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A NEW GENUS AND SOME NEW SPECIES OF HYMENOPTERA FROM THE PHILIPPINE ISLANDS.

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All of the Hymenoptera described in this paper were received from Father W. A. Stanton, who captured them in the Observatory Garden at Manila, P. I.

Family X.—STELIDIDÆ. *Cœlixys*, Latr.

Cœlixys Manilae, new species.—♀. Length, 6.5 mm. Black; the cheeks, temples, clypeus and the face upwards to the front ocellus, the mesopleura, sternum, coxæ, metathorax, and the apical margins of the ventral and dorsal abdominal segments, clothed, rather densely, with a whitish pubescence, sometimes tinged with yellow; there are also triangular spots of a yellowish pubescence on the anterior and posterior margins of the mesonotum and on the base of the scutellum; the head and thorax are rather coarsely, closely punctured, opaque, while the abdomen is shining, although distinctly punctate, the punctures sparse and separated; the pygidium is bi-impressed at apex with a short median carina separating the impressions, the punctures being coarser and closer in the impressions or towards apex; the mandibles medially and the legs are red, the femora beneath and the tibiæ outwardly being clothed with a short, fine, dense, whitish pubescence. Wings hyaline, but faintly fuscous towards their apical margins, the tegulæ dark rufo-piceous, shining, the stigma and veins very dark fuscous, almost black.

Type.—No. 8103, U. S. N. M.

Manila (Father Stanton).

Family XII.—ANDRENIDÆ. *Halictus*, Latr.

Halictus Manilae, new species.—♀. Length, 6 mm. Aeneous black, the head from the base of the antennæ upwards greenish metallic, closely punctured, and clothed with a griseous pubescence, the clypeus smooth, but with some sparse punctures, the anterior margin fringed with yellowish hairs; the median process of the labrum is semicircular and bi-impressed at base; ocelli pale or whitish; antennæ black, the flagellum testaceous beneath, the pedicel small, only a little longer than thick, and much narrower than the flagellum; the first joint of the flagellum is

obconical, longer than the second joint, the third joint a little longer than the second; the following joints to the last are nearly equal, slightly longer than thick, the last as long as the first; the mesonotum and the scutellum are smooth and shining, but with minute, scattered punctures; the area at base of the metanotum is rugulose but not bounded by a salient rim, the posterior face smooth, impunctured, the mesopleura closely punctured. The abdomen is oblong oval, smooth and shining, but the derma, under a strong lens, shows some delicate, microscopic, transverse aciculations. The dorsal segments 2 to 5 have a band of white, appressed pubescence at base. The legs are black, with the tarsi ferruginous, the tibiae, middle femora beneath and the tarsi with a ferruginous pubescence. Wings hyaline, the subcostal and median veins black, the stigma and other veins pale yellowish.

Type.—No. 8104, U. S. N. M.

Manila (Father Stanton).

Family XIX.—LARRIDÆ.

THYREOSPHEX, new genus.

The wasp forming the type of this genus is a true Larrid, but differs greatly in certain characters from all others so far discovered. It falls into the subfamily *Larrinae*, and between the genera *Tachytes*, Panzer, and *Tachysphex*, Kohl.

My generic table of the genera, published in the CANADIAN ENTOMOLOGIST, Vol. XXXI, 1899, p. 244, may be modified to contain this new genus, as follows:

12. Second cubital cell receiving both recurrent nervures, the first transverse cubitus not angularly broken; face normal *Tachytes*, Panzer.

Second and third cubital cells each receiving a recurrent nervure, the first transverse cubitus angularly broken at its basal third; face abnormal, with a shield-like plate anteriorly that extends over the base of the antennæ. ♂ (♀ unknown). *Thyreosphex*, Ashm., gen. nov.

Thyreosphex Stantonii, new species.—♂. Length, 5 mm. Black and shining, with some sparse, microscopic punctures, the face, from the front ocellus, anteriorly more or less rugulose, with irregular, elevated lines, and a distinct median carina; eyes parallel, large, extending to the base of the mandibles; the shield-like plate that covers the base of the antennæ is rounded anteriorly and broadly margined with white; the clypeus is sparsely clothed with silvery hairs; the mandibles have a rufous

spot towards their apex; palpi slender, white; the flagellum brown, with a dusky streak above, the joints of which are rather long and cylindrical, the first joint being about five times as long as thick; the hind angles of the pronotum are subacute, with a white spot at each angle; the mesonotum has two parallel grooved lines; the tegulæ are testaceous, with a white spot anteriorly; legs black, the tarsi honey-yellow, the tibial spurs white; the metanotum has three longitudinal carinæ, the metapleura and the posterior face being striated. The abdomen is oblong oval, smooth and shining, impunctured, but more or less constricted in the first and second sutures. Wings hyaline, the small stigma and the veins brown.

Type.—No. 8105, U. S. N. M.

Manila.—This singular little wasp is named in honour of Father Stanton, whose captures have contributed so much towards advancing our knowledge of the Hymenopterous fauna of the Philippines.

Family XXI.—TRYPOXYLIDÆ. Trypoxylon, Latr.

Trypoxylon Philippinensis, new species.—♂. Length, 6.5 mm. Black and shining, with sparse glittering white hairs, the hairs silvery back of the eyes, on the clypeus, and on the collar; mandibles ferruginous; the extreme apex of the scape, pedicel and trochanters, the tegulæ, bases of all tibiæ, and a band at the base of the second and third abdominal segments are honey-yellow, or testaceous; the front and middle tarsi, the tibial spurs, and the fourth joint of the hind tarsi, are white. Wings hyaline, the stigma and veins, except the costal and median veins at base, dark fuscous, or almost black. The metanotal area is well defined, the area and the posterior face each with a longitudinal median sulcus.

Type.—No. 8106, U. S. N. M.

Manila (Father Stanton).

Family XXXI.—CHRYSIDIDÆ. Hedychrum, Latr.

Hedychrum Stantonii, new species.—♂. Length, 4 mm. Blue, but with metallic greenish or brassy reflections on the vertex in front of the anterior ocellus, on the anterior half of the pronotum and along its sides, on the sides of the mesonotum broadly, on the scutellum at the sides narrowly, on the metanotum, the pro- and meso-pleura, the mesosternum, the hind coxæ within, and some spots on the first and second segments of the abdomen; legs black, with the tarsi, except the basal joint of the hind tarsi, pale or yellowish. Wings hyaline, with the apical third subfuscous, the stigma and veins brown. The head and thorax are rather coarsely,

closely punctured, the metathorax with large, coarse, umbilicate punctures, while those on the abdomen are much smaller, not dense, but separated, except on the first segment laterally, where they are larger and more confluent.

Type.—No. 8107, U. S. N. M.

Manila (Father Stanton).

Family LVI.—SCELIONIDÆ. *Telenomus*, Haliday.

Telenomus catacanthæ, new species.—♀. Length, 0.8 mm. Head, thorax and abdomen black, the scape of antennæ and the legs, including the coxæ, brownish yellow, the pedicel and flagellum black; the head and abdomen are smooth, impunctate, the first abdominal segment and the second at base, longitudinally striated, the mesonotum feebly, microscopically punctate and sericeous; the head is transverse, wider than the thorax, about $3\frac{1}{2}$ times as wide as thick antero-posteriorly; the ocelli are arrayed in a triangle, but widely separated, the front ocellus placed in a slight depression, the lateral ocelli rather close to the eye margin, but not quite touching it; the flagellum is subclavate, thickened towards apex, the pedicel obconical, about as long as the first joint of the funicle, the second joint of the funicle is a little shorter than the first, the third is shorter than the second, the fourth and fifth moniliform, the club 5-jointed, the joints, except the last, being a little wider than long. Wings hyaline, the venation light brown, the marginal vein short, hardly half as long as the stigmal vein.

♂.—Agrees well with the ♀, except that the pedicel is brownish yellow, the flagellum alone being black, filiform, tapering off at apex, pubescent, the first joint being a little longer than the pedicel, but hardly as long as the second, which is fully twice as long as thick, the third joint is only about two-thirds the length of the second and more slender, the fourth and following joints to the last being moniliform, the last ovate; the marginal vein is a little longer than in the female, being fully two-thirds the length of the stigmal vein.

Type.—No. 8108, U. S. N. M.

Manila. Described from several specimens bred by Father Stanton from the eggs of a Pentatomid, probably those of *Catacantha Carrenoi*, Le Guillon.

Family LXVI.—ICHNEUMONIDÆ. *Colpomeria*, Holingren.

Colpomeria flava, new species.—♂. Length, 7 mm. Entirely yellow, except the eyes, which are brown, and a rounded spot on the

middle of the mesonotum, a spot enclosing the ocelli, and the tips of the claws, which are black. Wings hyaline, the stigma and subcostal vein yellowish, the costal and other veins black.

Type.—No. 8109, U. S. N. M.

Manila (Father Stanton).

This species mimics a species of *Xanthopimpla* in colour and in the structure of the abdomen, and I first took it for a species in that genus. It has, however, no areolet in the front wings, and agrees structurally, in venation and in the structure of the legs, with genuine *Colpomeria*.

Family LXVIII.—BRACONIDÆ. Ischiogonus, Wesmael.

Ischiogonus Philippinensis, new species.—♀. Length, 2 mm.; ovipositor as long as the abdomen. Reddish brown, the head paler, more yellowish, the first and second segments of the abdomen more or less fuscous above, the eyes black, the flagellum fuscous; wings hyaline, the stigma and veins light brown.

The quadrate head is smooth, impunctate; the mesonotal furrows converge and meet posteriorly just in front of the scutellum; the metanotum has a median carina that unites with a transverse carina bounding the upper margin of the posterior face, the latter uniting with the pleural carinæ, the metanotum, therefore, biareolated. The abdomen is elongate oval, as long as the head and thorax united, with the first and second segments longitudinally striated.

Type.—No. 8110, U. S. N. M.

Manila (Father Stanton).

ENTOMOLOGICAL SOCIETY OF ONTARIO.

The library and collections of the Society have been removed from the Y. M. C. A. building on Wellington street, London, to the Public Library building on the corner of Queen's Avenue and the same street. The new room is much larger and more convenient in many respects than the one occupied by the Society during the last eight years, and affords much needed space for bookcases, etc. It is hoped that the change of quarters will produce an increased interest in the Society, and cause its valuable library and collections to be made more use of by the public, to whom they will be open on every alternate afternoon.

The annual meeting is to be held in the Public Library building on Wednesday and Thursday, October 26th and 27th, when many subjects of interest and importance will be discussed.

THREE NEW LYCOSIDS.

BY RALPH V. CHAMBERLIN, SALT LAKE CITY, UTAH.

Brief preliminary descriptions of the following species are given in order that the names may be used in another place.

Lycosa permunda, sp. nov.—♀. Cephalothorax dark brown; a pale narrow median line extending backward from first eye row, widening abruptly in front of dorsal groove, and then gradually narrowing to a point at posterior margin; a broad light-coloured marginal stripe on each side not extending forward farther than the third eye row, its upper margin coarsely dentate, the lower border broken by a few dark dots, but not limited below by a continuous dark line or stripe at margin. Chelicerae black. Labium and endites dark brown. Sternum dark brown, with a yellow median line. Legs brown, darker distally; beneath unmarked but having a number of dark cross bars above on femora and posterior tibiae. Abdomen above dark, having the usual lanceolate mark at base followed by a series of light coloured, chevron-formed transverse lines, each ending on each side in a light dot; sides yellowish brown, densely spotted with black; venter also yellowish brown, more sparsely covered with smaller black dots, much as in *helluo*.

Length, 22 mm. Length of cephalothorax, 10.7 mm.; width, 8 mm. Length of leg iv., 30.3 mm.

♂.—Coloured nearly like the ♀, but paler throughout. Marginal stripes of cephalothorax not interrupted below by dark spots. Legs clear brown, without any cross markings on any joints. Palpi yellowish brown excepting tarsus, which is black.

Length, 20 mm. Length of cephalothorax, 10 mm.; width, 7.5 mm. Length of leg iv., 32.4 mm.

Locality: Kansas.

In general appearance the female resembles *helluo*, but is easily separated by structure of epigynum and by various other characters. The male is conspicuously different in its palpal organ and in size, proportion and structure from those of related species. This form also might suggest the *vafra* of Koch, but is not that species.

Pirata aspirans, sp. nov.—♀. Sides of cephalothorax dark brown, crossed by radiating lines of black; a pale-coloured median band enclosing in front the usual dark V-shaped mark; a yellow stripe on each side extending forward as far as third eye row, limited below by a marginal black line; clypeus yellow. Chelicerae reddish yellow. Labium yellow. Endites yellow apically, dusky brown below. Sternum and coxae of legs

immaculate yellow. Legs yellow, with all joints excepting tarsi banded with black annuli, which on the femora of the first legs are confluent, and on the other joints of the same legs are partially so. Abdomen above black, at sides minutely punctate with yellow; at base a lanceolate yellow mark, having at each side behind middle a small ovate yellow spot, with black dot at centre, and each side of its apex a larger triangular yellow spot; behind is a series of chevron-shaped transverse marks, which become successively shorter caudally, the last few being diamond shaped and contiguous with each other by their apices. Sides of abdomen above like lateral part of dorsum, but with black reduced to spots over a yellow field below. Venter yellow, dusky in front of genital furrow, and with a dusky median stripe behind epigynum extending only part way to the spinnerets. Anterior row of eyes but slightly procurved, shorter than the second; anterior median eyes two-thirds their diameter apart closer to the smaller lateral eyes; anterior lateral eyes three-fourths their diameter from front margin of clypeus, their diameter from eyes of second row; eyes of second row two-thirds their diameter apart; quadrangle of posterior eyes one-fourth as long as the cephalothorax, a little wider in front than long. Epigynum behind at middle shallowly indented or angularly excavated, the side lobes widely rounded.

Length, 3.9 mm. Length of cephalothorax, 1.8 mm.; width, 1.4 mm. Length of leg iv., 7.3 mm. (of tibia + patella, 2.3 mm.).

Locality: Virginia, North Carolina. One specimen from the former locality and two from the latter in company with specimens of *P. bilobata* (Tully). The female of this species is nearest *P. humicolus*, but among other points differs clearly in the form of the spermathecae. In *aspirans* the spermathecae lie entirely in front of their openings, whereas in *humicolus* this is not the case. Both these species may be separated from *minuta* by the fact that in them the inferior margin of the chelicerae is armed with three teeth, *minuta* having but two. The male of *aspirans* is conspicuously different in the form of the scopus.

Allocosa degesta, sp. nov.—♀. *Cephalothorax* shining black, of reddish lustre. *Chelicerae* the same. *Labium* and *endites* brown. *Legs* nearly as in *funerea*, but light marks on femora more obscure and less contrasted on other joints between the light and dark rings. *Sternum* reddish brown, dark about margins, lighter, more yellowish over middle area. *Abdomen* above nearly as in *funerea*; venter yellow, with a few faint dark dots at sides. *Spinnerets* yellow. *Epigynum* brown, weakly reddish at borders.

Chelicerae not quite twice as long as the *face* is high. Anterior row of eyes a little longer than the second, nearly straight; anterior median eyes much larger than the lateral, at most one-fifth their diameter apart, still closer to the lateral eyes, not fully one-third their diameter from eyes of second row; anterior lateral eyes not fully their diameter from front margin of clypeus, some closer to eyes of second row; anterior median eyes three-fourths as large as those of second row; eyes of second row about their radius apart; quadrangle of posterior eyes as wide in front as long, only one-sixth as long as cephalothorax. *Spines* of anterior tibiae greatly reduced, minute; none at all on either anterior or posterior side of joint. Epigynum nearly the same as that of *funerea*.

Total length, 6.6 mm. Length of cephalothorax, 3.2 mm.; width, 2.25 mm. Length of leg iv., 9.4 mm.

Locality: Louisiana.

The other species of *Allocosa* so far described are *funerea*, Hentz; *rugosa*, Keys (*nigra*, Stone, nec *funerea*); and *sublata*, Montg. I have a fifth species not yet described.

STRANGE ATTEMPTED HYBRIDIZATION IN NATURE.

It will doubtless be of interest for me to record what seems to me the strangest cross-copulation between different species of lepidoptera that I have ever heard of. Mr. Arthur Hudson informs me that one night recently he found on a treacled post a ♂ *Orthosia Conradi* in coitu with a ♀ *Noctua Smithii*, and on the same night on another treacled post, a ♂ *Xylophasia lateritia* in coitu also with a ♀ *N. Smithii*. Both pairs remained in cop. for some little time after boxing; but the ♀♀ died, probably from dry heat, within about twenty-four hours, without laying. Mr. Hudson's dictum on matters concerning the habits, etc., of our local lepidoptera is unimpeachable, and he says there cannot be any doubt as to the species in each case. Of course it is unlikely that, had eggs been obtained, they would have proved fertile. During my 17 years' experience as a collector I never yet saw even supposed different species in cop., and never heard of copulation between species so widely distinct. The occurrence of the two cases on the same night would seem to suggest that something about the atmospheric conditions had turned the moths a bit "crazy."—F. H. WOLLEY DOD, Millarville, Alta.

NEW SPECIES OF NORTH AMERICAN ASILIDÆ.

BY E. A. BACK, B. SC., AMHERST, MASS.

Dasyllis cinerea, sp. nov.—Black, shining, with slight bluish reflection; head, thorax, tip of abdomen, and legs with cinereous hair and pile. Length, 12–15 mm.

♂ ♀.—Head black, face cinereous pollinose, mystax and vibrissæ long, composed of moderately-dense cinereous hair, with the exception of a few black ones for the most part confined to the oral margin, but sometimes extending up on the facial gibbosity; ocellular tubercle prominent with black hair; occipito-orbital hairs fine, black and gray, the latter predominating; beard dense, silky, of same gray colour; palpi small, black-haired; antennæ black, first two segments with black and gray hairs. Thoracic dorsum clothed with short gray pile, longer behind; lateral margins with fine black hair; scutellum, with the exception of a few short black hairs on the anterior, and a fringe of longer hairs of same colour on its posterior margin, bare and shining black; halteres yellowish-brown. Abdomen with lateral margins of segments 1–4 with moderately long gray and black pile; dorsum of same segments sparsely clothed with fine black pile, not noticeable without the aid of a lens. Segments 5–6, excepting the middle anterior portion of segment 5, with dense, procumbent, yellowish-gray, sometimes brassy-yellow pile. Venter with sparse, long, gray pile; ovipositor of female with long pile of same colour, sometimes is part black; genitalia of male with short black pile and a few longer gray hairs. Legs black; coxæ, femora, on the upper and posterior surfaces, and the tibiæ, excepting the distal third of the posterior pair, with long gray pile and hairs; scattering hairs and bristles on all the legs, a patch of short pile on the upper distal portion of the posterior femora, and the clothing of the distal third of the posterior tibiæ, and of all the tarsi, black. Wings hyaline, slightly fuliginous along the black veins. A distinct bulla on vein at base of discal cell.

Described from two males and one female from Southern Pines, N.C., collected in March by F. Sherman, and one female from Karnes, N. Y., collected June 18. Four co-types deposited as follows: A male and female in the collection of the Massachusetts Agricultural College, one male in the collection of the N. C. Experiment Station, and one female in the collection of the N. Y. State Museum.

Dasyllis Fernaldi, sp. nov.—Black; segments 4-5 of abdomen with fulvous pile. Length, 15-18 mm.

♂ ♀.—Head: pile covering entire head, excepting on the oral and occipito-orbital margins and of palpi, where it is black, dull yellow. Basal segments of antennæ black with sparse yellow pile; third joint covered with a pale pubescence. Thoracic dorsum with short, sparse dull yellow pile intermixed with black on portion above and in front of wings; humeri with small rufous spot and black pile. In no place does the pile completely hide the dorsum. Pleura black with a bronze tinge. Scutellum with short black pile and long bristles. Halteres yellowish.

Abdomen moderately slender; tergum of segment 1 with short black hairs, apparently nude, likewise on segment 2, except pile is yellow and more perceptible; on segment 3 still denser and has more of a fulvous tinge. Longer pile on lateral margins of segments 1, 2, 3, yellow and increasing in quantity. Segment 4 entirely clothed with fulvous pile, excepting a few hairs on lateral margin. This fulvous pile extends back over sides of segment 5 and its anterior border, otherwise segment 5 and following segments with dull yellow pile. Genitalia of male large, with sparse yellow pile and few black bristles. Venter thinly clothed with long yellow pile. Legs black; coxæ with yellow pile; femora and tibiæ, especially on outer portion, with sparse yellow pile, more abundant on anterior legs, rest of pile short, black. Intermediate femora on the anterior side with short row of black bristles. Tarsi black with black bristles and very short yellow pile, varying in amount. Claws black, rufous at base; pulvilli tawny. Wings slightly fuscous. Expanse, 30 mm.

Described from three males and one female from Colorado. Co-types deposited as follows: 1 male in collection of Massachusetts Agricultural College and two males and one female in collection of American Entomological Society, Philadelphia.

I have named this species after Dr. H. T. Fernald, in recognition of his kind services.

Saropogon rufus, sp. nov.—♀. Rufous; eyes, style of antennæ, tip and upper side of proboscis, front, and occiput of head, line on distal margin of trochanters, and the claws, black. Face covered with fine golden pile, mystax composed of whitish bristles; ground colour of occiput black, hidden beneath a dense golden pubescence. Anterior and intermediate coxæ white pollinose; halteres rufous. Abdomen slender, shining, nearly glabrous; second segment of venter white pollinose.

Pulvilli straw-coloured. All bristles and pile not mentioned, pale or deep rufous. Wings hyaline, slightly fuscous along the brown veins. Length, 14.5 mm.

This species may be readily distinguished from Loew's *adustus* and *combustus*, the types of which I have seen, by its more slender body and the lack of any blackish tinge to the wings. It may be distinguished from Johnson's *bicolor* and *abbreviatus*, the types of which I have also seen, by its long, slender abdomen.

Described from one female captured August 2, Tehachapi, California, by A. P. Morse. Type specimen in collection of Mr. Charles W. Johnson.

Sarapogon albifrons, sp. nov.—♀. Face white, thorax brownish-yellow, abdomen rufous. Length about 10 mm.

Head everywhere white pollinose; ground colour of face pale straw, of occiput black. Eyes, ocelli, proboscis, and distal half of third antennal joint black. Bristles of mystax, pile of segments 1 and 2 of antennæ, proboscis, and testaceous palpi, and hair of ocellular tubercle, occiput and beard, white; last very slight. Thoracic dorsum and upper portion of pleura and scutellum brassy-yellow pollinose. Lower portion of pleura and the coxæ whitish pollinose. Pile of thorax confined chiefly to dorsum, very short, white; bristles and halteres whitish.

Abdomen rufous, slender, somewhat shining. First segment, especially on sides, spot on posterior angles of four following segments white pollinose; spots on segment 5 very small, and in one instance lacking. White pile most abundant on segment 1, elsewhere extremely scarce and short. Legs pale rufous; distal margins of trochanters and claws black; pulvilli whitish. Two anterior pairs of coxæ with moderately long white pile; femora, tibiæ and tarsi with very short pile of same colour. Tibiæ and tarsi with sordid white bristles, longest on the intermediate pair. Wings pure hyaline with slight violaceous tinge; veins brownish at base of wing, darker outwardly.

This species is smaller than either *adustus* or *combustus*, and is nearer them in form than *bicolor*, *abbreviatus* or *rufus*.

Described from 2 females collected by F. H. Snow, Bill Williams Fork, Arizona, August. One is a somewhat worn specimen, and has lost its antennæ. Two female co-types, one in the collection of the Massachusetts Agricultural College and one in that of the University of Kansas.

Ospriocerus albifasciatus, sp. nov.—Black, thoracic dorsum, posterior margin of 4th and the following segments of abdomen rufous; wings deep fuliginous; legs black. Length, 18 mm.

♂.—Head black; face and occiput white pollinose; mystax, occipito-orbital bristles and beard black. Antennæ black; distal end of the first and the entire small second segment reddish, both with black hair. Lateral margins of proboscis, and the palpi, in certain lights rufous; the latter with black hair. Dorsum of thorax, excepting that of the prothorax and a distinct median line, rufous, with very fine black pile and the usual black bristles; anterior and lateral margins of prothorax with longer black hair. Dorsum of prothorax, a broad stripe running backward over the humeri to the base of the wings, and a short narrow stripe on the mesothorax on each side of the median line, white pollinose. Entire thoracic dorsum when viewed from the side appears thinly covered with a hoary bloom. Pleura nearly glabrous, in certain lights with a reddish tinge; a spot above each coxa shining white pollinose. Scutellum black, bordered very narrowly on the anterior, and on the posterior margin when viewed from above, more broadly with white pollinose; bristles black. Halteres pale straw colour; spot on thorax above their insertion shining white pollinose.

First four segments of abdomen black; a large dull white pollinose triangular spot on each side of segments 2 and 3, extending backward nearly to the posterior margin, and on segment 2 in a narrowing stripe to the middle of the tergum, thus forming a narrow pollinose cross band on the anterior margin. The fasciæ of segment 3 do not extend so far upward in this specimen; the sides of segment 1 are also somewhat white pollinose. The posterior lateral margins of 2, a fine line on the posterior portion of 3, the entire posterior margin of 4, and segments 5, 6 and 7, entire above, rufous. Pile of tergum short, black, fine, except on the lateral margins of segments 1 and 2, where it is longer.

Venter: segments 2 and 3 dull whitish pollinose; the 4th almost black, the following dark rufous; pile black, sparse on segments 1 and 3, denser and more tufted on the following. Genitalia black above, rufous below, clothed with long whitish pile. Legs everywhere black, except at the femero-tibial articulations, where they are rufous, the thick short pile and bristles black. Claws black, at base rufous; pulvilli straw-coloured. Anterior coxæ with a few whitish and many black bristles; the posterior pair obscurely white pollinose.

Described from 1 male from Indian River, Florida. Type in collection of the American Entomological Society of Philadelphia.

Anisopogon Johnsoni, sp. nov.—Black; head, thorax, scutellum, posterior margins of abdominal segments, venter and legs with dull yellowish-white or whitish pile. Pile, except on posterior margins of abdominal segments, where it is short, recumbent, and often deeper yellow than on the thorax, long, erect, not dense, giving the insect a furry appearance. Face, thinly white pollinose; mystax and vibrissæ composed of long pile, the former dense, mostly black, the latter not as dense, and extending upward to the antennæ on either side of the face in such a way as to leave the middle of the face below the antennæ bare. Occiput white pollinose with long pile; in one male specimen with a few black occipito-orbital bristles. Beard long and fine, palpi small with black and white pile. Proboscis and antennæ black, the style of the latter nearly or quite as long as the third segment. Thorax in several specimens slightly white pollinose beneath the long pile. Abdominal segments finely punctured; the anterior two-thirds of each segment with short black pile, not easily noticeable. Last two segments of female shining black, not punctured; genitalia of male small, reddish, with fine pile.

Legs: coxæ and femora black, with same long pile on thorax. In a few specimens the pile on the upper distal portion of the intermediate and posterior femora short, black; tibiæ and tarsi vary from nearly black to deep testaceous. Pile and bristles of tibiæ moderately long and whitish; bristles of posterior pair in part black; pile extends down over the entire first segment of the anterior, and to a greater or less extent on the first segment of the intermediate and posterior tarsi; the following segments with black bristles. Claws black, pulvilli dark brown. Wings hyaline, veins yellow.

Described from 3 males and 3 females and 10 other specimens for comparison. Seven bear the label of Colorado, and one the date of capture at Fort Collins, September 12, 1901. A pair of co-types deposited in the collection of the Massachusetts Agricultural College, American Entomological Society of Philadelphia, and that of Charles W. Johnson. The paratypes are in the collection of the American Entomological Society.

I have named this species after the well-known dipterologist, Charles W. Johnson, curator of the Boston Society of Natural History, whose aid has been one of encouragement to me.

BEETLE DRIFT ON LAKE MICHIGAN.

BY JAMES G. NEEDHAM.

The ill wind that blows insects into a lake may blow the entomologist some good if he be on hand to collect them when they are cast upon the beach. During recent years I have gathered much material for class use from the drift line upon the beach at Lake Forest, with great economy of time and labour. After every on-shore breeze following sunshiny summer weather some insects are cast up by the waves, and occasionally there is a great accumulation of them. Twice I have observed accumulations of them quite out of the ordinary; the first time, in August, 1899, when the drift was predominantly crickets of a single species (*Nemobius fasciatus*)*, and a second time in June, 1904, when it was predominantly May beetles of a single species (*Lachnosterna fusca*). It is the purpose of this paper to record some observations on this occurrence.

It was discovered on the afternoon of June 11th. The weather had been bright and calm for several days, and the favoring wind was gently blowing from the north-east, and bringing the insects ashore, for the most part alive and in good condition. Two things seemed very remarkable about this drift: first its smell, due to the presence in large numbers of the ground beetle, *Calosoma frigidum*, incited by their tossing upon shore to emit their pungent, but, when sufficiently diluted, not wholly unpleasant odour; and second, the preponderance of beetles. It was nearly all beetles, and nearly all the beetles were a single species. The accumulation was hardly sufficient to be called a windrow—rather, an incomplete layer averaging a meter wide, spread out in a long sinuous line at the farthest reach of the waves—a ribbon of brown trailed along the lighter coloured sand. There was little cinder flotsam or other trash in it, it was nearly pure insect material—brown, because of the millions of May beetles, hardly one per cent. being anything else.

I gathered an abundant supply of *Lachnosterna* and *Calosoma*, made a few notes and went home. Early the next morning I went again to the shore, a mile farther northward. There, to my great surprise, I found the beach bare. Had I missed my opportunity by putting off till to-morrow a more careful examination? I walked southward, and soon came upon the smell of it, and then, the drift itself. The wind was still north-east, but insects had apparently stopped coming in. Many of the May beetles,

*An account of this I published in the Occasional Memoirs of the Chicago Entom. Soc., Vol. I., No. 1.

and some others with them, had buried themselves shallowly beneath the sand, and many of the ground beetles were in hiding under loose boards, etc., upon the sand. All were easily discoverable, however, and it is probable that few had left the beach, for none were seen taking flight, and few could be found under loose boards, except near the edge of the water. Hence, I considered the opportunity still favourable for making an estimate of the constituents of the drift. So I selected a representative bit of it a few rods long, and collected and counted all the beetles I could easily find in it, save only *Lachnosterna fusca*, which was innumerable. The result of the count I list below:

Cicindelidae.

Cicindela hirticollis, Say. (2)

Carabidae.

- Calosoma scrutator*, Fabr. (5)
Calosoma frigidum, Kirby. (180)
Calosoma calidum, Fabr. (3)
Amara impuncticollis, Say. (3)
Amara musculus, Say. (4)
Diplochila laticollis, Lec. (3)
Platynus cincticollis, Say. (1)
Platynus nutans, Say. (1)
Platynus æruginosus, Dej. (1)
Galerita janus, Fabr. (22)
Lebia ornata, Say. (1)
Chlænienus tricolor, Dej. (4)
Chlænienus tomentosus, Say. (5)
Cratacanthus dubius, Beauv. (2)
Agonoderus pallipes, Fabr. (8)
Harpalus laticeps, Lec. (1)
Bradycellus rupestris, Say. (7)
Anisodactylus nigrita, Dej. (8)
Anisodactylus discoideus, Dej. (1)
Anisodactylus Baltimorensis,
 [Say. (1)
Anisodactylus sericeus, Harris. (3)

Dytiscidae.

[The names of the species will be given in a future issue.]

Silphidae.

Necrophorus Americanus, Oliv. (4)

Coccinellidae.

Hippodamia convergens, Guer. (1)
Anatis 15-punctata, Oliv. (3)

Byrrhidae.

Cytilus sericeus, Melsh. (2)
Byrrhus Americanus, Lec. (6)

Lucanidae.

Lucanus placidus, Say. (23)

Scarabaeidae.

Lachnosterna fusca, Frl. (innumera-
 [ble)
Cotalpa lanigera, Linn. (10)

Chrysomelidae.

Diabrotica vittata, Fabr. (1)
Doryphora 10-lineata, Say. (2)

Pythidae.

Crymodes discicollis, Lec. (3)

Curculionidae.

Sitones flavescens, Marsh. (1)

Besides beetles there was almost nothing. I saw in all but one Lepidopter—a tiger moth of the genus *Eyprepia*. Of Hymenoptera there was an occasional bumblebee, wasp or ichneumonid. Of Hemiptera I saw one *Belostoma* and one *Nepa*. Of Diptera I saw only craneflies—wings and fragments of single specimens of *Symplecta*, *Gonomyia*, *Limnobia* and *Pachyrhina*. Of Odonata I saw three specimens each of *Libellula f-maculata* and *Leucorhinia intacta*. Of other groups I saw none at all. The presence of drowned aquatic species, and the prevalence of large, strong-flying species, were, as usual, obvious features. I followed the drift line more than a mile. It appeared to continue southward indefinitely. Drift lines are not very local; this is the first time I have seen either end of one.

I will mention in conclusion an accompaniment of the drift that was probably independent of most of the causes that brought the other insects together: This was the copious intermixture of empty pupa-skins of *Chironomus*. This is the blood worm that lives on the lake bottom. It transforms to a floating pupa, whose skin is left on the surface when the gnat emerges. The wind drifted these skins to the shore, forming a thick, gray scum-like layer of them in the hollows of the shore, overspreading the pier with a layer half an inch thick. The big beetles swam out with their legs draped with these pupa skins, which were inconceivably more numerous than even the *Lachnosternas*.

White grubs (larvæ of *Lachnosterna*) are occasionally excessively destructive to blue-grass sod along this "North Shore." In the summer of 1903 I saw acres of beautiful sward with all its roots eaten off two inches below the surface; it could be rolled up like a carpet; in places there were a dozen grown larvæ per square foot beneath it. Perhaps these devastating larvæ come from eggs laid by adult *Lachnosternas* brought in with the drift.

We learn with much pleasure, from *Science*, that MR. SAMUEL HENSHAW, of Cambridge, Mass., has been appointed Curator of the Museum of Comparative Zoology at Harvard University. His only predecessors in the office have been Prof. Louis Agassiz, the founder and first Curator of the Museum, and his son, Dr. Alexander Agassiz. Mr. Henshaw is well known among Entomologists as the author of the valuable "List of the Coleoptera of America, north of Mexico."

MOSQUITO NOTES.—No. 2.

BY C. S. LUDLOW, M. SC.,

Laboratory of the Office of the Surgeon-General, U. S. A., Washington, D. C.

Among the new genera lately separated by Theobald from *Aedes* and *Uranotenia*, the differences seem at times puzzling, and without an opportunity to study the types, it is not always easy to feel sure of the position of a new insect. It is also to be noted that in some of these genera the male is unknown, and it may possibly happen that they belong to the class having long palpi in the male. This is very definitely suggested by a mosquito received recently from Bayamban, Pangasinan, P. I., which, while having long palpi in the male, flat scales (no curved ones) on the head, curved scales only on the scutellum, still has the wing characteristics of *Uranotenia*. From most of the new genera it is cut off by the wing and the long palpus, but it evidently lies near *Mimomyia*, if *Mimomyia* belongs to the long-palpied group, the main differences being :

1st. The shape of the scales on the mesonotum, which in this insect are, so far as I can determine, simple slender curved scales; more slender than those on *Stegomyia fasciata*, Fabr., but showing no truncated ends.

2nd. Base of 1st submarginal is exterior to that of 2nd posterior.

3rd. Position of cross-veins, which in this insect are typical *Uranotenia* veins.

Variability of cross-veins has, however, now become proverbial, and while the other differences constitute good specific values, they hardly seem, even considering the scale shapes on the mesonotum, sufficient to warrant creating a new genus, and I am therefore placing it, provisionally at least, under *Mimomyia*.

Mimomyia Chamberlaini, n. sp.—Male: head light, heavily covered with light yellow, almost white iridescent flat scales, a few brown forked scales on the occiput extending well around to the sides; two large bristles projecting forward between the eyes, four or five around the eyes; antennæ brown, very plumose, light banded, basal joint bare, dark, verticels brown, but giving light (tow-coloured) reflections with a suggestion of orange; proboscis orange, tip black; palpi longer than the proboscis, mostly yellow-scaled ventrally, but partly brown-scaled dorsally, a dark band at the apex of the penultimate joint, and the ultimate joint clubbed (suggesting some of the *Anopheles*), and quite dark at the tip; clypeus yellow; eyes brown and silver.

Thorax: dorsum dark brown, heavily covered with dark brown slender curved hairs, laterally light, covered with light golden curved scales, forming a large spot over and around the wing joint, and running in a line cephalad on the edge of the mesonotum, light bristles over the wing joint; pleura and prothoracic lobes almost white; scutellum, dark brown median lobe, and light lateral lobes, both covered with dark brown slender curved scales, six large and a few small bristles on the mid-lobe, four bristles on the lateral lobes; metanotum dark brown.

Abdomen light, thickly covered with dark brown flat scales, having deep blue iridescence; very large basal lateral light spots forming an almost continuous lateral yellowish stripe, also continuous with the venter, which is very light yellow, almost white. All the segments heavily haired.

Legs: coxæ and trochanters all light. In the fore legs the femora are brown dorsally and ventrally light yellow, growing darker toward the apex, tibiæ brown (giving red-bronze and purple lights), metatarsi brown, with tiny light apical bands, tarsal joints brown, the first and second also with light apical bands. Ungues unequal, very large, one bi-serrate and the smaller almost straight. Mid-legs much as in fore legs; there are tiny light bands on the metatarsi, and first and second tarsal joints, and in some lights the whole metatarsus looks light. Ungues as in fore legs. Hind legs have femora brown, with red reflections, tibiæ brown, with light apical bands. There are also narrow apical bands on the metatarsi and first and second tarsal joints, the remainder of the hind legs is missing. In some cases the bands seem slightly to involve both joints, but in any case they are minute.

Wing light, and apparently partly denuded, but there are rather broadly truncated, sometimes slightly asymmetric dark scales, with dark blue-green iridescence on costa, subcosta and 1st long vein and a few of the same "broad-ended" scales on the other veins; 1st submarginal cell is about one-third longer and a third narrower than the 2nd posterior, the base of the latter, however, being well interior to that of the 1st submarginal. Stem of 1st submarginal about one-third longer than the cell, and somewhat longer than that of the 2nd posterior. Mid cross-vein is about same length as supernumerary, which it meets, and posterior cross-vein is about one-fourth longer, and is distant from the mid about three-fourths of its own length. Halteres light, knob brown scaled. Length, 4.5 mm.

Habitat: Bayamban, Pangasinan, Luzon, Philippine Islands. Taken May 15.

Described from one specimen collected by Capt. W. P. Chamberlain, Asst. Surg., U. S. A., after whom it is named. In the same collection were *Culex microannulatus*, Theob.; *C. gelidus*, Theob.; *C. annulifera*, Ludlow; *Mansonia annulifera*, Theob.; *Myzomyia Ludlowi*, Theob.; *Myzomyia Thorntonii*, Ludlow; *Stegomyia scutellaris*, Walker; and *Myzomyia Rossii*, Giles, var. *indefinita*, n. v., Ludlow, an unusually large number of species for one collection.

As another instance of variation, I have received during the last year, from different parts of the P. I., specimens of a *Myzomyia* apparently new, yet lying so close to *Rossii* and *Ludlowi* that it has been difficult to be sure just where they belong. The differences hardly seem to be specific, and are, besides, most of them very unstable, and after much hesitation I have decided to publish it as a variety of *Rossii*.

Myzomyia Rossii, Giles, var. *indefinita*, n. v.—Female: Head brown, covered with white curved scales on the vertex, some large ones projecting forward as a white tuft between the eyes, white forked scales on the occiput, brown on the sides; antennæ brown, verticels and pubescence white, basal joint testaceous; palpi brown, last joint broadly white tipped, a narrow white band near it, and another dividing the remainder of the palpus in half (very like *Ludlowi*), basal part dark and quite heavily scaled; proboscis dark, tip light; eyes brown; clypeus brown.

Thorax gray and sparsely covered with slender hair-like curved white scales, and a few heavier ones projecting forward at the neck, a dark median line, widening just cephalad of the scutellum so as to form a small spot, narrow lateral ridges appearing as dark lines, running from the scutellum about half the length of the mesothorax; scutellum with hair-like white scales; metanotum brown; pleura gray, with brown spots almost forming bands.

Abdomen gray, densely covered with golden hairs.

Legs: coxæ and trochanters white, scaled with dark tips so as to form a light band at base of leg; femora all brown, a subapical yellow band on the fore femora, the tip dark; this marking sometimes occurs on the other legs and sometimes is wanting on all; tibiæ brown, with a narrow apical yellow band; metatarsi the same; tarsi on fore and mid-legs basally and apically banded except the last joint, which lacks the apical

band; unguis simple and equal. The metatarsi and tarsi on the hind legs have usually only minute apical bands, but occasionally the tarsal bands involve both joints.

Wings light, heavily covered with dark and light scales, forming on the costal portion spots as follows: Apex light, extending on tip of 1st long. and upper branch of 2nd long., then a short dark spot, which includes 1st long. and upper branch of 2nd long., followed by a light spot, about one-third longer than the dark, and extending also on 1st long.; second dark spot about as long as the preceding one, and extends on 1st long.; then a light spot followed by the third dark spot, which is much the longest of the dark spots, includes the sub-costa its full length, and extending on the 1st in the centre, suggests the "T" of *Rossii*; there is also at times a second dark spot on the 1st long. under this long one (like the marking in *Ludlowi*), and the relative lengths of all the costal spots vary so much that no measurements can be depended on. The fourth spot is shorter again, and extends on the sub-costa and 1st long. A couple of small indefinite dark spots on the costa only at the base of the wing. The wing field reminds one strongly of *Ludlowi*, and is fairly stable; 1st submarginal is slightly longer and about the same width as the 2nd posterior cell; bases nearly on a line, and the cells are noticeably longer than those in *Ludlowi*, in which this species resembles *Rossii*. Supernumerary cross-vein about half the length of the mid, which it meets, and posterior cross-vein is also about the same length, and about two and one-half times its length from the mid. Halteres light, knob fuscous. Fringe mottled, light at apex of cells. Length, 3.5 mm.

Habitat: Philippine Islands. Taken May (Bayamban), Sept. (Mangarin), Dec. (Guimaras Is.), etc.

This species occurs with *Ludlowi* at various places, and until Mr. Theobald called my attention to the differences I believed it to be *Rossii*, which it strongly resembles. The general colouring is, however, darker in this resembling *Ludlowi*, and its great variability makes it extremely hard to place definitely. Its relationship to these two species may be indicated as follows:

Wing venation like *Rossii*, and is constant. Palpal markings and general colour like *Ludlowi*, also constant. Femoral markings (when present) like *Rossii*, never like *Ludlowi*. Wing markings extremely variable, and may resemble either species. The balance seems to lie in favour of *Rossii*, and I have therefore referred it to that species.

In my "Mosquito Notes"* I referred to *Culex teniorhyncus*, Wied., as not having been found, so far as I knew, north of Florida. The mistake was caused by my being so impressed with the statement (Theobald's Monograph, Vol. I., pp. 352, 353, 1901), "Mr. Coquillett writes me this species is not found north of Florida and Mexico," that I did not even consult American authorities. This statement is, of course, superseded by later work, and the species is found in the vicinity of Washington, D. C., in Pa., and in N. J., etc., as shown by various authorities, notably the interesting work on *C. teniorhyncus* and *G. sollicitans*, by Dr. J. B. Smith, of N. J., to whom, as to others, my apology is due. This is another very variable species. Dr. Smith writes me that those he finds show much variation as to abdominal markings, but that the leg maculation is constant; those sent me from Florida and N. C., while fairly stable as to abdominal markings, are not constant as to the band on the proboscis, it being at times hardly more than a dot, while the last tarsal joint of the hind legs shows all variations from pure white to almost pure brown, the two legs on the same insect being often quite unlike. Mr. Coquillett tells me he also finds these differences in the specimens sent him.

NOTES ON SOME BEES IN THE BRITISH MUSEUM.

BY T. D. A. COCKERELL, BOULDER, COLORADO.

Spending the summer in England, I have, of course, hastened to examine the types of F. Smith, and other bees contained in the collection of the British Museum. The following notes elucidate some species which had puzzled American entomologists, who had access only to the descriptions:

Chelostomoides rugifrons (Smith).

Chelostoma rugifrons, Sm., type ♀.—Would be large for *Chelostoma*; a transverse ridge, with large punctures, below the antennæ, and below this a smooth shining impunctate depressed area, bounded on each side by a vertical ridge, so that one gets the impression at first that the clypeus is very broadly and deeply emarginate; the long labrum, seen from above, looks like the end of an elephant's trunk, being broadened at the end, and presenting a median elevation; the "tooth near the base within" of the mandibles is a shining tubercle; the recurrent nervures join second submarginal cell at about equal distances from its base and apex respectively; the basal nervure just fails to reach transverso-medial; claws

*CANADIAN ENTOMOLOGIST, Aug., 1904, p. 236.

broad and angled basally, but not cleft; no pulvillus (*Chelostoma florismue* has a large pulvillus); first abdominal segment with a distinctly margined though shallow concavity.

Emphoropsis cineraria (Smith).

Anthopora cineraria, Sm., ♀.—Easily known by its rather large size and grayish appearance, rather like a large *Clisodon terminalis*; hair on outer side of hind tibiæ entirely shining orange-golden; hair on sides of face is black, and black hair is mixed with that of mesothorax; the venation is of the type of *E. floridana*, marginal cell comparatively long, and recurrent nervures entering it at ends of second and third submarginal cells, though not meeting transverse cubital nervures; third submarginal cell strongly contracted above. The male has a white clypeus, very broadly margined laterally with black; the white area is broader than long, and is a curious sort of pinkish-white.

The Mexican species of *Emphoropsis* (placed by Smith in *Habropoda*) represent a distinct section of the genus, known by the light area on the clypeus being much longer than broad, and separated from the lateral face-marks. Our *E. floridana* differs also from the Mexican ones by its much broader face, with a broader and shorter clypeus. The Mexican *E. agilis* has maxillary palpi slender, 6-jointed, second joint longest, last two small; paraglossæ short; galea long and parallel-sided, as long as labial palpi. Male with third antennal joint not elongated, though its apical half is broadened. The second joint of maxillary palpi is much longer than first, but not as long as the last three together. The Mexican species are readily separated, thus:

- Pubescence of thorax black *Emphoropsis terminata* (Smith).
 Pubescence of thorax not black 1.
1. Ground-colour of abdomen red *E. agilis* (Sm.).
 Ground-colour of abdomen black or largely so 2.
2. Pubescence of thorax bright orange-fulvous, anteriorly with black hairs
 intermixed *E. fulva* (Sm.).
 Pubescence of thorax without black hairs intermixed 3.
3. Pubescence of thorax light yellowish; clypeus without black marks on
 the yellow; apical part of abdomen not red . . *E. montezumia* (Sm.).
 Pubescence of thorax bright orange-fulvous; clypeus with two black
 streaks on the yellow; apical part of abdomen with red
 ground-colour *E. bombyformis* (Sm.).

Perdita halictoides, Smith.

Type: Abdomen very dark brown, almost black; nervures and stigma sepia, strongly defined; marginal cell with the poststigmatal part hardly as long as the substigmatal; metathorax and sides of thorax dark blue, but the prothorax, mesothorax and scutellums practically black, tinged with aeneous; face more or less greenish, with no light marks; mandibles fulvo-ferruginous, scape reddish; legs dark brown, femora darker. Nearest to *P. œneifrons*, Ckll.

Pseudopanurgus andrenoides (Smith).

Scapter andrenoides, Sm., type ♀.—Rugose, with pale fuliginous wings, head and thorax almost nude; marginal cell truncate; stigma large, brown; first recurrent nervure enters second submarginal cell a long way from its base; second recurrent joins cell at its extreme tip; basal nervure falls short of transverso-medial by a moderate distance; maxillary palpi 6-jointed; first joint of labial palpi somewhat shorter than the other three united; facial foveæ club-shaped in outline, smooth and shining; no raised nodule on vertex; process of labrum broadly truncate; mandibles reddened; clypeus densely punctured, except a narrow median line; punctures of mesothorax minute and extremely numerous, though quite distinct; the abdomen has not the large coarse punctures of some forms of *Pseudopanurgus*; tegulæ shining testaceous; basal half of the abdomen with a strong reddish tinge; hind legs slender; hind tibial scopa thin but abundant. The truncation of the marginal cell is not nearly so oblique as in *Panurginus Cressoniellus*.

Nomia fausta (Smith).

Andrena fausta, Sm., type ♀.—Natal. Third submarginal cell at least as large as first; enclosure of metathorax practically reduced to a transverse band; head and thorax with very dense large punctures; basal joint of hind tarsi with the apical margin very oblique, second joint triangular; tegulæ with a little keel behind. Colours like those of *Nomia rubella*, Sm. Also examined by Col. Bingham, who agrees with me that it is a *Nomia*.

Prosopis.

♂.

- Supraclypeal mark well developed; lateral face-marks extending upwards along eye-margin; scutellum yellow 1.
 i. Marginal cell and beyond fuliginous; sides of clypeus, except basally, narrowly margined with black (Mexico). *maculipennis*, Smith.
 Marginal cell not clouded; sides of clypeus not marginal with black (S. Paulo, Brazil) *rugosa*, Smith.

♀.

Lateral face-marks continued upwards along eye-margin; clypeus with a broad central yellow stripe. 1.

1. Scutellum black (Brazil) *variolosa*, Smith.

Scutellum yellow *vigilans*, Smith.

Prosopis trepanda, Smith, is a synonym of *vigilans*.

Gastropsis.

Ashmead puts this in the *Andreninae*, but it is really a relative of *Meliturga*, and has, like it, terminal abdominal spines in the ♂, and the same sort of eyes (though in *Meliturga* ♂ they converge above) and the same third antennal joint. They also agree in having the basal nervure falling a long way short of the transverso-medial. They are, of course, quite distinct genera, *Meliturga* being the more aberrant. *Oxæa* also appears to be related.

Gastropsis pubescens, Sm., ♂.

W. Australia; the only known species of the genus. Its general appearance is very like that of the Peruvian *Megacilissa vestita*, Smith, but the venation, of course, is different. It has the broad second submarginal cell like that of *Anthoglossa plumata*, Sm., and like it has the stigma obsolete. First and second recurrent nervures enter middle of second and third submarginal cells; third antennal joint very long; face narrow, with large eyes; maxillary palpi 6-jointed; area of metathorax very long and narrow; abdomen very hairy, and rather tapering, with two terminal spines, which are sometimes folded back, and then not readily seen.

Sphecodes dichroa, Smith.

Type ♀. Vertex with a low but quite observable tubercle just behind the ocelli, and behind this are a number of transverse grooves or striæ; mesothorax with large strong punctures well separated on a shining surface; abdomen with distinct but only moderately close punctures, only the last segment blackish; area of metathorax strongly but not closely longitudinally wrinkled, and with some irregular cross-wrinkles.

Sphecodes pilosulus, Smith.

Type ♀. Mandibles dentate; metathoracic area semilunar, very distinct, with a strong margin, and very strongly, closely longitudinally ridged; rest of metathorax hairy; face hairy; first abdominal segment with a black discal patch.

Sphecodes mandibularis, Cresson.

An apparently authentic ♀ in the Museum has the mandibles dentate.

A NEW GENUS OF SPIDERS.

BY THEO. H. SCHEFFER, A.M., MANHATTAN, KANS.

Family Thomisidæ: Subfamily PHILODROMINÆ.

Philodromoides, gen. nov.—Cephalothorax low, about as wide as long; head region much narrowed and slightly elevated. Abdomen fully twice as long as wide, very little wider behind than at the base; somewhat pointed at the end; the base projects a short distance over the cephalothorax, and is distinctly notched on the upper side. The sternum and labium are about as in *Philodromus*. All eyes approximately equal in size; the anterior row much the shorter and slightly recurved; median eyes of this row farther from each other than from the side eyes. Posterior row also recurved; side eyes of this row on larger tubercles than any of the others; median eyes farther from each other than from the side eyes. Ocular quadrangle considerably wider behind; about as wide as long. Clypeus wider than space between anterior median eyes, but not as wide as space between posterior median eyes; obliquely directed forward and downward. Legs long and slender, the second pair longest, the third shortest; the relative lengths are, in their order, second pair, first pair, fourth pair, third pair. The tibiæ of the first and second pairs are set beneath with ten or twelve stout spines arranged in two rows, and the metatarsi are similarly armed with half that number. Weaker spines likewise occur on the other two pairs of legs and on the pedipalps.



FIG. 8.

Philodromoides prataria, sp. nov.—Female. Length, 6 mm.; length and width of cephalothorax, 2 mm.; width of abdomen, 2 mm. Other characters as given in the generic description. A very few short bristle-like hairs scattered about among the spines on the outer joints of the legs and on the chelicerae and the pedipalps; thickest on the tarsi of the latter.

Coloration.—Abdomen plain brown above, mottled and streaked with a lighter shade. The four muscle impressions are quite distinct. Cephalothorax rusty-brown, lighter at the sides and just back of the head region. Streaks marked by depressed lines radiate from the dorsal groove. The sternum is pale yellow or almost white. The abdomen is lighter beneath than above, and there is a less mottled central region, set off by a row of indistinct dots on either side. The legs are pale yellow to whitish. The femora, patellae and tibiae of all four pairs are marked in front with a longitudinal stripe of black, which becomes nearly obliterated on the metatarsi and tarsi. The corresponding joints of the legs of the third and fourth pairs are similarly marked on the hind border also.

The males are somewhat smaller than the females, the abdomen being considerably narrower than the cephalothorax. The legs are more hairy in appearance and the spines less conspicuous than in the female. The colour markings are about the same in the two sexes.

This species is not uncommon about Manhattan, Kansas, in mid-summer. Mature males and females were taken in this locality on August 17. Types are in the collection of the Kansas State Agricultural College and in the National Museum at Washington.

A NEW PROTEOPTERYX.

BY W. D. KEARFOTT, MONTCLAIR, N. J.

PROTEOPTERYX WILLINGANA, sp. nov.

♂, 18 mm. Head, thorax, palpi, antennae and fore wings, same shade of very light tan or pale brownish-fuscous, overlaid with a few blackish brown scales.

Palpi: outer joint short, obtusely pointed; tuft on second joint flattened and appressed, lower scales extending to outer end of outer joint. Head roughly scaled. Eyes black with coppery reflection. Antennae annulated with fuscous and brown. Thorax smooth.

Fore wing: just beyond base, above and below fold five small clusters of dark scales in an irregular ring, open towards base. A broad oblique central fascia is faintly outlined by two very scattering lines of dark scales, the inner from inner quarter of costa to inner third on dorsum, and the outer from middle of costa to dorsum before angle. Regularly and closely placed on costa are small clusters of dark scales, in short oblique dashes on the inner half, and short oblique lines on the outer half. A small subapical dark spot, and below it a submarginal cloud of darker scales between the latter and outer margin, obscurely merging into central fascia. The lower two-thirds of margin are almost entirely free from dark scales, and are of a pale yellowish-fuscous colour, except the ocellic spot above angle, which is white, overlaid with gray. Cilia same as fore wing, but slightly darker.

Hind wing pale fuscous, with darker fuscous scales below outer half of costa and at apex. Cilia same. All the space above vein 8 is closely and heavily clothed with rather short black scales; this is possibly a sexual character. Abdomen grayish-fuscous, anal tuft bright light brown. Legs yellowish fuscous, shaded with light brown.

♀, 18 to 20 mm. Three specimens, each differing from each other only in degree of darkness, and differing from the male in the absence of the black subcostal streak on hind wing and in the addition of four clusters of raised scales on the fore wing, three subdorsal, evenly spaced, inner just beyond base and outer before angle, the fourth is above and beyond the latter.

Fore wing of palest ♀ contains less black scales than ♂ described above, and the lines indicating the central fascia are almost obsolete. There are three short parallel horizontal dark lines on outer margin below apex, and a fourth below them traversing the ocellic spot. White scales are rather freely scattered over the fore wing of this specimen, which under a low-power lens or with eye only, appears almost immaculate, of a pale tan colour, with basal area, a broad oblique band beyond central fascia and cilia a shade darker.

The markings on fore wing of darkest ♀ are well defined. The ground-colour is white and whitish-fuscous, with streaks and spots of yellowish-tan. The black scales are arranged as follows: A short vertical streak just beyond base connects by a line in the fold to a parallel vertical streak inclined inwardly, neither touching dorsum. A rather large

quadrate costal spot at inner fourth and below and beyond it, but separated by ground-colour; another quadrate spot, above and defining the middle cluster of raised scales; these two spots form the inner boundary of the central pale fascia. At centre of costa an oblique line goes to lower median vein, thence curves outwardly, then upward into apex, is broken just before apex by ground-colour, and sends off two straight horizontal lines into margin. The first upper half of this line forms the outer definition of central fascia, the lower half of which is defined by a short horizontal streak and three small dots. The costal maculation is less distinct on this than the more obscurely-marked ♂, and the black-brown streaks of the latter are replaced by pale fuscous and yellowish-fuscous. Ocellic spot in anal angle is an inverted **U** of pure white scales, yellow in the centre and broken by a horizontal fuscous line through outer leg. Subciliate line dark fuscous, cilia yellowish-fuscous.

Described from one ♂ and three ♀'s bred by Mr. T. N. Willing, Regina, Assa., in whose honour the species is named, and kindly forwarded for determination by Dr. James Fletcher, who states that the species is likely to become of rather considerable economic importance in the North-west, as the larvæ are gall-makers on the twigs of *Negundo aceroides*, Moench. (*Acer negundo*, L., of Britton and Brown), the box elder. No doubt a more detailed account of the work of this insect and description of the larvæ will be given in one of Dr. Fletcher's annual reports. The labels on Mr. Willing's specimens state the moths issued July 2 to 7.

The genus *Proteopteryx* was erected by Walsingham*, with *emarginana*, Wism., as the type of the genus. Fernald† has recently pointed out that *emarginana* has a costal fold, mention of which was omitted by Walsingham, hence a costal fold in the ♂ must be added to the characters of genus *Proteopteryx*.

This species *Willingana* agrees in venation and other characters with Walsingham's original definition of the genus, but the ♂ has no costal fold; hence it, with some others of the species now placed under this genus in our lists, will, when further study has been given the subject, be separated from *Proteopteryx*.

*Ills. Lep. Het., Br. Mus., IV., 68, 1879.

†CAN. ENT., XXXVI., 120, 1904.