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No. 3

PREPARATORY STAGES OF *ICTHYURA PALLA*, FRENCH, WITH NOTES ON THE SPECIES.

BY G. H. FRENCH, CARBONDALE, ILL.

EGG.—Globular, a little flattened at base, smooth; color orange yellow. Duration of this period, 24 days.

Young Larva.—Length .08 of an inch. Color pale brownish green. Head and a small cervical shield jet black. Each segment has about six blackish tubercles from which arise rather long gray hairs, the dorsal tubercles on segments 5 and 12 a little more prominent than the others. Duration of this period, 3 days.

After First Moulting.—Length .14 of an inch. Color pale yellowish green. Head black, as also a plate and a small spot on the top of the second segment. To each segment six purplish black slightly tubercular spots; those on the dorsum faint except those on 5 and 12, which are prominent, each pair confluent; a few hairs from each spot. Thoracic feet black. Duration of this period, 4 days.

After Second Moulting.—Length .25 of an inch. Color green, with a yellowish tint; head and thoracic feet jet black, the spot on the middle of the second segment and the plate black, but slightly purple tinted; the rest of the markings dark reddish purple. These consist of a dorsal line, with a very faint line each side; a more prominent subdorsal line, with a line each side composed of elongate spots, the breaks being at the ends of the segments, each spot a little broader in the middle than at the ends. The upper of these bordering line of spots contains the posterior dorsal piliferous spots, the anterior of each joint being in the line bordering the dorsal line. The line below the subdorsal contains the row of supra-stigmatal piliferous spots. There is a faint stigmatal line with some mottlings below. Segments 5 and 12 slightly elevated, the anterior pair of spots closer together and colored; a spot on each abdominal leg. Duration of this period, 4 days.

After Third Moulting.—Length .40 of an inch. The stripes remain the same as during the preceding period. The ground color of the dorsum

is bright yellow, reaching to the line containing the outer row of dorsal piliferous spots; below this line to the line below the subdorsal, pale whitish; below this the color is yellow. Duration of this period, 4 days.

After Fourth Moulting.—Length .55 of an inch. The plan of color and markings unchanged save that the subdorsal color is grayish white, the elevations on joints 5 and 12 more prominent, and in same the dorsal yellow brighter.

After Fifth Moulting.—Length 1 inch. Similar to the preceding stage, but varying a little in color. Dorsum clear yellow with three dark reddish purple stripes; below this grayish yellow, the two broadest of the three lines mottled, the upper one the most; below this, including the stigmatal line and the substigmatal space, reddish yellow; the stigmatal line red, much broken; venter concolorous with the substigmatal space. Thoracic feet, head and two spots on the neck jet black; joints 5 and 12 have each two prominent velvety black papillæ; a white hair from each piliferous spot, and in addition to this a fine short white pubescence covers the whole body, but not so thickly as to obscure the color.

Mature Larva.—Length from 1.10 to 1.20 inches; width of head .15 of an inch, of body .20. Dorsum lemon yellow with three purplish black stripes arranged as in preceding stages. Just above the stigmata is a narrow yellow line; between this and the yellow of the dorsum the ground color is gray, in some examples tinged with yellow on segments 2 to 5, in others it is a paler yellow; in the centre of this space is a purplish black line, and on both borders or edges of the space is a mottled stripe of the same hue. The stigmatal, substigmatal and ventral spaces, with the prolegs, somewhat carneous, the slight fleshy ridge below the stigmata being most so. In the upper part of the stigmatal space is a mottled line, the stigmata black. Head, thoracic feet and spots as at the first of the period. In some examples the stripes are more of a dark purplish red than black. Duration of this period from 4 to 7 days.

Chrysalis.—Length .55 of an inch; cylindrical; depth through thorax and the first abdominal segment .18 of an inch; through joint 3, .20; joint 4, .21; joint 5, .21; from here tapering gradually to the end, which is rounded, smooth, ending in a stylus with a hook at the end on each side. Surface smooth, shining, a few punctures between the joints, and the upper part of head and thorax a little roughened. Color dark chestnut brown, the eyes and a little shading at the end of the wing cases darker. Wing

cases extending back to posterior part of joint 5, leg and antennæ cases not so far. Duration of this period from 10 to 13 days.

For several years the larvæ of this species have been taken from the willows here, when nearly full grown, in September, and the moths obtained from them in the spring, but not till last spring (1884) did I succeed in taking the larvæ through all their stages. In 1883 eggs were obtained in large numbers, but they did not hatch, not for lack of being fertilized, because the larva developed inside the eggs to near the time for hatching, as could be seen through the shell. Two or three of them even came out, but in so weak a condition that they did not eat. I think they must have been affected by the disease that seemed to affect all Lepidopteral life that year.

These eggs were obtained May 11th, and the imagines were produced from July 7 to 13. There are two broods in a season, the larvæ feeding on willows (*Salix nigra*), the last brood hibernating in the pupa state. In feeding they fasten the leaves of the ends of a twig together and feed in this larvarium, usually several feeding together. They do not pupate in this, but in the breeding cage spin close cocoons of brown silk in the corners of the box.

As a species this stands close to *inclusa*. There are several points of difference that seem to be permanent. It is of smaller size, out of a large series of reared and captured specimens none of the females being as large as all my females of *inclusa*, the most of them smaller than the males of that species; the males being proportionally smaller than the males of *inclusa*. In color the females are lighter than the *inclusa* females, the oblique transverse shades more brown tinted and less orange tinted; the ante-apical orange that in *inclusa* is a distinct patch across four or five subcostal interspaces separated by the veins, is in *palla* a mere stain, in no examples a defined patch, and in some scarcely distinguishable. The males average darker than the males of *inclusa*, both fore and hind wings being more of a brown of the vandyke-brown order, rather than umber, being more the shade of the male of *indentata*. In this sex the ante-apical orange is more distinct than in the female, but in about nine examples out of ten is still a stain instead of a patch, occasionally one showing about two very small spots that are fairly outlined.

Palla seems to be the species distributed over this portion of the United States. I found larvæ in Nebraska in 1882 that produced this species, and have had a number of specimens sent me from Central

Illinois, but have never seen *inclusa* in this region, though I have looked carefully for the larvæ in both willow and poplar for several years. If *palla* breeds as true to type in all localities where found as it does here, we shall have to regard it as a good species.

PROBABLE ORIGIN OF THE WORD BUTTERFLY.

BY FREDERICK CLARKSON, NEW YORK CITY.

The transformation of a grovelling worm to the glory that attaches to the winged aspirant of the heavens, has won for this insect from remote antiquity the appellation of Spirit or Soul, as typical of the resurrected human body. There is, I think, good reason to believe that the root meaning of the word Butterfly dates back to early Egyptian history, and as a hieroglyphic it is synonymous as representing the qualities of completeness and perfection which characterize the soul. I have supposed that it might serve the interest of this journal to record such historical gleanings bearing upon this subject as have come within my reach. It is said that in Yorkshire in England, the country folk call the night-flying white moths, Souls. This restricted application of the term very forcibly expresses what had been traditionally received by these people, and which they unwittingly have applied to certain white winged species. The English word Moth is said to be the Egyptian MUT or MAT. MAT is to pass; MUT to die; MATT, unfold, unwind, open, as the chrysalis entered the winged state and passed. The winged thing was a symbol of the Soul; it appears in the hieroglyphics as the Moth or Butterfly. The common view, we know, originates the word with the yellow *Diurnæ* as illustrated in the butter-colored wings of the genus *Colias*. The word Butter is supposed to be derived from PUT (Eg.), food; and TER (Eg.), made, fabricated. The Butterfly may be the type PUT (Eg.), TER, complete, perfect. Thus in death (MUT) the Soul passed, unfolded like the Moth, whose chrysalis showed and was the type of the process, whence the Butterfly. Calling the Moth a Soul identifies the imagery as Egyptian. In Cornwall, in England, departed souls, moths and fairies are called Piskeys. Piskey is the same word as Psyche, and both are derived from the Egyptian, in which KHE is the soul, and SU is she; hence the fem-

inine nature of the Greek P-SU-KHE. Without the article, SAKHU is the understanding, the illuminator, the eye, and soul of being, that which inspires.

The ancients evidently were not very good Entomologists, for this original meaning, beautiful as it is, is altogether incompatible with the teachings of the modern science, for in these days we realize that the so-called spiritual life, as represented by the butterfly, is but a span in comparison with the earthly life, as illustrated by the larva, and that the heavenly aspiration and grace which mark the shorter life are the outcome of a comparative eternity of rioting and waste; yet, be it said, the silk worm at the eleventh hour makes a good record.

“ Well were it for the world, if all
Who creep about this earthly ball,
Though shorter-lived than most he be,
Were useful in their kind as he.”

Moreover, who that has ever attempted to capture a *Limenitis arthemis*, but has learned to his cost, that though a thing of beauty, and its possession a joy forever, its habits are deceitful. Well do I remember a chase for this butterfly – the first that I had ever seen on the wing. It was a royal game of tag, with hide-and-go-seek variations. We see-sawed up and down a ravine for nearly an hour. When first discovered it was regaling itself in the sunlight, upon a leaf about half way down the opposite bank, all the while jerking its wings, after a fashion, as if beckoning me over. By the time I had worked my way down over the rocks and through the briers, it was spreading its wings on the bank I had just left, and when I returned it was away again to its favorite leaf on the other side. Tired and heated, I gave up the chase, when the *artemis*, in a most provoking way, lit upon a shrub beneath my very nose. This coquettish insect apparently realized my discomfiture, and after repeated approaches and withdrawals, it rose on wing, and with

“ The light coquettes in sylphs aloft repair
And sport and flutter in the fields of air.”

SHORT NOTES ON COLEOPTERA.

BY JOHN HAMILTON, M. D., ALLEGHENY, PA.

Hololepta fossularis Say. The habitatio of this insect is usually under locust bark in the first stages of decay, a fact so well known that collectors

would look for it in no other place. But last summer I found a number of them under the bark of *Ulmus fulva* (slippery elm), the odor of which in the same state of decomposition is as rank as that of *Robinia*. With them were several *H. lucida*. The individuals of these two species so approximate as in some examples to be scarcely separable; and indeed there is a reasonable doubt whether any of them are instinctively conscious of being specifically different.

Ips fasciatus Oliv. This well known species is very variable in size, color and sculpture. Several of these color variations have been described as species, as: *4-guttatus* Fab., *4-signatus* Say, *bipustulatus* Mels., *6-pustulatus* Reitter. *Quadriguttatus* Fab. is the European form, and though described subsequently to *fasciatus* Oliv., is still retained in the European catalogues, as the form *fasciatus* does not occur there, as I am informed.

The form *fasciatus* is the most common here, and is that into which all the others are resolved; in it the elytra are black with an irregular broad basal, and a sub-apical fascia, yellow; individuals are met with totally black without any spot; others have only a small basal and sub-apical spot yellow (more often reddish); others add to these a humeral lunule; others have various other spots, and by the gradual dilation and coalescing of these through a series of specimens, the full form *fasciatus* is reached, which can be readily verified by any one who takes the trouble.

The point I wish to present is the seasonal character of the melanism. I have never met with these black and spotted forms at any other time than in early spring, usually during April, at the sap of trees, especially birch and maple. As the season advances these entirely disappear, and the fasciate form alone remains, continuing till autumn. Some of these probably hibernate (though this is not established by observation), and appear in the spring among the recently developed melanotic variations. Whether the fasciate form decreases northwardly and increases southwardly has not been ascertained, but two specimens from Mt. Washington and two from Montana are of the form *4-guttatus*. As the species in the north extends across the continent, northern collectors might easily determine the matter. This insect is often found in the green ears of maize; but only in such as have been injured by birds or animals, which scarcely entitles it to be classed among the injurious.

Gaurotus abdominalis Bland. This graceful Longicorn occurs from Massachusetts to Western Virginia, but in restricted localities, which accounts for its being met with by so few collectors. It usually affects

wild places along streams that flow between rugged hills and mountains. Here it appears early in May on the blossoms of the wild plum, and a little later in more abundance on various species of *Cornus* (*C. circinata*, *C. paniculata* and *C. alternifolia*), popularly known as swamp dog-wood, though the species mentioned do not usually grow on wet ground. It is also fond of laurel blossoms (*Kalmia latifolia* and *K. angustifolia*). I have never observed it later than the first week in June. It is exceedingly wary and active, not being easily taken by beating. After a sudden noon-day shower I took over twenty specimens, by hand, from a low *Cornus* bush, into the cymes of which they had crawled for protection.

It greatly resembles *G. cyanipennis*, and like it, varies in color from bright green to copper and golden; but is always to be known by its rufous abdomen. The structural differences, notwithstanding the close similarity, are so great that eventually the two species may be placed in different genera. See Bulletin of Brooklyn Ent. Soc. v. 7, p. 107.

Saperda discoidea Fab. According to all the observations on record that I have seen, the larva of this beetle lives under the bark of diseased or deadened hickory and walnut, and before transforming penetrates the solid wood and there undergoes its changes. My own observations are not in accord with this. I once took from the thick bark of a hickory log in some cordwood, four mature individuals, the larvæ of which had fed partly on the bark and partly on the wood, and when approaching maturity had entered the bark and there disclosed. The past year, I found in May more than twenty of the full fed larvæ, pupæ, and beetles yet immature, in the bark of a large standing hickory that had been deadened about two years previously; they were all on the north side of the tree and none over fifteen inches from the ground. After feeding on the outer layers of wood till they had nearly attained their full growth, the larvæ had bored, instead of the wood, into the thick bark, closing their burrows in the usual way, and there transforming like the species of *Urographis* do in oak bark.

Where the larva selects the wood it may be legitimately inferred that the bark is not thick enough for its purposes. But how does it know whether the bark is thick or thin? This instinctive versatility in adapting itself to circumstances is only another of the mysterious things that meet the investigator of Nature at almost every step.

Dioedus punctatus Lec. is abundant here from April to September. It inhabits decaying oak (mostly of the red and chestnut species) that is

almost changed to humus. It is found in all its stages at the same time, and seems to have no other business than to hasten the destruction of its habitation. I have never met with a specimen elsewhere. Heretofore its habitatio has been given as under the bark of yellow pine.

Scolytus rugulosus Ratz. I have obtained this insect twice from hickory twigs placed in a box. The color of these is black, like *S. 4-spinosus*. I have others that are reddish-brown, said to be from peach trees. I have carefully looked for it several times in diseased trees of the last mentioned species, and also in pear trees affected by blight, but always with negative results.

Macrobasis unicolor Kirby is found here in countless numbers from the middle of July till the middle of August, on a leguminous plant (*Baptisia australis*) growing abundantly on the river shore, the foliage of which it eats with great avidity and entirely destroys. In Economic Entomology it is classed among the insects injurious to vegetation, according to Riley in the Missouri Reports, devouring potato vines, beans, the foliage of the apple and the honey locust; and on Mount Washington was found by Mr. F. Gardiner, jr., on *Pyrus americana*. Here it has not been observed to have such tastes, nor to eat any other than the plant mentioned, though potatoes, beans, &c., are cultivated very extensively close by.

From the observations of Mr. Riley as given in his paper, "On the Larval Characters and Habits of the Blister-beetles," &c., it is probable the young of this beetle live on the eggs of *Caloptenus femur-rubrum*, which is also very abundant on the river shore. The gray race is the only one occurring here, and fortunate is it for the farmers along the river that the insect prefers a useless weed to his beans and potatoes. I have experimented with them, and find they possess vesicatory properties equal to the imported *C. vesicatoria*, a fact, however, that is not new.

In the larval state of Coleoptera many live in decaying bark and wood, some confined to a single species, or the species of a genus and perhaps its allies. Hickory and beech are more palatable to a greater number than any other wood. The following seem to be omnivorous:—

Cucujus clavipes feeds on locust, maple, sycamore, wild cherry, hickory, white oak, elm; *Clinidium sculptile* on spruce, hemlock, tamarack, black oak, hickory, chestnut, ash, gum, poplar, birch; *Synchroa punctata* on all species of oak, hickory, apple, cherry, mulberry, osage orange, chestnut; *Dendroides canadensis* on nearly everything.

LIST OF STAPHYLINIDÆ TAKEN AT BELLEVILLE, ONT.

BY PROF. J. T. BELL, SC. D.

Falagria dissecta.	Philonthus cyanipennis.
" venustula.	" æneus.
Homalota—10 species not yet determined.	" palliatus.
	" micans.
Aleochara lata.	Xantholinus cephalus.
" brachypterus.	" obsidianus.
" bimaculata.	" obscurus.
Cxyпода sagulata.	Leptacinus flavipes.
Myllæna dubia.	Diochus Schaumii.
Cilea silphoides.	Lathrobium grande.
Erchomus ventriculus.	" punctulatum.
Tachinus pallipes.	" simile.
" fimbriatus.	" nigrum.
Tachyporus brunneus.	" tenue.
" elegans.	" collare.
Conosoma crassum.	" othioides.
Bolitobius cincticollis.	" debile.
" dimidiatus.	Cryptobium bicolor.
" anticus. -	Stilicus biarmatus.
Bryoporus rufescens.	Lithocharis obsoleta.
Mycetoporus lepidus.	Sunius binotatus.
" americanus.	" longiusculus.
" flavicollis.	Pæderus littorarius.
Heterothops fumigatus.	Dianous cœrulescens.
Creophilus maxillosus.	Stenus junco.
Leistotrophus cingulatus.	" 8 species undetermined.
Staphylinus vulpinus.	Euæsthetus americanus.
" fossator.	Bledius semiferrugineus.
" badipes.	" emarginatus.
" cinnamopterus.	Oxytelus rugosus.
" violaceus.	Trogophlœus 4-punctatus.
Ocypus ater.	Olophrum obtectum.

Omalium rufipes.	Pycnoglypta lurida.
Protinus atomarius.	" convexa.
Micropeplus tesserula.	And about 6 species not yet identified.

A NEW TENTHREDINID.

BY L. PROVANCHER, CAP ROUGE, QUEBEC.

Genus *Synairema*, Hartig.

This genus was detached from *Tenthredo* by Hartig in 1837, for an insect described in 1793 by Panzer, under the name of *Tenthredo rubi*, found in Germany, Sweden, France, Tyrol, &c. In 1849, Brems described a new species found in Helvetia, which he named *S. alpina*. It has not yet been recorded as met with in America.

Synairema differs only from *Tenthredo* by its lanceolate cell, which is largely contracted in the middle, while in the last it is separated by a straight nervule.

Synairema Americana, nov. sp.

♀.—Length .46 inch. Black; face below the antennæ, inner orbital lines reaching the occiput and thence curving inwards, mandibles, clypeus, palpi, genæ, scape underside, a spot on each side of the median lobe of mesothorax, a spot on tegulæ, scutel, a point before and another one behind, apex of basal plates, pleura and pectus in parts, white. Antennæ long, slender, black with a white spot on the scape underneath. Wings hyaline, nervures and stigma brown black. Legs white, including coxæ and trochanters, the two anterior pairs with a black line exteriorly on their femora, tibiæ and tarsi; the posterior pair black, with coxæ, except a black spot outside, trochanters and basal third of femora, white; the spines of their tibiæ, except the tips, and a ring at the base of the first joint of the tarsus, also white. Abdomen elongated, black, shining, venter more or less whitish on the sides. Valves of the terebra black, shortly exerted.

Captured one female at Cap Rouge.

LIST OF DIPTERA TAKEN IN THE VICINITY OF PHILADELPHIA FROM 1882 TO 1884, INCLUSIVE.

BY E. L. KEEN, PHILADELPHIA, PA.

The object of giving this list in its present imperfect form is to call the attention of our Entomologists to this greatly neglected order of insects, and as most of the families are still in an unworked condition, to call especial attention to them; of course, the named species represent only about one fourth of all the species taken by me during my three years collecting, and were mostly taken in Fairmount Park, and a few at Delanco, N. J.

If a few of our many Entomologists would turn their attention to the Diptera, they would be sure to find an interesting and very wide field, in fact there would be room enough for nearly a dozen systematic workers in this order.

At present the Diptera are receiving great attention from Dr. S. W. Williston, who has already greatly advanced the study of the order, and if we had a few more such workers, the Diptera would soon rise to as honorable a rank as is held by Coleoptera, etc.

Cecidomyiidae.

Took a few species, but none are determined.

Mycetophilidae.

Species undetermined.

Simulidae.

Simulium venustum (?) Say.

Bibionidae.

Bibio albipennis, Say.

" *femoratus*, Wied.

And several undetermined species.

Bibio articulatus, Say.

Scatopse atrata, Say.

Culicidae.

Culex ciliatus, Fabr.

" *taeniorhynchus*, Wied.

Several other species were taken, but are undetermined.

Anopheles quadrimaculatus, Say.

Chironomidae.

There are a large number of species of this family, but they are not worked up.

Psychodidae.

Took six species of this family on the bark of trees last summer ; there are only two recorded in Osten Sacken's Catalogue.

Tipulidae.

Geranomyia canadensis, Westw.	Bittacomorpha clavipes, Fabr.
" rostrata, Say.	Tipula abdominalis, Say.
Rhypholophus nubilus, O. S.	" bella, Loew.
Erioptera straminea, O. S.	" costalis, Say.
" venusta, O. S.	" cunctans, Say.
Chionca valga, Har.	" fasciata, Loew.
Symplecta punctipennis, Meig.	" fuliginosa, Say.
Epiphragma fascipennis, Say.	" hebes, Loew.
Limnophila montana, O. S.	" infuscata, Loew.
Eriocera fuliginosa, O. S.	" tricolor, Fabr.
" spinosa, O. S.	Pachyrhina collaris, Say.
Amalopsis inconstans, O. S.	

Besides the above there are quite a number of undetermined species.

Rhyphidae.

Rhyphus alternatus, Say.	Rhyphus punctatus, Meig.
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Stratiomyidae.

Metoponia fuscitarsis, Say.	Sargus decorus, Say.
Beris viridis, Say.	" elegans, Loew.
Clitellaria subulata, Loew.	Chloromyia viridis, Say.
Stratiomyia marginalis, Loew.	Stratiomyia norma, Wied.

Also a number of undetermined species.

Tabanidae.

Chrysops callidus, O. S.	Chrysops vittatus, Wied.
" celer, O. S.	Therioptectes lasiophthalmus, Macq.
" excitans, Walk.	Tabanus atratus, Fabr.
" flavidus, Wied.	" costalis, Wied.
" frigidus, G. S.	" lineola, Fabr.
" fugax, O. S.	" nigrovittatus, Macq.
" niger, Macq.	" stygius, Say.
" obsoletus, Wied.	" sulcifrons, Macq.
" plangens, Wied.	" trimaculatus, Palisot-Beau.
" univittatus, Macq.	

Leptidae.

- | | |
|-------------------------|-----------------------------|
| Chrysopila ornata, Say. | Chrysopila thoracica, Fabr. |
| " propinqua, Walk. | Leptis punctipennis, Say. |
| " quadrata, Say. | |
- Took quite a number of undetermined species of this family.

Asilidae.

- | | |
|--------------------------------|----------------------------------|
| Leptogaster flavipes, Loew. | Laphria sericea, Say. |
| Stichopogon trifasciatus, Say. | Mallophora laphroides, Wied. |
| Holcocephala abdominalis, Say. | " orcina, Wied. |
| " calva, Loew. | Promachus Bastardii, Macq. |
| Deromyia discolor, Loew. | " quadratus, Wied. |
| " umbrinus, Loew. | Erax aestuans, Linn. |
| Atomosia glabrata, Say. | " Bastardi, Macq. |
| " puella, Wied. | " lateralis, Macq. |
| Cerotainia macrocera, Say. | " furax, Will. |
| Dasyllis flavicollis, Say. | Proctacanthus brevipennis, Wied. |
| " thoracica, Fabr. | " Philadelphicus, Macq. |
| " tergissa, Say. | Asilus Novæ Scotiæ, Macq. |
| Pogonosoma dorsata, Say. | " sericeus, Say. |

Midaide.

Midas clavatus, Drury.

Bombylidae.

- | | |
|------------------------------|----------------------------|
| Exoprosopa fascipennis, Say. | Bombylius fratellus, Wied. |
| Anthrax alternata, Say. | " pulchellus, Loew. |
| " fulvohirta, Wied. | " validus, Loew. |
| " lateralis, Say. | " varius, Fabr. |
| " sinuosa, Wied. | Sparnopolius fulvus, Wied. |
| Argyramoeba limatulus, Say. | Geron calvus, Loew. |
| " Cedipus, Fabr. | Systropus macer, Loew. |
| " Simson, Fabr. | |

Therevidæ.

Have quite a number of species, but none are determined.

Scenopinidæ.

Scenopinus fenestralis, Linn.

Empidæ.

Species of this family are quite plentiful around Philada., but I have none named.

Dolichopodidae.

A large number of species are found here of this large family; only a few of mine are determined.

- Dolichopus batillifer, Loew. Scellus exustus, Walk.
 " bifractus, Loew. Psilopus patibulatus, Say.
 " eudactylus, Loew. " siphon, Say.
 Diaphorus spectabilis, Loew.

Syrphidae.

(See Vol. xvi., No. 8, pp. 145-147.)

Conopidae.

- Conops tibialis, Say. Stylogaster neglecta, Will.
 Have quite a number of undetermined species.

Pipunculidae.

Took two or three species of this family, which are not as yet determined.

Tachinidae.

Took about 50 species of this large family, of which the following are determined:—

- Trichopoda pennipes, Fabr. Hystricia vivida, Harr.
 Exorista flavicauda (?) Riley. Belvoisia bifasciata, Fabr.

Of *Dexida*, *Sarcophagida*, *Muscida*, *Anthomyida*, I took a very large amount, but for the most part the species are unnamed.

Cordyluridae.

- Cordylura bimaculata, Loew. Scatophaga stercoraria, Linn.
 " setosa, Loew.

Helomyzidae.

- Helomyza quinquepunctata, Say.

Sciomyzidae.

- Tetanocera arcuata, Loew. Tetanocera saratogensis, Fitch.
 " pictipes, Loew. Sepedon armipes, Loew.
 " plebeja, Loew. " fuscipennis, Loew.

Psilidae.

- Loxocera cylindrica, Say.

Micropezidae.

- Calobata antennipennis, Say.

Ortalidae.

- Pyrgota undata, Wied. Callopostria annulipes, Macq.
 Rivellia viridulans, R. Desv. Scoptera colon, Loew.

Camptoneura picta, Fabr. Chætopsis aenea, Wied.
Stictocephala vau, Say.

Trypetidae.

Straussia longipennis, Wied. Euaresta bella, Loew.
Oedaspis polita, Loew. " festiva, Loew.
Eurosta solidaginis, Fitch.

Lonchæidæ.

Paloptera superba, Loew.

Sapromyzidæ.

Sapromyza compedita, Loew. Sapromyza philadelphica, Macq.

Diopsidæ.

Sphyracephala brevicornis, Say.

Ephydridæ.

Paralimna appendiculata, Loew.

Ochthera mantis, Deg. Also several other species.

Ephydra atrovirens, Loew.

Oscinidæ.

A few species around decayed fruits.

NORTH AMERICAN PYRALIDÆ.

BY PROF. C. H. FERNALD, STATE COLLEGE, ORONO, ME.

Crambus zeellus, n. s.

Expanse of wings, from 18 to 24 m. m.

Palpi, head and thorax, pale leaden gray. The labial palpi extend forward as far as the length of the head and thorax. The maxillary palpi are as long as the head.

Fore wings dull leaden gray, mixed with ashy and whitish, especially on the outer part, and crossed beyond the middle by two angulated dull ochre yellow lines, overlaid more or less with dark brown. The first line crosses the end of the cell where it is angulated. The second crosses the wing about half way between this last and the end. The terminal line is dark brown, and a dark brownish cloud extends obliquely in from the apex to the second line, but does not reach the costa. A narrow ochre yellow line, somewhat curved, extends from the middle of the base of the wing to the second line near the anal angle, and a similar line, though less

plainly marked, runs parallel, between this line and the hinder margin. The terminal space is more or less gray. The outer margin is regularly excavated below the apex. Fringes pale metallic lead color. Hind wings pale fuscous with lighter fringes. Under side of the body and all the wings pale fuscous.

Habitat.—Me., Penn., W. Va., Ill., Mo.

Bred from corn by Prof. S. A. Forbes.

I am under obligations to Lord Walsingham for comparing specimens of this and other species with the collections in London.

Crambus hulstellus, n. s.

Expanse of wings, 26 m. m.

Head, thorax and fore wings, chalky white. The palpi are somewhat fuscous on the outside, but white on the rest of their surface. Antennæ fuscous.

The fore wings are crossed by a twice angulated, brown, median line, much darker and heavier on the angles. This line starts from a point a little beyond the middle of the costa and runs out beyond the end of the cell where the first acute angle is formed. From this angle the line runs obliquely across the wing to the middle of the hinder margin forming the second angle just below the cell, beyond which the line is nearly obsolete. A double, yellowish line starts from the costa a little beyond the outer fourth, and curving downward runs nearly parallel with the outer margin, to the hinder margin a little within the anal angle. The terminal space is yellowish and this color fuses with the line so that it does not appear double except at the costa, and there is a row of seven black points along the outer margin. The space between the median and subterminal lines has six longitudinal, geminate brown dashes on the veins. The surface of the wing inside of the angles of the median line is covered with silver colored scales, and there are three dark brown dashes, one near the base above the hinder margin, the second outside of this and a little above, and the third extends along towards the second angle of the median line; and the costa is more or less sordid. Cilia white with a silvery base which is broken by the white opposite the second and third black spots below the apex.

The hind wings are sordid white, with a narrow terminal border slightly darker. Cilia pure white. Under side of the hind wings lighter

than above, under side of fore wings sordid white, with the subterminal line and terminal black points reproduced.

Received from Texas by Rev. Geo. D. Hulst, for whom I take great pleasure in naming this species.

Eurycreon perplexalis, n. s.

Expanse of wings, 22 m. m.

Palpi and head mouse-colored. The base of the palpi beneath and a superciliary line, white. Thorax and fore wings pale mouse-colored, the latter overlaid more or less with whitish scales. The space between the reniform and oblique orbicular is whitish. The inner line is obsolete; the outer line starts at right angles from the costa, has a re-entrant angle outside of the upper part of the reniform spot, thence it is outwardly rounded and dentate with five teeth, down to vein two, where it sends a long blunt angle in towards the base of the wing, then turns and forms a similar but shorter outward angle, then runs to the hinder margin at right angles with it. This line is bordered on the outside with a narrow whitish shade, most prominent on the costa and before the hinder margin. The terminal line is dark and composed of confluent semi-lunate spots. The fringes are paler than the wings.

Hind wings pale gray, darker terminally, with the faintest indication of an extra median line. Fringes paler with a basal darker line. Under side of all the wings pale yellowish fuscous, with the markings of the upper surface faintly indicated.

Received from Texas by Rev. Geo. D. Hulst.

Botis inornatalis, n. s.

Expanse of wings, 13 m. m.

The head and palpi are pale snuff brown, the latter extend forward as far as the length of the head in front of it, and they are whitish underneath at the base, and the superciliary line is white.

The thorax and fore wings are of a light vinous red or reddish pink color, very near the color of *Botis signatalis*, but without markings of any kind. Fringes paler than the wings at the base, but whitish on the outer part.

Hind wings pale fuscous, lighter at the base, and stained with vinous red along the outer margin. The abdomen is concolorous with the hind wings.

Under side of the fore wings silky, fuscous and stained with vinous along the outer part of the costa. Under side of the hind wings lighter than above. Under side of the body, middle and hind legs, white and silky. The fore legs are pale fuscous.

This beautiful little species was collected in Florida and sent to me by Rev. Geo. D. Hulst.

CORRESPONDENCE.

XYLORYCTES SATYRUS.

Dear Sir: In answer to Dr. H. A. Hagen's query in the ENTOMOLOGIST for Dec., 1884, I have to say that some four years ago a boy brought me a living specimen, a fine male, of *Xyloryctes satyrus*, which he had taken in Bleeker's Woods, just outside of the city limits.

JAMES T. BELL, Sc. D.

Belleville, Ont., Feb. 17th, 1885.

Dear Sir: Dr. Hagen asks in Dec. No. (Vol. xvi., p. 239) whether this beetle occurs further north than Pa. I find it recorded by Zesch and Reincke in their list of species captured within fifteen miles of Buffalo; by Howard and Schwarz in list of Coleoptera of lower peninsula of Michigan, presumably from Detroit; by Pettit, as captured at Grimsby, Ont., and by Prof. Bell, as taken near Belleville, Ont. It also occurs here—and this is probably the most northerly record for it—but is apparently rare. The only specimen I possess is a ♂ which was brought to me alive by a friend, but I have several times met with the elytra and other fragments of dead specimens in or under decayed logs. It is of course noticeable as being our largest representative of the Scarabæidæ, which in these colder regions only muster about forty species.

W. HAGUE HARRINGTON.

Ottawa, 25th Feb., 1885.

Dear Sir: I am able to add to the kind answers to my query by Messrs. G. Dimmock and S. Henshaw, two more. Prof. Chas. V. Riley writes me—that August 18th, 1871, he found larvæ, pupæ and fresh beetles of *X. satyrus* quite common at Ridgewood, N. J., under old leaves in the

woods, especially in moist hollows; August, 1878, he found the beetles quite common, and in fact injuring the roots of ash trees in Babylon, L. I. Miss Emily L. Morton, Newburgh, N. J., states the frequent occurrence of *X. satyrus* on Long Island at various places, but has never seen a specimen of it taken in her own collecting grounds, New Windsor, N. Y., or vicinity. I have never made any lists of the distribution of insects except, of course, for some orders which belong to my special studies; but I have many times missed such a reference list for Coleoptera. I have been now informed that such a list is in the way of preparation. Even if I had time enough to undertake such a large work, I would have been prevented from doing it for a certain reason. If local lists should be taken as a basis for such a reference list of N. Am., it would be necessary to assume that the determinations of the species are unquestionable. That this is not the case in some lists of Coleoptera and Lepidoptera, I have been shown by specialists. Therefore if such a reference list should be of value, it must be worked by specialists who are able to control carefully the determinations. As in my large correspondence I am often asked to give information of the occurrence of species in certain localities, my way to answer these queries is to consult the collections in my care. So for beetles, the N. A. collection formed out of the collections of Mel-sheimer, Ziegler, Lewis, A. Agassiz, and all other beetles, formerly belonging to the Museum. Further, the collections of Dr. LeConte, Lt. Casey, and of the Peabody Academy, the two latter ones now belonging to the Museum; and finally of the general collection. If the result is not sufficient, I would like to apply to the knowledge of specialists, and the prompt answers now given will mostly settle the question. I should add that at least for Lepidoptera, I did begin the arrangement of the collection in a way to form a reference list, in placing a specimen of every State and of other important localities in the boxes, to have a graphical view of the distribution of each species. I have retained for this purpose specimens often in a very bad condition. But this plan, by which sometimes a whole box was needed for one species, outgrew the given limits of space. Nevertheless, for Odonata and some other families belonging to my specialty, I still retain this arrangement, which has given for some species of large distribution two closely filled boxes, and even more. When such species are studied and finally outworked, it will be of course possible to diminish the number of specimens. It would be an error to believe that I could do all this myself. My intention is to bring all specimens present in the

collection together in such a manner that the monographer or the student can find now or in later times the material which he needs for his study. To draw the attention of students to parts of the collection which are arranged as far as my knowledge goes, I did begin to publish during the last year lists of the contents of the collection, and will go on with such publications if they should prove to be useful. Through the addition of the collection of the Peabody Academy, the Museum possesses a very large number of types for Heterocera and Micro-Lepidoptera of N. Am., and a very large number of types of Europe. I have during many years given especial care to bring together a collection of types of the European fauna for comparison with the fauna of N. America.

Concerning my list of the Phytoptoceria, I was most agreeably surprised by a letter of Prof. S. A. Forbes, and by a copy of the 12th Report, in which Mr. H. Garman has given an excellent paper on the Phytopti and other injurious plant mites. The copy of this Report which he has formerly forwarded to me has never reached my hands. As this paper is not quoted in *Justis Jahresharict*, it is new to me, and I am glad that the list is now directly advanced by such a prominent paper.

H. A. HAGEN.

EUPTOIETA CLAUDIA.

Dear Sir: In reply to the letter of Mr. Thos. E. Bean, in the Jan'y number of the ENTOMOLOGIST, I took several specimens of *Euptoieta claudia* last season in the Calgarry and Goose Lake region, and *Pyrameis cardui* was so plentiful from Toronto to Br. Columbia that I hardly considered it worth while to publish it on the list. *E. claudia* is added to my list in the Dec. number. I took the larvæ of *cardui* on both thistles and nettles all along the route.

Yours truly,

GAMBLE GEDDES.

Government House, Toronto, 25th Feb., 1885.

[*E. claudia* was also among the insects collected by Miss F. M. Pierce, of Moose Mountain, N. W. T., last year, and forwarded for our Society's collection.—ED. C. E.]