

SCIENTIFIC RESULTS
OF
THE SECOND YARKAND MISSION;

BASED UPON THE COLLECTIONS AND NOTES
OF THE LATE
FERDINAND STOLICZKA, PH.D.

HYMENOPTERA.

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21. BOMBUS ALTAICUS.

Bombus altaicus, Eversm. Bull, Mosc., xix, 436, tab. 4, fig. 1.

Hab.—Tankse, Pangkong valley, Ladák; also in Asiatic Russia.

22. BOMBUS BIZONATUS.

Femina.—*B. hirsutus, ater; thorace antice, scutello, abdomineque basi flavis, medio nigro-fasciato, apice pallido.*

The head clothed with black pubescence, the labrum fringed with fulvous; the clypeus naked, smooth and shining. Thorax clothed with pale fulvous pubescence and having a black pubescent band between the wings; the pubescence on the legs and on the body beneath, black; the apical joints of the tarsi with short pale pubescence, that on the basal joint beneath rich fulvous; wings sub-hyaline, the nervures black. The first and second segments of the abdomen with pale fulvous pubescence, the third with black, and the three apical ones with very pale fulvous. Female, length $7\frac{1}{2}$ lines.

Hab.—No locality indicated.

23. BOMBUS OPPOSITUS, Fig. 11.

Femina.—*B. hirsutus, ater; thorace abdomineque supra fulvis.*

Black; the head clothed with black pubescence; the clypeus naked, smooth and shining. Thorax, clothed above with rather short, rich fulvous pubescence, that on the sides, beneath, and on the legs is black; the pubescence on the apical joints of the tarsi is pale fulvous, on their basal joint within it is bright fulvous, outside it is black; wings subhyaline, their nervures black. Abdomen, clothed above with rich fulvous, beneath with black pubescence. Female, length 9 lines.

Hab.—No precise locality indicated.

The genus *Bombus* is widely distributed; its number of species amounting to little short of one hundred. *Bombi* are found both in the Old and New World, a few species occurring in the Tropics; the genus has not been observed to penetrate Africa beyond Algeria, and it has not been found either in Madagascar, Australia or New Zealand. In the Old World it has been found in Lapland, Siberia, Kamtschatka, China, Japan, India and Java. In great Britain twenty species occur. In the New World, it has been found in Greenland, Boothia Felix, and at the Great Bear Lake, within the Arctic Circle. Mexico has produced some of the most beautiful species of the genus; North America is rich in species; in South America several fine ones occur.

Tribe—HETEROGYNA.

Family—FORMICIDÆ.

24. CAMPONOTUS BASALIS, Fig. 1.

Femina.—*C. niger, thorace subtus, pedibus abdominisque basi castaneo-rufis.*

Shining black; the anterior margin of the clypeus and the mandibles rufo-piceous; the flagellum of the antennæ ferruginous. Thorax ovate; the mesothorax and scutellum dark

rufo-fuscous; beneath, the pro-and metathorax and also the legs castaneo-rufous. Abdomen, subglobose; the scale and petiole, and the two basal segments castaneo-rufous, their apical margins black, the second most broadly so; beneath, these segments are entirely castaneous. Female, length 5 lines.

Hab.—Sind valley, Káshmir. Taken in August.

25. CAMPONOTUS BACCHUS.

Femina.—*C. capite abdomineque nigris, metathorace pedibusque pallide ferrugineis.*

Formica Bacchus, Smith, Cat. Hym. Ins., Pt. VI, Formicidæ, p. 21. ♀

Componotus Bacchus, Mayr, Novaræ Voy., Form., p. 27.

———*fervens*, Mayr, lib. cit., nec Smith, Cat. Hym. Ins., p. 241.

In the same bottle in spirit a male ant accompanied the female; its size and general appearance justify me in considering it to be the male of *C. Bacchus*; it is $4\frac{1}{2}$ lines long, black, with the antennæ and legs pale ferruginous, the scape being darker than the flagellum; the mandibles, palpi and post-scutellum are also pale ferruginous; the wings flavo-hyaline; the nervures pale rufo-testaceous; the stigma fuscous.

Hab.—Jhilm Valley, Punjab Hills. Ceylon, Calcutta, and Islands of the Eastern Archipelago.

This genus is cosmopolitan; its species are numerous, new kinds occurring in almost every collection made in little frequented places; any attempt to calculate the number of species would be an impossibility; until each species has been collected from its nest, and all the different kinds of sexes carefully ascertained, the number of specific forms cannot be ascertained; workers of several sizes and forms occur in nests of many species, and if captured at large, are doubtless described as distinct; the number of species doubtless amounts to hundreds.

26. FORMICA SIMULATA.

Operaria.—*F. rufo-ferruginea, lævissime cinereo-micans; fronte vertice et abdomine nigrofuscis; squama subtriangulariter rotundata, margine supero rotundato; area frontali opaca.*

The head red, with the vertex and the front, as far as the insertion of the antennæ, more or less rufo-fuscous; the clypeus with a longitudinal sharp carina in the middle; its anterior margin rounded and entire; mandibles ferruginous, with their teeth black; the antennæ ferruginous, with the flagellum, beyond the third joint, fuscous. Thorax and legs bright blood-red. Abdomen covered with fine cinereous pile; in some examples fusco-ferruginous at the base; with a few scattered pale setæ; the scale of the peduncle red, its superior margin rounded. Worker, length 3 lines.

Hab.—On the road across the Pámir, from Sirikol to Panja; also at Yárkand; April and May.

This species closely resembles the *Formica sanguinea* of Europe, particularly small workers of that species; the specimens were collected in spirit; therefore it is probable the entire insect would, when living, be covered with a fine pile.

27. FORMICA FRATERNA.

Operaria.—*F. rufo-fusca*, *sparse pilosula*; *mandibulis*, *antennarum scapis*, *flagellorum basi*, *pedibusque pallide rufescentibus*; *area frontali opaca*.

The insect covered with a fine grey pile; the anterior part of the head rufo-testaceous, the mandibles ferruginous; the scape of the antennæ and a few of the basal joints of the flagellum pale ferruginous; the legs and scale of the peduncle entirely of that colour; the scale rounded above. The base of the abdomen in some examples more or less tinged with ferruginous; the abdomen with a few scattered pale setæ. Worker, length $2\frac{3}{4}$ to 3 lines.

Hab.—No precise locality indicated.

This species very closely resembles the *Formica cunicularia* of Europe, but its pale legs give it a different aspect.

28. FORMICA DEFENSOR.

Operaria.—*F. rufo-ferruginea*, *lævissime cinereo-micans*; *fronte abdomineque fusco-nigris*; *squama subtriangulariter*, *marginè supero rotundato*.

Head, thorax, legs, antennæ, and squama rufo-ferruginous; the apical half of the flagellum and the front above the insertion of the antennæ, fuscous; an impressed line from the anterior ocellus to the clypeus, the latter with a sharp central carina; the frontal area opaque; the teeth of the mandibles black; the head and the flagellum with fine cinereous pile.

The abdomen fusco-ferruginous at the base, and the extreme apex pale ferruginous; the abdomen covered with a fine cinereous pile; beneath fusco-ferruginous. Worker, length $2\frac{3}{4}$ lines.

Hab.—On the road across the Pámir, from Sarikol to Panja. (April and May.)

29. FORMICA CANDIDA.

Femina.—*F. nigra nitidissima*; *mandibulis*, *antennis*, *pedibusque rufescentibus*; *squama lata*, *subtriangulariter*, *marginè supra rotundato*.

Shining black; the mandibles, antennæ, and legs ferruginous; the latter slightly fuscous above, as are also a few of the apical joints of the flagellum above. The head, the width of the thorax; the clypeus with a sharp central carina; the frontal area semiopaque; the mandibles stout, and with longitudinal punctures. The metathorax semiopaque, and with a fine cinereous pile, which also covers the squama, legs, and thorax on the sides and beneath. Abdomen oblong-ovate, very smooth and shining, and with a sprinkling of pale hairs at the apex; the extreme apex pale testaceous. Female, length $3\frac{1}{2}$ lines.

Hab.—On the road across the Pámir, from Sarikol to Panja. (April and May.)

Family—MYRMICIDÆ, (Sm.)

30. MYRMICA CURSOR.

Femina.—*M. sordide rubra*; *capite thoraceque longitudinaliter striatis*; *abdomine fusco-nigro*, *nitido*; *mandibulis*, *antennis*, *pedibusque pallide ferrugineis*.

Obscure ferruginous, with the head sometimes nearly black, or with the sides more or less ferruginous; the antennæ with the scape and a few of the basal joints of the flagellum

pale ferruginous, the rest fusco-ferruginous; the head longitudinally but irregularly striated, the striæ at its sides formed of confluent punctures. Thorax longitudinally striated, oblong-ovate, and having a longitudinal ferruginous space above, enclosed by a black margin; the sides and beneath ferruginous; the metathorax with two short, stout, acute, compressed spines; the legs pale ferruginous. Abdomen globose, smooth and shining; the first node of the petiole wedge-shaped when viewed sideways, and coarsely rugose, the second node globose and sub-rugose. The scape of the antennæ in this species is bent and slender at the base as in the *M. ruginodis* of Europe, which it closely resembles; it is, however, a rather smaller insect. Female, length $2\frac{3}{4}$ lines.

Hab.—No precise locality indicated.

31. MYRMICA LUCTUOSA.

Mas.—*M. niger, nitidiusculus; mandibulis, antennis, pedibusque, necnon capite thoraceque, sordide pallescentibus; alis hyalinis, nervis rufo-pallidis.*

Black; head and thorax longitudinally striated; the metathorax with transverse curved striæ, and with two stout compressed spines, its apex obscurely rufo-piceous; the club of the antennæ paler than the rest of the antennæ. The wings pale fulvo-hyaline and iridescent; the stigma and nervures pale ferruginous; the legs long and slender, with the apical joints of the tarsi pale testaceous. Abdomen smooth and shining, and with a few scattered pale hairs; the nodes of the abdomen rugose, the first oblong, the second globose. Male, length $2\frac{3}{4}$ lines.

Hab.—Murree (Mari), Punjab hills.

32. MYRMICA BREVICEPS.

Femina.—*M. sordide rubida; mandibulis, antennis, pedibusque pallide ferrugineis; capite thoraceque longitudinaliter profunde striatis; abdomine rufo-nigro, nitido.*

Rufo-ferruginous; the head strongly longitudinally striated; a small smooth shining space at the base of the clypeus, which is deeply longitudinally grooved; the mandibles striated. Thorax above with a black patch on each side of the mesothorax, and another at the anterior portion; the metathoracic spines short, stout and acute. The first node of the abdomen longitudinally rugose, the second transversely so; the abdomen smooth and shining, ferruginous at the base; the rest dark rufo-fuscous, nearly black, and with scattered erect pubescence. Female, length $2\frac{1}{2}$ lines.

Hab.—No locality or date.

This insect very closely resembles two or three of the British species, particularly *Myrmica sulcinodis*; its head is, however, shorter than that of the British insect.

33. CREMATOGASTER APICALIS.

Femina.—*C. pallide castaneo-rufus, lævis, nitidus; abdomine apicem versus nigrescente; alis hyalinis.*

Rufo-castaneous, smooth, shining and impunctate; the eyes, margins of the mandibles, and the anterior margin of the clypeus narrowly black; the clypeus finely longitudinally

striated. The mesothorax with a few longitudinal dark lines; the scutellum convex, and rounded behind; the metathorax truncate, not spined, and paler than the mesothorax; wings clear hyaline, the nervures and stigma pale rufo-testaceous. Abdomen oblong-ovate, the base castaneo-rufous, from thence becoming gradually darker to the apex. Female, length $3\frac{1}{2}$ lines.

Hab.—Jhilar valley, Punjab hills. Taken in July.

34. DORYLUS (TYPHLOPONE) LEVICEPS, Fig. 2.

Operaria.—*T. rufo-testaceus, capite castaneo, mandibulis nigris.*

Head oblong, subquadrate, rather wider anteriorly, the flagellum slightly fuscous; very smooth and shining, and with a very faintly impressed central longitudinal line, and also a few delicate scattered punctures. Thorax oblong, divided in the middle by a transverse suture, flattened above and having a few fine punctures. Abdomen, the node of the peduncle incrassate, subquadrate above; oblong-ovate. Worker, length $3\frac{1}{2}$ lines.

Hab.—Jhilar valley. Taken in July.

The insects described under the generic name *Typhlopone* of Westwood are now discovered to be the workers of *Dorylus*; the late Dr. Jerdon observed them issuing from the nests, in company with males of *Dorylus*; Dr. Gerstaecker has described the female of *Dorylus* in the Stett. Ent. Zeits. for 1863, under the generic name *Dichthadia*, pointing out its affinities of structure with those of the male, upon which the genus was founded; and proving demonstratively the affinities of the genera.

35. MUTILLA SUSPICIOSA.

Mutilla suspiciosa, Smith, Journ. Proc. Linn. Soc., II, 84 ♂ (1857).

Hab.—Jhilar valley. Taken in July.

This species resembles the male of *M. sexmaculata*, but it differs from it by having the wings entirely dark brownish-black; the abdomen is red, with the base and apex black; it has been found in Borneo, Batchian, Celebes, Amboyna, and Bouru.

36. MUTILLA SEXMACULATA, Swederus.

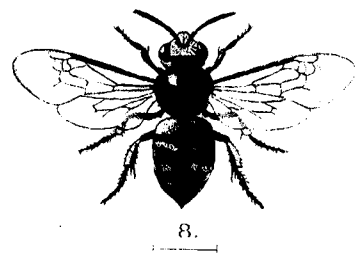
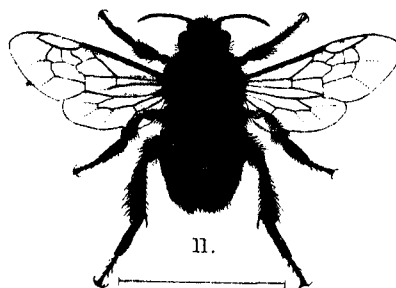
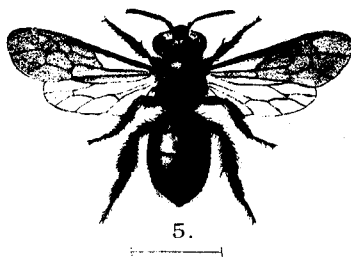
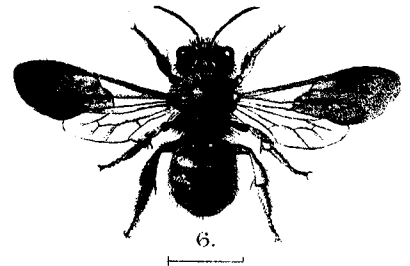
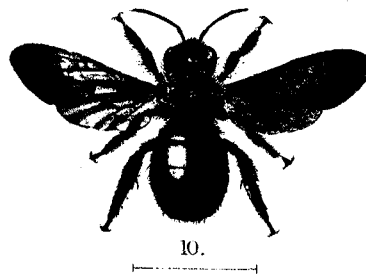
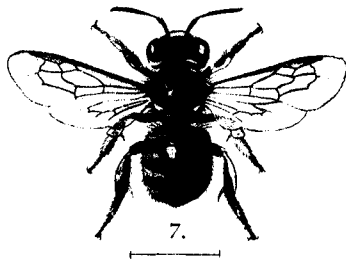
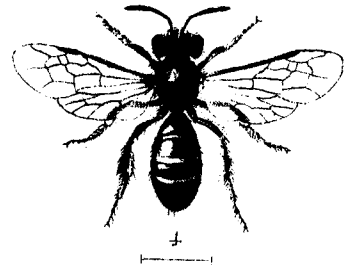
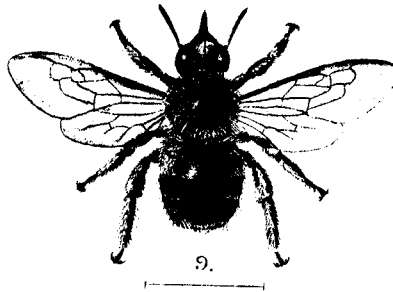
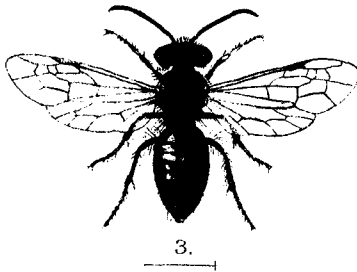
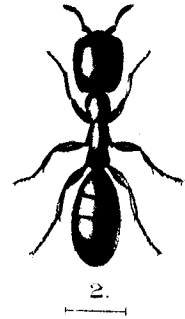
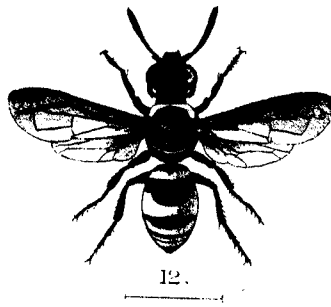
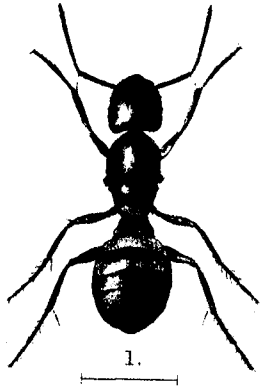
Femina.—*M. nigra, thorace supra rufo, abdomine utrinque serie trium macularum albidarum.*

Mas.—*M. nigra, thorace antice cinereo, abdomine rufo, basi nigro, alis fuscis basi hyalinis.*

The male of this species was discovered by Sir John Hearsay, who captured the sexes *in coitu*; it, as well as the female, varies greatly in size. I suspect it is the *Mutilla rufogastra* of St. Fargeau.

M. Radoszkovsky, in his Monograph of the *Mutillidae* of the Old World, says that the insect I have named *M. sexmaculata* of Swederus is not that species; I have carefully compared the insect with the descriptions given both by Swederus and by M. Radoszkovsky, and am quite satisfied that my quotation is correct, although it is said by

HYMENOPTERA.



E. A. Smith, del et sculpst.

Miner's Broom.

1. *Camponotus basalis.* (Smith)
2. *Dorylus laeviceps.* " "
3. *Andrena familiaris.* " "
4. " *floricula.* " "
5. *Lamprocolletes peregrinus.* "
6. *Osmia laboriosa.* " "

7. *Anthidium vigilans.* (Smith)
8. *Crocisa intrudens.* " "
9. *Xylocopa dubiosa.* " "
10. " " " " " "
11. *Bombus oppositus.* " "
12. *Pterochilus albo-fasciatus.* "