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XLVI.—Descriptions and records of bees.—LXXV

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terminal series of black points; cilia brown at base, silvery white at tips. Hind wing silvery white; a dark brown patch at base; the terminal area golden yellow, expanding on inner area to middle, defined on inner side by a series of dark points from below costa to vein 2 and a striga at vein 1; a series of silvery-white marks before termen from below costa to submedian fold, defined by blackish, the spot below costa round, the others elongate except the small spot below vein 5; minute terminal black spots above and below vein 4 and slight striæ towards apex and between veins 3 and 1; cilia silvery white with some brown at apex and a brown line through them from vein 5 to near tornus.

Hab. DUTCH N. GUINEA, Fak-fak (*Pratt*), 1 ♂ type. *Exp.* 24 mm.

[To be continued.]

XLVI.—*Descriptions and Records of Bees.*—LXXV.

By T. D. A. COCKERELL, University of Colorado.

Xylocopa draconis, sp. n.

♂.—Length about 25 mm., anterior wings 18.5 mm.

Black, without any metallic tint; thorax thickly covered (except bare space on disc) with reddish-ochreous velvety hair; abdomen not banded. Eyes extremely large, converging above; mandibles bidentate, with a yellow basal patch; tubercle of labrum small; clypeus ivory-colour, more or less brownish, with a pair of black spots, the surface of clypeus closely punctured, but an impunctate median ridge; supraclypeal area almost pallid; ocelli large, far down on front; face and front with red-brown hair, darkest around ocelli; top of head and cheeks with reddish-ochreous hair; anterior femora swollen, without hair below; anterior and middle tibiæ with bright fulvous hair on outer side, reddish on inner, and sooty behind; anterior tarsi similarly coloured, but from middle of basitarsus on there is creamy-white hair on under side posteriorly, beneath the sooty, and on apical part of basitarsus anteriorly and beneath the red is very bright; middle tarsi with reddish-black hair above and behind, but red beneath; hind femora broad, basally keeled beneath, with a pustuliform swelling on the side of the keel; hind tibiæ with a conspicuous apical lobe, much broader than long, on inner side; hind basitarsi with ochreous hair in front, black above and red behind, the

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under side presenting a large, bare, shining, elevated, wedge-shaped surface; tegulæ black. Wings brown, subtranslucent, apically suffused with rosy-purple; venation very different from that of *X. sinensis*, Smith, the third submarginal cell not conspicuously broadened or bulging apically, and the second much less elongated. Abdomen with sooty hair on first segment, second with fulvous, sooty only along apical margin, the rest with scanty hair except at sides and apex; at sides it is sooty, except anteriorly on segments 3 and 4, where is some fulvous; at apex the hair is long and reddish; beneath, the hind margins of the segments are narrowly bright ferruginous and the hair is fulvous.

Southern China (no other particulars known). In U.S. National Museum.

Resembles *X. appendiculata*, Smith, but the hair is quite differently coloured. There is also a general resemblance to the smaller *X. collaris*.

Xylocopa punctifrons, sp. n.

♂.—Length about 21 mm., anterior wings 16 mm.

Clypeus (except lower margin, broadening laterally), transverse supraclypeal mark and lateral face-marks (ending very obtusely halfway up front) ivory-colour; labrum black, with a minute light point; thorax without conspicuous light hair, except at sides, where a broad band of greyish hair extends from the tegulæ to the ventral surface. Abdomen with a little pale hair on first segment. Wings dark reddish fuliginous, with strong purple tints; light hair on hind tibiæ, and middle and hind tarsi, as in *X. tarsata*, but it is ochreous.

French Congo (Queensland Museum). Received by the Museum from Le Moult of Paris.

Very close to *X. tarsata*, Smith, but considerably larger, with the greater part of clypeus and sides of face densely punctured. The colour of the hair on the legs agrees with that of *X. tarsata*, var. *namutonensis*, Strand, but that form has the size of *tarsata*. It is possible that *X. punctifrons* is the undescribed male of *X. tuberculiceps*, Ritsema, but the legs have much more light hair than in the female of that species, and the localities are far apart.

In the same lot came *X. carinata*, Smith, *Mesotrichia præusta* (Smith), and *Crocisa excisa*, Friese, from Dimbroko, French W. Africa.

Centris maroniana, sp. n.

♂.—Length about 28 mm., anterior wings 22.5 mm.

Robust, black, including the legs, but anterior trochanters and tibiae suffused with chestnut-red. Eyes very large, converging above; ocelli large, practically contiguous, and lateral ones distant from eyes less than half diameter of one; sides of face, supraclypeal area and upper part of clypeus ferruginous; the rest of clypeus and the labrum chrome-yellow; scape short and stout, dark reddish, yellow in front; mandibles elbowed near apex; hair of head clear ferruginous; disc of mesothorax and mammiform elevations of scutellum shining; thorax densely covered with velvety hair, black, with a faint rusty tint dorsally, except anteriorly, where it is rich deep red, the red gradually fading into the black; pleura with dark reddish hair; anterior legs with red hair, black on basitarsi; middle and hind legs with long pure black hair; tegulae ferruginous. Wings dark fuliginous, brilliantly purple, with some shades of green. Abdomen with short velvety hair, which is black except a broad yellowish-white (olivaceous-tinted) band, occupying second segment except base and third except extreme apex.

"Guyane, Maroni" (Queensland Museum; received from Le Moul).

Related to *C. smithiana*, Friese (which I have from F. Smith's collection), but larger, with the hair of the thorax dorsally black except in front. From the character of the ocelli, it possibly flies in the evening or at night. The bee-fauna of Maroni, as shown by the same collection, includes the following:—*Acanthopus splendidus*, Fab., *Aglææ cerulea*, Lep., *Exærete frontalis*, Guér., *Oxæa festiva*, Sm., *Xylocopa barbata*, Fab., *Bombus incarum*, Frankl., *Centris obsoleta*, Lep., *C. americana*, Klug, *Epicharis conica*, Sm., *E. schrottkyi*, Friese, *E. affinis*, Sm., *Ceratina lata*, Spin., *Fulæma dimidiata*, L., *E. fasciata*, Lep., *E. mocsaryi*, Friese, *E. smaragdina mexicana*, Mocs., *Euglossa brullei*, Lep., *Eufriesia pulchra*, Sm., &c.

Pachymelus mediocinctus, sp. n.

♂.—Length 18 mm., length of anterior wing 14 mm.

Black, with tarsi dark red; eyes large, slightly converging above; clypeus prominent, but flattened on disc, yellow, with upper and lateral margins and two conspicuous spots black; labrum large, emarginate at apex, yellow, with lateral and inferior margins narrowly black; mandibles

bidentate, the inner tooth short (style of *P. hova*), basal part of mandibles mainly very pale yellowish ; scape with a yellow stripe in front. Face, front, and vertex with long black hair, but also white at sides of face and (appressed) on each side of labrum ; occiput and cheeks with long white hair ; mesothorax shining, but distinctly punctured ; scutellum only feebly bigibbous ; thorax with black hair, becoming obscurely ochreous along anterior margin of mesothorax, bright ochreous (forming a conspicuous wide band) on metathorax, and pure white in middle of ventral surface. Legs with mainly black hair ; anterior tibiae with a band of appressed golden pubescence in front ; tegulae black. Wings dilute fuliginous ; venation as in *P. micrelphas*, but second s.m. narrower. Abdomen closely punctured, basal segment with black hair ; apical margin of second segment, and all of next three except base, covered with appressed bright ferruginous pubescence ; sixth segment with hair partly red and partly black ; apical plate emarginate.

Miarinarivo, Madagascar (Queensl. Museum ; from Le Moults).

Similar to *P. cambouei*, Sauss., but that is a very much larger species, with the scutellum different.

Hyleoides concinnus (Fabricius).

Launceston, Tasmania, Feb. 15-16, 1916 (*F. M. Littler*).

Genus new to Tasmania. The female agrees with mainland specimens ; but the male, compared with one from Sydney, differs by the wholly black prothorax and the more distinct punctures of second abdominal segment.

Megachile derelicta, Cockerell.

♀.—St. Patrick's R., Tasmania, 6.2.14 (*Littler*).

New to Tasmania.

Mesotrichia bryorum (Fabricius).

Daru, Papua (Queensland Mus.).

The female has the wings suffused with rosy-purplish, whereas Australian examples usually have them much more green.

Eulæma amabilis, sp. n.

♂.—At first sight exactly like *E. bruesi*, Ckll., but differing thus : green of mesothorax more brilliant, extending along the sides to the posterior end, where it is very

bright and broadly margined mesad with blue; scutellum with lateral sulci strongly marked, the general surface of scutellum dark purplish and shining, the lateral margins thickened and shining steel-blue; median smooth ridge of labrum little broadened above; apex of abdomen broadly emarginate, formed as in *E. manni*, Ckll. From *E. manni* it is at once known by the strong keel down middle of clypeus, the dark black-haired first abdominal segment, the blue margins of scutellum, &c. From *E. smaragdina*, Perty, by the black hind tibiae, marked with green posteriorly (with a rather small but distinct tubercle above the spurs), and the entirely black hair of thorax. From *E. auripes*, Gribodo, by the strong clypeal keel, the less prominent lateral keels of labrum, and the hair of legs differently coloured, the fringe on apical part of anterior tarsi ferruginous, while the pubescence on outer face of middle basitarsi is shining creamy-white. It is also distinct from *E. mexicana* and the various related forms described by Friese and others. The mesopleura is dark blue.

Manaos, Brazil (*Miss H. B. Merrill*). U.S. Nat. Museum.

Mesonychium dugesi, sp. n.

♂.—Length about 15 mm.

Very robust, black, with the abdomen dark but brilliant blue, the hind margins of the segments more or less green; disc of mesothorax dark purple-blue on each side of the median sulcus; pubescence at first sight appearing wholly black, but it is mixed with ochreous on labrum and lower part of clypeus, and there is a spot of the same on each side of front; on lower part of pleura is a little pale hair, and there is white hair on anterior tibiae posteriorly; second and third antennal joints dark red in front; scutellum rather short, hairy, without conspicuous prominences; third s.m. strongly narrowed above, but not nearly to a point; spur of middle tibia strongly bifid, one division with two or three spines; hind femora broad, with a very large tooth beneath near base; hind tibiae with a polished red area at end; venter of abdomen with a large red area in subapical region. The wings are brownish subhyaline, with a dark apical cloud.

Guanajuato, Mexico (*A. Dugès*). U.S. National Museum.

This has the appearance of the species which Schrottky places in his genus *Cyphomelissa*, but the third submarginal cell is as in *Melissa* or *Mesoplia*. It will easily be known from *Mesonychium insigne* (*Melissa insignis*, Sm.), from Orizaba, by the absence of the bright yellow hair. The

venation and middle spur separate it from *M. cærulescens*, Lep.

Mesonychium decoratum (Smith).

Bocas del Toro, Panama, July 6, 1908 (*W. Robinson*).

This agrees with one from F. Smith's collection, obtained by Bates in S. Paulo, Brazil. A form with broader pygidial plate (♀) comes from Rio Mato, Venezuela, October (*Carriker*).

Mesonychium azureum guatemalense (Cockerell).

Cacao, Trece Aguas, Guatemala, April 4 (*Barber & Schwarz*).

This specimen shows that the type was partly denuded. The disc of mesothorax and outer face of hind tibiæ are ornamented with green scale-like hairs.

Mesonychium duckei (Fries).

Cabima, Panama, May 17, 1911 (*Aug. Busck*).

The third s.m. is very much broader below than in *M. decoratum*, so that the venation approaches *Cyphomelissa*. After reviewing the subject, I must agree with Ducke that *Mesonychium* is the proper name for this genus, including *Mesoplia* and *Melissa*, and also *Cyphomelissa* as now interpreted by Schrottky.

Colletes cyanescens, Haliday.

I have this from Santiago, Chile, and specimens marked Southern Chile (*M. J. Rivera*) are in the U.S. National Museum. *C. atripilis*, Vachal, is a synonym.

Triepeolus pruinosus, sp. n.

♀ (type).—Length about 9 mm.

Black, the thorax densely punctured and not shining; basal half of mandibles red; labrum dark reddish; clypeus very minutely and densely punctured; scape red at base and more or less at apex; second and third antennal joints bright ferruginous; a conspicuous patch of creamy-white hair on each side of antennæ; mesothorax with a thin pruinose pubescence, anterior margin with two nearly round spots of yellow pubescence; yellowish-white prothoracic hair-band broadly interrupted in middle, ending laterally in round spot on base of tubercles; tubercles reddish; hind margin of mesothorax with a creamy hair-band; scutellum

moderately bigibbous, axillæ bluntly conical; area of metathorax dull and rough basally; tegulæ bright ferruginous. Wings strongly dusky at apex. Legs obscure ferruginous, spurs red. Abdomen with broad yellow bands on first two segments, that on first anteriorly produced at sides into an evanescent cloud, not a distinct tooth or band-like lobe; third and fourth segments with whitish bands, more or less failing in middle; modified pygidial space subcircular, not very large; last ventral segment produced beyond last dorsal, the very broad end turned downward.

♀.—Similar in appearance, but the legs are mainly black; the anterior tibiæ, middle tibiæ in front, hind tibiæ at base, and the tarsi (the hind ones not wholly) are red; face densely covered with creamy-white hair; mandibles black with a median red band; flagellum black except at base; yellow spots on anterior margin of mesothorax larger, suffusedly elongate posteriorly; abdomen with five yellow bands (successively paler) and one white one, the first two bands more or less suffused with brownish-orange; ventral fringes pale reddish at ends. The dark parts of abdomen are hoary with a fine pale pubescence.

Carcarana, Argentina (*L. Bruner*, 15). U.S. Nat. Museum.

Resembles *Epeolus burmeisteri*, Friese, but considerably larger, with darker legs, and the patch on anterior margin of mesothorax divided into two spots. *Epeolus (Doeringiella) bizonatus* (Holmbg.), from Bahía Blanca (*Bruner*), is superficially very like *T. pruinosus*, but larger, and easily separated by the extraordinary antennæ.

Isepeolus vierecki, Jörgensen.

Bahia Blanca, Argentine (*Bruner*); San Juan, Argentine (*C. S. Reed*).

It is permissible to correct the specific name, printed "*viecki*" in Jörgensen's work.

Isepeolus bruneri, sp. n.

♀.—Length 10 mm.

Black, mandibles obscurely reddish in middle, but otherwise tegument of head and thorax all black; thorax variegated with white hair as in other species, with two conspicuous black spots on scutellum, and others covering axillæ; disc of mesothorax shining, with well-separated punctures; first two abdominal segments ornamented as in *I. cockerelli*, Jörg., except that the inner processes on second segment are longer; third with a pair of large oblique

(quadrate) patches on hind margin, and each side with a large complicated patch of white, presenting a deep sinus anteriorly; fourth segment with a very large and thick mark having two parts, like the letter H; fifth with two large spots, not reaching apical margin; sixth segment with a small outwardly directed basal spine on each side. Face with white hair, partly black on lower part; front and vertex with black hair; a band of white hair in front of ocelli; scape red at base, middle covered with long white hair, the broad apex intense black; flagellum red beneath; third antennal joint unusually short for the genus, not as long as next three combined; tegulæ red. Wings brownish on apical margin, stigma and nervures piceous; second s.m. distinctly narrower above, receiving first r. n. before end. Legs black with the usual white hair-marks, knees red; pleura with black hair.

Carcarana, Argentina (*L. Bruner*).

Allied to *I. cockerelli*, but known by the abdominal pattern, venation, &c.

Lonchopria alopeæ, sp. n.

♂.—Length about 14 mm.

Head, thorax, and legs black, with long and abundant fox-red hair. Abdomen shining olive-green, with the same red hair, except the last two segments, which are black, the penultimate with black hair. Mandibles bidentate, reddish apically; malar space very short; clypeus very smooth and polished, the upper part with two rounded elevations, between which is a depression bearing a tuft of very long red hair; labrum bituberculate; antennæ very long, reaching to meta-thorax, flagellum bright ferruginous beneath except at base; face very broad; mesothorax shining, with well-separated punctures; area of metathorax smooth, with an obtuse transverse ridge; tegulæ black. Wings dusky, stigma dull ferruginous; third s.m. very oblique; apical segment of abdomen keeled. Maxillary palpi with six subequal joints.

La Paz, Bolivia, Nov. 14, 1898. U.S. National Museum.

A remarkable species, superficially resembling *L. thoracica* (Friese), but with much longer and more abundant hair on abdomen, shorter stigma, quite different mandibles, &c.

According to specimens received from Friese and Jensen-Haarup, it is *L. armata*, Fr., which is the male of *L. chalybæa*, Fr., not *L. anea*, Fr., as Friese first thought. *L. marginata* (Spin.), described as a *Colletes*, the specific name preoccupied, apparently becomes *L. zonalis* (Reed, 1892).

Scastra bombylans (Holmberg).

Bahia Blanca, Argentine (*Bruner*, 2).

Xenoglossa crawfordi, Cockerell.

Guanajuato, Mexico (*A. Dugès*).

Colletes punctipennis, Cresson.

Brownsville, Texas, 1908 (*Jones & Pratt*).

New to the United States.

Pseudomelecta californica miranda (Fox).

Mexico (C. F. Baker collection, 2320).

Megachile anthracina, Smith.

Moulmein, I. Burma, Dec. 1910 (*R. L. Woglum*).

XLVII.—*The Khapra Beetle* (*Trogoderma khapra*, *sp. n.*),
an Indian Grain-pest. By GILBERT J. ARROW.

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THIS very destructive wheat-pest has been studied in great detail by Messrs. J. H. Barnes and A. J. Grove, who have published figures and descriptions of it in all its stages in Mem. Dept. Agric. India (Chemical Series), iv. 6, 1916, p. 172) under the name *Attagenus undulatus*, Motsch. As already stated in a footnote in the 'Review of Applied Entomology,' v. 1917, p. 126, the insect is really a species of *Trogoderma* and appears to be without a specific name. *Attagenus undulatus* is quite a different insect, as I have established from specimens in the British Museum received from Motschulsky himself (see Ann. & Mag. Nat. Hist. (8) xv. 1915, p. 426). Mr. Bainbrigge Fletcher has incorrectly reported me (Agric. Research Inst. Pusa, Bull. 59, p. 14) as saying that the insect common in stored wheat in Northern India should be known by this name. On the contrary, the distribution I recorded shows *A. undulatus* to belong to tropical and not wheat-growing latitudes.

Specimens found in imported wheat have been received at the British Museum during many years past, and I have