder.

(To be continued.)

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B. Pickman Mann.

(Continued from page 28.)

* 61. A. J. COOK. Birds and Caterpillars. p. 368.

Larvæ of *Clisiocampa americana* eaten by *Coccygus erythrophthalmus*; larvæ of *Dryocampa senatoria* eaten by *Turdus migratorius* and *Cyanura cristata*.

* 62. T. A. MARSHALL. Note on Preserving Insects in Collections. p. 369.

A wash of carbolic acid keeps away pests.

* 63. F. H. WENHAM. Podura Scales. p. 376.

Confirmation of the presence of spines on Podura scales.

* 64. The Proceedings of the American Philosophical Society, vol. xiv, No. 92, contain the following, and No. 65.

Dr. Horn said that some foreign trees were attacked by native insects. p. 10.

* 65. PROF. E. D. COPE. On the zoology of a temporary pool on the plains of Colorado.

Insects and other animals living in a pool of a few weeks' duration.

* 66. The Proceedings of the American Association for the Advancement of Science, vol. xxii, part ii, contain the following, and Nos. 67 to 70.

a. Insects eaten by toads (by Thomas Hill), p. 23, 24; *b.* Honey bees frequenting the Catalpa (by Thomas Meehan), p. 73; *c.* Donation of insects to the American Museum of Natural History in Central Park, New York (by Albert S. Bickmore), p. 199-200; *d.* Trace of an insect parasite of *Hyptiotes "Americanus"* (by B. G. Wilder), p. 266; *e.* Intertidal insects found on the coast of Maine (by A. E. Verrill) [See this Record, No. 13], p. 369; *f.* Proceedings and Memorial of the entomologists, p. 424-425.

* 67. J. L. LECONTE. Hints for the promotion of Economic Entomology. p. 10-22.

Past history of entomology in North America; estimate of the labors of the principal N. A. entomologists; influence of the Smithsonian Institution. Importance of entomology and means of its progress; suggestion of measures for preventing the ravages of insects.

* 68. P. R. UHLER. On a remarkable Wasp's Nest found in a stump, in Maryland. p. 32-34.

A clay nest said to be made by *Polistes* sp.? [Reprinted from Amer. Nat., vol. vii, p. 678-679.] [See this Record, No. 52, for opposing views.]

* 69. A. R. GROTE. On the Origin of Insects and remarks on the Antennal Characters in the Butterflies and Moths. p. 110-112.

Derivation of Tracheata from the biregional Crustacean; unequal value and true meaning of various antennal characters; correspondence in the position of the wings; function of the antennæ.

* 70. BURT G. WILDER. The Habits and Parasites of *Epeira riparia*, with a note on the moulting of *Nephila plumipes*. p. 257-253.

Insects eating and eaten by *Epeira riparia*.

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Vol. I.] Cambridge, Mass., January, 1875. [No. 9.

Re-discovery of *Cicindela limbata* Say.

MORE than fifty years ago Say described, from the collections of Long's expedition to the Rocky Mountains, an insect under the name of *Cicindela limbata*. As is well known, the collections of Say have all been destroyed, and from that day to this, though half a century has elapsed, and the country, which at that time was the almost unknown confines of the republic, has become its geographical centre, and is as well known as the Atlantic coast was then, no collector has ever taken any such insect, and no doubt the question has arisen in the minds of Entomologists, were the observations of Say in error? or has the species become extinct?

As the Cicindelidae are favorites with collectors, and the species noted is strikingly different from any known forms, it might be supposed that we had here a case of the extinction of a species, a thing not unknown among Vertebrates, but for which the data are wanting as yet among insects.

Last summer, while engaged on the survey of the North Boundary of Nebraska, I visited one of the numerous hills of drifting sand with which a large part of that section is covered, when I saw a *Cicindela* fly up, which was evidently quite different from anything I had ever seen before; on following it, it alighted on a steep slope of bare sand, where, after some exertion, I succeeded in capturing it. By going over the sand, I saw others, and during the time I remained in that vicinity—about an hour—they increased in frequency, a circumstance which I thought due to disturbing them in their hiding places by trampling the sand.

The next day I contemplated visiting the locality again, but it proved cloudy and unpleasant, and the following day we left

that section, and soon after passed out of the sand hills, though one day we went through a considerable stretch of them, and I looked for the species again, but only saw two or three specimens, singly, in similar situations.

On my return, I compared it with the figures in LeConte's "Revision of the Cicindelæ of the United States," in Trans. Amer. Philos. Soc., vol. xi (1857), p. 27, which showed that it was a species unknown to Dr. LeConte at that time, and on comparison with the description of *C. limbata* Say, it proved to be the long lost species.

It may appear singular that the species should have remained undetected so long, but owing to its small size and great activity, as well as because it probably is confined to the barren sand hills, which are not promising regions to collect in, it is evident that, but for its accidental discovery, it might have remained undetected much longer.

E. P. Austin.

Summer Butterflies at the White Mountains.

(Continued from page 25.)

Nymphalis milberti Godt. A single specimen was taken on July 1, near the first saw-mill. Another was seen a day or two before in the same locality, but not captured.

Polygonia interrogationis Fabr. One specimen found on July 5, among the rocks, on the ridge near the summit. It had undoubtedly flown up from the valley.

Polygonia faunus Edw. On the arrival of the party, ragged and battered females of this species were excessively common in the Glen, and as high up as the Half Way House, but they soon disappeared.

Polygonia gracilis G. and R. was not seen.

Basilarchia disippe Godt. One specimen observed at the entrance to the Glen, near Gorham, June 26.

Basilarchia arthemis Drury. It was interesting to observe the gradual progress of this species up the Glen and mountain, with the season. During the first days none were caught in the valley, though they were carefully looked for. But at Bethel, on the borders of the mountainous region, they were seen several times from the cars on June 26.

About July 1, isolated specimens were noticed in the lower part of the valley; after a day or two specimens were also caught near the Glen House, and had become common below it. On July 4, the first were taken above the Glen House, and on July 6, the first on the base of the mountain. After this date they were extremely common in the valley, and for about two miles up Mt. Washington.

Basilarchia proserpina Edw. was not noticed.

Lycæna lucia Kirby. Faded specimens were captured on the arrival of the party.

Lycæna comyntas Godt. In the valley.

Lycæna americana D'Urb. Common.

Pieris oleracea Harr. A few poor males were caught in the Glen, from June 29 to July 4.

Pieris rapæ Linn. Three specimens in the same locality as *oleracea*, on July 3.

Papilio turnus Linn. Taken on all parts of the mountain, and very abundantly in the Glen.

Nisoniades icelus Lintn. Common.

Cyclopides mandan Edw. This very rare northern species has hitherto been known but twice from New England, and but once from New Hampshire. A good specimen was taken on the Conway road, two miles above the Glen House, on July 6.

Atrytone zabulon Boisd. Lec. Ragged specimens were frequent during the stay of the party.

Pamphila taumas Fabr. Common in meadows.

Pamphila peckius Kirby. Common in the same localities as *taumas*.

Pamphila mystic Edw. Captured in various localities in the Glen, on June 29 and July 1, 3, 6 and 9, but not commonly.

Amblyscirtes vialis Edw. Milford, N. H., has been the most northern locality for *vialis*; but several fine specimens occurred in the Glen on July 6 and 9.

Amblyscirtes samoset Scudd. Of this rare species six were taken in an indifferent state of preservation along the Gorham road, on June 29 and 30.

H. K. Morrison.

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(Continued from page 28.)

* 71. TOWNEND GLOVER. Manuscript notes from my Journal, or Illustrations of insects, Native and Foreign. Diptera or Two-winged flies. Washington D C. 1874. written by Townend Glover Transferred & printed from stone by Jas. F. Gedney. 4to. pg. III, plates I–XII, pl. A (each with a page of explanation), pg. 120, printed only on one side of the sheet. [Not published. Only 45 copies printed for gratuitous distribution.]

a. Introduction, p. I–III. b. Figures of about 340 imagos, 160 young, 30 habitations and numerous details of about 400 species, pl. I–XII. c. Anatomical details of 86 genera, pl. A. d. Arrangement of Families, p. 1. e. Alphabetical list of the Families and Genera of Diptera mentioned in this work, with Synonyms. Habitat, Food, etc., p. 2–59. f. Alphabetical List of Predaceous or Parasitic Diptera, the larvae or perfect flies of which destroy other Insects, p. 60–62. g. Alphabetical List of Vegetable & Animal Substances &c., inhabited, injured, or destroyed by Diptera, p. 63–78. h. Alphabetical List of Insects of other Orders either destroying Diptera or destroyed by them, p. 79–85. i. Alphabetical List of names of Authors, & of Authorities quoted, p. 86–89. j. Abbreviations used in this work, p. 90. k. Alphabetical List of some of the principal Genera &c. of Diptera with derivation of names, p. 91–93. l. Alphabetical list of the species of Diptera and other Orders, Fungi &c. with derivation of names, p. 94–100. m. Supplement. 1. Remedies, p. 101–111. n. Alphabetical list of Insects &c. mentioned in Report on Remedies, p. 112. o. Synoptical Tables [of divisions and families], p. 113–118. p. Definition of terms, p. 118. q. Addenda, p. 119–120. r. Notes, p. 120.

* 72. THOMAS BELT. The Naturalist in Nicaragua: A Narrative of a Residence at the Gold Mines of Chontales; Journeys in the Savannahs and Forests. With Observations on Animals and Plants in reference to the Theory of Evolution of Living Forms. With map and [about 40] illustrations. London, Murray, 1874. 8vo. pg. xvi, 403.

Habits of many insects of all orders, especially *Eciton* and *Oecodoma* spp.; insects attacking and insects defending plants and animals; mutual adaptations of insects and plants; edible insects protected by mimicry and inedible ones by display; use of the secretions of Homoptera; instincts and

reasoning powers; migrations; characteristics of the Nicaraguan fauna; habitat of tropical animals during the glacial period; similarity of fresh water animals all over the world; natural and artificial selection; bearing of epidemics on the origin of species.

* 73. The Annals and Magazine of Natural History, ser. 4, vol. xiii, contain the following, and Nos. 74, 75.

a. Seudder's On some recent remarks [etc.] reprinted [see No. 4 of this Record], p. 186-188. *b.* Notice of Belt's The Naturalist in Nicaragua (1874) [Habits of *Oecodoma* and *Eciton* spp.; relations between insects and plants; mimicry], p. 246-249. *c.* Notice of Thomas' Synopsis of the Aericidæ of North America (1873) [Oviposition of *Caloptenus*; classification of Orthoptera; synoptical table of (2) subfamilies and (8) groups of Aericidæ; statistics of species], p. 322-324.

* 74. F. W. HUTTON. The Geographical Relations of the New-Zealand Fauna. pp. 91-94, 96-98, 100.

Genera of insects common to New Zealand and North America.

* 75. FREDERICK SMITH. A Revision of the genera *Epi-charis*, *Centris*, *Eulema*, and *Euglossa*, belonging to the family Apidæ, section Scopulipedes. pp. 318-322, 357-373, 440-446.

Describes each genus and 48 (30 new) species; enumerates 115 species, of which 28 (18 described, 15 new) are North American.

* 76. The Transactions of the Entomological Society of London for the year 1874, as far as p. 328, contain the following, and Nos. 77, 78.

a. Synonymy of some N. A. species of *Apatura* (by A. G. Butler), Proc., p. iii. *b.* Migrations of *Doryphora decem-lineata* and means against it, Proc., p. v.

* 77. H. W. BATES. Supplement to the Longicorn Coleoptera of Chontales, Nicaragua. p. 219-236.

Enumerates 37 (26 new) species of 29 (2 new) genera, making a total of 309 species; also describes two new species from South America and one from Jamaica. [See these Transactions, 1872, p. 163-238.]

* 78. F. SMITH. Monograph of the Genus *Xylocopa*, Latr. p. 247-302.

Treats of 123 (30 new) species, 18 (7 new) of which occur in N. A.

* 79. HERMAN STRECKER. Lepidoptera, Rhopaloceres and Heteroceres, Indigenous and Exotic; with Descriptions and Colored Illustrations. Nos. 1-11. Reading, Pa., 1872-1874. 4to. pg. 100, with 11 plates (i-xi), containing 179 figures.

Title; advertisement. 168 (32 new) N. A. and one exotic species described, and the following figured: 9 (1 new) *Papilio*, 3 *Pieris*, 1 *Colias*, 3

Anthcharis, 3 Melitaea, 1 Grapta, 1 Chionobas, 3 (1 new) Satyrus, 17 Lycaena, 9 (1 new) N. A. and 1 European Smerinthus, 1 new Platysamia, 44 (13 new) Citocala, including a Monograph of the 9 known N. A. species of Smerinthus, and a List of the 73 described N. A. species of Lycaena. Synonymic and other notes upon 22 species; position of Eudryas; notes on Anticosti Lepidoptera, on Polar Lepidoptera and on Northern Lepidoptera. [Exchange and purchase lists on the covers.]

* 80. The Entomologist's Monthly Magazine, vol. x, from p. 169, contains the following, and Nos. 81 to 84.

a. Synonymy of "Apatura Herse" and "Apatura Lyeaon" (by A. G. Butler), pp. 216, 235. b. Notice of Strecker's Lepidoptera, Rhopaloceres and Heteroceres, Indigenous and Exotic, parts 1-6 (1872-1873), p. 233.

* 81. R. M'LACHLAN. Note concerning *Acanthaclisis americana* Drury. p. 210.

Probable discovery of the types of Drury's *Myrmeleon americanum* and *Libellula Titia*. *A. americana* = ? *A. fallax*.

* 82. R. M'LACHLAN. Notes on some Odonata, &c., in the Collection of the Royal Dublin Society. p. 227-228.

Georgia specimens from Abbot; specimens from Museum Leskeanum.

* 83. THOMAS E. BEAN. Occurrences of Diurnal Lepidoptera at Galena, Illinois, 1871-73. p. 248-251.

Calendar and food-plants in part of "44" [43] species enumerated.

* 84. H. W. BATES. New Species of Cicindelidæ. p. 261-269.

Describes 16 (5 Central American) n. spp.; enumerates 11 C. A. spp.

* 85. The Canadian Entomologist, vol. vi, as far as p. 120, contains the following, and Nos. 86 to 114.

a. Editorial, p. 1-2. b. Suggestion of a compromise in questions of nomenclature (by James Behrens), p. 18-19. c. Inquiries respecting *Agrotis fennica*: cyanide of potassium as a killing material (by Geo. Norman), p. 19. d. Petition for assistance (by G. R. Crotch), p. 20. e. Description of the larva of *Papilio brevicaula* (by W. H. Edwards), p. 20. f. Parasites (? *Pteromalus puparum*) in chrysalids of *Pieris rapae*; others in *Grapta progne* (by W. Couper). p. 37. g. *Colias philodice* var., *Limenitis ephestion* var.?; *Grapta comma*, *Cynthia cardui*, *C. atalanta* and second brood of *L. ephestion* at Portland (by H. H. L.), p. 38. h. Annual Meeting of the London Branch of the Entomological Society of Ontario [*Papilio thoas* and *Philampelus satellitia* taken at Amherstburg], p. 38-39. i. Obituary notice of Dr. F. E. Melsheimer (by J. L. LeConte), p. 39-40. j. Organization of the Montreal Branch Entom. Soc. Ontar., p. 59. k. Notice of Dr. S. V. Summers' projected Entomological Collecting Tour, pp. 59, 80. l. *Pieris rapae* at Dunn, Haldimand Co., Ont., (by F. C. L.), p. 60. m. *Vanessa*

C- ["G-"] *album* from N. W. coast of British America (by W. H. Edwards), p. 60. n. Notice of No. 1 of The Cincinnati Quarterly Journal of Science, p. 77; of vol. i, pts. 8 and 9 of Stretch's Illustr. Zyg. and Bomb. N. A. [see above, No. 42], p. 77-78; of Packard's Cat. Phal. Cal., No. 2 [see above, No. 1], p. 78. o. Presentation of a testimonial gold medal to Mr. Riley, p. 78-79. p. Soot as a means of destroying the Phylloxera; supposed distinctness of the root-lice and leaf-lice, p. 79-80. q. Announcements; Notice of No. 4 of the Bull. Buff. Soc. Nat. Sci. [see above, Nos. 19-25], p. 98-100. r. Protective instinct of *Catocala relictæ* (by R. Bunker), p. 100. s. Scudder's The Preservation of Caterpillars by Inflation, reprinted [see this Record, No. 59], p. 107-111, fig. 20-27. t. Annual Meeting of the Montreal Branch Entom. Soc. Ontar., p. 118. u. *Dysauxes mediastina* not N. American, but Australian (by R. H. Stretch), p. 119. v. *Platysamia columbia* raised from cocoon at Montreal (by C. W. Pearson), p. 119. w. Notice of Lintner's Entom. Contr. No. III [see above, No. 26]; of Grote's List of the Noctuidæ of N. A. (1874); of No. 1 of Psyche (1874); of Edwards' Butterflies of N. A., vol. ii, pt. 1 (1874), p. 120.

* 86. WM. SAUNDERS. On some of our Common Insects. 11. The Tiger Swallow Tail—*Papilio turnus*, Linn. p. 2-5, fig. 1-2.

Description of imago (fig.), egg, larva (fig.); habits.

* 87. T. G. GENTRY. The Use of Aphis-excretion and Benefit derived therefrom. p. 5-8.

Use of honey-dew as food for the young Aphides and to change ants from destroyers to protectors.

* 88. V. T. CHAMBERS. Micro-Lepidoptera (continued from vol. v.) pp. 8-11, 49-52, 72-77, 96-97.

Enumerates 14 (9 new) species of 10 (7 new) genera; habits of *Butalis matutella*?, *Acaea ostryaella*.

* 89. FRANCIS WALKER. The Families of Diptera. p. 11-12.

Thoughts on fleas; synopsis of sub-families of Mycetophilidæ.

* 90. A. R. GROTE. Notes on Noctuidæ. p. 13-16.

Enumerates 10 spp.; describes as new 1 *Agrotis*, 1 *Luperina*, 1 *Hadenæ*.

* 91. W. V. ANDREWS. Entomological Readings, Suggestive and Reflective. p. 16-17.

Indefiniteness of species; parthenogenesis of *Eacles imperialis*.

* 92. S. H. SCUDDER. The Food-plants of European Butterflies. p. 21-25 [continued p. 126-127.]

About 179 plants cited about 323 times as food of 101 butterflies.

English Names for Butterflies.

(Continued from page 31.)

25. *Euptoicta Claudia*.— The variegated Fritillary.

A name proposed by Gosse.

26. *Speyeria Idalia*.— The regal Fritillary.

This most superb of all Fritillaries deserves such a designation.

27. *Argynnis Cybele*.— The great spangled Fritillary.

Proposed by Gosse.

28. *Argynnis Aphrodite*.— The silver-spot Fritillary.

Also proposed by Gosse.

29. *Argynnis Atlantis*.— The mountain Silver Spot.

30. *Brenthis Myrina*.— The silver-bordered Fritillary.

Called by Gosse the pearl-bordered Fritillary, but the spots are of the color of those of No. 28 rather than of No. 33.

31. *Brenthis Montinus*.— The dappled Fritillary.

32. *Brenthis Bellona*.— The meadow Fritillary.

In allusion to its exclusive resort.

33. *Phyciodes Tharos*.— The pearl Crescent.

Called by Gosse the pearl-crescent Fritillary, but the name of Fritillary belongs more appropriately to the species of *Argynnis* and *Brenthis*: or at least it is best that two groups of genera should not be confounded by the application of a single English word having a generic sense.

34. *Phyciodes Batesii*.— The tawny Crescent.

The characteristic spot on the border of the under surface of the hind wing giving its name to the last species, is usually tawny in this.

35. *Charidryas Nycteis*.— The silver Crescent.

36. *Limnæcia Harrisii*.— Harris's butterfly.

37. *Euphydryas Phaeton*.— The Baltimore.

Called the Baltimore Fritillary by Gosse, in allusion to its colors.

38. *Libythea Bachmanii*.— The snout butterfly.

A not very elegant name, proposed by Gosse.

(To be continued.)

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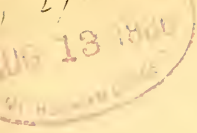
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ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB.

EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., February, 1875. [No. 10.

Notes on White Mountain Noctuidæ.

The number of species of Noctuidæ taken on the excursion of our Club at Mt. Washington was very small in comparison with that which is known to occur there, and this poor success was mainly due to the difficulties which rendered almost impracticable the use of "sugar" and "light" in capturing them. However, of those secured, some were new to science, many were rare, and all deserve mention. Particular interest attaches to the distribution of the species which are peculiar to the mountain fauna, and as, fortunately, many of these were taken in the pupal state (through the kindness of the coleopterists of the expedition), we are able to fix beyond question their true habitat and the feeding place of their larvæ.

The notes attached to each species show that those of which two or more specimens were captured were found indifferently over the upper part of the mountain, and that therefore the presence of two distinct faunal areas above the tree line was not indicated, at least for the family to which our observations are confined.

The great preponderance of the higher genera will be noticed, and this proportion holds good in the north temperate countries of Europe and Asia as well as America; the lower forms appear more numerous as the climate becomes warmer, attaining their greatest development in the tropics.

The following is a complete list of the species:

Pseudthyatira cymatophoroides Guen. Two specimens of the typical form were taken at sugar in the Glen; one showed a marked approach to the var. *expultrix* Grote, which was common in the same locality, and also near the Half-way House, from July 3 to 10.

Gonophora scripta Gosse. Common in the Glen and near the camp, at sugar and light. This species occurs very rarely near Boston.

Jaspidea lepidula Grote. A single specimen of this rare and beautiful species was captured at sugar, near the Glen House, on June 29.

Lithacodia bellicula Hübn. Not uncommon in the Valley.

Microcoelia fragilis Guen. One specimen caught on the carriage road near the two mile mark; others were found at the head of Tuckerman's Ravine, and near the seven mile mark. The occurrence of this species at this height is very interesting; it is also found in various localities in the Middle and Western States.

Acronycta dactylina Grote. A pair was taken at sugar near the second saw mill, on June 30. This species approaches very closely indeed to *A. rubricoma* Guen.

Acronycta brumosa Guen. Grote and Robinson's *A. Verrilli* is identical with Guenée's species. The only specimen seen was taken by Mr. J. C. Munro, near the Half-way House, on July 1.

Acronycta superans Guen. One perfect example of this handsome insect was found by Mr. Austin, clinging to some rocks near the Summit House, on July 3.

Agrotis scropulana Morr. Seven pupæ were found; three on the Ledge, and the others on the bridle path, for some distance beyond the seven mile mark. The moths emerged in Cambridge from July 12 to 20; their delicate shades of brown, blue and creamy white, place them among the most beautiful of our Noctuidæ.

Agrotis opipara Morr. Of this species, which almost approaches its congener in beauty, five pupæ were found; one on the Ledge, two above this locality, by Mr. Emerton, and two by ourselves, buried deeply beneath the moss on one of the numerous plats of sedge, a few hundred feet below the summit. The perfect insects came out at the same time as those of the preceding species.

Agrotis okakensis Pack. One pupa of this rare species was found by Mr. Emerton above the Ledge; it emerged on July

10. This is the first record of its occurrence at the White Mountains; the specimen, compared with one received from Labrador, through the kindness of Mr. Herman Strecker, and with Dr. Packard's type from the same locality, shows little or no variation.

Polia perquiritata Morr. One specimen taken at light, near the Half-way House on July 6.

Anarta melanopa Thumb. We found this typical subalpine species, which also flies in Labrador, on the mountains of Colorado and on the Alps, distributed over the mountain above the tree line, and in one case below it. The following are all the localities in which it was observed: on the Ledge, three or four worn specimens from July 1 to 3; a few feet above "Sanborn's Camp"; on the flat land in the neighborhood of Wiley's House, and here feeding with *Chion. semidea* on the flowers of *Cassiope hypnoides* Don.; among the rocks near the Summit House; over the entire southern slope of the mountain, from the carriage road to the edge of the ravines; down the precipitous descent into Tuckerman's Ravine, one specimen was taken at the foot, among birches two or three feet high.

Plusia mappa G. & R. One specimen was found by Mr. Blanchard on a shrub near the carriage road, on June 29, another was taken at sugar near the camp, on July 6.

Pteroscia atrata Morr. A pupa found on the Ledge produced this species; a worn specimen was also captured at light near the camp, on July 8.

Euclidia cuspidea Guen. Common in dry fields in the Glen.

H. K. Morrison.

English Names for Butterflies.

(Continued from page 40.)

39. *Polystichtis borealis*.—The large Metal-mark.
This is Grote's name. I had called it the Steel-speck. Both names are in allusion to the metallic dots with which the wings are covered.
40. *Thecla Ontario*.—The northern Hair-streak.
41. *Thecla Liparops*.—The white-striped Hair-streak.
Called the streaked *Thecla*, by Harris.
42. *Thecla Edwardsii*.—Edwards' Hair-streak.
43. *Thecla Calanus*.—The banded Hair-streak.
44. *Thecla acadica*.—The Acadian Hair-streak.

45. *Callipareus Melinus*.—The gray Hair-streak,
Called the hop-vine Thecla by Harris.

46. *Mitoura smilacis*.—The olive Hair-streak,
Called the Auburn Thecla by Harris.

47. *Incisalia Augustus*.—The brown Elfin,

48. *Incisalia Niphon*.—The banded Elfin.

49. *Incisalia Irus*.—The hoary Elfin.

50. *Erora læta*.—The spring Beauty.

Derived from the generic name.

51. *Strymon Titus*.—The coral Hair-streak.

Gosse's name.

52. *Lycæides Scudderii*.—The pearl-studded Violet,

53. *Glaucopsyche Pembina*.—The silver Blue.

54. *Cyaniris pseudargiolus*.—The southern Azure,

Called the pale Azure by Gosse.

55. *Cyaniris neglecta*.—The pale Azure,

56. *Cyaniris violacea*.—The dotted Azure.

57. *Cyaniris Lucia*.—The spring Azure.

This is Gosse's name. It was called the blue Lucia by Harris.

58. *Everes Comyntas*.—The tailed Blue.

59. *Chrysophanus Hyllus*.—The bronze Copper.

60. *Chrysophanus Epixanthe*.—The marsh Copper,

61. *Lycæna americana*.—The American Copper.

This is Harris's name. It was called the small Copper by Gosse.

62. *Feniseca Tarquinius*.—The Wanderer,

This is Grote's name and very appropriate, considering the appearance of the insect in many detached and widely separated localities. I had called it the Piebald, from the odd distribution of its colors. *S. H. Scudder*,

(To be continued.)

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann,

(Continued from page 39.)

Nos. 93 to 104¹ are from **The Canadian Entomologist**, vol. vi, as far as p. 67 (continued).

* 93, ROBERT BUNKER. Notes on collecting Catocalas. p. 25-26.

Seasons; localities; methods of collecting. Protective instincts.

¹The record of the articles on page 67-120 is omitted for the present.

* 94. W. SAUNDERS. On some of our Common Insects.
12. The American Copper Underwing—*Amphipyra pyramidoides* Guen. p. 27-28, fig. 3-4.

Habits; description of larva (fig.), imago (fig.); means against it.

* 95. H. K. MORRISON. On *Anisopteryx vernata* and *pometaria*. p. 29-32.

Reprint of descriptions by Peck, Harris, and Mann; distinctive characters and seasons of the two species. [See this Record, No. 10.]

* 96. W. SAUNDERS. Notes on the Larva of *Boarmia larvaria* Guenee. p. 32-33.

Description; food-plant (willow); seasons.

* 97. WILLIAM COUPER. A Dissertation on Northern Butterflies. pp. 33-37, 55-59, 91-96.

Relations and distribution of *Papilio brevicauda*, *P. polyzenes* (*asterias*), *P. Anticostiensis* and their allies. Relations and distribution of *Chionobas* spp.; of *Pieris frigida*, *Ganoris oleracea*, and *G. borealis*. Distribution, food-plants, and varieties of *Papilio turnus*; habits of *Colias philodice* on the Island of Anticosti; production of varieties of *Colias*, *Grapta*, and other Lepidoptera by difference of food and other causes.

* 98. T. G. GENTRY. Description and Habits of a supposed new species of Lepidopterous larva of the genus *Sphinx*. p. 41-43.

Description, food-plant, and habits of an undetermined larva.

* 99. G. M. DODGE. *Hesperia Pawnee*. N. sp. p. 44-45.

Description and season of male and female imagos from Nebraska.

* 100. J. PETTIT. List of Neuroptera collected. p. 45.

23 species of 13 genera from (?) Grimsby, Ontario.

* 101. W. SAUNDERS. On some of our Common Insects.
13. The Disippus Butterfly—*Limenitis disippus* Godt. p. 46-49, fig. 5-7.

Description and figures of all stages and of the hibernaculum; habits; enemies.

* 102. S. V. SUMMERS, M.D. List of Coleoptera of St. Louis County, Missouri. (continued from vol. v.) p. 52-55.

Enumerates 111 species of 56 genera.

* 103. W. SAUNDERS. Notes on the Larva and Pupa of *Saperda moesta* Lec. p. 61-63.

Food-plant; habits; description of larva and pupa; history of development.

* 104. T. G. GENTRY. Observations on *Formica flava*, and inferences deducted therefrom. p. 63-67.

Neuters killing the young and helpless ants, as it is supposed, to preserve them from captivity and a life of servitude.

* 105. **Nature**, vol. ix, from p. 177, and vol. x, contains the following, and Nos. 106, 107.

Vol. ix: *a.* Notice of the "North American Bee-keepers' Society," p. 193. *b.* A swarm of ephemerids (by T. G. Gentry), p. 196. *c.* Structure and action of striated muscular fibre in *Gyrinus* (by Dr. Thomas Dwight), p. 196. *d.* Synonymy of some N. A. species of *Apatura* (by A. G. Butler), pp. 255, 335. *e.* Notice of Packard's Insects of the Garden, p. 332. *f.* Means against *Doryphora decemlineata*, p. 354-355. *g.* Insects collected on the "Polaris" Arctic Expedition, p. 405. *h.* Fertilization of *Yucca* by *Pronuba yuccasella* (by T. Meehan), p. 436. *i.* Notice of Packard's Our Common Insects, p. 498-499.

Vol. x: *j.* Native beetles attacking foreign trees at Philadelphia in preference to native trees; do Longicorns attack healthy trees? (by G. H. Horn). *k.* Notice of *Psyche*, No. 1, p. 295. *l.* Ravages of grasshoppers in Minnesota, p. 344. *m.* Habits of *Pseudomyrma bicolor*, p. 402. *n.* Cave insects of Kentucky, p. 441.

* 106. ALFRED R. WALLACE. Belt's "Naturalist in Nicaragua." ix, p. 218-221.

Mimicry and display as means of protection; habits of *Oecoloma* sp.; relations between insects and plants.

* 107. C. V. RILEY. Pitcher-Plant Insects. x, p. 463-465, fig. 1-2.

Habits and figures of all stages of *Xanthoptera semicrocea* and *Sarcophaga sarraceniæ*.

* 108. The **Third Annual Report of the Secretary of the State Pomological Society of Michigan. 1873.** By Authority. Lansing, 1874, contains the following, and Nos. 109 to 115.

a. Need of a State Entomologist, p. 9; appointment of Prof. A. J. Cook as the one, p. 353. *b.* Peach-tree insects, pp. 33, 197-198, 288; orchard insects, pp. 97, 222, 258, 278, 280, 281, 356-357, 361-362, 365-366, 368, 370, 491-492; *Carpocapsa pomonella*, pp. 198, 252, 297, 331, 350-351, 366-368, 371-372; means against them. *c.* Fertilization of flowers by insects (by W. G. Beal), p. 58-59. *d.* Birds and insects, and their relation to fruit-growing (by A. J. Cook), p. 257. *e.* *Lytta cinerea* attacks *Gleditschia triacanthus*; *Clytus robiniae* does not, p. 514.

* 109. B. HATHAWAY. The Codling Moth. p. 80-83.

Habits of *Carpocapsa pomonella*; means against it.

* 110. PROF. A. J. COOK. Insects injurious to Strawberries. p. 102-106, fig.

Lachnosterna fusca, Anchylopera fragariae, Emphytus maculata.

* 111. L. H. BAILEY, JR. Birds. p. 127-128.

Insects eaten by some common singing birds of Michigan.

* 112. H. A. SHAW. The Necessity of a State Entomologist. p. 129-132.

Statistics of the importance of insects and of means against them.

* 113. C. V. RILEY. Lecture on Entomology. p. 443-448.

Habits of *Carpocapsa pomonella*: means against it.

* 114. DR. W. LEBARON. The Bird Question. p. 449-456.

Relation between injurious and beneficial birds and insects.

* 115. A. J. COOK. Insects injurious to House Plants and Shrubbery. p. 496-504.

Aphidiae, Coccidae, Thrips, Scandria, Termes; habits; remedies.

* 116. DR. MAX GEMMINGER et E. v. HAROLD. Catalogus Coleopterorum hucusque descriptorum synonymicus et systematicus. Tom. XI. Chrysomelidae. (Pars I.) Monachii, Beck, 1874. 8vo. p. 3233-3478; Index Generum, pg. 4 (s. n.)

Enumerates 5477 species of 296 genera, amongst which are 750 N. A. species of 68 genera; synonyms and references.

* 117. HAROLD'S **Coleopterologische Hefte**, xii, contains the following, and Nos. 118 to 121.

Bibliographical Review (resp. Coleoptera) of the Verhandlungen des naturforschenden Vereins in Brünn, XII (1874), p. 110-114; of Schaufuss' Nunquam otiosus, vol. ii (1874), p. 144.

* 118. E. v. HAROLD. Ueber die Ataenins-Arten mit gezahntem Kopfschild. p. 15-25.

Describes 9 (6 new, 5 new North American) species, with notes.

* 119. E. v. HAROLD. Zur Kenntniss der kugelförmigen Trogiden. p. 26-51.

Includes notes upon 4 N. A. (1 new Cuban) species of *Acanthocerus*.

* 120. E. v. HAROLD. Beiträge zur Kenntniss der amerikanischen Eumolpiden. I. Stück. p. 53-87.

Describes 44 (41 new) species, of which 8 (7 new) are North American, belonging to 10 (*Araecyntha*, *Mevania* = 2 new) genera, with notes.

* 121. G. R. CROUCH et E. v. HAROLD. Berichtig-

ungen und Zusätze zum Catalogus Coleopterorum synonymicus et systematicus. p. 91-96.

Includes synonyms and corrections of 77 North American species in vol. ix; and of 1 North American species in vol. iv.

* 122. The **Berliner Entomologische Zeitschrift**, Jahrg. xviii (1874), contains the following, and Nos. 123 to 130.

a. Obituary notice of G. R. Crotch (by G. Kraatz), p. 7. b. *Vanessa Milberti* a species representative of *V. urticae* (by O. Staudinger), p. 148. c. Notice of Harold's Coleopterologische Hefte, xii (1874) (by G. Kraatz), p. 447.

* 123. DR. G. KRAATZ. Ueber die schnelle Verbreitung des höchst schädlichen Kartoffelkäfers aus Colorado (*Doryphora decemlineata* Dej.). p. 151-152.

Migrations, habits and poisonousness of *D. 10-lineata*. [See below, No. 130.]

* 124. E. v. HAROLD. Beschreibung zweier neuer Aphodius-Arten. p. 174-176.

Ataenius socialis from North America; *Aphodius nobilis* from Africa.

* 125. E. v. HAROLD. Beiträge zur Kenntniss einiger coprophagen Lamellicornien. (Achstes Stück.) p. 177-208.

Treats of 26 (7 new) species of Aphodius, of which 4 (2 new) are North American; review of Horn's Description of the species of Aphodius and Dialytes of the United States (1870).

* 126. G. KRAATZ. Ergänzungen und Nachträge zu Hagen's Bibliotheca Entomologica. (Erstes Stück.) p. 209-226.

Corrections and additions upon 90 works of 81 authors (prior to 1862).

* 127. G. KRAATZ. Die systematische Stellung der Käfergattung Boros. p. 352.

Dr. LeConte transfers Boros from the Tenebrionidae to the Pythidae.

* 128. DR. H. LOEW. Neue nordamerikanische Dasypogonina. p. 353-377.

Describes 14 new species of ♀ (*Psilocurus* = 1 new) genera; remarks on related species; supplants 7 generic names.

* 129. H. LOEW. Neue nordamerikanische Diptera. p. 378-384.

Describes 6 new species: 1 *Rachicerus*, 1 *Chrysopila*, 2 *Triptotricha*, 1 *Thereua*, 1 *Acrosticta*; remarks on related species.

* 130. G. KRAATZ. Zur Nomenclatur des Kartoffelkäfers. p. 442-444, tab. 1, fig. 5, 6.

Chrysonela (Leptinotarsa) decemlineata distinguished from *L. juncta*; its varieties and synonymy; figures of *L. undecimlineata* and *L. juncta*.



PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB.

EDITED BY B. PICKMAN MANN.

Vol. I.]

Cambridge, Mass., March, 1875.

[No. 11.]

Description of the Larva of *Galerita Janus*.

Head of medium size, flat, semicircular, somewhat enlarged anteriorly, with a short, cylindrical basal neck; above, sparingly covered with short black hairs; depressed in the middle; sides and base rounded, convex; branches of the Y suture protruded interiorly in the middle, where a small black dot is to be seen, ending inside of the elevated, somewhat cylindrical, anterior angles of the head, where the antennæ are inserted: above the anterior border, a horny prolongation nearly as long as the head, conical at the base, the apical half bifurcated, each branch with two bristles on the under surface, one nearly terminal, the other a short distance behind the first; just behind the insertion of the antennæ, six oval ocelli arranged around a low, conical elevation, in two transverse series, the middle pair more widely separate than the upper or lower ones; on the upper surface of the head, within and behind the ocelli, on each side, a longer bristle; head beneath flat; on each side near the base, two bristles on short pointed tubercles.

Antennæ twice as long as the head, of four cylindrical joints, the first nearly equal to the two following united, the second half as long, and the third more than half as long as the first, the fourth very small, lozenge-shaped; the first and second straight, the first with three equidistant interior bristles and two internal and two or three external finer bristles near the apex, the second with one prominent and several finer bristles, the third and fourth joints bent downwards and outwards, with more numerous, very long and fine hairs, in the fourth inserted upon two internal, one external and one terminal tubercles.

Labrum rudimentary, a small, transverse plate, turned back, with rounded angles and under surface densely covered with

minute hooks ; two acute teeth each side on the head, beneath the bifurcated prolongation, one near the labrum, the other further off and nearer the border.

Mandibles longer than the head, sickle-shaped, pointed, with a stout internal tooth near the middle.

Maxillæ cylindrical, about as thick and as long as the first joint of the antennæ, slightly curved inwards, bearing midway a stout external bristle, and near the apex two or three internal and one external bristles, the whole joint scatteringly covered with fine short hairs, the extremity with two appendages, the external, or palpus, of four joints increasing slightly in length, the first two bearing one or two bristles, the last two without hairs, the internal, or maxillary lobe, of two joints, the terminal long, slender and pointed, each with a bristle.

Labium with an elongated mentum and two diverging, elongated, cylindrical palpus-bearing pieces united nearly to their apices by a membrane prolonged beyond them in a fleshy ligula, terminating in a bristle ; labial palpi of two joints, the first once and a half as long as the second.

Thoracic segments above, horny, flattened, covered with short pubescence.

Prothorax elongated, narrow in front, gradually enlarged, widest shortly before the base, where it equals the head in width ; angles rounded ; on each side of the median line several scar-like depressions.

Mesothorax and metathorax together as long as the prothorax, somewhat broader, narrowed before, with rounded angles ; mesothorax a little longer and narrower than the metathorax ; both with slight depressions on each side.

Abdomen as long as the head and thorax together, flattened, in the middle as wide as the prothorax, gradually narrowed before and behind ; segments with horny, transverse shields above and below, finely rugose, and scatteringly covered with short, spiny hairs, more conspicuous at the borders ; the terminal, ninth segment shorter and narrower than the others, with a tubular anus, and two very long, filiform appendages of more than twenty-five very unequal articulations, each furnished with a bristle (*apex wanting*).

Stigmata nine pairs, the first, upon the mesothorax, very large, oblong, oblique, visible from below, the others on segments one to eight of the abdomen, the first oval, half as large as the mesothoracic, the rest small, circular.

Legs slender, half as long as the body, increasing in length posteriorly; femora stout, anterior longest, flattened anteriorly; tibiæ cylindrical, about as long as the femora; tarsi cylindrical, longer than the tibiæ, the two joints equal in length, the terminal slender, tapering uniformly, with two small apical hooks; legs, except the anterior femora, hairy, more densely on the terminal joints.

Femora of the fore legs with four strong, straight spines on the anterior border, united at their bases and tipped with a bristle, the three anterior subequal, the fourth smaller, the two anterior closer together. Tibiæ of fore legs obsolete serrate posteriorly, with four or five bristle-bearing denticulations.

Length, exclusive of appendages, 17 millimetres.

Body very dark brown, opaque, having in life a bluish reflection as in the imago, the head and prothorax honey yellow, with a faint brown patch in front of the eyes, and the first two joints of the antennæ more or less darkened, especially towards their apices, the prothorax with a dark brown transverse band, deeply tri-lobed posteriorly, divided by the median furrow, not quite attaining the border on the sides, and covering the apical third. The fore legs clear yellow, like the head and prothorax, the terminal joint uniformly darkened, and the two preceding only towards their apices. The remaining legs dark brown, testaceous at the joints. The long first joint of the terminal appendages clear yellow, the succeeding joints dark brown except at their junction with each other.

This description is made from three larvæ preserved in alcohol, and the skin of a fourth from which the imago was raised, none of which have the caudal appendages entire. They were found in the latter part of July, at Detroit, Michigan, under the loose bark of damp and rotten logs, where by the 16th of August the pupæ were found in unlined cells, formed by the movement of the larvæ. Two days later the imago appeared.

On comparison with a larva from Kansas, probably of *G.*

atripes or *G. bicolor*, in the alcoholic collection of the Museum of Comp. Zoöl. at Cambridge, I can find but slight differences. The Kansas species is somewhat more elongated in all its parts, and the spines of the anterior femora are slightly curved backwards; the dark band on the prothorax is much reduced in size, and the caudal appendages are more testaceous; they have thirty-three articulations. The specimen is much denuded of its bristles, but those that remain correspond in position with those of *G. janus*. In general, the characters given by Chapuis and Candèze for *G. Lecontei* agree with those of *G. janus*, but many of the details given above for *G. janus* are not mentioned in the description of *G. Lecontei*. Sallé's figure of the latter, reproduced in Packard's "Guide", is certainly unreliable, and strangely exaggerated in the attenuation of its parts. The larva figured in the "Guide", Appendix, p. 713, fig. 667, cannot be a *Galerita*,
H. G. Hubbard.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 48.)

The **Annales de la Societe Entomologique de France**, ser. 5, vol. iii (1873), from p. 395, contain Nos. 131, 132.

* 131. V. SIGNORET. Essai sur les Cochenilles ou Gallinsectes (Homoptères — Coccides) 11e partie. p. 395-448, tab. 12, 13.

Describes 52 (14 new, 37 figured) species of Lecanium, of which 10 (3 new, 5 figured) are North American; classification; habits.

* 132. AL. LABOULBENE et CH. ROBIN. Observations sur les Organes lumineux du *Pyrophorus noctilueus* Linné. p. 529-536.

Structure, histology, chemical composition and physiological action of these organs.

* 133. The **Bulletin de la Soc. Entom. de France**, année 1873, from p. exciii, contains the following.

a. The generic name *Bromius* must yield to the name *Adoxus* (by Édouard Lefèvre), p. excv-excvi. b. Synonymy and habitat of *Clytus cinereus* (by Ernest Olivier), p. cexxvii. c. List of the 375 (7 N. A.) mem-

bers of the Society, p. cexli-cclxv. *d.* Alphabetic and analytic index of genera, species and subjects; index of authors and of additions to the Library, p. cclxvii-ccciv.

* 134. The **Popular Science Monthly**,¹ vol. iv, from p. 257, contains the following, and Nos. 135 to 141.

a. The Caterpillar Nuisance in Philadelphia [Replacement of *Ennomos subsignaria* (exterminated by English sparrows) by *Orygia leucostigma* (which the sparrows will not attack)], p. 381. *b.* The Grape-vine Blight [*Phylloxera vastatrix*; means against it], p. 381-382. *c.* Migrations of Insects [Statistics of swarms of locusts], p. 382. *d.* Inoculating the vine with essence of *Eucalyptus globulus* a remedy for the Phylloxera; mode of application, p. 511. *e.* Notice of Lubbock's On the Origin and Metamorphoses of Insects (1874) [Intelligence of insects; habits of *Cerceris*; habits of ants], p. 628; of Packard's Insects of the Garden, p. 755-756.

* 135. *C. V. Riley.* Length [and weight] of Thread of the Silk-worm, p. 508.

* 136. RICHARD BLISS, JR. Professor Louis Agassiz. p. 608-618.

Obituary notice.

* 137. *Dr. B. A. Gould.* A Swarm of Locusts. p. 636.
Description of a swarm seen at Cordova, Arg. Rep.

* 138. *P. R. Uhler.* Clay Wasp-Nests. p. 637-638.

Nests made by *Polistes* sp.; manner of construction; habits of the wasps. [See this Record, No. 68].

* 139. ANONYM. The Mantis or Praying Insect. p. 710-713, fig.

Habits and figure of imago; its names; stories about it.

* 140. S. E. WILBER. Animal Migrations. p. 745-746.

The attacks of dipterous parasites the sole incentive to the migrations of locusts.

* 141. *D. L. Adair.* The Uses of Bees' Wings. p. 763.

Structure of the wings; their use for flight, respiration, smell and hearing.

* 142. The **Scientific American**,² vols. xxx and xxxi, contains the following.

Vol. xxx: *a.* Improved Fly Traps, pp. 26, 89, 121, 265. *b.* Vermin Killer [a liquid mixture], p. 65 and vol. xxxi, p. 21. *c.* The Yama-mañ, or Oak Tree Silk-worm [Description of egg (fig.), larva (fig.), imago; habits; manner of importation], p. 66, fig. *d.* Use of fungi in destroying caterpillars (by J. L. LeConte), p. 82. *e.* To exterminate house insects,

¹ Record made with the assistance of Mr. Samuel Henshaw.

² Record made with the assistance of Mr. George Dlmock.

pp. 107, 115, 283. *f.* Improved Cotton Worm Destroyer (by J. W. Johnson), p. 118, fig. *g.* Magnifying Insect Case, p. 246. fig. *h.* Army Ants [Intelligence of ants; habits of *Eciton* sp.; (see Rec., No. 72)], p. 289. *i.* On the classification of the rhiphophorus [rhynchophorous] Coleoptera (by J. L. LeConte), p. 293. *j.* A simple insect catching device [for field insects], p. 295. *k.* The Colorado Potato Bug [habits and description of larva and imago (fig.); means against it], p. 306, fig.; p. 383. *l.* The Ants of Brazil [habits and habitations (mounds)] p. 340. *m.* Wire Worms [how to destroy them], p. 406.

Vol. xxxi: *n.* White Ants [their ravages at Pernambuco] (by Truman Hotchkiss), p. 20. *o.* How to kill grasshoppers [method used with success in Cyprus], p. 37. *p.* *Phytolacca decandra* destructive to cockroaches, p. 43. *q.* Rabies in Ants [from eating corrosive sublimate; a means against *Oecodoma* (see Rec., No. 72)], p. 49. *r.* The Colorado Potato Bug [means against it] (by M. P. Smith), p. 52. *s.* Strange Stories Confirmed [*Oecodoma* eats fungi and not leaves; *Cecropia* trees protected by ants] (by Fritz Müller), p. 54. *t.* Habits of *Cicada septendecim*, p. 58. *u.* Politics in the Beehive [habits of *Trigona* spp., in Brazil] (by F. Müller), p. 65. *v.* The Locust in Minnesota [description and habits of *Caloptenus spretus*; extent of its ravages; means against locusts in Europe and Africa; their natural enemies], p. 65. *w.* Raiding Ants [habits of slave-making ants in N. W. Arkansas], p. 68. *x.* A wash to keep mosquitoes away, p. 75. *y.* Language of Insects and Animals [communication among ants], p. 81. *z.* Oak Apples or Galls [*Cynips quercus-petoli*], p. 82, fig. 1-5. *aa.* Our Six Legged Rivals [intelligence of ants; analogy between ants' doings and those of men], p. 113. *bb.* Remedy for Insect Stings, p. 118. *cc.* The Western Locust Plague [habits of *Caloptenus spretus*; damage done by locusts and means against them in Minnesota], p. 119, fig. *dd.* How to kill house flies, p. 124. *ee.* The Ant's Instinct [capture of roaches by ants] (by T. Hotchkiss), p. 132. *ff.* To prevent or check oiliness in Lepidoptera, p. 138. *gg.* Replacement of Injurious Insects [see Rec., No. 134, *a*] (by J. L. LeConte), p. 152. *hh.* The Grape Phylloxera — Sixty Thousand Dollars Reward offered for a Remedy for the Grape Disease [amount and manner of award; description, habits and figures of all stages of the insect and disease; means of coping with the disease (see Rec., No. 39)], p. 162, fig. 1-5; p. 356. *ii.* Insects more particularly associated with *Sarracenia variolaris* [see Rec., No. 107] (by C. V. Riley), p. 168. *jj.* On the Cotton Worm [its habitat; means against it] (by A. R. Grote), p. 168. *kk.* Vesicatory Potato Bugs, pp. 176, 213, 231, 277. *ll.* Utilization of locusts for food, p. 187. *mm.* Queer Rains [swarms of ants in England], p. 193. *nn.* The Plague of Locusts [means against and natural enemies of locusts] (by J. Whiteford), p. 196. *oo.* To destroy Rose Slugs, p. 207. *pp.* The Phylloxera [means against it], pp. 231, 273, 356. *qq.* The Louse a Substitute for the Compass (by Prof. Webster, p. 261). *rr.* The South American Boxer [habits of a species of (?) Locustina] (by T. Hotchkiss),

p. 277. *ss.* The Potato Bug [description, habits and use of *Cantharis vittata*] (by E. S. Wicklin), p. 309. *tt.* Entomological Notes [*Pemphigus imbricator* found on beech; vesicatory potato bugs (*Lytta* sp.)] (by C. V. Riley), p. 356. *uu.* The Chemical Effect of the Phylloxera on Grapevines, p. 369.

* 143. The (New York) Tribune Extra — Lecture and Letter Series, No. 21, Pamphlet Edition, contains the following.

a. Cave Fauna of the Middle States [Finding of animals in the Mammoth Cave and neighboring caves] (by A. S. Packard, Jr.), p. 43. *b.* Plants that feed on Animals [Insect-catching habits of *Sarracenia variolaris*] (by Dr. J. H. Mellichamp), p. 55. *c.* Pitcher-Plant Insects [Insect-catching habits of *Sarracenia variolaris*; list of its victims; habits and figures of all stages of *Xanthoptera semicrocea* and *Sarcophaga sarraceniae*, which frequent it and *S. flava*; capture of insects by other plants] (by C. V. Riley), p. 56-58, fig. *d.* The Cotton Worm of the Southern States [Habits and seasons of *Aletia argillacea*] (by A. R. Grote), p. 61-62. *e.* Organization of the Entomological Club of the American Association for the Advancement of Science, p. 72. *f.* Insectivorous Plants of California [Fly-catching habits of *Darlingtonia californica*] (by Wm. M. Canby), p. 72-73. *g.* Historical Study of Butterfly Genera [Notice of a paper defining the proper use of about 1100 names] (by S. H. Scudder), p. 75. *h.* Summer Dormancy of Butterfly Larvæ [resp. *Brenthis* spp. and *Phyciodes nycteis*] (by C. V. Riley), p. 75. *i.* Transformations of the Tumblebug [*Canthon hudsonias*] (by C. V. Riley), p. 75-76. *j.* Larval Habits of the Blister Beetle [Habits and hypermetamorphosis of *Melœ angusticollis*; habits of *Epicaula vittata* and *Henous confertus*] (by C. V. Riley), p. 76. *k.* One Injurious Insect replacing another [see Rec., No. 134, *a*] (by J. L. LeConte), p. 76. *l.* Organic Change produced in the Bee [Contrasted structure, habits and instincts of worker and queen honey-bees; occasion of these differences; how are they caused?] (by Sophie B. Herrick), p. 89-90. *m.* The Great Dismal Swamp [see Rec., No. 142, *qq.*] (by N. B. Webster), p. 92.

* 144. The Hartford Daily Courant, vol. xxxviii, Nos. 193 (11, 158) — 198 (11, 163), contains the following [see Rec., No. 143].

No. 194. *a.* On the Cave Fauna of the Middle States.

No. 195. *b.* On *Sarracenia Variolaris* as a Fly-catcher. *c.* On the Insects more particularly associated with *Sarracenia Variolaris*. *d.* On the Cotton Worm of the Southern States.

No. 196. *e.* Organization of the Entom. Club. Amer. Assoc. Advanc. Sci. [Constitution and Resolutions of the Club. (Election of officers, op. cit., No. 197.)]

No. 197. *f.* *Darlingtonia Californica*, an Insectivorous Plant. *g.* The Genera of Butterflies, studied historically. *h.* On the Summer Dormancy of the Larvæ of *Phyciodes Nycteis*, Doubleday; with remarks on the Nat-

ural History of the species. *i.* On the habits and Transformations of *Canthon hudsonias* (Forst.)—the common "Tumbledung." *j.* On the Larval Habits of the Cantharid genera *Epicauta* and *Henous*. *k.* An Instance of Replacement of Injurious Insects by Human Agency.

* 145. The **Bulletin of the Torrey Botanical Club**, vol. v, contains the following,

a. *Ctenucha virginica* captured by *Apocynum androsaemifolium* (by W. H. Leggett), p. 32. *b.* *Darlingtonia* as a Fly trap (by W. B.), p. 32. *c.* Notice of Psyche, Nos. 1-4, p. 35. *d.* Grasshoppers [Imprisonment of locusts in flowers of *Hemerocallis fulva*] (by W. H. Leggett), p. 41. *e.* Insects destroyed by vegetables (by Austin Bacon), p. 51-52.

English Names for Butterflies.

(Continued from page 44.)

63. *Catopsilia Eubule*.—The cloudless Sulphur.

A name proposed by Gosse.

64. *Colias Pelidne*.—The Pink-edge.

65. *Colias Philodice*.—The clouded Sulphur.

66. *Colias Eurytheme*.—The orange Sulphur.

67. *Eurema Lisa*.—The little Sulphur.

68. *Abæis Nivippe*.—The black-bordered Yellow.

A name proposed by Gosse.

69. *Ganoris rape*.—The cabbage butterfly.

Its common name.

70. *Ganoris oleracea*.—The gray-veined White.

A name proposed by Gosse. Harris called it the pot-herb Pontia.

71. *Synchlœe Protodice*.—The checquered White.

72. *Euchlœe Genutia*.—The falcate Orange-tip.

73. *Lærtias Philenor*.—The blue Swallow-tail.

A name proposed by Gosse.

74. *Pterourus Troilus*.—The green-clouded Swallow-tail.

Proposed by Gosse.

75. *Euphæades Glaucus*.—The tiger Swallow-tail.

Proposed by Gosse. He called the melanic female the black Emperor Swallow-tail.

76. *Iphiclides Ajax*.—The zebra Swallow-tail.

Gosse's name.

77. *Amaryssus Polyxenes*.—The black Swallow-tail.

Proposed by Gosse.

(The names of the Skippers will not be given at present.) *S. H. Scudder.*

PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB.

EDITED BY B. PICKMAN MANN.

Vol. I.]

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[No. 12.

A North Greenland Butterfly.

The recent polar expedition of Captain Hall, in the U. S. Steamer *Polaris*, brought home from *Polaris Bay*, Lat. $81^{\circ} 38'$ N., two specimens, male and female, of *Brenthis polaris* (Boisd.) — the most northern butterfly known.

The male is badly rubbed, but evidently differs, as the fresher female does, from Labrador specimens, in being of a much duller color upon both surfaces of the wings. The upper surface of the male, in Labrador specimens, is bright orange fulvous, that of the females a little duller; while in these Greenland examples the color is a dull sordid fulvous, almost changing to ashen in the fore-wings of the female. The dark markings of the upper surface in both sexes are not so dark in the Greenland as in the Labrador specimens, and, with some exceptions, they are also slightly narrower; the transverse markings in the cell of the fore wings in both sexes are noticeably slenderer, but the mesial band of the fore wings, besides being less irregularly zigzag, is broadened in the posterior half of the wing, at least in the female, and its border more obscured by scattered griseous scales; the mesial band of the hind wing is, however, narrower than in Labrador specimens, and there is therefore a greater extent of fulvous surface, but that is greatly obscured by griseous scales; the roundish spots of the extra-mesial row are rather larger than usual in the female.

Beneath, similar differences occur. The general color is duller than on the upper surface, though not to so great an extent, and the contrasts of the dark and bright markings are not so noticeable as in Labrador specimens. On the fore wings, the lower portion of the mesial band is broader, as on the upper surface, and the extra-mesial spots are also larger, especially

below, and in the female; the sub-marginal blackish spots are much less conspicuous than the extra-mesial series, while in Labrador specimens they are usually the same. On the hind wings, the differences are more marked, especially in the female, where the markings are, as it were, blended; this effect is mostly produced by the white spots surmounting the extra-mesial series of black markings, which, in Labrador specimens, are almost wholly confined to the basal side of the spots, while in the Greenland individuals, not only do the white markings extend closer to the mesial band, but follow down the sides of the spots and extend along the nervures, narrowing as they go, almost to the outer border; thus the saffron which usually follows these spots on the outer side, in Labrador specimens, is almost wholly interchanged for whitish in the Greenland forms.

The principal differences, then, between these far northern representatives of the species and the typical Labrador forms consist in a dulling or fading of the colors and of the colorational contrasts, a partial suffusion of the markings, and a more or less conspicuous infuscation of the wings by a sprinkling of sordid or griseous scales. Expanse of wings, ♂ 40 mm., ♀ 43 mm.

This butterfly was first described by Boisduval, as coming from "*Cap Nord*;" afterwards it is quoted by him from the same place and from the Norwegian Alps; and again, in his *Icones*, from "*la partie la plus septentrionale de la Laponie, au Cap Nord, et au Labrador.*" No other author, as far as I have noticed, records it from Europe. Staudinger, in his catalogue, gives as localities: "Labr.; ? Lap. s. ?; ? Sib. s. or," showing that he knows it only from Labrador. Möschler gives it only from Labrador. Schilde does not record it in his exhaustive catalogue of N. Finland Lepidoptera, and it is not given as an inhabitant of Greenland, either by Staudinger in his list of Greenland Lepidoptera, or by Schiödte in Rinks's Greenland. Dr. Packard says that in Labrador it is found from Square Island, *i. e.* from the northernmost point of the Straits of Belle Isle, northward. It is probably an exclusively American insect, confined to the coldest regions, or "barren lands," and excluding the southern peninsula of Greenland. Boisduval says he received his specimens from Sommer and Eschscholtz, the

former of whom, at least, was in the habit of receiving specimens from Labrador, and by some accident, the earlier localities may have been given erroneously. *Samuel H. Scudder.*

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 56.)

* 146. The **Report of the [United States] Commissioner of Agriculture** for the year 1872, contains the following, and Nos. 147, 148.

a. Value of the Division of Entomology of the Department of Agriculture (by Fred'k Watts), p. 4-5. *b.* Lessened ravages of the chinch-bug, the Hessian-fly and the Colorado potato-beetle (by J. R. Dodge), p. 11-12. *c.* Injury done to horses by bots and buffalo-gnats, p. 32, to cattle by the "heel-fly," p. 35, and to sheep by scab and "grub in the head," p. 37 (by J. R. Dodge). *d.* Connection of insects with the Black-knot of Plum and Cherry trees (by Prof. C. H. Peck), p. 175-176. *e.* Colleges which give instruction in entomology, pp. 358, 361, 368, 369, 374, 382. *f.* Notice of Adair's Progressive Bee Culture (1872) [Bees do not possess reasoning powers; nature and function of the "queen"], p. 401-402; of Adair's Annals of Bee Culture for 1872, p. 402. *g.* False remedy for the Hessian-fly exposed (by Prof. S. I. Smith), p. 448. *h.* An invasion of asparagus-beetles checked by hens; of orange-colored wheat-aphides checked by a red-bug (by J. S. Gould), p. 448. *i.* The large podded milk weed (in Utah) destructive to bees (by H. E. Norton), p. 451. *j.* Dr. Hull's new curculio-catcher described, p. 451. *k.* No insects prey on young osage-orange plants (by H. J. Dunlap), p. 474. *l.* Hibernation of honey-bees (by Mrs. E. S. Tupper), p. 479-480. *m.* Grape-roots injured by a Phylloxera (?) (by G. W. Campbell), p. 504.

* 147. TOWNEND GLOVER. Report of the Entomologist and Curator of the Museum. p. 112-138, fig. 1-26.

a. *Anarsia pruinella* (fig. 1) killing the tips of peach-twigs; remedies. *b.* *Araecoccus coffeae* (fig. 3) destroying peaches. *c.* *Mycetobia persicae* (fig. 4) feeding on the exudations from the burrows of *Aegeria exitiosa* in peach-trees. *d.* Larvæ of *Sciara* sp. (fig. 5) forming snake-like masses; habits of other species of *Sciara*. *e.* *Romalea microptera* (fig. 6-7) injuring gardens and orchards; remedies. *f.* *Amphicerus bicaudatus* (fig. 8) injuring grape-vines, fruit-trees and *Carya alba*; remedies. *g.* Ravages of *Anomis xyliua* and *Heliothis armigera* upon the cotton, and of *Prodenia autumnalis* upon corn, grass and peas. *h.* Present distribution of *Dory-*

phora decemlineata; its ravages lessened by natural enemies and artificial means; several field-crops injured by Cantharid beetles and other unidentified insects. *i.* Ravages of *Micropus leucopterus* upon sorghum and cereals; of *Cecidomyia destructor* upon wheat; of *Caloptenus spretus*, *C. femurrubrum* and *Agrotis?* spp.? generally; of *Lachnosterna* spp. and *Leucania unipuncta* upon meadows and field-crops. *j.* Means against *Macroductylus subspinosus*. *k.* Appearance and ravages of *Cicada septendecim*. *l.* Means against plum-tree insects. *m.* Injuries by *Bruchus pisi*, *Macrosila carolina*, *Aphis humuli?*, cabbage-worms, and canker-worms. *n.* Directions for sending specimens and notes. *o.* NOTES ON THE DIPTERA, WITH THEIR REMEDIES. General habits of the order; habits of, and means against, the mosquito (fig. 9), *Cecidomyia destructor* (fig. 10), *C. tritici* (fig. 11), *C. grosulariae*, *C. robiniae* and other gall-gnats, *Tipula oleracea* (fig. 12), *Trichocera hyemalis* (fig. 14), *Simulium* spp., *Tabanus atratus* (fig. 15), *T. chrysops* (fig. 16), *Oestrus ovis* (fig. 17), *Oe. bovis* (fig. 18), *Gasterophilus equi*, house-flies, *Stomoxys calcitrans* (fig. 19), *Sarcophaga caruaria*, *Calliphora vomitoria* (fig. 20), *Lucilia caesar* (fig. 21), *Anthomyia ceparum* (fig. 22), *Psila rosae* (fig. 23), *Ortalis flexa* (fig. 24), *Chlorops* spp., *Agromyza tritici*, *Hippobosca equina* (fig. 25), *Melophagus ovinus* (fig. 26), fleas, *Sarcopsylla penetrans*; means against insects in general.

* 148. LEWIS BOLLMAN. Silk Cultivation, p. 304-316.

[Commercial subjects are excluded.] Proper atmospheric conditions, food, treatment and selection of caterpillars to favor success.

* 149. The Report [U. S.] Comm. Agric. for 1873, contains the following, and Nos. 150, 151.

a. Importance of entomology; arrangement of the collections of the Department of Agriculture (by Fred'k Watts), p. 9-10. *b.* Completeness of the Department library in standard works on entomology (by F. Watts), p. 11. *c.* Ravages of the chinch-bug and of grasshoppers (by J. R. Dodge), p. 16. *d.* Connection of insects with the Orange Blight (by Thomas Taylor), pp. 200, 201, 205. *e.* Means against insects on orange-plants (by T. Taylor), p. 206. *f.* The growing of Jute (*Corchorus capsularis*) a protection from insects in cotton-fields (by Emile Lefranc), pp. 269-270, 271. *g.* Red pepper efficacious against cabbage-lice (by J. W. Still), p. 289. *h.* Offer of a prize for information about *Phylloxera vastatrix* (by the French Society for the Encouragement of National Industry), p. 289. *i.* Colleges which give instruction in entomology, pp. 323, 331, 336, 348, 352. *j.* Advantage of drought to insects, p. 387-388. *k.* Injury done to raspberries by tree-crickets (by H. H. McAfee), p. 389. *l.* Habits and depredations of the grape Phylloxera (by C. V. Riley), p. 389-390. *m.* Depredations (in Iowa) of *Leucania unipuncta*, *Lygæus leucopterus*, *Cecidomyia destructor*, *Lachnosterna quercina*, *Bostrichus bicaudatus?* and — ? upon grass, wheat, grape-vines and fruit-trees, p. 391-392. *n.* Ransom process of exterminating curenlios, p. 430. *o.* Prolificacy of Lepidoptera (by Prof. G. H. Perkins), p. 476. *p.* Donations to Museum, pp. 477, 478. Index

* 150. TOWNEND GLOVER. Report of Entomologist and Curator of the Museum. p. 152-169, fig. 1-10.

a. *Systema blanda* (fig. 1), attacking leaves of *Zea mays*; habits; remedies. b. *Xyloryctes satyrus* (fig. 2) eating roots of Fraxinus and Liquidambar; description of larva; remedies. c. Habits of *Oncideres cingulatus* (by G. F. B. Leighton). d. Present distribution of *Doryphora decem-lineata*; means against it. e. Habits and luminosity of *Pyrophorus physoderus* (fig. 3), compared with *P. noctilucus* (fig. 4) and *Photinus pyralis*. f. Ravages of *Caloptenus* spp.? g. *Phylloca decandra* a blatticide. h. Habits, transformations, parasites (*Microgaster congregata*, et al.) and enemies of, and means against, *Macrosila carolina* (fig. 5-7), compared with *M. quinque-maculata* (fig. 8); *Pteromalus tubacum* parasitic on the Microgaster. i. Injury done to grape-vines by *Aegeria polistiformis*. j. Remedies for the Phylloxera; are the root and leaf lice identical? k. A luminous Elaterid (?) larva (fig. 10). l. *Anomis xyliua* distinguished from *Heliolithis armigera* in all stages; ravages of the Anomis; detailed statements upon the efficacy of Paris green as a remedy, the mode of its application and its injurious or poisonous effects, and upon other remedies for the Anomis.

* 151. E. WARE SYLVESTER. The Osier Willow. p. 254-255.

Habits of, and means against, *Nematus ventralis* and other Tenthredinidae injurious to *Salix viminalis* and other willows.

* 152. F. V. Hayden's [Seventh] Annual Report of the United States Geological and Geographical Survey of the Territories, embracing Colorado, being a Report of Progress of the Exploration for the year 1873. Conducted under the Authority of the Secretary of the Interior. Washington, 1874, p. 537-606, with figures, contains the Report of Lieut. W. L. Carpenter on the Collections made by him in 1873, while connected with the United States Geological Survey, consisting of the following, and Nos. 153 to 160.

Introductory and explanatory letter (by W. L. Carpenter), p. 537-538.

* 153. W. L. CARPENTER. Destruction of Pine-timber in the Rocky Mountains. p. 538-539.

Pinus ponderosa stripped of its bark by unknown causes.

* 154. W. L. CARPENTER. Report on the Alpine Insect-fauna of Colorado. p. 539-542.

Similarity of the alpine insect-fauna of the Rocky Mts. to that of Mt. Washington, N. H., Labrador and Alaska; list of 10 Hymenoptera, 9 Lepidoptera, 13 Diptera, 16 Coleoptera, 3 Hemiptera, 4 Orthoptera, 7 larvæ, 2 pupæ collected; general remarks; notes on a few species.

* 155. W. H. EDWARDS. List of [41] Species of But-

terflies collected by Lieut. W. L. Carpenter, U. S. A., for the United States Geological Survey of Colorado, 1873. p. 542.

* 156. A. S. PACKARD, JR. On the Geographical Distribution of the Moths of Colorado. p. 543-560, fig. 1-15.

Nature of the Coloradian alpine and subalpine faunæ; their relations to the similar faunæ of arctic and other north-temperate regions; origin of these faunæ; laws of climatic variation. Enumerates, with notes, one Tortricid (larva), 4 (*Crambus Carpenterellus* = 1 new) Pyralidae, 39 (*Marmopteryx tessellata* from Arizona = 1 new) Phalaenidae, 9 Noctuidae, 16 (*Hemileuca Diana* = 1 new) Bombycidae, 2 Zygaenidae, 3 Sphingidae, and immature 3 Diptera, 3 Coleoptera, 1 Hymenopter.

* 157. C. R. OSTEN SACKEN. Report on the Diptera collected by Lieut. W. L. Carpenter in Colorado during the Summer of 1873. p. 561-566, fig.

Indication of the needs of American dipterology and of the proper mode of collecting Diptera; characters of the faunæ to which the specimens belong. Enumerates over 50 species, but 17 of which are determined; monograph of *Bibiocephala grandis*, a new species and genus of Blepharoceridae.

* 158. C. R. OSTEN SACKEN. Notice on the Galls collected by Lieut. W. L. Carpenter. p. 567.

Three oak-galls (Cynips), two? willow-galls (Nematus), two? cottonwood galls (Pemphigus?), one sage-bush gall (Trypeta?).

* 159. HENRY ULKE. List of Species of Coleoptera, collected by Lieut. W. L. Carpenter, United States Army, for the United States Geological Survey of Colorado, 1873. p. 567-571.

164 species of 103 genera of 30 families enumerated; notes (by W. L. C.) on the habitat and food-plants of *Lytta Nuttalli*, *Tachyta liturata*, *Doryphora decem-lineata*, *Erotylus Boisduvalii*. Adaptability of the color of species to their food-plant.

* 160. H. A. HAGEN. Report on the Pseudo-Neuroptera and Neuroptera collected by Lieut. W. L. Carpenter in 1873 in Colorado. p. 571-606.

Describes 2 Termitina, 8 (7 new) Perlina, 7 (3 new) Ephemerina, 15 (4 new) Odonata, 2 new Phryganina; enumerates, with localities, 54 (23 Coloradian) Pseudo-Neuroptera; 17 (13 Coloradian) Neuroptera; characters and relations of the faunæ to which the species belong.

* 161. **The Rural Carolinian**, vol. v, from p. 169, contains the following, and Nos. 162 to 172.

a. "Fly" in Wheat [habits of *Cecidomyia tritici*] (by C. R. Dodge), p. 195. b. What a Fairy saw in a Bee-hive [honey-gathering and bee-

enemies], p. 219. *c.* The Eucalyptus and the Phyloxera [see Rec., No. 134, *d*], p. 223. *d.* Directions for obtaining information about troublesome insects, pp. 243, 312, 537-538, 602, 656. *e.* How Mr. Steen killed the [Cotton] Caterpillars, p. 294. *f.* Carbolic Acid for insects (by I. I. Hite), p. 304. *g.* To free poultry from Lice, p. 379. *h.* Carbolic Soap for Lice on Cattle, p. 404-405. *i.* Bed Bug Preventive (by J. R. B.), p. 444. *j.* Moth Preventive, p. 444. *k.* Plum-twigs surrounded by Insects [habits of and means against aphides] (by C. R. Dodge), p. 477-478. *l.* Simple Remedy for Bee-stings, p. 498. *m.* Making Ants Mad [see Rec., No. 142, *g*], p. 503. *n.* For destroying Lice on Cattle, p. 525. *o.* The Curculio circumvented at last—perhaps [by the odor of burning tar and sulphur], p. 529. *p.* Cabbages and their enemies p. 529-530. *q.* Co-relation of Bees and Flowers, p. 535. *r.* For protection against Moths (by M. L. B.), p. 558. *s.* White Grub Fungus [fatal to larvæ of *Laachnosterna* sp.] (by C. R. Dodge), p. 584. *t.* Means against squash-bugs (*Coreus tristis*), p. 604. *u.* Alum for Insects, p. 669. *v.* For preventing damage by Moths, p. 669-670.

* 162. CHARLES R. DODGE. The Paris Green Remedy for the Cotton Caterpillar. p. 193-195.

Results of experiments; mode of application; dangers in its use.

* 163. C. R. DODGE. The Swallow-tail Butterflies. p. 247-248.

Description and habits of larvæ and imago of some common N. A. species of *Papilio*.

* 164. C. R. DODGE. A few Remedies for Insects. p. 312-313.

To destroy [scale] insects on fruit trees; the rose aphid; destroying cockchafers; to destroy ants; caterpillars on cabbages; poisoning cockroaches.

* 165. C. R. DODGE. The "Lubber" Grasshopper. p. 363.

Habits of and means against *Romalea microptera*.

* 166. Carbolic Acid for Insects. p. 364.

Means and effects of its application.

* 167. C. R. DODGE. Injury to Cotton by Insects. p. 417-418.

Seasons and ravages of *Anomis xyliana*, et al.

* 168. C. R. DODGE. A pair of Pine-Weevils. p. 476-477.

Habits of and means against *Hylobius pales* and *Pissodes strobi*, injurious to young cedars.

* 169. J. PARISH STELLE. The Cotton Caterpillar and how to Combat it Successfully. p. 511-516, fig. 1-2.

Description, figures and habits of all stages of *Anomis xyliana*; means against it.

- * 170. C. R. DODGE. Science vs. Ignorance. p. 536-537.
Usefulness of *Coccinella novemnotata* in ridding peach-trees of aphides; other means against the aphides.
- * 171. C. R. DODGE. Notes. p. 537-538.
How to send insects in alcohol; how to get and use Paris Green.
- * 172. W. P. REESE, M.D. The Cotton Caterpillar Again. p. 565-566.
Habits of and means against *Anomis xyliana*.

Proceedings of the Club.

(The paragraphs under this heading, though in most cases drawn up by the Secretary, have been revised by their respective authors, who are responsible for them.)

§ 1. PROPER WOOD FOR INSECT-BOXES.—A discussion of the merits of different woods for use in the construction of insect boxes showed a preference among the members of the Club for the woods of the Aspen (*Populus tremuloides*), Tulip (*Liriodendron tulipifera*) and Bass-wood (*Tilia americana*). Baron Osten Sacken says that the resin contained in pine wood (*Pinus strobus*) exhales as a vapor, which eventually combines with the fat of the specimens enclosed in the box and renders them greasy. It was suggested that a number of persons who wished to have boxes made of these woods should combine together to purchase some trees for the purpose, as these woods are not generally offered for sale in the market.

B. Pickman Mann.

§ 2. OCYTES SEMINOLE IN MASSACHUSETTS. MR. S. H. SCUDDER exhibited a single female of *Ocytes Seminole* taken by Mr. R. Thaxter in the marshes near Belmont, Mass. It has not before been recorded north of Florida, and in its markings stands midway between specimens from Florida and Texas, exhibited with it. Other species of the genus were also shown for comparison.

Dr. Hagen said that Florida Pseudo-Neuroptera are found on Cape Cod.

Mr. Scudder remarked that southern butterflies not infrequently occur in a narrow belt of country near the sea shore, as far north as New Hampshire.

§ 3. PROTHORACIC GLANDS IN LEPIDOPTEROUS LARVÆ. MR. S. H. SCUDDER exhibited an inflated caterpillar of *Argynnis Cybele*, in which the prominence often seen on the under surface of the first thoracic segment of butterfly caterpillars was unusually large, and presented a transverse slit. It is probable that this organ secretes fluid for softening the leaf before eating, and Mr. Scudder queried whether the glands which supplied the fluid might not bear some relation to those which feed the osmateria of the Equites. Mr. Guenée had described an extensile protuberance with a transverse slit on the dorsum of the seventh abdominal segment in the larva of a European *Lycæna*, which when subjected to pressure emits a fluid.

PSYCHE.

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[No. 13.

On the relation between European and American Noctuina.

Dr. A. Speyer gives (Stett. Entom. Zeit., 1875. Jan.—March) the first part of an interesting communication, a report on the general results of which, containing some new and important facts, will perhaps draw the attention of American lepidopterologists to the observation of them in the next summer. The genital appendages were not examined, because the material in Dr. Speyer's hands was not rich enough; he leaves the examination of those parts to other entomologists.

Differences in the form are rarely to be found; most of the differences concern the color, the pattern and the shape of the wings, all of which are most easily affected in local varieties. The palpi and antennæ of the males are the next variable characters.

The most important difference observed by Dr. Speyer consists in a slight and even not generally constant modification in the mixture of the predominant colors.

The predominant colors of the Noctuina are a mixture of black, white and red, also gray and brown, grayish brown or reddish brown. In the American species less red is to be found, and more blackish, in the European less black and more reddish; these colors are to be observed commonly on the abdomen and the hind wings. The brownish gray of the European species is changed in the American species into pure gray or blackish gray. The reddish hue on the gray underside of the wings in many brown species, chiefly near the veins, is in the American species fainter or wanting. The reddish brown of the dorsum and fore wings changes in the American species into grayish, blackish or bluish. The color of the American

species is darker by a larger proportion of black; even the pattern (the lunules and arrow lines) is often more strongly developed in American species by being of a deeper black. The transverse lines and the spots are more visible by having stronger blackish borders.

In the colors made of a mixture of yellow and red, Dr. Speyer observed just the opposite change. In the American species the red is predominant and the black more evanescent (*Orthosia ferrugineoides*, *Hydroecia nictitans*, *Plusia Putnami*, *Brephos infans*).

The difference in the shape of the wings, if present, consists mostly in the American species having broader and shorter wings.

Dr. Speyer believes that the modification in the mixture of the grayish and reddish colors is alone of importance, as he observed it, with few exceptions, in the larger part of the species compared.

He is not certain about the cause which produces the fact, but he believes that the two climates of America and Europe are well represented by the fact. It is generally observed that the color grows darker and more blackish to the north or at higher elevations, but it is not certain whether this is produced by the stronger and colder winter, as in some species (*Vanessa prorsa*, *Polyommatus Phlaeas*) it is the summer generation which is more blackish.

Dr. Speyer considers the climate of Europe as presenting a more insular character, the climate of America a more continental character. The fauna of Siberia should have nearly the same difference from that of Europe as the fauna of America has, but the fauna of Siberia is still too imperfectly known to allow of sure conclusions. The little that is known of it, however, is in favor of Dr. Speyer's remarks. Nearly all the species which he was able to examine came from the eastern part of the Union; perhaps the fauna of the western parts would give a more conclusive result.

A difficulty in the exact comparison of the North American and European species consisted in the fact that most of the American Noctua were specimens collected in the field,

most of the European specimens were raised. Raised specimens differ from collected ones mostly by a smaller size, but even the shape of the wings is different; the wings are shorter in relation to the body, the anterior angles more pointed, the indentations of the border deeper and more pointed. Such modifications also change the pattern somewhat, especially the relative situation of the lines and spots. It seems, after all, that only raised specimens should be compared with raised ones, or those caught in the field with caught ones. The very lack of such specimens prevented him from giving a certain opinion upon *Taeniocampa incerta*.

There were fifty-one American species compared.

Twenty are considered identical with European species: *Leucania pallens*, *Agrotis C-nigrum*, *A. plecta*, *A. saucia*, *A. segetum*, *A. ypsilon*, *Aplecta prasina*, *Mamestra trifolii*, *M. dissimilis*, *Hadena lateritia*, *Hydroecia nictitans*, *Euplexia lucipara*, *Dipterygia pinastri*, *Heliothis armigera*, *Scoliopteryx libatrix*, *Amphipyra tragopoginis*, and four species for which the American habitat is still doubtful: *Aporophyla australis*, *Mamestra thalassina*, *Hadena polyodon*, *Eremobia ochroleuca*.

Sixteen are considered surely different species: *Thyatira scripta*, *Acronycta occidentalis* (*psi*), *A. brumosa* (*auricoma*), *Agrotis obtusa* (*triangulum*), *Mamestra nimbosa* (*nebulosa*), *M. imbrifera*, *Hadena lignicolorana* (*sublustra*), *Cucullia asteroides* (*asteris*), *C. intermedia* (*lucifuga*), *Erastria musculosa* (*pyrga*), *Abrostolis urentis* (*asclepiadis*), *Plusia contexta* (*festucae*), *P. Putnami*, *Amphipyra pyramidoides* (*pyramidea*), *Rivula propinqualis* (*sericealis*), *Brephos infans* and var. *Hamadryas* (*Parthenias*).

Of the others Dr. Speyer has not yet fixed his opinion. He considers as local varieties, till better information is obtained, six: *Caradrina miranda* (*lepigone*), *Taeniocampa incerta*, *Agrotis augur* var. *grandis*, *A. baja*, *Hadena finitima*, *Plusia gamma* var. *Californica*. In the same manner he considers as different species, nine: *Caradrina Meskei*, *Orthosia ferrugineoides*, *Agrotis clandestina*, *Mamestra subjuncta*, *Hadena devastator*, *Pyrrhia exprimens*, *Plusia brassicae*, *Calpe Canadensis*, *Sarothripus Lintnerana*.

Of seventeen species quoted by Grote as identical with European species, Dr. Speyer has not yet seen specimens.

Of course the detailed exposition for each species can not be given in a short report.

[Much to our regret, since we desire to have no anonymous articles in *PSYCHE*, the author of the above report declined to allow his name to be appended to it. *Ed.*]

Varieties of *Cleora pulchraria* Minot.

This beautiful species stands entirely alone in our fauna, as it is our only representative of a remarkable European genus, of which the most prominent structural characters are the strongly pectinate antennæ of the male and the extruded ovipositor of the female. In this part of Massachusetts the insect appears to be quite rare, and local in its distribution; this is probably due to the fact that the larvæ feed on pine; but I have been able to obtain, in September and October, resting on the trunks of a grove of these trees, behind the Museum of Comparative Zoology at Cambridge, nearly two hundred specimens of the moths. One must naturally expect, in the collocation of so many specimens, to see a certain number of aberrant forms, but I was by no means prepared to find the extraordinary amount of variation actually exhibited. I give a short description of the general plan of the simple ornamentation of the species, in order that the variations from it may be more readily appreciated. The anterior wings are crossed by two distinct black lines, the interior lobate, the exterior sharply dentate between the nervules; between them the discal dot is always seen, very black and conspicuous; the posterior wings have the discal dot, and following it a single median dentate line. The features most liable to vary are as follows, the most inconstant being placed first: the ground color, the structure and proximity of the median lines, the color of the vertex and front, and the shape of the wings. Before mentioning each individual variety, I would remark that no class of variations is confined to either sex; both sexes appear to vary within the same limits and to the same extent.

The ground color, which shows the greatest diversity, in the normal form is white, more or less thickly sprinkled with black

atoms; the base of the posterior wings is always more free from them than are the other parts of the wings. In one form the black atoms are so small and few in number that the insects look entirely white; at the other extreme specimens occur, in which they are so numerous that the color appears black, covered with thinly scattered white specks; in still others the black atoms lose their identity and the ground color becomes uniform gray or blackish gray; but in a large series these extreme forms are connected by so many intermediate links, that shade gradually into each other, that it is impossible to draw anywhere the line which separates them from each other. In one curious variety the black atoms are massed together into small blotches; the nervules are black and contrasting and appear like a network connecting the median lines. Individuals having the usual ground color, but in which one or more of the nervules are accompanied by a black band, are not infrequent. In one remarkable male the ground is uniform blackish gray, and even the fringe is gray and not chequered as usual; the ordinary lines are indistinct and diffuse, and each accompanied by a distinct white line which makes the specimen very conspicuous; in another, a female, the ground is the same, but the white lines are absent.

After the ground color, the median lines show the most variation. Ordinarily they are situated at a nearly equal distance from one another and from the base and external margin; sometimes they are connected by a fine submedian dash; in one strongly marked specimen they actually touch each other; on the other hand, in two females, they are so widely separated that the median space occupies fully three-fourths of the surface of the anterior wings. The exterior line is always sharply dentate outwardly; in some specimens it is narrow and clearly defined inwardly, in others it is very thick and heavy, and in some individuals of the latter form it is strongly suffused. The interior line is always thicker than the outer line, but it usually has its lobes distinct; occasionally, however, it is so much suffused that the form of the lobes is lost; in one pale specimen this line, as well as the exterior, is thin, and both are nearly obsolete.

The color of the vertex is usually white or gray, but it is sometimes ochreous, and in one specimen it is even orange; the front almost always varies in the same manner, but in a less degree.

No two specimens have their wings of exactly the same shape, but in general the variation is only slight; in some females, however, the elongation of both pairs is quite perceptible, and in such specimens the costa is more strongly arched than usual, and on the posterior wings the costal angle is less, and the anal angle greater; in one well marked insect of this group the posterior wings are shorter and more triangular than in others.

I have described the principal types of variation, and have given a few examples under each; it would be quite impossible to characterize them all within the limits of this paper. I know of no Geometrid in which there is so much variability in characters which are usually in this family constant and of specific value.

H. K. Morrison.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 64.)

[*Measures of defence against insects not being a part of the science of entomology, although of small value in its absence, they will only be noticed hereafter, in this Record, when given in connection with some matter of entomological import.*

In addition to articles on Insects, we shall hereafter record articles on all other Arthropoda, except Crustacea.]

* 173. The **Proc. Bost. Soc. Nat. Hist.** [see Rec., Nos. 1-10], vol. xvi, from p. 209, contain the following, and Nos. 174-177.

a. On the disposition made of some of Abbot's paintings of insects (by S. H. Scudder), p. 295 (see also, vol. xvii, p. 10-11). b. On the capture of *Argynnis polaris* by the Polar Expedition (by S. H. Scudder), p. 365.

* 174. A. R. GROTE. Descriptions and Notes on the Noctuidæ. p. 239-245.

Enumerates 15 species; describes 10 (9 ? new) species.

* 175. E. P. AUSTIN and J. L. LeCONTE. Catalogue of the Coleoptera of Mt. Washington, N. H., with Descriptions of New Species. p. 265-276.

Enumerates 232 species, with notes; describes 11 (9 new) species; synoptical table of species of Cephaloon.

* 176. H. A. HAGEN. On Amber in North America. p. 296-301.—Also separate. 8vo. pg. 7.

Localities and insect-contents of amber. [The separate contains some matter not in the original. In a communication to the Club, Dr. Hagen said it seems from the description that the supposed "nest of an insect" is a group of galls attached to a twig. *B. P. M.*]

* 177. H. A. HAGEN. The Odonate Fauna of Georgia, from Original Drawings now in possession of Dr. J. LeConte, and in the British Museum. p. 349-365.

Enumerates 66 species, with notes. Describes 5 (2 new) species.

* 178. The **Proc. Bost. Soc. Nat. Hist.**, vol. xvii, as far as p. 256, contain the following, and Nos. 179-182.

a. Condition of the Entomological Department (by Prof. Alpheus Hyatt), p. 7. b. Notice of Prof. Wyman's "Notes on the Cells of the Bee" (1866) (by Prof. Asa Gray), p. 117-118. c. The four types of nests made by "Tarantulas" characterized (by S. H. Scudder), p. 130.

* 179. S. H. SCUDDER. Notes on the Natural History of Portions of Dakota and Montana Territories, being the Substance of a Report to the Secretary of War on the Collections made by the North Pacific Railroad Expedition of 1873, Gen. D. S. Stanley, Commander. By J. A. Allen, Naturalist of the Expedition. VII. Report on the Butterflies collected by Mr. J. A. Allen on the Yellowstone Expedition of 1873. p. 86-91.

Enumerates 23 species, with notes and localities; describes *Agriades Minnehaha*, n. sp.

* 180. H. K. MORRISON. Descriptions of New Noctuidæ. p. 131-166.

Describes 4 (Pteroseia, Thaumatopsis = 2 new) genera and 58 (56 new) species, including 23 (22 new) *Agrotis*; enumerates 65 species of 24 genera.

* 181. S. H. SCUDDER. Remarks on the Old Genus *Callidryas*. p. 206-209.

Division of the genus into groups; localities and varieties of the five U. S. species: *Phoebis Agarithe*, *Callidryas Eubule*, *C. Sennae*, *C. Philea*, *Metura Cipris*; description of *Aphrissa Butleri* n. sp. from Tehuantepec.

* 182. H. K. MORRISON. List of a Collection of Texan Noctuidæ, with Descriptions of the New Species. p. 209-221.

Enumerates 55 species of 30 genera; describes one new genus (Tornos) and 15 (10 new) species.

Litt. Liv. Age [see Rec., Nos. 11, 12], vols. cxxi-cxxiv (ser. 5, vols. vi-ix), contains Nos. 183 to 186.

* 183. W. C. (*Chambers' Journal*.) Explorations of a Naturalist. cxxi, p. 188-191.

Notice of Belt's *The Naturalist in Nicaragua* [see Rec., No. 72]; habits and food of foraging, leaf-cutting and other ants; means against leaf-cutting ants.

* 184. *The Spectator*. Sir John Lubbock on "the Little Busy Bee". cxxi, p. 379-381.

Refutation of traditional notions about the mental qualities of honey-bees; character of instinct.

* 185. A BUSY OLD MAID. (*The Spectator*.) The Busy Bee. cxxi, p. 381-382.

Are the instincts of worker honey-bees inherited?

* 186. *Chambers' Journal*. Colour in Animals. cxxii, p. 57-60.

Variety, cause and conditions of colors in insects and other animals.

* 187. **The American Journal of Science and Arts** [see Rec., No. 13], vol. cvii (ser. 3, vol. vii), from p. 167, and vol. cviii (3, viii), contains the following, and Nos. 188, 189.

Insects found by the "Polaris" Expedition, cvii, p. 528.

* 188. O. HARGER. Notice of a new Fossil Spider from the Coal Measures of Illinois. cvii, p. 219-223, fig.

Description and figure of *Arthrolycosa antiqua*, a new species and genus, composing the new family Arthrolycosidae; its characters and affinities.

* 189. ALFRED M. MAYER. Experiments on the supposed Auditory Apparatus of the *Culex* Mosquito. cviii, p. 89-103.

Reasons to expect that "those articulates which are sensitive to sound, and also emit characteristic sounds, will prove to possess receptors of vibrations external to the general surface of their bodies, and that the proportions and situations of these organs will comport with the physical conditions necessary for them to receive and transmit vibrations to the interior ganglia"; situation of the organs of hearing in Orthoptera; functions of antennæ and palpi; adaptation of the fibrils of the antennæ of the male mosquito to the perception of the various notes sounded by the female, and to the determination of the direction from which the sounds proceed; conformity of anatomical facts to the hypothesis that the antennal fibrils are the auditory organs of the mosquito.

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PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB

EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., June, 1875. [No. 14.

On the localities and habits of the various species of **Omus.**

The rarity of the species composing this genus, and the position which it holds in the ranks of Coleoptera, have always rendered it a favorite one with collectors, and the few notes which I have endeavored to bring together may not be without interest to the readers of *PSYCHE*. The species of *Omus* are more numerous than may be believed, as since the publication of Gemminger and Harold's Catalogue, vol. i, in which only four species are enumerated, the list has been increased to eight, and it is quite probable that more remain to reward the investigations of explorers. The following are the species at present known.

OMUS.

Eschscholtz. *Zool. Atl.*, I, 1829, p. 4.

- | | |
|--|---|
| <i>californicus</i> Eschtz. <i>Zool. Atl.</i> , I. | } California, west of Sierra Nevada, and not farther south than Monterey Co.
} Foothills and Sierra of California; Oregon; Washington Territory; Vancouver Island.
} Northern California; Oregon; Montana; Vancouver Island.
} Sierra Nevada; California.
} El Dorado Co., California.
} Monterey (Gabb), Gaviota (W. S. Edwards), Cal.
} Big Trees, Calaveras Co., Cal.
} Lake Tahoe, California. |
| <i>Audouinii</i> Reiche. <i>Ann. Fr.</i> , 1838. | |
| <i>Dejeanii</i> Reiche. <i>Ann. Fr.</i> , 1838. | |
| <i>laevis</i> Horn. <i>Proc. Ac. Phil.</i> , 1866. | |
| <i>submetallicus</i> Horn. <i>Trans. Am. Ent. Soc.</i> , 1868. | |
| <i>Lecontei</i> Horn. <i>Trans. Am. Ent. Soc.</i> , 1872. | |
| <i>sequoiarum</i> Crotch. | |
| <i>Edwardsii</i> Crotch. | |

O. californicus. I have frequently found this species in various districts around San Francisco, and every year can look with certainty for a few specimens in particular localities. I have little doubt from its habits, that the whole of the group are

night feeders, as I have often seen californicus wandering from its haunts after sundown, as if in search of food. During the day they hide under small pieces of wood and branches of trees, rarely under large logs, and for three years in succession I obtained a large number of specimens of the present species by throwing some finely cut pieces of meat around the places in which I knew they were to be found. The lid of a box made an excellent trap, and one day I obtained, in a spot only about ten feet square, no less than twenty-six specimens. An English collector took over one hundred and fifty californicus at the Presidio, San Francisco, by digging in a sand bank, after having well baited the neighborhood, for several days, with finely chopped meat. I am not aware that this species has been found farther south than Gilroy, Santa Clara Co., or farther to the north of the State than Mendocino. It is certainly the most common of the group.

O. Audouinii. I have seen no specimens of this insect taken farther south than the upper portion of the Sierra Nevada, in Plumas Co. It is far from rare in Oregon, and is occasionally found in some numbers along the rocky shores of the Columbia River, particularly about the Dallas. It is also frequent in Washington Territory and Vancouver Island, specimens having been found in the latter locality both by the late Mr. Crotch and myself.

O. Dejeanii. Very common in some portions of Vancouver Island, especially about Sannich and Gold Stream. This is the largest and decidedly the handsomest species of the group.

O. laevis. In a letter to me from Dr. Horn, dated July 1, 1870, the following passage occurs: "My 'laevis' was found in the foot hills east of Visalia, I think. It would do no harm to explore in the neighborhood of Half Moon Bay and Monterey, as I have an indistinct suspicion that insects from the two localities are mixed in my hands, accidentally." I regret that I am able to add no more information with reference to this unique species, which Dr. Horn informs me is remarkably distinct from any other form known to him.

O. submetallicus. Soon after my arrival in California, I pointed out to my friend, Mr. James Behrens, of this city, a

specimen in his collection which I believed to be a new species of *Omus*. He soon afterward forwarded it to Mr. H. Ulke of Philadelphia, for identification, and it was shortly described by Dr. Horn under the above name, as from Mr. Ulke's cabinet.¹ The specimen was taken in El Dorado Co., California, in June, 1865, by Mr. Elliot Crane, a relative of Mr. Behrens, and is the only one, I believe, at present known to entomologists. Dr. Horn speaks of it as "a very singular species, differing from all our others by its more elongate and cylindrical form as well as by its color."

O. Lecontei. This very distinct species, easily known by its more slender form and very long antennæ, appears to have its locality in the more southern portions of California, the specimens from which Dr. Horn's description was made, having been taken by Mr. W. M. Gabb, near Monterey, and a pair in my own collection, a little farther south, viz., at Gaviota, by Mr. W. S. Edwards, of the U. S. Coast Survey.

O. sequoiarum. The first specimen of this species which I ever saw was in the collection of Mr. J. Behrens, by whom it was taken at the only locality at present known for it, the Mammoth Tree Grove, Calaveras Co. During the visit of the late Mr. Crotch to this State, I called his attention to this insect, and he at once recognized it as a new species and visited the "Big Trees" almost for the purpose of finding so rare a treasure. He was rewarded by the capture of seventeen specimens, all remarkably constant in their characters. Last year (1874) I also took three specimens, two males, one female, in the same locality, two of which were running about a pathway in the dusk of the evening. The species is remarkable for its dull opaque black color and for the shorter, broader thorax, with its hind margins most distinctly rounded.

O. Edwardsii. This species was first taken by myself at Lake Tahoe, California, beneath a pine log, the male and female being found in coitu. Mr. Crotch visited the locality and captured five specimens, all agreeing exactly with the original. It

¹ Mr. Ulke informs us that, owing to the number of his Californian correspondents and the quantity of specimens which he received from them, he was unable to recollect the particular source from which this specimen came. *Ed.*

is, with the exception of *Dejeanii*, the largest of the group, and is, in sculpture, intermediate between *californicus* and *Audouinii*. The head and thorax are much smoother than in the former species, while its very much larger size, and the extremely deep transverse fovea of the thorax, will serve to distinguish it from the latter.

I am not aware whether the two last named species were published by Mr. Crotch, but I know that careful descriptions of them were drawn up by him, and that he communicated them to friends in Europe and elsewhere under the names which I have here adopted.

Henry Edwards.

San Francisco, May 7, 1875.

On the Insect Fauna of the White Mountains.

New Hampshire holds within her limits as a State, a region which is proving itself more interesting to the entomologist than any other in the United States east of the Rocky Mountains. The summit of Mount Washington, with an elevation of 6293 feet above the sea level, and with a climate giving an average temperature of 47.7° during its short summer, and that of Mount Adams, might well harbor species peculiar to a restricted locality and contrasting in character with the insect species afforded by the rest of New Hampshire and the New England States, which would throw important light on the questions of the effects of isolation and interbreeding on specific forms; and if the Glacial Epoch had aught to do with the distribution of the insects, we might expect these summits to harbor, as on aerial islands, species coming from a remoter north, valley inhabitants during the continuation of the cosmical winter, which ascended to the summits to find their congenial climate as the lengthening summers laid the mountains more and more bare of ice. Evidence of this seems to be afforded by the scientific labors of Mr. S. H. Scudder on the Grasshoppers and Butterflies. Say has described a species of the genus *Oeneis* from the summit of Mount Washington, whose congeners inhabit Labrador, Siberia, the Alps, the Ural and Rocky Mountains, and, from a study of specimens, it seems to be concluded

that the White Mountain butterfly offers features which will allow of its separation from its allies of Labrador and Arctic America. Lederer remarks that a figure of semidea resembles an eyeless form of *Taygete* (W. E. M., viii, 369), and also notes the resemblance of *Argynnis montinus*, another inhabitant of Mount Washington, to the boreal *A. Freija*. We thus have, in these two isolated White Mountain forms, a basis for an inquiry into the amount of change which they have undergone since they became separated from the main body of the species. Parallel observations might be expected in the moths. The only paper on the Noctuidae of Mount Washington known to us as yet is Mr. Morrison's in *PSYCHE* for February of the present year. This author records, from the "Ledge," two species of "Agrotis", under the names *scopulana* Morr., and *opipara* Morr., which might reasonably be supposed to offer interesting characters for comparison with Labradorian or Alpine forms in the genus. Without knowing the boreal species it is obviously unsafe to write a paper on the Noctuidae of the White Mountains. My material is scanty and limited to a single specimen of the former species, sent me as "*scopulana* Morr., Type", in which the legs are defective. On comparing it with three specimens of *Pachnobia carnea* Thun., from Labrador, it seems to me probable that a larger series may show that the species are the same. The three Labrador specimens vary greatly, one female being quite like the White Mountain specimen in tone and narrowness of the reniform. The basal black marks are more prominent in the White Mountain specimen. With regard to *opipara*, I have a single specimen from the White Mountains, of which my determination is not absolute, but I believe it to be the species, since it came from Mr. Morrison, though unnamed. If so, I think we have to do with *A. islandica*, and, if my locality for this specimen be correct, this Labradorian species will be found on Mount Washington. Until these points are cleared up, we shall want the proper data for an interesting discussion on the questions arising from an accurate knowledge of the moths of the White Mountains.

A. R. Grote.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 72.)

The **Verhandlungen der kaiserlich-koeniglichen zoologisch-botanischen Gesellschaft in Wien**, Band xxiii (1873), contain Nos. 190-192.

* 190. S. H. SCUDDER. Seltsame Geschichte eines Tagfalters. Aus dem *American Naturalist*, September, Vol. VI. 1872, übersetzt und mit Bemerkungen versehen von Dr. Ad. Speyer in Rhoden. *Abhandlungen*, p. 145-152.

Manner in which the separate broods of *Brenthis (Argynnis) Bellona* and *B. Myrina* are produced and continued: steps toward the formation of a new species. Contrasted history of *B. Euphrosyne*. Apparent differences between individuals of the separate broods.

* 191. PROF. P. C. ZELLER. Beiträge zur Kenntniss der nordamerikanischen Nachtfalter, besonders der Microlepidopteren. Zweite Abtheilung. *Abhandl.*, p. 201-334, tab. iii, iv. —Also separate. 8vo. pg. 134, tab. 2 (iii, iv).

Describes 2 n. spp. Noctuidae, 1 n. sp. Geometridae, 1 new genus (*Cordylopeza*) and 8 (6 new) spp. Pyralidae, 6 (*Tegeticula*, *Epicorthylis*, *Enchrysa*=3 new; *Anaphora*, *Xylesthia*, *Oeta*=3 previously described) genera and 106 (79 new) spp. Tineacea, 1 n. gen. (*Scoptonoma*) and 12 (8 new) spp. Pterophoridae; also describes 1 n. sp. Australian Pyralidae, 2 n. spp. Australian and 1 n. sp. Russian Tineacea; notes on other species and in general.

* 192. H. A. HAGEN. Beiträge zur Kenntniss der Phryganiden. *Abhandl.*, p. 377-452.

A new working up of all the materials at hand, relating to the subfamily Phryganidae; geographical distribution and faunal relations of the species of this subfamily; contrasted characters of the Phryganidae and Limnophilidae. Describes *Neuronia* and its 18 (9 [2 new] N. A.) spp., *Phryganea* and its 13 (2 new, 4 [1 new] N. A.) spp., *Agrypnia* and its 6 (4 [3 N. A.] new) spp., and the larvæ and larva-cases of 9 (*Phryganea cinerea*?, *Neuronia concatenata*=2 N. A.) spp. of Phryganidae. Describes 6 (1 new N. A.) spp. *Glyphotaenius*, 6 (1 N. A.) spp. *Grammotaulius*, belonging to the subfamily Limnophilidae.

* 193. The **American Agriculturist**, vol. xxxiii, contains the following, and Nos. 194 to 198.

Notice of Moon's Bee World, p. 8; of Packard's Our Common Insects (1873), p. 8; of the Michigan Bee Association, p. 165.

* 194. ANONYM. When to Flow Cranberries to Kill Worms. p. 19.

Habits and seasons of *Tortrix vacciniivorana*; means against it.

* 195. M. QUINBY. Bee Notes.—Advice to Beginners.

a. The temper of bees; how irritated and how soothed, p. 10–11. b. The health of bees in winter; how known and how controlled, p. 49. c. Winter diseases of bees; consumption of food in winter, p. 90. d. Remedies for bee-stings; do bees injure fruit?, p. 129–130. e. Habits of the moth-worm (?*Galleria cereana*); means against it, p. 249–250, fig.

* 196. M. QUINBY. Bee Notes.

a. Some of the objections to Bee-keeping considered [do bees injure fruit?; are bees killed by the pollinia of milk-weed (*Asclepias*)?], p. 170–171. b. Do bees injure fruit?, pp. 369–370, 410.

* 197. ANONYM. Notes from the Pines.—“Horticulture is a War with Insects.” p. 302–303.

Influence of insects upon agriculture.

* 198. MARY TREAT. The Enemies of the Oak. p. 344, fig. 1–5.

Figures of *Prionus laticollis*, larva and imago, and of *Hyletus robiniae*, larva and imago, ♀ and ♂; habits of these insects, of *Dryocampa senatoria* and of *Stenocorus putator*.

* 199. The **Sixth Annual Report of the Trustees of the Peabody Academy of Science, for the year 1873**, contains the following, and Nos. 200 to 202.

Report of the Curator of Articulata (by A. S. Packard, Jr.), p. 13–14.

* 200. A. R. GROTE. On the Noctuidæ of North America. p. 21–33.

List of 13 species common to Europe and N. A.; of 4 pairs of closely allied but distinct species of the two countries; of 6 pairs of species still in doubt. Describes *Dicopis* (n. g.) *muratis*, *Jaspidia lepidula*, *Agrotis gilvipennis*, *A. velleripennis*, *Copipanolis* (n. g.) *cubilis*, *Polia leucoscelsis*, *Pachypolia* (n. g.) *atricornis*, *Macronoctua* (n. g.) *onusta*, *Platysenta* (n. g.) *atriciliata*, *Senta defecta*, *Orthosia viatica*, *O. decliva*, *O. inulta*, *O. apiata*, *Lithophane petulca*, *L. ferrealis*, *L. semiusta*, *L. querquera*, *L. pexata*, *Catocala semirelictæ*, *Stictoptera divaricata* = 5 n. gen., 21 n. spp.; notes on generic synonymy; list of the 65 N. A. species of *Catocala*.

* 201. A. S. PACKARD, JR. Descriptions of New North American Phalænidæ. p. 39–53. [For figures, see Rec., No. 1.]

Describes *Lithostege triseriata*, *L. rotundata*, *Lobophora montanata*, *Laren-*

tia cretacea fig., *Scotosia Meadii*, *Hypsipetes albifasciata* fig., *Melanthia brunneicollata* fig., *Coremia lignicolorata* fig., *Phibalapteryx carnata* fig., *Aspilates Lintneraria*, *Euaspilates* (n. g.) *spinataria*, *Phasiane sinuata*, *Ph. trifasciata*, *Ph. excurvata*, *Ph. Meadaria*, *Tephрина argillacea*, *Fidonia acidaliata*, *Macaria subminiata*, *Lozogramma atropunctata*, *Corycia triseriata*, *Cymatophora 5-linearia*, *C. plumosaria*, *Caulostoma occiduarua* = 1 n. g., 23 n. spp.; notes on related species.

* 202. A. S. PACKARD, JR. Record of American Entomology, for the year 1873. p. 61-114.

Hymenoptera (by A. S. Packard, Jr.). List of 8 articles by 8 authors; notice of 141 (74 new) species of 46 (*Joppidium*, *Catocentrus*, *Polyrhabdus*, *Cryptocentrus* = 4 new) genera.

Rhopalocerous Lepidoptera (by S. H. Seudder). List of 19 articles by 10 authors; notice of 81 (14 new) species of 37 (*Callicista* = 1 new) genera.

Heterocerous Lepidoptera (by A. S. Packard, Jr.). List of 29 articles by 10 authors; notice of 622 (397 new) species of 267 (*Calasymphobolus* [*Sphingidae*]; *Euctenucha*, *Pseudalyptia* [*Zygaenidae*]; *Megacronyeta*, *Lepitoreuma*, *Eulonche*, *Ufeus*, *Ablepharon*, *Ommatostola*, *Lygranthoecia*, *Argillophora*, *Harveya*, *Spiloloma*, *Admetovis*, *Pleonectopoda*, *Eupsephopaetes*, *Anytus*, *Annaphila*, *Axenus*, *Homohadena*, *Adipsophanes*, *Plagiomimicus* [*Noctuidae*]; *Sudariophora*, *Mellilla*, *Eriplatymetia*, *Goniacidalia*, *Euacidalia*, *Euephyra*, *Eunemoria*, *Hesperumia* [*Phalaenidae*]; *Coptocnemis*, *Chalcoëla*, *Dicymolomia*, *Enaemia*, *Cordylopeza*, *Lomanaltes*, *Plathypena*, *Maerhypena*, *Euhypena*, *Chytolita*, *Pityolita*, *Litognatha*, *Meghypena*, *Pseudasopia*, *Argyrophyes*, *Condylolomia* [*Pyalidae*]; *Phaeasiophora* [*Tortricidae*]; *Tegeticula*, *Pronuba*, *Argiope*, *Eido*, *Dicte*, *Cyane*, *Cyllene*, *Erippe*, *Helice*, *Sinoë*, *Taygete* [*Tineidae*]; *Scoptonoma* [*Pterophoridae*] = 59 new) genera.

Diptera (by Edward Burgess and H. Loew). List of 4 articles by 4 authors; notice of 23 species of 18 genera; corrections of the Record for 1871.

Coleoptera (by G. H. Horn). List of 24 articles by 10 authors; notice of 359 (342 new) species of 195 (*Agabinus*, *Agabetes*, *Ilybiosoma* [*Dytiscidae*]; *Helopeltis* [*Hydrophilidae*]; *Megalodaene*, *Cyrtotriplax*, *Cypherotylus* [*Erotylidae*]; *Ceratomegilla*, *Cycloneda*, *Anisocalvia*, *Hyperaspidius*, *Cephaloseymnus* [*Coccinellidae*]; *Tribalister*, *Anapleus*, *Teretriosoma*, *Aeletes* [*Histeridae*]; *Homaesthesia*, *Gonocallus*, *Xylocrius*, *Ganimus*, *Eucrossus*, *Haplidus*, *Axestinus*, *Osmidus*, *Aneflus*, *Eustroma*, *Zamodes*, *Plectromerus*, *Callimus*, *Eumichthus*, *Ilybodera*, *Pilema*, *Megobrium*, *Holopleura*, *Schizax*, *Glycobius*, *Calloides*, *Microclytus*, *Zagygnus*, *Leptalia*, *Bellamira*, *Sternidius*, *Eutessus*, *Styloxus* [*Cerambycidae*]; *Chalcoptaria*, *Metaparia*, *Androlyperus*, *Galerucella*, *Orthaltica*, *Luperaltica*, *Ceraltica*, *Euplectroscelis* [*Chrysomelidae*]; *Metamasius*, *Dryotribus*, *Wollastonia*, *Elassoptes* [*Curculionidae*] = 56 new) genera.



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The Introduction of *Danaida Plexippus* into the Pacific Islands.

[In a letter from Dr. Luther H. Gulick; with additional comments.]

“In 1852, I returned, after eleven years’ absence, to the Sandwich Islands, and my brother John drew my attention to the fact that the so-called American milk-weed (*Aselepias*) had, during my absence, been introduced, and had spread so rapidly as to be already ranked, in that tropic climate, with troublesome weeds. My brother had, early after its introduction, noticed that in whatever part of the group the milk-weed appeared, there also what he called the milk-weed butterfly (*Danaus*) appeared; a butterfly unknown on all the Sandwich Islands till after the introduction of the milk-weed.

“In 1857, a number of choice plants were sent me at Ponape or Ascension Island of the Caroline Range, from Honolulu, by our small missionary brig of about one hundred tons burthen, whose diminutive hold and cabin were several times ransacked in every corner before it reached our island, so that no such butterfly as the *Danaus* could easily have been concealed there. The plants were in glass-covered cases, as closely sealed from the air as it was possible to make them. The vessel sailed from Honolulu on the 24th of June, and reached Ponape, two thousand miles or more from the Sandwich Islands, on the 18th of August, or after fifty-four days, several days after which the case was for the first time opened, thus making a period of about eight weeks from the time of its closure. On the voyage to Ponape, the vessel touched at Apaiang of the Gilbert Islands and Ebon of the Marshall Islands, both low coral atolls, where butterflies of any kind are all but unknown, and at Kusaie or

Strong's Island, which is of basaltic formation and clothed with the most beautiful luxuriance of the tropics, but where, in a general way, I know that neither the above-mentioned milk-weed nor its accompanying butterfly were at that time to be found.

“Some weeks after the plants had been opened on Ponape (I should think it must have been three or four months) there having meantime been no vessel from any other land, we discovered several young plants of the milk-weed, springing up in the earth in which various other plants had been brought from the Sandwich Islands. These milk-weeds had evidently sprung from seeds in the Sandwich Island earth, as we found no plants of that kind after a most careful inspection of every item, when the case first arrived from Honolulu, and as they were plants till then unknown on Ponape, my brother Theodore and I set ourselves to watching whether or not the butterfly would appear with it. The plants did not grow very rapidly or healthily, but just as several of them were beginning to develop flower buds, we discovered a swarm of small caterpillars of the *Danaus*, of different sizes, but none of them apparently more than two or three days out of the egg, feeding on the leaves. This, of course, stimulated our curiosity exceedingly. We had to destroy a considerable portion of the swarm, so as to secure for the remainder nourishment sufficient from the five or six slender and stunted plants to permit of their maturing, for we found that the caterpillars would feed on nothing else. In due time the chrysalids were formed. We took charge of them, showed them to the natives, and offered large rewards to any one who would bring us others of the same kind, but they did not and said they could not, for they were unknown on the island. In about two weeks the butterflies appeared, and we offered like rewards, with like results, regarding them, and as Ponape has but very few butterflies of any kind, we were sure they were something new.

“We afterwards took a few of the seeds of the milk-weed, carefully cleaned, to the opposite side of the island, twenty-five miles as we travelled round the shore, and there planted them. The plants, apparently now naturalized, grew very thriftily to

the height of four or five feet, and after some months the butterfly appeared there also (it was the butterfly, I think, that was first noticed by my friends) and that too, before they had become common on the northeastern side of the island, where they were first propagated, and long before they were found at any intermediate point. I am under the impression that the plant was subsequently introduced at Kusaie, and that the butterfly also appeared there, but of this I am not personally cognizant.

“Barcelona, Spain, April 17, 1873.”

The above account was furnished by Rev. Dr. Gulick, at my request, for insertion in my work on New England Butterflies; but its special interest induces me to publish it independently. The butterfly in question is a species which abounds over the southern half of N. America and the northern half of S. America, including the intervening islands. In N. America, it is single-brooded (not double-brooded, as asserted by Mr. Riley), the butterfly hibernating. It leaves its winter quarters later in the season than other hibernating butterflies and continues upon the wing until July and August, laying eggs all the time, so that the insect may be found in its earlier stages throughout most of the summer. The eggs are deposited upon the under surface of leaves and hatch in four or five days; the caterpillar attains its full growth in two or three weeks and the chrysalis hangs from nine to fifteen days. The earliest butterflies which have not hibernated may be found in New England in July; so that while the earlier stages are passed rapidly, the perfect insect lives a full year, mingling on the wing with its own progeny and witnessing the decay and renewed growth of the plant which nourished it; for the *Asclepias* dies early and is not sufficiently grown to support the caterpillars of *Danaida* when the first butterflies appear in the spring.

The butterfly has extraordinary powers of flight and has been seen fifteen or twenty miles from land; when several are sporting together they are described as “gyrating in a wild manner at all heights,” some so far up that they appear “but as moving specks in the sky.” But it would be utterly absurd to presume

that this butterfly could have traversed two thousand miles of ocean, and in addition have appeared on an island less than twenty miles in diameter almost simultaneously with a few plants of *Asclepias*, accidentally introduced! The only other alternative is to suppose that it was carried to the island with the box of plants sent to Dr. Gulick. But the precise manner of its introduction is still a perplexing question. In a vast majority of cases the accidental transportation of insects from one country to another is during their preparatory stages; but in this case the voyage is known to have taken nearly eight weeks, while the transformations of the Danaida, even in a temperate country, seldom occupy more than four or five weeks, and in the tropics doubtless take less time. So that, should a plant of the *Asclepias* weed, bearing eggs of the Danaida just laid, have been accidentally introduced into the Wardian case sent to Dr. Gulick, the butterflies would certainly have appeared in the closed case before the voyage was half over; and we must suppose that the caterpillars from which they were produced had eaten up every trace of *Asclepias*, that the butterflies themselves remained therein unseen for a month, and that at least a pair of them made their escape unnoticed from the case on its arrival at Ponape.

This seems quite impossible. And although Dr. Gulick distinctly says that the "diminutive hold and cabin" of the vessel "were several times ransacked in every corner before it reached our island, so that no such butterfly as the Danaus could easily have been concealed there," this seems to be the only other alternative, and one which the long duration of this stage of the insect and its power of extended hibernation directly favor. In this case we must suppose that a pregnant female flew into the hold (to rest for the night) while the vessel was loading at Honolulu and, undergoing a forced imprisonment (or pseudo-hibernation) during the voyage, escaped on unlading and in course of time found *Asclepias* ready for its necessities. A single butterfly, even of the great size of Danaida *Plexippus* would easily escape observation flying at large about a wooded tropical island.

Samuel H. Scudder.

On the Insect Fauna of the White Mountains.

Mr. Grote, in an article "On the Insect Fauna of the White Mountains," in *PSYCHE* for last month, writes as follows: "On comparing it (*Agrotis scropulana* Morr.) with three specimens of *Pachnobia carnea*, Thunb., from Labrador, it seems to me probable that a larger series may show that the species are the same," and "I have a single specimen (of *Agrotis opipara*, Morr.) from the White Mountains, of which my determination is not absolute, but I believe it to be the species, since it came from Mr. Morrison, though unnamed. If so, I think we have to do with *A. islandica*."

In making synonymical corrections, we want certainties, not probabilities, and it is "obviously unsafe" to make or to insinuate such corrections on the scanty and doubtfully determined material, which Mr. Grote states he possesses. I will mention that the four species named are entirely distinct from each other; and that, in working on my paper on the genus *Agrotis*, my material of them consisted of thirty *Pachnobia carnea*, from Labrador, and one from the White Mountains, bred by myself; six specimens each of *Agrotis scropulana* and *opipara*, all bred from the larvæ; and three specimens of *Agrotis islandica*, lent me by Dr. Packard.

In *Pachnobia carnea* there is no basal black dash, and the reniform spot is obsolete; in *Agrotis scropulana* the basal dash is very large, black and distinct, and the claviform spot is long, clear yellow and conspicuous; in the former the interior line is oblique and outwardly undulate, in the latter it is very strongly drawn in, sometimes touching the basal dash. *Agrotis islandica* and *opipara* do not bear any resemblance to each other; the ground color is entirely different; the former is a dull gray inconspicuous species, with fine and interrupted markings, the latter is entirely cinereous, with distinct heavy black markings. I do not think it necessary to give other points of difference, as those pointed out above are amply sufficient to separate the insects.

H. K. Morrison.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 80.)

No. 202 is from the **Sixth Annu. Rep. Peab. Acad. Sci., for 1873.**

* 202. A. S. PACKARD, JR. Record of American Entomology for the year 1873. p. 61-114. (Continued.)

Hemiptera (by P. R. Uhler). List of 5 articles by 5 authors; notice of 103 (14 new) species of 45 genera.

Orthoptera (by S. H. Scudder). List of 5 articles by 4 authors; notice of 259 (13 new) species of 66 (*Pedioscirtetes*, *Tropidolophus* [*Aceridii*] = 2 new) genera.

Neuroptera (by A. S. Packard, Jr.). List of 15 articles by 7 authors; notice of 224 (38 new) species of 86 genera.

Arachnida (by A. S. Packard, Jr.). List of 5 articles by 4 authors; notice of 30 (27 new) species of 14 genera.

Myriopoda (by A. S. Packard, Jr.). List of 2 articles by 2 authors; notice of 11 new species of 7 (*Archilulus* = 1 new) genera.

In all, the writings of 52 authors are recorded, and 1853 (930 new) species of 781 (123 new) genera are noticed.

The **Bull. Buff. Soc. Nat. Sci.** [see Rec., Nos. 19-25], vol. ii, contains Nos. 203 to 223.

* 203. A. R. GROTE. List of the Noctuidae of North America. p. 1-77, with one plate (i), containing eleven figures.

Criticism of previous authors; synopsis of the three independent groups here catalogued, and of the genera *Agrotis*, *Hadena* and *Mamestra*; list of 214 genera, 811 species; index to genera; descriptions of 10 (*Feralia*, *Adita*, *Chytonix*, *Zosteropoda*, *Zotheca*, *Stiria*, *Stibadium*, *Melaporphyria*, *Tricopis* = 9 new, *Antiblemma* = 1 previously described) genera, and of 35 (*Feralia Comstocki*, *F. februaryalis*, *Agrotis phyllophora*, *A. formalis*, *A. specialis*, *Mamestra puerilis*, *Dianthoecia rufula*, *D. insolens*, *Oncocnemis Behrensi*, *Hadena genialis*, *H. murina*, *Zosteropoda hirtipes*, *Pachnobia cornuta*, *Zotheca tranquilla*, *Scopelosoma Graefiana*, *S. ceromatica*, *S. Morrisoni*, *Xylomiges hiemalis*, *Plusia 8-scripta*, *P. viridisigma*, *Stiria rugifrons*, *Stibadium spumosum*, *Lygranthoecia saturata*, *Melaporphyria immortua*, *Tricopis chrysellus*, *Antiblemma canalis* = 26 new) species; position of *Epipaschia*, with list of species.

* 204. S. V. SUMMERS, M. D. Catalogue of the Coleoptera from the region of Lake Pontchartrain, La. p. 78-99.

List of 885 species and 21 varieties, in all 906 forms of 497 genera of 53 families.

* 205. A. R. GROTE. On the species of *Helicopsis* inhabiting the Valley of the Amazon. p. 106-108, with one plate (ii), containing four figures.

Notice of *H. Cupido*, *H. Acis*, *H. Endymion* and Madam M. S. Merian; habits of *H. Cupido*. Describes *H. Lindeni*, n. sp., with figures.

* 206. H. K. MORRISON. Descriptions of New Noctuidae. p. 109-117.

Describes *Luceria Burgessii*, *L. loculata* and var. *conspicua*, *Dryobota fibulata*, *Mamestra assimilis*, *Morrisonia peracuta*, *Lithophane faginu*, *L. disposita* = 8 n. spp.; synopsis of *Mamestra assimilis*, *Hadena impulsa* and *Agrotis velleripennis*.

* 207. L. F. HARVEY. Observations on North American Moths. p. 118-121.

Describes *Agrotis volubilis*, *Mamestra rosea*, *M. lilacina*, *Taenioampa pacifica*, *Glauca olivata*, *Orthodes griseocincta* = 6 n. spp. Noctuae; describes *Endropia Warneri* n. sp. Geometrae.

* 208. A. R. GROTE. Additions to the "List of North American Noctuidae." p. 122-126.

I. Genera allied to *Taenioampa*: synopsis of these (6) genera; list of 18 species; describes *Perigrapha innoxia* n. sp. II. Genera allied to *Orthosia*: synopsis of these (5) genera; list of 24 species; describes *Orthosia purpurea* n. sp. III. References omitted in the "List;" addition of three species to the list, making in all 820 spp. of 218 genera.

* 209. A. R. GROTE. New Noctuae. p. 143-144.

Describes *Hadena confederata*, *Taeniosea* (n. g.) *gentilis*, *T. perbellis* = 3 n. spp.

* 210. A. R. GROTE. Notes on American Lepidoptera with Descriptions of Twenty-one New Species. p. 145-163.

Describes *Hemaris palpalis*, *Lepisesia Victoria*, *Philampelus* (*Dupo*) *mirificatus*, *Ceratomia Hageni* = 4 n. spp. Sphingae; note on several species of *Hemaris*; attributes 54 spp. Sphingidae to Cuba and 76 to N. A. north of Mexico and the West India Islands.

Note on *Crocota* and some of its species; preliminary list of *Lithosiae*, embracing 18 species, besides varieties, of 9 genera; describes *Dryocampa rubicunda*, var. *alba*. Describes *Acronycta subochrea*, *A. quadrata*, *Agrotis gravis*, *Mamestra vicina*, *Hadena castanea*, *H. albina*, *H. curvata*, *Amolita* (n. g.) *fessa*, *Heliophila adjuta*, *H. ulonca*, *Anicla* (n. g.) *Alabama*, *Lithophane oriunda*, *Orthosia infumata*, *Pseudorthosia* (n. g.) *variabilis*, *Plusia fratella*, *Acerra* (n. g.) *normalis*, *Tarache pulchella* (= ? *T. terminimaculata* ?)

Toxocampa Victoria = 4 n. gen., 18 n. spp. Noctuae; note on *Acronycta americana* and *A. acericola*, on *Agrotis fennica* and *A. lycarum*, on *Polyphaenis herbacea* and *Eurois herbula*.

* 211. A. R. GROTE. Determination of the Species of Moths Figured in the "Natural History of New York." p. 164-168.

Criticism of the work referred to; determination of the figures.

* 212. CH. R. OSTEN SACKEN. A List of the Leptidae, Mydaiidae, and Dasypogonina of North America. p. 169-187.

List of 47 spp., 6 gen., Leptidae; of 28 spp., 2 gen., Mydaiidae; of 141 spp., 28 gen., Dasypogonina (Asilidae); describes *Mydas audax*, *M. carbonifer*, *M. chrysostomus* = 3 n. spp.

* 213. J. A. LINTNER. Description of a New Species of *Calocampa*. p. 188-189.

Describes *Calocampa nupera* n. sp.; notes on *C. vetusta*.

* 214. H. K. MORRISON. On the Species of *Calocampa*. p. 190-192.

Describes *C. curvamacula*, *C. germana* = 2 n. spp., and *C. nupera*; enumerates 7 (3 N. A.) spp.

* 215. A. R. GROTE. On allied Species of Noctuidae inhabiting Europe and North America. p. 193-200.

1. 31 species common to Europe and North America, exclusive of Labrador or circumpolar forms; 7 species still in question. 2. 12 closely allied forms, or "analogues." 3. 2 species which need comparison. Describes *Lithophane Thaxteri*, *Dicopsis Thaxterianus*, *Perigea luxa* = 3 n. spp.; notes on a few synonyms and corrections of the "List."

* 216. H. A. HAGEN. On *Attacus* (*Samia*) *Columbia* and its Parasites. p. 201-208.

Arguments for and against the specific rights of *S. Columbia*; is it not a hybrid?; notes on *Cryptus nuncius*, *C. Samiae* (= *C. extrematis*), *Hemiteles compactus*, *H. Smithii*, *H. sessilis* (?).

* 217. A. R. GROTE. Supplement to the List of North American Noctuidae. p. 209-223.

Notes on Mr. Morrison's Descriptions of new Noctuidae [see Rec., No. 180]; list of 205 spp., making in all 909 spp., of 231 genera; proposes *Trichosea* (n. g.), *Agrotis haruspica* (= *A. unimacula* nom. praeoc.), *Ochria Saulzaltai* (= *O. purpurifuscia* nom. erron.); describes *Heliosea pictipennis* n. sp.; makes numerous changes in synonymy.

* 218. A. R. GROTE. Check List of North American Sphingidae. p. 224-228.

Enumerates 74 species of 36 genera.



PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB

EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., August, 1875. [No. 16.

Notes on Luminous Larvæ of Elateridae.

On the 30th of June, 1873, I received from Dr. G. F. Waters, of Newton Centre, Mass., four luminous larvæ of Coleoptera, accompanied by a note informing me that he had found similar larvæ in Newton, in June, for the past eight years. These larvæ appeared in daylight of a yellowish color. Dr. Waters said further in his note, "Mr. F. F. Bush, of Weston, brought me some from near his residence once, which were quite dark brown to black on the unlight parts. I hear that they have been seen also in Milton. I know of no other locality where they are to be found. Mr. Bush said they are to be 'found in great abundance on all dark nights.' I have always found them under or near pine trees, and Mr. Bush's locality is so situated. . . . These were climbing grass and holding high their lights, as though looking for their loves. I have never been able to keep them alive more than five or six days." Subsequently Dr. Waters wrote: "Saturday evening [5 July], I took cars to Auburndale, and then walked two or three miles into Weston. I arrived at the locality just at dusk, and passed it without seeing anything but fire-flies; on returning I met some boys in a wagon, who had given me directions and then followed as soon as they could 'hitch up.' Knowing where they had been previously found, they, in following me, got two *very large* and *full* and gave them to me. Last evening [6 July] I went out for a walk and took my known locality and collected *nine*, mostly small." On the 9th of July I received from Dr. Waters ten of these larvæ, one of which was dead. On the evening of the same day I made a diligent search under the pine trees of "Norton's Woods," near the Museum of Comparative Zoology, Cambridge, but found none. On the night of the 16th of July,

I went with Dr. Waters to Pleasant Street in Newton, on the grounds of Mr. Davis, of the firm of Hallett & Davis, piano-forte makers, near the Cochituate Aqueduct, where we found thirty-four more, one of which was black. We did not get upon the ground till 9 o'clock, P. M., or later, when it was quite dark and moonless. The larvæ seemed to be still emerging from the ground, as after taking all I could find at one time in a place I afterwards found more there. These larvæ shine with a bright light from their spiracles and the membrane between the rings, which discovers them at a distance of some rods. I found them mostly near the roots of the grass, under or near an evergreen hedge and also a "buck-thorn" hedge, but some at a considerable distance from the hedge, in an orchard. Dr. Waters found some under pine trees on a high knoll near by. The whole locality was rather high and dry, no dew being on the ground, nor had there been a dew for several weeks. No larvæ were found near the brook which runs by the orchard.

On the evening of the 28th of July we went with two friends to the same locality in Newton where we had found the thirty-four larvæ. There, and on the lane entering Homer Street opposite Mr. E. F. Waters', and on the side of Centre Street, we found twenty more larvæ, four of which were quite black; the others yellow. All were on the average smaller than those got before; the black ones nearly of the same size with each other.

On the evening of the 29th of July, I obtained permission to examine the grounds of Mr. J. R. Lowell, near Mt. Auburn, in Cambridge. There, under or near pine trees, I caught thirty more larvæ, fourteen of which were black, the rest yellow.

On the evening of the 6th of August I hunted long and diligently for more of these larvæ in Mr. Lowell's grounds, but found none.

Thus in one month we found eighty yellow and nineteen black luminous Coleopterous larvæ. Some of these afterwards escaped, some I preserved in alcohol, some died of unknown causes, but on the 2d of August I had forty-eight living yellow ones and eighteen living black ones in my jars of earth. The last of these died in November, none of them having pupated.

Since the occurrences narrated above, I have made many inquiries about similar larvæ, and, have only learned that Mr. Sanborn found three or four larvæ apparently identical with one of the above, by the roadside between West Roxbury and Dedham. The first he had seen were brought him in 1862, by E. S. Rand, Jr., who found them in Dedham.

The most abundant form of these larvæ differs so little from "the third species" of unknown larvæ described by Osten-Sacken in vol. i of the Proceedings of the Entomological Society of Philadelphia, p. 129, that I think it sufficient only to describe the differences.

This is No. 3074 of my collection. It is 35 mm. long, elongated, with the first five rings behind the small head successively widening, the last three rings almost insensibly narrowing, the last ring evenly rounded; of a soft-leathery consistence. Lateral margins of all the abdominal segments and sometimes of the thoracic ones, the whole venter, and sometimes also the front and hind margins of the thoracic segments yellowish. Head retractile, well exerted when in walking, transverse, dilated medially behind, dark brown or almost black, sometimes paler on the margins. Anterior margin of the head above between the bases of the mandibles bisinuated, the forward projections of the curve being lateral, and the hollow central and broader. Below, directly over the mouth, the margin is truncate, centrally notched. No separate clypeus or labrum distinguishable. Third joint of antennæ cylindrical, twice as long as broad, one-third as long as the second joint, with no trace of a fourth joint in most cases. Mandibles strongly curved, either one outermost. So-called "second appendage" of the maxillæ indistinguishable. Third and fourth joints of maxillary palpi usually at least as long as they are broad.

Prothorax, when extended, as broad anteriorly as the head, longitudinal, posteriorly twice as broad as the head. Mesothorax and metathorax nearly equal in length, the latter a little longer; each shorter than prothorax. Punctuation of the thorax almost none. Tips of coxæ not very approximate, the posterior ones less approximate. Hind legs not much larger than the others and having about the same proportions. All the

legs spiny and bristly, but with no complete rings of spines. Abdominal segments not very different in length, but their relative lengths not very definite. Pseudopod a flattened truncated cone, of homogeneous fleshy texture; exsertile tip bituberculate or bifurcate.

No. 3075 of my collection, one specimen, is the dead larva given me by Dr. Waters, July 9. Dr. Waters assured me that all the larvæ in this lot were luminous, and as they were collected in the evening, they must have been so, yet this larva has a broader head actually and proportionally, short stout mandibles dilated and bent at a right angle in the middle, maxillary palpi not tapering, short and stout, rounded at the end, the third and fourth joints forming a mass of oval outline three times as long as either the first or second; the labial palpi short and stout, approximate; and other differences which I will not dwell upon with my present material.

The black larvæ make a third form, of which I find no specimens preserved in my collection, and did not take a particular description. They differ markedly in being able or apt to extinguish their light at times, which none of the yellow larvæ did, and then to resume it. They are much more active than the others, and smaller.

What else I have to say refers to the first larvæ described. They are quite active, and I should judge from the structure of their jaws that they are carnivorous. I did not succeed in feeding them with meat, earthworms, slugs, larvæ, leaves, nor slices of potato. They were in the habit of descending below the surface of the ground in the daytime, or sometimes remaining coiled up on the surface. Numbers congregated in the day time under a piece of tin or a slice of potato. They generally formed passages in the earth, with chambers, in which they rested singly. At night they moved about upon the surface. I did not determine whether artificial darkness would arouse them in the daytime. At night they were attracted to the side of the jar nearest artificial light. When disturbed, they roll themselves up with the head applied to the ventral surface of about the sixth ring, and with the terminal segment reaching the back of about the third ring; the head is then withdrawn

almost entirely within the prothorax, so that at most the mandibles, tip of mentum and palpi project beyond the prothorax. When picked up, they give quite a cold sensation to the touch. Sometimes they emit a blackish fluid from the mouth, in the manner of locusts. Erroneously, according to the claims of priority, although the error is more appropriate than the truth, they are commonly called "glow-worms." By the suggestion and indications of Mr. E. P. Austin, I conjecture that they are the larvæ of *Asaphes memnonius*. *B. Pickman Mann.*

The Note of the Katydid.

Since I began to study the character of the notes produced by different species of Orthoptera, it has been my fortune to hear that of the true Katydid (*Cyrtophyllus concavus*) but once. This insect lives in tree tops, one or two only in a tree, in little colonies scattered here and there over most of the United States east of the Rocky Mts. One such colony I encountered in the heart of the city of Springfield, Mass., and spent an evening endeavoring to reduce the notes to scale. The insects which I observed were from fifteen to twenty rods distant, perched in the tops of maple, cherry and elm trees, not far above my window.



They ordinarily call "Katy," or say "she did," rather than "Katy did"; that is, they rasp their fore wings twice, more frequently than thrice; these two notes are of equal (and extraordinary) emphasis, the latter about one quarter longer than the former; or, if three notes are given, the first and second are alike and a little shorter than the last; the notes are repeated at the rate of two hundred per minute; and while the interval between two series of notes varies to a certain degree, it is seldom greater than two and one-third seconds, or less than a second and a quarter; usually it is between one and seven-eighths and two seconds. The accompanying cut, in which each bar represents a second of time, attempts to reduce this to a scale.

The note, which sounds like *xx*, has a most shocking lack of melody; the poets who have sung its praises must have heard it at the distance that lends enchantment; in close proximity the sound is excessively rasping and grating, louder and harsher than I have heard from any other of the Locustarians, the noisiest of all Orthoptera. Since these creatures are abundant wherever they occur, the noise produced by them, on an evening especially favorable to their song, is most discordant. Usually, as I have said, the notes are two in number, rapidly repeated, at short intervals; perhaps nine out of ten individuals will ordinarily give this number; but, occasionally, a stubborn insect persists in sounding the triple note; and as Katydid-like creatures appear desirous of answering their neighbors in the same measure, the proximity of a treble-voiced songster demoralizes a whole neighborhood, and a curious medley results; notes from some individual may then be heard all the while, scarcely a moment's time intervening between their stridulations, some nearer, others at a greater distance; so that the air is filled by these noisy troubadours with an indescribably confused and grating clatter. This renders special observation of the notes of any individual all the more difficult, and it is only by great patience and careful selection that it can be accomplished, unless one places himself upon the outskirts of a colony.

Samuel H. Scudder.

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B. Pickman Mann.

(Continued from page 88.)

* 219. A. R. GROTE. North American Pyralides. p. 229-232.

Describes *Asopia devialis*, *Arta* (n. g.) *statalis*, *Botis feulalis*, *B. 5-linealis*, *B. (Pyrausta) matronalis*, *B. hircinalis*, *B. niveiciliatis* = 1 n. g., 7 n. spp.; notes on synonymy.

* 220. S. H. SCUDDER. Synonymic List of the Butterflies of North America, North of Mexico. Part I. Nymphales. p. 233-269.

Synopsis of the genera of North American Nymphales; list of 187 spp.

of 56 genera, with synonyms, geographical distribution and food-plants; proposes *Neominois*, *Cercyonis*, *Satyrodes*, *Scmnopsyche*, *Thessalia*, *Anthassa* = 6 n. gen.

* 221. L. F. HARVEY. Observations on North American Moths. (Second Paper.) p. 270-284, pl. iii, fig. 1, 3, 7.

Describes *Apatela Radcliffei*, *A. persuasa*, *Agrotis rudens*, *A. sculptilis*, *A. chortalis*, *Dianthoecia palilis*, *Mamestra marinitincta*, *Homohadena atricollaris*, *H. induta*, *Prodenia flavimedia*, *P. lineatella*, *Ablepharon absidum*, *Graphiphora arthrolita*, *Orthosia crispa*, *Glaea tremula*, *Xylomiges crucialis*, *Aunaphila mera*, *Grotella* (n. g.) *septempunctata* fig., *Lygranthoecia roseitincta*, fig., *Acopa* (n. g.) *carina*, fig., *Lita* (n. g.) *sezzignata*, *Bolina agrotipennis*, *Eubolina* (n. g.) *impartialis*, *Catocala Belfragiana*, *Remigia hexastylus*, *R. indentata*, *Pseulaglossa denticulalis*, *Bomolocha perangulalis*, *Pseulogygia* (n. g.) *versuta* = 5 n. gen., 29 n. spp. Noctuae; describes *Crochiphora coloraria* var. *sphaeromacharia* n. var. Geometrae; list of Noctuae collected in Texas by Mr. Belfrage.

* 222. A. R. GROTE. On the Genus *Agrotis* with Additions to the "List of North American Noctuidae." p. 301-312, pl. iii, fig. 2, 4-6.

Notes on 6 species of *Agrotis*; list of the 70 species of N. A. *Agrotis* represented in the collection of the Buffalo Society of Natural Sciences; addition of 3 genera and 34 species to the "List." Describes *Agrotis Ridingsiana*, *Orthosia helva*, *Perigea ennixa*, *Ingura praepilata*, *Heliothis cupes* fig., *Prothymia orgiae* fig., *Plusia metallica* = 7 n. spp.; figures *Pyrria exprimens*, *P. angulata*.

* 223. A. R. GROTE. On allied Species of Noctuidae inhabiting Europe and North America. (Second Paper.) p. 313-314.

29 species common to Europe and N. A., exclusive of Labrador or circum-polar forms.

* 224. The **Ann. Rep. Mus. Comp. Zool.** [see Rec., Nos. 14, 15] for 1874, contains the following, and Nos. 225, 226.

p. 4-5. Accession of specimens and value to the collection of insects through Baron Osten-Sacken and others.

* 225. H. A. HAGEN. Report on the Articulates. p. 12-13.

List of accessions and statement of work done during the year; improvements in closing glass vials which contain alcohol. [In communications to the Club, Dr. Hagen said that the collection of European Microlepidoptera at the Museum, in May, 1874, contained 1079 species, *i. e.* 200 species of Pyralidina, over 200 Tortricina, 673 Tineina; more than one-third of all that are known. Most of these are types of Zeller, Schleich, Mann and others.

In experimenting with rubber corks, the smaller and less tapering corks were found to be best, and rubber ropes valueless.]

Proceedings of the Club.

§ 4. MIMETIC RESEMBLANCES BETWEEN DIPTERA AND HYMENOPTERA. BARON OSTEN-SACKEN exhibited a number of specimens of Diptera and Hymenoptera to illustrate the mimicry which obtains in certain cases. The instances selected were *Laphria* and *Bombus*; *Systropus* and *Ammophilha*; *Ceria* and *Ancistrocera*; *Ceria* and *Polistes*; *Ceria* and *Conops* (both Diptera); *Spilomyia* and *Vespa*. He further remarked that there is a great resemblance between *Hispa suturalis* and *Capsus robiniae*, a beetle and a bug frequenting the leaves of the locust-tree. (Mar. 13, 1874.)

§ 5. CAPTURE OF RARE PSEUDONEUROPTERA AND NEUROPTERA. DR. HAGEN said that many rare species of Pseudoneuroptera and Neuroptera had been collected this year, some by himself in Massachusetts, and some by Mr. Sanborn in Kentucky. Amongst these are *Calopteryx angustipennis* and *Petalura Thoreyi*. The two other species of *Petalura* known belong to New Holland. This genus is so exceptional that the first specimen of the American species was declared by Selys to be of necessity Australian and erroneously labelled. Some larvæ from the same locality and collector probably belong to *Petalura*. By the dilated antennæ they agree with the larva of Hagenius. Two *Aeschna furcillata* were caught in Manchester, Mass. Only one specimen is known to exist in Europe. A specimen of *Neuronia pardalis* was also captured. The only nearly related species live in Japan, the northern part of Europe and in Siberia. They have the peculiarity to fly very high; this specimen was taken on top of a stage-coach. Dr. Hagen farther obtained a Hemerobid of the genus *Dila* from Kentucky: the male with pectinated antennæ, the female with a long ovipositor like that of *Rhaphidia*. Two species are known from Europe and two from Asia, viz: one from Ceylon and one from India. (Oct. 9, 1874.)

PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB

EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., September, 1875. [No. 17.

Bleaching the Wings of Lepidoptera.

In the common method of destroying the scales on the wings of Lepidoptera, by means of caustic alkaline solutions, for the purpose of studying the venation of the wings, there is danger of not arresting the action at the proper moment, and consequently danger of destroying not only the portions which it is desirable to remove, but also the scale-supporting membrane, and even the delicate veins themselves. The use of a modification of the chlorine bleaching process, commonly employed in cotton bleacheries, obviates the necessity of removing the scales at all, and leaves the wing perfect.

There are many ways in which this bleaching can be done, but I have found the most convenient method of applying the chlorine to be the following. The wings must first be soaked a few moments in pure alcohol, in order to dissolve out the oily matter in them. If this is not done, the surface of the wings acts as a repellent, and will not be moistened by an aqueous solution. When the wings have become thoroughly soaked by the alcohol, they are ready to be removed to a solution of common bleaching powder. This bleaching powder is sold by druggists as "chloride of lime," but it is really a mixture of calcic hypochlorite, calcic chloride, and calcic hydrate. Ten parts of water dissolve the first two compounds, leaving nearly all the third suspended in the solution. The solution should be made with cold water, filtered, and kept in a tightly corked bottle till required for use. When the wings are transferred to this solution the bleaching commences, and in an hour or two the wings are devoid of markings, except when the colors have been photographed on the membrane, although the veins retain

a light brown color. This is due to the fact that chlorine cannot quite decolorize animal matter or any substance containing nitrogen, as it does vegetable tissue.

After the color has sufficiently disappeared from the wings, they should be transferred to a wash composed of one part of strong hydrochloric acid to ten parts of water. Here it may be added, that in case the bleaching does not readily commence upon immersion in the bleaching powder solution, the action may be hastened by a previous dipping in the dilute hydrochloric acid. In the bleaching solution, a crust of calcic carbonate, formed by the union of the calcic hydrate of the solution and the carbonic dioxide of the air, is deposited on the wings, and this calcic carbonate the final wash in the dilute acid will remove. As soon as the calcic carbonate has disappeared, and all bubbling, consequent upon its decomposition by the hydrochloric acid, has ceased, the wings should be well soaked in pure water. They may then be secured on cards with a mucilage of gum tragacanth; or upon glass, by the proper transfers through alcohol and chloroform to Canada balsam.

A solution of sodic hypochlorite, known as *Eau de Labarraque*, or a solution of potassic hypochlorite, known as *Eau de Javelle*, when used in place of the solution of bleaching powder, does not leave a deposit of calcic carbonate on the wings, and thus dispenses with the wash of dilute acid. A solution of zinc hypochlorite acts more delicately than the solution of sodic hypochlorite, and may be used in place of the latter, as may also solutions of aluminic hypochlorite or magnesian hypochlorite.

These bleaching processes preserve the most delicate wings unbroken, and when the specimens are of rare species, "rubbed" wings can be used, the absence of the scales not being evident after bleaching. The costal venation of Hesperidae can be clearly determined in bleached wings.

Provided the wings are not kept too long in the bleaching solution, or in the dilute acid, the scales remain perfect and in position, although rendered so transparent that their presence is scarcely noticeable even with the aid of a lens. That they still remain, is easily proved by examining the torn edge of a

piece of wing under a compound microscope, when the transparent scales will be seen overhanging the edge like shingles upon a broken roof.

Geo. Dimmock.

(Read before the American Association for the Advancement of Science, at Detroit, Mich., Aug. 14, 1875.)

On the Insect Fauna of the White Mountains.

In a paper published in the July number of *PSYCHE*, I drew attention to some of the questions raised by studies on the insects of Mount Washington. In concluding, I suggested the probable identity of *Agrotis opipara* with *A. islandica*, and *Agrotis seropulana* with *Pachnobia carnea*. I am answered on page 85 of this journal by the remark that "in making synonymical corrections, we want certainties, not probabilities." This does not apply to myself, because I purposely made no synonymical correction in these instances. As to my suggestions, the first has proved itself correct. A specimen of *Agrotis islandica* sent me by Mr. H. B. Mæschler, from Labrador, cannot possibly be distinguished from my specimen of *opipara* from Mount Washington. The markings are equally heavy and distinct in both. I justify my remark "obviously unsafe", in the paper referred to, by pointing out that in Dr. Staudinger's original paper on *A. islandica* (*Stett. Ent. Zeit.*, 1857, p. 232), all the differences described on p. 85 of *PSYCHE* are considered varietal of *islandica*. Staudinger says of *islandica*, "This new *Agrotis* varies in size, still more in the markings, but most of all in the color." Specimens are described with unicolorously dark primaries, becoming almost smoky brown; this will account for the "gray" specimens differing from the "cinereous" ones. I have Dr. Packard's Iceland specimens of *islandica*, which formed the basis of Mr. Morrison's knowledge of the species. They belong apparently to an inconspicuously marked form, which seems to vary in color and depth of marking somewhat as *velleripennis* does. The structure is the same in these specimens of *islandica* from Iceland and *opipara* from Mount Washington; the Labrador specimen might have been taken on Mount Washington, and the Mount Washington in Labrador, for all essential points of distinction between them.

How can Mr. Morrison then say that *opipara* and *islandica* "do not bear any resemblance to each other"?

As to *A. scropulana*, I think I am justified in making a suggestion as to its identity with *Pachnobia carnea*, from its near resemblance, as to which its author was entirely silent. It differs by the basal markings of the primaries, a character which formed my principal difficulty in suggesting the identity of the species. None of the other characters pointed out by Mr. Morrison in his late paper appear to me to be valid, or other than varietal and inconstant in the limited number of specimens before me. The structure of the feet, so far as I can now see, after a careful re-examination, is the same in both forms. The line on the hind wings, the discal marks and the tone are the same.

In conclusion, I would draw attention to the fact that Mr. Morrison's descriptions of *opipara* and *scropulana*, as well as those of other species of the genus in the Proceedings of the Boston Society of Natural History, are too indefinite for identification; so that, did I not possess material received from himself, I would hardly be in a position to refer to his species at all.

A. R. Grote.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 96.)

No. 226 is from the **Ann. Rep. Mus. Comp. Zool.**, for 1874.

* 226. C. R. OSTEN-SACKEN. Report on the present condition of the Collection of Diptera of the Museum of Comparative Zoology. p. 14-17.

Grouping of the materials by faunæ; degree of value to be attached to the several groups.

¹* 227. **Sarah Hackett Stevenson.** Boys and Girls in Biology; or, Simple Studies of the Lower Forms of Life, based upon the latest Lectures of Prof. T. H. Huxley, and published by his permission. New York, Appleton, 1875. 8vo. pg. 186.

¹ Record furnished by Mr. George Dinmock.

p. 155-184. The Butterfly: its egg, larva and pupa; their development and anatomy. p. 186. Brief definition of an insect.

* 228. [**Chicago**] **Inter-Ocean**. Grasshoppers in Minnesota. New York Commercial Advertiser, June 1, 1874.

Habitats, habits and enemies of locusts.

* 229. **St. Joseph [Mo.] Herald**. Grasshoppers stopping Cars. Hartf. Daily Courant, vol. xxxviii, No. 198 (11, 163), Aug. 19, 1874.

Stoppage of railroad trains by locusts.

* 230. **C. R. Dodge**. The Potato Bug. * * * * New York Herald, vol. xl, No. 160, June 9, 1875, p. 3.

Early and later history of *Doryphora 10-lineata*; its migrations; measures to prevent its importation into Europe; its description and habits; its allies; its destructiveness; means against it.

* 231. The **Report of the State Board of Agriculture to the Legislature of Kansas for the year 1873**, contains the following, and Nos. 232, 233.

a. The Chinch Bug, *Micropus leucopterus* [extracts from Riley's Second Annual Report on the Insects of Missouri], p. 129-131. b. Silk-worm seasons (by E. V. Boissiere), p. 137-138.

* 232. C. V. RILEY. Entomology. p. 266-274.

Extracts from Riley's Fifth Missouri Report, p. 17-27; importance and progress of entomology; how to counterwork noxious insects.

* 233. C. V. RILEY. Insect Punctures. p. 274-279, fig. 47-59.

Reprint from Riley's Fifth Annual Missouri Report. p. 119-125, fig. 47-59: eggs of *Orocharis saltator*?, *Oecanthus niveus*, *Orchelimum glaberrimum*?, *Phylloptera oblongifolia*, *Platyphyllum concavum*, *Phaneroptera curvicauda* [Orthoptera], *Ceresa bubalus*, *Pocilloptera pruinosa* and other Homoptera in and on eanes, twigs and leaves.

* 234. The **Third Report Kansas State Board Agric. for 1874** contains the following, and No. 235.

a. County reports and notes upon the visitations of locusts and chinch-bugs, p. 16-53. b. Sketch of instructions given in entomology at the Agricultural College, p. 303.

* 235. PROF. F. H. SNOW. Observations on the Use of the Antennæ of *Polyphylla variolosa*.—Harris. p. 361-362.

Occurrence of *Polyphylla variolosa* at Penikese Island; adaptation of the antennæ of the male to be organs of hearing; manner in which the male seeks his mate.

* 236. Prof. J. O. Westwood. Thesaurus Entomologicus Oxoniensis; or, Illustrations of new, rare, and interesting

Insects, for the most part contained in the collections presented to the University of Oxford by the Rev. F. W. Hope [etc.], with forty plates from drawings by the Author. Oxford, Clarendon Press, 1874. Large 4to. pg. xxiv, 205, with forty plates.

Advertisement; systematic index of the insects figured and described in this work; index of the plates; obituary notice of the Rev. Fred. Wm. Hope [etc.], by T. J. Pettigrew [etc.]; list of the entomological works of the Rev. F. W. Hope; Thesaurus Entomologicus; plates.

Describes 52 genera and 236 (21 [1 new] N. A., 185 new) species of 67 (Astenorhella, Phymatopteryx, Macromina, Praona, Platysodes, Genuchinus, Callynones, Spilophorus, Psilocnemis [Cetoniidae], Zythonia [Erotylidae] = 10 new) genera of 15 families of **Coleoptera**, principally Chremastocheilides and Paussidae; habits of some American Chremastocheilides;

Describes 24 genera and 164 (18 [12 new] N. A., 115 new) species of 50 (Perantherix, Brachytoma [Tenthredinidae] Stephanus, Ophionellus [Evaniiidae], Choetospila, Euchrysia, Polychroma, Oodera, Belonea [Chalcididae], Eupsenella, Apenesia, Loboscelidia [Proctotrupidae] = 12 new) genera of 6 families of **Hymenoptera**, principally Chalcididae and Proctotrupidae; enumerates 181 species;

Describes Physophorina, Tetricodina [Locustidae] = 2 n. gen. and 7 (5 [1 N. A.] new) species of 5 genera of 2 families of **Orthoptera**;

Describes 10 (4 new) species of 2 genera of 2 families of **Neuroptera**;

Describes 8 (2 new) species of 4 genera of 3 families of **Lepidoptera**;

Describes ten cases of gynandromorphism in Lepidoptera, and one in Neuroptera;

Describes 2 (Euloba [Tingidae] = 1 new) genera and 11 (7 new) species of 3 genera of 2 families of **Hemiptera**;

Describes *Platypsylla castorinus* of the order? **Achreioptera**;

Describes 1 genus, 3 (1 new) species and the family of Campodeidae of **Thysanura**;

Describes Ancistrona, Polyetenes = 2 new genera and 3 new species of 2 genera of 2 families of **Anoplura**;

Describes 13 (Stylocellus, Cryptocellus = 2 new) genera and 3 new species of 3 genera of 3 families of **Adelarthrosomata** [Arachnida].

* 237. The **New England Farmer** [see Rec., Nos. 16-18], vol. liii (new ser., vol. xxix), from No. 14, contains the following, and Nos. 238 to 241.

a. Notice of Packard's Insects of the Garden, part ii (1874), No. 15; of Moon's Bee World, vol. i (1873-1874), No. 47. b. Cabbage Worms [description, habits and American history of *Pieris rapae*; habits of its parasite (from Packard); means against it], No. 15. c. Appearance of "grasshoppers" [locusts] in Iowa, No. 16; in Kansas, No. 32; in the West, No. 45; — their ravages, and the consequences of them, in Minne-

sota, Nos. 23, 29 (twice); in Iowa, Nos. 28, 29; in Maine, Nos. 29, 33; in Nebraska, Nos. 30, 33, 34, 35, 44; in New Hampshire, Nos. 32, 40; in Kansas, Nos. 33, 34, 39. *d.* Potato Bugs and Alfalfa [*Doryphora 10-lineata* as fond of Medicago as of Solanum], No. 17. *e.* Snow Fleas [habits of *Achorutes nivicola*], No. 17. *f.* Onion Culture [habits of *Anthomyia ceparum*; means against it], No. 18; ravages of *A. ceparum* in Massachusetts, No. 28. *g.* Grubs or Warbles in Cattle [habits of *Oestrus bovis*, means against it], No. 22. *h.* Pine Trees a preventive against Canker Worms, No. 22. *i.* Depredations of *Aphis persicae*?, Nos. 22, 26. *j.* Habits of *Psylla pyri*, or its American cousin, No. 26. *k.* Injuries caused by *Aphis cerasi*?, No. 27. *l.* Worms among the Strawberry Plants [description and habits of *Cotalpa lanigera* (from Harris)], No. 28. *m.* Cut Worm Moths.—Elm Tree Caterpillars [habits of Agrotidians (from Harris); of *Vanessa Antiopa*], No. 29. *n.* A useful [hymenopterous] parasite [upon ?*Clisiocampa americana*], No. 29. *o.* Habits of the Curculio [and means against it (from Riley)], No. 29. *p.* Ravages of caterpillars (? Tenthredinidae) on birch and poplar trees in Maine, No. 30. *q.* Beetles—Elateridae [description and habits of the family (from Packard); means against them], No. 31. *r.* Western Potato Bugs [habits of ?*Doryphora 10-lineata*] (by Wm. R. Putnam) No. 31. *s.* Arrival of *Doryphora 10-lineata* on Long Island, No. 31; in Vermont, No. 32. *t.* First appearance of *Melolontha subspinosa* in Maine; description and habits of it (from Harris), No. 32. *u.* Decrease of Noxious Insects [importance of parasites], No. 32. *v.* Parasite of the Potato Beetle [? *Coccinella*], No. 32. *w.* The Pear Slug [descriptions and habits of *Selandria cerasi* (from Harris); means against it, No. 34. *x.* The Asparagus Beetle [habits of *Crioceris asparagi*; means against it], No. 35. *y.* Charge of the Grasshopper Brigade ["poetry"], No. 36. *z.* Habits of the Grasshopper [a good sample of newspaper entomology!], No. 49. *aa.* Ingenuity of a Spider, No. 52.

* 238. S. P. WARNER. The Onion Maggot. No. 18.

Habits of *Anthomyia ceparum*.

* 239. J. N. BARTLETT. The Apple Tree Borer. Nos. 24, 39.

Habits of *Saperda canlida*; means against it.

* 240. ANONYM L. B. S. Harvesting Ants. No. 25.

Extract from Moggridge's "Harvesting Ants and Trap-door Spiders" (1874), with notes; habits of *Atta structor* and *A. barbara*.

* 241. *Popular Science Monthly*. Migrations of Insects [Locusts]. No. 29.

* 242. The **New Engl. Farm.**, vol. liv (new ser., vol. xxx), as far as No. 39, contains the following, and Nos. 243 to 247.

a. Effect of food on Insects [absurdity of supposing that a change of

food changes the species of an insect], No. 4. *b.* "Grasshoppers" hatched in January at Bellows Falls, Vt. (by F. O.), No. 6. *c.* Tree Borers [apple-trees injured by *Chrysobothris femorata*, *Saperda caudata*,? *Oncideres cingulatus*], No. 10. *d.* Vast quantities of locusts chilled to death on the Blue Mts. of Colorado, No. 12. *e.* Movements of locusts in Missouri and Kansas, No. 24; along the U. P. R. R., No. 33. *f.* Notice of Packard's "Insects of the Forest" (1875), No. 25. *g.* Ravages of *Anisopteryx* in Vermont, No. 26. *h.* Caterpillar scourge in Maine, No. 27. *i.* Arrival of *Doryphora 10-lineata* in Vermont, No. 27; in Massachusetts, Nos. 29, 30. *j.* Great flight of locusts in Missouri, No. 28. *k.* Pear leaves in Vermont eaten by "a worm or slug," No. 30. *l.* Ravages of *Leucania unipuncta* in Rhode Island and Massachusetts, Nos. 31, 34; in Long Island, No. 33; in New Hampshire, No. 35. *m.* The Apple Tree Web Worm [habits of *Hypphantria textor*], No. 34. *n.* Measuring the Strength of Insects [an experiment on tractile power (by Plateau)], No. 37.

* 243. *Rev. J. G. Wood's "Insects Abroad."* Burying Beetles. No. 22.

Their habits and use.

* 244. *J. N. BARTLETT.* Tree Borers. No. 28.

Habits of Buprestidae (from Harris).

* 245. *LA ROY SUNDERLAND, in Boston Journal of Chemistry.* The Currant Worm. No. 33.

[This 72-year old "recent amateur" shows his recent amateurship by confounding *Hadena arctica*, *Aegeria tipuliformis*, *Nematus ventricosus* and ? *Syrphus* sp. as some of the "three or four or a dozen phases" of THE Currant Worm.]

* 246. *A. S. PACKARD, JR.* The Colorado Potato Beetle and Army Worm. The Currant Worm, &c. No. 35.

Distinction between *Doryphora 10-lineata* and *Lema trilineata*; request for information about the movements and ravages of the former and of *Leucania unipuncta* in Massachusetts. Exposure of the errors in the article cited in Rec., No. 245.

* 247. *T. H. HASKINS, M.D.* Currant Worms. No. 35.

Defence of the use of hellebore as a means against "currant worms"; absurdity of the article cited in Rec., No. 245.

CHRYSOMELA 10-LINEATA ON LONG ISLAND. On May 25, 1875, I captured a specimen of *Chrysomela 10-lineata* Say, or Colorado Potato-beetle, at Bay Ridge, L. I., and a few days afterward received a number from a friend, taken near Fort Hamilton, L. I. Thinking a notice of its appearance among us would be interesting to some of the readers of your valuable little publication, I have taken the liberty of sending you this note. — *John Akhurst, Brooklyn, N. Y., June 4, 1875.*

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PSYCHE.

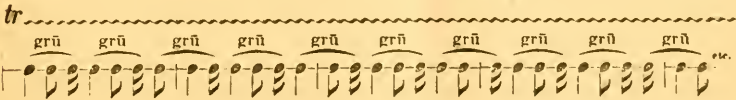
ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB
EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., October, 1875. [No. 18.

The Chirp of the Mole-cricket.

The common mole-cricket of the United States (*Gryllotalpa borealis* Burm.) usually commences its daily chirp at about four o'clock in the afternoon, but stridulates most actively at about dusk. On a cloudy day, however, it may be heard as early as two or three o'clock; this recognition of the weather is rather remarkable in a burrowing insect, and the more so since it does not appear to come to the surface to stridulate, but remains in its burrow usually an inch below the surface of the ground. The European mole-cricket is said to chirp both within its burrow and at its mouth (*plerumque sub terrâ*, Fischer says), and it may be that our species sometimes seeks the air in chanting; but the chirp, as far as I have heard it, always has a uniformly subdued tone, as if produced in some hidden recess. Fischer says that the European species, which is twice as large as ours, cannot be heard more than from one hundred and fifty to two hundred feet (*ultra spatium 20-30 passuum*). Ours, when certainly beneath the surface, is easily distinguished at a distance of five rods; and one would presume that it could be heard, if above ground, nearly twice as far away.

Its chirp is a guttural sort of sound, like *grü* or *grēēu*, repeated in a trill indefinitely, but seldom for more than two or



three minutes, and often for a less time. It is pitched at two octaves above middle C, and the notes are usually repeated at the rate of about 130 or 135 per minute; sometimes, when many are singing, even as rapidly as 150 per minute. Often,

when it first commences to chirp, it gives a single prolonged trill of more slowly repeated notes, when the composite character of the chirp is much more readily detected; and afterward is quiet for a long while. When most actively chirping, however, the commencement of a strain is less vigorous than its full swell, and the notes are then repeated at the rate of about 120 per minute; it speedily gains its normal velocity. The note sounds exceedingly like the distant croak of toads (*Bufo*) at spawning season, but is somewhat feebler. Zetterstedt compares the chirp of the European species to the note of *Hyla arborea*.

Although belonging to the saltatorial Orthoptera, this insect, like the other species of its genus, is a poor leaper; *inepte salit* says Fischer of its European congener. But on the other hand, it can run backward quite as easily as forward,— a fortunate gift, as the greater part of its burrow is too narrow for it to turn in.

Samuel H. Scudder.

Hibernation of *Amphipyra pyramidoides*.

In Vol. VI, No. 2, of the CANADIAN ENTOMOLOGIST, the Editor, in speaking of *Amphipyra pyramidoides*, says: "In what stage of its existence this insect passes the winter months, has not yet been determined. Whether the eggs, which are probably laid during August, remain dormant during the remainder of the summer and hatch early in the following spring, or whether the eggs hatch into larvæ early in the fall, and the larvæ, while still young, become torpid and sleep through the long winter months, remains undecided; we incline, however, to the latter view."

Observations that I have at different times made upon the habits of this moth, would lead to a different conclusion. While collecting *Catocalas* during August (1874) in Weston, Mass., I several times struck dead trees and raised a cloud of *A. pyramidoides* which flew out from under the loose bark. Tearing off the bark, I found hundreds of them, many living and some mere mouldy skeletons. I paid no particular attention to the fact at first, but afterwards, finding many trees inhabited in this manner, not only during the autumn, but also

during the next *spring*, I concluded that they must hibernate thus, in flocks, laying a portion of their eggs in the fall, and the rest during the following spring. I think the mouldy skeletons must be those of moths who were unable to withstand the winter, and died clinging to the bark, for in the spring there were some just beginning to mould, and others in various stages of decomposition.

Roland Thaxter.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 104.)

* 248. The **Nat. Can.** [see Rec., Nos. 27-32], vol. vi, from p. 193, contains the following, and Nos. 249 to 254, all, as before, presumably by the Editor, l'Abbé L. Provancher.

a. Ravages of locusts at Portneuf checked by crows, p. 255. b. Announcement of an exhibition of insects to take place at Paris, Sept. 6-30, 1874, p. 268. c. Notice of Loew's Monographs of the Diptera of North America, vol. iii (1873), p. 269. d. Obituary notice of Mr. G. R. Croteh, p. 269. e. Abundance of insects in Canada this year, p. 272.

* 249. Les Ichneumonides de Québec avec description de plusieurs espèces nouvelles. (suite.) [See Rec., No. 28.] p. 200-205; p. 279-285; p. 298-301; p. 331-336.

Describes 12 (10 n.) spp. *Cryptus*, 16 n. spp. and genus *Phygadeuon*, 3 n. spp. *Mesochorus*, 4 n. spp. *Mesostenus*, 9 n. spp. *Hemiteles*, 3 (1 n.) spp. *Trogus*, 1 n. sp. *Joppa*; synopsis of the species in each genus; enumerates 58 spp.

* 250. Une Excursion à Montréal. p. 215-224.

Telyphonus giganteus from Florida; ravages of *Clisiocampa sylvatica*; abundance of *Macronema zebratum*; lists of 57 species collected.

* 251. Larves de Diptères sur un corps humain. p. 264-266; p. 319.

Ten young Tachinid (?) larvæ in the subcutaneous tissue of a baby; citation of similar cases.

* 252. Insectes nommés. p. 266-268.

Lepisma sp. from a well 107 feet deep.

* 253. Les Sauterelles. p. 270.

Excellence of locusts as human food.

* 254. Vers à soie d'Amérique. L'Attaque Polyphème. *Attacus Polyphemus* Liuné. p. 302-319, fig. 9-11, with one plate (ii).

Description; habits; enemies; availability for the production of silk. Enumeration of American silkworms. Experiments made with it, and directions for its cultivation [from Amer. Nat., vol. i (by Mr. Trouvelot)]; offers of assistance to would-be experimenters.

* 255. The **Mass. Ploughm.** [see Rec., Nos. 33-38], vol. xxxiii, from No. 40 (1704) contains the following.

a. The Luna Moth.—*Attacus Luna* [fig., description (from Harris)], No. 41 (1705). b. Increase of Noxious Insects [habits and ravages of, and means against *Clisiocampa americana*], No. 42 (1706). c. The Cranberry Worm [habits of ——— ? and of an onion cutworm], No. 42 (1706). d. Appearance of *Doryphora 10-lineata* near Boston [Doubtful. *B. P. M.*], No. 43 (1707). e. Damage to the wheat crops by insects, No. 44 (1708). f. Diseased Squash Vines [ravages of *Aegeria cucurbitae*], No. 45 (1709). g. The Onion Midget [copied from Rec., No. 238], No. 46 (1710).

* 256. The **Mass. Ploughm.**, vol. xxxiv, as far as No. 20 (1735), contains the following, and No. 257.

a. Eggs of the Bee Moth [description of eggs and egg-laying of *Galleria cereana*], No. 6 (1722). b. Agricultural Ants [habits of *Myrmica molefaciens* (from Amer. Nat., vol. viii; see Rec., No. 272)], No. 8 (1724). c. The Work of Insects [commercial value of various insects and insect products], No. 8 (1724). d. Destitution in Nebraska [extent of ravages by locusts], No. 8 (1724).

* 257. *Omaha Herald*, Dec. 22. The Rocky Mountain Grasshopper. No. 14 (1730).—Also reprinted in Boston Daily Advertiser, vol. cxxiv, No. 154 (18, 723), Dec. 30, 1874.

Habits, habitat and habitus of *Caloptenus spretus*.

* 258. The **Proc. Acad. Nat. Sci. Philad.** for 1874 [see Rec., No. 40], contain the following, and Nos. 259 to 261.

Statement of work done on the entomological library and collections of the Society, pp. 229, 231.

* 259. PROF. JOSEPH LEIDY. On a Parasitic Worm of the House-fly. p. 139-140.

Filaria (Habronema) muscae living frequently in the proboscis of the common house-fly. [The occurrence of such a parasite was pointed out by Mr. F. G. Sanborn in Nov. 1873, at a meeting of the Entomological Section of the Boston Society of Natural History.]

* 260. J. LEIDY. Note on *Dryocampa*. p. 160.

Devastation of oaks in the forests of New Jersey by *Dryocampa senatoria*; affection of the *Dryocampa* by the fungus *Achlya proliferata*.

* 261. A. R. GROTE. New species of North American Noctuidæ. p. 197-214.

Describes *Acronyeta exilis*, *A. paupercula*, *Eutotype* (n. g.) *Rolandii*, *Dianthoecia pensilis*, *Gortyna cerina*, *Himella* (n. g.) *fidelis*, *H. fufurata*, *Taenioecampa capsella*, *Agrotis innotabilis*, *A. euroides*, *A. Bostoniensis*, *Hadena* sub-gen. *Oligia*, *H. (O.) versicolor*, *H. (O.) tracta*, *Apamea purpuripennis*, *Pseudorthosia pectinata*, *Plusia labrosa*, *P. epigaea*, *Scopelosoma devia*, *Calocampa cineritia*, *Pyrrhia illiterata*, *Tamila tertia*, *Homopyralis* (n. g.) *tactus*, *H. tantillus* = 3 n. gen., 23 n. spp.; describes *Helotropha reniformis* var. *atra* n. var.; republishes Linne's description of "*Phalaena Omicron*" = ? *Plusia simplex*; notes on *Apamea* and *Scopelosoma*, with list of species; on *Agrotis badinodis*, *A. geniculata*, *Melaporphyria immortua*, *Hydroecia*, *Calocampa* spp.

The **Proc. Acad. Nat. Sci. Philad.** for 1875, as far as p. 152, contain Nos. 262, 263.

* 262. T. G. GENTRY. Curious Anomaly in History of certain Larvæ of *Acronyeta oblongata*, Guenee, and Hints on Phylogeny of Lepidoptera. p. 25-54.

Abundance of larvæ of *Vanessa Antiopa* and *Acronyeta oblongata*; habits of the latter; effect of environment and peculiarities of food upon the habits of animals and plants. Because a few starved specimens of *A. oblongata* had not the strength to form a cocoon, the author is led into random hypotheses upon the derivation of Lepidoptera, whence "after many hours of toil" he has "been enabled to construct" a genealogical tree.

* 263. H. K. MORRISON. Notes on the Noctuidæ, with Descriptions of certain New Species. p. 55-71.

Describes *Charadra decora*, *Agrotis dilucida*, *Mamestra thecata*, *Onconemis Meadiana*, *Mamestra rufula*, *Actinotia derupta*, *Hadena suffusca*, *H. inordinata*, *H. stipata*, *H. paginata*, *Laphygma inflexa*, *Orthosia perpura*, *O. differta*, *Schinia Tepperi*, *Heliothis lucens*, *Tarache patula*, *T. crustaria*, *Lithacodia penita*, = 18 n. spp.; describes *Agrotis brocha*, *A. plagigera*, *A. redimicula*, *A. Rileyana*, *A. gladiatoria*, *Schinia gracilentia* var. *oleagina* n. var.; notes on *Agrotis badicollis*, *A. unimacula*, *Orthosia ferrugineoides*, *Remigia texana*.

* 264. The **Amer. Nat.** [see Rec., Nos. 44-63], vol. viii, from p. 385, contains the following, and Nos. 265 to 289.

a. Notice of Edwards' The Butterflies of North America, second series part i (1874), p. 420-421; of Grote's List of the Noctuidæ of North America (1874) [separate; see Rec., No. 203], p. 421-422; of Scudder's On the Carboniferous Myriopods preserved in the Sigillarian Stumps of Nova Scotia [Memoirs Bost. Soc. Nat. Hist., vol. ii, p. 231-239] (1873), p. 430-

431; of *Psyche*, No. 1 (1874), p. 447; of Loew's Monographs of the Diptera of North America, vol. iii (1873) [and of vols. i, ii, iv], p. 497-498; of a new volume of Lacordaire's Genera of Coleoptera (1874?), p. 576; of Lintner's Entomological Contributions, No. iii [see Rec., No. 26; figures of larvæ of *Coelodasys unicornis*, *Platygerura furcilla*, *Nalata gibbosa*, *Notodonta* sp., *Cerura borealis*, *Diptera deridens*, and imagos of *Cucullia Speyeri* ♂ ♀] (1874), p. 691-692, fig. 101-109; of Kraatz's "Monstrosities among Beetles" ["Berl. Entom. Zeitschr., vol. xvii"] (1873), p. 693. *b.* A remarkable Beetle Parasite of the Beaver [description and figure of *Platypssylla castoris*; its affinities], p. 427-428, fig. 82. *c.* Resolve of the New York State Legislature to promote the publication of Asa Fitch's Reports on Insects, p. 446-447. *d.* Ravages of locusts in Minnesota and Iowa, pp. 447, 511; use of locusts as food, p. 511. *e.* Notice of the death of G. A. Herrich-Schaeffer, p. 447; of G. R. Crotch, p. 512. *f.* Improvements in Insect Mounting [preservation in balsam of specimens for microscopic use], p. 507-508. *g.* Dimorphism in Gall Flies [*Cynips q. operator*], p. 563. *h.* Ichneumon parasites of Anthrenus larvæ, p. 564-565. *i.* Larvæ of Membracis [*Umbonia indicator*] serving as milk cattle to a bee [*Trigona cagafogo*], p. 565. *j.* List of papers read in Section B, at the Hartford meeting (Aug. 1874) of the American Association for the Advancement of Science, p. 573-574. *k.* An economical substitute for sheet cork (by Egbert Bagg, Jr.), p. 704. *l.* Importance of a re-survey of the State of Massachusetts, [resp. insects *et al.*], p. 762-764.

* 265. J. L. LECONTE. The Classification of the Rhynchoporous Coleoptera. p. 385-396, p. 452-470.

Sketch of the classifications of Schönherr (1833-1844), of Lacordaire (1863), of Jekel (1864), of Suffrian (1840-1848), of Thomson (1865), of Horn (1873); proposal and definition of a new classification; remarks upon the series and families and some of the lesser groups in the new classification.

* 266. A. S. PACKARD, JR. The Discovery of the Origin of the Sting of the Bee. p. 431.

Claim of priority of discovery.

* 267. A. S. PACKARD, JR. The Mouth Parts of the Dragon Fly. p. 432.

Notice of an article entitled * Zur Morphologie der Orthoptera amphibiotica, in the * Festschrift zur Feier des hundertjährigen Bestehens der Gesellschaft Naturforschender Freunde zu Berlin. Berlin, Dümmler, 1873. 4to. [In this article, p. 65-66, fig. 28, 29, is described *Pteronarcys frigida* n. sp., from Labrador.]

* 268. SANBORN TENNEY. On some of the Evidences of Life in Great Salt Lake. p. 435-436.

Finding of *Ephydra* sp. and other animals on the shore.

* 269. *Nature*, June 4. Charles Robert Darwin. p. 473-479.

Brief biographical sketch, with list of writings: to which is appended a biographical notice by Asa Gray.

* 270. A. S. PACKARD, Jr. Occurrence of *Japyx* in the United States. p. 501-502, fig. 91.

Finding of *Japyx subterraneus* n. sp. and *Scolopendrella americana* in Kentucky; description and figure of the former.

* 271. A. S. PACKARD, Jr. The "Hateful" Grasshopper in New England. p. 502.

Finding of *Caloptenus spretus* in Maine and Massachusetts; its characters and variations.

* 272. Dr. G. LINNECUM. The Agricultural Ant. p. 513-517.

Habits of *Myrmica molefaciens*.

* 273. A. R. GROTE. On the Antennæ in the Lepidoptera. p. 519-520.

Function of the antennæ. [See Rec., No. 69.]

* 274. Prof. P. J. VAN BENEDEEN. The Social Life of the Lower Animals. p. 521-530.

The trades and occupations, the parasitism, commensalism and mutualism of insects and other animals.

* 275. A. S. PACKARD, Jr. On the Distribution and Primitive Number of Spiracles in Insects. p. 531-534.

Upon which and how many segments spiracles are found in the different orders of insects.

* 276. Fritz Müller and CHARLES DARWIN. Recent Researches on Termites and Stingless Honey-bees. p. 553-556.

Reprint from "Nature" of a translation of a letter from Fritz Müller upon the discovery of two sexually mature forms of Termites, their habits and anatomy; and upon the habits and affinities of *Melipona* and *Trigona* as compared with *Apis*.

* 277. A. R. GROTE. The Cotton Worm. p. 562.

Habits of *Aletia argillacea*.

* 278. A. S. PACKARD, Jr. Larvæ of *Anopthalmus* and *Adelops*. p. 562-563.

Description of the larvæ of *Anopthalmus Tellkampfi* and *Adelops hirtus*; habits of the former.

* 279. G. LINNECUM. Sweet Scented Ants. p. 564.

Mention of Texan ants which smelt sweetly when crushed.

- * 280. G. LINCECUM. Robber Ants. p. 564.

Evisceration of one species of ant by another, for the purpose of obtaining the sweet contents of the stomach.

- * 281. A. M. MAYER. Experiments on the supposed Auditory Apparatus of the Mosquito. p. 577-592, fig. 92.

[Reprint, with a few corrections by the author, of the article cited in this Record, No. 189. See also Rec., No. 55.]

- * 282. G. LINCECUM. The Gossamer Spider. p. 593-596.
Habits of an undetermined species of Arachnidae.

- * 283. Dr. August Weismann and A. S. PACKARD, Jr. The Metamorphosis of Flies. I. p. 603-612.

Translation of a chapter entitled "View of the Phenomena of Development," from Weismann's "The Development of Diptera" (1864). "Relates wholly to *Musca vomitoria*."

- * 284. Dr. Augustus Weismann. The Metamorphosis of Flies. II. p. 661-667.

Translation of the closing chapter in Weismann's "Die Entwicklung der Dipteren" (1864). The histologic and morphologic relation between the larva and pupa in Muscidae.

- * 285. C. V. RILEY. Insectivorous Plants. p. 684-687.

Abstract of the article cited in this Record, No. 143, c.

- * 286. A. Weismann. The Metamorphosis of Flies. III. p. 713-721.

Translation of the concluding chapter of Weismann's "Die Metamorphose der *Corethra plumicornis*" [etc.] (1866). The histologic and morphologic relation between the larva and pupa in *Corethra* compared with that in *Musca* [see Rec., No. 284], indicating two diametrically opposed forms of insect metamorphosis.

- * 287. A. R. GROTE. On the Cotton Worm of the Southern States (*Aletia argillacea* Hubner). p. 722-727.

Habits, seasons and synonymy of *A. argillacea*. [See Rec., No. 143, d.]

- * 288. J. M. MILLIGAN. *Yucca filamentosa*. p. 749-752.
Habits of *Pronuba yuccasella*.

- * 289. A. R. GROTE. Note on the Synonymy of *Telea Polyphemus*. p. 753-754.

Bibliognostic citations resp. *Telea Polyphemus* and *Bombyx Paphia*.

CATOCALA RELICTA AT NEWTONVILLE, MASS. On Sept. 20, 1875, I captured at Newtonville a good specimen of *Catocala relictata* ♂, at sugar; the first that I have captured in this locality.—Roland Thaxter.

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PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB

EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., November, 1875. [No. 19.

On a supposed Case of Seasonal Dimorphism among Diptera.

Seasonal dimorphism is a constantly recurring disparity—great or small, between two successive broods of the same species during the same year. The attention of entomologists was recalled to this perhaps too little noticed phenomenon by Dr. Weismann's recent publication concerning some cases of seasonal dimorphism among Lepidoptera (Ueber d. Saison-Dimorphismus d. Schmetterlinge). I am strongly inclined to think that the case I intend to notice here, belongs to the same order of phenomena, among Diptera. It was for the first time brought forward by me in a recent paper on the genus *Syrphus*, published in the Proc. Bost. Soc. Nat. Hist., xviii (Oct. 1875); but I deem it useful to bring it before a larger circle of entomological readers, and thus to invite further investigation.

In preparing the above-mentioned paper on *Syrphus*, I had the opportunity to examine about 300 specimens of the most common species of this genus in New England, a species closely allied to, if not identical with, the European *S. ribesii* Linné. The result of this examination was, that I distinguished two well marked forms, each represented in both sexes, and which may be defined as follows :

- I. ♂, ♀. Eyes pubescent; hind femora black, except at the tip;
- II. ♂, ♀. Eyes glabrous;
 - ♂, all the femora black at the base; hind femora black, except the tip;
 - ♀ all the femora yellow from the very base (the coxæ being black); hind femora often with a brown ring before the tip.

The first of these forms I named *Syrphus torvus*, the second *S. rectus*. Between the males of these forms there is hardly any difference at all, except, as just shown, in the condition of the eyes, pubescent in the one, glabrous in the other. Between the females, the difference consists, besides the condition of the eyes, in the color of the hind femora. Minor differences existing between the two forms, are almost unappreciable, and would have been neglected, without the help of those leading characters.

As both forms occur in large numbers in the same localities (my specimens were principally from the White Mountains), the question naturally arises whether they occur promiscuously, or at different seasons? The answer would have been easy, if the dates of the capture of each of those 300 specimens had been noted. Although this was not the case for a considerable majority among them, still, from the data in my possession, it seems probable that *S. torvus* is the form commonly occurring in the early summer, *S. rectus* that of the late summer and autumn. If such is the case, the next question would be whether these two forms are distinct species, or whether they represent a case of seasonal dimorphism of the same species? The latter alternative seems to me the more probable, although of course it would require further proof, by way of observation and experiment, before being accepted.

About ten years ago, Mr. Malm in Göteborg, Sweden, expressed the opinion that the representatives of my *S. rectus* and *S. torvus* in Europe, *S. ribesii*, *S. vitripennis* and *S. topiarius* are not species, but only varieties, each occurring more abundantly in its own season: *topiarius* (*torvus*), in the spring; *ribesii* (*rectus*), in autumn; and *vitripennis* between the two, in midsummer. There seems to be a difference, however, between the case, as it stands in Europe, and as I find it here. The European *S. vitripennis* is said to be an intermediate form between the two other species; it has glabrous eyes, but at the same time the femora of the female are dark at the base. Among the 300 American specimens which I have examined, *there was not a single case of this kind*: as shown above, all the females with glabrous eyes have the femora yellow from the

very base. Mr. Malm also found other passages from one form to the other, tending to establish their specific identity: for him, therefore, these forms are *varieties*; while in America, as far at least as my observation goes, the two forms are perfectly distinct, and thus are either distinct species or dimorphic forms of the same species.

Although the technical particulars, into which I was obliged to enter, are too dry for the general reader, the interest attached to the question thus raised reaches beyond the scope of mere descriptive entomology; and this may be my excuse for bringing this matter before the readers of *PSYCHE*. For more details, I refer to my paper in the above-quoted Proceedings.

C. R. Osten Sacken.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 112.)

* 290. The **Amer. Nat.**, vol. ix, as far as p. 576, contains the following, and Nos. 291 to 307.

a. Notice of LeBaron's Fourth Annual Report on the Noxious and Beneficial Insects of the State of Illinois (1874), p. 53; of Packard's proposed monograph of Geometrid moths [with request for assistance] (by A. S. Packard, Jr.), pp. 64, 179-180, with figures; of Simon's *Les Arachnides de France*, Tome 1 (1874) (by J. H. Emerton), p. 108-109; of Weyenbergh's **Sobre un Monstruo Dicéfalo (Larva de Chironomus)* [etc.] [*Periódico Zoológico*, Tom. 1, p. 50-57, with a figure] (1874), p. 179; of Lubbock's *On British Wild Flowers considered in Relation to Insects* (1875), p. 245-246; of Scudder's *The Distribution of Insects in New Hampshire* (1874) p. 309; of Morse's *First Book of Zoology* (1875), p. 571. *b.* Note on *Telea Polyphemus* [corrections of and additions to the article cited in *Ree.*, No. 289] (by A. R. Grote), p. 113-114. *c.* Obituary notice of Dr. Gideon Lincecum, p. 191. *d.* *Filaria* in the House Fly [see *Ree.*, No. 259], p. 247. *e.* Danger of using Paris Green in killing Potato Beetles (by R. U. Piper), p. 318. *f.* Cigars Destroyed by Insects [*Catorama simplex*, *Xyloterus?* sp., *Calandra oryzae*], p. 375. *g.* Entomological announcements for the Detroit meeting of the A. A. A. S. (Aug. 1875), p. 380. *h.* Appointment of Prof. Cyrus Thomas as State Entomologist of Illinois, p. 383. *i.* Fertilization of Alpine Flowers by Butterflies, p. 421-422. *j.* Notice of the

excursion of the Cambridge Entomological Club to the White Mts. (1875), p. 480. *l.* A Tachina Parasite of the Squash Bug (*Coreus tristis*), p. 519.

* 291. F. C. CLARK, M. D. The Song of the Cicada. p. 70-74.

Quotations from ancient writers about cicadas; description of the sonorous apparatus.

* 292. J. L. LECONTE. An Additional Character for the Definition of Rhynchophorous Coleoptera. p. 112-113.

Presence of a straight median suture on the under surface of the head, corresponding with the gular sutures of other Coleoptera.

* 293. THOMAS W. STARR. A Method of Preparing and Mounting Suitable Insects for Microscopical Examination. p. 122-124.

* 294. R. Packerham Williams. Embedding Tissues. p. 124.

Description of an embedding mixture serviceable in cutting sections of the eye of insects.

* 295. H. J. M. Underhill. Spiders' Web. p. 125-126.

Composition of the web and the mechanism by which it is produced.

* 296. E. LEWIS STURTEVANT. Flight of Vanessa Antiope, Feb. 16th. p. 247.

V. Antiope flying at South Framingham, Mass., in freezing weather.

* 297. T. G. GENTRY. The Fertilization of certain Flowers through Insect Agency. p. 263-267.

Cucurbita ovifera fertilized with pollen of *C. pepo*, and vines of *Wistaria sinensis* cross-fertilized by bees. [See Rec., No. 301.]

* 298. A. S. PACKARD, JR. The Invertebrate Cave Fauna of Kentucky and Adjoining States. I. Araneina. p. 274-278.

Notice of the caves visited; distribution of the cave spiders and myriopods; *Spirostrephon cavernarum* a cave species in process of formation. [See Rec., No. 299.]

* 299. J. H. EMERTON. Notes on Spiders from Caves in Kentucky, Virginia and Indiana. p. 278-281, with one plate (i), containing 31 figures.

Describes *Nesticus pallidus*, *N. Carteri*, *Linyphia subterranea*, *L. Weyeri*, *L. incerta* = 5 n. spp.; describes *Anthrobia mammothia*; figures of each; notes on ten ("eleven") species. [See Rec., No. 298.]

* 300. W. L. CARPENTER. Artificial Hatching of Grasshoppers. p. 312.

Locusts hatched in January, in Dakota, by the heat of camp-fires. Doubts [by the editors] whether the hatching had not taken place in the previous autumn.

* 301. T. MEEHAN. Mr. Gentry's paper on Fertilization through Insect Agency. p. 374-375.

Criticism of the article cited in Rec., No. 297.

* 302. W. F. BUNDY. Colorado Potato Beetle destroyed by the Rose-breasted Grosbeak. p. 375.

Goniaphea ludoviciana an effectual check upon *Doryphora 10-lineata* about Jefferson, Wis., in 1874.

* 303. T. B. COMSTOCK. The European Cabbage Butterfly. p. 426.

Arrival of *Pieris rapae* at Cleveland, Ohio; its ravages there and in Western Pennsylvania; its partial destruction by *Pteromalus puparum*.

* 304. J. L. LÉCONTE. Address of the Retiring President of the Association. p. 481-498.

Geographical distribution (resp. Coleoptera) considered as a department of palæontology; requisites for its study. Character and criterion of a "species". Difficulty of interpreting the intellectual processes of dissimilar beings.

* 305. *Entom. Monthl. Mag., Jan., 1874.* Importation of useful Insects. p. 520.

Proposition to carry specimens of *Bombus* and *Chrysopa* from England to New Zealand.

* 306. J. W. DAWSON. Address of [Vice President of the A. A. A. S.]. p. 529-552.

p. 516. Comments on "those ingenious, not to say amusing, speculations in which some entomologists and botanists have indulged with reference to the mutual relations of flowers and haustellate insects."

* 307. A. S. PACKARD, JR. *Caloptenus spretus* in Massachusetts. p. 573.

Occurrence of *Caloptenus spretus* at Amherst, Mass.

* 308. **William LeBaron, M.D., STATE ENTOMOLOGIST.** Fourth Annual Report on the Noxious and Beneficial Insects of the State of Illinois. Springfield, 1874. 8vo. pg. xviii, 199, fig. 1-94.

Introduction, p. iii-iv.

OUTLINES OF ENTOMOLOGY, published in connection with the Author's Annual Reports upon Injurious Insects. — Part First. Including

the Order of Coleoptera. — Preface, p. vii–ix. Systematic Index, p. xi–xv. Synopsis of the Tribes of the Coleoptera, p. xvi–xviii. Insects in general [classification; internal anatomy; sounds; sexes; external anatomy; directions for capturing and preserving insects; instinct; economic relations; food; treatment of injurious insects; orismology; nomenclature; division into orders], p. 1–25, fig. 1–2. Order of Coleoptera [characters; external structure; larvæ and pupæ; connection of structure and habits; classificatory divisions and subdivisions as far as the discrimination of the larger or more important genera], p. 26–185, fig. 3–94. Catalogue of the principal Authors who have written upon the Coleoptera, with special reference to the describers of N. American species, or of their Natural History, and with the ordinary abbreviations of their names prefixed [with biographical notes], p. 186–190. Glossary, p. 191–194. Index of Families, Sub-families and Genera, p. 195–199.

* 309. **A. S. Packard, Jr.** Half-Hour Recreations in Natural History. — Division First. — Half-Hours with Insects. Twelve Parts. — Parts 1–8 [each 32 pg.]. Boston, Estes & Lauriat [1874–1875]. 8vo. p. 1–256, with 195 figures and a colored lithographic plate.

1. Insects of the Garden. p. 1–64, fig. 1–53, plate.

Destructiveness, dimorphism, metamorphoses, structure, habits and mutual relations of insects; importance of economic entomology; account of some prominent garden insects; their enemies, their relatives, or means against them.

3. Relations of Insects to Man. p. 65–96, fig. 54–70.

Unity of creation; account of some human parasites, some stinging, some poisonous and some useful insects and arachnids; production of wax and honey.

4. Insects of the Plant House. p. 97–119, fig. 71–86.

Inducements to microscopic study; functions of antennæ; secretions, propagation and embryonic growth of Aphides; metamorphoses, depredations and useful products of Coccidae; means against hot-house pests.

5. Edible Insects. p. 120–128, fig. 87–90.

Locusts, larvæ and other insects good for food or medicine.

6. Insects of the Pond and Stream. p. 129–160, fig. 91–126.

The struggle for existence; ancestry, vital adaptations, respiration and locomotion of aquatic insects.

7. The Population of an Apple Tree. p. 161–192, fig. 127–141.

Habits, depredations and enemies of some insects found in or upon apple-trees; means against them.

8. Insects of the Field. p. 193-224, fig. 142-172.

Variety and activity of field-insects; fertilization of flowers; habits, devastations and enemies of some species; means against them.

9. Insects of the Forest. p. 225-256, fig. 174-195.

Richness of forest faunæ; habits and devastations of some forest insects.

* 310. **Will W. Tracy** and **Geo. Parmelee**. Injurious Insects. Report read before the Peninsula Farmers' Club at Old Mission, Mich. Traverse City, 1874. 8vo. pg. 12.

Descriptions and habits of *Carpocapsa pomonella*, *Conotrachelus nenuphar*, *Aphis mali*, *Aegeria exitiosa*, *Saperda candida*, *Chrysobothris femorata*, and genus *Agrotis*; means against them. Letters from Dr. J. P. Trimble, of N. J., and Prof. A. J. Cook, of Michigan Agricultural College, upon the same subjects.

* 311. **C. V. Riley**, STATE ENTOMOLOGIST. Seventh Annual Report on the Noxious, Beneficial, and other Insects of the State of Missouri, made to the State Board of Agriculture, pursuant to an appropriation for this purpose from the Legislature of the State. Jefferson City, 1875. 8vo. pg. viii, 196, iv, with 39 figures and a map.

Preface and Table of Contents, p. iii-viii.

a. Migrations, depredations, poisonousness, habits and proper name of *Doryphora 10-lineata*; means against it; proposes for it the new subgeneric title *Thlibocoryna* in place of *Myocorina* preoccupied, p. 1-19, fig. 1. *b.* "Full account" of *Micropus leucopterus*; description, habits, enemies, history, ravages; means against it; other insects mistaken for it, p. 19-71, fig. 2-11. *c.* Habits and parasites of *Chrysobothris femorata*; means against it; describes *Bracon charus* n. sp., p. 71-79, fig. 12-13. *d.* *Anisopteryx vernata* and *A. pometaria* distinguished; habits and description of every stage of each, p. 80-90, fig. 14-18. *e.* Supplement to the article in the Sixth Report [see Rec. No. 39] upon *Phylloxera vastatrix*; habits, polymorphism, ravages, distribution; varieties of grape injured by it; means against it; synopsis of the 16 (*Ph. caryae-gummosa*, *Ph. caryae-ren*, *Ph. caryae-fallax* = 3 new) N. A. species of Phylloxera; habits and diagnosis of *Ph. Rileyi*, p. 90-121, fig. 19-22. *f.* History, description, ravages, habits, food, seasons, home, enemies, parasites (especially *Trombidium sericeum*, *Astoma gryllaria*, *Tachina anonyma*, *Sarcophaga carnaria*) and proper name of *Caloptenus (Melanoplus) spretus*; means against it; comparative description of *C. femur-rubrum*; describes *C. Atlanis* n. sp.; other devastating locusts, especially *C. differentialis*, *C. bivittatus*, p. 121-196; fig. 23-39.

* 312. The **Overland Monthly**, vol. xiii, No. 5 (p. 393-488), contains the following.

Notice of Strecker's "Illustrations of Lepidoptera" [for correct title, see Rec., No. 79] and of *Psyche*, p. 485.

* 313. The **Springfield Daily Republician**, Dec. 10, 1874, contains the following.

Notice of Psyche and the Cambridge Entomological Club, p. 3.

* 314. **J. A. Lintner**. The New Apple-worm. Albany [N. Y.] Evening Times, April 12, 1875.

Finding of *Mermis* sp., an entozoan parasite of the larva of *Carpocapsa pomonella* within an apple; habits of *Gorlius* parasites of insects.

Proceedings of the Club.

§ 6. ON EUMENIA ATALA. MR. SCUDDER said he had lately received from Dr. Packard the larvæ and pupæ of *Eumenia Atala* collected by Dr. Edw. Palmer. This butterfly has been very variously classified by separate authors, having been placed by Godart between the Satyrids and the Brassolids, and among the Erycinids by Lucas. Westwood, in the Genera of Diurnal Lepidoptera, placed it among the Lycænids. Boisduval made a distinct family for it. The character of the cell of the forewings was erroneously stated by Bates, who thought the cell was closed by a vein resembling the others, and suggested that this species with some others might form a separate group among the Lycænids. The existence of a strong vein is only apparent, however, and due to the character of the scales at the apex of the cell. On denuding the wing it is seen that in both sexes the vein which closes the cell is really almost obsolete. The fore tarsi of the males are one-jointed, and spinous. Dr. Palmer was able to assure Mr. Scudder that the larvæ collected really belong to this species. They differ greatly from the larvæ of Lycænids in being but little onisciform, in having distinct though minute, prolegs, an only partially retractile head and but slight enlargement of the prothoracic segment. The pupæ do not have the terminal segment wholly upon the under surface of the body, as is the case in the Lycænids. The larva feeds on *Zamia*. (Dec. 11, 1874.)

§ 7. VANESSA URTICAE IN NORTH AMERICA. MR. OUTRAM BANGS exhibited a worn specimen of *Vanessa urticae*, which he had collected on the wing, at Watertown, Mass., a few years ago. (June 11, 1875.)

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PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB

EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., December, 1875. [No. 20.

On an Immense Flight of Small Butterflies (*Terias lisa*) in the Bermudas.

Marvellous indeed, as naturalists well know, are those periodic movements of the feathered race known as spring and autumn migrations. Moved by an instinctive impulse implanted in them by the Creator, thousands upon thousands of birds of all sizes, from the bulky swan to the tiny humming bird, travel by sea or land to distances so remote that, unless it was ascertained beyond doubt that the space was traversed, the fact would be considered almost incredible.

But if we are greatly astonished at the power of endurance exemplified in this long sustained flight of some of the smallest birds, what will be said when we relate a circumstance connected with a similar power possessed by a species of butterfly, so small and apparently incapable of withstanding the violence of the elements, that we know not which is the more remarkable, the distance traversed, or the number of these frail little creatures which lived to reach those remote isles of the ocean, after an aerial journey of some six hundred miles or more?

Thus it was. Early in the morning of the first day of Oct. last year (1874), several persons living on the north side of the main island perceived, as they thought, a cloud coming over from the north west, which drew nearer and nearer to the shore, on reaching which it divided into two parts, one of which went eastward, and the other westward, gradually falling upon the land. They were not long in ascertaining that what they had taken for a cloud was an immense concourse of small yellow butterflies (*Terias lisa* Boisd.), which flitted about all the open grassy patches and cultivated grounds in a lazy manner, as if fatigued after their long voyage over the deep. Fisher-

men out near the reefs, some few miles to the north of the islands, very early that morning, stated that numbers of these insects fell upon their boats, literally covering them. They did not stay long upon the islands, however, only a few days, but during that time thousands must have fallen victims to the vigorous appetites of the blue bird (*Sialia sialis* Baird) and black bird (*Mimus carolinensis* Gray), which were continually preying upon them. Only one other instance of a flight of these butterflies visiting the islands is recorded (in the author's "Naturalist in Bermuda" p. 120).

The migratory habit of the Pieridae, to which the present species belongs, is well known, and notices of the occurrence of large flights have occasionally appeared in entomological journals. Numbers of *Pieris napi* and *P. brassicae* have been known to cross the channel from France to England, and a migratory host of *Callidryas radia* has been observed moving along in Basuto Land; but the only instances published of their having been met with at sea, are to be found in Darwin's "Naturalist's Voyage" and the "Entomologist's Magazine" (England).

Darwin writes as follows:—Several times when the ship (H. M. S. "Beagle") has been some miles off the mouth of the Rio Plata, and at other times when off from the shores of northern Patagonia, we have been surrounded by insects. One evening, when we were about ten miles from the Bay of San Blas, vast numbers of butterflies, in bands or flocks of countless myriads, extended as far as the eye could range. Even by the aid of a telescope it was not possible to see a space free from butterflies. The seamen cried out "it was snowing butterflies," and such in fact was the appearance. More species than one were present, but the main part belonged to a kind very similar to, but not identical with, the common English *Colias edusa*. Some moths and Hymenoptera accompanied the butterflies, and a fine beetle (*Calosoma*) flew on board. The day had been fine and calm, and the one previous to it equally so, with light and variable airs. Hence we cannot suppose that the insects were blown off the land, but we must conclude that they voluntarily took flight. The great bands of the *Colias* seem at first to afford an instance like those on record of the

migrations of another butterfly, *Vanessa cardui* (Lyell's Principles of Geology, vol. iii, p. 63), but the presence of other insects makes the case distinct and even less intelligible. Before sunset a strong breeze sprung up from the north, and this must have caused tens of thousands of the butterflies and other insects to have perished.

In the Entomologist (vol. iii, p. 226) it is stated that during a cyclone, and at a distance of 600 miles from the African coast and 200 from the Cape Verde islands, a vessel was visited by numerous birds and butterflies, the latter being *Diadema bolina* and *Pyrameis cardui*.

Now the instance related by Darwin only proves the fact of flocks of butterflies being observed *ten* miles from land, and that recorded in the Entomologist leaves it an open question as to whether the insects were direct from the coast of Africa or Cape Verde Is.,¹ or indeed whether they occurred in remarkable numbers. We have, therefore, reason to believe that the vast host of *Terias lisa* which arrived at the Bermudas on the 1st of October last, and that visitation recorded in the "Naturalist in Bermuda" as occurring on the 10th of October 1847, are the only instances known of such extraordinary flights of Lepidoptera, or indeed any insects being met with at such an amazing distance from land.

The question, therefore, naturally arises — How did this immense concourse of butterflies get to the Bermudas? The nearest point of land is Cape Hatteras, in North Carolina, which is somewhere about 600 miles distant, and if they had started from this point and taken a straight line to the islands, without meeting with any contrary winds, it would, at the rate of 12 miles per hour (a fair average rate of travel for any of the Pieridae), have taken them two days and two hours (of course including nights) to complete the distance; a space of time almost too great, we should imagine, for an insect in no degree remarkable for robust frame or strength of wing to keep up a continuous flight. We are, however, inclined to think that the presence of this vast concourse of insects at the Bermudas was

¹ I do not find any record of the occurrence of *P. cardui* in the Cape de Verde islands, although it is found on the islands to the north.—S. H. Scudder.

not owing to ordinary causes, and that we must look to some extraordinary means to solve the mystery. From a very extended series of observations made at intervals during the last twenty years, with the view of throwing light upon the migration of North American birds to those islands, we have become impressed with the fact that the largest flights of birds occur there during the period of great atmospheric disturbance. From the latter end of September to that of October, violent revolving gales are prevalent throughout the region which comprises the east coast of the Southern and Middle¹ States and the North Atlantic in those latitudes, for some 600 or 800 miles from land. At this particular period vast flights of birds of all kinds are proceeding southward along the coast for their winter resorts in Florida, West Indies and South America, and must often meet with the violent gales we have alluded to. Now the observations of scientific aeronauts, like Glaishier and others, teach us that the upper atmosphere is composed of currents of air differing in their courses as elevation proceeds, and some cases are on record in which balloons at a great height have suddenly come in contact with violent direct gales, which carried them onward with such velocity as to render their course one of extreme peril, only escaping destruction by the superior manœuvring of those in charge. Let us suppose a violent revolving gale passing along the coast of the Southern States, about the latitude of the Bermudas, during the period of the autumnal migration of birds and butterflies, engulfing some of those great flights which are then proceeding along in a southerly direction. Drawing them up high in its vortex, a direct westerly gale is met with, blowing with great force out to sea. Hurlled with amazing rapidity along this cool aerial current, in the course of about three or four hours the heated vapor arising from the Gulf Stream would be met with, and would it be considered as too imaginative to grant that the ascending warmth of that stream has power sufficient to ameliorate the condition of the cool current, to stay its rapid course

¹*Terias lisa* occurs along the Atlantic Coast from New Hampshire to Cuba. It is excessively rare north of Cape Cod, common from New Jersey to Cape Hatteras, and extremely abundant farther South.—S. H. S.

and allow the animal freight to descend, which, then within a comparatively short distance of the Bermudas, would seek the nearest land by that instinctive impulse so characteristic of these tribes, and aided perhaps by perfect calm or favoring breeze, arrive at those distant isles, without encountering the dangers, which, in the form of contrary winds, would most certainly accompany an intentional migration to the islands? If our theory, however, be an incorrect one, as it may be, we should indeed be glad if some one would lend a helping hand to solve this question of a migration of tiny butterflies from the American main to those small and remote isles, six hundred miles away over the rolling waters of the trackless deep.

J. Matthew Jones.

Halifax, N. S., Nov. 15, 1875.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 120.)

The **Transactions of the American Entomological Society**, vol. v, as far as p. 118, contain Nos. 318 to 331.

* 318. G. H. HORN. Revision of the Species of *Trox* of the United States. p. 1-12.

Description, with synoptical tables, of 21 (*T. gemmulatus* = 1 new) spp.

* 319. W. H. EDWARDS. Descriptions of New Species of Diurnal Lepidoptera found in North America. p. 13-19.

Describes *Argynnis Rhodope*, *A. Nitocris*, *Satyrus Phocus*, *Melitaea Acastus*, *Synchlōë Crocale*, *Géirocheilus Tritonia* = 6 n. spp.; re-describes *Erebia Haydenii*; list of 13 other butterflies, taken in British Columbia and Vancouver's Island.

* 320. G. H. HORN. Descriptions of New Species of United States Coleoptera. p. 20-43.

Describes *Cychnus mimus*, *Hetaerius tristriatus*, *Paromalus difficilis*, *Nosodendron californicum*, *Esthesopus bicolor*, *Elater Phelpsii*, *Glyphonyx mimeticus*, *Oestoles puncticollis*, *Aplastus angusticollis*, *A. tenuiformis*, *A. corymbitoides*, *A. molestus*, *Malachus macer*, *M. spinipennis*, *M. Thevenetii*, *Stibia ovipennis*, *S. hispidula*, *Chilometopon* (n. g. *Epitragini*), *Ch. helopioides*, *Schizillus* (n. g. *Cryptoglossini*), *S. laticeps*, *Eleodes vectorator*, *Iphthimus*

zopheroides, *Nyctobates subnitens*, *Phthora americana*, *Scaphidema pictum*, *Helops arizonensis*, *Epicauta Rileyi*, *E. Alphonsii*, *Cantharis Crotchii*, *C. insperatus*, *Xanthochroa californica*, *Corphyra abnormis*, *C. Crotchii*, *C. monticola*, *C. inconspicua*, *C. Bardii*, *C. distinguenda*, *Mycterus quadricollis* = 2 n. gen., 37 n. spp.; re-describes *Aplastus speratus*, *A. optatus*, *Chilometopon abnorme*, *Cryptadius*, *C. inflatus*, *Iplthimus serratus* var., *Scotobaenus parallelus* ♂, *Epicauta sanguinicollis*, *Cantharis tenebrosa*, *Corphyra punctulata*, *C. funebris*, *C. vittata*; synoptical tables of the species of *Aplastus*, *Malachius antennis maris pectinatis*, *Stibia*, *Corphyra* (Pacific spp.); notes on the tribe Gnathosiini; synonymy of *Cardiophorus mimeticus*, *Limonius cribricollis*, *Eleodes texana*.

* 321. J. L. LECONTE. Descriptions of New Coleoptera chiefly from the Pacific Slope of North America. p. 43-72.

Describes *Tetragonoderus latipennis*, *Pogonus parallelus*, *P. depressus*, *Hydroscapha* (n. g. Hydroscaphidae), *H. natans*, *Sepidulum* (n. g. Hydrophilidae), *S. costatum*, *Trigonurus Crotchii*, *T. caelatus*, *Zalobius* (n. g. Oxytelini), *Z. spinicollis*, *Trichonyx striatus*, *Tychus cognatus*, *Dermestes signatus*, *Trogoderma Belfragei*, *Kalissus* (n. g. Micropeplidae), *K. nitidus*, *Georyssus californicus*, *Throscinus* (n. g. Parnidae), *Th. Crotchii*, *Elmis divergens*, *E. corpulentus*, *E. seriatus*, *E. foveatus*, *E. vulneratus*, *E. caesus*, *Pachyplectrus* (n. g. Hybosorini), *P. laevis*, *Pelidnota lugubris*, *Crenastochilus retractus*, *C. crinitus*, *Scaptolenus estriatus*, *Brachypsectra* (n. g. Rhipiceridae), *B. fulva*, *Araeopus* (n. g. Daseyllidae), *A. monachus*, *Dicranopselaphus Edwardsii*, *Microphotus angustus*, *Matheteus* (n. g. Lampyridae), *M. Theveneti*, *Phengodes integripennis*, *Masterocerus texanus*, *Silis spinigera*, *S. flavida*, *S. cava*, *S. vulnerata*, *S. filigera*, *Dilemnus obtusus*, *Trichodes bimaculatus*, *Lebasiella maculicollis*, *Hedobia granosa*, *Xestobium affine*, *X. squalidum*, *Vrilletta* (n. g. Anobiini), *V. Murrayi*, *V. expansa*, *V. convexa*, *Euceratocerus* (n. g. Ptilinini), *E. Hornii*, *Polycyon plicatus*, *P. obliquus*, *Phymatodes nitidus*, *Hyboderia debilis*, *Xylotreechus planifrons*, *Toxotus virgatus*, *Strangalia delicata*, *Leptura rhodopus*, *Oberea quadricallosa*, *Stereopalpus pruinosus*, *Eurygenus campanulatus*, *Eustrophus impressicollis*, *Blapstinus latifrons*, *Asclera discolor*, *Rhina frontalis*, *Cryphalus carinulatus*, *C. puncticollis*, *C. digestus*, *Xyleborus vicinus*, *X. hamatus*, *Tomicus latidens* = 11 n. gen., 69 n. spp., one each from Arizona, Utah? and Rhode Island, the rest from the Pacific Slope or Texas; re-describes *Pogonus texanus*, *Scaptolenus femoralis*, *Silis lutea*, *S. pallida*; synopsis of the species of *Silis*.

* 322. G. R. CROTCH. Descriptions¹ of New Species of Coleoptera from the Pacific¹ Coast of the United States. p. 73-80.

Describes *Omus sequoiarum*, *O. Edwardsii*, *Hydroporus (Coelambus) unguicularis*, *H. (C.) masculinus*, *Hydnobius Matthewsii*, *Anisotoma paludicola*,

¹ Many apparent misprints, like these, which have already appeared in *PSYCHE*, and for which we have been blamed, as showing negligence, result from our attempt to preserve accuracy in quotation. We shall endeavor to point out our own errors in a Table of Errata.—B. P. M.

Prostomis americanus, *Lasconotus?* *linearis*, *Oxylaemus californicus*, *Trogosita yuccae*, *Colastus yuccae*, *C. agavensis*, *Eपुरaea Hornii*, *E. (Dadopora) texana*, *E.? monogama*, *Plomaphagus leptinoides*, *Grynocharis pilosula*, *Scymnus pacificus*, *S. coniferarum*, *S. Phelpsii*, *Chauliognathus Lewisii*, *Zeugophora californica*, *Cryptocephalus nigerrimus*, *Pachybrachys Donneri*, *P. circumcinctus*, *Glyptoscelis varicolor*, *Scelolyperus* (n. g. *Galerucini*), *S. tejonicus*, *Thricolema* (n. g. *Chrysomelidae*), *Th. anomala*, *Luperus graptoderoides*, *Orchestrus ramosa*, *Crepidodera basalis*, *Odontota Hardyi* = 2 n. gen., 32 n. spp., one each from Canada, Texas and New Mexico, the rest from the Pacific Coast; establishes *Eपुरaeanelle* (n. subg. *Eपुरaea*); synopsis of the species of *Chauliognathus*.

* 323. J. L. LÉCONTE. Note on the genus *Pleocoma* Lec. p. 81-84, fig. 1-5.

History of the generic definition; synopsis and description of the 4 (2 new) species; invalidity of improper names.

* 324. BARON [C.] R. OSTEN SACKEN. Description of the larva of *Pleocoma*, Lec. p. 84-87, fig. 1-4.

* 325. J. L. LÉCONTE. On the *Cupesidae* of North America. p. 87-88.

Describes *Priaema*, *Cupes lobiceps* = 1 n. gen., 1 n. sp.; synopsis of our 3 species of *Cupes*.

* 326. A. R. GROTE. Remarks on North American *Noctuidae* with descriptions of New Species. p. 89-98.

Describes *Agrotis Normanianus*, *Eurois pressus*, *Hadena flava*, *H. delicata*, *Homohadena Kappa*, *Pyrrhia angulata*, *Catocala simulatilis*, *C. Levettei*, *C. adoptiva*, *C. coelebs*, *C. anna* = 11 n. spp.; re-describes *Hadena maclata*; describes *Catocala innubens* var. *flavidalis* n. var.; seasons and distribution of several species of *Agrotis*; on *Catocala*, with list of the 74 N. A. species.

* 327. E. T. CRESSON. Descriptions of New Hymenoptera. p. 99-102.

Describes *Agama albipes*, *Stizus nevadensis*, *Vespa occidentalis*, *Agapostemon melliventris*, *Halictus trizonatus*, *Nomia nevadensis*, *Melissodes nevadensis*, *Bombus nevadensis* = 8 n. spp., from Nevada and New Mexico.

* 328. W. H. EDWARDS. Description of new species of Diurnal Lepidoptera found in North America. p. 103-111.

Describes *Apatura Leilia*, *Argynnis Nausicaa*, *A. Opis*, *A. Clio*, *Graptu Rusticus*, *G. Silvius*, *Thecla Siva* = 7 n. spp. from Arizona, Montana, and the Pacific coast.

* 329. W. H. EDWARDS. Description of a new species of *Catocala* from Arizona. p. 112.

Describes *Catocala Editha*.

* 330. A. R. GROTE. Descriptions of North American Moths. p. 113-118.

Describes *Mamestra lubens*, *Heliothis cupes*, *Cleophana occata*, *Agrotis excellens*, *Heliophila ligata*, *Prothymia orgiae*, *Cirrhobolina* (n. g.) *incandescens*, *Melanomma* (n. g.) *auricinctaria* = 2 n. gen., 8 n. spp.; describes *Orthosia disticha*; notes on *Bolina*, *B. ochreifascia*, *Cirrhobolina deducta*; *Syneda Stretchii* = *S. Howlandii*.

* 331. A. R. GROTE. Note on *Papilio Gundlachianus*. p. 118.

Indicates *Blakea* n. g., with *P. Gundlachianus* as type.

* 332. **The Cincinnati Quarterly Journal of Science**, vol. i, contains the following, and Nos. 333 to 339.

a. Definition of Species [extract from "Wallace on Natural Selection, p. 141," and "Darwin, Origin of Species, p. 67"], p. 84-86. b. The Late Professor Louis Agassiz [reprint of a notice "from Harper's Weekly January 24, 1874"], p. 86-88. c. Rules for Rendering the Nomenclature of Zoology Uniform and Permanent, reported and adopted at the Twelfth Meeting of the British Association for the Advancement of Science, held at Manchester, in June, 1842, p. 351-367.

* 333. JOHN BLACKWALL [misprinted "Blackwell"]. A Succinct Review of Recent Attempts to Explain Several Remarkable Facts in the Physiology of Spiders and Insects. p. 46-51.

Reprint from Journ. of Proc. Linnæan Society, vol. vii, p. 154-. Spiders can not propel threads to a distance; method of copulation of spiders; spiders and insects adhere to polished vertical surfaces by a gelatinous secretion.

* 334. J. BLACKWALL. Facts Relative to the Movements of Insects on Dry, Polished, Vertical Surfaces. p. 51-54.

Reprint from Journ. Linn. Soc., vol. viii, p. 136-. [See Rec., No. 333.]

* 335. A. G. WETHERBY. Method of Rearing Lepidoptera - Entomological Memoranda. p. 154-157.

Directions for rearing Lepidoptera in confinement.

* 336. ALFRED R. WALLACE. On the Phenomena of Variation and Geographical Distribution as illustrated by the Papilionidæ of the Malayan Region. p. 161-179.

Reprint from Trans. Linnæan Soc., vol. xxv, p. 1-. Special applicability of Papilionidæ to the explanation of these phenomena; character, rank, geographical distribution and variation of Papilionidæ; definition and exemplification of 1. simple variability, 2. polymorphism or dimorphism, 3. local form or variety, 4. co-existing variety, 5. race or subspecies, 6. species; variation as specially influenced by locality.

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PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB
EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., January, 1876. [No. 21.

Spiders common to New England and Europe.

In the past summer I have compared a collection of some three hundred species of spiders from New England, nearly all from the neighborhood of Boston and Salem, with several large collections of European spiders, and find the following species to be common to both countries. The names used are those adopted in Thorell's *Synonyms of European Spiders* (1873).

1. *Epeira sclopetaria*, probably *E. vulgaris* Hentz.
2. *Epeira patagiata*.
3. *Cyrtophora conica* = *Epeira caudata* Hentz.
4. *Meta Menardi*, found in the caves of Virginia and Kentucky and in one place in Massachusetts.
5. *Linyphia bucculenta*.
6. *Linyphia phrygiana* = *L. conferta* Hentz.
7. *Linyphia marginata* = *L. marmorata* Hentz.
8. *Erigone rubens*, a single ♂ found in Salem.
9. *Theridium tepidariorum* = *Th. vulgare* Hentz, the most common house spider in New England, but in Europe it is only found in hot-houses.
10. *Theridium stictum*.
11. *Phillonethis lineata*, a very common spider in Europe. Only a few American specimens have been found, in Beverly, Mass., and on a neighboring island.
12. *Ero thoracica*.
13. *Pholcus phalangioides*, the common *Pholcus* found in cellars about Boston. It is probably described by Hentz as *Ph. atlanticus*.
14. *Seytodes thoracica* = *S. cameratus* Hentz.
15. *Misumena vatia* = *Thomisus fartus* Hentz.

16. *Thanatus oblongus* = *Thomisus duttonii* Hentz.

17. *Epiblemum scenicum* = *E. faustum* Hentz.

18. *Aelurops fasciatus* = *Attus leopardus* Hentz. Only one American specimen was compared.

19. *Tegenaria derhamii*.

20. *Amaurobius ferox*.

21. *Drassus lapidicola*, one of the most common Drassidae in both countries. It is probably described by Hentz as *Clubiona obesa*.

Besides the above, the following American species are represented in Europe by closely similar species.

Epeira insularis Hentz was formerly supposed by Thorell to be *E. marmorea*, but is distinguished from the latter by constant differences in color and markings and in the copulatory organs of both sexes. Another American *Epeira*, perhaps the *E. obesa* of Hentz, is also closely related to *E. marmorea*.

Epeira trifolium Hentz. The females are only distinguishable from those of *E. quadrata* by slight differences in the epigynum. The males of *E. trifolium* are not certainly known.

Epeira Nordmanni Thor. Several young females from the coast of Maine seem to be of this species, but no adults have been compared.

Epeira Packardii Thor., found by Dr. Packard in Labrador, and by Mr. Sanborn on Mt. Washington, N. H., at an elevation of about 5000 feet, is very near to and possibly identical with *E. carbonaria*, which occurs in the Alps, at an elevation of 6000 or 7000 feet.

Theridion boreale Hentz, one of the commonest spiders in New England, is represented in Europe by the equally common *Steatoda bipunctata*. The males are easily distinguished by differences in the palpi, but the females of the two species are readily mistaken for each other.

Lithyphantes corollatus. A young female from Malden, Mass., seems to be of this species.

Pachygnatha trilineata Koch, the common *Pachygnatha* in the neighborhood of Boston, is very near *P. clerckii* of Europe, but they are easily distinguished by the palpal organs.

Tegenaria medicinalis Hentz is near *Coelotes atropis*, possibly the same species.

Micrommata canadensis Hentz is represented by the common *Ocyale mirabilis*.

Pylarus bicolor Hentz belongs to the genus *Ariadne*, and is very near *A. insidiatrix*.

J. H. Emerton.

Leipzig, Dec. 16, 1875.

Arctic Lepidoptera in the White Mountains.

Mr. Roland Thaxter sends me a male specimen, taken by Mr. B. P. Mann, above the tree-line, on Mount Washington, which seems to be the first indication of the probable occurrence of *Laria Rossii* Curtis on the mountains, and still further to illustrate the relations between the Arctic and Mount Washington faunæ. The specimen is a male, smaller than Curtis' figure, with the dark band on the secondaries so broadened and diffused as to leave but a discal yellowish patch. The markings on the fore wings seem quite similar, and, in the absence of a larger series of specimens, the more closely scaled and rather darker Mount Washington specimen should not be held to indicate a distinct species. It appears that arctic species are subject, as a rule, to unusual variation. My specimens of *Pachnobia carnea* from Labrador strongly vary in depth of color and distinctness of marking; a specimen, undoubtedly of this species, sent me by Mr. Morrison, from Mount Washington, is very pale. We shall probably find, when more material is collected together, that we have, besides *Anarta melanopa*, *Agrotis islandica*, and *Pachnobia carnea*, also the Bombycid *Laria Rossii* to add to our list of Arctic Lepidoptera found in the Mountains of New Hampshire. A. R. Grote.

Chrysalis with attached Larval Head.

Mr. Roland Thaxter brought me, Sept. 27th, 1875, the living chrysalis of *Euphocades Troilus*, with the head of the caterpillar still remaining upon it. The head is split, as ordinarily when cast for the last time, and the two hemispheres hug the

base of the right ocellar prominence of the chrysalis, the left ocellar prominence being greatly aborted and entering the heart of the left cephalic hemisphere; the right hemisphere is nothing but a pellicle, connected only with the opposite half, but the left seems to be closely soldered to the insect, although the edges are free almost or quite throughout; in addition, the pellicle and hardened dorsal shield of the first segment of the larva are present, directly behind the left hemisphere; the frontal triangle and all the mouth parts of the larval head remain naturally attached to the left hemisphere; there is nothing else peculiar to the creature excepting its total lack of maxillary and antennal cases, the empty trough for the reception of the former being particularly conspicuous, while that of the latter is closed on the distal half, or, on the right side, even more than that. This makes it all the more probable that the larval head has still an organic connection with the insect. The chrysalis was raised in confinement.

Samuel H. Scudder.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 128.)

The Cinc. Quart. Journ. Sci., vol. i (continued), contains Nos. 337-339, and vol. ii contains Nos. 340 to 344.

* 337. V. T. CHAMBERS. Prof. Frey, of Zürich, and some American *Teneina*. p. 193-211.

Criticism of Frey & Boll's * *Nordamerikanische Tineen*, *Stett. Entom. Zeit.*, 1873, p. 201-224; discussion of the species therein mentioned and described. [See Rec., No. 339.]

* 338. CYRUS THOMAS, Ph.D. From the Introduction to the Synopsis of the *Acrididæ* of North America. p. 253-269.

Reprint from Thomas' * *Syn. Acrid. N. A.* (1873), p. 9-25; external and internal structure and terminology of *Acrididæ*; oviposition; stridulation.

* 339. V. T. CHAMBERS. Notes and Errata on a former paper, on Prof. Frey, and some American *Teneina*. p. 338-340.

Addition to the article recorded above, Rec., No. 337.

* 340. V. T. CHAMBERS. *Tineina* of the Central United States. p. 97-121.

Describes¹ *Aesyle*, *A. fasci*, *Lithocolletis symphoricarpace*, *L. Mariae*, *L. ysimachiae*, *L. helianthivor*, *L. albanot*, *L. quercib*, *L. fuscocost*, *L. unifasci*, *L. castaneae*, *Lyonetia apicistrig*, *Opostega? quadristrig*, *Phyllocnistis populi*, *Ph. liquidambaris*, *Ph. smilacis*, *Tischeria tinctori*, *T. badii*, *T. quercivor*, *T. fuscomargini*, *T. purinos*, *T. castaneae*, *T. ambrosiae*, *T. heliopsis*, *Oecophora Shaleri*, *Coleophora Shaleri*, *Ornix quercifoli*, *Nepticula castancaefoli*, *N. nigrivertic*, *N. resplendens*, *N. unifasci*, *Bucculatrix ambrosiaefoli*, *B. quinquenot* = 1 n. g., 32 n. spp.; habits; food-plants; notes upon¹ *Lithocolletis ambrosiae*, *L. argentinot*, *L. aerifer*, *Phyllocnistis* spp., *Tischeria* spp., *Nepticula fuscotibi* (= *N. ciliaefuse*), *Bucculatrix Packard*.

* 341. V. T. CHAMBERS. *Teneina* of the United States. p. 226-259.

Recriticism (with modifications) of Frey & Boll's Nordamer. Tin. [See Rec., Nos. 337, 339]; range of variation in "species"; describes¹ *Cosmopteryx pulchrim*, *Glyphipteryx exoptat*, *Lithocolletis* Riley, *Laverna Murfeldt*, *Gelechia physalivor*, *G. simplici*, *G. inaequepulv*, *G. Marmor*, *G. ambrosiae*, *G. cristat*, *Hyale*, *H. coryli*, *Semele*, *S. cristat*, *Gelechia lacteus-ochr*, *G. maculatus*, *G. thoracestrig*, *G. thoracenigrae*, *G. thoracefasci*, *G. occident*, *G. grisseochr*, *G. ochreostrig*, *G. discostrig*, *G. ocherfusc*, *Tinea Behrens*, *T. nireocapit*, *Gelechia saphirin*, *G. nigr*, *G. trialbamacul*, *G. confus*, *G. latifasci*, *G. trifasci*, *G. capiteochr*, *G. palpiline*, *G. milleri*, *G. grissefasci*, *G. palpialb*, *G. concinnus*, *G. discoanul*, *G. obscuroocel*, *Oeseis*, *O. bianul*, *Holcocera triangularis*, *Euplocamus? fuscofasci*, *Tinea apicimacul*, *T. unomacul*, = 3 n. gen., 43 n. spp.; habits; food-plants; notes upon¹ *Cosmopteryx* spp., *Gelechia* spp., *Endrosis fenestr*, *Amadrya effrenat*.

* 342. L. W. CLAYPOLE. Note from Antioch College. p. 285.

Arrival of "*Anisopteryx vernata*" at Yellow Springs, Ohio.

* 343. V. T. CHAMBERS. *Teneina* of Colorado. p. 289-305.

Describes¹ *Gelechia 10-macul*, *G. 4-macul*, *G. ribes*, *G. 8-macul*, *G. albimargin*, *Oecophora 4-macul*, *Glyphipteryx montis*, *Coleophora luteocost*, *C. sparsipulv*, *Laverna alb*, *L. albapalp*, *L. griss*, *L. grandis*, *Cosmopteryx montis*, *Gracilaria alnivor*, *G. alnicol*, *G. acerifoli*, *G. thermops*, *G. populi*, *Lithocolletis alnivor*, *Lyonetia alni*, *Eurynome*, *E. lute* = 1 n. g., 22 n. spp., habits; food-plants; notes on *Gelechia gallaesolidaginis?*, *G. rosasuffusella*, *Plutella cruciferarum* ["*cruciferum*"], *Oecophora boreasella*, *Argyresthia Goedartella* ["*goedastella*"], *Bedellia somnulentella*, *Ornix pruinosaella* ["*pruinosaella*"], *Lithocolletis satificoliella?*, *Phyllocnistis* ["*Phyllænistis*"] *populiella*, *Ph. ampelopsiella*.

* 344. A. G. WETHERBY. Descriptions of Lepidopterous Larvæ, with Remarks on Their Habits and Affinities. [etc.]. p. 363-371.

¹ Every specific name ends in *ella*, omitted in the Record to save space.

Describes *Limacodes argentatus*, *L. ? nebulosus*, *L. nondescriptus*, and three unknown species of *Limacodes* = 6 n. spp., from the larva; describes larvæ of *Callochloa chloris*, *Empretia stimulea*; food-plants; transformations.

* 345. **A. R. Grote.** Check List of the Noctuidæ of America, North of Mexico. I. Bombyciæ and Noctuelitæ (Nonfasciatae). Buffalo, N. Y. 1875. 8vo. pg. 28, with a photographic plate of ten figures.

Enumerates 790 species of 176 genera, with foot-notes; describes *Mamestra atlantica*, *Heliothis luteitinctus*, *Oxylos* = 1 n. gen., 2 n. spp.— I. On the structural characters of the Noctuæ. — II. On the Geographical Distribution of the Noctuæ. — III. Notes and descriptions. — Describes *Trigonophora V-brunneum*, *Pachypolia acutissima*, *Dryobota stigmata*, *Halena interna*, *H. cuculliformis*, *Cucullia lactifica* [Lintner], *Agrotis fenisea* Harvey], *A. carissima* [Harv.], *Metalepsis*, *Spragueia* = 2 n. gen., 8 n. spp.; notes on *Halena ancociscenensis*, *Charadra decora*, *Exyra*; generic index; figures of *Apatela funeralis*, *A. lithospila*, *Lithophane Thaxteri*, *Aecerra normalis*, *Homohaulena badistriga*, *Behrensia conchiformis*, *Agrotis pressa*, *Pachypolia atricornis*, *P. acutissima*, *Cucullia serraticornis*.

* 346. **The Entom. Monthl. Mag.** [see Rec., Nos 80–84], vol. xi, contains the following, and Nos. 347 to 361.

a. Notice of Psyche, No. 1, p. 44–45; of Edwards' The Butterflies of North America, ser. 2, part i (1874), p. 70; of Packard's On the Transformation of the Common House Fly [etc., see Rec., No. 6], p. 93. b. European Conifers, limes, etc., at Philadelphia, killed by larvæ of native insects, and native trees spared (by G. H. Horn), p. 69. c. Remarks on *Pronuba yuccasella* (by J. O. Westwood), p. 94. d. Remarks on habits and habitats of *Doryphora 10-lineata*, and the probability of its being imported into Europe (by R. McLachlan, H. W. Bates, S. Stevens, J. J. Weir), p. 282.

* 347. **H. W. BATES.** Notes on Cicindelidæ and Carabidæ, and Descriptions of New Species (No. 17). p. 22–28.

Describes 14 (*Pachytetes fuliginellus* from Nicaragua = 1 N. A.) new species Carabidæ.

* 348. **J. O. WESTWOOD.** Illustrations of Insect Monstrosities. No. 1.—On a Monstrous Stag Beetle (*Lucanus Elaphus*). p. 32–35, fig.

Remarks on the classification of monstrosities, with citation of authorities; definition of varieties, hybrids, and monsters by distortion, defect, excess, coalescence, fissure and arrest; figure and description of a gynandromorphous *L. Elaphus*.

* 349. **HERBERT DRUCE.** Descriptions of three New Butterflies from Costa Rica. p. 36–37.

Describes *Papilio Salyattes*, *Eresia Coela*, *Mesosemia Ceropia*.

* 350. J. O. WESTWOOD. Description of a New Species of *Cremastocheilus* from California. p. 55.

Describes *Cremastocheilus crassipes* n. sp.

* 351. W. C. HEWITSON. Descriptions of New Species of Butterflies. p. 56.

Describes 3 (*Eresia Eutropia* from Panama = 1 N. A.) n. spp.

* 352. R. McLACHLAN. Note on some Odonata (Dragonflies) from the Sandwich Islands, &c. p. 92.

Notes on habitats and habits of *Anax Junius*, *Pantala flavescens*, *P. hymenaea*, *Tramea lacerata*, *Libellula quadrimaculata*.

* 353. D. SHARP. On a New Family of European Aquatic Coleoptera. p. 101-104.

Reprints and amends LeConte's description of *Hydroscapha* and of *H. natans* [see Rec., No. 321]; describes a Spanish congener (*H. Crotchi*), and remarks on the affinities of the Hydroscaphidae.

* 354. W. C. HEWITSON. Descriptions of New Species of Lycaenidae from South America. p. 104-107.

Describes 8 (*Thecla Sedecia*, *Th. Chonida*, *Th. Critola*, *Th. Mathewi*, from Mexico, *Th. Cyphara* from Panama = 5 N. A.) n. spp.

* 355. D. SHARP. Description of three New Species of *Trigonurus*. p. 204-206.

Describes *Trigonurus rugosus*, *T. Edwardsi*, *T. Lecontus*, from California.

* 356. D. SHARP. On the synonymy of *Pleocoma* staff, Schaufuss.

Reasons given for differing from the conclusions arrived at respecting the "invalidity of improper names", in the article cited Rec., No. 323.

* 357. BARON E. DE SELYS-LONGCHAMPS. Notes on Odonata from Newfoundland, collected in 1874 by Mr. John Milne. p. 241-243.

Describes *Aeschna hudsonica*, *Acuallagma boreale* = 2 n. spp.; describes *Epitheca cingulata* ♂; notes on five other species. Explanatory note by R. McLachlan.

* 358. H. W. BATES. On a Collection of Butterflies made by Mr. John Milne in Newfoundland. p. 244-246.

Notes upon the 16 species thus far known from Newfoundland.

* 359. D. SHARP. On three New Species of Hydrophilidae. p. 247-250.

Notes on the characters and affinities of *Sepidulum*; on the modifications of structure of the ventral segments in Hydrophilidae for functional purposes; describes 3 (*S. trogoides* from Mexico? = 1 N. A.) new species of *Sepidulum*.

* 360. GEO. NORMAN. Captures of Noctuidæ at St. Catharines in the Province of Ontario, Canada West. p. 258-262.

List of 6 Rhopalocera, 4 Saturnidæ, 3 Sphingidæ, about 174 Noctuæ collected, with notes on abundance, dates, food-plants, baits.

* 361. V. T. CHAMBERS. On some European 'Micros' away from home. p. 279-280.

Notes on a few Tineina common to Europe and N. A.; especially on a variety of *Gelechia Hermannella*.

The **Entomologische Zeitung herausgegeben von dem entomologischen Vereine zu Stettin**, Jahrg. xxxv (1874), contains the following, and Nos. 362 to 367.

* 362. H. B. MÖSCHLER. Illustrations of the Zygaenidæ and Bombycidæ of North America, by Richard H. Stretch [etc.]. p. 150-152.

Notice of the first 6 parts [see Rec., No. 42]; comparison of the North American and European faunæ.

* 363. H. B. MÖSCHLER. Beitrag zum Schmetterlings-Fauna von Labrador. p. 153-166.

Describes *Agrotis Erdmanni*, *Cidaria suspectata*, *C. algidata*, *Botys hyperborealis*, *Tortrix arctica*, *Grapholitha tarandana* = 6 n. spp.; re-describes *Lycaena Scudderii*, *Argynnis Atlantis*; notes on *Pieris frigida* = *P. Napi*, *Deilephila chamacnerii* = *D. Galii*, *Arctia speciosa*, *Epialus hyperboreus*, *Agrotis Westermanni*, *Agrotis comparata* = *A. imperita*, *Plusia Hochenwarthi*, *P. divergens*, *Anarta Zetterstedtii*, *Lygris destinata* (6 varieties), *Cidaria dilutata*, *Penthina roseomaculana*.

* 364. ——— BLAUDEL. Saturnia Cecropia. p. 222-223.

Peculiarities of larvæ raised from eggs, and of their cocoons.

* 365. H. B. MÖSCHLER. Exotisches. p. 303-313.

Bibliographic review resp. *Philampelus vitis* and *Ph. Linnei*; notice of Strecker's Lepidoptera [etc., see Rec., No. 79].

* 366. H. B. MÖSCHLER. List of the Noctuidæ of North America by Aug. R. Grote [etc.]. p. 313-317.

Notice of Grote's List [see Rec., No. 203]; list of Hübnerian generic names substituted for later names; comparison of the number of North American and European species respectively in several genera; species common to Europe and North America; notes on Labrador species.

* 367. PROF. P. C. ZELLER. The Butterflies of North America, William H. Edwards [etc.]. p. 430-443.

Notice and critical review of the work cited; treats of *Papilio Ajax*, *Parnassius* spp., *Neophasia Menapia*, *Pieris* spp., *Anthocharis* spp., *Colias* spp., *Argynnis* spp., *Grapta* spp., *Limenitis* spp., *Apatura Alicia*, *Paphia Glycerium*, *Thecla* spp., *Lycaena* spp.

PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB

EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., February, 1876. [No. 22.

Odoriferous Glands in Phasmidae.

Specimens of *Anisomorpha*, probably *A. buprestoides* Stoll', were recently sent me from Texas by Mr. J. Boll, with the statement that when the females were captured they spurted from the prothorax, somewhat after the manner of bombardier beetles, a strong vapor, which slightly burnt the skin; when the females were seized by the males, a thick fluid oozed from the same spot. Say gave a similar account in his *American Entomology*, nearly fifty years ago, on the authority of Mr. Peale, who told him that specimens of *A. buprestoides*, when taken, discharge "a milky white fluid from two pores of the thorax, diffusing a strong odor, in a great measure like that of the common *Gnaphalium* or *Life Everlasting*"; a plant, he adds, "growing near the place where they occurred." Another instance is recorded by Bates, who named a S. American species *Phasma putidum*, because, when it is seized, "a dark liquor oozes from the mouth and other parts of the body, emitting a most peculiar and disagreeable odor."

Mr. Boll attributes this power to the females only, but both sexes certainly possess, with equal distinctness, the pores through which the fluid or vapor passes. These are situated one on each side of the prothorax at its upper anterior extremity, at the bottom of a large and deep pit, opening outward and a little forward, its upper and posterior borders with abrupt sides. These pores, or foramina repugnatoria, as they may be called from their analogy with the pores in *Myriapods*, so named by Waga, greatly resemble stigmata, and have actually been mistaken for a prothoracic pair by Stål,¹ and are de-

¹ *Recensio Orthopterorum*, III, 54-55, § 156-157.

scribed by him as present in the whole group of genera allied to *Phasma* (s. str.). They are very conspicuous in *Autolyca pallidicornis* Stål, and doubtless all the species possessing the foramina are endowed with this peculiar means of defense, the only one known to Phasmidae, apart from their mimetic deceits. It may be questioned, indeed, whether the foramina are not common to the entire family, for they occur also in *Phyllium* and *Heteropteryx* and all other genera I have examined, even in those not appertaining to the groups in which they are mentioned by Stål. In *Heteropteryx* they are conspicuous and are situated at the outer anterior base of a large pointed spine, in the same relative position as in the genera already mentioned.

The occurrence of foramina repugnatoria presupposes, of course, some tegumentary follicles or deeper seated glands for the secretion of the offensive fluid, and since the existence of glands of any considerable size, opening upon the sides of the body, is quite unknown in the true insects, as far as I am aware (with the exception of such extensible structures as the caruncles of *Malachius* and allies), it is additionally interesting to observe that these foramina are the openings of true glandulæ odoriferae, which, in certain species, attain a very great size. If an *Autolyca pallidicornis*, for instance, be opened upon the dorsal surface,¹ these glands will be seen at first glance lying side by side above the salivary glands,—two straight, flattened, ribbon-like bodies, blind sacs with stout walls, each one and a half millimetres broad, extending from the posterior extremity of the mesothorax, where they are broadly rounded, to the anterior part of the prothorax; here they are curved slightly outward toward the foramina and taper rapidly, changing at the same time from a flattened to a cylindrical, and finally to a compressed form, so as to have the appearance of being twisted through quarter of a circle. The membrane at the base of the pit in which the foramina are situated is very delicate, excepting near the centre, where it is thickened; in the middle of the thickened portion occurs a nearly perpendicular slit, less than 0.25 mm. long, which may probably be opened or closed at will by the action of muscles on its thickened walls. In *Aniso-*

¹All my observations are taken from specimens preserved in alcohol.

morpha buprestoides the glands have the same appearance, and though comparatively slenderer, reach likewise the extremity of the mesothorax.

My examination of these genera, in which the odoriferous glands prove so conspicuous, made it seem very remarkable that they had hitherto been overlooked in Phasmidae; for although the anatomical researches of Müller and Brandt upon *Bacteria ferula* (Fabr.) had reference principally to certain features of the nervous system, yet the former at least touches upon other parts of its structure, and even gives a detailed drawing of the alimentary canal, the anterior part of which, with its salivary glands, would have been quite concealed by the odoriferous glands, were they as conspicuous in that species as in those above mentioned. In such a case Müller could not have overlooked them. Leidy, too, in his account of the anatomy of *Diapheromera femorata* (Say), makes no mention whatever of parts such as are described above, or, indeed, of any special glands. An examination of the latter species, however, in which the foramina are very minute, shows that the glandulæ odoriferæ are present, although they are inconspicuous and do not occupy the position along the dorsum in which they are found in *Autolyca* and *Anisomorpha*. They consist of a pair of small obovate or subfusiform sacs, one on each side of the prothorax, about a millimetre in length, and half a millimetre in width, with a short and very slender duct opening exteriorly, as in the other genera; these sacs are directed inward and a little downward, and scarcely reach the œsophagus at all. Should a similar feature hold in *Bacteria ferula*, as is probable from the relationship of the two insects, we need not be surprised to find it overlooked in the dissection of an alcoholic specimen, such as Müller must have had, especially when the object of his investigation was to trace a portion of the nervous system.

Should foramina repugnatoria, with odoriferous glands, be found in all Phasmidae, it might at first be thought probable that they would also be discovered in other Orthoptera. It should, however, be remembered that all the other groups possess already means of active defense. Thus the saltatorial families have the power of leaping to great distances by means

of their thickened hind legs, the Blattariae and Forficulariae run with great rapidity, and the Mantidae, by their threatening attitude and well-armed fore legs, assume even the offensive; while the Phasmidae, with their slender form and sluggish movements, have special need of such a weapon as these glands furnish them.

Samuel H. Scudder.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 136.)

* 368. **S. H. Scudder.** The Distribution of Insects in New Hampshire. — A Chapter [xii] from the First Volume of the Final Report upon the Geology of New Hampshire. — Concord, N. H., 1874. large 8vo. p. 331–384, fig. 46–59, with three plates (A, B, C).

I. General Considerations [determination and characterization of the faunal areas existing in New Hampshire, with faunal charts; comparison of these with corresponding European faunal areas]. II. List of the Butterflies of New Hampshire, with Notes on their Geographical Distribution [enumerates 85 species, and gives 13 figures of 7 species; description (by A. S. Packard, Jr.) and figures of *Eulophus semideae* and *Encyrtus Montinus* = 2 n. spp. of Chalcididae parasitic in pupæ of *Oeneis semideae*]. III. List of the Orthoptera of New Hampshire, with Notes on their Geographical Distribution and Stridulation [enumerates 46 species; gives 4 figures of 3 species, and notation of 12 songs of 9 species]. Index.

The **Revue et Magasin de Zoologie**, sér. 3, T. i (1873), contains Nos. 369 to 371.

* 369. **AUG. SALLE.** Description et Figure de Cinq Espèces de Coléoptères Mexicains. p. 11–17, pl. 9, 10.

Describes and figures *Syntelia Westwoodi*, *Macropnus Mniszeczki*, *Calais Nietoi*, *Eulactylus Boucardi* = 4 n. spp.; re-describes and figures *Syntelia mexicana*; note upon *Iphis* [*Calais*] *glauca*.

* 370. **F. E. GUERIN-MENEVILLE.** [Comptes Rendus de l'] Académie des Sciences de Paris. pp. 1–XI, XXXVIII–LVII, LXVII–LXXXII.

a. Notes on *Phylloxera vastatrix* [on the identity of the American leaf insect with the European root insect; why then are leaf-galls so rare on our vines?; on an Acarus which attacks the Phylloxera (by Max Cornu and Planchon)], pp. li, lxvii–lxx. b. On the Cucuyos [*Pyrophorus noctilu-*

cus] of Cuba, and their phosphorescent organs (by Dos Hermanas, Robin, Laboulbène [see Rec., No. 132]), pp. 52-54. Comments by Guérin-Ménéville.

* 371. F. E. GUERIN-MENEVILLE. Bulletin Bibliographique. pp. XII-XXXVIII, LVII-LXVI.

Notice of the following works which purport to contain material upon North American entomology: Mémoires de la Société Royale des Sciences de Liège, ser. 2, tom. iii (1873), p. xx-xxiv; Anales de la Sociedad Espanola de Historia Natural, tom. i, p. xxxiii-xxxiv; Annales de la Société Entomologique de Belgique, tom. xv (1871-1872), p. lxi-lxiv; Stett. Entom. Zeit. [see Rec., Nos. 362-], Jahrg. xxxiii (1872), p. lxiv-lxv.

The **Rev. et Mag. Zool.**, sér. 3, T. ii (1874), contains Nos. 372 to 375.

* 372. DR. BOISDUVAL. Monographie des Agaristidées (Lépidoptères). p. 26-110.

Enumerates, with notes and descriptions in most cases, 123 (16 N. A.) species of 14 genera and 5 tribes; describes 8 (*Eudryas assimilis*, *E. Bartholomaei*, *Alypia Edwardsii* = 3 N. A.) new species; life history of *Cydimon Boisduvalii* (from MacLeay, Trans. Zool. Soc. Lond.) [and of *Urania Rhipheus*]. [This volume contains, on plate 8, figures of "*Agarista finbriata* Bd.," "*A. Xanthomelas* Bd." and "*Coronis Dutreuxii* Deyr.," the latter from Costa Rica. There seems to be no corresponding text.]

* 373. AUGUSTE CHEVROLAT. Catalogue des Clerides de la Collection de M. A. Chevrolat. p. 252-329.

List of earlier writings upon Cleridae; catalogue of [55] genera and [351, incl. 117 N. A.] species, with synonymical corrections; describes *Sallea* n. g.; describes *Macrotelus? cincipennis*, *Aulicus basicollis*, *A. albo guttulatus*, *A. bilineatus*, *Epiphlaeus quadristigma*, *Peloniium piciventre*, from Cuba, *Tillus leucomelas*, *Sallea rubripennis*, *S. bicolor*, *Derestenus nigrifrons*, *D. lateralis*, *D. mutabilis*, *D. vittipennis*, *Clerus semiochraceus*, *C. quadrinodosus*, *C. sanguinipes*, *C. scutellaris*, *Epiphlaeus marginipes*, *Hydnocera bituberculata*, *H. nitidicollis*, *Ichenea religiosa*, *I. trilineata*, *I. circumcincta*, *Platynoptera Ichnoides*, *Peloniium militare*, *P. Stenochioides*, *P. nigroclavatum*, *P. insigne*, *P. bilineicolle*, *Orthopleura suturalis*, from Mexico, *Clerus mollifascia* from Mexico and Yucatan, *Priocera flavoguttata*, *Derestenus distinctus*, *Clerus merilanus*, *C. Pilatei*, *Hydnocera quadrilineata*, from Yucatan, *Thanasimus melanocephalus* from Nova Scotia, *Hydnocera funebris*, *Peloniium lineatocolle*, *P. filiolus*, from California, *P. Pensylvanicum* from Pennsylvania, *P. subfuscitum* from Guadalupe, *P. 4-notatum* from Texas = 43 n. spp.

* 374. A. CHEVROLAT. Description d'une Nouvelle Espèce d'Othnius et d'un Nouveau Genre de la Famille des Othnidæ, l'une et l'autre du Mexique, p. 329-331.

Describes *Polypria*, *P. crux rufa*, *Othnius Mexicanus* n. sp.

* 375. ANONYM. Bulletin Bibliographique. p. x-xlix.

Notice of the following works which purport to contain material upon North American entomology: *Annales de la Société Entomologique de Belgique*, tom. xvi, p. xxv-xxviii; *Annal. Soc. Entom. France*, 1873 [see Rec., Nos. 131-132], p. xxviii-xxxii; *Verh. k.-k. zool.-bot. Gesellsch. Wien*, Bd. xxiii (1873) [see Rec., Nos. 190-192], p. xxiii-xxiv; *Gorham's Endomyceci Recitati*, p. xxxvi; *Thomas' Syn. Acrid. N. A.* [see Rec., No. 338], p. xxxvi-xxxvii; *Chapuis' Genera des Coléoptères*, tom. x [Phytophages], p. xxxviii-xl; *Stål's Recensio Orthopt.*, part i, p. xlii-xliii; *Proc. Acad. Nat. Sci. Philad.* (1873) [see Rec., No. 40], p. xlv-xlix.

The **Memoirs of the Boston Society of Natural History**, vol. ii, p. 249-420, contain Nos. 376 to 379.

* 376. S. H. SCUDDER. The Species of the Lepidopterous Genus *Pamphila*. p. 341-353, with two plates (x, xi), containing 39 figures.

Geographical distribution; synoptical tables to determine the species (a) by the wings of the males, (b) by the wings of the females, (c) by the abdominal appendages of the males; describes the 8 (*P. Nevada*, *P. Colorado*, *P. Manitoba* = 3 new) species, with colored figures of each; establishes *Pyrrhosidia* n. g.

* 377. C. R. OSTEN SACKEN. Prodrôme of a Monograph of the Tabanidæ of the United States. Part I. The Genera *Pangonia*, *Chrysops*, *Silvius*, *Hæmatopota*, *Diabasis*. p. 365-397.

Synoptical tables of N. A. genera and U. S. species; enumerates 40 species; describes 32 (*Pangonia tranquilla*, *P. pigra*, *P. chrysocoma*, *Chrysops atropos*, *Ch. mitis*, *Ch. fugax*, *Ch. celer*, *Ch. sordidus*, *Ch. callidus*, *Ch. delicatulus*, *Ch. pudicus*, *Ch. montanus*, *Ch. indus*, *Ch. frigidus*, *Ch. moechus*, *Ch. morosus*, *Ch. striatus*, *Ch. hilaris*, *Ch. fallax*, *Silvius trifolium*, *Haematopota americana* = 21 new) species.

* 378. A. S. PACKARD, JR. On Gynandromorphism in the Lepidoptera. p. 409-412, pl. xiv, fig. 1-2.

Describes a female and a male gynandromorph of *Callosamia Promethea*; gives a partial bibliography of gynandromorphism, with remarks.

* 379. S. H. SCUDDER. The Structure and Transformations of *Eumæus Atala*. p. 413-419, pl. xiv, fig. 3-17.

Systematic position; structure of larva, pupa and imago; habits.

380.¹ **Henri de Saussure et A. Humbert.**—Mission Scientifique au Mexique et dans l'Amérique Centrale, ouvrage

¹ Record furnished by Mr. S. H. Scudder.

publié par ordre [* *] du Ministre de l'Instruction Publique.—
Recherches Zoologiques [pour servir à l'Histoire de la Faune
de l'Amérique Centrale et du Mexique,] publiées sous la direc-
tion de M. [H.] Milne Edwards [etc.]. Sixième Partie. Paris,
Imprimerie Nationale [Impériale], 1870-1874. Large 4to.

Première Section. Études sur les Orthoptères, par H. de
Saussure.

1^{re} Livraison, 1870. p. 1-132, pl. I-IV. — Blattides, p. 1-124, pl. I-II.
Introduction, p. 1-2; composition of the abdomen, p. 2-4; nomenclature of
the organs of flight, p. 4-9; classification, p. 10-11. Describes and cata-
logues 38 (29 N. A.) genera, 15 (10 N. A.) divisions or subgenera and 186
(104 N. A.) species.—Phasmides, p. 125-132, pl. III-IV. Organization.

2^{me} Livraison, 1872. p. 133-292, pl. V-VI. — Phasmides (cont.) p. 133-
201. Organization (cont.), p. 133-134; affinities, p. 134-135; habits, p.
135-140; mimetic resemblances, p. 140-146; geographical distribution,
p. 146; classification, p. 147-148. Describes 14 (12 [1 new] N. A.) gen-
era, 9 (8 [1 new] N. A.) subgenera and 40 (27 [2 new] N. A.) species.
— Mantides, p. 202-292, pl. V-VI. Organization, p. 202-213; affinities,
p. 213-216; habits, p. 217-219; oviposition, p. 219-222; development, p.
222-225; adaptation to surroundings, p. 225-228; geographical distribution,
p. 228-229; classification, p. 229-230. Describes and catalogues 24 (16 N.
A.) genera and 45 (24 N. A.) (6 [4 N. A.] new) species.

3^{me} Livraison, 1874. p. 293-516, pl. VII-VIII. — Mantides (cont.), p.
293-295. Describes 3 species.—Gryllides, p. 296-516, pl. VII-VIII. Or-
ganization, p. 296-309; homologies of the drum of the elytra, p. 309-314;
affinities, p. 314-317; habits, p. 317-330 (mimery, p. 328-330); classifica-
tion, p. 330-332. Describes and catalogues 33 (27 N. A.) (12 [8 N. A.]
new) genera, 5 N. A. subgenera and 159 (87 N. A.) (71 [33 N. A.] new)
species; 5 irrecognizable species, p. 516; examination of some species
described by F. Walker, p. 516.

Seconde Section. Études sur les Myriapodes, par H. de
Saussure et A. Humbert. 1872. p. 1-211, pl. I-VI.

Introduction, classification, p. 1-8.—Chilognathes, p. 9-106. Introduc-
tion, p. 9-11; classification, p. 11-12; buccal organs, p. 13-15; composi-
tion of the segments of the body, p. 17-18. Describes and catalogues 11
(10 N. A.) genera, 15 (10 N. A.) subgenera and 66 (44 N. A.) species.—
Chilopodes, p. 107-147. Introduction, p. 107; classification, p. 107-108;
buccal organs, p. 108-111. Describes and catalogues 11 (10 N. A.) genera,
2 (1 new) N. A. subgenera and 29 (23 N. A.) species. General [Synonymic]
Catalogue of American Myriapods, p. 149-207 [with notes; contain-
ing 416 (344 N. A.) species, referred to 47 (41 N. A.) genera and 17
(14 N. A.) subgenera], p. 149-207. Index, p. 209-211.

Proceedings of the Club.

§ 8. HABITS AND FORMS OF CALOPTENUS SPRETUS. MR. SCUDDER offered some remarks on Mr. Riley's account of *Caloptenus spretus* in his recent Annual Report [see Bibl. Rec., No. 311]. The speaker doubted whether these insects took flight from the heart of the Rocky Mts. to the localities in which they were destructive, passing over the wide expanse of arid plains which intervene, because there has been no record of their occurrence in swarms in these plains, and there is sufficient ground for the supposition that they may have developed in the immediate vicinity of the regions which they devastate. It is well known that among other insects there are years in which individuals are suddenly very abundant, and intervening series of years in which few are to be found. It is also known that a few of these locusts can be found in Kansas and Missouri, and in fact from Texas to Manitoba every year, so it seems hardly necessary to look so far for the derivation of the destructive swarms. Moreover, the circumstance, mentioned by Mr. Riley, that the locusts get tired after repeated flights, is an additional argument against the supposition that they came from a great distance, for the rate at which their strength diminished seemed out of all proportion to the activity of the insects at the time of their first ravages.

Mr. Scudder also doubted the specific and perhaps even the varietal rights of *C. Atlanis*, described by Mr. Riley from the White Mts., for specimens of *C. spretus* have been found in different eastern localities, and, like many other insects of wide latitudinal distribution, have shorter wings than the western forms. Mr. Riley gives no characters of importance to distinguish *C. Atlanis* from *C. spretus*.

Some conversation ensued, upon the migrations of locusts in Europe and Asia, and it was remarked that in those countries the locusts come from the east westward, while in our territories the migrations are toward the east. This was explained to be probably on account of the direction of the wind, which in our western territories is for much the greater part of the year from the west.

(June 11, 1875.)

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PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB

EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., March, 1876. [No. 23.

List of Coleoptera collected in Michigan in 1874.

Among a large number of species of Coleoptera collected in Michigan by Mr. H. G. Hubbard and myself, during the year 1874, those mentioned in the following list will be found of some interest. Where no locality is given, the species were collected in the vicinity of Detroit.

Omophron robustum Horn. A single specimen on the shore of Lake Erie near Monroe, in September.

Schizogenius ferrugineus Putz. With the preceding, not rare.

Dicaelus purpuratus Bon. The larva of this species is very beautifully colored, and was found in rotten logs, in the middle of August; it undergoes its transformation in this place, and the imago appears about the beginning of September.

Bembidium anguliferum Lec.¹ Very rare under decaying leaves; previously found only in California.

Hydrophorus rotundatus Lec. In the Detroit River, rare.

Helophorus tuberculatus Gyllh. Not common near Detroit.

Philhydus consors Lec. Much rarer than *Ph. cinctus* Say.

Cercyon unipunctatum Linn. and *C. centrimaculatum* St. Not rare, on the window of a stable, in October.

Cercyon naviculare Zimm. Abundant in decaying fungus.

Nossidium americanum Mots.² In a kind of Polyporus not rare in July.

Ptilium Collani Mäkl. Common in decaying fungus.

Smicrus filicornis Fairm. Under decaying hay, in October, not rare.

Pteryx balteata Lec. In rotten wood and sphagnum moss, not rare.

Pinella quercus Lec. Under old bark of oak, elm and other trees, common.

Homalota Mannh. To give some idea of the number of species of this

¹ For the determination of this and many of the following species I am indebted to Dr. Leconte.

² It may be not without interest to state that a species of Motschulskium, very probably identical with *M. sinuicollis* Matth., was found abundantly by Mr. Crotch at San Diego, Cal., under seaweed.

genus, inhabiting the United States, it may be stated that about sixty species were found in the vicinity of Detroit in a single season.

Calodera Mannh. Of this genus, which is very easy to recognize, three species were found near Detroit; three others are not rare in the marshes near Cambridge, Mass.; all the species live under very wet decaying leaves and moss.

Oligota pedalis Lec. Very rare under decaying leaves.

Myllaena fuscipennis Kr. Not rare under stones, etc., near the Detroit Riv.

Dinopsis americana Kr. Under decaying leaves in fall and winter, not rare.

“ *myllaenoides* Kr. With the preceding, but much rarer.

Tachyporus nanus Er. and *T. maculipennis* Lec. Both are common in the grass at the foot of old oak trees.

Tachyporus affinis Kirb. Rare in decaying fungus.

Conosoma Knoxii Lec. Not rare in fungus, in the fall.

Bolitobius niger Grav. Very rare in fungus.

Bryoporus rufescens Lec., *B. testaceus* Lec., *Mycetoporus lepidus* Grav., *M. americanus* Er. and *M. lucidulus* Lec., occur rarely under decaying leaves; *M. flavicollis* Lec. is common in the same localities.

Heterothops fumigatus Lec.¹ Common under decaying leaves.

“ *pusio* Lec. Very rare.

Philonthus blandus Grav. and *Ph. laetulus* Say are two quite distinct species; both are to be found not rarely in fungus.

Xantholinus cephalus Say. Common under bark of several kinds of trees.

Thinobius Kr. A single specimen of an undescribed species was found by sweeping on a swampy meadow; a second species occurs in California.

Trogophloeus Mannh. This genus seems to be very rich in species, fifteen or sixteen species being observed by us near Detroit.

Isomalus pallidus Lec. A single specimen in a little ditch, after a heavy rainstorm.

Pseudopsis sulcata Newm. Several specimens in decaying fungus.

Bythinus zonatus Br. Two specimens sifted from sphagnum moss.

Trimium dubium Lec. Not very rare under dry old leaves.

Catops brunneipennis Mannh. Several specimens under decaying leaves.

Colon dentatum Lec. and two other species of the same genus, *Anisotoma punctatostriata* Kirb., *A. collaris* Lec., *A. obsoleta* Melsh., *Cyrtusa egena* Lec., *C. picipennis* Lec., *Colenis impunctata* Lec., *Clambus gibbulus* Lec., *Cybocephalus nigrutilus* Lec., etc., are found by sweeping meadows at sunset, in the latter part of June.

Anogdus laevis Lec. Several specimens under old bark, in August.

Clambus puberulus Lec. On a window of a stable, not rare, in August.

Orthoperus glaber Lec. and two other species of the same genus, by sweeping on grass.

Baeocera concolor Fabr. and *B. apicalis* Lec. Rare in fungus.

¹ An undescribed species of *Tanygnathus* Er. occurs in Florida.

Toxidium gammaroides Lec. and *T. compressum* Zimm. Not rare in the same localities.

Lathridius oarinatus Gyllh. Common on a window of a stable.

Lathridius filiformis Aub. Common in old flour barrels, in company with *Mycetophagus bipustulatus* Melsh. and *Cryptophagus croceus* Zimm.

Mycetophagus obsoletus Melsh. One specimen, under leaves.

“ *pluripunctatus* Lec. Abundant in fungus.

Litargus infulatus Lec. One specimen, under bark.

Mycotretus sanguinipennis Say and *M. pulcher* Say. Not rare in a small kind of fungus growing on old logs.

Triplax festiva Lec. and *T. macra* Lec. A large colony of both species was found in the end of August, inhabiting a fungus growing on a dead beech tree, in company with *Engis 4-maculata* Say, *Triplax thoracica* Say, *T. flavicollis* Lec., *Diplocoelus brunneus*, *Orchesia castanea* Melsh. and other species.

Laenophloeus adustus Lec. Rare in sweeping on meadows.

Monotoma fulvipes Melsh., *M. parallela* Lec., *M. picipes* Herbst. The two former rarely and occasionally, the latter common on a window of a stable.

Lithochrus immaculatus Zimm. Very rare on meadows.

Onthophilus alternatus Say. Quite common in the sand under decaying fungus and excrements, but very difficult to be seen.

Dendrophilus punctulatus Say. In old trees, rarely.

Nicagus obscurus Lec. This species was common on the 20th of June, flying in the early afternoon, on the shore of Lake Huron, above Port Huron.

Tharops obliquus Say. Abundant on piles of beech wood, in July and Aug.

Nematodes penetrans Lec. A single specimen.

Cardiophorus amictus Melsh. and *C. convexulus* Lec. Rare near Detroit and Port Huron.

Helodes explanata Lec. Only one specimen on a meadow, in July.

Eucinetus terminalis Lec. and *E. testaceus* Lec. rare under dry leaves; *E. morio* Lec. not rare in fungus.

Polemium limbatus Lec. Rare on meadows.

Hydnocera tabida Lec. Several specimens on grass, near the Detroit River.

Caenocera scymnoïdes Lec. One specimen by sweeping.

Cryptocephalus Schreïbersii Suffr. Rare on *Cassandra catyculata*, in Oct.

Stenispa collaris Baly. Several specimens of this rare insect were found under dry leaves near willows, in October.

Hapladrus concolor Lec. One specimen on the shore of Lake Huron near Port Huron.

Paratenetus gibbipennis Mots. Not rare under decaying leaves. This species is stouter than *P. fuscus* Lec., with the elytra almost gibbous and the pubescence much shorter.

Pentaphyllus pallidus Lec. Abundant in dry fungus.

Anthicus coracinus Lec. A few specimens under decaying hay, in Oct.
Eustrophys confinis Lec. Not rare with *E. bicolor* Say and *E. tomentosus* S.
Glipodes sericans Lec. Two specimens by sweeping.

E. A. Schwarz.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 143.)

* 381. The **Observer of Nature**, vol. i, contains the following, and Nos. 382 to 392.

a. Brief notes [of interest, but not demanding special reference] upon donations of insects to the Kansas State University and upon the diligence and success of students and collectors belonging to the University, Nos. 1, 2, 3, 4. b. Abundance of *Lygaeus leucopterus*, No. 2. c. University Cabinet [extent of the entomological collection], No. 3. d. The Curculio [habits of *Conotrachelus nenuphar*], No. 4.

* 382. ANDREW ATCHISON. The First Naturalist. No. 1. Biographical sketch of Aristotle.

* 383. GEORGE F. GAUMER. Insects and How to Collect them. No. 1.

Directions for collecting insects.

* 384. G. F. GAUMER. Collecting in Southern Kansas. No. 1.

Notes upon the habits of the tarantula, scorpion and centipede.

* 385. ANONYM. How to Collect. No. 2.

Habits of Coleoptera; how to collect and preserve them.

* 386. F. H. SNOW. List of Butterflies occurring at Lawrence, Kansas, with notes. No. 2.

List of 66 species; notes on their abundance and food-plants.

* 387. F. H. MORGAN. Coleoptera in Lawrence Mills. No. 3.

Notes on habits of seven species found in flour-mills.

* 388. G. F. GAUMER. Nature's Common Things. No. 3. Notice of a few insects occurring near Lawrence.

* 389. W. H. EDWARDS. Butterflies. No. 4.

Letter to Prof. Snow, upon varieties and the rearing of butterflies.

* 390. A. ATCHISON. The Maple Worm. No. 4.

Habits, food-plants (*Acer* spp.) and parasites of *Anisota rubicunda*. [See also vol. ii, No. 4.]

* 391. ANONYM. The Colorado Potato Beetle. No. 4.
Habits, food-plants (*Solanum* spp.) and parasites of *Doryphora 10-lineata*.

* 392. G. F. GAUMER. Our Little Enemies. No. 4.
Description, habits and food (pelts and stuffs) of *Tinea flavifrontella* and *Attagenus pellicio*.

* 393. The **Observ. Nat.**, vol. ii, contains the following, and Nos. 394 to 393.

a. Brief notes similar to those recorded in Rec., No. 381*a*, Nos. 1, 2, 3, 4. *b.* Offer of prizes for the best collections of insects, No. 1. *c.* Catching moths by baiting with a female, No. 1. *d.* Enemies to the Potato Vine [remarks on habits of various species] (by W. S. Herrick, Thos. Gaumer, J. D. Lambert, A. Atchison, G. F. Gaumer, W. Osburn), No. 2. *e.* Larva of *Lachnosterna fusca* infested with a fungus, No. 3. *f.* Abundance of *Caloptenus spretus* just hatched; other notes on these locusts, No. 3. *g.* Scarcity of various insects, Nos. 3, 4. *h.* Notes on *Lygaeus leucopterus*; its scarcity.

* 394. G. F. GAUMER. Hyponomeuta Wakarusa, New Species. No. 1.

Description of larva, pupa and imago; habits; food-plant (*Euonymus atropurpureus*).

* 395. J. D. LAMBERT. Diptera. No. 1.

General remarks on Diptera; especially *Cecidomyia* spp., Tabanidae, Oestridae; their habits.

* 396. G. F. GAUMER. Three Days among the Grasshoppers. No. 4.

Habits and ravages of *Caloptenus spretus*; manner of moulting.

* 397. The **Can. Entom.** [see Rec., Nos. 85-104], vol. vi, from p. 67, contains the following, and Nos. 398 to 445.

[See Rec., No. 85.] *a.* First Annual Report of the Council of the Montreal Branch of the Entomological Society of Ontario [good advice], p. 133-134. *b.* Notice of Riley's Sixth Annual Report [etc., see Rec., No. 39], p. 140; of an article on the Colorado Beetle [*et al.*] by Newman "in a recent number of his 'Entomologist'", p. 160; of Glover's Manuscript Notes [etc., see Rec., No. 71], p. 260. *c.* Presumed hibernation of larvae of *Melitaea Phœdon*; food-plant of *Phyciodes marcia* (by W. H. Edwards) p. 159. *d.* Fears of the invasion of Europe by *Doryphora 10-lineata*, p. 160. *e.* Obituary notice of G. R. Croteh, p. 160. *f.* Annual Meeting of the Entom. Soc. of Ontario [see Rec., No. 432], p. 199. *g.* Purchase of Insects [establishment of the "Philadelphia Agency" to facilitate exchanges among entomologists], p. 200.¹ *h.* Insects and Flowers [Apis and Bombus getting honey from Wistaria flowers through a hole drilled in the calyx by

¹ The Agency no longer exists. B. P. M.

the latter] (by C. T.), p. 206. *i.* Finding of *Dryocampa rubicunda* in Montreal (by H. H. Lyman), p. 220. *j.* Petition for assistance (by Dr. A. S. Packard, Jr.), p. 220. *k.* Index, p. 261-264.

* 398. GAMBLE GEDDES. On some of our Common Insects. 14. The Common Cockchafer — *Lachnosterna quercina*, Knoch. p. 67-69, fig. 8.

Habits; season; food-plants; description of imago and larva; figures.

* 399. A. R. GROTE. On Mr. Couper's Collections of Lepidoptera made on Anticosti Island in 1873. p. 69-72.

Enumerates 31 species; treats especially of *Alypia Lang'oni*, *Plataretea parthenos*, *Arctia virguncula*, *Agrotis gilvipennis*, *A. confusa*, *Eurois occulta*.

* 400. R. V. ROGERS. On some of our Common Insects. 15. — The Coccinellidæ. p. 81-85, fig. 9-15.

Habits, appearance and usefulness, especially of ten Canadian species.

* 401. T. G. GENTRY. Remarkable Variations in Coloration, Ornamentation, &c., of certain Crepuscular and Nocturnal Lepidopterous Larvæ. p. 85-91.

Contrasted descriptions, food-plants and seasons of normal and varietal forms of larvæ of *Actias luna*, *Telea polyphemus*, *Eacles imperialis*, *Sphinx 5-maculata*; variations due to changed nutrition; analogous phenomena in silk worms.

* 402. PROF. S. H. PEABODY. *Arctia Arge*, Drury. p. 98.

Seasons, food-plant, habits and description of the larva.

* 403. W. SAUNDERS. On some of our Common Insects. 16.—The Gooseberry Saw-fly (*Nematus ventricosus*, Klug.) p. 101-104, fig. 16-18.

Habits; seasons; descriptions and figures; enemies (fig.).

* 404. H. K. MORRISON. On two new species of Noctuidæ [*Hydroscia semiaperta*; *Hadena congermana*]. p. 105-106.

* 405. F. WALKER. Translation of the Synopsis of the Genera of European Mycetophilidæ. p. 111-114.

Complement to the article cited in Rec., No. 89; together 42 genera.

* 406. G. M. DODGE. Notes on Collecting Lepidoptera. p. 114-115.

Substances to be used as bait; cyanide as a killing material.

* 407. A. R. GROTE. New Canadian Noctuæ. p. 115-118.

Species collected; list of 25 European species certainly found in N. A.

* 408. F. B. CAULFIELD. A Thirsty Spider. p. 119.

Observation of "a small black spider," drinking.

* 409. W. H. EDWARDS. Notes on the Larvæ of *Argynnis* Cybele, Aphrodite and Diana. p. 121-125.

Experiences in raising these butterflies from the egg; peculiarities in their habits.

* 410. G. M. DODGE. *Catocala Whitneyi*, N. sp. p. 125-126.

Description; habitat; habits.

* 411. V. T. CHAMBERS. Micro-Lepidoptera [concl. from Rec., No. 88]. p. 128-130, p. 149-153, p. 166-170, p. 197-198, p. 217-220.

Describes¹ *Coleophora zelleri*, *C. argentialb*, *C. gigant*, *C. aeneus*, *C. fagistic*, *C. unicolor*, *C. ciliaeochr*, *C. rufolute*, *C. auropurpuri*, *C. lineapulv*, *Aspidisca juglandi*, *A. salici*, *A. diospyri*, *Antispila ampelopsifoli*, *A. hydrangae*, *A. ampelopsis* = 16 n. spp.; re-describes *Aspidisca splendorifer*, *A. —*, *Antispila cornifoli?*, *A. isab*, *A. viticordifoli* n. sp.?; notes upon the habits, as far as known; characters distinguishing the American species of *Antispila* and several species of *Aspidisca*.

[The new species and genera referred to in Rec., No. 88 are¹ *Argyresthia undulat*, *A. apicimacul*, *Dryope*, *D. Murtfeldt*, *Oenoe*, *O. hybrom*, *Perimede*, *P. errans*, *Ch[r]ysopcleia*, *Ch. purpuri*, *Aeaea*, *A. ostryae*, *Theisoa*, *Th. bifasci*, *Philonome*, *Ph. Clemens*.]

* 412. A. R. GROTE. On two species of *Agrotis*, allied to *A. triangulum*. p. 131-132.

Describes *A. attentus*, *A. perattentus* = 2 n. spp.; "*Hadena renigera*" is a *Mamestra*.

* 413. F. B. CAULFIELD. Notes on the Larva of *Leucania pseudargyria*, Guenee. p. 132-133.

Description of the larva; its hibernation.

* 414. S. V. SUMMERS. Notes on the Species of *Oodii* of Louisiana. p. 135-137.

Biological notes on 9 species of *Oodii*, and on *Crinus scrophulariae*; description of the latter.

* 415. J. L. LECONTE. Anticosti Coleoptera. Collected on the Island in 1873, by Wm. Couper, Montreal. p. 137-138.

List of 49 species determined, and 4 known as to genus.

* 416. WM. SAUNDERS. On some of our Common Insects. 17.—The Currant Geometer or Measuring Worm—*Ellopia (abraxi) ribearia*, Fitch. p. 138-139, fig. 22-23.

Description of larva (fig.) and imago (fig.); habits; means against it.

¹ Every specific name ends in *ella*, omitted in the Record to save space.

Pieris rapae in Mid-ocean.

Dr. J. L. LeConte recently sent me a butterfly taken last August, by Dr. R. H. Lamborn, on the steamship *Abyssinia*, eleven hundred miles east of New York, while on her passage from Liverpool. When first seen, Dr. Lamborn writes, the insect was "flying among the rigging and following the ship, which was moving over a calm sea at the rate of about twelve miles an hour. The wind had been steadily south-west during the passage." This butterfly is a female of *Pieris rapae*, and is in perfect condition, excepting that it was rubbed in capture.

This throws light, if any were needed, on the manner of the introduction of this pest into America. Undoubtedly the butterfly had not flown from land, but the caterpillar from which it sprang had been introduced into the vessel in the cabbages intended as food while in port or during the voyage; and in this particular instance the butterfly had emerged from the chrysalis (which had suspended itself in some safe nook on board) previous to the completion of the voyage. This must now be a weekly occurrence in midsummer, and it would seem as if no amount of precaution, likely to be taken, would have kept *Pieris rapae* out of America many years longer. I have evidence that the insect was independently introduced into the port of New York, and swarmed in the vicinity of that city, before the Canadian hordes had reached Albany, on their southward march.

Samuel H. Scudder.

HIBERNATION OF *AMPHIPYRA PYRAMIDOIDES*. In Chicago, Illinois, this insect is single-brooded, for a poplar-feeding larva found the latter part of May, and which spun upon the 14th of June, did not produce the moth till the following April; but specimens obtained near St. Louis often produce the moth during July of the same year that they are found as worms. In this last case a second brood is doubtless produced the same year, though it is barely possible that the moths winter over and do not deposit till spring; for they are characterized by having very flat bodies, and with their wings folded flatly on their backs they are often found hiding in narrow cracks and crevices where they seem to love to shelter.—3rd Mo. Ent. Rep., p. 73.

The above, written in 1870, shows conclusively that this insect sometimes passes the winter in the chrysalis state. My experience, since, agrees with Mr. Roland Thaxter's, and I have no doubt that the species frequently hibernates also as a moth. There is much greater irregularity in the development, time of appearance, and hibernation of insects than most entomologists incline to allow.

C. V. Riley.

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PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB

EDITED BY B. PICKMAN MANN.

Vol. I.]

Cambridge, Mass., April, 1876.

[No. 24.]

Lixus rubellus Randall.

About three years ago a dam was built across a little brook in Tyngsboro, Mass., draining a long stretch of meadow land into the Merrimack River, to create a supply of water for mechanical uses. An area of about fifteen acres was thus overflowed. During the past summer I observed sheets of the purple bloom of some plant, then unknown to me, growing above the surface of this water, and one genial day in the middle of last September, as my brother and I were paddling slowly up the pond, examining the floating lily pads, with their very numerous population of *Galeruca sagittariae*, young and adult, our boat was directed towards the water weed, whose flowers had attracted our attention, when we began to find the subjects of this notice, numerous pale brown beetles with prolonged and deeply notched apices, clinging to the thick spikes or flower heads, sometimes two upon a single head, but usually singly, and often upon the floating leaves and partly submerged. Nearly all of the three dozen specimens obtained seemed quite mature, the few exceptions being soft and a little paler than the others. They made little or no effort to escape, perhaps occasionally shrinking back a little, when towards the most distant side of the spike, on the approach of the hand. In one or two instances an individual was seen to fly a short distance, one alighting on our boat.

At a subsequent visit, after the pond had been once covered with a thin sheet of ice, which had afterwards melted, a single specimen was found, still clinging to a blackened flower head lifted slightly above the water. And I would say here, for the benefit of those unfamiliar, as I was, with the *Polygo-*

num amphibium, for such the plant proved to be, that the pinkish flowers grow in a dense head, from half an inch to two inches long, barely rising on tolerably stout stems above the surface of the water, where the oblong leaves float like lily pads.

One naturally infers that the larvæ infest the submerged stems, the mature beetles leaving the water, like so many other aquatic insects. The larvæ of those European species, of whose habits I have seen any notice, live in the stems and roots of plants. I have never collected any other of our species, and know nothing of their natural history. The habits of *Lixus rubellus*, as mentioned herein, including its late appearance, must account, I suppose, for the long disappearance from our knowledge of a species which is probably really very common in its peculiar home. The description of Randall is quite characteristic, and, so far as I am acquainted with our other species, this is very easily distinguished. *Frederick Blanchard.*

Lowell, Mass., Feb. 1, 1876.

On some Coleoptera from Florida.

Hydroporus exiguus Aubé, which appears in Harold & Gemminger's Catalogue as *Anodochilus* (Babington) *exiguus*, with *A. maculatus* Bab. as synonym, was unknown to Leconte in his paper on North American *Hydroporus* (Proc. Acad. Nat. Sci., 1855). In Leconte's list it appears as doubtfully belonging to the North American fauna, and Crotch omitted it entirely in his Revision of the Dytiscidae and in his Check List. In the beginning of May, 1875, this species was recovered by Mr. H. G. Hubbard and myself, in the upper St. John River, south of Lake Harney, several specimens having been found. The characters given by Leconte, in his table (l. c.), are sufficient to recognize this very remarkable species.

Hydnocera aegra Newm., distinct by its uniform red color, occurs in several parts of Florida, although very rare. It is to be found by sweeping the swampy meadows in the pine wood lands, from March to June; *Temnopsophus bimaculatus* was found always in company with it.

Pachybrachys limbatus Newm. [*Cryptocephalus limbatus*

Newm., Mag. Nat. Hist., 1870, p. 250], unknown to Haldeman and Suffrian, has never been identified, so far as I know. It is very distinct, by its coloration, from all other species of *Pachybrachys*. It is black, subopaque; in the male, a frontal mark on the head and a stripe along the interior margins of the eyes, the sides of the thorax and a great part of the anterior margin, a large oblong spot on the anterior side of the front femora, and a small spot near the base of all femora are whitish; in the female, the head and thorax are almost entirely black, and the white spot on the anterior femora is wanting. Elytra red, with a large common sutural spot, not reaching the apex, black. Head densely punctured on the black parts, the white parts almost smooth; thorax on the sides densely, on the disc and near the base less densely punctured, the white margins with a few punctures or smooth; elytra near the scutellum with irregular coarse punctures, in the other parts the punctures are arranged in rows, often interrupted and curved on the disc and sides, more regular in the apical part. It varies in the extension of the white color on head and thorax, also in the size of the elytral spot. In size it equals *Pachybrachys luridus*. It occurs not rarely on oak scrubs, in the Indian River country, in March and April.

E. A. Schwarz.

INSECT CALENDARS. — For many years I have been in the habit of keeping a catalogue of the times when insects may be found in activity, that is, in the larval and imaginal stages. My plan has been the following. Each month is divided into quarters, indicated by Roman numerals, the quarters of the months of 31 days ending on the 8th, 16th, 23d and 31st, and those of the months of 30 days ending on the 8th, 15th, 23d and 30th. These I call "weeks." In each "week" I record the species found in the place of my residence and adjacent localities during that week. An insect which appeared in every week of the year would thus be recorded forty-eight times (or not at all). The simplicity and convenience of this method fully rewards me for the labor of repeating the name so often. I attach to each record a note of the authority upon which it rests, and sometimes, for convenience, a note of the first and last times of appearance of the insect during the season. For this latter purpose, I call the last week of June the 24th week of the year, and the last week of December the 48th week.

Two examples will complete my statement.

NAME.	AUTHORITY	DURATION.
<i>Anisopteryx pometaria</i>	B. P. M. "Notes," p. 218	12—16
" <i>vernata</i>	do. do.	10—17

The only dates for *A. pometaria* thus far known to me are Oct. IV, Nov. I, II, III, IV, Dec. I, II, III, IV, Jan. I, II, Mar. IV, Apr. II, III, IV.

B. Pickman Mann.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 151.)

The **Can. Entom.**, vol. vi, (continued), contains Nos. 417 to 445.

* 417. WM. SAUNDERS. Interesting Captures. p. 140.

List of 13 butterflies, 1 moth, 2 beetles collected in Essex Co., Ontario, by Mr. F. C. Lowe.

* 418. WM. SAUNDERS. On some of our Common Insects. 18. — The Spotted Pelidnota — *Pelidnota punctata*, Linn. p. 141-142, fig. 24.

Habits; description of larva and imago; figure of these and of the pupa.

* 419. S. H. SCUDDER. The Linnean Signification of the Generic Term Papilio. p. 143-145.

Reasons for considering *Antiopa* the type of *Papilio*. [See Rec., No. 426.]

* 420. W. V. ANDREWS. Entomological Notes. p. 145-147.

Notes on "Controlling Sex in Lepidoptera" [see Amer. Nat., vol. vii, p. 129-132, and Newman's Entomologist, year ?1874]; on the article cited in this Rec., No. 401.

* 421. WM. SAUNDERS. On the Larva of *Catocala Ulltronia*, Hubn. p. 147-149.

Description of the larva; its habits.

* 422. A. R. GROTE. Preliminary Catalogue of the Noctuidæ of California. p. 154-157, p. 214-217. [Continued in vol. vii; see Rec., No. 456.]

List of 50 species, with notes; describes *Acronycta perdita*, *Agrotis fuscigerus*, *A. Hollemani*, *Hadena divesta* = 4 n. spp.; discusses the generic names *Gortyna*, *Hydroecia* and *Ochria*.

* 423. W. H. EDWARDS. *Grapta comma* and *dryas*. p. 167.

Proof that these are forms of one dimorphic species.

* 424. H. H. LYMAN. Miscellaneous Notes. p. 158.

Abundance of *Clisiocampa sylvatica*, *C. americana* and *Lachnosterna quercina* at Montreal; imago of *Papilio turnus* feeding on cow-dung; moths caught at Portland; description of the egg of *Gastropacha americana*.

* 425. WM. SAUNDERS. The American Association. p. 161-163.

Sketch of some of the entomological doings at the Hartford meeting

(Aug. 1874) of the A. A. A. S.; constitution of the Entomological Club of the A. A. A. S.

* 426. H. A. HAGEN. The Linnean Signification of the Generic Term Papilio. p. 163-166.

Remarks upon the article cited in this Rec., No. 419; Linné never gave vernacular names to animals; reasons for reaching a conclusion different from Mr. Scudder's; the idea of type involved in this reasoning a recent innovation.

* 427. A. R. GROTE. Notes on the "List" of 1868. p. 170-171.

Comparison of *Sesia uniformis*, *ruficaulis* and *diffinis*; *Smerinthus pallens* Streck. = *Cressonia juglandis* ♀; *Dysodea* = *Platythyris*; remarks on species of the latter genus.

* 428. T. G. GENTRY. Notes on *Megachile centuncularis*. p. 171-175.

Description of cells found underground in the fall, and of others found in the spring in mud cells apparently made by a *Pelopoeus*; wild speculations.

* 429. BEVERLEY R. MORRIS, M.D. Stray Notes on Canadian Diptera. p. 176-178.

List of 17 named and 5 undetermined species taken at Toronto, Gorham or Portland, with notes.

* 430. A. R. GROTE. Explanatory. p. 178-179.

Reply to strictures made by Mr. Strecker [see Rec., No. 79] concerning certain synonyms in the nomenclature of Noctuidae; synonymy of *Catocala ponderosa*. •

* 431. A. R. GROTE. Synonymical Note. p. 180.

Eudryas assinilis Boisd. = *E. grata*; synonymy of *Urania Rhipheus* and *U. orientalis*; correction of the article cited in this Rec., No. 372.

* 432. CHARLES J. S. BETHUNE. Annual Address of the President of the Entomological Society of Ontario, 1874. p. 181-186.

The year's work; extent of entomology; need of work to be done; remarks upon *Doryphora 10-lineata*, *Pieris rapae*, *Caloptenus spretus*, *Phyllozera vastatrix*; report of attendance upon the Hartford meeting of the A. A. A. S. [see Rec., No. 425].

* 433. J. L. LÉCONTE. On some Changes in the Nomenclature of North American Coleoptera, which have been recently proposed. p. 186-196:

Recommendation of non-concurrence with certain changes from established usage found in Crotch's Check List [see Rec., No. 43], with an argument for the recommendation; table of synonyms and table of homonyms of the 52 Geoffroyan genera.

* 434. W. F. KIRBY. Discrepancies in recent Lists of Lepidoptera. p. 196-197.

Reasons given why Kirby's Catalogue of Diurnal Lepidoptera and Staudinger's Catalogue of European Lepidoptera do not always agree in nomenclature.

* 435. A. R. GROTE. Brief Notice of Mr. Strecker's Last Issue (No. 10). p. 199.

Doubts regarding the date of this issue; note on *Macroglossa fumosa*; synonymy of *Sphinx eremitoites*, *Catocala magdalena*, *C. aspasia*.

* 436. J. L. LECONTE. On Entomological Nomenclature. Part I. — On the Law of Priority. p. 201-206.

Recommendation to "resist innovation" in nomenclature; citation of the canons supposed to govern nomenclature at present, with commentaries upon them.

* 437. C. V. RILEY. On the Insects more particularly associated with *Sarracenia variolaris* (Spotted Trumpet-Leaf). p. 207-214, fig. 25, 26.

[Subject indicated in Rec., Nos. 107, 143 c.]

* 438. MARY E. MURTFELDT. The Larvæ of *Depressaria dubitella* and *Gelechia rubensella*. p. 221-222.

Habits, food-plants and descriptions of these larvæ; *D. Chambersella* n. sp., named without description (!).

* 439. J. L. LECONTE. On Entomological Nomenclature. Part II. — On Generic Types. p. 223-226.

Modern misinterpretations of generic types; invalid generic names; exceptions to the rule of priority; suggestions of reform.

* 440. E. B. REED. On some of our Common Insects. — No. 15. The Io Moth — *Saturnia (Hyperchiria) Io* Fabr. p. 227-229, fig. 27-30.

Description; food plants; habits; figure of larva and imagos.

* 441. V. T. CHAMBERS. Tineina from Texas. p. 229-249 [cont. in vol. vii; see Rec., No. 449].

Character of the Tineine fauna of Waco, Tex., as shown by a collection of about 250 specimens of 27 genera and 76 species; remarks on the ten not new species; describes ¹*Amaltria? Clemens*, *Tinea obscuristrig* [corr.], *Anesychia multipunct*, *A. mirus*, *Harpalyce*, *H. tortric*, *H. alb*, *H. canus*, *Gelechia thoracealb*, *G. minimacul*, *G. ochreosuffus*, *G. depressostrig*, *G. pallidigrise* [corr.], *G. quadrinacul*, *G. Waco*, *G. crescentifasci*, *G. pullus*, *G. plut*, *G. s*, *G. trimacul*, *G. elegant*, *G. rufus*, *G. costarufu*, *G. subruber*, *G. maculinargin*, *G. argentialb*, *G. bidiscomacul*, *G. subalbus*, *G. parvipulv*, *G. lavern*, *G. cilioline*, *G. minim*, *Anarsia suffus*, *A. trimacul*, *Neda*, *N.*

¹ Every specific name ends in *ella*, omitted in the Record to save space.

plut, *Cleodora pallidestrig* [corr.], *C. pallid*, *Nothris grise*, *Holocera Clemens*, Polyhymno, *P. luteostrig*, *P? sexstrig* = 3 n. gen., 40 n. spp.

* 442. H. K. MORRISON. On a New Species of Ceramica. p. 249-251.

Describes *C. rubefacta*; validity of the genus; characters of genus Perigrapha; list of known species of Taenioampa.

* 443. H. K. MORRISON. On the Species referred to Orthodes by Guenee. p. 251-254.

Describes the genus, *O. infirma* (type), *O. cynica*, *Pseudorthodes* (n. g.), *Ps. vecors*; synonymy.

* 444. EDWARD NEWMAN. Obituary [notice of Francis Walker]. p. 255-259.

[Reprint from "The Entomologist."] Biographical details.

* 445. H. K. MORRISON. On *Cirroedia pampina* Guen. p. 259-260.

Reasons for referring pampina to *Cirroedia* rather than to *Atethmia*.

* 446. The **Can. Entom.**, vol. vii, contains the following, and Nos. 447 to 534.

Title page and List of Contributors. *a.* Our Seventh Volume [editorial preface], p. 1. *b.* Correction of an error on p. 92 of vol. vi [see Rec., No. 97] (by W. Couper), p. 19. *c.* Notice of Scudder's The Distribution of Insects in New Hampshire [see Rec., No. 368] and Species of the Lepidopterous genus Pamphila [see Rec., No. 376], p. 20; of Riley's Seventh Annual Report [see Rec., No. 311], p. 119-200; of The *Cinc. Quart. Journ. Sci.*, vol. ii, Nos. 2 and 4 [see Rec., Nos. 340, 343-344], pp. 120, 220; of *Field and Forest*, vol. i, Nos. 1 and 2, p. 140; of Edwards' *The Butterflies of North America*, ser. 2, part iii, p. 160; of Cook's *Injurious Insects of Michigan* [see Rec., No. 539], p. 200; of Riley's *Remarks on Canker Worms and Description of a New Genus of Phalaenidae*, p. 219; of Merri'n's *The Lepidopterist's Calendar*, second edition [England], p. 219; of *Bull. Buff. Soc. Nat. Sci.* [see Rec., Nos. 203-223], vol. iii, No. 1, p. 219-220; of *The Scientific Monthly*, vol. i, No. 1, p. 220; of the *Amer. Nat.* [see Rec., Nos. 264-307], p. 244. *d.* The Cossus of the Greeks and Romans was probably the larva of *Lucanus cervus*, p. 24. *e.* Parasitic Diptera [*Gaurax anchora* reared from cocoon of *Samia cecropia*; *Blepharopeza adusta* from larvæ of *Spilosoma acraea*] (by C. R. Osten Saeken), p. 72. *f.* Local Lists of Butterflies [request that American collectors of Butterflies would send to the Editor lists of the species found in their neighborhoods, with notes on their abundance and other matters bearing upon the geographical distribution of the species], p. 72. *g.* Annual Meeting of the London Branch [of the E. S. O.] [list of officers elected], p. 76; of the Montreal Branch [list of officers elected; annual reports], p. 132-133; of the Entomological Society of Ontario [list of officers elected], p. 217.

h. Synopsis of Neuroptera [announcement of a new edition of Dr. Hagen's Synopsis of the Pseudo-Neuroptera and Neuroptera of North America, and request for contribution of materials], p. 76. i. On the Use of Cyanide of Potassium [directions for catching and killing moths, "etc."] (by Joseph E. Chase), p. 97-98. j. Entomological Club of the American Association for the Advancement of Science [announcement of meeting to be held at Detroit, Aug. 10, 1875], p. 118-119. k. Important to Entomologists [further announcement of next meeting of Entom. Club. A. A. A. S., and call for a large attendance], p. 121-122. l. *Pieris rapæ* [spreading westward in Ontario] (by W. Saunders), p. 163. m. *Pterophorus periscelidactylus* [capture of this species (at ? Kingston, Ont.), Oct. 31, while the thermometer was several degrees below freezing] (by R. V. Rogers), p. 218. n. Petitions for exchanges [offering insects of Nebraska and Kansas, and Coleoptera of New York, the Gulf States, Europe, Australia and New Zealand] (by J. M. Grant, George P. Cooper, F. G. Schaupp [mispr.], W. V. Andrews), p. 219. o. Canadian Entomologist [full sets can now be supplied], p. 220. Index, p. 249-252.

Proceedings of the Club.

§ 9. MIMICRY. MR. SCUDDER spoke of the mimicry between *Basilarchia Disippe* and the co-territorial species of *Danaus*; where *Plexippus* is the more abundant species of *Danaus*, the mimicking *B. Disippe* wholly resembles it in color; but where *D. Berenice* prevails (as in the extreme south) the color of the mimicking species darkens so as to resemble it. He did not think that we had yet reached a satisfactory solution of the facts of mimicry. If the object of mimicry is the protection of the insect, why does it not occur more frequently in those stages of the insect's life when the animal is peculiarly liable to attack from such foes as mimicry is presumed to blind? Nine-tenths at least of every brood of any given insect are destroyed during the larval period, and so far as he was aware, there was but a single instance known, in which one caterpillar mimicked another less liable than itself to the attacks of foes. He referred to the mimicry, said by Boisduval to be shown by the African *Diadema Bolina* to *Danaus Chrysippus*.

(March 13, 1874.)

MR. E. BURGESS called attention to the imitation of twigs which obtains in many larvæ of Phalaenidae, as examples of protective mimicry in the early stages of Lepidoptera.

(April 10, 1874.)

PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB

EDITED BY B. PICKMAN MANN.

Vol. I.]

Cambridge, Mass., May, 1876.

[No. 25.

The Aborted Wings of Boreus.

These curiously modified organs have been considered by the writer as altogether useless appendages. In *B. brumalis*, the anterior pair are long and narrow and slightly tapering from base to tip; the tips are curved downward and nearly reach the end of the abdomen. The inferior pair are narrow and ribbon-shaped; are slightly longer than the superior pair, and have a transverse fold near the end, by which, probably, the tip is folded on the main portion. The upper pair are corneous in texture, the inferior subcorneous. But the characteristic which calls for particular attention is found in two series of rather long stoutish acute spines, a series to either edge of the inferior surface of the upper pair of wings (?). On the basal fourth of these organs the spines are absent. Where they are found they form a rather close series, stand at right angles to the surface to which they are attached and gradually increase in length to the final one at the tip, which is much longer than any of the others. These spines, in conjunction with the wings, I have reason to think, are used to support the female in the act of copulation. In this act the female is borne upon the back of the male, assuming, while in this position, that attitude which it assumes when alarmed and feigning death — the limbs are contracted against the body, the head drawn toward the breast and the antennæ laid along the ventral surface — thus apparently doing nothing to hold itself secure, yet maintaining itself when the male is leaping actively. When we consider the convex surface of the abdomen of the male, the support received from the connection of the sexual organs would seem hardly enough to account for the firm position of

the female; that the modified wings of the male contribute to this support would therefore be a plausible theory. But for the theory to hold good it must be proved that the wings are available for such a purpose, that is, capable of being raised and opened. I have supposed them to be incapable of any motion. An examination of a specimen which I have had in my possession for several years threw no light upon the matter, all its limbs having become rigid from immersion in alcohol, but a specimen rendered transparent and properly prepared for the microscope revealed the fact that the superior pair of wings were articulated at the outer two-thirds of their base, the inner third being free.

The wings of *B. Californicus* are furnished with similar series of spines. *B. nivoriundus* I have never seen.

Henry L. Moody.

Synoptical Tables for Determining N. A. Insects.

Observations upon the habits and other peculiarities of insects often fail of record merely because the names of the insects are not known to the observer. Beginners in the study of systematic Entomology find it of great advantage to start with a named collection, and can rarely get such, at least without difficulty. Collectors are encouraged by finding that it is easy to name their specimens, and from collectors are led to become students. For these reasons and others, any device is desirable which will render these names discoverable, with the least possible preliminary study; the experience of naturalists has shown that artificial keys, or dichotomic synopses, are most adapted to supply the demand.

A series of synoptical tables for determining the names of North American insects will appear in *PSYCHE*, as occasion favors. The first of the series will be a table for determining the families of Orthoptera. This will be followed by a table for determining the genera and species of the family Forficulariæ, found in the United States. Other families of Orthoptera or other orders of insects will afterwards be treated in a similar manner. When one or a few of the members of any group are of such character that the insertion of those members into

the table would necessitate the establishment of dichotomies upon obscure marks of difference, those members will not be included in the table, but descriptions of them, or lists of them with references to descriptions will be added in an appendix, so that the completeness of the synopsis may not be impaired, while at the same time the table will be rendered more definite in its divisions.

Each synopsis will include a list of the groups of which it treats, with references to the most important accessible works in which monographs or descriptions are given. In case any groups have already been tabulated elsewhere, so that a new tabulation seems not to be needed, merely a reference to the tables will be given. Much space will be saved by the avoidance of useless repetition, at the same time that these synopses will serve as a complete guide to the larger works for which no substitute can be made.

B. Pickman Mann.

BIBLIOGRAPHICAL RECORD.

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B. Pickman Mann.

(Continued from page 160.)

Nos. 447 to 534 are from the **Can. Entom.**, vol. vii (cont.).

- * 447. { G. M. DODGE. *Catocala Nebraskæ*, Dodge. p. 2.
 { A. R. GROTE. Note on *Catocala Nebraskæ*. p. 2-3.

Description; affinities. Note on *Nemophila* spp. from California.

- * 448. GEO. NORMAN. Captures of Noctuidæ at St. Catharines, Ont. p. 3-6; p. 21-24.

List of 175 species collected, with dates, notes of abundance, and method of capture.

- * 449. V. T. CHAMBERS. *Tineina* from Texas. [Continued from vol. vi; see Rec. No. 441.] pp. 7-12, 30-35, 51-56, 73-75, 92-95, 105-108.

Remarks on three additional not new species; describes¹ *Hyponomeuta 5-punct*, *H. apicipunct*, *Gracilaria Belfrag* [*G. belfrageella*, p. 92], *G. (Corisceum) quinquestrig*, *Naera*, *N. fuscocristat*, *Butalis brevistrig* ["*buristriga*"], *B. dorsipallid*, *B. immaculat*, *B. planipen* ["*plausipenella*"], *B. albipen*, *Glauce*, *G. pectenulæ*, *Laverna oenotheræ*, *L. unicristat*, *L. rufocristat*, *L.*

¹ Every specific name ends in *ella*, omitted in the Record to save space.

ignobilis ["*ignotilisella*"], *L. albocapit*, *L. parvicristat*, *L. miscicolor* ["*miscocalonella*"], *L. fuscoeristat* [= *Naera fuscoeristatella*], *L. obscurus*, *Bucculatrix nive*, *B. magn*, *B. immaculat*, *Eriphia*, *E. concolor*, *Elachista?* *concolor*, *E. parvipulv*, *E. inornat*, *Dryope luteopulv*, *Actole*, *A. b*, *Nepticula Belfragr* [err. typ?], *Coleophora bistrig*, *C. argentialb*, *C. albacost*, *C. triline*, *Occophora basique*, *Theisoa multifasci*, *Ithome*, *I. unimacul*, *Phaetusa*, *Ph. plut*, *Phigalia*, *Ph. alb*, *Ph. ochremacul* = 7 n. g., 39 n. spp.; substitutes the generic name *Leuce* for *Naera* preoccupied; notes that the name *Aspidisca* is preoccupied; heterogeneity of the families Glyphipterygidae and Lyonetiidae; notes on the affinities of many genera and species.

* 450. W. SAUNDERS. The Mexican Honey Ant. (*Myrmecocystus Mexicanus*.) p. 12-14, fig. 1.

Habits and honey-production; use as food for man.

* 451. W. SAUNDERS. On some of our Common Insects. The Green Grape-Vine Worm — *Amphipyra pyramidoides*. p. 14-15, fig. 2, 3.

Food-plants; seasons; description of larva (fig.), pupa and imago (fig.)

* 452. H. K. MORRISON. ——— p. 15-17.

Reply to Mr. Grote's criticisms [see Rec., No. 217] upon the article cited in this Rec., No. 180. Discusses *Hadena vasilis*, *H. vulgivaga*, *Taenio-campa oviduca*, *Glaca sericea*, *Agrotis exsertistigma*, *Exyra*, *Tricholita*, *Manestra illabefacta*. [See Rec., No. 464.]

* 453. W. COUPER. *Glaucopsyche Couperi* Grote p. 17-18. *Papilio brevicauda*, Saunders. pp. 18, 80.

Rectification of names applied to *G. Lygdamus*, *G. Couperi* and *Lycæna Pembina* (by W. H. Edwards and S. H. Scudder). Capture of *P. brevicaula* on the south shore of the Gulf of St. Lawrence.

* 454. A. R. GROTE. *Colias philodice*. p. 18-19.

Contact with potassic cyanide in the collecting bottle causes the wings of *C. philodice* to become crimson.

* 455. W. V. ANDREWS. ——— p. 19.

Addition of 8 species to Grote's list [see Rec., No. 407] of Noctuidæ common to North America and Europe; occurrence of *Danaüs archippus* in Queensland; suspicious resemblance between some Labrador and European species of *Colias*.

* 456. A. R. GROTE. Preliminary List of the Noctuidæ of California. [Continued from vol. vi; see Rec. No. 422.] Part III. p. 25-28. Part IV. p. 44-49. Part V. p. 67-72. Part VI. p. 101-104.

List of 95 additional species, with notes and some redescrptions; describes *Agrotis lagena*, *Manestra illaudabilis*, *Hadena indirecta*, *Actinotia Stewarti*, *Prodenia præfica*, *Annaphila decia*, *Trichotarache assimilis*, *Lito-*

sea albersa, *Agrotis silens*, *A. pastoralis*, *A. gagates*, Behrensia, *B. conchiformis*, *Graphiphora Behrensiana* = 1 n. g., 13 n. spp.: proposes the new generic name *Litosea*.

* 457. W. SAUNDERS. On some of our Common Insects. — The Cylindrical Orthosoma — *Orthosoma cylindricum*, Fabr. p. 29, fig. 4, 5.

Habits, descriptions and figures of imago and larva.

* 458. T. GLOVER. Recent Notes on the Phylloxera from Foreign Sources. p. 35-39.

Reprint from "Entomological Record," in Monthly Report of the U. S. Department of Agriculture. Experimental means against the Phylloxera, and their respective results; reports of discussions of French vineyardists upon the subject.

* 459. T. L. MEAD. Interesting Captures. p. 39-40.

Grapta satyrus, *Thecla strigosa* and more common butterflies taken in Victoria Co., Ontario; also *Arctia (Euprepia) americana*; habits of the first and last.

* 460. W. COUPER. ——— p. 40.

Brepbos infans and *Samia Columbia* found in the Province of Quebec; ravages of *Biston ursaria* on Lombardy Poplar.

* 461. W. SAUNDERS. On some of our Common Insects. — The Beautiful Wood Nymph — *Eudryas grata*. p. 41-44, fig. 6-8.

Description and habits of all stages; figures of imago, larva and eggs; description, figure and habits of *Exorista leucaniae*, parasitic upon the larva.

* 462. F. B. CAULFIELD. Notes on the Larva of *Grapta Faunus* Edwards. p. 49-50.

Description, habits and food-plants of the larva.

* 463. HENRY L. MOODY. Young of *Polyxenus*. p. 56.

Place and manner of deposition of eggs; description of eggs and of young ten hours old.

* 464. A. R. GROTE. *Crocigrapta*. p. 57. ——— p. 57-60

Proposal of the new generic name *Crocigrapta* for *Perigrapta Normani*. Rejoinder to Mr. Morrison's article cited in Rec., No. 452, discussing the same species [see also Rec., No. 442], and, in addition, *Hydroecia semiaperta*, *Bolina nigrescens*, *B. fasciolaris*; defence of the validity of generic names proposed with only an implied description. [See Rec., No. 470.]

* 465. ALLEN Y. MOORE. ——— p. 60.

Results attained in raising *Papilio asterias* from a wounded pupa.

* 466. G. NORMAN. Sugaring for Noctuae. p. 61-62.

Directions as to materials, place, time and manner.

* 467. R. BUNKER. Hints on Collecting Cocoons of the Luna Moth. — *Tropæa luna*. p. 63.

Differences in cocoons, habits and food-plants of Luna and Polyphemus.

* 468. W. SAUNDERS. On some of our Common Insects. The Hellgrammite Fly — *Corydalis cornutus* Linn. p. 64–67, fig. 9, 10.

Habits of larva and imago; description of imagos and eggs; figures of larva, pupa and imagos.

* 469. A. R. GROTE. On *Calocampa*. p. 76–77. On *Adita*. p. 77. ——— p. 77–78.

[Refers to *Annals Lyc. Nat. Hist. N. Y.*, vol. xi, p. 91–104.] Relationship between the North American and European species of *Calocampa*; validity of the genus *Lithomia*. The species of the genus *Adita* have spinose tibiae. Reasons for retaining Hübner's name *Atethmia* instead of Guenée's name *Cirroedia* for a genus of Noctuidæ [see *Rec.*, No. 445].

* 470. H. K. MORRISON. ——— p. 78–80.

Remarks upon some of Mr. Grote's statements in the article cited in *Rec.*, No. 464. [Mr. Morrison says that when he discovered a genus which approached *Tricopis*, but was distinct from it, he very properly gave it the name of *Eutricopis* (cf. *Amer. Journ. Sci. and Arts*, ser. 2, vol. xlvii, p. 68, Art. 28 (8) and Art. 29 (1); the genus *Eutricopis* not possessing the three-clawed tibiae which give the name to the genus *Tricopis*.] [See *Rec.*, No. 483.]

* 471. W. V. ANDREWS. ——— p. 80.

Inquiry concerning the habits and seasons of *Rhagium lineatum*. [See *Rec.*, Nos. 479–481.]

* 472. C. W. PEARSON. Rare Captures. p. 80.

Occurrence of *Colias eurytheme*, *Smerinthus modesta* and a variety (?) of *Catocala concumbens* at ? Montreal.

* 473. W. H. EDWARDS. Some Notes on *Lycæna pseudargiolus*. p. 81–83.

Proof that *L. violacea* is a spring form of *L. pseudargiolus*; habits and seasons of the species. Suggestion that *L. neglecta* and *L. lucia* may be identical, and perhaps also forms of *L. pseudargiolus*; doubts.

* 474. A. R. GROTE. On three New Species of Noctuidæ. p. 83–85.

Describes *Agrotis rufipennis*, *Orthosia helva*, *Glaea venustula* = 3 n. spp.; note on the genus *Glaea*.

* 475. W. SAUNDERS. On some of our Common Insects. — The Beautiful *Deiopeia* — *Deiopeia bella*. p. 85–86, fig. 11. Describes the imago (fig.).

* 476. F. B. CAULFIELD. List of Diurnal Lepidoptera of the Island of Montreal, P. Q. p. 86-90.

Enumerates 47 species, with notes on abundance and seasons.

* 477. H. K. MORRISON. Description of a New North American Species of *Mamestra*, and of a Genus allied to *Homohadena*. p. 90-91.

Describes *Mamestra Dodgei* n. sp. and *Copihadena* n. g., the latter to include "*Homohadena*" *atricollaris*. *H. induta* = *H. retroversa*. [See Rec., No. 488.]

* 478. F. G. SANBORN. Obituary [notice of Philip S. Sprague]. p. 95-96.

[Reprint from the American Journal of Numismatics (etc.), vol. ix, p. 95.] [The name is misprinted, "Philip L. Sprague."]

* 479. HENRY L. MOODY. *Rhagium lineatum*. p. 96.

* 480. ANDREW S. FULLER. *Rhagium lineatum*. p. 97.

Replies to Mr. Andrews' inquiry, cited in Rec., No. 471.

* 481. FREDERICK BLANCHARD [mispr. "Planchard"]. *Rhagium lineatum*. p. 96-97.

Reply to Mr. Andrews' inquiry, cited in Rec., No. 471; notes on hibernation of other *Cerambycidae*, viz.: *Microclytus gazellula*, *Graphisurus pusillus*?, *Cyrtophorus niger*?

* 482. EDWARD L. GRAEF. ——— p. 98-99.

List of eight species of butterflies and five species of moths received from the neighborhood of Salt Lake, Utah; notes on *Platysamia Gloverii* and *Anthocharis ausonides*.

* 483. A. R. GROTE. ——— p. 99-100. ——— p. 100.

Reply to the article cited in Rec., No. 470, and conclusion of the series cited in Rec., Nos. 180, 217, 452, 464, 470. *Agrotis scandens* and *A. mu-raenula* are distinct species.

* 484. G. J. BOWLES. Description of a New Species of *Dryocampa*. p. 108-109.

Re-describes "*Dryocampa rubicunda* var. *alba*" as *D. pallida* n. sp.

* 485. C. J. S. BETHUNE. Insects of the Northern Parts of British America. Compiled from Kirby's Fauna Boreali-Americana: Insecta. [Cont. from vol. v.] pp. (156-158,) 109-113, 129-132, 156-159.

Reprint of p. 240-257 of Kirby's work, comprising descriptions of 18 spp. Coleoptera, 3 spp. Orthoptera, 2 spp. Neuroptera, 2 spp. Trichoptera, 5 spp. Hymenoptera.

* 486. A. R. GROTE. On Genera in the Moths. p. 113-115.

Thoughts on the value of classificatory divisions and the necessity of defining our comprehension of them.

SALICYLIC ACID AS A PRESERVATIVE. Having lately experimented with salicylic acid as a preservative, I found that when about ten grains of it are added to a quarter of a pound of brown glue, to be dissolved in water for the purpose of gluing sheets of cork into insect-boxes, it is an excellent material to preserve, clarify and deodorize the glue. I also found the following useful for preserving delicately tissueed invertebrates and larval insects: Dissolve twenty grains of salicylic acid in two fluid ounces of alcohol and add three ounces of water.—*Carl F. Gissler*, Brooklyn, N. Y., Feb. 13, 1876.

Proceedings of the Club.

§ 10. PROTHORACIC TUBERCLES IN BUTTERFLY CATERPILLARS. Mr. S. H. SCUDDER suggested that the extensible tubercle of the under surface of the first thoracic segment of most butterfly caterpillars would probably prove homologous with the osmateria (or more highly developed extensible tubercles of the upper surface of the same segment) of the caterpillars of the swallow-tail butterflies. Osmateria are found only and always in the subfamily to which the swallow-tails belong; inferior tubercles in all other butterfly caterpillars, but never in the swallow-tails. Prepared caterpillars of all the principal groups were exhibited in illustration. [See these Proceedings, § 3, p. 64.]

November 12, 1875.

§ 11. GUADALUPE ORTHOPTERA AND BUTTERFLIES. Mr. S. H. SCUDDER exhibited the Orthoptera and Butterflies collected in February and March, 1874, by Dr. Edward Palmer, on the island of Guadalupe, off the coast of Lower California. There were but four different kinds of Orthoptera; one an undescribed species of *Gryllus* with very short wings, most nearly allied to *G. peruvianus* Sauss., and probably indigenous, the remainder Acrydii; one an undetermined species of the genus *Acrydium* of the American division *Schistocerca*; the others undescribed species of *Trimerotropis*, one of which is also found in California and a very closely allied species in Texas; while the last, though probably not indigenous, has not yet been recognized among the Orthoptera of the main land. The only butterfly found upon the island, according to Dr. Palmer, is *Vanessa Carye*, a species common to the west coast of America from California to Peru. *Nov. 12, 1875.*

PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB

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[No. 26.]

Synoptical Tables for determining N. A. Insects.

Orthoptera.

- 1 (8) Head sometimes vertical, sometimes nearly horizontal. Hind femora resembling those of the other legs, and scarcely, if at all, stouter or longer than the middle pair. [Non-saltatorial.]
- 2 (3) Head subhorizontal, mouth anterior; tarsi 3-jointed or less; anal area of wings extending around the apex over more than half the front border of the wing; abdomen terminated by foreipate appendages *Forficulariæ.*
- 3 (2) Head and mouth variable; tarsi 5-jointed¹; anal area of wings never infringing on the front border; abdominal appendages not foreipate.
- 4 (5) Body oval, depressed; head nearly horizontal and wholly or almost wholly withdrawn beneath the pronotum; mouth parts posterior; ocelli generally two in number; antennæ long, setaceous; pronotum shield-like *Blattariæ.*
- 5 (4) Body elongate, generally narrow: even when depressed or expanded, generally but little broader than deep at the posterior extremity of the prothorax; head free, often separated from prothorax by a deep constriction.
- 6 (7) Head oblique, trigonal; mouth inferior, and more or less posterior; antennæ seldom so long as the body, slender, setaceous²; ocelli three; pronotum longer than any other segment; fore legs raptorial, terminating in a single claw, which with the tarsi is placed beneath the spinous tibia when at rest; anal cerci articulated *Mantides.*
- 7 (6) Head subhorizontal, generally quadrate or gibbous; mouth anterior and inferior; antennæ generally longer than the body, setaceous, moderately stout; ocelli three, but often wanting; pronotum very short; fore legs constructed like the others, the fore femora often arcuate at the base; anal cerci inarticulate *Phasmida.*

¹ Occasionally a joint is absent, probably by an accidental loss of the leg in early life: since in the reproduction of lost limbs—a phenomenon not unusual in the lower Orthoptera—one tarsal joint always disappears.

² Pectinate in some males.

- 8 (1) Head vertical, the mouth parts below; hind femora very much stouter or very much longer (or both) than the middle femora. [Saltatorial.]
- 9 (10) Antennæ much shorter than the body, filiform, clubbed or ensiform, but if the first, scarcely tapering; the joints distinct, often depressed; ocelli three in number; tarsi 3-jointed, similar in structure on all the legs; base of the male tegmina with no tympanum on dorsal surface; ovipositor composed of a double pair of short arcuate plates, vertically divergent at tip *Acrydii*.
- 10 (9) Antennæ much longer than the body, setaceous, delicately tapering; ovipositor usually prolonged into a compressed blade or needle.
- 11 (12) Ocelli generally wanting; tarsi (at least of middle legs¹) 4-jointed, nearly similar in structure on all the legs (but see note); fore-coxæ usually broader than long; middle field of tegmina, like the costal field, nearly or quite vertical when closed; base of ♂ tegmina (when present) furnished on dorsal surface with a tympanum,² limited to the anal area, and crossed by a prominent nervure formed by the last axillary vein; ovipositor (when exerted) forming a strongly compressed, generally ensiform blade, the inner valves almost always partially exposed the entire length of the ovipositor, the tip not expanded. *Locustariae*.
- 12 (11) Ocelli sometimes present, sometimes absent; tarsi 3-jointed,³ those of either the fore legs, or else of the hind legs, differing from the others in structure; fore coxæ longer than broad; middle field of tegmina, like the anal field, nearly or quite horizontal when closed⁴; base of ♂ tegmina (when present) furnished on the dorsal surface with a tympanum extending across the anal and median areas, crossed by a prominent nervure formed by the anal vein; ovipositor (when exerted) forming a nearly cylindrical, straight or occasionally upcurved needle, the inner valves generally scarcely exposed, except at the expanded tip . . . *Gryllides*.

For general descriptive and methodical orthopterological works, treating among others of N. American insects, the student may consult Burmeister's *Handbuch der Entomologie*, Vol. II, part II, *Gymnognatha*, 8vo, 1838 (descriptions mostly in Latin); Serville's *Orthoptères*, 8vo, 1839 (French); Saussure's *Mélanges Orthoptérologiques*, fasc. i-iv. 4to, 1863-72, including

¹ In *Daihinia* the fore and hind tarsi are 3-jointed.

² There are exceptions to this in exotic genera.

³ Stål is inclined to place in the *Gryllides* the *Stenopelmata* and *Gryllaerididae*, which have 4-jointed tarsi, but coxæ longer than broad; I have, however, left them, as has usually been done, in the *Locustariae*.

⁴ The Asiatic *Schizodaetylus* is a curious example of a *Locustarian*, with an enormously developed anal (horizontal) field, giving it the aspect of a *Gryllidan*. Many Orthopterists consider it as such.

thus far only Blattariae, Mantides and Phasmida, published separately and also in Mém. Soc. Phys. et d'Hist. Nat. Genève; the same writer's Histoire Nat. du Mexique, etc., 4^e mém., 1864-5 (Blattariae); 3^e mém., 1871 (Mantides); and further his contributions to the French Government's Mission Scientifique au Mexique (see Bibl. Rec., No. 380), which has so far included the Blattariae, Mantides, Phasmida and Gryllides (all these works are richly illustrated, and are in French, with Latin diagnoses). Stål's Recensio Orthopterorum, I-III, 1873-75 (Latin) has so far covered the Phasmida, Acrydii and Locustariae. Walker's List of Dermaptera in the British Museum, 6 vols., 8vo, 1868-71 (English and Latin), covers the Blattariae and the saltatorial families; it is a work thoroughly bad in classification and description, and is infinitely more a hindrance than a help; as a bibliographical aid it has its merits, and it describes about 140 N. American species as new. Glover's Illustrations of N. American Entomology, Orthoptera, 4to, 1872, gives thirteen crowded plates, not executed in the best manner, with names. Emmons, N. York Insects, 4to, 1854, figures a few species. See also Harris's classic work on Injurious Insects, 3d ed., in which the New England species known to him are described, and some of them figured; my paper in the Boston Journ. of Nat. Hist., VII, 1862, in which all the N. England species, and a few others, are systematically arranged; and my Smithsonian Catalogue of described N. American Orthoptera, 8vo, 1868, an alphabetical index to the literature previous to 1867.

For other important systematic works on the classification of Orthoptera, see the faunal works of Fischer, Orthoptera Europaea, 4to, 1853 (Latin), and Fieber's European Orthoptera in Lotos III-IV (German).

For works on particular families, besides those specified above, see the following: *Forficulariae*,—Dohrn's Monographie der Dermapteren, in the Stettiner Entom. Zeitung, XXIV-XXVI (German, with Latin diagnoses), my Catalogue of the family, in the Proceedings Bost. Soc. Nat. Hist., XVIII, and my Synopsis of the N. American species in the Bulletin U. S. Geol. Surv. Terr., II. *Blattariae*,—Brunner, Système des Blattaires, 8vo, 1865 (French, with Latin diagnoses). *Mantides*,—an illustrated catalogue (4to) has long been in preparation by Westwood, and may be looked for at any time. *Phasmida*,—Westwood's Illustrated Catalogue of the Phasmidae of the British Museum, 4to, 1859 (Latin and English). *Acrydii*,—Thomas's Acrididae of N. America, 4to, 1873 (English).

The N. American species have been mostly described by Brunner, Burmeister, Charpentier, DeGeer, Dodge, Dohrn (H.), Drury, Fabricius, Fitch, Germar, Girard, Gray (G. R.), Haldeman, Harris, Hermann, Kirby, Linné, Olivier, Palisot, Saussure, Say, Scudder, Serville, Smith (S. I.), Stål, Stoll, Thomas, Thunberg, Uhler, Walker and Westwood. The necessary references to them will follow under the special groups. *Samuel H. Scudder.*

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 167.)

Nos. 487 to 534 are from the **Can. Entom.**, vol. vii (cont.).

* 487. W. SAUNDERS. On some of our Common Insects.
— *Drasteria erichtea*, Cram. p. 115–117, fig. 12.

Describes imago (fig.) and larva; seasons and habits. Calls it also "*Drasteria erecthea*."

* 488. L. F. HARVEY. On a New Species of *Tricopis* and *Homohadena*, and Remarks on *Homohadena induta*. p. 117–118.

Describes *Tricopis aleucis* and *Homohadena figurata* = 2 n. spp.; doubts whether *H. induta* is the species originally described as *H. retroversa*. [See Rec., No. 477.]

* 489. F. B. CAULFIELD. *Luna* and *Promethea*. p. 119.
Occurrence of *Tropaea luna* and *Callosamia promethea* at Montreal.

* 490. J. A. LINTNER. On *Lycæna neglecta*, Edw. p. 122–123.

Seasons and habitats of *Lycæna neglecta* in New York; reasons for doubting that *L. neglecta* and *L. lucia* are seasonal forms of one species. [See Rec., No. 473.]

* 491. V. T. CHAMBERS. *Tineina* from Canada. pp. 124–128, 144–147, 209–213.

Notes upon ¹*Gelechia* ("*Oecophora*") *basque*, *Coleophora auropurpuri*, *C. cretaticost*?, *Tinea tapetz*?, *T. pellion*?, *T. auropulv*, *Bucculatrix albicapit*, *Lithocolletis salicifoli*, *L. Scudder*, *Argyresthia goedart*; describes ¹*Argyresthia Belanger*, *Bucculatrix Canadensis*, *Gracilaria pulch*, *Elachista unifasci*, *Anarsia*? *albapulv*, *Gelechia albomacul*, *G. niveopulv*, *G. bicristat*, *G. Belanger*, *Leucophryne* n. g., *L. tricristat*, *Tinea marmor*, *T. minutipulv*, *T. marginimacul* = 1 n. g., 13 n. spp.; enumerates 22 species.

* 492. J. A. LINTNER. On *Orthosia ralla*, Gr. & Rob. p. 128–129.

Differences between *Orthosia* [*Xanthia*] *ralla* and *O. ferrugin[e]oides*.

* 493. G. M. DODGE. Notes on *Caloptenus spretus*. p. 133–135.

Habits, habitat, seasons and migrations of *C. spretus*.

* 494. L. F. HARVEY. New Noctuidæ. p. 135–136.

¹Every specific name ends in *ella*, omitted in the record to save space.

Describes *Tarache lactipennis*, *Ipimorpha intexta*, *Homohadena incomitata* = 3 n. spp.

* 495. W. V. ANDREWS. ——— p. 137. ——— p. 138. ——— p. 138.

Locality-list of 54 species of N. A. butterflies. Inquiry respecting the classificatory relations of *Tetracha*. Recommendations resp. the use of Cyanide of Potassium. [See Rec., No. 446 i.]

* 496. A. R. GROTE. ——— p. 138–139. ——— p. 139.

Question resp. the date of No. 11 of Strecker's *Rhopalocera* [etc.] [see Rec., No. 79]; note on *Samia columbi* and on *S. californica*. The name *Agrotis perexcellens* substituted for *A. excellens*, preoccupied.

* 497. W. SAUNDERS. *Insect Captures*. p. 139–140.

List of 9 Lepidoptera and 9 Coleoptera, taken with other insects in Essex Co., Ont., by F. C. Lowe. [See Rec., No. 417.]

* 498. R. V. ROGERS. On some of our Common Insects. — The Luna Moth — *Actias luna* Linn. p. 141–143.

Describes larva, cocoon and imago. [See Rec., No. 519.]

* 499. A. R. GROTE. Description of a New Californian *Agrotis*. p. 144.

Describes *Agrotis observabilis* n. sp.

* 500. H. K. MORRISON. On two New Species of Homoptera. p. 148–149.

Describes *Homoptera uniformis*, *H. cinerea* = 2 n. spp.

* 501. R. BUNKER. Notes on the Life History of the American Tiger Moth. p. 149–150.

Describes eggs, larva in every stage, cocoon; observations.

* 502. W. H. EDWARDS. Notes on Butterflies. p. 150–151.

Completion of the history of *Melitaea phæton*; additions to the histories of *Phyciodes nycteis* and *Argynnis idalia*.

* 503. W. SAUNDERS. List of Neuroptera collected chiefly in the neighborhood of London, Ont. p. 152–154.

Enumerates 43 species from Ontario and 13 from other portions of Canada.

* 504. A. R. GROTE. Description of *Pachnobia orilliana*. p. 154–155.

Describes *P. orilliana* n. sp.; note on the characters of the genus; list of the 4 N. A. species.

* 505. L. F. HARVEY. Description of a New Species of *Annaphila* from California. p. 160.

Describes *Annaphila immerens* n. sp.

* 506. T. L. MEAD. Notes upon some Butterfly Eggs and Larvæ. p. 161-163.

Food-plants of *Phyciodes tharos* and *Ph. marcia*; description of young larvæ. Method of obtaining eggs of *Limenitis arthemis*; habits of larvæ. Description of eggs and of habits of young larva of *Nisoniades lucilius*?

* 507. A. R. GROTE. The Effect of the Glacial Epoch upon the Distribution of Insects in North America. p. 164-167.

Explanation of the manner in which, in temperate latitudes, the mountain relatives of boreal species may have attained their present distribution.

* 508. J. L. LECONTE. Methods of Subduing Insects Injurious to Agriculture. p. 167-172.

Statement of the measures which should be adopted by the national government; materials, apparatus and method of attack.

* 509. A. R. GROTE. On a Canadian Species of *Agrotis*. p. 172-173.

Describes *Agrotis versipellis* n. sp.

* 510. A. R. GROTE. On certain Species of Moths from Florida. p. 173-176.

Describes *Aegeria* (*Pyrrhotaenia* n. g.) *floridensis*, *Didasys* n. g., *D. Belae*, *Dahana* n. g., *D. atripennis*, *Hexeris* (n. g.) *enhydria* = 4 n. gen., 4 n. spp.; note on *Megathymus Yuccae*; enumerates 7 species.

* 511. W. SAUNDERS. Meetings of the Entomological Club of the American Association for the Advancement of Science. p. 177-185.

List of persons present; scarcity of some insects and abundance of others during the past year; measures for increasing the usefulness of State Reports; locusts as food; distribution of *Pieris rapae* and *P. protodice*; habits and parasites of *Danaus archippus*; captures of rare butterflies in New York, Canada, Ohio and Michigan; sugaring for Noctuae; list of Noctuae captured at sugar, at Schenectady, N. Y., by Mr. J. A. Lintner; pita wood (*Agave americana*) as a substitute for cork for lining insect-boxes; report on nomenclature; proposal for a pronouncing list of names of insects; resolve to ignore offensive names proposed for insects; the Dimmockian process for displaying the wing-structure of Lepidoptera.

* 512. A. R. GROTE. On *Catocala Verrilliana*, with Notes on *Catocala relictæ*. p. 185-186.

Re-describes *C. Verrilliana*; varieties of *C. relictæ*.

* 513. A. R. GROTE. On New Species of *Agrotis*. p. 186-188.

Describes *A. Treati*, *A. brunneipennis*, *A. friabilis* = 3 n. spp.; notes on *A. badicollis*, *A. campestris*.

* 514. A. R. GROTE. On a New Canadian Lithophane and Scopelosoma. p. 188-189.

Describes *Lithophane Georgii*, *Scopelosoma Pettiti* = 2 n. spp.; list of (6) species of Lithophane taken at Orillia.

* 515. W. H. EDWARDS. Argynnis Myrina and its alleged Abnormal Peculiarities. p. 189-195, p. 218.

Amended history of the broods of *A. myrina* [see Ree., No. 190]; condemnation of the manner in which many old names are given to genera at the present time.

* 516. A. R. GROTE. Note on *Datana perspicua* G. & R. p. 195-196.

The validity of the species proved by new specimens.

* 517. A. R. GROTE. Notes on certain Species of Arctia. p. 196-197.

Describes *A. Michabo*, *A. Stretchii*, *A. Snowi* = 3 n. spp.; notes on *A. arge*, *A. Anna*, *A. Persephone*.

* 518. H. K. MORRISON. Description of a New *Hadena* from the White Mountains. p. 198.

Describes *Hadena ancoëconensis* n. sp.

* 519. R. V. ROGERS. The Luna Moth (*Actias luna*). p. 199-200.

Describes eggs and larvæ until the second moult. [See Ree., No. 498.]

* 520. A. R. GROTE. On a New *Euchaetes*. p. 200.

Describes *Euchaetes Spraguei* n. sp.

* 521. C. R. OSTEN SACKEN. Three New Galls of *Cecidomyiæ*. p. 201-202.

List of his previous publications on the galls of N. A. *Cecidomyiæ*; describes galls of *C. (tiliæ) verrucicola*, *C. (urticæ) urnicola*, *Asphondylia (asteris) recondita* = 3 n. spp.

* 522. A. R. GROTE. On North American Species of *Plusia*. p. 202-205.

Describes *P. monodon*, *P. pseudogamma*, *P. Dyaus*, *P. pedalis* = 4 n. spp.; list of the (39) N. A. species identified; 7 unidentified.

* 523. A. R. GROTE. On *Scopelosoma* and allied Genera. p. 205-207.

Describes *Eucirrhodia* n. g., to include *E. pampina*; restricts *Xanthia* in N. A. to *X. togata (silago)*, and suggests the order of succession of the 7 allied genera. List of the (7) N. A. species of *Scopelosoma*. Describes *Litholomia* n. g., to include *L. [Scopelosoma] napaea*.

* 524. A. R. GROTE. *Agrotis rubifera*, N. S. p. 207.

Describes *A. rubifera* n. sp.

* 525. NAPOLEON CORNEAU. Lepidoptera collected at Godbout River, North Shore of the St. Lawrence, during the Seasons of 1874-75. p. 208.

List of 21 species of butterflies collected.

* 526. F. B. CAULFIELD. Notes on the Larva of *Catocala ilia*, Cram. p. 208-209.

Description of the larva and some of its habits.

* 527. H. K. MORRISON. Notes on an Interesting Eastern Variety of *Oncocnemis Chandleri*. p. 213-214.

Describes a variety of *O. Chandleri* as *O. riparia* n. sp.

* 528. H. K. MORRISON. Descriptions and Notes on the Noctuidæ. p. 214-216.

Describes *Caradrina meralis*, *Hadena norua* = 2 n. spp.; re-describes *Agrotis decolor (campestris)*; note on *Hadena fibulata*.

* 529. C. W. PEARSON. *Grapta Satyrus* (Edwards). p. 216-217.

Occurrence of this species near Montreal.

* 530. JOHN G. JACK. The Usefulness of Spiders. p. 218.

Destruction of injurious insects by spiders; abundance of *Clisiocampa*.

* 531. A. R. GROTE. Lepidopterological Observations. p. 221-227, with a photographic plate (i), containing 14 figures.

Describes *Nola ovilla*, *Apatela dentata*, *Mamestra Goodelli*, *Dianthoecia lustralis*, *Lygranthoecia Meskeana*, *Heliothis lupatus*, *Tarache binocula*, *Spragueia guttata*, *S. fasciatella*, *Agrotis turris* = 10 n. spp.; adds *Dilophonota merianae* to the List of U. S. Sphingidae; notes on *Apatela tritona*, *A. grisea*, "*Mamestra promulsa*" = *Anarta promulsa*, *Agrotis rufipennis* = *A. mimallonis*. The plate illustrates *Parastichtis gentilis*!, *P. perbellis*!, *P. minuscula*, *Litholomia napaea*, *Agrotis friabilis*!, *A. campestris*! = ?*A. decolor*, *A. (Matuta) Catherina*!, *A. (Pachnobia) Orilliana*! = *A. claviformis*, *A. versipellis*!, *A. badicollis*!, *A. rubifera*!, *Apatela subochrea*!, *Oligia versicolor*!, *Crocigrapha Normani*!, mostly types.

* 532. W. H. EDWARDS. An Abstract of Dr. Aug. Weismann's Paper on "The Seasonal-Dimorphism of Butterflies." [Leipzig, 1875, published by W. Engelmann.] — To which is Appended a Statement of Some Experiments made upon *Papilio Ajax*. p. 228-240.

Account of experiments made with a view to determine the facts relating to seasonal dimorphism, and from them to deduce the reasons for the phenomena. Treats of *Vanessa levana-porima-prorsa* and *Papilio ajax* = *tela-monides-Walshii-marcellus*.

PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB

EDITED BY B. PICKMAN MANN.

Vol. I.]

Cambridge, Mass., July, 1876.

[No. 27.

Synoptical Tables for determining N. A. Insects. Orthoptera — U. S. Forficulariæ.¹

- 1 (6) Sixth antennal joint much shorter than the first.
- 2 (5) First antennal joint as long as the fourth to sixth joints inclusive.
 - 3 (4) Furnished with both tegmina and wings . 1. *Labidura riparia*.
 - 4 (3) Possessed of neither tegmina nor wings. 2. *Anisolabis maritima*.
- 5 (2) First antennal joint no longer than the fourth and fifth joints together 3. *Spongophora brunneipennis*.
- 6 (1) Sixth antennal joint as long, or very nearly as long as the first.
- 7 (18) Sixth antennal joint cylindrical, many times longer than broad ; second tarsal joint produced beneath the third.
 - 8 (9) Wings wanting, or shorter than the tegmina.
 4. *Forficula aculeata*.
 - 9 (8) Wings protruding beyond the tips of the tegmina.
 - 10 (13) Middle legs very much nearer the fore than the hind legs.
 - 11 (12) Male forceps attingent at extreme base.
 5. *Forficula auricularia*.
 - 12 (11) Male forceps widely separate at extreme base.
 6. *Forficula taeniata*.
 - 13 (10) Middle legs only a little nearer the fore than the hind legs.
 - 14 (15) Inner edge of male forceps with a post-median tooth.
 7. *Forficula exilis*.
 - 15 (14) Inner edge of male forceps with no distinct post-median tooth.
 - 16 (17) Inner edge of male forceps sharply and profusely denticulate 8. *Forficula californica*.
 - 17 (16) Inner edge of male forceps with a single sharp basal tooth 9. *Forficula pulchella*.
 - 18 (7) Sixth antennal joint plainly obconic; second tarsal joint simple, compressed.

¹ A synopsis of all the N. A. species has just appeared in the Bull. U. S. Geol. and Geogr. Serv. Terr., vol. ii. [See Bibl. Rec., No. 571.]

- 19 (20) Wings wanting, or shorter than the tegmina.
 10. *Labia Burgessii*.
- 20 (19) Wings protruding beyond the tips of the tegmina.
- 21 (22) Forceps of female scarcely flattened beneath, with rounded lateral edges 11. *Labia minor*.
- 22 (21) Forceps of female flattened beneath, with sharp lateral edges.
- 23 (24) Exposed part of wings with a distinct yellow spot.
 12. *Labia guttata*.
- 24 (23) Exposed part of wings unicolorous.
 13. *Labia melancholica*.

This table does not include *Forficula Percheroni* Guér., described by me fourteen years ago (as *Spongophora bipunctata*) from a broken specimen in the Harris collection, supposed to have come from Massachusetts. If it did, it was probably introduced accidentally, as it has not since been captured in the United States. Nos. 1, 2, 5 and 11 are also found in the Old World.

A general catalogue of Forficulariae, by the writer, will be found in Vol. xviii of the Proceedings of the Boston Society of Natural History, where will be found references to the best descriptions of the species. Original descriptions of most of the N. American species will be found in the Orthoptères of Serville (Suites à Buffon), the Handbuch der Entomologie (Vol. 2) of Burmeister, Dohrn's Dermapteren von Mexico (Stett. Entom. Zeit., Jahrg. 23), the Monographie der Dermapteren of the same author (ibid., Jahrg. 24-26), and in my Century of Orthoptera and other papers (Proc. Bost. Soc. Nat. Hist., Vol. 18). Other descriptions will be found in Palisot de Beauvois (Ins. Afr. et Amer.), Guérin (Sagra's Cuba) and the general writings of Linné and Fabricius.

The latest views on the classification of Forficulariae will be found in Dohrn's Monograph, above cited. The anatomy of the group has been studied by Posselt (Inaug. Dissert., 1800), Dufour (Ann. Sc. Nat., 1828; Rech. anat. et phys. sur les Orth., etc., 1841), Lacaze-Duthiers (Ann. Sc. Nat., 1852), Meinert (Naturh. Tidsskr. [3] 5), and in a more general way by several other authors, Serres, Newport, etc. On the structure of the wings and their manner of folding, see a paper shortly to appear in the American Naturalist. Fossil species have been described by Herr, Massalongo, Weyenbergh and Scudder.
Samuel H. Scudder.

REMARKABLE TENACITY OF LIFE. Yesterday afternoon, between two and three p.m., I collected a number of Coleoptera, among which were *Lophoglossus strenuus*, *Helops micans*, *Helops aereus*, several *Pterostichi* and *Platyni*. I arrived at home a little after five p.m., and, after the perusal of some letters, went to pick out the specimens. All except *L. strenuus* and *H. micans* were pasted on cards. About fifteen minutes afterwards the six

specimens of *Helops aereus* began to move about on the cards, trying to free their legs from the nearly dry shellac. Some chloroform poured into the box helped the poor creatures into a better existence. This tenacity of life is remarkable, as none of the other beetles, after having been in the alcohol for some three hours, were found to be alive. There must be a sort of respiratory receptacle under the elytra, analogous to that of certain water-beetles.

C. F. Gissler, Brooklyn, N. Y., May 7th, 1876.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 176.)

Nos. 533 and 534 are from the **Can. Entom.**, vol. vii (cont.).

* 533. F. B. CAULFIELD. List of Sphingidæ and Zygænidæ occurring on the Island of Montreal, P. Q. p. 241-242. Enumerates 28 species, with notes on abundance and seasons.

* 534. C. W. PEARSON. Excursion of the Montreal Branch to Chateauguay Basin, on Dominion Day. p. 242-244. Itinerary; list of 32 Lepidoptera taken June 30 and July 1, 1875.

* 535. The **Fourth Annual Report of the Secretary of the State Pomological Society of Michigan, 1874.** By Authority. Lansing, 1875, contains the following, and Nos. 536 to 538.

a. Need of greater attention to economic entomology (by G. Parmelee), 11-12. b. *Aegeria exitiosa*, pp. 31, 560; *Conotrachelus nenuphar*, pp. 35-36, 38-39, 237-240, 482-483, 491; *Carpocapsa pomonella*, pp. 69-70, 104, 106, 484, 533, 535, 547; *Doryphora 10-lineata*, pp. 71, 74; *Phylloxera vastatrix*, p. 72; *Ellopiæ ribearia*, p. 74; *Nematus ventricosus*, pp. 379-380, 559-560; orchard enemies, pp. 74, 486, 489, 490-491, 559-560; means against these and other injurious insects.

[In correction of Rec., No. 108 a, Prof. Cook writes: "I am not State Entomologist, but am Prof. of Entomology here [Lansing] and an officer of the Pom. Society, and so do what work my time as teacher will permit."]

* 536. A. J. COOK. The Codling Moth. p. 152-160.

Habits, seasons, description and enemies of *Carpocapsa pomonella*; means against it.

* 537. A. J. COOK. Economic Entomology. Its History, Progress, and needs in the United States. p. 176-183.

Notice of the labors of Harris, Fitch, Walsh, Riley, LeBaron, Packard.

Glover, and of societies and colleges; investigations which need to be made. (Abstract, p. 546-547.)

* 538. A. J. COOK. Grape Phylloxera. p. 341-350, fig. 1-5.

History, habits and forms of *Phylloxera vastatrix*; means against it. (Abstract, p. 556.)

* 539. A. J. COOK. Injurious Insects of Michigan. [From Report of State Board of Agriculture for 1874.] 8vo. pamphlet. pg. 48, fig. 1-47.

INSECTS INJURIOUS TO THE FARM, GARDEN, AND ORCHARD. Summary account of *Doryphora 10-lineata*, *Agrotis subgothica*, *A. Cochranii*, *Lachnosterna fusca*, *Bruchus pisi*, *Coreus tristis*, *Macrosila 5-maculata*, *Haltica striolata*, *Pieris rapae*, *Lytta cinerea*, *L. atrata*, *Diabrotica vittata*, *Carpocapsa pomonella*, *Saperda candida*, *Chrysobothris femorata*, *Mytilaspis conchiformis*, *Bostrichus bicaudatus*, *Elaphidion parallelum*, *Anisopteryx vernata*, *Clisiocampa Americana*, *Hyphantria textor*, *Conotrachelus nenuphar*, *Aegeria exitiosa*, *Selandria cerasi*, *Nematus ventricosus*, *Abraxas ribearia*, *Macroductylus subspinosus*, *Erythroneura vitis*, *Phylloxera vastatrix*, with figures, and of *Melittia cucurbitae*, *Agrotis devastator*, *Anthomyia raphani*, *Tomicus liminaris*, *Aphis* spp., *Aegeria tipuliformis*, *Tinea flavifrontella*; means against them.

* 540. The **Proceedings of the California Academy of Sciences**, vol. v, contain the following, and Nos. 541 to 553.

a. Remarks on Manna and Honey-Dew [occurrence of these substances in the San Joaquin Valley; attempt to account for them; their use by bees] (by John Applegarth), p. 42-43.

* 541. HENRY EDWARDS. Notes on the Honey-Making Ant of Texas and New Mexico, *Myrmecocystus Mexicanus* of Westwood. p. 72-75.

Description of the nest, the three kinds of individuals, and the method of obtaining food.

* 542. JAMES BLAKE, M.D. On the structure of the Honey-bag in the Honey-making Ant *Myrmecocystus Mexicanus*. p. 98.

* 543. H. EDWARDS. Pacific Coast Lepidoptera.—No. 1. Description of some new or imperfectly known Heterocera. p. 109-113.—Also separate. 8vo. pg. 5.

Describes *Sphinx perelegans*, *S. oreodaphne*, *S. Vancouverensis*, *Pseudalyptia* (n. g. Zygaenidae), *Ps. Crotchii*, *Ctenucha Walsinghamii*, *Epialus modestus* = 1 n. g., 6 n. spp.; re-describes *Sphinx Sequoiae*.

* 544. H. EDWARDS. Pacific Coast Lepidoptera.—No. 2. On the Transformation of the Diurnal Lepidoptera of Cali-

fornia and the adjacent districts. p. 161-172.—Also separate. 8vo. pg. 12.

Original and compiled descriptions of all the larvæ and pupæ of species belonging to the Pacific Coast, with which entomologists are at present acquainted, viz.: *Papilio Philenor* larva and pupa, *P. Zolicaon* l. & p., *P. Asterias* l. & p., *P. Eurymedon* l. & p., *P. Rutulus* p., *Neophasia menapia* p., *Colias eurytheme* l. & p., *Terias nicippe* l. & p., *Danais Archippus* l. & p., *Melitæa chalcedon* l. & p., *M. Editha* l. & p., *M. palla* l. & p., *Phyciodes mylitta* l. & p., *Grapta satyrus* l. & p., *G. zephyrus* l. & p., *Vanessa antiopa* l. & p., *V. Milberti* l. & p., *Pyrameis Huntera* l. & p., *P. Cardui* l. & p., *P. Atalanta* l. & p., *Junonia coenia* l. & p., *Limnitis Lorquini* p., *L. Californica* p.; food-plants, seasons.

* 545. H. EDWARDS. Pacific Coast Lepidoptera.—No. 3. Notes on some Zygenidæ and Bombycidæ of Oregon and British Columbia; with descriptions of New Species. p. 183-190.—Also separate. 8vo. p. 13-20 (appended to No. 2).

Describes *Scepsis Matthewi*, *Sarrothripa Columbianâ*, *Lithosia candida*, *Clemensia irrorata*, *Orgyia badia*, *Cymatophora improvisa* = 6 n. spp.; notes on habits and geographic distribution of about twenty species.

* 546. H. EDWARDS. Pacific Coast Lepidoptera.—No. 4. Descriptions of some New Genera and Species of Heterocera. p. 264-267.—Also separate. 8vo. pg. 4.

Describes *Spilosoma* (*Diaphora*, St.) *pteridis* larva, pupa and imago, *Epiplus Mathewi*, *Thauma* (n. g. Bombycidae), *Th. ribis*, *Stretchia* (n. g. Notodontidae), *S. plusiaeformis* = 2 n. gen., 4 n. spp. [See Rec., No. 550].

* 547. H. EDWARDS. Pacific Coast Lepidoptera, No. 5 — On the Earlier Stages of some Species of Diurnal Lepidoptera. p. 325-332.—Also separate. 8vo. pg. 8.

Describes the known earlier stages of *Papilio Daunus*, *Pieris protodice*, "*Anthocaris ausonides*," *Colias caesonia*, *Terias lisa*, *T. delia*, *Danais Berenice*, *Agraulis vanillae*, *Argynnis myrina*, *Pyrameis carye*, *Limnitis misippus*, *L. Lorquini*, *Thecla halesus*, *Th. arsace*, *Th. mopsus*; says "I believe that the present and previous articles will be found to contain all the knowledge we possess concerning the earlier stages of our diurnal Lepidoptera." [See Rec., No. 544.]

* 548. H. EDWARDS. A Tribute to the Memory of George Robert Crotch: p. 332-334.—Also separate. 8vo. pg. 2.

* 549. H. EDWARDS. Pacific Coast Lepidoptera, No. 6.—Notes on the Earlier Stages of *Ctenucha Multifaria*, Boisduval. p. 344-345.—Also separate. 8vo. pg. 2.

Describes egg, young larva, pupa, cocoon and habits.

* 550. H. EDWARDS. Pacific Coast Lepidoptera, No. 7.—
Descriptions of some New Species of Heterocera. p. 365–367.
—Also separate. 8vo. pg. 3.

Describes *Epialus Tacomae*, *Halesidota Davisii*, *Heterocampa* (?) *conspicua* = 3 n. spp.; synonymy of *Antarctia vagans*, including *Spilosoma pteridis*, described above, p. 264, and of *A. rufula*.

* 551. H. EDWARDS. Pacific Coast Lepidoptera, No. 8.—
On the Transformations of some species of Heterocera, not
previously described. p. 367–372.—Also separate. 8vo. pg. 6.

Describes egg and larva of *Phryganidia californica*, larva, pupa and cocoon of *Clisiocampa constricta* Stretch, n. sp., young larva of *Leucarctia acrea*, larva and pupa of *Halesidota sobrina*, *H. argentata*, *Pyrrharctia Isabella*, *Platysamia ceanothi*, *Choerodes aegrotata*, pupa of *Gastropacha* sp. (“*betulifolia*?”), larva of the same (?); seasons; habits.

* 552. H. EDWARDS. Pacific Coast Lepidoptera, No. 9.—
Description of a New Species of *Thyris*, from the Collection of
Dr. Hermann Behr. p. 413.—Also separate. 8vo. pg. 1.

Describes *Thyris montana* n. sp., from Colorado.

* 553. H. EDWARDS. Pacific Coast Lepidoptera, No. 10.
—On a New Species of *Papilio* from California. p. 423–425.
—Also separate. 8vo. pg. 3.

Describes *P. Pergamus* n. sp.; gives a synoptical table of seven species, with synonymical notes. [In the separates, for “spotted,” before *P. Zolicaon*, read “black, with yellow lateral line;” for “with yellow lateral line,” before *P. Aliaska*, read “with black dorsal line.”]

Nos. 554 to 557 are separate issues from the **Proc. Cal. Acad. Sci.**, vol. vi. 8vo. pg. 29.

* 554. H. EDWARDS. Pacific Coast Lepidoptera, No. 11.
—List of the Sphingidæ of California and adjacent Districts,
with Descriptions of New Species. p. 1–8.

Describes *Hemaris rubens*, *H. cynoglossum*, *Proserpinus Terlooii* = 3 n. spp.; re-describes *Arctonotus lucidus*, *Proserpinus Clarkiae*; describes a new variety (*S. pallidulus*) of *Smerinthus ophthalmicus* and a new variety (*S. occidentalis*) of *S. modestus*; enumerates 24 species, with notes.

* 555. H. EDWARDS. Pacific Coast Lepidoptera.—No. 12.
On some New Species of Noctuidæ. p. 9–16.

Describes *Anarta Kelloggii*, *A. crocea*, *Melicleptria venusta*, *M. vacciniæ*, *M. fasciata*, *M. oregonica*, *Heliothis Crotchii*, *Axenus ochraceus*, *A. amplus*, *Annaphila arvalis*, *A. lithosina*, *A. amicula*, *A. germana*, *A. domina*, *A. superba* = 15 n. spp.

* 556. H. EDWARDS. Pacific Coast Lepidoptera, No. 13.
—On the Earlier Stages of *Vanessa Californica*. p. 17–20.

Describes young and old larvæ and the chrysalis; habits, food-plant (*Ceanothus thyrsiflorus*); notes on abundance and transformations.

* 557. **H. EDWARDS.** Pacific Coast Lepidoptera, No. 14. —Notes on the Genus *Catocala*, with Descriptions of New Species. p. 21–29.

Describes *C. Cleopatra*, *C. Mariana*, *C. Perdita*, *C. Hippolyta*, *C. Luciana*, *C. Cassandra* = 6 n. spp.; re-describes *C. Californica*, *C. Faustina*, *C. Irene*, *C. marmorata*, *C. Stretchii*, *C. Aholibah*, *C. Zoe*.

* 558. **H. EDWARDS.** Darlingtonia Californica. [San Francisco Evening] "Bulletin," Dec. 22, 1875.

Description of this plant, its botanical relations, its arrangement and action as a fly-trap, and a list of insects (5 Col., 3 Hym., 3 Orth., 3 Neur., 20 or more Dipt., 3 Lep., 4 Hem., 2 Arachn.) found in the pitchers; a spider (*Thomisus*? sp.), small dipterous larvæ (Tipulid?), a larger dipterous larva and a lepidopterous larva feed upon or in the pitchers.

* 559. **J. Traherne Moggridge.** Supplement to Harvesting Ants and Trap-door Spiders. With Specific Descriptions of the Spiders, by the Rev. O. Pickard-Cambridge. London, Reeve, 1874. pp. ? i–xii, 157–304, with eight plates (xiii–xx).

p. 198–210, pl. xv; p. 260–264. Describes and figures nest, eggs and imago of *Cteniza Californica* n. sp.; habits of the spider.

Proceedings of the Club.

§ 12. NOTES ON THE WHITE MOUNTAIN FAUNÆ. One of the characteristic features of this fauna, at the time of the meeting, was the abundance of the fly known as *Simulium molestum*. It was not known to any of the members present whether the bloodthirsty propensities of the species were manifested by the females alone or by both sexes indifferently; but the opinion expressed by one of the members was that the females alone drew blood, and that the males were not of frequent occurrence.

Syrphus torvus was noticed to be extremely abundant, a circumstance which the writer suggested might have some connection with the equal or greater abundance, especially at an earlier period, of a species of plant-louse (*Aphis*?), which infested the branches of birch-trees, and, according to the report of one of the members, who had been on the mountain earlier

in the season than the writer, had produced an appearance like a snow-storm around the Summit House, one day. Some of the members reported finding individuals of this *Syrphus* attached to the sand by a fungoid growth, and appearing so life-like as to induce caution in the attempt to capture them. One member found a specimen attached to his blanket in the morning which had not been there the evening previous, showing that the action of the fungus was quite rapid. The writer had noticed a large gathering of individuals of this species on the carriage-road, above the limit of large trees, at a time when a brisk wind was blowing; and had found that sweeping his net through the air near above them did not cause them to take flight, but that it was necessary to take them up with the fingers; yet these individuals were fully able and ready to fly when allowed to escape. A member who had been upon Mt. Adams found the Coleopterous fauna of that mountain essentially the same as that of Mt. Washington, although numerous specimens of *Hyperaspis* were found there such as he had not found elsewhere.

Several members expressed the opinion that the distinction between the subalpine and Canadian faunæ was rather imaginary. The prevalent opinion seemed to be that the wooded and unwooded regions had distinguishing characteristics, but that these regions merge into each other gradually. *Carabus chamissonis* has a wide range, being found in the Canadian as well as in the two other regions. The specimens found at this time were said to be wintered individuals, the new brood coming out in August and September. Probably more specimens were taken this year than in all previous years together. Many valley forms of insects were found at the extreme summit of the mountain; the individuals at the summit visiting the extreme peaks, even congregating upon a pile of stones, if no higher point was near. None were found abundant even twenty or thirty feet below the highest point. (*July 8, 1874.*)

B. Pickman Mann.



PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB
EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., August, 1876. [No. 28.

The Mandibles of the Larvæ of *Eros*.

The mandibles of all the larvæ of the Coleoptera, with the single exception described in this paper, as far as I am aware, are in the normal position, that is, at the sides of the oral opening, and have lateral action; but in the larva of *Eros thoracicus*, a member of the predaceous family Lampyridæ, we find an exception to what has hitherto been considered the rule.

The larva is about twelve millimetres long, rather thick, fleshy and grub-like, somewhat appressed; the body at the terminal two or three segments of either end narrows a little; the head is small and transverse. The color of the body is light bright lemon, the dorsal surface of each segment having a large patch of brownish yellow. The legs are short, and the motions of the larva are slow and clumsy; when disturbed, it curls quickly on its side, after the manner of some of the saw-fly larvæ.

I give the above very abbreviated description, so that one may know the larva and verify what I am about to write. What larvæ I have taken I have found either in the soft decayed wood of dead pines, or between the loose bark and wood of the same trees; but they are rarely found; at least such is my experience.

I was desirous of breeding the first specimen that came to my hands. When I began to make a description of it, I found, as I thought, that the mandibles were altogether absent, and that the labrum was of a singular shape, and described the latter, at the time, as "crescent-shaped, with the horns prominent and attached to the front by a narrow portion of the base." It

was only when I noticed that the so-called labrum was divided into two, and that each portion had independent motion, that I discovered that what I called the labrum was the mandibles; but now I was as much at a loss to account for the presence of the mandibles in this anomalous position as before for their absence. The place of their attachment is under the clypeus, at the margin of the front. The clypeus is apparently absent, but a specimen of the larva prepared for the microscope shows a small piece which is no doubt the clypeus. When this piece is removed, the manner of the hinging of the mandibles is easily seen, but it is necessary to have the head transparent and properly mounted to see it to advantage. In such a specimen, a rather broad, thickened line will be seen on each side of, and somewhat distant from, the middle line of the head; these two lines are on the interior surface and do not appear at all in the opaque specimen. They diverge rather broadly behind and terminate anteriorly at the clypeal suture; at this end there is a cavity which receives a short, stout process proceeding from the mandibles on their outer, or, in this position, posterior surface, at about one fourth their length from their extreme base. Two slender, rather long processes are produced forward from the space between the ends of the lines; these, in their natural position, I think, have a somewhat downward curve; in the specimen under examination they are pressed flat. The mandibles are divided from their base for about one third of their length to receive these processes, which are produced through them. These last mentioned processes I suppose to be points of muscular attachment. The mandibles are rather slender and acute at the tips; they have a very strong downward curve, but only a slight outward curve, with the tips pointing directly forward. Looked at directly in front, in the living insect, the mandibles form two sides of a rather acute triangle with its narrowly truncate apex at the middle line of the clypeus.

From their position, their manner of articulation, and their form, one would be led to think that the mandibles could not have the usual lateral action, and such is the case. The only motion they have is a vertical one, but it is possible that they move on a curve; if the slender processes in front are

straight, in their normal position, they would seem to preclude a direct vertical action, but if they have a downward curve, as I think they do, they would in no manner hinder it. But, whether the motion is directly vertical, or vertical with a curve, the tips are never brought together, nor in approximation even. The mandibles have separate action; one will be raised, and then the other, and both together, but I have never seen the tips approach each other, nor ever seen any lateral movement. When a larva is disturbed, it will withdraw the mandibles almost entirely within the oral cavity, but always with a downward motion.

Naturally it occurs to one to inquire the use of such organs. It is easily seen that they can be of little use in taking prey; it would seem impossible that the larvæ could capture any living thing with such a pair of mandibles, and the maxillæ are of such a form as to be of no assistance, being very short, straight, and furnished with one or two bristles only at the end. I am inclined to think, in view of the facts, that the larvæ of *Eros*, at least of this species, are vegetable feeders, and, as it would seem that nothing but the very softest of tissues would yield to mandibles so disadvantageously placed, I think it possible that the larvæ may feed on the delicate fungoids which are so numerous in the spring under the bark of moist decaying pine stumps. I much desired to see the larvæ in the act of feeding, but never did so, and, as it may be many seasons before I take another, I shall feel under obligations to any reader of this paper, if they would forward any specimens they may take to my address at Malden, Mass. The living insect would reach me in good order if enclosed in a vial with a little of the soft decayed wood such as will be found in the same position as the larvæ; if the wood is dry, it would need to be slightly moistened.

I bred three specimens to the perfect insects; two of which, a male and female, are deposited in the Randall Collection of the Boston Society of Natural History; the other is in my own collection.

Henry L. Moody.

ENTOMOLOGICAL NOTES. I have captured twelve specimens of *Habrosyne scripta* Gosse, this season, by sugar. I have never seen it here before. I have recently captured sixty-six specimens of *Hyperchiria Io* ♂, attracted by two females; a perfect specimen of *Darapsa versicolor*, June 25, and *Catocala Briseis*, July 15, both at sugar.

I have raised the larva of *Ablepharon Henrici*. It eats grass; is a hairy caterpillar, resembling *Acronycta obliquata*; spins a moderately tough cocoon very like that of *A. obliquata* in shape and texture.

I have raised *Plusia aeroides*. It feeds on Meadow-sweet (*Spiraea salicifolia*); is a curious hunched larva, light pea-green, marked with greenish-white; walks like a Geometrid; turns milky white before spinning a light white cocoon. The pupa is light green, with large black patches on the back. Spun June 26; imago July 6. Roland Thaxter, Newtonville, Mass.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 183.)

* 560. **Alfred E. Beach.** The Science Record for 1874. A Compendium of Scientific Progress and Discovery during the past year. With Illustrations. New York, Munn, 1874. 8vo. pg. 598, fig.

a. The Bark-Louse [discovery of the male of *Mytilaspis conchiformis* (by C. V. Riley)], p. 356. b. Remedy for the Cotton-worm [ravages of *Aletia argillacea*; means against it], p. 370-371. c. The Cocuyo [luminosity of *Pyrophorus noctilucus*], p. 484-485. d. The Honey-making Ant [reprint of the article cited in Rec., No. 541], p. 486-489. e. Sting of the Queen-Bee [said to be incapable of penetrating human skin, but to cause death when plunged into the spiracles of another bee], p. 489. f. The Musk Beetle [beauty and habits of *Cerambyx moschatus* (from Hardwicke's Science Gossip)], p. 489-490. g. Venomous Spiders in New-Zealand [habits and transformations of the "katipo"], p. 491-492. h. Coloring of Cocoons [red, green, yellow or violet cocoons obtained by various feeding of silk-worms], p. 492. i. The Phasmid, or Walking-Stick [habits and appearance of a New Zealand Phasmid], p. 492-493.

* 561. **A. E. Beach.** The Science Record for 1875. A Compendium [etc., see Rec., No. 560]. 1875. 8vo. pg. 597, fig.

a. Sections of Insects' Eyes [reprint, see Rec. No. 294], p. 178-179. b. Importation of Phylloxera into France, p. 348. c. The Colorado Potato-bug [migrations and habits of, and means against *Doryphora 10-lineata*;

description and figures of it and of *D. juncta*], p. 356-359, fig. *d*. The Western Grasshopper Plague [abundance of locusts in Kansas], p. 359. *e*. The Army-worm [extract; see Rec., No. 287], p. 361. *f*. Animal Life in Caves [see Rec., No. 143 *a*], p. 454-455. *g*. Habits of the Grasshopper [see Rec., No. 237 *z*], p. 456-457. *h*. The Uses of Bees' Wings [reprint; see Rec., No. 141], p. 457. *i*. A Curious Caterpillar and its Destroyer [habits of *Bombyx processionea*; of its enemy *Calosoma Sycophanta*], p. 458-459, fig.

* 562. **Capt. William A. Jones' Report upon the Reconnaissance of Northwestern Wyoming**, including Yellowstone National Park, made in the summer of 1873. — With Appendix. — Washington [War Department], 1875, contains the following, and No. 563.

Insect pests near Yellowstone Lake, p. 27; locusts in the Green River Basin, p. 49.

* 563. J. D. PUTNAM. Entomological Report. p. 315-318.

List of 90 determined Coleoptera collected on the route in June-August, 1873, with localities and months of capture; of 19 Shoshone or Snake Indian names for designated insects; of 9 corresponding names for colors.

* 564. The **Bulletin of the United States Geological and Geographical Survey of the Territories**, No. 1, contains the following.

a. List of Members and Colaborators of the Survey for 1873 [entomologists *et al.*], p. 3-4. *b*. List of the Publications of the Geol. Surv. Terr. [several contain entomological articles], p. 5-6.

The **Bull. U. S. Geol. and Geog. Surv. Terr.**, No. 2, contains No. 565.

* 565. CYRUS THOMAS. Descriptions of some new Orthoptera, and Notes on some Species but little known. p. 63-71.

Describes *Minorissa alata*, *Gomphocerus carpenterii*, *Thrinxus californicus*, *Ommatolampis brevipennis*, *Caloptenus* ["*Caleoptenus*"] *flavolineatus*, *C. floridianus*, *C. keelerii*, *Machaerocera sunichrasti* = 8 n. spp., from N. and S. ? A.; re-describes *Opomala mexicana*, *Pyrgomorpha brevicornis*, *Gomphocerus simplex*, *Xiphocera pygmaea*, with notes.

The **Bull. U. S. Geol. and Geogr. Surv. Terr.**, ser. 2, Nos. 1-6 [forming, with ser. 1, Nos. 1 and 2, vol. i], contains Nos. 566 to 569.

* 566. ERNEST INGERSOLL. Report on the Natural History of the United States Geological and Geographical Survey of the Territories, 1874. p. 121-124.

Finding of insects, spiders, and other animals in Colorado.

* 567. S. H. SCUDDER. The Tertiary Physopoda of Colorado. p. 221-223.—Also separate. 8vo. pg. 3.

Describes *Melanothrips extincta*, Lithadothrips, *L. vetusta* = 1 n. gen., 2 n. spp.; re-describes Palaeothrips, *P. fossilis*.

* 568. P. R. UHLER. List of Hemiptera of the Region West of the Mississippi River, including those collected during the Hayden Explorations of 1873. p. 267-361, pl. 19-21.—Also separate. 8vo. pg. 95, with three plates (19-21), containing 44 figures.

Enumerates 427 (43 new) spp. of 232 (8 new) genera of 28 families. Describes *Corimelaena ciliata*, *C. cyanea*, *C. anthracina*, *Homaemus consors*, *Aulacostethus simulans*, *Zophoëssa consocia*, *Microporus testudinatus*, *Trichocoris* (n. g. Cydnidae), *T. conformis*, *Amnestus pusillus*, *Macroporus* (n. g. Cydnidae), *M. repetitus*, *Melanaethus* (n. g. Cydnidae), *M. elongatus*, *Chlorochroa congrua*, *Mozena obtusa*, *Phygadicus Behrensii*, *Helonotus* (n. g. Lygaeidae), *H. abbreviatus*, *Miris instabilis*, *Orectoderus* (n. g. Phytocoridae), *O. obliquus*, *Aradus ampliatus*, *A. debilis*, *A. inornatus*, *Brachyrhynchus simplex*, *Apiomerus repletus*, *Pelogonus americanus*, *Corixa sutilis*; *Cicada hesperia*, *Publilia modesta*, *Aphrophora permutata*, *Philaenus abjectus*, *Lepyronia angulifera*, *Clastoptera delicata*, *Scolops hesperius*, *S. grossus*, *S. angustatus*, *Liburnia vittatifrons*, *Issus aureus*, *I. aciculatus*, *Ty'ana ustulata*, *T. ustulipunctata*, *Dictyonissus* (n. g. Fulgoridae), *D. griphus*, *Aphelonema* (n. g. Fulgoridae), *A. simplex*, *Cochlorhinus* (n. g. Tettigonidae), *C. pluto*, *Bythoscopus siccifolius*, *Jassus laetus*, *Deltocephalus debilis* = 8 n. gen., 43 n. spp.; re-describes *Corimelaena?* *albipennis*, *Phimodera torpida*, *Microporus*, *Corixa Escheri*.

* 569. S. H. SCUDDER. Fossil Orthoptera from the Rocky Mountain Tertiaries. p. 447-449.

Describes *Homoeogania ventriosus*, *Labidura tertiaria* = 2 n. spp.; remarks upon related fossils.

The **Bull. U. S. Geol. and Geogr. Surv. Terr.**, vol. ii, as far as p. 278, contains Nos. 570 to 573.

* 570. S. H. SCUDDER. Fossil Coleoptera from the Rocky Mountain Tertiaries. p. 77-87.

Describes *Bembidium exoletum*, *Phillydrus primaevus*, *Staphylinites* (n. g.) *obsoletum*, *Gyrophæna saxicula*, *Leistotrophus patriarchicus*, *Lathrobium abscissum*, *Oxytelus pristinus*, *Antherophagus priscus*, *Phenolia incapax*, *Chrysobothris Haydeni*, *Epiphaniis deletus*, *Corymbites velatus*, *Oxygonus mortuus*, *Chauiognathus pristinus*, *Sitodrepa defuncta*, *Spermophagus vicificatus*, *Bru-chus anilis*, *Oryctoscirtetes* (n. g. Chrysomelidae) *O. protogaeum*, *Trypodendron impressus*, *Sitones grandaevus*, *Otiiorhynchus perditus*, *Entimus primordialis*, *Eudiagogus saxatilis*, *E. examinis*, *E. effusus*, *Hylobius provectus*, *An-*

thonomus defossus, *Cryptorhynchus annosus*, *Eurhinus occultus*, *Brachytarsus pristinus* = 2 n. gen., 30 n. spp.; mentions *Laccophilus* sp.

* 571. S. H. SCUDDER. Brief Synopsis of North American Earwigs, with an Appendix on the Fossil Species. p. 249-260.

Includes all the (38) species known to the author from N. A. and the West Indies. [For a condensed synopsis of the 13 certainly U. S. species, see PSYCHE, vol. i, p. 177-178.] Note on *Labidura tertiaria* [see Rec., No. 569]; describes *L. lithophila* n. sp.

* 572. S. H. SCUDDER. List of the Orthoptera collected by Dr. A. S. Packard in Colorado and the neighboring Territories, during the Summer of 1875. p. 261-267.

Enumerates 29 species, with dates and localities; describes *Stenopelmatus oculatus*, *Hesperotettix*, *Chrysochraon deorum*, *Scyllina delicatula*, *Arphia arcta*, *Mestobregma*, *Circotettix*, *Trimerotropis citrina*, *T. suffusa*, *Aulocara*, *A. caeruleipes*, *A. decens* = 4 n. gen. (Acrydii), 8 n. spp.

* 573. S. H. SCUDDER. Notice of a small Collection of Butterflies, made by Dr. A. S. Packard, in Colorado and Utah, in 1875. p. 269-270.

Enumerates 33 species, with dates and localities.

* 574. The **Proc. Amer. Assoc. Advanc. Sci.** [see Rec., Nos. 66-70], vol. xxiii, contains the following, and (in part ii) Nos. 575 to 579.

a. Report of the Committee on Mrs. Thompson's Donation [accepting Mr. Scudder's Memoir on Fossil Butterflies (see Rec., No. 591)], part i, p. 48. b. Notice of meetings and publication of Constitution of The Entomological Club of the A. A. S., part ii, p. 153.

* 575. A. R. GROTE. On the Cotton Worm of the Southern States (*Aletia argillacea* Hübner). p. 13-18.

Praise of Mr. Glover's officially unappreciated works; retrospect of previous publications upon the moth; seasons, habits, habitat, migrations and synonymy of the species.

* 576. C. V. RILEY. On the Insects more particularly associated with *Sarracenia variolaris* (Spotted Trumpet-leaf). p. 18-25, with two figures.

[Same as a portion of the article cited in Rec., No. 143 c.]

* 577. J. L. LECONTE. An Instance of Replacement of Injurious Insects by Human Agency. p. 44.

[See Rec., No. 134 a.] Remedies recommended.

* 578. C. V. RILEY. On the Summer Dormancy of the

Larva of *Phyciodes Nycteis* (Doubleday), with Remarks on the Natural History of the species. p. 108-112.

Recapitulation of Mr. Scudder's curious history of a butterfly [see Rec., No. 190]; notes on similar habits of *Ph. Nycteis* and cases of retarded development in other Lepidoptera; description of larva and pupa of *Ph. Nycteis*.

* 579. J. H. MELLICHAMP. Notes on *Sarracenia variolaris*. p. 113-133.

Botanical peculiarities and insect-catching adaptations and habits of this plant; list of its victims; purpose and effect upon insects of the different secretions of the plant; habits of *Xanthoptera semicrocea* and *Sarcophaga sarraceniae*; cross-fertilization effected by *Euryomia melancholica*.

The **Proc. Amer. Assoc. Advanc. Sci.**, vol. xxiv, contains (in part i) No. 580 and (in part ii) Nos. 581 to 589.

* 580. J. L. LECONTE. Address of the Retiring President of the Association, p. 1-18.

[Same as the Address cited in Rec., No. 304.]

* 581. J. W. DAWSON. Address of [the Vice President of the A. A. A. S.]. p. 3-26.

[Same as the Address cited in Rec., No. 306.]

* 582. S. H. SCUDDER. New and Interesting Insects from the Carboniferous of Cape Breton. p. 110-111, fig. 1-2.

Describes and figures the fossil larva of an Odonat (possibly *Haplophlebium Barnesii*) as *Libellula carbonaria* n. sp.; and a fragment of a wing of a cockroach as *Blattina sepulta* n. sp.

* 583. J. L. LECONTE. On the Method of Subduing Insects Injurious to Agriculture. p. 202-207.

[Same as the article cited in Rec., No. 508.] Known methods have not been practised sufficiently; new methods should be investigated properly; information thus procured should be made known widely and action founded upon it urged effectively; this can be done only by legislative enactment under the direction of a scientific commission. Materials to be used; time to be chosen for attack; weapons to be employed.

* 584. C. V. RILEY. Locusts as Food for Man. p. 208-214.

Accounts of the use of locusts as food in different ages and countries; how they are cooked; what kinds are eaten.



PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB
EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., September, 1876. [No. 29.

Anatomy of the Plant-lice.

A "Contribution to the Anatomy and Histology of the Plant-lice, of the Coccidae in particular, by E. L. Mark," in the *Archiv für mikroskopische Anatomie*, Bd. xiii, gives an exposition of the organs concerned in the acquisition and digestion of food, and treats the same under the heads :

1. Mouth-parts,
2. Alimentary Canal, and
3. Accessory Organs of Alimentary Canal, the latter being the salivary glands and the Malpighian vessels.

An attempt is made to homologize the elements — to which special names are given — of the chitinous frame-work of the mouth parts in different genera of the Coccidae.

Observations on the method of extruding the setæ, four in number, which compose the sucking tube, follow. A peculiar sack-like organ, enveloping the extensive loop which the bundle of setæ often forms within the abdomen, is found to be present in each of the four groups into which the Coccidae have been divided by Targioni-Tozzetti, although this author denies the existence of such an organ. The earlier observations of Dujardin are thus in the main corroborated.

A complicated pumping apparatus is also ascribed to these insects.

The exceedingly peculiar and interesting relations of the different parts of the intestinal canal, not very successfully explained by Leydig, — whose mistakes Lubbock was hardly more successful in correcting — but much better understood by

Targioni-Tozzetti, are elucidated, with some corrections to the last named author.

Under the head of organs accessory to the intestinal canal, the author announces the discovery of *salivary glands*, and it is to an exact exposition of the anatomical and histological nature of these organs that a large portion of the article is devoted. The organs in question have been previously seen and described, but, from a want of exact topographical and histological knowledge, have been incorrectly assigned to the *nervous* system. The salivary glands are found to exist in the Aphidae as well as in the Coccidae, and in both families have the same general plan of structure. A pair of sack-like, more or less extensively lobed glands, placed over the mouth-parts, and flanking the subœsophageal ganglion, are traversed each by an excretory duct, arising by a varying number of finely punctured tubes, and passing forward and downward to unite with its fellow of the opposite side to form a short stem; the latter empties directly into the œsophagus at its initial end.

Another organ, thought to be a second salivary gland, of somewhat different function, is found to exist in certain of the Coccidae (*Aspidiotus* and *Chionaspis*).

The Malpighian vessels are very briefly considered.

The article is illustrated by three colored plates drawn by the author.

Edward L. Mark.

Notes on Attaci.

Telea Polyphemus. Larva feeds upon *birch*, oak, elm, maple, hazel, cherry, walnut, willow, linden. I should think that the fact of its feeding upon willow might be of value to any one who intends to raise silk, for willow is easily cultivated and grows rapidly. From May 25 to July 15.

Actias Luna. Larva eats *birch*, oak, walnut, hop hornbeam, chestnut. I once found a small birch tree in Weston nearly stripped by *Luna* larvæ. I counted them carefully, and found that there were no less than forty-five. With this exception, I have never found more than five or six on one tree. Full grown larvæ vary very much in size. In the *Can. Ent.*, vol. vi, p. 86, Mr. Gentry describes a variety of the larva in which

the general color is "reddish brown inclining to dullness." I have raised about five hundred *Lanas*, and to my knowledge no larva spun its cocoon without turning dull reddish brown some time before. The moths sometimes fly to a lamp. I have never been able to attract many by exposing a female; the largest number that I have attracted in one night is nine.

Callosamia Promethea. Larva eats *button bush*, cherry, sassafras, spice bush, apple, ash, lilac. It is a curious fact that the males fly only during the afternoon, from about three to six o'clock. They often come in large numbers to a fresh female. I never saw a female flying by day; I think they fly by night only. Cocoons may be found often in large numbers, hanging on *button bush*, by river banks, in winter. I have often found hundreds thus in one day.

Platysamia Cecropia. Larva feeds upon *button bush*, apple, wild cherry, ash, barberry, blue-berry, birch, oak, hazel, maple, elder-berry, alder, jersey tree, buck thorn. Males often come in large numbers to a fresh female. I have taken forty-three in one evening. Males vary very much in color. I have one of a bright orange color, which came to a female. *R. Thaxter*.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists.

B. Pickman Mann.

(Continued from page 192.)

Nos. 585 to 589 are from the **Proc. Amer. Assoc. Advanc. Sci.**, vol. xxiv, part ii.

* 585. C. V. RILEY. The Locust Plague; How to avert it. p. 215-222.

Ravages committed by *Caloptenus spretus* in the Western United States, in 1873, 1874 and 1875; natural agencies and artificial means to be employed in the destruction of the eggs and unfledged young (the winged insects being uncontrollable); importance of governmental assistance towards the investigation and adoption of further means of prevention.

* 586. A. R. GROTE. The Effect of the Glacial Epoch upon the Distribution of Insects in North America. p. 222-226.

[Same as the article cited in Rec., No. 507, slightly amended.]

* 587. A. R. GROTE and ADOLPH KAYSER. Are Potato-bugs Poisonous? p. 226-228.

Statement of experiments with liquid matters and with tinctures obtained from *Doryphora 10-lineata*, tending to show that the insects are not generally poisonous.

* 588. G. DIMMOCK. A Method of Bleaching Wings of Lepidoptera to facilitate the Study of their Venation. p. 228-230.

[Essentially the same as the article in PSYCHE, vol. i, p. 97-99.]

* 589. CHARLES H. ALLEN. Demonstration of Locomotion in the larvæ of the Cestridæ. p. 230-236.

Statement of a case in which larvæ of probably *Hypoderma bovis* moved respectively one, six and thirty inches under the skin of a boy; notes on other larvæ of Oestridæ.

* 590. The **Memoirs of the American Association for the Advancement of Science**. I. Salem, Mass. F. W. Putnam, Permanent Secretary, A. A. A. S. 1875. 4to. consist of the following and No. 591.

Title; Letter of Gift [of the Thompson Fund]; Report of the Special Committee on the Thompson Fund, Hartford Meeting, August, 1874, p. i-iv.

* 591. S. H. SCUDDER. Fossil Butterflies. pp. v-xi, 1-99, fig. 1-8, with three plates (i-iii) containing 54 figures.

Title, Dedication, Contents, Introductory, p. v-xi. Says: "In the hope of drawing attention to fossil butterflies, * * *, I have brought together in this connection all that has been published of this group of fossils, whether of text or illustration." Bibliography [cites 41 titles, stating the subject treated of under each], p. 1-7. Motto [by Heer], p. 8. Descriptive [treats of *Neorinopsis*, *N. sepulta*, *Lethites*!, *L. Reynesii*, *Eugonia*, *E. atara*, *Mylothrites*!, *M. Pluto*, *Coliates*!, *C. Proserpina*, *Pontia*, *P. Freyeri*, *Thaites*, *Th. Ruminiana*, *Thanatites*!, *Th. vetula*, *Pamphilites*!, *P. abilita*! = 9 (5 new) gen., 9 (2 new) spp. of fossils; figures *Eugonia j-album*, *Zophoessa Sura*, *Delias Pasühoe*, *Lethe Dyrta*, *Neorina Lowii*, *Delis Sinorix*, *Pontia Protodice*, *P. Freyeri*, *Thais Rumina*, *Parnassius Snintheus*, *Thanaos Juvenalis*, *Carystus Lucasii*, *Pansylia Mesogramma*, for comparison], p. 9-69, fig. 1, pl. i-iii. Comparative Age of Fossil Butterflies, p. 70-71. Probable Food-Plants of Tertiary Caterpillars, p. 71-76. Present Distribution of Butterflies most nearly allied to Fossil Species, p. 76-83. General Résumé, with Notices of Undetermined Forms, p. 83-88. Notice of Insects which have been erroneously referred in recent times to Butterflies [treats of *Cyllonium Boisduvalianum*, *C. Hewisonianum*, *Palaeontina oolitica*], p. 88-95, fig. 2-8. Explanation of the Plates, p. 97-98. List of Wood-cuts; Errata, p. 99.

* 592. The **Proceedings of the Davenport Academy of Natural Sciences**, vol. i, contain the following, and Nos. 593 to 605.

a. Habits of *Amphicerus bicaudatus*, which bores in canes of the grapevine (by J. D. Putnam), p. 36. b. Explanation of Plates xxxv and xxxvi, p. 267.

* 593. J. DUNCAN PUTNAM. The Maple Bark Louse (*Lecanium acericola* W. & R.). p. 37-38.

Habits of *Lecanium acericola*; its enemies.

* 594. J. D. PUTNAM. List of Coleoptera found in the vicinity of Davenport, Iowa. p. 169-173.

Enumerates about 225 species.

* 595. J. D. PUTNAM. Coleoptera collected at Monticello, Iowa, June 12th, 1872. p. 173.

Enumerates 37 species.

* 596. J. D. PUTNAM. Coleoptera collected near Frederic, Monroe Co., Iowa, August, 1869. p. 173.

Enumerates 19 species.

* 597. J. D. PUTNAM. List of Lepidoptera collected in the vicinity of Davenport, Iowa. p. 174-177.

Enumerates 39 Rhopalocera, 10 Sphingidae, 21 Zygaenidae and Bombycidae; notes on abundance.

* 598. J. D. PUTNAM. List of Coleoptera collected in the Rocky Mountains of Colorado, in 1872. p. 177-182.

Enumerates 250 species.

* 599. J. D. PUTNAM. List of Lepidoptera collected in Colorado during the summer of 1872. p. 182-187 [see also p. 267], pl. xxxv, fig. 5.

Enumerates 47 (8 doubtful or unnamed) Rhopalocera, 13 or 14 (6 or 7 unnamed) Sphingidae, Aegeriidae, Zygaenidae and Bombycidae; notes on abundance, habitat and seasons. Figure of *Papilio indra* ♀.

* 600. J. D. PUTNAM. Report on the Insects collected by Captain Jones' Expedition to Northwestern Wyoming in 1873. p. 187-192.

[See Rec., Nos. 562-563.] General introductory remarks; finding of scorpions, Orthoptera and flies. **Hymenoptera**: about 30 (13 identified) species, with localities. **Lepidoptera**: about 12 species, with localities and dates of capture. **Coleoptera**: 45 species from Fort Bridger, May and June; 40 species from Stinkingwater River, July; 21 species from Yellowstone National Park, August; in all 96 species. **Neuroptera**: 10 species. **Indian Names for Insects**: 19 Shoshone or Snake names

for designated insects [and one for the Horned Toad (*Phrynosomia*)]; 9 names for colors.

* 601. J. D. PUTNAM. Report on the Insects collected in the vicinity of Spring Lake Villa, Utah Co., Utah, during the Summer of 1875. p. 193-207 [see also p. 267].

Introductory remarks. **Hymenoptera**: about 70 (50 identified) species. **Lepidoptera**: 32 (29 identified) Rhopalocera; 6 or 7 Sphingidae, Zygaenidae, Bombycidae and Noctuidae; notes on abundance, localities and dates of capture; congregation of individuals on mountain peaks. **Coleoptera**: 52, 38 and 105 identified species from three regions, respectively, making in all 169 species, besides several not identified; *Dyschirius salivagans* and *Tanarthrus salicola*, described by LeConte [see Rec., No. 605], as coming from Great Salt Lake, and credited to Mr. Ulke, were collected by Mr. Putnam, at Utah Lake. **Neuroptera**: 19 (13 identified) species, 12 of which are new to the fauna of Utah; localities and dates of collection; notes by Dr. Hagen.

* 602. E. T. CRESSON. List of Hymenoptera, collected by J. Duncan Putnam, of Davenport, Iowa, with Descriptions of two New Species. p. 206-211, pl. xxxv, fig. 1, 2.

Enumerates 145 species, from Colorado, Wyoming, Utah and Iowa, with localities of each; describes and figures *Nomada Putnami*, *Anthophora albata* = 2 n. spp.

* 603. DR. CYRUS THOMAS. A List of Orthoptera, collected by J. Duncan Putnam, of Davenport, Iowa, during the Summers of 1872-3, 4 & 5, chiefly in Colorado, Utah and Wyoming Territories. p. 249-264, pl. xxxvi.

Enumerates 51 (45 determined) species from Colorado, Utah, Wyoming, Iowa and California; describes and figures *Ischnoptera bivittata* ♂ ♀, *Psolossa? coloradensis* ♂ ♀, *Trimerotropis fontana*, *Cratypedes Putnamii*, *Ceuthophilus utahensis* = 5 n. spp.; partially re-describes *Circotettix undulata* and *C. carlingiana*, *Mestobregma kiowa*, *Pezotettix obesa*, *P. Dodgei*; figures *Cyphoderris monstrosus*; notes on generic and specific characters. [See Rec., No. 604.]

* 604. J. D. PUTNAM. Notes. p. 265-267, pl. xxxvi, fig. 1, 2.

Notes on 10 of the species included in Dr. Thomas' List [see Rec., No. 603], especially on habits of *Caloptenus spretus* and *Anabrus simplex*; enumeration of 5 species omitted from that List; important corrections to be made in that List.

* 605. J. L. LECONTE. Descriptions of Coleoptera. p. 268, pl. xxxv, fig. 3, 4.

Reprint, with corrections and additions, of the descriptions of, and notes

upon, *Dyschirius salivagans* and *Tanarthrus salicola*, in Trans. Amer. Entom. Soc., v, pp. 169, 174; figures of the two species.

* 606. **J. D. PUTNAM.** Entomological Contributions from the Proceedings of the Davenport Academy of Natural Sciences, Vol. I.—Being some account of the collections of insects made by J. Duncan Putnam, among the Rocky Mountains in Colorado, Wyoming and Utah, during the years 1872, —'73, —'74, —'75; and in Iowa from 1869 to 1875.—With Two Plates.—Davenport, Iowa, September, 1876. 8vo. pp. 169–211, 249–268, with two plates (xxxv, xxxvi).

Reprint of Nos. 594–605 of this Record, in separate binding.

* 607. The **Proc. Amer. Philos. Soc.** [see Rec., Nos. 64–65], vol. xiv, from p. 177 [= Nos. 93–95], contain the following, and No. 608. (Vol. xv [= No. 96] will consist of LeConte and Horn's Memoir, referred to below; vol. xvi, as far as p. 276 [= No. 97], contains nothing entomological.)

Report of the Committee to which was referred the Memoir on the Rhynchophora of N. America, by Drs. LeConte and Horn, pp. 649, 662–663.

* 608. **A. R. GROTE.** List of the North American Platypterices, Attaci, Hemileucini, Ceratocampadæ, Lachneides, Terebines and Hepiali, with notes. p. 256–264.—Also separate. 8vo. pg. 9.

Enumerates 67 species, belonging to 29 genera, with synonymy and indication of the (7) genera represented in Europe.

The Annals and Mag. Nat. Hist. [see Rec., Nos. 73–75], ser. 4, vols. xiv–xvii, contain Nos. 609 to 619.

* 609. **R. MELDOLA.** Note on *Iphielides Ajax*. xiv, p. 239–240.

Why do not the forms of *I. Ajax* conform strictly to the law of substance waste? [See Rec., Nos. 4, 73a.]

* 610. **A. G. BUTLER.** Descriptions of new Species of *Sesia* in the Collection of the British Museum. xiv, p. 365–367.

Describes *Sesia Grotei* n. sp. from Texas and two new species from Japan.

* 611. **ANTON STUXBERG.** Descriptions of some new North-American Lithobioidæ. xv, p. 188–192.

Describes *Lithobius monticola*, *L. pusio*, *L. paradoxus*, *L. obesus*, *L. Kochii*, *L. megaloporus*, *L. eucnemis*, *L. Saussurei* = 8 n. spp. from California and Mexico.

* 612. A. G. BUTLER. On some new Species of Butterflies from Tropical America. xv, p. 222-225.

Describes *Antirrhæa tomasia*, *Paphia Ada*, *Heliconius clarescens*, *Daptonura florinda* and var? *monstrosa* = 4 or 5 n. spp. from Veragua; describes 3 n. spp. from South America.

* 613. A. G. BUTLER. Descriptions of new Species of Lepidoptera from Central America. xv, p. 338-342.

Describes *Morpho polybaptus*, *Belemnia Jovis*, *Pericopis Lucretia*, *Josia cruciata*, *Ruscino latifasciatus*, *Scordylia Salvini*, *Atteria rivularis* = 7 n. spp.; list of four additional species collected.

* 614. A. M. MAYER. Experiments on the supposed Auditory Apparatus of the *Culex mosquito*. xv, p. 349-364.

[Reprint, from the * Philos. Mag., ser. 4, vol. xlviii (see Rec., No. 640), of the article cited in Rec., No. 189. This lacks the author's corrections as given in the reprint, Rec., No. 281, and is not an exact reproduction of the original. (In the reprint, Rec., No. 281, the figure is inverted.)]

* 615. A. G. BUTLER. Descriptions of new Genera and Species of Lepidoptera in the Collection of the British Museum. xv, p. 396-400.

Describes *Sphaenogona semiflava* n. sp. from Trinidad and 7 n. spp. from localities not N. American, unless *Acridura gryllina*, *A. metallica*, *Hyalocercera vulnerata* = 3 n. spp. from the highly indefinite locality "Espíritu Santo" are N. American. Describes *Mimensemia* (n. g. Agaristidae), *Acridura*, *Hyalocercera*, *Thysanoprymna* (= 3 n. gen. Aretiidae, Zygænoïd type) = 4 n. gen.

* 616. DR. [H.] LOEW. On Androgynous Diptera. xvi, p. 79.

Notice of a hitherto partially overlooked published case of androgynism in *Beris nitens*, and of a new case in *Synarthrus cinereiventris*, the latter from Texas.

* 617. A. G. BUTLER. Revision of the Subfamily *Pericopiinae* of the Lepidopterous Family *Arctiidae*, with Descriptions of new Species. xvi, p. 163-177.

["All the Pericopiinae are from the New World."] Enumerates 102 (16 N. A.) species of 8 (5 N. A.) genera, with localities and some descriptive or classificatory notes; describes 6 (*Phaloësia chalybea* from Vera Cruz = 1 N. A.) new species.

PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB
EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., October, 1876. [No. 30.

Entomology at the Centennial Exhibition.

As the Centennial Exhibition is intended to display the industrial products of all nations, silk insects and silk in its stages of manufacture form an important part of the entomological representation.

Of the States of the Union, California makes the finest displays, one of feeding larvæ, cocoons and raw silk, from Joseph Neumann of San Francisco, in the Main Building, and a similar display in the State Building. E. V. Boissiere of Williamsburg, Kansas, exhibits cocoons and silk in the Main Building.

Undoubtedly the most interesting display of sericulture is made by Capt. Luis de Rezende, in the Brazilian Department of Machinery Hall; this comprises eggs, feeding larvæ, cocoons, and silk-reeling apparatus in operation.

In the East Indian Department of the Main Building are specimens of silk, figures of larvæ, and imagos of *Antheraea paphia* [*Saturnia mylitta* Fab.], the Tussar silkworm; of *Bombyx mori*; of *B. croesi*, the Nistry silkworm; of crosses of *B. mori* and *B. croesi* with each other, and with *B. fortunatus*, the Bengal or Dasee species; of *B. huttoni*, the native Himalayan species; and of *Attacus ricini* [*Saturnia arrindia* Miln.-Edw.], the Eria silkworm.

The Zoölogical and Acclimatization Society of Victoria exhibits a case containing cocoons of twenty varieties of European, twenty of Oriental, and nine of Australian silkworms, the latter including *Saturnia cecropia*, *S. ailanthus* [*S. cynthia* Drury], *S. yama-mai*, *S. eria* [*S. arrindia* Miln.-Edw.], *S.*

pernyi, *S. selene*, *S. assama*, and *S. atlas*. Other silk exhibits are to be found in the departments of the Main Building occupied by Victoria, South Australia, Queensland and New South Wales, as well as from Spain, Portugal, Italy, Egypt, Chili, and Turkey, the last mentioned country exhibiting a very fine lot of cocoons and raw silk.

In the Agricultural Building, Portugal displays cocoons from many different exhibitors, and Japan shows silk and cocoons, and a few good illustrations of silk insects in different stages, including a figure of the internal anatomy of *Bombyx mori*, with explanatory notes, by N. Sasaki.

There are only a few collections arranged to illustrate scientific and economic entomology, yet several of them are excellent. At the head of the list should be placed the collection exhibited by the United States Agricultural Department, in the Government Building.¹ This collection, numbering twenty-six cases of insects arranged by Mr. F. G. Sanborn, classifies the insects in accordance with the benefit or injury they do to man. For example, "Insects injuring the Grape Vine, or its Fruit," are represented in one case, and number thirty-one species. Silk-producing insects occupy two cases. Thirty-one species of insects beneficial as scavengers, and seventy species beneficial by destroying other insects are shown. A case is devoted to insecticidal devices, and another to insects available as food for man. A complete generic bill of fare enumerating the delicacies exhibited in this case would offer Oedipoda, Acridium, Rhomalea, Brachypeplus, Pezotettix, Phaneroptera, Phylloptera, Stenopelmatus, Caloptenus, Notonecta and eggs, and Corixa and eggs.

In the Kansas State Building is a fine exhibit, consisting of thirty cases of insects, of all the suborders, from that State. The specimens in this collection are very good, but the names, in some cases, are incorrectly given.

Canadian insects are represented, in the Agricultural Building, by the best scientific collection on exhibition, consisting of forty-five cases of Lepidoptera, twenty-seven of Coleoptera,

¹ For further description of this collection see *Fidd and Forest*, Vol. ii, p. 21-24.

and fourteen of other insects, all carefully preserved and labelled, and tastily displayed. This very creditable exhibit is made by the Entomological Society of Ontario,¹ and exemplifies what any active society can accomplish, by a few years of actual collecting, towards determining a local fauna. Chas. Foley, of Lindsay, Ontario, exhibits a few boxes of insects at the same place.

In the Brazilian Department of the Main Building is a fine collection of insects from the Province of Parana, belonging to J. Francisco Suplicy, of Lapa. This collection was exhibited in 1875, in the Fourth Brazilian Exhibition. A case of about two hundred well preserved Brazilian Lepidoptera is exhibited in Machinery Hall.

In the Main Building, the South Kensington Museum of London exhibits a series of galls, and figures of galls and gall-insects; Queensland a case of Lepidoptera, containing about two hundred species; Victoria is represented by two cases, one of about three hundred species of Coleoptera, and the other of about two hundred species of Lepidoptera; the Government of the Orange Free States of South Africa has on exhibition two cases, containing about five hundred species of insects of all suborders; Belgium exhibits in her model school-house a teaching collection, representing two hundred genera of insects, while a few other countries are unintentionally represented by specimens of *Bruchus* emerging from leguminous seeds in their exhibits.

Mr. D. F. Taylor, Birmingham, England, exhibits in the Main Building a large lot of gilded insect pins. This is apparently the only exhibit of entomologists' special apparatus outside of the case of insecticides in the Government Building.

A few plates or figures of insects are exhibited. The United States Government Building contains a series of about two hundred and seventy-five octavo plates of injurious insects, showing their mode of operation, by Townsend Glover of Washington.

In the Ladies' Pavilion, six sample plates from Edwards'

¹ See *New York Daily Graphic*, xi, 494-495, for notes concerning this exhibit.

Butterflies of North America testify to Miss Peart's extraordinary ability in figuring insects on stone. In the same building, a Mrs. Stevens, seventy years old, exhibits a fine colored figure of *Attacus cecropia*.

In the gallery of the Main Building, Mr. L. Trouvelot, of Cambridge, Mass., exhibits a book of colored figures of the Lepidoptera of Massachusetts.

The educational department of the Government of the Netherlands exhibits four wall figures of structural entomology; the Society for Public Utility, of Switzerland, a plate of figures of Phylloxera; and J. S. Bray, of Sydney, a photograph of a collection of twelve cases of insects, of all the suborders, from New South Wales; all in the Main Building.

Of insects used for ornamentation, there are a few poor exhibits. In the Main Building Melles. M. and E. Natté, of Rio de Janeiro, sell the more brilliant species of Brazilian Coleoptera and Lepidoptera, for decorative purposes.

Panels made by pressing butterflies and ferns between two glass plates, and supplying a background of dark paper, are exhibited in the British Department of the Main Building. In the East Indian Department of the same building, is a broad-brimmed palm-leaf hat beautifully decorated with a row of green elytra from a species of Indian Buprestis.

In the Agricultural Building, Mr. Richard Hartley, a taxidermist of Philadelphia, exhibits a fancy design and two figures of churches, one composed chiefly of Lepidoptera, and the other a Coleopterous structure, made of nothing but specimens of *Chrysochus auratus*, *Melanotus communis*, and *Chrysomela clivicollis*.

For the benefit of entomologists who camp every summer, mention should be made of models of tents exhibited by Davies, Turner & Co., of London. Besides making some very convenient combined tents and hammocks, the firm manufactures a military tent, with camp bedsteads, suitable for eighteen men, which weighs but six and one-half pounds per man.

There are a few other exhibits of camping equipage, and, perhaps, some of insects, overlooked in my hasty visit, but I

have endeavored to give the entomology of the Centennial Exhibition as fully as the limited space allowed this article will permit. Geo. Dimmock.

BIBLIOGRAPHICAL RECORD.

Authors and Societies are requested to forward their works to the Editor at the earliest date possible. We ask our readers to inform us of the publication especially of those works which are not generally consulted by entomologists. B. Pickman Mann.

(Continued from page 200.)

Nos. 618 and 619 are from **The Annals and Mag. Nat. Hist.** ser. 4, vols. xvi, xvii.

* 618. A. R. GROTE. The Effect of the Glacial Epoch upon the Distribution of Insects in North America. xvi, p. 440-442.

[Reprint from Amer. Journ. Sci. and Arts, vol. ex (ser. 3, vol. x), p. 335-338.] "A brief statement of the phenomena assumed to have attended the advent of the glacial period," and of "the action presumed to have accompanied" the retirement of the ice-sheet, in the endeavor "to show that the present distribution of certain insects may have been brought about by the phenomena." [Cited also in Rec., Nos. 507 and 586.]

* 619. PROF. T. THORELL. On the Classification of Scorpions. xvii, p. 1-15.

An "attempt at a systematical arrangement of the order of Scorpions, based on the examination of a rather limited number (about 90) of species." Historical and critical review of some previous writings; remarks on nomenclature in general. Defines synoptically 30 genera of 4 families, with citation of types and bibliographical and descriptive foot-notes. Describes *Lepreus*, *Phassus*, *Rhopalurus*, *Hadrurus*, *Iurus*, *Uroctonus*, *Pandinus*, *Palamnaeus*, *Miacophonus*, *Hormurus*, *Ioctonus*, *Euscorpium* = 12 n. gen.; describes 7 (*Vejovis intrepidus* from Mexico, *Uroctonus mordax* from California = 2 N. A.) n. spp. [See PSYCHE, vol. i, p. 209-214.]

* 620. The **Report of the Entomological Society of Ontario, 1873**, including a Report on some of the Noxious, Beneficial and Common Insects of the Province of Ontario. Prepared for the Honourable the Commissioner of Agriculture on behalf of the Society. Printed by Order of the Legislative Assembly. Toronto: 1874. 8vo. pg. 4, 41, fig. 1-31, contains the following, and Nos. 621 to 625.

Title, Contents. Annual business reports and report of the annual meeting; annual address of the President (C. J. S. Bethune) [history of

the Society; doings of the year]; list of honorary members; Editorial (from Can. Entom., v, 181) [announcing change of editorship], p. 1-6.

* 621. W. SAUNDERS. Insects Injurious to the Raspberry. p. 7-17, fig. 1-11.

Treats of *Rhodites radicum*, *Selandria rubi*, *Hyphantria textor*, *Acronyeta verrilli* [corr.], *Aplodes rubivora*, *Lozotaenia rosaceana*, *Pterophorus* sp., *Byturus unicolor*, *Agrilus ruficollis*, *Oberca tripunctata*, *Haltica* (*Crepidodera*) *cucumeris*, *Corimelaena pulicaria*, *Oecanthus niveus*.

* 622. W. SAUNDERS. Insects Injurious to the Strawberry. p. 18-19, fig. 12.

Treats of *Empfytus maculatus*, *Paria seznotata*.

* 623. W. SAUNDERS. On some Innoxious Insects. p. 20-25, fig. 13-18.

Treats of *Papilio turnus*, *Pyrrharetia* (*Spilosoma*) *Isabella*, *Arctia Saundersii*, *Belostoma grandis*, *Julus multistriatus*.

* 624. JOSEPH WILLIAMS. Household Pests. p. 26-33, fig. 19-24.

Treats of *Tinea flavifrontella*, *Culex pipiens?*, *Musca domestica*, *Dermestes lardarius*.

* 625. EDMUND BAYNES REED. On some Common Insects which affect the Horse, the Ox and the Sheep. p. 34-41, fig. 25-31.

Treats of *Oestrus* (*Gasterophilus*) *equi*, *O. bovis*, *Cephalemyia* [corr.] (*Oestrus*) *ovis*.

* 626. The **Annual Rep. Entom. Soc. Ontar.**, for the year 1874. Including Reports on some of the Noxious and Beneficial Insects of the Province of Ontario. Prepared [etc., see Rec., No. 620], 1875. 8vo. pg. iv, 62, fig. 1-46, contains the following, and Nos. 627 to 632.

Title, Contents, p. i-iv. a. Annual business reports and reports of the annual meetings of the Society and of the London and Montreal Branches [see Rec., Nos. 85 *h*, *t*, 397 *a*, *f*], including report of the meeting and copy of the Constitution of the Entom. Club A. A. A. S. [see Rec., No. 425], p. 1-6. b. Annual Address of the President (C. J. S. Bethune) [same as Rec., No. 432], p. 6-9. Introductory, p. 10.

* 627. E. B. REED. Entomological Contributions. p. 11-16, fig. 1-6.

Treats of *Saturnia* (*Hyperchiria*) *Io*, *Chrysobothris femorata*, *Clytus pictus*.

* 628. W. SAUNDERS. Notes of the past season. p. 17-22, fig. 7-16.

Treats of *Nematus ventricosus*, *Ellopi* ("Abraxis") *ribearia*, *Orgyia leucostigma*, the Apple-tree Blight.

* 629. W. SAUNDERS. On some of our Common Insects. p. 22-28, fig. 17-29.

Treats of *Attacus Cecropia* and its enemies, *Ophion macrurum*, *Exorista militaris*, *Chalcis Maria*, *Cryptus nuncius*; treats also of *Colias philodice* and *Deilephila lineata*.

* 630. C. J. S. BETHUNE. Grasshoppers or Locusts. p. 29-42, fig. 30-34.

Confusion in the names locust and grasshopper; figures of *Cicada septendecim*, *Oedipoda migratoria*, *Cyrtophyllum concavum*. History of visitations of locusts, in earlier times, in America, and of the plague of locusts, in 1874, especially in Nebraska, Minnesota, Kansas and Manitoba. Description and figures of *Caloptenus spretus* and *C. femur-rubrum*. Means of reducing the ravages of the locusts.

* 631. W. SAUNDERS. On some Injurious Insects. p. 43-53, fig. 35-41.

Treats of *Carpocapsa pomonella*, remedies for its ravages, and its enemies, *Pimpla annulipes*, *Macrocentrus delicatus* and an unknown larva; treats also of *Selandria cerasi* and means against it.

* 632. C. J. S. BETHUNE. The Grape Vine Phylloxera. (*Phylloxera vastatrix*, Planchon.) p. 54-62, fig. 42-46.

History, description and habits of the insect, and practical considerations concerning it; its enemies, especially *Tyroglyphus phylloxerae*.

* 633. The **Annual Rep. Entom. Soc. Ontar.** for the year 1875. Including Reports on some of the Noxious, Beneficial, and other Insects of the Province of Ontario. Prepared [etc., see Rec., No. 620], 1876. 8vo. pg. 4, 54, fig. 1-29, contains the following, and Nos. 634 to 638.

Title, Contents. *a.* Annual business reports and reports of the annual meetings of the Society and of the London and Montreal Branches [see Rec., No. 446 *g*], p. 1-5. *b.* Annual Address of the President of the E. S. O. (C. J. S. Bethune) [doings of the year; relative prevalence of various destructive insects], p. 5-7. *c.* Annual Address of the President of the Montreal Branch (Wm. Couper) [doings of the year; distribution and immigration of injurious insects], p. 8-10. *d.* Address of the incoming President of the Montreal Branch (G. J. Bowles) [importance of entomology; subjects suggested for investigation], p. 10-13. *e.* Meetings of the Entom. Club A. A. A. S. [same as Rec., No. 511], p. 13-17. *f.* Methods of Subduing Insects Injurious to Agriculture (by J. L. LeConte) [same as Rec., Nos. 508, 583], p. 17-20. *g.* Copy of Memorial [to the U. S. Congress, praying for the appointment of a Commission to investigate the subject of insects injurious to agriculture], p. 20-21. *h.* Our Deceased Members [obituary notices of Francis Walker and P. S. Sprague (see Rec., Nos. 444, 478)], p. 22-24.

* 634. W. SAUNDERS. On Canker Worms. p. 25-28, fig. 1-6.

Summary of what is known resp. *Anisopteryx vernata* and *A. pometaria*; means against them; natural enemies. [*A. vernata* appears in spring only; *A. pometaria* in both fall and spring. B. P. M.]

* 635. W. SAUNDERS. Notes of the Year. p. 29-35, fig. 7-16.

Scarcity of insects generally; habits of *Clisiocampa americana* and *C. sylvatica*; migrations and habits of *Pieris rapae*; chrysalids of *Selandria cerasi* and *Nematus ventricosus* killed by a cold winter, while eggs of *Abraxas ribearia* were uninjured; eastward movements of *Doryphora 10-lineata*; means against all these insects. The Apple Tree Blight [apparently not caused by insects].

* 636. W. SAUNDERS. On some of our Common Insects. p. 36-42, fig. 17-29.

Treats briefly of *Deiopia bella*, *Drasteria erichtea*, *Eudryas grata* (and its parasite *Exorista leucaniae*), *Orthosoma cylindricum*, and more at length of *Telea Polyphemus* (and its parasite *Ophion macrurum*).

* 637. R. V. ROGERS. On some of our Common Insects. The Luna Moth (*Actias Luna*, Linn.). p. 43-44.

[Essentially the same as Rec., Nos. 498, 519.]

* 638. C. J. S. BETHUNE. The Western Locusts. p. 45-54, fig.

Ravages of *Caloptenus spretus* in Manitoba and in the U. S. west of the Mississippi; means of reducing their ravages; locusts as an article of food [see Rec., Nos. 583, 584].

* 639. E. L. MARK. Beiträge zur Anatomie und Histologie der Pflanzenläuse, insbesondere der Cocciden. Inaugural-Dissertation, behufs Erlangung der Doctorwürde vorgelegt der philosophischen Fakultät der Universität Leipzig. Bonn, 1876. 8vo. pg. 58, 1, with three plates (iv-vi).

[Abstract given in PSYCHE, vol. i, p. 193-194.]

The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science, ser. 4, vols. xlvii, xlix and l [= Nos. cccix-ccciv, ccxxii-cccxxxiv], contains nothing entomological; vol. xlvi [= Nos. cccxv-cccxxi] contains No. 640.

* 640. A. M. MAYER. Researches in Acoustics.—No. V. 3. Experiments on the supposed Auditory Apparatus of the *Culex mosquito*, p. 371-385, fig. 2.

[Reprint of the article cited in Rec., Nos. 189, 281, 614. (See Rec., No. 614.)]

PSYCHE.

ORGAN OF THE CAMBRIDGE ENTOMOLOGICAL CLUB
EDITED BY B. PICKMAN MANN.

Vol. I.] Cambridge, Mass., November, 1876. [No. 31.

Synoptical Tables for determining N. A. Insects. Scorpiones.

In the *Annals and Mag. Nat. Hist.*, ser. 4, vol. xvii, p. 1-15 (Jan. 1876), Prof. T. Thorell has published an essay on the classification of Scorpions [see *Rec.*, No. 619], from which the following synopsis of genera is adapted. The synopsis is prefaced by the following scheme of the orders in the class Arachnoidea, indicating the relative position of each.

Class ARACHNOIDEA.

Subcl. 1. THORACOPODA Thor.

- | | |
|---|--------------------|
| Ord. 1. Scorpiones. | Ord. 5. Solifugae. |
| Ord. 2. Pedipalpi. | Ord. 3. Araneae. |
| Ord. 6. Pseudoscorpiones. | Ord. 4. Opiliones. |
| Ord. 7. Acari. | |
| Ord. 8. Linguatulina (= fam. Pentastomoidae). | |

Subcl. 2. (Ord. 9.) CORMOPODA Thor. (= fam. Artiscoidae).

1 (18) Sternum narrowing forwards, subtriangular. [Intermediate plates of the pectoral combs¹ rather few in number, most of them angular and larger than the fulcra, and forming only one series. The movable finger of the mandibles (which always forms a perfect fork) has two rows of teeth; the immovable finger has two teeth in the upper margin, 2-0 in the under. The fingers of the palpi are provided with a number of oblique rows of fine teeth, along the middle of their

¹The plates of the front row are called *dorsal plates*; those of the hind row, each supporting a tooth of the comb, are the *fulcra*; those between are the *intermediate plates*.

edge, and with other, generally coarser teeth, arranged in one or more rows on each side of these. Three principal lateral eyes and 2-0 accessory eyes on each side of the cephalothorax.]

Fam. I. **Androctonoidea**.

- 2 (5) Not only the upper but also the under margin of the immovable mandibular finger armed with two strong teeth. [Lateral teeth of the palp-fingers, which are coarser than the median teeth, forming along the inner side a single simple row, but arranged along the outer side in a series of teeth placed two and two obliquely and transversely near to each other. No tooth or spine under the base of the sting. Generally two accessory eyes, besides the three principal eyes, on each side of the cephalothorax.] Subfam. 1. **ANDROCTONINI**.
- 3 (4) The fifth joint of the tail broadly excavated above, its upper margins forming an elevated denticulate or granulate keel . . . *Androctonus*.
- 4 (3) The upper margins of the fifth joint of the tail rounded, not compressed into an elevated keel *Buthus*.
- 5 (2) The under margin of the immovable mandibular finger has no tooth or only one. [Lateral teeth of the palp-fingers arranged in a single row or forming several short transverse rows. The sixth joint of the tail generally provided with a spine or tooth under the sting. Accessory lateral eyes often wanting, sometimes one or two on each side.]
- Subfam. 2. **CENTRURINI**.
- 6 (7) "Joints of the tail destitute of keels."¹ *Uroplectes*.
- 7 (6) At least a few of the joints of the tail evidently keeled.
- 8 (11) Under margin of the immovable mandibular finger toothless.
- 9 (10) Lateral teeth of the palp-fingers forming on the inner side a single simple row, but arranged on the outer side in a row which partly consists of teeth placed two and two transversely near to each other.
- Lepreus*.
- 10 (9) Lateral teeth of the palp-fingers forming, both on the inner and outer side, a row of teeth placed two and two transversely near to each other *Tityus*.
- 11 (8) Under margin of the immovable mandibular finger armed with one (very small) tooth.
- 12 (15) Both the inner and outer lateral teeth of the palp-fingers arranged in a single row.
- 13 (14) The fifth joint of the tail broadly excavated above, its upper margins forming an elevated keel *Phassus*.
- 14 (13) Upper margins of the fifth joint of the tail rounded, not forming an elevated keel *Isometrus*.
- 15 (12) Both the inner and outer lateral teeth of the palp-fingers arranged in a number of short oblique rows, with at least three teeth in each row.

¹ Peters, the author of the genus, has placed in it a species with "upper crests of the tail distinct." *Uroplectes* is perhaps not different from *Tityus*.

- 16 (17) The fifth joint of the tail broadly excavated above, its upper margins forming an elevated keel *Rhopalurus*.
- 17 (16) The upper margins of the fifth joint of the tail rounded, not forming an elevated keel *Centrurus*.
- 18 (1) Sternum either very short, forming a transverse falciform band or line, or else with parallel sides and subpentagonal.
- 19 (24) Sternum very short, forming a transverse falciform band or line curved backwards between the coxae of the second pair of legs and the genital plates. [Intermediate plates of the combs generally (always?) numerous, most of them rounded and small (little or no larger than the fulera), and arranged in 1-3 longitudinal rows. Both fingers of the mandibles provided with a single row of teeth. Lateral eyes three or two (?) on each side, small. No tooth or spine under the sting.] Fam. II. **Telegonoidae**.
- 20 (23) Tail without keels on the underside.
- 21 (22) The fifth joint of the tail provided on the underside, near the apex, with a large, depressed, almost semi-elliptical area, rounded in front, and limited by a row of small teeth or granules . . . *Bothriurus*.
- 22 (21) The fifth joint of the tail smooth below, without a depressed semi-elliptical area *Telegonus*.
- 23 (20) Tail keeled at least on the under side of the fifth joint.
Cercophonius.
- 24 (19) Sternum with parallel sides, subpentagonal. [The movable mandibular finger provided with one or two rows, the immovable with a single row of teeth.]
- 25 (28) Sternum rather small, about double as broad as long. Intermediate plates of the combs generally (always?) numerous, most of them rounded and small (little or no larger than the fulera), and arranged in 1-3 longitudinal rows. The hands subfusiform or ovate, their height or thickness in general greater than their least breadth. [Three (or four) lateral eyes on each side, forming a row curved inwards.¹ No spine or tooth under the sting.] Fam. III. **Vejovoidae**.
- 26 (27) The movable mandibular finger provided with a single row of teeth in the upper margin. Dorsal eyes placed rather far in front² of the centre of cephalothorax *Vejovis*.
- 27 (26) The movable mandibular finger not only provided with a row of teeth in the upper margin, but also with a tooth in the under margin. Dorsal eyes not far removed from the centre of cephalothorax.

Hadrurus.

¹According to Peters, these scorpions have two principal lateral eyes and one or two accessory eyes.

²The measures are taken from the eyes to a straight line tangent to the anterior margins of the frontal lobes, and to the middle of the posterior margin of the cephalothorax.

- 28 (25) Sternum generally large. Intermediate plates of the combs rather few in number, angular, and (at least most of them) larger than the fulera, and arranged in a single row. Hands broader than high, in general large and depressed. [Principal lateral eyes three or two; accessory eyes in general wanting, rarely one on each side. Sixth joint of the tail nearly always destitute of a tooth or spine under the sting.] Fam. IV. **Pandinoidae**.
- 29 (32) The movable mandibular finger not only provided with a row of teeth in the upper, but also with one or more teeth in the under margin. [Cephalothorax emarginate in front; dorsal eyes situated far in front of the centre of cephalothorax; lateral eyes three, removed from the lateral margin of cephalothorax. Sternum as broad as the labial lobes of the second pair of legs together. Hands rather large, thick; the hand-back¹ forming an obtuse angle with the upper surface of the hand. Tail evidently keeled, its sixth joint long, not grooved on the under side.] Subfam. 1. **IURINI**.
- 30 (31) The under margin of the movable mandibular finger armed with one strong tooth. The fine teeth along the middle of the edge of the palp-fingers forming many short oblique rows *Iurus*.
- 31 (30) The under margin of the movable mandibular finger provided with a row of (5) teeth. The teeth along the middle of the edge of the palp-fingers forming a single continuous row . . . *Uroctonus*.
- 32 (29) The movable mandibular finger provided with a single row of teeth, situated in its upper margin Subfam. 2. **PANDININI**.
- 33 (52) Three principal lateral eyes on each side.
- 34 (35) "Joints of the tail rounded, without keels."² . . . *Dacurus*.
- 35 (34) Tail evidently keeled.
- 36 (37) "A spine under the base of the sting." . . . *Diplocentrus*.
- 37 (36) No tooth or spine under the sting.
- 38 (47) Lateral eyes removed from the lateral margin of cephalothorax. Hand-back forming an acute angle with the upper side of the hand.
- 39 (46) Dorsal eyes not very far removed from the centre of cephalothorax. Under side of tail provided with three longitudinal grooves, and with granules arranged in at least four longitudinal rows. Labial lobes of second pair of legs together from half as broad again to double as broad as sternum.
- 40 (41) Cubitus rounded off anteriorly; its anterior side not separated by a strong margin or ridge from the upper and under surfaces.

Heterometrus.

¹ The *hand-back* is that surface of the hand which (in the family Pandinoidae) is turned outwards, and which is bounded by the two strongest costæ of the hand.

² According to Peters; C. L. Koch, however, says of his "*Centrus*" [*Dacurus*] *galbinius*: "The lateral keels and the inferior keels indeed present, but not very strongly developed." The hands are said to be "narrow, uneven on the outside, without distinct keels." Koch gives this species ten eyes (?)

- 41 (40) Culitus subprismatic, with the anterior and superior sides plain; anterior side subrectangular, limited both above and below by a very distinct dentate or granulate margin.
- 42 (45) Anterior margin of cephalothorax rather broadly and deeply emarginate, its frontal lobes rounded.
- 43 (44) Inner margin of the hands strongly compressed, thin. Dorsal eyes situated a little behind the centre of cephalothorax . . . *Pandinus*.
- 44 (43) Inner margin of the hands very thick, not compressed. Dorsal eyes situated a little in front of the centre of cephalothorax.
- Palamnaeus*.
- 45 (42) Anterior margin of cephalothorax rather slightly emarginate in the middle; frontal lobes broadly truncate *Miacophonus*.
- 46 (39) Dorsal eyes situated about double as far from the anterior margin of cephalothorax as from its posterior margin. The sixth joint of the tail destitute of rows of granules and of distinct grooves on the under side. Labial lobes of second pair of legs together a little broader than (not more than half as broad again as) sternum. *Opisthophthalmus*.
- 47 (38) Lateral eyes, at least the anterior one, situated very near to or on the lateral margin of cephalothorax. Hand-back forming an obtuse or nearly right angle with the upper side of the hand.
- 48 (51) Tail not much compressed; its superior margins not keeled.
- 49 (50) The elevated lateral margin of cephalothorax visible under the lateral eyes; these eyes, therefore, separated from the margin by a slight interval. Hands not much flattened *Opisthacanthus*.
- 50 (49) Lateral eyes situated on the very margin of cephalothorax. Hands very flat *Hormurus*.
- 51 (48) Tail rather strongly compressed, with keels both on the upper and under side *Ischnurus*.¹
- 52 (33) Two principal lateral eyes on each side.²
- 53 (54) "Tail with only three keels on the under side, thick, its keels strong." *Urodacus*.
- 54 (53) The first four joints of the tail with four keels on the under side.
- 55 (56) Sternum narrower than the labial lobes of the second pair of legs together *Broteas*.
- 56 (55) Sternum as broad as the labial lobes of the second pair of legs together.

¹ The place of *Hemiscorpis* is probably in the vicinity of this genus. It is characterized by Peters in the following words:—"Sternum as broad as the labial lobes of the second pair. Frontal margin scarcely emarginate. Body and extremities flattened. Tail slender, long, higher than broad, keeled, its sixth joint with two lateral tubercles (in the males) behind the base of the short sting. The hind lateral eye somewhat smaller, placed more inwards." If the tubercles mentioned by Peters also exist in the females, *Hemiscorpis* is without doubt a good genus.

² There is sometimes an accessory eye on one or both sides of cephalothorax, or the hind lateral eye is divided into two.

- 57 (58) "Sternum longer than broad. Hands flat, angular." *Scorpiops*.
 58 (57) Sternum broader than long. Hand-back forming, with the upper-side of the hand, a right or obtuse angle.
 59 (60) Dorsal eyes situated nearly in the middle of cephalothorax, which is emarginate in front; dorsal eye-tubercle divided by a longitudinal middle groove. Hands rather thick. Tail somewhat strong, with strongly marked keels on all sides *Ioctonus*.
 60 (59) Dorsal eyes far in front of the centre of cephalothorax; frontal margin not, or but little, emarginate; dorsal eye-tubercle destitute of a longitudinal middle groove. Hands flattened. Tail slender.

Euscorpilus.

Some of the genera are more fully defined, and the names of their authors and of the typical species, and the dates of their establishment, are given in the work from which this is derived.

B. Pickman Mann.

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CORRECTION OF ERRORS DETECTED.

(See note at bottom of p. 126. Defective or inverted type and wrong font letters are not corrected here. Some of these corrections have been made in a part of the edition.)

Down to the end of page 40, diphthongal letters are admitted in Latin names; afterwards not, unless quoted. In Rec., No. 66, the lettered divisions end with a semicolon, which should be changed to a period. In many later paragraphs, such lettered divisions are referred to with a comma between the numeral and the letter: the comma should be omitted. The fonts of type used did not contain the properly accented letters for the words Société and Labouibène on p. 52, and the words Sallé and Guérin-Méneville on pp. 140, 141. The words *Anomys*, on p. 20, line 12; *Microcentrus*, on p. 20, line 28; *maculata*, on p. 47, line 3; *Romalea*, on p. 59, line —5 and p. 63, line —14; *hyemalis*, on p. 60, line 14; *Crochiphora*, p. 95, line 14; *Telyphonus*, on p. 107, line —10; *Amalrya*, on p. 133, line —18; *Cremastochilus*, on p. 135, line 3; *Crinus*, on p. 151, line —10; *Amalrya*, on p. 158, line —8; *Blepharo-*, on p. 159, line —9; *Matthewi*, on p. 181, line —25; and *acraea*, on p. 182, line 12, are printed as they occur in the articles recorded, but should be written respectively: *Anomis*, *Microcentrum*, *maculatus*, *Rhoma-lea*, *hiemalis*, *Crociphora*, *Thelyphonus*, *Amylrya*, *Cremastochilus*, *Cionus*, *Amylrya*, *Blephari-*, *Mathewi*, *acraea*. Many similar errors have been corrected in the text; quoted errors in English style are passed over without remark. *Loxotaenia*, on p. 15, line —12; *Hyptiotes*, on p. 32, line 11; *Micrommatu*, on p. 131, line 3, are etymologically correct, but historically wrong; names historically correct, but etymologically wrong, are too numerous to mention, and are tolerated.

Page	3	line	15 for	:	read	, and Nos. 1 to 10.
"	"	"	24 "	; also	"	, including
"	"	"	25 "	four	"	five
"	11	"	—6 "	LeConte	"	LECONTE
"	18	"	22 "	<i>Limnæcia</i>	"	<i>Limnæcia</i>
"	32	"	2		add	p. 139-140
"	"	"	—12 for	253	read	263
"	36	"	6 "	28	"	32
"	39	"	—12 "	<i>ostryæcla</i>	"	<i>ostryæella</i>
"	40	"	27 "	<i>Limnæcia</i>	"	<i>Limnæcia</i>
"	52	"	—10 "	et	"	et
"	54	"	—2 "	Webster, p. 261).	"	Webster, p. 261.
"	60	"	—5 "	<i>Cecido</i> ,	"	<i>Cecido-</i>
"	"	"	—1 after	Index	add	.
"	61	"	16 for	ravages	read	ravages
"	63	"	—13 "	166.	"	166. C. R. DODGE.
"	71	"	2 "	H.,	"	H.;
"	72	"	—6 "	nterior	"	interior
"	75	"	—3 "	number	"	number
"	78	"	9 "	190 - 192	"	190 to 192
"	88	"	—6 "	erron.)	"	erron.), Exyra
"	94	between lines	—10 and —9, insert	Nos. 219 to 223 are from the		Bull. Buff. Soc. Nat. Sci. , vol. ii.

Page	line	4 for	RESEMBLANCES	read	RESEMBLANCES
"	"	5 "	OSTEN-SACKEN	"	OSTEN SACKEN
"	"	—4 "	Rhaphidia	"	Raphidia
"	100 "	—10 "	OSTEN-SACKEN	"	OSTEN SACKEN
"	102 "	16 after]	add]
"	104 "	24 for	<i>artica</i>	read	<i>artica</i>
"	"	33 "	HASKINS	"	HASKINS
"	105 "	—5 "	at two	"	at D, two
"	108 "	—15 "	18, 723	"	18, 723
"	"	—4 "	.]	"	. B. P. M.]
"	109 "	18 "	25	"	24
"	"	—5 "	series	"	series,
"	112 "	9 "	Arachnidae	"	Arachnida
"	"	10 "	Weissmann	"	Weissman
"	"	13, 17 and 24,	for Weissmann	"	Weissmann
"	113 "	—28 for	disparity-	"	disparity,
"	"	—23 "	Dimor,	"	Dimor-
"	"	—21 and —20,	omit the commas	"	
"	"	—18 for		"	
"	114 "	—12 "	<i>topiarius</i>	"	<i>topiarius,</i>
"	115 "	—16 "	France	"	France
"	116 "	13 "	Microscopial	"	Microscopical
"	118 "	2 "	genera!	"	general
"	119 "	23 "	Mycocorina	"	Mycocoryna
"	120 "	1 "	Republiian	"	Republiian
"	125 "		Nos. 315 to 317 were omitted accidentally.	"	
"	129 "	—13 and —10,	for <i>Theridium</i>	"	<i>Theridium</i>
"	"	—9 for	<i>Phyllonthis</i>	"	<i>Phyllonthis</i>
"	132 "	—15 "	337—339	"	337 to 339
"	133 "	18 "	<i>ambrosiæ</i>	"	<i>ambrosiæ,</i>
"	"	25 "	<i>Tinea,</i>	"	<i>Tinea,</i>
"	"	—10 "	spp.,	"	spp.;
"	134 "	15 "	Harvey	"	[Harvey
"	135 "	1 "	Species	"	species
"	136 "	11 "		omit	the following, and
"	"	20 for	;	read	;
"	"	—6 "	by America,	"	America, by
"	141 "	2 "	52—54	"	lii—liv
"	"	—2 "	Mexique,	"	Mexique.
"	146 "	15 "	<i>Boletobius</i>	"	<i>Boletobius</i>
"	147 "	3 "	<i>carinatus</i>	"	<i>carinatus</i>
"	"	—26 "	<i>Lithocrus</i>	"	<i>Lithocrus</i>
"	"	—16 "	specimen	"	specimen.
"	"	—10 "	<i>Caenocera</i>	"	<i>Caenocera</i>
"	148 "	2 "	<i>Eustrophys</i>	"	<i>Eustrophys</i>
"	149 "	17 "	scarcity.	"	scarcity, Nos. 3, 4.
"	150 "	—11 "	<i>Hydroscia</i>	"	<i>Hydroscia</i>
"	155 "	24 "	catalogue	"	calendar
"	"	—1 "	Mann	"	Mann.
"	156 "	—9 "	167	"	157
"	157 "	14 "	centuncul-	"	centuncul-
"	"	24 "	Noctuidæ	"	Noctuidæ;
"	158 "	11 "	I. —	"	I. —
"	159 "	22 "	and Species	"	and The Species
"	160 "	8 "	Club.	"	Club
"	"	—2 "	16	"	10
"	165 "	—10 "	60	"	* 60.
"	172 "	6 "	<i>Continued</i>	"	<i>Continued</i>
"	174 "	5 "	<i>lucilius?</i>	"	<i>lucilius?</i>
"	175 "	—10 "	P	"	P
"	"	—6 "	Encirroedia	"	Encirroedia
"	179 "	—6 "	160,	"	160, fig.
"	"	—2 "	needs	"	Needs
"	189 "	16 "	D	"	D.
"	190 "	—1 "	<i>effusus</i>	"	<i>effusus</i>
"	191 "	16 "	spp.	"	spp.;
"	"		Brachystola in place of Brachypeplus preoccupied.	proposes	
"	195 "	17 "	tree	read	tea
"	196 "	18 "	following	"	following,

Page 198 line 17, 23 for	collected	read	Collected
" " " 25 "	1872-3, 4	"	1872-3-4
" 199 " 9 "	Iowa,	"	Iowa:
" 204 " -7 "	exhibit d	"	exhibited
" 205 " 11 "	Hist.	"	Hist.,
" 208 " 16 "	<i>erichtea</i>	"	<i>erichtea</i>
" " -3 "	mosquito,	"	mosquito.
" 213 " -12 "	Broteas'	"	Broteas.
" 216 " 6 "	AMERICAN NOCTUINA	"	American Noctuid
" " insert No. * 679a. JOHN AKHURST.	and. p. 104.	Chrysomela 10-lineata on Long Isl-	
" 217 before line -26 insert			{ Nos. 686 to 715 are from
" " " -14 for	SCHWARZ	read	Psyche , vol. i.
" 219 col. 2 " 6 "	641.	read {	SCHWARZ
" " " 1 " -5 "	564, 573	read {	641, 666-668, 677, 678, 684,
" " " 2 " -15 "	Mouthl,	"	685, 691, 698, 702, 703, 707.
" 220 " 1 " -13 "	Annu	"	564-573
" 221 " 1 " -34 "	O-ten-	"	Monthl.,
" " " 2 " 12 "	245,	"	Annu.
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March, 11

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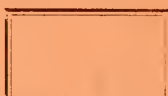


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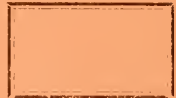
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The undersigned has still for sale, at much less than cost, a few of the second-hand Insect-boxes lately advertised, viz: three double boxes, fully cork-lined, 10 1-2 inches square outside, at 50 cts. each; one single box 15 x11, for 35 cts.; one double 13x10, for 20 cts.; one single, 12x7, for 15 cts.

☞ ALSO for sale, a lot of half-inch boards of pita-wood ("pith"), an excellent substitute for cork, at twelve cents per square foot.

ALSO for sale, Insect-pins of Reichl's make: Nos. 2 and 3, \$1.20 per M, Nos. 4, 5 and 6, \$1.10 per M.

ALSO for sale, new, plain, double, wooden Insect-boxes, 10x13, .45

ALSO for sale, pine-wood spreading-blocks, 3x4 inches spread, .10

ALSO for sale, F. C. HILL'S 5x3-inch photograph of the anatomy of the under-side of *Harpalus caliginosus*, .50

ALSO, Insects of various orders, in commission, at prices set by the owners of the specimens.

☞ The above prices, except for pins, do not include the cost of transportation.

B. PICKMAN MANN, Cambridge, Mass.

PSYCHE ADVERTISER.

Dec. 20

1875.

PSYCHE is issued once a month, by the Cambridge Entomological Club. No. 1 was issued May 1874; it is expected that Vol. I will be completed with No. 32, Dec. 1876. The subscription price in North America, payable in advance to the editor, is as follows: For any twelve months, one dollar; for the thirty-two months, until further notice, two dollars and sixty cents. Foreign subscriptions, which may be sent in available postage-stamps, are reckoned at the rate of five shillings or marks or six francs to the dollar. Acknowledgements of money received will be sent with the Nos. paid for.

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Address communications: Editor of PSYCHE, Cambridge, Mass., U. S. A.

PAPERS FOR SALE.

- | | |
|---|------|
| GROTH's Check List of the Coleoptera of North America. 126 pp. | 1.00 |
| Catalogue of the Coleoptera of Mt. Washington, N. H., with descriptions of New Species. [See Bibl. Rec. No. 175.] | .20 |
| On the Species of Coleoptera described by J. W. Randall, in 1838. By P. S. Sprague, with Notes by E. P. Austin. 13 pp. 8vo. | .20 |
| Apply to E. P. AUSTIN, Cambridge, Mass. | |

Mr. A. R. GROTE has published a List of the Noctuidae of North America, enumerating about eight hundred species, with notes and descriptions of new species. It can be obtained by remitting the price, one dollar, to the undersigned, who will send it by mail.

B. PICKMAN MANN, Cambridge, Mass.

COLEOPTERA FOR SALE OR EXCHANGE.

The undersigned offers for sale the following Coleoptera, at the annexed prices, or will exchange for any North American species not in his collection, or of which he has not a full series.

Of species marked with a * the specimens are all more or less imperfect. Parties ordering are requested to state if they will accept imperfect specimens at a reduced price in case no perfect ones are at hand. Any one wishing to exchange is requested to send a list of his duplicates with the prices.

E. P. AUSTIN, Cambridge, Mass.

List of Species (Continued from last Number).

4927	<i>Aseum</i>	<i>moestum</i>	.08	5589	<i>Cryptocephalus</i>	<i>venustus</i>	.08
5009	<i>Elaphidion</i>	<i>atomarium</i>	.15	5610		<i>4-maculatus</i>	.08
5011		<i>parallelum</i>	.08	5612		<i>quadraplex</i>	.05
5018		<i>moestum</i>	.10	5631	<i>Pachybrachys</i>	<i>viduatus</i>	.08
5051	<i>Rhopalophora</i>	<i>longipes</i>	.08	5638		<i>subfasciatus</i>	.08
5104	<i>Cyllene</i>	<i>infaustus*</i>	.05	5641		<i>luridus</i>	.05
5106		<i>charus</i>	.10	5663		<i>othonus</i>	.05
5133	<i>Neoclytus</i>	<i>capraea</i>	.10	5665	<i>Adoxus</i>	<i>vitis</i>	.05
5141	<i>Clytanthus</i>	<i>ruricola</i>	.08	5667	<i>Fidia</i>	<i>longipes</i>	.05
5156	<i>Desmocerus</i>	<i>palliatu8</i>	.08	5670	<i>Xanthonia</i>	<i>Stevensii</i>	.05
5179	<i>Pachyta</i>	<i>monticola</i>	.05	5671	<i>Heteraspis</i>	<i>pubescens</i>	.05
5191	<i>Acmacops</i>	<i>bivittata</i>	.08	5676	<i>Glyptoseelis</i>	<i>hirtus</i>	.05
5204		<i>protens</i>	.10	5685	<i>Myochrous</i>	<i>denticollis</i>	.05
5205		<i>strigillatus</i>	.10	5688	<i>Chrysochus</i>	<i>auratus</i>	.03
5207	<i>Gaurotes</i>	<i>cyanipennis</i>	.05	5689		<i>cobaltinus</i>	.08
5215	<i>Strangalia</i>	<i>luteicornis</i>	.05	5690	<i>Typophorus</i>	<i>tricolor</i>	.08
5216		<i>bicolor</i>	.08	5693	<i>Chaleoparia</i>	<i>globosa</i>	.05
5224	<i>Typocerus</i>	<i>sinuatus</i>	.08	5714	<i>Colaspis</i>	<i>favosa</i>	.08
5241	<i>Leptura</i>	<i>capitata</i>	.15	5715		<i>brunnea</i>	.05
5243		<i>haematites</i>	.08	5716		<i>praetexta</i>	.05
5249		<i>subargentata</i>	.10	5719		<i>tristis</i>	.03
5258		<i>sexmaculata</i>	.50	5737	<i>Chrysomela</i>	<i>elegans</i>	.03
5266		<i>canadensis</i>	.07	5739		<i>multiguttis</i>	.05
5270		<i>vagans</i>	.05	5741		<i>multipunctata</i>	.08
5280		<i>proxima</i>	.08	5755	<i>Gastrophysa</i>	<i>cyanea</i>	.08
5288		<i>pedalis</i>	.10	5759	<i>Prasocuris</i>	<i>varipes</i>	.08
5289		<i>vittata</i>	.05	5763	<i>Phyllosecta</i>	<i>vulgatissima</i>	.03
5290		<i>pubera</i>	.08	5767	<i>Plagiodera</i>	<i>tremulae</i>	.08
5291		<i>sphaericollis</i>	.05	5768		<i>scripta</i>	.05
5297		<i>mutabilis</i>	.08	5803	<i>Diabrotica</i>	<i>soror</i>	.08
5375	<i>Graphisurus</i>	<i>pusillus</i>	.15	5816	<i>Galeruca</i>	<i>conferta</i>	.08
5385	<i>Pogonocherus</i>	<i>penicellatus</i>	.10	5818		<i>cavicornis</i>	.04
5409	<i>Saperda</i>	<i>obliqua</i>	.25	5846	<i>Oedionychis</i>	<i>opacior</i>	.15
5446	<i>Tetraopes</i>	<i>maucus</i>	.10	5849		<i>octomaculata</i>	.15
5448		<i>femoralis</i>	.08	5903	<i>Orchestris</i>	<i>Zimmermanni</i>	.08
5514	<i>Donacia</i>	<i>piscatrix</i>	.08	5904		<i>vittata</i>	.03
5519		<i>proxima</i>	.15	5927	<i>Crepidodera</i>	<i>rufipes</i>	.05
5521		<i>subtilis</i>	.05	5928		<i>Helxines</i>	.03
5526		<i>pyritosa</i>	.10		<i>Chaetocnema</i>	<i>n. sp.</i>	.08
5532		<i>Kirbyi</i>	.05	5953	<i>Blepharida</i>	<i>rhois</i>	.07
5535	<i>Orsodachna</i>	<i>Childreni</i>	.03	5954	<i>Stenispis</i>	<i>metallica</i>	.10
5542	<i>Syneta</i>	<i>ferruginosa</i>	.10	5961	<i>Odontota</i>	<i>rosea</i>	.08
5564	<i>Saxinis</i>	<i>saucia</i>	.10	5962a		<i>inaequalis</i>	.03
5575	<i>Chlamys</i>	<i>plicata</i>	.08	5966	<i>Microrhopala</i>	<i>vittata</i>	.08
5578	<i>Exema</i>	<i>conspersa</i>	.05	5974	<i>Porphyraspis</i>	<i>cyanea</i>	.08

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5985	<i>Coptocycla aurichalcea</i>	.05	6459	<i>Notoxus bifasciatus</i>	.05
5987	<i>guttata</i>	.05	6462	<i>bicolor</i>	.05
5990	<i>clavata</i>	.05	6167	<i>Tomoderus constrictus</i>	.05
6024	<i>Emmenastus longulus</i>	.15	6471	<i>Anthicus nitidulus</i>	.07
6034	<i>Zopherus Haldemanni</i>	.25	6474	<i>formicarius</i>	.07
6045	<i>Phelopsis obcordata</i>	.10	6477	<i>californicus</i>	.07
6068	<i>Asida opaca</i>	.15	6493	<i>cervinus</i>	.05
6070	<i>polita</i>	.15	6501	<i>spretus</i>	.05
6071	<i>sordida</i>	.10	6595	<i>fulvipes</i> var.	.03
6072	<i>aegrota</i> *	.08	6544	<i>Emmesa connectens</i>	.20
6102	<i>Coelus ciliatus</i>	.05	6568	<i>Eustrophus bicolor</i>	.05
6127	<i>Eleodes obscura</i>	.15	6570	<i>tomenosus</i>	.08
6129	<i>suturalis</i>	.10	6579	<i>Anaspis atra</i>	.03
6131	<i>tricostata</i>	.10	6582	<i>flavipennis</i>	.03
6135	<i>humeralis</i>	.05	6583	<i>rufa</i>	.02
6137	<i>extricata</i>	.10	6593	<i>Mordella melaena</i>	.05
6139	<i>armata</i>	.15	6594	<i>scutellaris</i>	.05
6149	<i>nigrina</i>	.10	6596	<i>inflammata</i>	.20
6150	<i>hispidabris</i>	.10	6598	<i>marginata</i>	.03
6154	<i>dentipes</i>	.10	6621	<i>Mordellistena scapularis</i>	.08
6156	<i>pilosa</i>	.20	6642	<i>pustulata</i>	.05
6164	<i>parvicollis</i>	.10	6651	<i>pubescens</i>	.05
6165	<i>cordata</i>	.05	6667	<i>Macrostagon dimidiata</i>	.08
	<i>veterator Horn.</i>	.10	6681	<i>Myodites fasciatus</i>	.08
6184	<i>Argoporis sulcipennis</i>	.15	6703	<i>Henous confertus</i>	.10
6201	<i>Iphthimus opacus</i>	.08	6713	<i>Macrobasis albida</i>	.10
6206	<i>Coelocnemis punctata</i>	.15	6721	<i>immaculata</i>	.10
6208	<i>Upis ceramboides</i>	.08	6722	<i>segmentata</i>	.08
6213	<i>Cibdelis Blaeschkii</i>	.10	6738	<i>Epicauta maculata</i>	.08
6231	<i>Opatrinus notus</i>	.05	6769	<i>Cantharis vulnerata</i>	.10
6244	<i>Blapstinus pratensis</i>	.05	6773	<i>lugubris</i>	.10
6248	<i>moestus</i>	.02	6787	<i>stygia</i>	.08
6249	<i>pulverulentus</i>	.05	6804	<i>Zonitis flavida</i>	.10
6251	<i>metalliens</i>	.03	6810	<i>Nemognatha apicalis</i>	.08
6267	<i>Dioedus punctatus</i>	.05	6826	<i>vittigera</i>	.08
6286	<i>Uloa pumctulata</i>	.08	6834	<i>Cephalon lepturides</i>	.03
6288	<i>Eutochia crenata</i>	.08		<i>ungulare Lec.</i>	.20
6291	<i>Paratenetus punctatus</i>	.08	6848	<i>Oxacis cana</i>	.10
6292	<i>fuscus</i>	.03	6861	<i>Asclera ruficollis</i>	.10
6312	<i>Platydema excavatum</i>	.05	6862	<i>puncticollis</i>	.10
6316	<i>ruficorne</i>	.03	6867	<i>Mycterus scaber</i>	.05
6317	<i>flavipes</i>	.05	6880	<i>Salpingus virescens</i>	.10
6318	<i>janus</i>	.08	6895	<i>Sitones lepidus</i>	.05
6325	<i>subcostatum</i>	.05	6900	<i>Pandelecius hilaris</i>	.03
6329	<i>Hypophloeus parallelus</i>	.03		<i>Otiobrychus ligneus</i>	.03
6332	<i>Pentaphyllus pallidus</i>	.05	6932	<i>Aphrastus taeniatus</i>	.05
6336	<i>Boletophagus depressus</i>	.15	6935	<i>Phyxelis rigidus</i>	.05
6338	<i>Rhipidandrus paradoxus</i>	.05	6969	<i>Listroderes latiusculus</i>	.05
6365	<i>Meracantha contracta</i>	.05	6972	<i>porcellus</i>	.05
6381	<i>Hymenorus densus</i>	.05	6975	<i>sparsus</i>	.05
6382	<i>punctatissimus</i>	.08	6983	<i>Eudiagogus pulcher</i>	.03
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6408	<i>Arthromaera aenea</i>	.05	7077	<i>Attelabus analis</i>	.03
6421	<i>Schizotus cervicalis</i>	.20	7078	<i>bipustulatus</i>	.05
6423	<i>Dendroides concolor</i>	.10	7080	<i>rhois</i>	.03
6445	<i>Cordylura collaris</i>	.05	7084	<i>Rhyuchites bicolor</i>	.03
6450	<i>Notoxus anchora</i>	.05	7090	<i>Eugnaumptus angustatus</i>	.02
6454	<i>serratus</i>	.07	7101	<i>Magdalis olyra</i>	.05
6455	<i>monodon</i>	.03	7113	<i>Anthonomus crataegi</i>	.05

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ALSO for sale, Insect-pins of Reichl's make: Nos. 2 and 3, \$1.20 per M. Nos. 4, 5 and 6, \$1.10 per M; new, plain, double, wooden Insect-boxes, 4x10x13 inches in outside measurement, .45

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ENTOMOLOGISTS' DIRECTORY.

This list will appear regularly in PSYCHE ADVERTISER. Every student or collector of insects is asked to send his address and a statement of the department to which his especial attention is given, to the undersigned, for insertion in this list. No name will be published except with permission or by request of the person named. The names will be inserted in the order in which they are received.

As it is desirable to have at one place a store of information in regard to entomologists, the undersigned would be pleased to receive autobiographical notes from them, and complete lists of their writings upon entomology. Notice of all changes of address are requested.

From the information thus obtained, which will be kept by the Cambridge Entomological Club, the undersigned will answer, as far as possible, all letters of inquiry, which enclose a stamp for return postage.

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1. Austin, E. P., Cambridge, Mass. *Coleoptera*.
2. Mann, B. Pickman, Cambridge, Mass. *Economic Entomology*.
3. Scudder, S. H., 156 Brattle St., Cambridge, Mass. *Fossil Insects, Orthoptera and Hesperidae of the world, Butterflies of the U. S.*
4. Schwarz, E. A., Detroit Scientific Association, Detroit, Mich. *Coleoptera*.
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11. Hinkley, Holmes, 1 Fairfield St., Boston, Mass. *Lepidoptera*.
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NOTICE TO SUBSCRIBERS.

The List of Works to be loaned from the Library of the Club to the subscribers to PSYCHE will be continued in the next ADVERTISER.

1 28 10.
SONIAN DEPOSIT.

Please to read this page.

PSYCHE ADVERTISER.

DEAR SIR:

Since it is well recognized that labors for the advancement of science are rarely remunerative to the laborers, though benefiting society, persons who have the motive to undertake such labors expect from society at large that pecuniary assistance which is needed to give effect to their intentions.

The Cambridge Entomological Club, for which the undersigned are authorized to speak, is engaged in the prosecution of a work of recognized value, for the expense of which its slender resources are not sufficient.

This Club, having its headquarters in Cambridge, Massachusetts, but its membership distributed from Maine to California, has published, during nearly two years, a monthly periodical entitled PSYCHE. This magazine has contained, besides the class of matter usually found in an entomological publication, a current Bibliographical Record of all writings upon Entomology published in North America, and of all foreign writings upon North American Entomology, from the beginning of the year 1874. It is upon the value of this Record that the Club bases its claim for assistance from all persons disposed to render aid. Indeed, the magazine was started principally as a channel for the publication of this Record, which has occupied about 60 out of the 136 pages already issued.

Past experience shows that an annual income of nearly one hundred and fifty dollars more than can be expected from ordinary subscriptions is needed to save the Club from exceeding its resources in the publication of this magazine. It has therefore been determined to establish a publication fund of at least two thousand dollars, the income of which is to be devoted solely to the publication of this magazine with its Record. Should this fund be secured, American Entomologists will have the satisfaction of possessing a current analysis of the literature of their own department *more carefully prepared and more promptly issued than any which the students of other departments possess.* The character of the analysis will readily be seen from the contents of the accompanying specimen. At the end of each volume of PSYCHE a classified index to the Record will be given.

The Committee therefore earnestly appeal to you for contributions to this fund, assuring you that while the largest generosity will be fully appreciated, any small sum will be gratefully received.

SAMUEL H. SCUDDER,
E. P. AUSTIN,
EDWARD BURGESS,
GEO. DIMMOCK.

Contributions may be sent to B. P. MANN, Cambridge, Mass.; acknowledgements will be published upon the cover of PSYCHE.

☞ Any person who contributes toward this fund, before the 1st day of July, 1876, the sum of fifty dollars, will be enrolled as a PATRON of the Club, and will receive all its publications during life.

You are particularly requested to read this page with attention.

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PSYCHE ADVERTISER.

March & April, 20, 24

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19. Harvey, Leon F., M. D., Corresponding Secretary, Buffalo Society of Natural Sciences, 19 West Tupper St., Buffalo, N. Y. *Lepidoptera.*
20. Packard, A. S., Jr., Director, Peabody Academy of Science, Salem, Mass. *General and Economic Entomology. Lepidoptera and Hymenoptera.*
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22. Riley, Chas. V., State Entomologist, St. Louis, Mo. *General and Economic Entomology, and more particularly Galls and Gall-insects.*
23. Hubbard, H. G., 735 Woodbridge St., West, Detroit, Mich. *Coleoptera.*

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(Continued from the June Advertiser.)

38. GROTE, A. R. Descriptions and Notes on the Noctuidæ. [Rec., No. 174.] 1874. p. 239-245. .15—.06
39. ———Notes on American Lepidoptera with Descriptions of Twenty-one New Species. Determination of the Species of Moths figured in the "Natural History of New York." On allied Species of Noctuidæ inhabiting Europe and North America. [Rec., Nos. 210-211, 215.] 1874. p. 145-168; pg. 7. 1.00—.08
40. ———Remarks on North American Noctuidæ with descriptions of New Species. [Rec., No. 326.] 1874. pg. 10. .15—.06
41. ———Supplement to the List of North American Noctuidæ. Check List of North American Sphinges, North American Pyralides. [Rec., Nos. 217-219.] 1875. p. 209-232. 1.50—.07
42. ———Descriptions of North American Moths. Note on Papilio Gundlachianus. [Rec., Nos. 330-331.] 1875. p. 113-118. .15—.06
43. ———Check List of the Noctuidæ of America, North of Mexico. I. Bombyciæ and Noctuelitæ (Nonfasciatae). [Rec., No. 345.] 1875. pg. 28, with a photographic plate of ten figures. 1.00—.08
44. AUSTIN, E. P. & LE'ONTE, J. L. Catalogue of the Coleoptera of Mt. Washington, N. H.; with Descriptions of New Species. [Rec., No. 175.] 1874. p. 265-276. .20—.06

(To be continued.)

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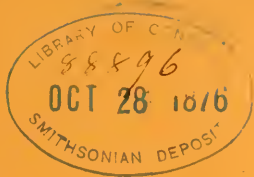
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A number of names are left over and will be inserted in the next issue.

Especial acknowledgements are due to Mr. W. V. Andrews, and to Dr. S. V. Summers, for lists of their entomological writings.

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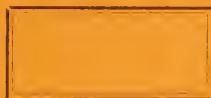
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Past experience shows that an annual income of nearly one hundred and fifty dollars more than can be expected from ordinary subscriptions is needed to save the Club from exceeding its resources in the publication of this magazine. It has therefore been determined to establish a publication fund of at least two thousand dollars, the income of which is to be devoted solely to the publication of this magazine with its Record. Should this fund be secured, American Entomologists will have the satisfaction of possessing a current analysis of the literature of their own department *more carefully prepared and more promptly issued than any which the students of other departments possess.* At the end of each volume of *PSYCHE* a classified index to the Record will be given; this index, in itself, will constitute a treatise upon entomology more instructive and comprehensive, in a small space, than is obtainable elsewhere.

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PSYCHE ADVERTISER.

Sept., Oct., & Nov.,

1876.

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