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The Canadian Entomologist.

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AN EXPERIMENT WITH A STINGING LARVA.

BY MISS MARY E. MURTFELDT, KIRKWOOD, ST. LOUIS, MO.

There is not in the whole group of caterpillars a more innocent and harmless-looking object than the larva of *Lagoa opercularis*—especially just previous to the fourth moult. As it reposes curled upon a leaf, with its long, wavy, white silken hairs the sport of the slightest zephyr, it resembles nothing so much as a tuft of the finest white cotton, and seems almost to invite the touch of caressing fingers. But let the unwary beware of meddling with that treacherous softness; they will find it a veritable “wolf in sheep’s clothing!”

I had upon several occasions tested upon my hands the prickles of various stinging larvæ, such as *Empretia stimulea*, *Callochloa viridis*, *Saturnia io* and *S. maia*, &c., without incurring more than a temporary smart, which, if severe, could be allayed by alkaline applications, as ammonia or a solution of soda. This being the case, I did not hesitate to undertake a similar experience with the larva of *Lagoa*, and one evening suffered the larva to be struck sharply against the little finger of my right hand, between the first and second joints. I felt the prickles pierce the skin, but for some time the irritation was but slight. As the evening advanced, however, the pain became severe and was accompanied by considerable inflammation and swelling of the finger. I then thought it advisable to apply some remedy, and tried first soda and then ammonia, but without the expected relief. I next resorted to arnica and camphor and finally to acids, but all in vain; the burning pain—exactly as though I held my finger against glowing coals—seemed rather to increase than diminish, and I felt that for once I was indeed a martyr to the desire (not my own, by the way!) for experimental knowledge. A night of sleepless suffering followed, and it was not until near morning that the pain subsided. No ill consequences followed except the peeling of the skin from

the part affected, but I have since experienced no inclination to cultivate a close acquaintance with this apparently innocent, but really formidable caterpillar.

After the last larval moult, as most Lepidopterists are aware, the larva of *Lagoa opercularis* presents an entirely different appearance from the one above described. The color is no longer white, but a dark gray, with fulvous or ochreous shadings on the dorsum and sides; the long hairs are replaced by a short and dense coating, resembling long-piled velvet, in which the stinging spines are more concealed than they were under the previous hairy coat. This larva is anomalous in one respect. It has, in addition to the four pairs of well-developed abdominal prolegs, two pairs of tubercles on joints 5 and 10, which are not only used as locomotive organs, but are actually provided with the rudiments of hooks.

THE PREPARATORY STAGES OF LYCAENA COMYNTAS.

BY W. H. EDWARDS, COALBURGH, W. VA.

Last year I observed a female *comyntas* depositing eggs upon *Desmodium Marilandicum* Gray, a common and troublesome weed in this region, called "shoestring" by the country people, from its toughness of stem, and bearing a sticking burr in the fall. On 9th July, 1876, I set a female in a bag over a stem of this plant, and several eggs were laid on the tender terminal leaves. Mr. Mead noticed that this butterfly laid also on red clover, and a number of eggs were obtained by the same process, on the 13th July, deposited on the young leaves and on the flowrets of the head. On the 12th, the eggs on *Desmodium* hatched; 15th, one larva passed 1st moult; 18th, the 2nd moult; 21st, the 3rd moult; on or about 26th, the 4th moult; made chrysalis 31st, and the butterfly emerged August 9th. I raised but one of this brood to maturity, but ten on the clover. The single larva was green in all its stages, and its chrysalis was green, but the larvæ on clover were reddish or red throughout, and their chrysalids were sordid white. Whether this difference was owing to the food plants further experiment must determine. The larvæ at first were such minute

objects as to be almost invisible, particularly on *Desmodium*, as both larva and plant were of nearly the same shade of green. On the clover they escaped sight down among the flowrets. Only by keeping them in small wine glasses could I have saved them. On clover, the tender leaves were rapidly eaten by the very young larvæ, a single larva eating out two or three furrows the width of its body, and side by side. As they became larger they seemed to feed on the calyces of the flowrets exclusively, curving themselves to the surface of the clover head, or burrowing into it. On *Desmodium*, as there were no flowers in bloom, only the tender leaves and immature flower buds were eaten. When about to change to chrysalis the larva rested motionless for several hours, usually on the upper surface of a leaf, the green shade becoming gradually yellowish, then red, rusty brown, and a loop was thrown over the body almost mid-length. When the change had occurred, the shape and appearance of the green chrysalis was so like that of the larva as to require some inspection to discover whether it was a chrysalis or no, lying flat on the leaf, the upper side rounded and of almost exactly the larval shape. To make the resemblance still closer, the chrysalis is as hairy as is the larva. I believe that wherever *comyntas* is found, two sizes of the butterfly appear, one of scarcely more than half the superficial area of the other. I do not know of any other species in which this peculiarity is regularly found. Both forms were among the butterflies from these chrysalids. The species is also dimorphic in the female, most of this sex here being black, the others blue with broad black margins. This phenomenon is similar to that of *Pseud-argiolus* in its winter form *violacca*. At Coalburgh, there must be several successive broods of *comyntas* during the season, as fresh individuals are seen every month from April to September.

I subjoin a description of the several stages :

EGG ; round, flattened, depressed at top, covered with a frost work of interlaced points ; in color delicate green.

YOUNG LARVA ; length .05 inch ; shape rather cylindrical ; color yellowish, excepting a few white tuberculated points on dorsum, arranged in two longitudinal rows ; a similar row at base of body ; from each of all these points arises a long, curved, white hair ; head nearly as broad as second segment, black, shining, retractile.

Following the larva which fed on *Desmodium* :

After FIRST MOULT ; length .08 inch ; onisciform, flattened, the dorsum flat at top, sloping towards base of body ; color greenish ; the

whole surface irregularly dotted with black ; and from most, but not all, of the dots come white hairs, those on dorsum curved back, those nearer base curved partly downward and partly back ; head obovate, long and narrow, smaller in proportion to 2nd segment than at last stage, and partly concealed, even when active, in second segment ; color black.

After SECOND MOULT ; length .12 inch ; broader and flatter than before ; on each side of the narrow dorsal ridge a slightly raised edge, caused by the tubercles ; at the base of the body a fold, and the hairs from this and the ridge are longer than elsewhere ; whole surface finely pilose ; color green, but with a rusty tint caused by the numerous reddish points ; above the fold these take the form of a line or slight stripe ; at this stage the division of the segments becomes distinctly apparent.

After THIRD MOULT ; length .20 inch ; color clear apple green, the crests of the dorsal ridge, and also the fold at base, whitish ; on either side of the white line thus caused at the fold, on several of the segments after the middle, but not on the two last, is a reddish line ; there is also an indistinct double oblique line of pale green on side of each segment ; head as at last stage.

After FOURTH MOULT ; length .36 inch, greatest breadth .10 inch ; onisciform, high anteriorly, the back rounded and sloping to last segment, which is much flattened ; both ends (when the head is retracted) rounded equally, or nearly so ; each segment rounded dorsally ; the whole upper surface covered with fine white hairs ; color emerald green with very many yellow tuberculous points ; along middle of dorsum a deep green stripe in a depression ; at base a whitish line edged with vinous on three or four segments after the middle ; under side and legs pale green ; head .025 inch in breadth, longer than broad, obovate, shining black, seen through the 2nd segment when half protracted.

CHRYsalis ; length .26 inch ; greatest breadth .10 ; shaped much like the mature larva, rounded at each end, tapering on the sides somewhat from segments 5 and 6 to head, roundly carinated dorsally, flattened on under side ; the mesonotum but slightly prominent ; color emerald green, except the abdomen both above and below, which is yellowish green ; a dark green medio-dorsal stripe from end to end, and on either side of this a row of small round black spots, nearly the whole length ; much covered with fine white hairs ; on the top and sides of the anterior segments the hairs are conspicuously longer, and are arranged in tufts, and similar hairs form a connected fringe quite round the abdomen.

The larvæ which fed on clover differed in coloration as follows: color russet varying towards vinous, interspersed with green; at third moult some were pale green dorsally, the white being caused by the tubercles, the sides vinous; the dorsal stripe vinous, and the oblique lines vinous; others had the back as well as sides vinous, and this variation and character followed to maturity. The chrysalids of these larvae were sordid white on the whole upper surface and lower side of abdomen, the former specked with brown; the medio-dorsal stripe was brown, as were also the dots; under side of thorax and of head case, and the whole of the wing cases apple green.

NOTES ON CERTAIN SPECIES OF MOTHS.

BY A. R. GROTE,

Director of the Museum, Buffalo Society Natural Sciences.

Phyprosopus callitrichoides Grote.

Prof. Zeller published this species subsequently under the generic name of *Sudariophora*, which I, afterwards, adopted in lieu of my own. Prof. Zeller, however, now states that the generic character upon which he founded the name *Sudariophora* does not exist in reality. Accordingly, I now revert to the earlier name for the genus. The insect was erroneously identified as *Doryodes acutaria* by Mr. Walker, and referred by him to the Pyralidæ in the British Museum lists, where it is recorded as *Doryodes acutalis*. It does not seem to have been separately named before I described it. Dr. Packard discusses the position of the species in his work on the *Geometræ*, p. 33, and finds that "the palpi are truly noctuid-form, as well as the shape of the wings." In criticising Prof. Zeller's classification of the moth, Dr. Packard omits to state that I had described it previously under the Noctuidæ. Consult Zeller, Beitr., 328-9.

Caterva catenaria (Drury).

The new generic name is proposed since our species is generically distinct from the European forms referred to *Zerene* Treits., a genus which,

according to Stephens, is equivalent to *Bupalus* of Leach. *C. catenaria* occurs in the autumn in various localities in New York State and Pennsylvania, according to our observations. It flies sluggishly in the day time, and collects in numbers about clumps of bushes in fields.

Epimecis hortaria (Fabr.).

In a list of N. Am. Geometrae which I have in MSS., this name is retained instead of *Bronchelia hortaria* Guen. The name is proposed in the Verzeichniss for this and another species, the European *umbraria*, which, however, belongs to *Cymatophora* (*Boarmia*), leaving the designation for *hortaria*.

Homopyralis discalis, n. s.

♂ ♀. This is a slightly larger form than *tactus*, and instead of the even brown color of that species, the wings are olivaceous and paler, contrasting with the lines and shadings, which are disposed as in its ally. The pale ground color appears on the extra basal space; the black orbicular is evident. Pale cuneiform spots accompany the t. p. line externally, as well as the black dotted terminal line. There is on the cell of fore wings, and more evidently on hind wings, a reddish shade beyond the stigmata. Beneath paler than in *tactus*. Exp. 26-28 mil. New York State (O. Meske; Geo. W. Peck).

Conchylis argentifurcatana, n. s.

Allied to *Ridingsana*. Fore wings olive brown with the internal margin silver striped. From the base to the middle of the wing a silver stripe runs centrally, terminating pointedly. This median stripe is joined to the costa at basal third and coalesces here with the oblique costal stripe, which runs downwardly and outwardly. The lower edge of the median stripe is produced downwardly somewhat squarely before its outer extremity. An irregular silver patch above anal angle. A minute silver dot beyond the first costal stripe. The costa at base is concolorous, not silvery. A sub-apical trigonate patch and a terminal apical discontinued silver band. Hind wings and abdomen fuscous, with paler fringes. This species differs from *Ridingsana* by the shape of the median stripe, which bulges downwardly at about the middle of the wing and sends a branch upwards to costa, coalescing with the oblique costal stripe. Two specimens, from W. Saunders, London, Ont.; taken at Port Stanley, Ont. Expanse 1.55 inch.

Conchylis hipecana, n. s.

Allied to *argentifurcatana*. Ochreous brown; the silver markings rather distinctly outlined in black. Internal margin striped with silver. Before anal angle a silver dot. Median stripe as in *argentifurcatana*, while the inferior bulged prolongation is wider, preceded by a notch of dark scales. An irregular silver patch above anal angle. Costa at base with a silver stripe terminating before the usual oblique costal stripe. A silver spot between this latter and the usual sub-apical trigonate patch. A terminal apical discontinuous silver band. Hind wings and abdomen pale fuscous with whitish fringes. This species differs by the costa being silvery from the base outwardly and by the median stripe not being joined to the first oblique costal stripe by a furcation. One specimen, from W. Saunders, London, Ont.; taken at Port Stanley, Ont. Expanse 1.55 inch.

Eustrotia caduca, n. s.

Among the species of Noctuidæ which I have recently been able to examine is a species of *Eustrotia* reared by Prof. Kellicott from larvæ feeding on the Yellow Pond Lily (*Nuphar advena*), and which I propose to call *Eustrotia caduca*. At first sight it looks like a very large *E. apicosa* (= *nigritula* Guen.), but the differences in ornamentation are at once perceivable on comparison. The colors and their disposition are similar. From the base to the t. p. line the wing is purplish brown, deepening outwardly in tone. The t. a. line is waved. Both stigmata are perceivable, the reniform rather large and quadrate, not oblique as in *apicosa*; they are leather brown in color, as is the terminal portion of the wing beyond the t. p. line. The shaded subterminal line is indented opposite the cell. The fringes are blackish, checkered with leather brown. The hind wings are fuscous, shaded with brown, and with double, faint mesial lines. Head and thorax leather brown. Beneath brighter brown with black discal mark on hind wings, double lines, the disc of the fore wings blackish. The moth expands 28 m. m. Hab. Jackson Co., Michigan.

Selenis monotropa, n. s.

Two fresh specimens, similar in appearance, but evidently of opposite sex from the structure of the frenulum. The male has not the hind tarsi covered with thick scales; but the fore legs are thickly covered with blackish hair, concealing a pale tibial tufting. Wings brownish black with a broad gray costal margin to the fore wings, widening to the base

of the wing, where it attains internal margin, and spreading across the hind part of the thorax. It is darker shaded, somewhat brownish anteriorly. Collar dead black. The black lines are indicated on the gray costal margin. Orbicular a minute dot. Reniform strongly indicated, surrounded with the pale shading of costal margin. T. p. line continuous, reddish brown where it crosses the gray margin, and here angulate, black below and strongly marked, a little dentate. Subterminal line followed by an interrupted reddish brown shading. Terminal line black, festooned, followed by a pale thread-like line at base of fringes, which latter are blackish. The denticulate black t. p. line continued across hind wings, which agree with the primaries. Over the middle of the wings are two or three blackish shade lines representing the median shade and t. a. line. Beneath a little paler, with small discal marks, white centered. Feet dotted with white; abdomen blackish. Expanse 31 mil. Hab. Bastrop Co. (O. Meske).

This species seems to be allied to *Selenis lanipes* Guen., of unknown locality. It appears to differ decidedly in color, the continuous black transverse posterior line, and the absence of the multitude of parallel, denticulate, unequal violet gray, reddish and black lines, crossing the wings in *lanipes*. There is also the absence of any sexual character in the clothing of the hind tarsi, unless I have made a mistake in my determination, which, after re-examining both hind wings, I think is not the case. The "ligne coudeé" is, instead of being continuous and evenly strong as in *monotropa*, "indiquéé par des traits noirs plus épais, fondus inferieurement." in *lanipes*. Gueneé's figure represents a similarly sized but much higher colored insect than the one I describe, and I do not think there is any reasonable doubt that they are different species.

NOTES ON THE OCCURRENCE OF ARGYNNIS IDALIA DRURY.

BY H. H. LYMAN, MONTREAL, P. Q.

Mr. W. H. Edwards, in his article on *Argynnis myrina*, published on page 189 of Vol. vii, of the CANADIAN ENTOMOLOGIST, says that in all the species of butterflies which he has made observations on, except *Apatura clyton*, the females emerge as early as the males, and in the course

of the same article he mentions having "bred from the egg four of our larger species of *Argynnis*, viz., *diana*, *cybele*, *aphrodite* and *idalia*."

Does *A. idalia* occur in Mr. Edwards' neighborhood, and to what extent has he obtained the imagines from eggs? The only other reference by him in the CAN. ENT. to *A. idalia*, that I can find, is on page 151 of Vol. vii, where he states that Mr. G. M. Dodge had sent him several eggs of this species from Nebraska, and that he had succeeded in carrying a few of the larvæ through the winter and one past the fifth moult, but that this one *died before chrysalis*.

Though I do not presume to question the statements of so distinguished an Entomologist as Mr. Edwards, I thought that I would give my experience with regard to this butterfly, and I should like to know whether any one else has had a similar experience.

I may state that I have collected for eight successive summers on Cape Elizabeth, in the vicinity of Portland, Me., where this butterfly occurs every season, and though generally not common, is sometimes somewhat plentiful.

My experience has been that, though I might find a stray female almost as early as the males, the great majority of females did not appear for a week or ten days after the males. It is only within the last three years that I have kept an entomological diary and numbered my specimens, so that I cannot give any figures with regard to those taken or observed before 1873, but I remember noticing the fact previous to that date; however, this species was tolerably abundant during the past season (1875), and I can give some dates in support of what I say.

By referring to my journal for this year, I find that I took the first ♂ of the season on 20th July, three more on July 24th, on which day I also caught one ♀, and from July 20th to 31st I took altogether 10 ♂ and 1 ♀. Unfortunately the weather during the first half of August was very bad, almost every day being foggy or rainy, or both, so that I am unable to state when the females emerged.

On one partially fine day, Aug. 9th, I obtained another ♂, and during the last half of August worn females were obtainable, but they were too poor for cabinet specimens.

In 1874 this species was very scarce, and I only obtained two specimens, ♂ on July 28th, and a badly rubbed ♀ on Sept. 3rd.

In 1873 it was also scarce and I only took two ♂, one on July 16th and another on the 17th. Of course the cases of 1873 and '74 would

not prove anything, as the number taken was so small, although the last two dates are a good deal earlier than I ever remember to have seen a female, but I consider that the captures of the past season afford strong evidence in favor of the opinion that the males of this species appear at least a week or ten days before the females.

ANNUAL ADDRESS OF THE PRESIDENT OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO.

To the Members of the Entomological Society of Ontario :

GENTLEMEN,—In accordance with time-honored usage, it devolves upon your retiring President at the close of another year of the existence of our Society to offer you a few remarks bearing upon the objects and interests of our body, or of Entomology in general.

And first, gentlemen, I desire to congratulate you on the continued prosperity of our Society and the increasing interest felt and manifested in the furtherance of the chief objects we as an organization have in view, viz., the diffusion of practical information in reference to the life history and habits of our insects, so that we may be able to distinguish our friends from our foes, and thus be placed in a position to apply intelligently such remedial measures for the check of insect ravages as experience may suggest to be most practical and effective.

During the past year circumstances have arisen which have brought our Society more prominently before our people than ever before, notably the fact of the accumulation of that grand collection of Canadian insects which we have prepared and forwarded to the Centennial Exhibition in Philadelphia. My esteemed predecessor, in his annual address last year in Toronto, referred to this proposed work, and expressed himself as confidently anticipating the active co-operation of our members in all sections of our country. The result has more than realized our fondest hopes; our members entered most heartily into the work, bringing together a collection of Canadian insects far surpassing anything ever before seen. The carrying out of the details of this work was entrusted last year to a special committee, consisting of Messrs. Bethune, Saunders and McMechan, and upon consultation it was resolved to accumulate all

the material for this collection at the Society's headquarters in London, and there make such selections from the insects sent as might seem desirable. All our members in London who had collections freely placed them entirely at the disposal of the committee, while many of those resident in other localities throughout the country expressed their readiness to contribute anything or everything in their power to fill up blanks in the desired series of specimens.

As is usual in such cases, the bulk of the work of arranging, classifying and labelling specimens fell upon a few individuals. It affords me much pleasure to have the opportunity of naming especially *one* who has labored most assiduously and has contributed more than any other person towards the success of this enterprise; I allude to my esteemed friend, Mr. Johnson Pettit, of Grimsby, who arranged the entire collection of Coleoptera and freely contributed from his own stores—the accumulation of years—a large proportion of the specimens. The extreme neatness and care manifested by him in the mounting and arrangement of the insects has been the admiration of all, and some idea of the accuracy of his determinations may be arrived at when I say that such authorities as Dr. Horn and Dr. LeConte, of Philadelphia, after a critical scrutiny of the whole series of Coleoptera, filling some twenty-seven cases in all, could only detect two or three errors, and these among the smallest and least conspicuous specimens; such results reflect great credit on the labors of our esteemed coadjutor. In the arrangement of the other departments, your President was ably aided by several gentlemen, notably Messrs. E. B. Reed, J. M. Denton and G. Geddes, of London; indeed, all our London members were ever ready to render all the assistance in their power.

The expenses necessarily attendant on this work have been considerable. The making and lining of suitable cases in which to display the insects, the printing of labels, &c., and the numberless outlays entailed by the transmission of specimens to and fro from all parts of the country, as well as many other incidentals which it is needless to enumerate here, combined, have involved a large outlay. This has been chiefly met by a special grant of five hundred dollars from the Government of Ontario, the remainder being drawn from the Society's resources.

To make the collection as perfect as possible, as far as accurate naming is concerned, the doubtful specimens in the orders most largely represented were submitted to the examination and correction of specialists. The entire collection of Lepidoptera was carefully gone over by Prof. A.

R. Grote, of Buffalo, who generously placed his services at the disposal of the Society for this purpose, and twice visited London in order to complete the work. Dr. Horn also kindly rendered all possible aid in the determination of such Coleoptera as were submitted to him, and to Dr. A. S. Packard we are indebted for naming some of the Geometridæ.

The collection arrived safely and in good condition in Philadelphia, where it at once attracted much attention. The whole display consisted of eighty-six glass cases, forty-five of which were filled with Lepidoptera, twenty-seven with Coleoptera, and the remaining fourteen occupied by the other orders, the whole arranged in a double row on a suitable stand *seventy-six* feet in length, in the Canadian Department in Agricultural Hall.

There were no other collections on exhibition in Philadelphia which would compare favorably with that sent by our Society. There was a very good one in the United States Government Building, from the Department of Agriculture in Washington, arranged by Prof. Townend Glover; this, however, consisted chiefly of Lepidoptera.

There was a small collection shown in the Canadian Department, adjoining that of our Society, consisting of four or five cases, containing Canadian insects representing the various orders; they came, I believe, from Montreal, but I did not succeed in finding the name of the party to whom they belonged. Through the neglect or carelessness of our Canadian Commission, neither this collection nor that of our own Society *are mentioned* in the official catalogue, do not appear to have been entered as belonging to any department of the exhibition, and hence were not examined at all by the Centennial judges. Had it been otherwise, we should no doubt have been honored with awards which, in the case of our Society, if we may judge from the laudatory comments of those best able to form an opinion, were well deserved.

In the Kansas State Building there was a collection from the State Board of Agriculture arranged by Prof. Snow, consisting of thirty cases, sixteen of Lepidoptera (seven of butterflies and nine of moths), five of Coleoptera, two Neuroptera, two Orthoptera, three Hymenoptera, one Diptera and one Hemiptera. These were very well set up, classified, and nearly all named, and were very creditable to Prof. Snow and the Board by whom they were sent. There was, nevertheless, one drawback to viewing them with any satisfaction; the dust was allowed to accumulate on the glasses to such an extent as to obscure the objects contained.

There was a collection from Brazil, shown in the Brazilian Department in the Main Building. This, we were told, was the work and property of a private gentleman residing in Rio Janeiro; it was arranged in thirty-five cases, thirty-one of which were Coleoptera and four Lepidoptera. This collection was very much mixed; there was no attempt made to name the insects, excepting to the extent of partially indicating the family names. Neither was there much effort towards a correct classification; they seemed to be partly arranged with regard to their natural relationships and partly with the view of display. Among the butterflies and moths there were some superb specimens whose brilliance attracted much attention. There were also some very beautiful and interesting things among the Coleoptera. The Curculionidæ were very brilliant and numerous in species, with forms greatly varied; the Cerambycidæ were also remarkable, handsome, and largely represented, some of them of great size. We noticed one enormous *Prionus* fully six inches long; the *Cetoniæ* were also very beautiful. Some of the Buprestidæ were wonderfully brilliant with metallic shadings, and the Chrysomelidæ very numerous and some of them very charming, the Cassidæ being largely represented. Among the Scarabeidæ there were some enormous specimens, among others, species of *Copris* with remarkable horns, and some brilliant species of *Onthophagus*; there were also a number of very handsome *Elaters*. One of the rarities in this collection was a fine example of *Hypsaphalus armatus*, an extremely rare insect about two inches in length, and of which it is said there are only two or three known specimens in collections. The more brilliant Brazilian insects, especially the Coleoptera, are largely employed by the inhabitants of that country in the ornamentation of jewelry and other fancy articles, often associated in the latter case with the feathers from their brilliant plumaged birds.

In the Department of Queensland there was a large case, filled chiefly with Lepidoptera in a fine state of preservation, embracing many very beautiful and strange looking things; almost the only familiar objects among them were specimens of *Danais archippus*. In this instance, also, none of the specimens were named, which detracted greatly from the interest which would otherwise have attached to them. We learned that this collection had been sold for \$150 to Mrs. Bridgman, of New York, a lady who, we believe, takes a deep interest in Entomology and who has a very large and handsome collection of Lepidoptera.

The Orange Free State of South Africa exhibited two cases of insects,

among which there was a curious admixture of millipedes, scorpions and spiders, arranged in a semi-ornamental manner. One case contained chiefly Coleoptera, with a few Hymenoptera, Hemiptera and Orthoptera. Among the Coleoptera there were some curious and beautiful forms, especially among the Cetonidae and Cerambycidae; also some handsome Scarabeans, Chrysomelans and Curculios. The second case was filled mainly with butterflies, among which there were a few very handsome ones. That cosmopolitan species, "the painted lady," *Cynthia cardui*, was represented by several specimens; there was also a *Sphinx* closely resembling the death-head moth of Europe, and a *Utethesia* very like our *bella*. Besides these there were a number of very curious and handsome moths, with a few Orthoptera and Neuroptera. No attempt was made in the way of naming anything in this collection, nor any effort at classification.

An American gentleman, whose name I did not learn, had a very curious exhibit of insects in Agricultural Hall, of a purely ornamental character, in three cases. One was a circular arrangement, and was built up chiefly with butterflies and moths; the other two represented public buildings and were constructed of beetles; the specimens were immensely numerous and well preserved; the whole arrangement indicating great ingenuity and perseverance on the part of the collector.

India had a very fine exhibit of silks, raw and manufactured, with the insects and cocoons from which they were obtained. The Tusseh silk-worm moth, *Antherae paphia*, is very handsome, not unlike our *polyphemus*; the cocoon is egg-shaped, and yields a very strong looking silk. The *Bombyx Huttonii*, or wild silk-worm moth, is also very pretty; in form it resembles *B. mori*, but its wings are beautifully marked and tipped with brown.

It was very gratifying to observe the prominence given to the study of Natural History in the Educational Departments of many of the nations thus represented at the Centennial. Nearly all of them had small collections illustrating the course of teaching in this branch of study, and in nearly every instance Entomology occupied a prominent position. In the model schools of Sweden and Belgium this was very noticeable; also in the Russian exhibit, where there were cases of insects of all orders, including in many instances the blown larvae very neatly set up. In the same department in the Japan exhibit there were similar cases fairly classified, illustrating the various orders. The Chinese make use of

insects, too, but with them they are used as medicines; among their *materia medica* collections we observed dried caterpillars, the empty pupa cases of a species of *Cicada*, and other similar substances, all extolled as possessing rare medical virtues.

The bringing together of such an immense number of agricultural productions as are now on exhibition in Philadelphia, including almost every variety of grain, peas, beans and other useful productions on the face of the globe, affords a favorable opportunity for the introduction of any insect pests which may infest these articles in the country of their growth; these, if introduced and acclimatized, may attack similar or related products in this country, unless precautions are taken against their dissemination, and thus we may have new foes to fight which may be very difficult to contend with. The American Centennial Commission, who do not seem to have overlooked anything, have, with wise foresight, appointed a special Commission of eminent Entomologists to report on the insects introduced along with the products exhibited. This report will be looked forward to with much interest by agriculturists as well as Entomologists.

The Agricultural Building, in which our insects were shown, was well supplied with skylights, which admitted a flood of light on everything below. Exposure to this brilliant light for so many months has had a damaging effect on the colors of some of our Lepidoptera, the moths being much more faded than the butterflies; this fading is especially noticeable in insects having any red colors on their wings, such as the Catocalas and Arctians; many of these, however, can be replaced without much difficulty.

Suitable arrangements have been made for the careful packing and re-shipping of the insects at the close of the Exhibition, when they will be forwarded to the Society's rooms in London, Ont. Here it is proposed to keep the collection as far as possible undisturbed, where it will serve a good purpose as a collection of reference for collectors to name their specimens from. Mr. Pettit has kindly consented to allow all that he has contributed to remain in the Society's rooms, and all the London members will follow his example. Mr. Wm. Couper, of Montreal, has generously donated all he has sent to the Society, and I doubt not that most of our other friends in Montreal and elsewhere, who have contributed to the collection, will allow such of their insects as are not represented in our cabinets in London, to remain at least for a time, when no doubt most of them could be replaced. The advantages which will result to our

Society from the possession of a collection so well worked up and so correctly named, can scarcely be over estimated, affording as it will conveniences to collectors for naming specimens such as we have never had before. If for no other reason, we shall, in the possession of these advantages, always have cause to remember with pleasure the hundredth anniversary of American independence.

The continuance of the organ of our Society, the CANADIAN ENTOMOLOGIST, has also contributed greatly to the maintenance of the interest felt in our Society. During the past year important matters have been discussed in its pages, and a mass of new facts, throwing light on the habits and life history of many of our insects, placed before our readers. Much space has also been given to the important department of descriptive Entomology. Indeed, I scarcely think we should be deemed presumptuous in saying that our little journal is an important bond which does much to bind together the brotherhood of Entomologists throughout America.

The recent action of American Entomologists on the subject of Entomological nomenclature claims more than a passing notice. At the meetings of the Entomological Club of the American Association for the Advancement of Science, held last month in Buffalo, N. Y., this important subject was discussed and conclusions reached in reference to it which, I hope, will greatly tend to the stability of our nomenclature, the great end and aim which all parties claim to have in view. Amidst the conflicting opinions held by leading Entomologists on this subject, it was scarcely to be expected that entire unanimity could be secured; but it was most gratifying to notice the conciliatory spirit manifested by all, and the desire apparently as far as possible, to meet each other's views. A series of resolutions touching on important points was presented by the committee named last year to report on this subject, and on some of these they were unanimous, while on others there was a divided opinion. Those rules which were unánimously adopted will, it is understood, be strictly carried out by all who were present, while those on which there was expressed a divided opinion will, in the meantime, be left to be acted on or not, as the individual choice may dictate. Although this does not leave the subject in as satisfactory a state as entire unanimity would have done, still it was felt that by the action taken very much had been done towards settling some of the disturbing elements which interfere with the fixity of nomenclature. A report of these important meetings will be found in the

ENTOMOLOGIST; we commend them to the careful perusal of our readers. Our own Society was well represented in this gathering by the presence of the Rev. C. J. S. Bethune, M. A., E. Baynes Reed and your President.

I shall not attempt, gentlemen, to trespass longer on your time and patience. Thanking you for your kind partiality in electing me to fill so important an office among you,

I have the honor to be very sincerely yours,

WM. SAUNDERS.

London, September, 1876.

TINEINA.

BY V. T. CHAMBERS, COVINGTON, KY.

LITHARIAPTERYX, *gen nov.*

L. abroniæella. *N. sp.* (Or, as it may be popularly translated—the delicate little gem-wing, or gem-wing of the *abronia*.)

This insect is interesting not only for the elegance of its adornment, but equally so for the relation it bears to other genera of the *Glyphipterygidae*. Comparing it with *Glyphipteryx fuscoviridella*, *G. thrasonella*, *Echmia dentella*, *Perittia obscuripunctella*, and *Tenagma serricellum*, its relationship to them may be thus stated: Lacking some of the characters of each genus, it combines many of each. Like *Tenagma* and unlike the others, it has the submedian vein of the fore wings not furcate at the base; the form of wings is almost exactly as in *Echmia*, but not quite so wide, and the tuft of scales projecting from the hind margin in *Echmia* is absent; the neuration of the fore wings is almost exactly as in *Echmia*, except that, as above stated, the submedian is simple in this species, and there is a distinct secondary cell as in *Glyphipteryx*. The neuration of the hind wings resembles that of *Tenagma*, the cell being unclosed, but this species has the submedian furcate on the margin and two independent discal veins going to the hind margin, instead of one, as in *Tenagma* (or it would resemble the neuration of the hind wings of *Echmia* if the discal vein, the submedian and the first branch of the median were absent in that genus.) The characters of the head and its appendages are very

nearly as in *Perittia*, but this insect has the tongue longer and scaled at the base only; as in *Perittia*, there are no ocelli, and no maxillary palpi, the labial palpi (recurved in the living, porrected or drooping in the dead insect) do not over-arch the vertex, but reach only about to the base of the antennae, and taper gradually from the base to the apex, with the articulations indistinct; the antennae are simple, rather slender, and a little more than half as long as the wings. The ornamentation, though quite distinct from all other *Glyphipterygidae*, yet reminds one of *Glyphipteryx* by the smooth elevations of violaceous metallic spots, and of Dr. Clemens' genus *Hybroma*, by the dark streak along the base of the costa. Thus the head and its appendages ally this species to *Perittia*; the wings to *Aechmia*, and less closely to *Tenagma*, while the secondary cell of the fore wings and the ornamentation ally it more remotely to *Glyphipteryx*; the characters of the larva also ally it to *Glyphipteryx*, but the larvae of the other genera mentioned above are unknown.

Palpi, head and antennae like polished silver, the antennae annulate with brown; fore wings appearing to the unaided eye silver gray as far as the ciliae, and the apical portion ochreous or golden, according to the light, but under a lens the silver gray portion is resolved into a multitude of narrow wavy lines, alternately white and black, which cross the entire breadth of the wing; the costal margin from the base to about the basal fourth is velvety black, interrupted by two smooth metallic violaceous streaks, nearly perpendicular to the margin and appearing to be raised a little above the surface, and there is another on the extreme base of the costa which is almost concealed by the patagia (or instead of this, we may say there are three metallic violaceous spots, each widely margined by velvety black, the posterior black margin of each confluent with the anterior black margin of the succeeding one); a *very little* further back and still before the middle of the wing length, is another velvety black spot (the fourth, counting the one on the base), containing another metallic violaceous spot, and nearly opposite to this, but a little further back, is a velvety black dorsal spot, containing also a metallic violaceous spot, and further back on the costal margin, behind the middle, are two spots of smooth violaceous metallic raised scales, *not* margined with black, and opposite to the space between them, just within the dorsal margin, near the end of the cell, is another one also unmargined, and on the margin beneath it is a *small* white spot. In some lights all of the metallic violaceous spots appear simply white, and in the golden ochreous

apical part of the wing is a triangular white costal streak pointing obliquely *forwards* and ending in a small violaceous metallic spot. There are thus seven costal spots (including the one on the base), and two dorsal ones, the second dorsal being very small and white, and pointing to the infra-dorsal violaceous spot. Ciliæ fuscous, with a white line extending along the base of those of the dorsal margin. Hind wings purplish fuscous with long white ciliæ. Under surface of both pair purplish fuscous, with the three white costal streaks which are nearest to the apex showing through the wing. Upper surface of the abdomen shining black, each segment margined posteriorly with white; under surface silvery white, each segment narrowly margined anteriorly with black; anal tuft silvery white. *Al. ex.* 5 lines. Edgerton, Colorado; alt. over 6,000 feet.

The imago may be found in the afternoon in July, flitting about in the brilliant sunlight of that region, and alighting on the grass, or on the stalks of *Abronia fragrans*, which is very abundant, filling the air with its rich and delicate, though to me somewhat sickening, fragrance. (The statement in Prof. Gray's "School and Field Book of Botany," that the flowers of *A. fragrans* 'open at sunset' is incorrect, so far as I observed the species, as I have usually found the flowers fully open at all hours of the day. It is, however, more fragrant in the afternoon and evening, but I have never found the flowers frequented by any insect, otherwise than by an occasional visit from a small *Andrena*.) I never saw the species just described upon or in the flowers at any time. The larva resembles that of a *Glyphipteryx*, and mines the leaves of the *Abronia*, as I am fully convinced, though I did not succeed in rearing it, as all my specimens died after becoming pupæ. The moth and its larva are quite common. In twenty-five captured specimens I find no variation. The mine is irregular in shape, and the frass is ejected *usually* from the under side of the leaf, and sometimes there is a slight web on the outside of the leaf. It frequently abandons its old mine and constructs a new one, and once in confinement a well grown larva sewed two leaves together and fed upon them, though I never knew it to feed in this manner except in the breeding jar. It spins its cocoon in the sand. It is one of the prettiest of our 'Micros.'

BLASTOBASIS, Zell.
(HOLCOCERA, Clem).

B. gigantella. *N. sp.*

White; microscopically dusted with fuscous scales, and the course of

each vein of the fore wings distinctly marked by a fuscous line on the upper surface, so that the neuration is distinct without denuding the wings; abdomen creamy white, with a narrow transverse brown line on top of each segment, just before its hinder margin. *Al. ex.* $15\frac{1}{2}$ lines; probably greater than that of any other species belonging to the Tineina. It is the only species in this group, observed by me, which seems to conform to the law said to be found among other insects and birds of increase in development of peripheral parts in the West. It seems to be a very local species, and of very sluggish habits. I met with it only once, but then found about twenty-five specimens mostly *in coitu*. They were all found resting on the blades of the soap weed, as it is popularly termed in Colorado (*Yucca*), and would require to be thrown violently off from the blade before they would move, but were very active on the wing when once aroused. All of them were found within an area not over one hundred feet square, in a field of about twenty five acres, and I never saw it elsewhere. This field is on the road to Monument Park, about three miles north of Colorado Springs. The larva will probably be found to feed in some way on the *Yucca*. At all events, there was very little else in that particular locality on which it could feed. The wings are rather narrower in proportion to their length, than in other species of the genus.

CORRESPONDENCE.

PARASITE ON SAMIA CECROPIA.

DEAR SIR,—

I have this fall obtained upwards of a dozen examples of *Ophion macrurum* from cocoons of *Telea polyphemus* gathered about Oct. 25th and later. Is not this unprecedented?

I have a record from hearsay, but well authenticated, of two cocoons of *Samia cecropia* emerging the *second* summer.

I found late in October *cecropia* cocoons of this year's make, from which some parasite unknown to me had emerged, either through the loose end or through a round smooth hole bitten out of the cocoon, about the diameter of an ordinary lead pencil. The remains in the inner cocoon were mostly small fragments of blackened larval skin, and in one case the entire back of the larva very neatly cleaned. Can any one enlighten me as to the character of this parasite, which is evidently of unusually large size and power. C. E. WORTHINGTON, Chicago, Ill.