

# The Canadian Entomologist.

VOL. XXXIII.

LONDON, OCTOBER, 1901.

No. 10

## NEW DIURNAL LEPIDOPTERA FROM BOLIVIA.

BY A. G. WEEKS, JR., BOSTON, MASS.

*Papilio Cochabamba*, sp. nov.

Habitat: Bolivia. Expanse, 4.00 inches.

Front of head dark, greenish black. Between the eyes, two dots of greenish white, and another dot at "collar," followed by two more similar dots on front of thorax. Antennæ, greenish black, extreme point slightly brownish. Thorax, above, dark greenish black; beneath, black with a large yellowish spot at base of costal nervule, another also at base of costal nervule of hind wing, both with a small white dot above them. Legs, black above; beneath, whitish, the white extending on to thorax as a dash.

Abdomen above, greenish cream colour (very prominent), black tip. Below, black with a white spot at base of each segment on both sides. Between these spots and the cream colour of upper part, are a series of yellowish dashes.

Fore wings above, greenish black, but with a decided greenish lustre covering outer half. The interspaces at hind margin edged with white.

Hind wings of same ground colour, the greenish lustre being somewhat brighter and more prominent. Covering nearly the whole of the subcostal space is a large dash of greenish white, followed by a row of similar, although smaller, spots or dashes extending in a *straight line*, from apex to anal angle, each about one eighth inch wide and one-eighth inch long, diminishing in size towards anal angle. These are about one-third inch from hind margin, not touching, however, the discoidal space, and form the only prominent marking of the insect. The hind margin is strongly dentated with interspaces bordered by a white line.

Under side of fore wings: black, shading into gray black at a line drawn from inner angle across the wing towards outer part of discoidal cell. In the three lower interspaces, one-fourth inch from hind margin is a patch of whitish scales, suggestive of spots.

Under side of hind wings is entirely of bronze colour, somewhat lustrous, excepting at the top portion of each interspace, where there is a whitish spot, and inside of that, one-sixteenth inch from margin, a semicircle of brick colour, very prominent. The dentations of the wing bear the white linear border appearing on upper side.

The specimens in my possession were taken some two hundred miles north from Cochabamba. In general appearance, it resembles closely *Papilio Numitor*, Cram., and that group, and may be a climatic variation of it, but in *Numitor* the greenish-white dashes on hind wing follow more closely the contour of the hind margin, while in this these dashes are more in line with a line drawn from apex to anal angle. My specimens are invariable, showing no difference in the suffusion or size of dashes.

*Dynamine albidula*, sp. nov.

Habitat: Bolivia, near Sicastica. Expanse, 1.25 inches.

Head, palpi, thorax and abdomen above, blackish with gray hairs; beneath, nearly white. Antennæ, black with white annulations at the base of each joint. Club, tipped with tawny. Legs, white.

The lower portion of the fore wing is white, from a line drawn from a point close to the base on inner margin, and extending upwards to and along the median nervure to end of discoidal space, then curving downwards to lower angle, meeting inner margin one-sixteenth inch from angle. The rest of the wing is black with white spots. The discoidal space is heavily dusted with lustrous greenish-blue scales. In the centre of the space is a small white spot. Midway between apex and base is a large white spot, extending from costa towards hind margin, and directly over the summit of the lower white area. Just within hind margin, one-third distance from apex to lower angle, is a smaller white spot, and there is another below it, one-third distance from lower angle to apex. The latter of these merges into the white area of the lower portion of the wing.

Upper side of lower wing is entirely white, excepting a small area of black at the very base, and a narrow border of black along hind margin. This border is black at the upper angle, and turns to grayish at the lower half, disappearing entirely just before it reaches anal angle. Outside of this, on the edge of the margin, is a white thread.

The white area of upper side of fore wing is duplicated on under side. The black of the upper side gives way to a great extent to tawny. The discoidal space is jet black at its upper portion, tawny at basal portion,

the black extending down along the median nervure towards base. In the centre of the black area is a white spot. Separating the black from the tawny is a thread of very lustrous greenish-blue, nearly silver. This tawny colour extends to costa, the costa being tawny up to apex. A greenish-blue lustrous line extends from base along costa for one-quarter inch. The large white spot of upper surface is repeated. The first white spot at hind margin of upper surface is repeated, but suffuses strongly upwards to the costa, forming an apical band of white. At inner edge of this band is a heavy tawny line, the costal and lower portion of it tipped with lustrous greenish-blue scales. The lower white spot is the same as on upper surface. The hind margin has a black thread at its edge, and within this a line of tawny, edged on its inner side by a thread of the lustrous scales.

The lower side of lower wings is the same as upper surface, except the black is replaced by tawny, and the marginal border is edged on its inner side by a thread of lustrous greenish-blue, with a suggestion of a black thread within it.

Type, one specimen; taken October 1st, 1899.

*Amarynthia muscolor*, sp. nov.

Habitat: Bolivia, five days travel north from Cochabamba. Expanse, 1.25 inches.

Head, thorax and abdomen, nearly black, with approach to dark mouse colour on top. Antennæ, black, with slight white annulations at base of each joint. Legs, black.

General ground colour of upper surface, a dark mouse colour, with black markings. Costa of fore wings of ground colour. Hind margin, without border, except a slight linear black line and a fringe of hairs. One-eighth inch within margin is a semi-distinct black line, extending from tip down to inner margin, and another the same distance within this. The discoidal space contains four distinct black transverse lines, the outer two joining at top and bottom, forming an egg-shaped figure. From the lower junction of these, a black line extends downwards at right angles to the costa to the submedian nervule. The inner two of these discoidal lines do not join, but each extends downwards to submedian nervule. There is a suggestion of still another line, nearer the base, extending also to the submedian nervule.

Upper surface of hind wings nearly duplicates that of fore wings. The hind margin with its two inner lines and hairy fringe is the same.

The inner line forms a continuation of the line of fore wings which extends downwards from the egg-shaped figure, noted above. The outer line of the inner two lines mentioned as crossing the discoidal space of fore wings extends across the wing from costa to anal angle, where it joins the two broader lines. Within this, in discoidal space, are three lines, and a suggestion of a fourth near the joint. Inner margin, of ground colour, fringed with hairs.

The under surface is brilliant, the outer half of both wings being sky blue with a mother-of-pearl lustre. The costa of fore wing is mouse colour, with a linear dash of sky blue extending upwards from base. Hind margin is same as on upper surface, except that the slight hairy fringe shows whitish. The inner half of wing is blue-black. The dividing line between the inner and outer half is broken at the first median nervule, forming a jut. The discoidal space contains four sky blue spots, the second and fourth from the base being very prominent. Below the second one, above the submedian nervule, is another spot of the same colour. The space above inner margin is mouse colour, somewhat suffusing the blue-black of inner half of wing.

Under surface of hind wings much the same. The border of hind margin is same as on fore wings, but the first border line of the upper surface is duplicated. The line separating the blue-black and sky blue is continuous, extending from midway between apex and base to anal angle. The discoidal space contains but two sky blue marks, which are duplicated in a less degree in the space next below. The inner one is also duplicated similarly in the space above the discoidal space. The sky blue of outer half of wing extends upwards somewhat, along inner margin, and also suffuses the lower portion of the blue-black ground.

Described from three specimens in my collection from Cochabamba district, 1899.

*Eurybia hari*, sp. nov.

Habitat: Bolivia, north of Cochabamba. Expanse, 2.15 inches.

Head and eyes, dark fulvous brown, with a "collar" of reddish-brown yellow. Antennæ, nearly black, with yellowish points. Thorax and abdomen, dark mouse colour, somewhat lighter underneath. Legs, the same.

General ground colour of wings, dark mouse colour, with a border (interspacing) of reddish-brown yellow, covering nearly one-third of both fore and hind wings.

Costa of fore wings, dark mouse colour. Inner two-thirds of wing the same, excepting a prominent black spot in discoidal space, surrounded by a reddish-brown yellow ring, and outside of this a semicircle of same colour. Hind margin has a linear border of ground colour. The interspaces of hind margin contain a dash of reddish-brown yellow extending as far as discoidal space in upper three interspaces and paralleling downwards. These dashes form practically a broad band covering outer third of wing, the nervures of ground colour only showing between them. The outer end of these dashes contains a black arrowhead, small at top interspace, and increasing in size in lower interspaces. The inner end of these dashes contains a black dash, increasing in size in lower interspaces.

The hind wings duplicate these markings, with the following exceptions: The discoidal spot is much less prominent. The semicircle outside of it is missing. The linear border is also missing, the reddish-brown yellow extending clearly to margin.

The under side of both wings is the same as upper side, excepting that the ground colour is much lighter, and the yellowish portions suffused somewhat with ground colour. The discoidal spots are more prominent owing to the lighter shade of the background, rather than to any change of their own.

The general appearance is close to *Eurybia femina*, Hew.

Described from two specimens in my collection, secured by my collector, Mr. William J. Gerhard, at a point five days north from Cochabamba, Bolivia. In all the collections examined, including the largest collections in this country and in England, only one of this species was found, that being in Mr. Hewitson's collection, unnamed.

#### THE COLORADO POTATO BEETLE IN ENGLAND.

Although the announcement that the Colorado beetle had been discovered at Tilbury Docks (near London) must have given rise to some apprehension on the part of agriculturists in general, and potato-growers in particular, we are able to state, as the result of inquiries, that there now exists no cause for alarm, the prompt action of the Board of Agriculture having succeeded in exterminating, so far as is possible to judge, the dangerous insect. Little, if any, damage was done by this visitation, which seems to be the first for fifteen or twenty years. The land around Tilbury Docks is not agricultural, and if potatoes are

cultivated it is by the labourers who obtain allotments for the purpose of growing vegetables for their own consumption.

The story of the discovery of the Colorado beetle at Tilbury is briefly this: Situated at the north-east corner of the docks belonging to the London and India Dock Company, are some allotment gardens, occupied by employes of the company for the consideration of a "peppercorn" rent. Whilst gardening in one of these plots, a man came across what to him was a strange insect, unlike anything he had seen before. In his perplexity he made inquiries, the result being that the Board of Agriculture were communicated with. That body submitted the insect to their experts at the Natural History Museum, at South Kensington, who pronounced it to be the Colorado beetle. Representatives of the Board of Agriculture were despatched to Tilbury immediately, and they made a most careful examination, not only of the land affected, but of the surrounding area, in which work they were accorded every assistance by the officials of the dock company. The plots upon which the beetle had been found were first dealt with, all the vegetation being cut down, made into small heaps, and burnt with the help of hundreds of gallons of oil. The ground was afterwards ploughed vigorously, and minute care was taken in destroying the insects. The land adjoining received similar treatment. So complete and thorough were the means adopted that when the inspectors of the Board of Agriculture left the scene they expressed in no equivocal terms the conviction that the dangerous pest had been wholly annihilated.

How the beetle came into this country is, of course, a matter for conjecture. It may, however, be reasonably assumed that it was imported in one or more of the American boats which call at Tilbury, but, although the transatlantic steamers were searched, no trace of the pest could be found.

All persons occupying land in the vicinity of Tilbury have been warned to look out for the beetle, and if there should be another outbreak to give immediate notice to the Board of Agriculture through the police. The penalty for disobedience involves a penalty not exceeding £10, and it should also be remembered that keeping or selling any living specimens constitutes an offence under the Act, and is punishable by a fine not exceeding a similar amount. The insect is known to most people as being somewhat like a large "lady-bird," having longitudinal black lines down the wing-cases, the underneath being of a yellowish tint.—*Daily Telegraph*, Sept. 5.

## SOME NECESSARY CHANGES AND CORRECTIONS IN NAMES OF ORTHOPTERA.

BY JAMES A. G. REHN, PHILADELPHIA, PA.

## MANTIDÆ.

MIOMANTIS, Saùssure. Bull. Ent. Suisse, III., p. 64, 1870.

Preoccupied by *Miomantis*, Blanchard. D'Orbigny, Voy. Amer. Merid., VI., Ins., p. 209, 1842 (Coleoptera). To fill the deficiency, I propose the name *Calidomantis*.

HARPAX, Serville. Ann. Sci. Nat., XXII., p. 45, 49, 1831.

Preoccupied by *Harpax*, Parkinson. Organic Rem., 1811 (Mollusca). I have not been able to examine the first edition of Parkinson, but in the second the name *Harpax* occurs on page 221 of volume III. To replace Serville's genus, I propose the name *Australomantis*.

## PHASMIDÆ.

PHANTASIS, Saussure. Miss. Scient. Mex. Orth., p. 188, 1872.

Preoccupied by *Phantasis*, Thoms. Essai Classif. Cerambyc., p. 25, 1860 (Coleoptera). The name *Hesperophasma* is proposed to fill the deficiency.

## ACRIDIDÆ.

AKENTETUS, McNeill. Proc. Davenport Acad., VI., p. 225, 1897.

This generic name has been emended to *Acentetus* (Scudder, Proc. Amer. Acad. Arts Sci., XXXV., p. 45, 1899), in which case it is preoccupied by *Acentetus*, Cabanis (Mus. Hein., IV., pt. 1, p. 102, 1862), in Ornithology. This instance should help to deter the lovers of emendation and purity, the inviolability of the name being the easiest and most satisfactory method in this as well as all cases where a *typographical* error is not evident.

ALPHA, Brunner. Ann. Mus. Cio. Stor. Nat., Genova, XXXIII., p. 121, 1893.

Preoccupied by *Alpha*, Saussure. Smith. Misc. Coll., XIV., p. 121, 1875 (Hymenoptera). In allusion to the habitat of some of the species, I propose the name *Cordillacris*.The genus *Beta* of Brunner (p. 121) is also antedated in the same way (Misc. Coll., XIV., p. 88), but as his name has no type or included species designated, it cannot be regarded as thoroughly established.

ICHTHYDION, Saussure. Revue et Mag. de Zool., p. 390, 1859.

Preoccupied by *Ichthydion*, Dejean. Catal. Coleopt., II., 1833 (Coleoptera). In the third edition of Dejean, the name is found on page 223. To replace the preoccupied name, I propose the term *Ichthyotettix*.

EREMOBIA, Serville. Orthopteres, p. 704, 1839.

Preoccupied by *Eremobia*, Stephens. Catal. Brit. Ins., Lepidoptera, p. 104, 1829 (Lepidoptera). The next available name is *Tmethis*, Fieber, Lotos, III., p. 128, 1853.

XIPHOCERA auct (*Xiphicera*).

The use of this name by Latreille (Fam. Nat. Regn. Anim., p. 415) is merely in the French form *Xyphicère*, and as far as I can ascertain, he never used it Latinized in any of his later works. Lamarck is the first author I have found who Latinized the name, *Xiphicera* dating from him (Anim. Saus. Vert., II. ed., IV., p. 444, 1835). The form generally quoted *Xiphocera* (Burmeister, Handb. d. Entom., II., p. 612, 1838) is preoccupied by *Xiphocera*, Macquart. Dipteres, I., p. 279, 1834 (Diptera).

TROPINOTUS, Serville. Orthoptères, p. 617, 1839.

This name is generally quoted as *Tropidonotus* (Stol, Syst. Acrid., p. 14, 1877), but the emended form is preoccupied by *Tropidonotus*, Kuhl. Wagler's Nat. Syst. Amph., p. 179, 1830 (Reptiles).

#### TETTIGONIDÆ.

SCHWENOBATES, Saussure. Revue et Mag. de Zool., p. 209, 1859.

Preoccupied by *Schwenobates*, Blackwall. Ann. and Mag., Nat. Hist., VI., p. 343, 1850 (Arachnida). In place of the preoccupied name, I propose *Anabropsis*.

PSEUDANCISTRUS, Bolivar. Artr. Viaje Pac., Neur. y Ort., p. 82, 1884.

Preoccupied by *Pseudancistrus*, Bleeker. Ned. Tijds. Dierk., I., p. 78, 1863 (Fishes). I suggest *Polyancistroides* to replace the preoccupied name.

AMAURA, Brunner. Monogr. der Phaneropt., p. 247, 1878.

Preoccupied by *Amaura*, Moller. Ind. Moll. Grœul., p. 7, 1842 (Mollusca). The name *Ligocatinus* is proposed to fill the vacancy.

#### GRYLLIDÆ.

APHONUS, Saussure. Miss. Scient. Mex., Orth., p. 466, 509, 1874.

Preoccupied by *Aphonus*, Leconte. Proc. Acad. Nat. Sci., Phila., VIII., p. 21, 1857 (Coleoptera). To replace the preoccupied name, I propose *Aphonogryllus*.

DYSCOPHUS, Saussure. Miss. Scient. Mex., p. 438, 1874.

Preoccupied by *Dyscophus*, Grandidier, Ann. Sci. Nat., V. ser., XV., art. 20, p. 10, 1872 (Reptiles). In place of Saussure's name, I propose *Dyscophogryllus*.



## THE EASTERN SPECIES OF PSYCHODA.

BY NATHAN BANKS, EAST END, VA.

In the CANADIAN ENTOMOLOGIST for December, 1894 (Vol. XXVI., page 329), I presented the species of Psychoda then known to me from Long Island, N. Y. In the following year, in the November number (Vol. XXVII., page 324), I added some notes and described one more species. Since then nothing has been published on our Eastern species. Prof. Kincaid, however, has been active in studying the Western species.

During the past few years I have collected them at Washington and vicinity, and obtained three new species as well as many of those previously described. I now give a table of all the Eastern species, twelve in number, with descriptions of the three new forms:

## TABLE OF SPECIES.

1. Black-winged species.....	2.
Gray-winged species.....	8.
2. Wings with iridescent scales, hind tarsi only partly white.....	<i>nitida</i> .
Wings without iridescent scales.....	3.
3. Hind tarsi wholly pale yellowish or whitish.....	4.
Hind tarsi black or only partly pale.....	5.
4. Two black patches on the wings before the middle.....	<i>marginalis</i> .
No black patches.....	<i>albitarsis</i> .
5. Hind tarsi wholly black, wings and fringe all black.....	6.
Hind tarsi with some white marks, wings and fringe marked with pale.....	7.
6. Thorax white.....	<i>bicolor</i> .
Thorax black.....	<i>nigra</i> .
7. Fringe on posterior margin blackish; abdomen with white hair; wings banded with pale, legs pale.....	<i>Slossone</i> .
Fringe on posterior margin more whitish; apical margin with distinct black dots, wings not plainly banded, though with scattered white hair; legs black.....	<i>superba</i> .
8. Wings uniform gray.....	9.
Wings marked with black.....	10.
9. Larger; at least two millimeters long; fringe on hind margin fully as long as usual.....	<i>cinerea</i> .

- Smaller; less than two millimeters long; fringe on hind margin rather short. . . . . *minuta*.
10. Hind tarsi with black at base and tip; wings banded, with distinct dots at ends of veins, but not two spots on margins beyond middle. . . . . *signata*.
- Hind tarsi unmarked (yellowish); dots at ends of veins; wings scarcely banded, no basal black band, nor two spots on margins beyond middle. . . . . *alternata*.
- Hind tarsi uniform dark brown; wings with a basal black band, beyond the middle a black spot on each margin, and one or two apical dots. . . . . *opposita*.

*Psychoda cinerea*, Banks.—This species is known by its uniform pale appearance and average size. It is common at Washington, D. C., and Falls Church, Va., in June, and occurs at Ithaca, N. Y.

*Psychoda minuta*, Banks.—This is our smallest species; I have seen a specimen from Mesilla, N. Mex. (Cockerell).

*Psychoda alternata*, Say.—This species is common at Falls Church, Va., near houses, in June. It also occurs at Ithaca, N. Y. Eaton has decided that one of the common European species (*P. sexpunctata*, Halid.) is identical with *P. alternata*. The latter name has the priority.

*Psychoda signata*, n. sp.—Head and thorax clothed with white hair, some tufts of gray at bases of wings; antennæ white, about as long as width of wing; legs white, last few tarsal joints black, and a black ring on base of the first tarsal joint of hind legs; abdomen clothed with white hair. Wings marmorate with pale gray and blackish, rather thinly clothed with hair; a blackish patch near base, another rather before the middle from costa to centre of wing, one on posterior part about behind this one, a long one along the apical costal third of wing, often interrupted by three pale spots, and a few small patches on the apical third of hind margin; all these spots are blackish, irregular, and of indistinct outline. The fringe on costal margin is largely gray, but with two white patches, and the apex white; on middle of hind margin is a long white portion, the rest of the fringe is blackish; the fringe on the hind margin is about one-third the width of the wing. Length of wing, 2 mm.

A few specimens taken near Washington, D. C., in May.

*Psychoda opposita*, n. sp.—Head and thorax clothed with pale gray hair; antennæ thick, gray, longer than width of wing; abdomen clothed with rather short gray hair; legs brown, none of the tarsi marked with

white. Wings thickly clothed with pale gray hair; near base is a band of black hair, heaviest behind; slightly beyond the middle of the wing there is a black spot on the costal margin and another opposite on the posterior edge, the latter rather the larger; the extreme margin around the tip appears more or less black. The fringe is mostly pale gray, or almost white, on the hind margin; on the base of costal margin it is dark gray; that on posterior margin is almost one-half the width of the wing. Wings rather narrow and acute at tip. Length of wing, 1.7 mm.

Taken at Washington, D. C., on the bark of trees, in the early part of August. Easily known by the two black spots on each wing.

*Psychoda albitarsis*, Banks.—I have seen specimens only from the type locality, Ithaca, N. Y.

*Psychoda marginalis*, Banks.—I have only the types of this species, from Sea Cliff, N. Y. It is very distinct by the two patches of black hair on wings.

*Psychoda Slossone*, Williston.—My specimens are all from New York.

*Psychoda superba*, Banks.—This handsome species is very common at Washington, D. C., from June to August, on the bark of large trees.

*Psychoda bicolor*, Banks.—I have seen only the types from Sea Cliff, N. Y.

*Psychoda nigra*, Banks.—I have taken several specimens of this species at Falls Church, Va., close to a stream, in June. The fringe on the hind margin of wings is very long.

*Psychoda nitida*, n. sp.—Thorax in front densely clothed with long gray hair, behind at the bases of wings it is darker, often black. Abdomen black, with jet black hair. Legs black, with black hair; on the basal joints of all tarsi are some white scale-like hairs. Wings clothed with black, and some iridescent scales showing a bluish, greenish or coppery hue, according to the light and position. Fringe black, white at tip of wing. Tips of veins usually show heavier patches of black hair or scales. Antennae slender, moniliform, slightly longer than the width of wing. Wings moderately broad, scarcely acute at tip, the fringe on posterior margin being about one-fourth the width of the wing.

Length of wing, 2.6 mm.

This species is found at Washington, D. C., on the bark of large trees, in July. The iridescence of the scales on the wings at once separates it from all our other forms.

## CONCERNING PROTESTS AND OTHER THINGS.

BY JOHN B. SMITH, SC. D., RUTGERS COLLEGE, NEW BRUNSWICK, N. J.

There never yet was anything new or revolutionary advanced or suggested that was not met with a "protest" from some quarter. When machinery was introduced the hand-workers protested; when railroads supplanted stage coaches the coachmen protested; and so on. So we never had a new list in any order of insects, where changes in nomenclature were made, which was not denounced by someone who found himself or herself compelled thereby to take new views or learn new names.

Of course, protests have their uses, and are always interesting; so, that by Mr. Heath, in the September number of the *CANADIAN ENTOMOLOGIST*, was carefully read by me. Of course, it should really be answered by Dr. George D. Hulst; but he is, unfortunately, dead, and as he was a very good friend of mine, I will do the best I can in his behalf as well as my own, for I must plead guilty to being an American, and am uneasily suspicious that, since I happen to know about *Tephroclystis*, I must be included among the pseudo-savants.

Let me say first of all that Mr. Heath has been for some time a very good correspondent of mine, that I have found him always open-handed and open-minded, ready to do all in his power to further entomological science, anxious to aid, and willing to be aided; therefore, whatever I may say here is not meant as a reflection upon him—only an appeal to his natural love of justice, and a plea that he do not scold too hastily.

A protest always carries weight in proportion to the authority or knowledge of him that makes it, or the force of fact or argument with which it is backed up. Now, what does Mr. Heath really protest against? Specifically, only the use of *Tephroclystis* is mentioned, but inferentially other "new" and unfamiliar names are included in the ban. *Tephroclystis* is not so well known perhaps as *Eupithecia*, though it may rival "pugs" in familiarity; but would it not have been fair for Mr. Heath to show, first, that it is really a new name, and second, that there was no sound reason for the change other than that it did not mean "pugs." Before making his protest and scolding "American pseudo-savants" he should have made sure of his ground, and become genuinely "savant" himself. Had he done so he would have found that *Tephroclystis* is a Hubnerian term far antedating *Eupithecia*, Curtis, and that, following the law of priority, Hubner's name simply had to be used. If

it be objected that nomenclature ought not to be disturbed, and things ought not to be upset, it might be in order to suggest that Lord Walsingham and Mr. C. Hartley Durrant, both good Englishmen, have been the greatest disturbing factors of the decade so far as reinstating Hubner's names is concerned. A great part of Mr. Heath's scolding in the second paragraph, therefore, applies to them more perfectly than to any American entomologist. Finally, it may be noted that in Staudinger and Rebel's catalogue, just issued, *Eupithecia* is replaced by *Tephroclystis*, Hbn., and *Chloroclystis*, Hbn. Dr. Hulst was, therefore, neither arbitrary nor singular in using the term.

I am greatly afraid that, unless he wishes to remain solitary, Mr. Heath must give up *Eupithecia*, though there is no canon of nomenclature that opposes his hold on "pugs."

American entomologists and American naturalists generally are accused of being narrow, and confining their ideas "to their own little collections," etc., and this charge is just about as well based as the other. The truth is there are no broader students, literally and otherwise, to be found anywhere than in America; which is not saying that we do not have the other kind as well. But specialists are needed as yet where so much material remains undescribed, and the would-be monographer of a world-wide fauna finds himself very frequently compelled to limit his ambition by the wealth of new local material coming in to him.

There are many of the newer entomological recruits who do not realize the difficulties with which the earlier students had to contend. Before 1860, almost all American Lepidoptera were described in foreign publications, from Linné to Guenée and Walker. So, of necessity, the American student became familiar with the general world classification to that date. For years afterward everything was compared with European species, and, so far as possible, American forms were identified with those of other countries. Students like Zeller, Speyer, Moeschler and Staudinger co-operated, and the charge that American work was done without regard to what has been done elsewhere is simply absurd.

Of course, as in all countries, the work of special students was more or less confined to the local fauna. The fact that in so many countries work was simultaneously done has resulted in duplicating descriptions of similar structural combinations under different generic names. It is the work of the student now, to collate and systematize, as Sir George F. Hampson is doing with the British Museum material at command. This

will, of necessity, cause some change and shifting of names. I am led to say further, that no students have travelled so much to make comparisons as have the Americans. Grote, Fernald, Hulst and others, as well as myself, have visited all the European collections — some of us more than once — and have spent dollars, pounds, francs and marks in painful number to gain that broad knowledge for which we are now dubbed "pseudo-savants."

Now, I doubt whether I would have imposed all this upon the readers of the CANADIAN ENTOMOLOGIST except as a sort of introduction to another point, which the following quotation from a correspondent's letter will make clear: "In sending specimens to be determined in the customary way (the namer to have the privilege of retaining any specimens he may desire), if I send a species *new to our fauna*, does custom require its return to the sender, or is the recipient to keep, name and describe it — i. e., *steal* it boldly?" The italics are as in the original.

Now, how many persons who have asked that same question, and who have found fault with the answer, ever really understand what they are asking when they send in a box of insects numbering anywhere from 25 to 250 specimens for determination to one who is under no sort of obligation to do it?

First, they draw upon a store of knowledge that has been acquired by over twenty years of study; they demand the time necessary to make comparisons, to unpack, repack, often the replacement of a defective outer box or a new cover; very often the payment of return postage, almost always the payment of correspondence postage. Second, they often expect comments or information concerning the species, its rarity, value, larva or its life-history, and other matters too numerous to mention.

And in return for all this, what do they offer? In many cases nothing at all; but rather claim it as a right; in other cases, permission to retain such as they have in duplicate!

I have frequently spent a solid half day naming a box of specimens in which there was not a single example that was of use to me! I need hardly say that I could have found more profitable employment for my time. In Noctuids, the collection under my charge at New Brunswick is, perhaps excepting that of the U. S. National Museum, the most complete in the country. Of the Eastern and Central U. S. species, not a dozen are lacking; but that dozen I need badly. Once or twice each year, out of hundreds of species that pass through my hands, I find one

or two of the desiderata. It is the only pay I ask,— permission to retain such as are needed for the collection, and I do not consider it excessive. When I say that during the winter months I frequently get half a dozen sendings in one week, and often spend an entire day of ten hours in making determinations, the extent of the labour imposed on me may be estimated.

I wish it to be distinctly understood that I do not object to making determinations; it is a real pleasure to me to look over a lot of material, especially if in good condition and from a new locality; but I do feel sometimes that my work is not appreciated, and that an insect or two retained for the collection is rated exceedingly high when grumblingly yielded in return. It has occurred to me that where I have spent an hour or two in determining a species as new, and have given its genus, the collector to whom I returned it described it without even crediting me with the generic reference. Nowadays I give no such references.

Of course there are exceptions to all rules, and so many of my correspondents are liberality itself, giving me absolute disposal of the material sent for study, they will not apply what I have said to themselves, and will, I think, testify that I do not often abuse their confidence. I will repeat, however, that Mr. Heath comes in with the exceptions, and is a *persona grata* on my list. I cannot promise to be influenced by his protest, but I can recommend him as a very amiable and satisfactory correspondent.

#### CATERPILLARS ATTENDED BY ANTS.

In his paper on "The Food-plants of the Butterflies of the Kanara District of the Bombay Presidency," Mr. L. de Nicéville, of Calcutta, states (page 190) that the choice of the food-plant by the butterfly, in the case of many of the *Lycenidae*, is largely dependent upon the presence of the particular species of ant with which it lives in harmony in its larval condition. "If the right plant has no ants, or the ants on that plant are not the right species, the butterfly will lay no eggs there. Some larvæ will certainly not live without the ants, and many larvæ are extremely uncomfortable when brought away from their hosts or masters. In many cases it is just as important for breeding purposes to know the right species of ants as to know the right food-plant. In Kanara this is particularly noticeable in the cases of *Castalius ananda*, *Zesius chrysomallus*, *Aphneus lohita* and *Catapœcilima elegans*. *C. ananda*

is 'protected' by ants of the genus *Cremastogaster*. On one occasion Mr. Bell was collecting larvæ at Katgal, and the ants were principally on *Zizyphus rugosa* (Nat. Order *Rhamnææ*), but were also swarming all over six or seven different species of trees all around, and on all of these trees there were larvæ of *C. ananda* covered with ants and eating the leaves of the trees in every case. Since then he has noticed the larvæ of this butterfly eating the leaves of many different plants and always in company with the same species of ants. With regard to the other butterflies mentioned above, the females first look for the right species of ant, while the species of food-plant seems to be quite a secondary consideration, at any rate to a considerable extent. The larvæ of *Zesius* may be found on very nearly any plant that harbours the large red ant, *Ecophylla smaragdina*, so much so that Mr. Bell has often had a suspicion that the butterfly larvæ will occasionally eat the ant larvæ, though he has not actually seen them do so. The larvæ of the other two butterflies are only found on plants affected by ants of the genus *Cremastogaster*. The larvæ of all the four species are often found in the ants' nests, and their pupæ occasionally." Mr. de Nicéville then gives a list of twenty-seven species of *Lycenidæ*, twenty-four of which are attended more or less frequently by ants.

As long ago as 1878, Mr. W. H. Edwards gave in this magazine (CAN. ENT., Vol. X., pp. 131-136) a most interesting detailed account of his observations on the larvæ of *Lycæna pseudargiolus* and the attentions bestowed upon them by four different species of ants. The object of the ants was to obtain the sweet fluid extruded by the larvæ, and in return they warded off enemies threatening the caterpillars in their charge.

Mr. S. H. Scudder also gives an interesting "Excursus" on this subject in his great work, "The Butterflies of the Eastern United States and Canada," page 962, Excursus XXXV.

#### PUPÆ OF LYCENIDÆ.

In the paper already referred to (page 247), Mr. de Nicéville gives a list of eight genera of *Lycenidæ* which have the pupa suspended by the cremaster alone with no median girth; on this account he considers that they seem to form a very natural group, as it is an extremely rare character in this family of butterflies. This fact rather upsets the familiar division of the Rhopalocera into Succincti, Suspensi and Involuti, in accordance with the mode of attachment of the pupæ.



BEES FROM SOUTHERN CALIFORNIA, VISITING FLOWERS  
OF ERIOGONUM AND RHUS.

BY T. D. A. COCKERELL, EAST LAS VEGAS, N. M.

Southern California has its dry season in the summer, and comparatively few flowers are to be seen. Among those that remain, and are attractive to insects, the bushy species of *Eriogonum* are especially noteworthy, and I was fortunate in obtaining from them several bees.

*Eriogonum fasciculatum* was determined for me by Mrs. K. Brandegee. The Mt. Lowe species, which look very distinct from *fasciculatum*, is kindly identified by Miss Susan G. Stokes as *E. fasciculatum polifolium*, "one of the intermediate forms." This is the *E. polifolium* of Bentham.

*Prosopis polifolii*, n. sp.—♂. Agrees with the description of *P. Nevadensis* (Psyche Suppt., June, 1896, p. 32) except in the following particulars: Clypeus and lateral marks very pale primrose yellow; the lateral marks rather narrow, triangular, not or hardly notched by the antennal sockets, terminating above at a very acute angle with the orbital margin, though the apical point is rounded, the inferior inner side of the triangle at least not longer than the superior, sometimes visibly shorter; flagellum ferruginous beneath; wings clear, strongly iridescent. There is no vestige of a supraclypeal mark; clypeus much longer than broad, punctured and minutely roughened.

*Hab.*—Alpine Tavern, Mt. Lowe, Calif., about 5,000 ft., Aug. 12, 1901, on flowers of *Eriogonum polifolium*; La Jolla, Calif., about 150 ft., August, 1901, on flowers of *Eriogonum fasciculatum*. The first-mentioned locality is to be regarded as typical. The species, having no supraclypeal mark, can only be confused with *P. Nevadensis*.

*Ceratina Arizonensis*, Ckll., 1898—♀. Similar to the ♂, but the face is black, with a broad longitudinal white stripe on the clypeus.

*Hab.*—Alpine Tavern, Mt. Lowe, Calif., about 5,000 ft., Aug. 12, on flowers of *Eriogonum polifolium*. New to California.

*Perdita Claypolei*, n. sp.—♀. Length, 5 mm.; head and thorax dark brassy green, with moderately abundant white hair; abdomen piceous, with broad straight transverse chrome-yellow bands at bases of

segments two to four, none of them reaching the lateral margins of the segments; ventral surface dark. Head rather large, transversely oblong, broader than thorax; *face wholly dark*; front microscopically tessellate, with sparse distinct punctures; occiput with abundant white hair; antennæ short, dark, flagellum ferruginous beneath towards tip; anterior margin of prothorax above, and tubercles, cream-colour; mesothorax and scutellum shining but microscopically lineolate, with very sparse punctures; base of metathorax minutely roughened; tegulæ tinged with brown; wings short, reaching about to middle of fourth abdominal segment, the apical veinless field large; nervures dark brown; stigma centrally pale; marginal cell obliquely truncate, its post-stigmatal portion largest; second submarginal cell large, narrowed about one-half to marginal; third discoidal cell distinct; legs piceous; anterior knees and anterior tibiæ in front, cream-colour; apex of abdomen ferruginous, acutely pointed.

*Hab.*—Alpine Tavern, Mt. Lowe, Calif., about 5,000 ft., Aug. 12, three on flowers of *Eriogonum polifolium*. The hind femora carry great masses of yellow pollen. In my tables this runs to *P. sphaeralceæ*, but *P. Claypolei* is a smaller insect, with darker nervures and a much more shiny mesothorax.

A few hundred yards from the spot where this species was taken, one comes to a point which commands a splendid view of the lowlands, with the City of Pasadena, the scene of the last labours of Prof. E. W. Claypole, in the distance. The bee is accordingly named after the inspiring teacher and able naturalist who has so recently been taken from us.

*Colletes Americana*, Cresson, 1868. — Four males at flowers of *Eriogonum fasciculatum*, La Jolla, Calif., Aug., 1901.

I take this opportunity to describe another new Californian *Perdita*, not found on *Eriogonum*:—

*Perdita rhois*, n. sp.—♀. Length, 5 mm.; head and thorax dark bluish-green, base of metathorax decidedly blue; pubescence short and scanty; abdomen piceous, with broad straight transverse yellow bands on bases of segments 2 to 5 (rarely absent on 5), all but the first produced to the lateral margins of the segments, though narrowed a short distance before the margin; ventral surface of abdomen yellow. Head ordinary, nearly circular seen from in front; clypeus not in the least concealed by hair; clypeus (except two minute dots) and lateral

marks chrome-yellow; lateral marks small, nearly equilateral triangles, not reaching up to antennæ; no supraclypeal or dog-ear marks; mandibles yellow at base, ferruginous in middle, dark at tips; labrum dark, with a central depression; labial palpi with the first joint a trifle longer than the other three united; antennæ dark brown above, chrome-yellow beneath, including scape; front microscopically tessellate and with sparse minute punctures; mesothorax shining, but microscopically tessellate and sparsely punctured; tubercles yellow, but no other part of prothorax; tegule transparent, with a yellow spot; wings milky-hyaline, iridescent; nervures white; *stigma* very large, colourless, with a light brown margin; marginal cell rather obliquely truncate, the post-stigmatal portion the shortest; third discoidal cell distinct; legs dark, anterior knees, anterior tibiæ except a stripe behind, and middle tibiæ beneath, yellow; anterior tarsi yellowish.

Mut. *reducta*.—♀. Clypeus with two very broad black median bars, between which is left only a small yellow streak or triangle; lateral marks wanting or represented by two or three small spots; tubercles wholly dark; scape without the yellow stripe; abdominal bands narrow, not reaching lateral margins, sometimes only the first two bands well developed; venter of abdomen dark.

*Hab.*—San Diego, Calif., Aug. 4, 1901, at flowers of *Rhus laurina*, Nuttall, in the immediate vicinity of the Brandegee Herbarium. The plant was kindly identified by Mrs. K. Brandegee. There were taken four of the type, and three of mut. *reducta*, all from the same shrub. The dichroism of the species is quite remarkable.

In my tables, *P. rhois* runs to *P. bigelovia*, and is especially to be compared with *P. Crawfordi*, from which it differs by its large stigma and other characters.

While on the subject of *Perdita* the following may be placed on record:—

*Perdita callicerata*, Ckll.; Mesilla Park, N. M., June 9, 1898, one ♂ at flowers of *Atamosco longifolia* (*Zephyranthes longifolia*, Hemsley).

MR. E. S. G. TITUS wishes mention to be made that his recent articles on Bees in this magazine, Vol. XXXII., page 303, and Vol. XXXIII., pages 133 and 257, are to a large extent portions of a thesis for the Degree of M. Sc. placed on file with the Secretary of the State Agricultural College of Colorado, May 1st, 1901.

## SOME NEW DIPTERA.

BY CHARLES ROBERTSON, CARLINVILLE, ILLINOIS.

*Zodion palpalis*, n. sp.

♀.—Black, gray pollinose; face yellow, cheeks yellow, one-half the eye height; front reddish yellow, a narrow black line on each side above; antennæ reddish, second joint shorter than third; palpi black, quite long, clavate; mesonotum without stripes; scutellum with about twelve slender bristles; legs black, knees testaceous; wings subhyaline; first four segments of abdomen with large, subtriangular opaque black spots, last segment black, shining. Length, 5 mm.

♂.—Cheeks more than one-half the eye height; second and third segments of abdomen yellow, fourth with a subtriangular patch destitute of pollen. Length, 5 mm.

Carlville, Illinois; one ♀, nine ♂ specimens. All except one specimen have the first posterior cell closed and petiolate.

This species is quite distinct from *Z. fulvifrons* and *Z. nanellum*.

*Sphagina campanulata*, n. sp.

♂.—Front black, grayish pollinose, with a median, narrow shining stripe; occiput black, lightly dusted; thorax and abdomen entirely reddish, the latter more shining, fourth segment in one specimen a little infuscated with blackish; face, cheeks, antennæ, proboscis and halteres more yellow; front and middle legs whitish, last two joints of their tarsi blackish; hind legs reddish, base of femora, tibiæ, except tips, and joints two and three of their tarsi whitish, last two joints of tarsi blackish; wings subhyaline anterior outer angle of first posterior cell rectangular; second joint of abdomen longer than remaining joints together, fourth segment shorter and wider than third, the two regularly widening from base of three to apex of four, hypopygium very large. Length, 6-7 mm.

Carlville, Illinois; two specimens.

*Mallota Illinoensis*, n. sp.

♀.—Eyes bare; face deeply concave below antennæ, tubercle as usual, the cheeks and median stripe shining black; front broader than in *M. posticata* and *cimbiciformis*, yellow pollinose, except a patch above antennæ, yellow pilose, on the vertex the pile long and reddish, antennæ blackish, second joint and arista reddish; mesonotum reddish posteriorly, with obscure pollinose streaks anteriorly, scutellum yellow and with the mesonotum clothed with long reddish pile; legs reddish, the femora more

or less blackish, the knees yellow, pile yellow; wings with a brown cloud; abdomen brown, shining, with thin fuscous pile, the pile on the sides, middle and apical margins longer, yellowish, less erect. Length, 14 mm.

♂.—Eyes separated, pile and pollen of face more whitish, anterior and middle femora darker, abdomen inclining to ferruginous, hind femur beneath presenting a dentiform angle bearing a tuft of black pile, sides of second segment presenting a depression which shows a purplish reflection. Length, 12–13 mm.

Carlinville, Illinois; one ♀, two ♂ specimens.

*Temnostoma trifasciata*, n. sp.

This species closely resembles *T. bombylans*, but the wings are brown before, that colour not extending behind the fourth longitudinal vein; the abdomen of female has only three fasciæ.

Carlinville, Illinois; three ♂, two ♀ specimens.

*Phorantha purpurascens*, Twms.

*Hyalomyia purpurascens*, Townshend. Proc. Ent. Soc., Wash. 2: 137, 1891. This species was described from four males and four females from my collection. It is more common in my neighbourhood than all of the other species of *Phorantha* and *Alophora* together. I know the species very well. I still have eighteen specimens from the set from which the types were described. Altogether I have forty males of this species and they all have the calypteres brown. On the other hand, twenty-one females have the calypteres whitish.

From the material afforded in my neighbourhood, I think that Coquillett's *P. occidentis* contains the females of at least three distinct species. Assuming that Walker's type was a female and that it was the commonest species, *P. purpurascens* may be a synonym. I do not believe that, without comparing the type, it can be shown that Walker's species was the same as *P. purpurascens*, or even that it was a *Phorantha*.

*Hyalomyia Robertsonii*, Twms., was also founded on specimens from my collection. I do not know what it is, but the specimens were larger than those of *P. purpurascens*, and all of the specimens I have that were referred by me to this species belong to *Alophora*. I think they are females of *A. œneocentris*.

*Phorantha pruinosa*, n. sp.

♂.—Closely resembles the male of *P. purpurascens*, but the abdomen

is black, without any metallic reflection, the first segment shining, the second, third and fourth densely whitish pollinose. Length, 3 mm.

Carlinville, Illinois; three male specimens.

*Phorantha humeralis*, n. sp.

♂.—Closely resembles the male of *P. purpurascens*, but is larger, the wings more whitish, the base and costal margin as far as first vein more or less brown. Length, 4-5 mm.

♀.—Differs from females of *P. purpurascens* only in its larger size. Length, 4-5 mm.

Carlinville, Illinois; ten ♂, three ♀ specimens.

*Epigrimyia Illinoensis*, n. sp.

♂.—Closely resembles *E. polita*, front shorter and narrower, more narrow than face; the latter longer, wider, cinereous pollinose; cheeks wider; antennae and proboscis longer; front tibiae reddish; claws and pulvilli longer. Length, 5 mm.

Carlinville, Illinois; one ♂ specimen.

*Winthemia Illinoensis*, n. sp.

This species closely resembles *W. quadripustulata*. It differs in its smaller size, the bristles on the abdomen, especially in the male, more sparse, more erect, longer; the second segment in male with a marginal pair of macrochaetae; hind tibiae, outwardly, in both sexes, less regularly ciliate and presenting a long bristle near the middle. Length, 6-9 mm.

Carlinville, Illinois; five ♂, three ♀ specimens. The sexes were taken in copula.

The name may not stand: the presence of this species seems to throw some doubt on Coquillett's synonymy of *W. quadripustulata*.

## NEW BEES OF THE SUBFAMILY ANTHOPHORINÆ FROM SOUTHERN CALIFORNIA.

BY T. D. A. COCKERELL, E. LAS VEGAS, N. M.

*Diadasia rinconis*, subsp. *opuntiae*, nov.—♀. About 15 millim. long, varying to 13 millim.; tegulae light reddish-brown, varying to darker; wing-nervures piceous, second submarginal cell variable, but always small and usually very narrow, and narrowed above; third submarginal cell long, very strongly elbowed at end; labrum with only a few scattered hairs, or sometimes more hairy; mesothorax strongly and quite densely punctured, much more so than in *rinconis*; scutellum closely punctured;

abdominal bands as in *rinconis*, with curved anterior margins; hair at apex of abdomen yellowish fuscous.

*Hab.*—San Pedro, California, July 27, 1921, at flowers of *Opuntia*, gathering pollep. 17 ♀. First found by my wife. This will probably be regarded as a distinct species, but it is certainly very near to *D. rinconis*, which visits flowers of *Opuntia* in New Mexico (Entom., Sept., 1900, p. 245). The chief difference between *rinconis* and *opuntiae* is in the much more strongly and densely punctured thorax of the latter; *opuntiae* is also on the average a considerably bulkier insect. From the Californian *D. friesei*, *opuntiae* differs in the larger size, closer punctation of thorax, and the character of the abdominal bands.

(To be continued.)

#### BOOK NOTICE.

ILLUSTRATIONS OF UNFIGURED LEPIDOPTERA.—By A. G. Weeks, Jr., 360 Washington St., Boston, Mass.

We have received from the author the first thirty-one pages of this work, which he is publishing for private distribution at his own expense. This portion contains the description of seven species of butterflies, all but one of which have been already published elsewhere, but are now illustrated by most beautifully-executed coloured lithographs from drawings by Mr. J. Henry Blake. The species are all from tropical or sub-tropical regions and the types are in the author's collection. The exquisite plates compare very favourably with those in Mr. W. H. Edwards's "Butterflies of North America," which have set a high standard of artistic merit and truth to nature.

An interesting account is given of a collecting trip in Bolivia, made by Mr. Gerhard, of Philadelphia, who was sent by the author to that out-of-the-way and little-known region in order to secure as complete a collection as possible of the butterflies of the country. Though the region explored was in the high altitudes of the Andes, where vegetation was mainly confined to the mountain ravines and river gorges, the collector succeeded in obtaining, during an absence of a little over a year, thirteen thousand butterflies, over a thousand dragon-flies, a thousand beetles, twelve hundred moths, and a large number of other insects. Among these there will no doubt be found many species hitherto

unknown to science, and much valuable information will be afforded by a study of the collection regarding the distribution of species. Mr. Weeks gives in the work before us lists of the butterflies which he has thus far been able to identify. A number of interesting photographic reproductions give some idea of the country traversed by the collector. We look forward to the issue of further instalments of this work, which will, when completed, form a valuable contribution to Lepidopterological Science.

C. J. S. B.

---

#### CORRESPONDENCE.

---

##### A SURPRISE.

SIR,—That a *Polyphemus* cocoon would produce its imago the same season it was made, is what I little expected to see; and yet it has taken pupa; and that in a brief period of time.

The janitor of the Y. M. C. A., London, Ont., was taking his holidays in the latter part of July, and on the 2nd was in the country on a fishing excursion, and found on the ground, under some trees, a *Telea Polyphemus* cocoon. On his return, he informed me of his find. Thinking it was rather early for one of this year's make, I remarked it must be an old one. He said no, that the creature was alive inside. When he presented it to me, I realized at once that it was a freshly-made one, as it was white and free from the slightest indication of weathering. The pupa was very lively, and kicked vigorously. I placed the cocoon on a cabinet close at hand and in full view, and it was much handled by visitors, who expressed surprise at such an inanimate-looking object being so much alive. On the 10th of August I tried to stir it into action for a visitor's benefit, but failed. I left the room about half-past five, and returned about half-past seven, when I noticed that the cocoon was where I had not placed it; and, on examination, I saw the moth hanging to the projecting top of the cabinet. It is a female, perfectly developed, medium sized and light in colouring. The question naturally arises, is it double-brooded somewhere?

J. ALSTON MOFFAT.