

ON SOME SAWFLIES (HYMENOPTERA: TENTHREDINIDAE)
FROM THE INDIAN MUSEUM, CALCUTTA.

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I am very grateful to the authorities of the Zoological Survey of India, Indian Museum, Calcutta, for sending me, at my request, a very interesting collection of sawflies, mainly from the Himalayas, for study. Since writing up the report I had an opportunity of studying the types of sawflies, described by Cameron and Smith, preserved in the British Museum (Natural History), London, Hope Collection, Oxford, and the Indian Museum, Calcutta, and the changes in synonymies, etc., rendered necessary by this study are incorporated in the present report.

Tribe TENTHREDININI.

Genus **Pëus** Konow.

Pëus pannulosus Konow.

One ♀, from Darjeeling, alt. 7,000 ft., June-July, 1916; E. Brunetti.

Genus **Dipteromorpha** Kirby.

Dipteromorpha spinosa (Cameron).

Two ♀, from Pashok, Darjeeling District, alt. 4,500—5,000 ft., 26-v—14-vi-1916; F. H. Gravely.

My study of the type of *Tenthredo spinosa* Cameron has convinced me that it is identical with the species later described as *Dipteromorpha dentisterna* Rohwer; similarly *D. spinifera* Mocsary is the same as *Tenthredo fentoni* Kirby.

Genus **Metallopëus**, gen. nov.

The new genus *Metallopëus* belongs to the Tribe Tenthredinini, and is closely allied to the genera *Tenthredo* Linn. (= *Tenthredella* Rohwer) and *Pëus* Konow.

The nervation of the wings is identical with that of the genus *Tenthredo*. The antennae may be shorter than the thorax and longer than the abdomen, but always strongly taper towards the apex and are mostly somewhat compressed. The scutellum and the mesopleurae are always pyramidally raised, the latter generally bear a dorso-ventral carina, which runs to the apex of the pyramidal tubercle and is then continued to the meso-sternal thorns; these thorns are only rarely absent. Head behind the eyes in ♀ angulately enlarged, strongly carinate behind; supra-antennal tubercles strongly prominent; clypeus very big, truncate or nearly so at the apex, supra-clypeal furrow entirely absent. The first abdominal segment is divided in the middle by a

furrow which is wanting in the genus *Pëus*. The sub-apical tooth of the claws is always much longer and stouter than the apical. Head, thorax and abdomen always with a strong, bright metallic lustre.

Genotype.—*Tenthredo clypeata* Cam.

I refer to this genus *Tenthredo aericeps* Konow, *T. coccinoceros* Wood, *T. clypeata* Cam., *T. coerulea* Cam., *Pëus cupriceps* Konow, *P. splendidus* Konow and three undescribed species. The genus seems to be restricted to the higher ranges of the South-Asiatic mountains, at altitudes between 6,000—13,000 ft. The author has seen specimens of different species from Kashmir, Himalayas, Tibet, Assam, North Burma and Sze-Chuan (China); it has also been reported from Formosa.

***Metallopëus clypeata* (Cam.)**

Two ♀, from Simla, W. Himalayas, alt. 6,000 ft., 6-viii-1918 and 9-ix-1918; E. Brunetti.

Genus ***Tenthredo*** Linn.

I consider the genus *Tenthredella* Rohwer to be a synonym of the Linnaean *Tenthredo*.

***Tenthredo opacifrons*, sp. nov.**

Reddish yellow, upper surface of scape, pedicel and flagellum of antennae and hind tibiae and tarsi black; apex of middle tarsi and that of abdomen, chiefly above, blackish brown (the dark colour of the abdomen may be due to putrefaction). Wings, venation, costa and stigma reddish yellow, apex of both wings strongly infuscated, in the fore wings from a strongly marked straight line through the very apex of stigma.

Head distinctly narrowed and strongly carinated behind eyes. Post-ocellar area nearly quadrate, as long as wide, sloping from the raised middle carina to the rather deep, lateral furrow on either side. Antennal and inter-antennal furrows distinct, but not the post-ocellar and circum-ocellar. Middle foveae large but rather shallow, extending from between the antennae to middle ocellus and the feebly marked supra-antennal pit. Frontal area raised but not prominent. Supra-antennal tubercles absent; the margin of the antennal pit raised into a carina resulting in a rather narrow furrow between the antennae. Entire upper surface of head opaque; finely punctured, punctation denser on and around frontal area; orbits behind eyes and face below antennae smooth and strongly shining. Supra-clypeal furrow distinct; clypeus semi-circularly incised with obtusely rounded lateral teeth. Labrum almost rounded or somewhat pointed. Antennae slender, longer than abdomen, distinctly compressed; third and fourth joints subequal. Pronotal angles and mesonotum very minutely punctured; scutellum and its appendage with scattered punctures, former pyramidally raised to a rather sharp point. Mesopleurae strongly granulate, also pyramidally raised, with a strong but short carina at apex. Mesosternum shining, smooth with short, flattened thorns, hind metatarsus shorter than all the succeeding tarsal joints. Claws cleft, sub-apical

tooth much longer and stronger than apical. Length 14 mm. ♀ unknown, but should be similar to the ♂.

2 ♂, from Pashok, Darjeeling District, alt. 4,000 ft., 26-v-16—14-vi-1916; F. H. Gravely.

Holotype No. $\frac{850}{3}$ in the collections of the Zoological Survey of India (Indian Museum), Calcutta. *Paratype* in the author's Collection in Stockholm.

The new species is closely allied to *T. xanthoptera* Cam. and *T. lepcha* Cam., but in addition to other characters is easily separated from both the species by the punctured and not smooth frontal area.

***Tenthredo xanthoptera* Cam.**

I have examined the type of *T. vitalisi* Turner and have no doubt about its being synonymous with *T. xanthoptera*.

T. xanthoptera is known from Dehra Dun District, U. P.; Shillong, Khasia Hills, Assam; Burma; Tonkin and Laos. In the collection before me there are 4 ♂, 5 ♀, collected from Kalimpong, Pashok and Gopaldhara, Darjeeling District.

***Tenthredo lepcha* Cam.**

1 ♂, 2 ♀, from Pashok and Kalimpong, Darjeeling District.

***Tenthredo lepcha* var. *annandalei* Rohwer.**

3 ♀, from Kalimpong and Gopaldhara, Darjeeling District.

T. annandalei was described as distinct species, but I have failed to find any differences between it and *T. lepcha*. It, however, has pale hind femorae, and brownish, not black, hind tibiae; I am, therefore, of opinion that it should be regarded as a colour variety of *T. lepcha*.

The condition in reference to var. *birmensis* Rohwer (*gribodoi* Konow *nec* Costa) is also similar. The punctation of the mesopleurae is somewhat stronger in the only specimen available—a co-type of *gribodoi* Konow kindly sent to me for comparison by Mr. Runar Forsius—but, as none of the specimens from Darjeeling have the punctation constant or exactly similar to that of *T. lepcha*, I consider this to be a variable character for the species.

The abovementioned species and varieties occur in the same place and in nature it would be almost impossible to distinguish them one from the other. When carefully examined with a microscope, they can be distinguished with the help of the following key:—

I. Mesosternum with distinct, flattened thorns; mesopleurae strongly, pyramidally raised.

1. Sub-apical tooth of claws shorter than apical; upper surface of head shining, not punctured (Distribution: Mussooree, U. P.; Darjeeling District, Bengal; Sikkim; Assam; Burma; Laos, and Tonkin)

T. xanthoptera Cam. (*vitalisi* Turner).

2. Sub-apical tooth of claws much longer than apical; upper surface of head dull, distinctly punctured (Distribution; Darjeeling District)

T. opacifrons, sp. nov.

II. Mesosternal thorns absent; mesopleurae smooth, shining, with only a few more or less distinct punctures, apex not strongly elevated, blunt; sub-apical tooth of claws longer and stouter than apical.

1. Limit of infuscated apex of fore-wing concave; a median, longitudinal, serrated, black band along entire length of abdomen except at apex (Distribution: Burma)

T. lepcha Cam. var. *birmensis* Rohwer (*gribodoi* Konow).

2. Basal limit of infuscated spot of fore-wing straight; only upper and lower surface of apex of abdomen black.

A. Hind legs with femorae, tibiae and tarsi quite black (Distribution; Darjeeling District, Sikkim)

T. lepcha Cam. (*typica*).

B. Hind femorae reddish yellow, tibiae more or less brown, tarsi black (Distribution: Nepal, Bhutan, Sikkim, Darjeeling District)

T. lepcha var. *annandalei* Rohwer.

Tenthredo spinigera Konow var. **hedini** Malaise.

3 ♂, 3 ♀, from Phagu, Kufri, Simla District; alt. 7,000—9,000 ft.; N. Annandale and B. Chopra.

The description of *hedini* as a variety of *T. spinigera* Konow was included in a paper which is being printed in *Arkiv för Zoologi*, Stockholm, but I am now inclined to consider it as a distinct species.

Tenthredo clavicornis Konow.

2 ♂, 1 ♀, from Pashok, Darjeeling District; alt. 2,500 ft.; F. H. Gravely.

Tenthredo cretata Konow.

2 ♂, 2 ♀, from Pashok, Darjeeling District; alt. 2,500 ft.; F. H. Gravely and E. Brunetti.

Tenthredo indica Cam.

1 ♀, from Simla; alt. 6,000 ft.; 1-viii-1918; E. Brunetti.

Tenthredo clepsydra, sp. nov.

Black with light yellow markings. Head black; the very wide inner and hind orbits upto middle of eyes; on the upper orbital area a nearly rectangular spot on either side of the post-ocular area, which is connected with the hind-orbits through a very fine yellow line running half way between the eye and the hind carina of the head, and basal part of antennae yellow; narrow apical margin of clypeus and an area in its middle, which is sometimes absent, blackish. Antennae black at base and apex; apex of 3rd, entire 4th, 5th and base of 6th joint yellow. Thorax black; major part of upper angles and a spot on the lower angle of pronotum, tegulae, angulate part of middle lobe of mesonotum, scutellum and its appendage but not the limit between them, postscutellum, upper half of mesopleurae and a large spot on the

sides of metusternum yellow. Abdomen black with a distinct bluish tinge; 1st segment, with the exception of a small black spot in the middle at the base, yellow, 2nd-6th tergites on either side with a big, rounded yellow spot, a similar spot in the middle of the corresponding sternites; the yellow spots of the tergites are separated from one another by hour-glass shaped black markings, which together appear as a double-toothed saw along the middle of the abdomen—the name of the species is in reference to the hourglass-shaped black marks of the tergites. Legs yellow, base of all coxae and femorae black, apex of tibiae and in the anterior pair of legs a line running from the apex of tibiae upwards yellow. Wings hyaline, fore-wings near apex somewhat infuscated, nervures and apex of stigma dark brown, base of stigma and costa brown.

Head quite smooth, strongly shining, strongly narrowed behind eyes and distinctly carinated in this region. Post-ocellar area less than $\frac{1}{4}$ as wide as long; lateral and post-ocellar furrows very sharp and rather deep, former as deep as antennal furrows. The antennal furrows with the post-ocellar furrow and a shallow one above the antennal tubercles form the boundaries of the nearly quadrate frontal area; from the frontal corners of the quadrate two fine but distinct furrows run to behind the middle ocellus and unite with one another—inside each of the furrows is a blunt ridge diverging downwards from the ocellus. Supra-antennal tubercles distinct, prominent at the base of antennae but less marked backwards and abruptly cut off behind by the furrow bounding the frontal area described above; between the tubercles is a deep furrow with a low, blunt median carina at its bottom. Supra-clypeal furrow shallow but distinct. Clypeus hardly convex, semi-circularly incised at apex, with rounded lateral teeth. Labrum nearly circular. Antennae longer than abdomen, hardly thickened before apex, distinctly compressed, 3rd joint slightly longer than 4th. Mesonotum extremely minutely and densely punctured, opaque. Anterior half of rounded scutellum smooth, shining; posterior half and appendages with few, scattered punctures. Middle of mesopleurae only slightly obtusely raised, densely but not strongly punctured; area round the elevation hardly punctured, with a distinct lustre. Mesosternum without thorns. Abdomen shining. Claws cleft; apical tooth a little longer than sub-apical. Length of ♀ 13-15 mm. ♂ unknown.

2 ♀, from round Pashok, Darjiling District; alt. 5,000 ft.; F. H. Gravely.

Holotype No. $\frac{851^*}{H 8}$ in the collections of the Zoological Survey of India (Indian Museum), Calcutta; *Paratype* in the collection of the author.

This new species is closely allied to *T. indica* Cam. and *T. xanthopus* Cam., but differs in the sculpture of the head and colour; the colour of the abdomen of *T. clepsydra* is just the reverse of that of *T. xanthopus*.

Genus *Allantus* Panzer-Jurine.

Tenthredo Rohwer *nec* Linn. is, in my opinion, a synonym of *Allantus* Panzer-Jurine.

Allantus himalayensis Radoszkovsky.

2 ♀, from the Simla Hills—Kufri to Phagu, alt. 8,000—9,000 ft., and Phagu alt. 9,000 ft., 18-v-1916; N. Annandale and S. W. Kemp. The first of the two specimens on which the following description is based, has been returned to the Indian Museum, Calcutta, while the second is retained for the author's collection. 1 ♀, from Kanasa, Chakrata, United Provinces; Forest Research Institute, Dehra Dun Coll. 1 ♀, from Killanmarg, Kashmir, alt. 10,500 ft., 15-vii-1931, T. B. Fletcher (Brit. Mus. Coll.).

From Smith's poor figure and description of *simillimus*, I was of opinion that his species is synonymous with Radoszkovsky's *himalayensis* and this view was confirmed by examination of Smith's type. As I have not examined Radoszkovsky's type, but have identified the species from his description and very poor coloured sketch, I give below a description of my material. It may, however, be noted that my specimens agree with Smith's type of *simillimus* in all respects.

Head generally black. Clypeus and labrum black to reddish brown, former with two and latter with one large, light yellow spots at base. Mandibles with base lighter, middle region more reddish yellow. Antennae black, scape lighter in colour, pedicel and 3rd joint near the base more reddish yellow. Thorax generally black; upper and lower angles of pronotum light yellow; tegulae reddish yellow; scutellum quite black or usually with two, rarely confluent, light yellow spots; metasternum light yellow on both sides. Abdomen black with light yellow transverse bands; the bands are present on the first tergite and rather wide ones all round 4th and 5th segments, 3rd and 6th segments have a narrower hind margin, 7th - 9th tergites similarly have yellow hind margins and these together form a yellow spot near the tip of the abdomen. Legs reddish yellow; coxae, trochanters and larger part of femorae black, rest mainly on the under side reddish; sometimes the hind femorae are quite black, but in other specimens the reddish colour is more prominent; both the darker and light forms have the anterior edge of front femorae and tibiae more or less striped with light yellow. Wings yellowish, hyaline; radial and frontal half of cubital cells infumated dark brown, discoidal cell less strongly infumated; venation nearly black, costa and stigma reddish yellow.

Head distinctly enlarged behind eyes with a distinct carina behind, strongly and densely punctured or granulated. Post-ocellar area flat, nearly twice as wide as long, in front and on both sides distinctly marked off by rather fine and not too deep furrows; inter-ocellar furrow present. Pentagonal area hardly raised, rather indistinct; supra-antennal tubercles strongly raised with a deep, wide and flat-bottomed depression between them; tubercles about three times longer than wide. Supraclypeal furrow absent, area finely striated longitudinally. Malar space shorter than pedicel. Clypeus nearly flat, with a few scattered punctures, shining; at the apex deeply, rectangularly incised and with rather sharp, but rounded lateral teeth. Labrum pentagonal, with rounded angles. Antennae stout, little longer than thorax and distinctly thickened before apex; lengths of 3rd and 4th joints 7:4. Pronotum and mesonotum strongly and densely punctured, shining background

distinguishable between single punctures; mesopleurae granulated, posterior side of scutellum with dense and distinct and anterior side with confluent, shallow and indistinct punctulation; scutellum roundly raised, at the very apex with a shallow, longitudinal furrow; mesopleurae somewhat flattened, pyramidally raised, with truncate apex. First tergite of abdomen smooth, shining, following tergites comparatively strongly striated, quite dull. Apical teeth of claws longer than sub-apical. Length of ♀ 10.5—11.5 mm. ♂ unknown.

Allantus indica Kirby.

Black with yellow markings. Clypeus, base of mandibles, a minute spot at base of labrum in ♀, and entire labrum in ♂, upper angles and a spot near base of pronotum (but not the tegulae), yellow; there is also a large yellow spot on meta-sternum. Antennae black. Abdomen very differently coloured in ♂ and ♀. In ♀ the first six segments have yellow belts along the hind margins alternating with about as wide black rings, apex of abdomen above with a big yellow spot extending over the middle of last three tergites. Except for quite yellow genitalia, the underside of abdomen in ♂ has yellow transverse belts as in ♀, but hind margins of first and fourth tergites only are belted with yellow; 5th-8th tergites are yellow in the middle and have extremely narrow yellow marginal rings. Legs black; entire front side of first two pairs of legs in both sexes yellow, hind legs black; in ♀ apex of coxae, but in ♂ the front side of trochanters and of the basal portion of femorae also yellow. Wings, hyaline, fore-wings with a dark-brown infuscated shadow along the middle from the base to the apex, most prominent over the second cubital and both the radial cells, hind-wings only along the light-brown stigma less dark; nervures dark brown.

Head narrowed behind the eyes, coarsely punctured with large punctures, well separated by even and shining background. Front area and supra-antennal tubercles hardly raised, bordering antennal furrows very shallow; post-ocellar area sharply defined, $1\frac{1}{2}$ times as wide as long, with the bordering lateral, posterior and inter-ocellar furrows sharp and rather deep; area as also entire head distinctly marginated behind; supra and inter-antennal furrows very shallow, bottom of the latter in the middle somewhat roundly raised. Clypeus large, evenly rounded, at the apex roundly emarginated. Malar space shorter than pedicel. Antennae shorter than thorax, from fourth joint strongly thickened before apex, 3rd joint twice as long as 4th. Mesopleurae roundly bulging; mesosternum without thorns; almost smooth; scutellum nearly flat; rest of thorax with punctures as on head, but the punctures are fewer and towards the sides and front of mesonotum gradually disappear. Abdomen not visibly striated, strongly shining. Sub-apical teeth of claws distinctly larger, but only little longer than apical. Length 12-13 mm.

One ♀ labelled "Pashok, Darjeeling District, alt. 2,500 ft. 26-v—14-vi-1916, F. H. Gravely" from the collections in the Indian Museum, Calcutta. I have also examined one ♂ labelled "Sikkim, alt. 4,000 ft., April 1894, C. T. Bingham" in the British Museum collection.

This species apparently comes very near to *A. largifasciatus* Konow, from Sikkim, but according to Konow's description differs in the following points: The head is not narrowed behind the eyes; the post-ocellar area is as long as wide; the antennae are as long as the thorax and the first abdominal segment; the scutellum is raised as a cushion; length 15-16 mm. The sculpture of the head and thorax described as "capite et mesonoto crassius et sparsius, mesopleuris densius punctatis" is somewhat uncertain.

The statement of Enslin that *A. dudgeoni* Cam. is a synonym of *largifasciatus* Konow led the present author to describe the above species as new, but after studying Cameron's description and the types in the British Museum (Nat. Hist.), London, the supposed new species was found to be a synonym of *indica* Kirby. The types of *dudgeoni* Cam. were found to agree closely with *indica* Kirby, though the colouration of the ♂ and the ♀ is dissimilar.

Allantus salvazii, sp. nov.

Back above, dirty whitish yellow below and with a semi-circular light spot in the middle of 4th tergite. Antennae, head above the indistinct supra-clypeal furrow and on hind orbit to just below level of lower ocellus, the pronotum except the large upper and lower angles; meso- and metanotum and meso-sternum black. Mesopleurae light except for a black spot just under the wing; tegulae, frontal half of scutellum and two triangular spots on its appendage lighter. Abdomen black above, lighter below and on the sides. Wings hyaline, hardly darkened towards the apex, intercostal field distinctly light brown; costa, stigma and nervures dark brown, nearly black.

The ♂ is somewhat differently coloured. The infra-antennal area, the mesosternum and the frontal half of the meso-pleurae are lighter, but the scutellum and its appendage are quite black. The semi-circular light spot in the middle of the 4th tergite of the ♀ is, in the only available ♂, changed to an arrowhead-shaped spot over the 4th and 3rd tergites; in the middle of the 5th tergite there is also a faint indication of a light spot.

Head narrowed behind eyes, distinctly margined behind; frontal area and its nearest surroundings finely and inside the area densely punctured, rest strongly shining. Post-ocellar area wider than long (4:3), in the middle with a distinct, shallow and longitudinal depression. Inter- and post-ocellar furrows equally sharp; lateral ones a little sharper and deeper. Frontal area distinctly raised, from the ocelli to the base of the antennae even, in the middle a little excavated. Malar space shorter than pedicel. Clypeus large, rounded and convex; at the apex the incision is roundly pentagonal with a flat bottom, lateral teeth obliquely truncate with rounded angles. Labrum as long as wide, rounded. Antennae of ♀ shorter than head and thorax, distinctly thickened before the apex; length of 3rd and 4th joints as 7:4; in the ♂ longer than abdomen, nearly filiform, length of 3rd and 4th joints as 4:3. Mesonotum densely and finely punctured, mesopleurae, if at all, with very minute, scattered punctures, shining, in the middle rounded to pyramidally raised; mesosternal thorns absent; scutellum a little

raised, rounded, frontal half hardly, the remainder densely and rather strongly punctured, punctures shallow, confluent. Abdomen strongly shining with very faint, hardly visible striation. Apical teeth of claws longer than sub-apical. Length 9-10 mm.

One ♂ and 3 ♀, the type, allotype and one paratype ♀ from Tonkin, Chapa, 20-v—1-vi-1916, R. V de Salvaza; one paratype ♀ labelled "W. Himalayas, Simla, alt. 6,000—7,000 ft., jungle, viii—ix-1925, B. Chopra"

Type ♀, an allotype ♂ belong to the British Museum (Nat. Hist.), London; the Simla paratype belongs to the Indian Museum, Calcutta, Regd. No. $\frac{852}{H3}$; one paratype in the author's private collection.

I have associated this species with the name of the collector Mr. R. Vitalis de Salvaza.

Allantus felderi Radoszkovsky.

This is apparently a widely distributed and common species.

One ♂ and 4 ♀, all captured by N. Annandale and S. Kemp in the Simla Hills, Kufri to Phagu, alt. 8,000—9,000 ft., 18—21-v-1916.

A study of the types in the Indian Museum, Calcutta, has confirmed the author's view that *terminalis* Smith, *multicolor* Smith and *albipictus* Konow are all synonymous with *A. felderi* Radoszkovsky.

Allantus opposita (Smith).

One ♂, from "Round about Mussoorie, United Provinces"; 15-vi—1-vii-1930; B. Chopra. 3 ♀, from Simla, Western Himalayas; alt. 6,000 ft.; 26-vii—12-viii-1918; E. Brunetti.

These specimens have been compared with one ♀, received in exchange from the British Museum, belonging to the type-series of *Fethalia nigra* Cam. The first abdominal segment is divided along the middle and the "blotch" of Cameron is not, as he stated, absent. Cameron's *nigra* is a typical *Allantus* (*Tenthredo*) and is in no way related to the genera *Pëus* Konow or *Jermakia* Jak., as Rohwer supposed (*Rec. Ind. Mus.* XI, 1915, p. 46). I have adopted the earlier specific name *opposita* Smith for the species, as after studying Smith's type in the Indian Museum, Calcutta, I found that Cameron's *nigra* does not differ from it in any characters.

I give below a key of the Indian species of the genus *Allantus* which I have studied.

- I. Mesosternum with sharply pointed, somewhat flattened thorns; scutellum, viewed laterally, strongly raised and usually sharply pointed.
 - A. Scutellum viewed from behind quite truncate or obtusely rounded, sometimes a little pointed; head and thorax strongly punctured.
 - i. Scutellum, viewed laterally, rounded or obtusely pointed, frontal half usually quite white, sometimes black; ventral surface of head and body yellowish white; dorsal surface of abdomen distinctly bluish, under surface and 3rd tergite more or less white. Head

between eyes and post-ocellar area with big, dense punctures; hardly shining. Thorax finely but densely punctured. Wings clear, uniformly hyaline. (Distribution: At altitudes up to 11,000 ft. in Kashmir, Himalayas, Assam, Burma and South China)

A. felderi Radoszkovsky.

- ii. Scutellum strongly flattened, in lateral view sharp, posteriorly quite truncate, somewhat emarginated at apex. Head with long black hairs; head and thorax strongly and densely punctured, supra-antennal tubercles distinct. 3rd tergite and whole body black, sometimes hind margins of 1st, 4th, 5th and 9th tergites yellow. Hind femorae and tibiae usually red, sometimes quite black. Frontal borders of wings, especially both radial cells, strongly infuscated. (Distribution: Kashmir)

A. providus Smith.

B. Scutellum, viewed from behind, very sharply pointed, its apex raised to a thorn-like tip.

- i. Clypeus roundly emarginated, with a small tooth in the middle of the emargination; abdomen and rest of body black, without bluish tinge. Abdomen shining, tergites without distinct striations. Head and thorax finely but densely punctured, quite dull. (Distribution: Himalayas)

A. opposita Smith.

- ii. Clypeus roundly emarginated, without tooth in middle. Abdomen with a distinct bluish tinge; tergites striated. Smaller species. (Distribution: Sikkim and Tibet at alt. 12,000—16,000 ft.)

A. inguinalis Konow.

II. Mesosternum without thorns; scutellum generally flat, or if raised, only rounded or obtuse, never sharply pointed.

A. Front margin of fore-wings distinctly infuscated, at least the radial cell; antennae short, distinctly thickened before apex.

B. Head greatly enlarged behind eyes, trapezoid in dorsal view; head and thorax strongly and densely punctured; supra-antennal tubercles raised; abdominal segments generally black with narrow, light yellow hind margins, 2nd segment always and sometimes 3rd quite black. Scape, pedicel, tegulae reddish yellow; two yellow spots on clypeus and one on pronotum, two small, confluent yellow spots on scutellum; metasternum light yellow. (Distribution: Kashmir, Western Himalayas to Chakrata, United Provinces)

A. himalayensis Radoszkovsky.

BB. Head narrowed behind eyes.

C. Head and thorax with large, well separated punctures; background between punctures even and shining; all abdominal segments polished and strongly shining (all those of the ♀ have the apical half yellow; the ♂ has only the apical third of the 1st and the 4th tergite yellow, the other tergites in the ♂ only very narrowly in the middle with an indication of a yellow margin). Mouth-parts, upper angles of pronotum and metasternum

yellow, body otherwise black. (Distribution: Tropical parts of Darjeeling District and Sikkim, alt. 2,500—4,000 feet, in the Eastern Himalayas)

- A. indica* (Cameron).
- CC. No smooth unpunctured spaces between punctures on head and thorax.
- D. Supra-antennal tubercles strongly raised, about as high as long, strongly sloping backwards; 3rd-6th abdominal segments quite red, other segments black. Hind femoræ and tibiae red; head and thorax black, strongly and densely punctured; labrum and front side of the front legs white. ♀ unknown. (Distribution: Kashmir, Simla).
- E. Corners of pronotum, the very apex of scutellum, a spot on meta-sternum and the hind margin of 1st abdominal tergite white
- A. incognitus* Bingham
(forma *typica*).
- EE. No white on thorax or abdomen
- A. incognitus* Bingham var.
balobateus Rhw.
- DD. Supra-antennal tubercles not strongly raised; under-side of abdomen and hind femoræ always black.
- i. Head and thorax quite densely and rather finely punctured, every puncture distinct and deep, surface dull; 4th tergite above with very wide, reddish yellow hind margin; 1st tergite on each side with a minute light yellow spot and in the middle with reddish yellow narrow hind margin; 2nd and 3rd tergite quite black; the hind margins of the two or three last tergites and sometimes the sides of the 5th, the tegulae and hind pronotal angles reddish yellow; a yellow spot on mesosternum, in ♂ the mouth-parts light yellow, in ♀ black, only the base of the mandibles reddish yellow. (Distribution: Assam)
- A. odynerinus*, sp. nov.
- ii. Head and most of mesonotum densely punctured, punctures confluent but not deep; with distinct, sometimes strong lustre; meso-pleuræ and scutellum distinctly punctured; pronotal angles, tegulae and a spot in the middle of the 8th tergite always reddish yellow; colour of the mouth-parts and of scutellum varying from black to yellow; at the base of the 3rd, 4th and 5th tergites a very narrow strip of yellow colour most prominent at the sides; rest of thorax and abdomen black. (Distribution: Assam, Himalayas)
- A. trochanteratus* Cameron.
- AA. Fore-wings not infuscated; head never enlarged behind eyes.
- a. Malar space twice as long as pedicel; antennæ except for 3rd joint light yellow, flagellum hardly enlarged before the apex; abdomen twice as long as thorax; scutellum strongly, pyramidally raised. Head and thorax rather densely and extremely minutely punctured; except for a narrow strip of mesopleuræ the whole under-side

of the animal very light yellow. 3rd antennal joint; a big spot between the eyes; meso- and meta-notum with the exception of the scutellum, its appendage and post scutellum black. 3rd and 9th tergites quite light, all others with very big, nearly quadrate basal spots, leaving only the narrow, in the middle somewhat triangularly widened hind margins light yellow. (Distribution: Himalayas, Chakrata, U. P., alt. 7,000 feet).

A. beesoni, sp. nov.

b. Malar space only as long as the pedicel; antennae black.

i. Entire head and thorax uniformly, strongly and densely punctured; under-side of animal except the mouth-parts and the metasternum, black; 1st, 3rd, 4th and 5th tergites with equally wide, light yellow hind margins; pronotal angles light yellow; frontal half of the scutellum and legs, except coxae and trochanters, yellowish red. (Distribution: Kashmir)

A. kashmirica, sp. nov.

ii. Mesopleurae and head, except round ocelli, nearly unpunctured, strongly shining; mesonotum and the pentagonal area minutely and rather densely punctured; upper part of mesopleurae, and in ♀ mesosternum, black; otherwise the whole under-side light yellow; above black, pro-notal angles, tegulae, frontal half of scutellum, sides of its appendage and a nearly semi-circular big spot in the middle of the 4th tergite light yellow. (The ♂ has the scutellum and its appendage quite black and the light spot in the middle of the abdomen above is triangular and extends from the 4th tergite over to the 3rd). Antennae of ♀ much shorter than abdomen, distinctly thickened before apex; in ♂ nearly filiform and longer than abdomen. (Distribution: Tonkin and Simla in the Himalayas)

A. salvazii, sp. nov.

Genus *Macrophya* Dahlbom.

Macrophya tenuicornis Rohwer.

3 ♂, 4 ♀, all from between Pashok and Kalimpong, Darjeeling District, alt. 600—4,500 ft., 24-iv—10-v-1915 and 2-v—14-vi-1916; F. H. Gravely.

Macrophya regia Forsius.

One ♀ of this brilliant species is labelled: "Kalimpong, Darjeeling district, E. Himalayas, 4,500 24-iv—10-v-1915, F. H. Gravely."

The origin of this species was hitherto most uncertain. The only known ♀ occurred in a collection with the label "probably from China, otherwise possibly from Sumatra"

Genus **Pachyprotasis** Hartig.

Pachyprotasis maesta, sp. nov.

Black; two spots on clypeus, base of mandibles; supra-clypeal area; wide lower, hind and inner orbits up to half the eyes light yellow; from that point the inner orbits continue with a very narrow strip to the upper corner of the eye and grows from here a trifle wider continuing to the posterior corner of the post-ocellar area. Labrum reddish yellow, antennae quite black. Sides of pronotum and base of tegulae margined with yellow. A spot near front margin of mesopleurae, a strip along middle of scutellum and most of its appendage; entire postscutellum and in the paratype a very minute spot or point on each lateral corner of the middle of scutellum and most of its appendage; entire postscutellum and in the paratype a very minute spot or point on each lateral corner of the middle lobe of mesonotum; the upper part of metasternum and most of metapleurae light yellow. 2nd-7th abdominal segments all around with yellow hind marginal rings, dorsally very narrow, less so ventrally; dorsally only the 3rd-5th marginal rings complete. The base of saw-sheath and most of 9th tergite yellow. Legs reddish; all coxae black, their apices and trochanters yellow. Apices of all femorae and four frontal tibiae and tarsi striped with black behind. Hind legs more prominent reddish brown, very apex of hind tibiae and a line on hind tarsae black. Wings nearly quite clear, nervation, costa and stigma brownish black.

Head behind eyes narrowed and margined with rather big, scattered punctures, strongly shining between the punctures. Post-ocellar furrow absent; the area, therefore, seems longer, measured from the ocelli is $1\frac{1}{2}$ times wider than long. Lateral furrows hardly depressed, only marked as very fine, hardly visible, curved and forwardly converging lines. Frontal area missing, supra-antennal pit round and rather sharp. Clypeus convex, with a few large but shallow and indistinct punctures, at the apex rectangularly incised. Labrum truncate. Antennae longer than the abdomen, flagellum tapering slightly from the middle; 3rd joint a trifle longer than 4th. Mesonotum evenly, but not densely punctured; punctures and shining areas between them distinct; mesopleurae strongly and rather densely punctured with opaque lustre. Punctures on scutellum less distinct than on mesonotum. Tergites in the middle not or hardly emarginated, strongly shining. Saw-sheath normal for the genus. Hind basi-tarsus a trifle longer than all the following joints. Claws cleft, both teeth equally long, but sub-apical a little stouter. Length 7-8 mm. ♂ unknown.

2 ♀, both from Darjeeling, alt. ca. 7,000 ft., the *type* in the Indian Museum; Regd. No. $\frac{858}{H3}$, 6-v-1917 and the *paratype*, 23-v-1917; E. Brunetti, in the author's collection.

In my key (*Entom. Tidskrift, Stockholm* 1931, p. 133) this species comes near *P. versicolor* Cam. or *P. variegata* Fall., but does not agree

with either of them. It differs from *versicolor* in having a smooth unpunctured head. In *variegata* the punctation on the mesopleurae is much more obliterated and confluent and there is a distinct lustre, but the head, owing to a minute punctuation between the bigger and also confluent punctures, is not so strongly, if at all, shining. Both species are also differently coloured.

Pachyprotasis versicolor Cam.

This species differs from all the known species of the genus *Pachyprotasis* in the highly raised supra-antennal tubercles which produce a deep and in cross-section triangular furrow between the antennae. These latter also are much longer than those of any known species of the genus, being longer in both sexes than the whole body.

11 ♂, 3 ♀, all from Darjeeling, alt. ca. 7,000 ft., 23-29-v-1917, E. Brunetti; one ♂ labelled "Pashok, Darjeeling distr., alt. 4,000 ft., 26-v-1914, F. H. Gravely"

A single ♂ and a ♀ both from Darjeeling collected by E. Brunetti apparently represent two new species, but the author does not think it advisable to describe new species based on single specimens in such a variable genus as *Pachyprotasis*.

Genus **Siobla** Cameron.

Siobla punctata Cameron.

7 ♂, all labelled "Darjeeling, alt. ca. 7,000 ft., vi—vii-1916; E. Brunetti"

Genus **Laurentia** A. Costa.

Laurentia punjabica, sp. nov.

Black; labrum, very narrow inner margins of eyes, an elongated spot on upper hind orbits, narrow margin of pronotum, tegulae and posterior half of meta-epimerae white; 4th-6th abdominal segments red above and below; legs reddish; all coxae and most of four front trochanters black, hind trochanters more or less light yellow; apex of hind tibiae and apical $\frac{3}{4}$ or tarsi infuscated to black; antennae black; wings hyaline, venation, costa and stigma blackish brown.

Hind wings of ♀ with only one closed middle cell—the cubital; ♂ with two; lanceolate cell petiolate. Clypeus rounded or angularly but not deeply emarginate. Labrum short, rounded or obtusely pointed. Inner margins of eyes straight, not emarginate, distinctly converging towards mouth. Malar space hardly longer than diameter of an ocellus. Supra-antennal tubercles absent. Hind margin of head below and along orbits rounded, not carinated, above with a distinct, though not strong, angulate carina. Antennae as long as abdomen, stoutly filiform, neither compressed nor tapering towards apex; scape and pedicel roundly conical; both little longer than apical width; pedicel shorter than scape. Neither scutellum nor mesopleurae pyramidally raised. 1st abdominal tergite divided along the middle. Hind coxae not

elongated, femoræ not reaching the apex of abdomen. Hind basitarsus shorter than all succeeding tarsal joints together. Claws without basal lobe, apex cleft; sub-apical tooth stronger and normally longer than apical.

Head enlarged behind eyes, then strongly narrowed; surface covered with fine, irregular wrinkles, not quite opaque, but lustre not strongly marked. Post-ocellar area $2\frac{1}{2}$ times wider than long; lateral furrows very deep, parallel; post-and inter-ocellar furrows equally fine, rather deep; antennal furrows shallow. Frontal area hardly raised, but distinct. Supra-antennal pit large, shallow, more or less distinctly continued as wide but shallow middle fovea to central ocellus; no longitudinal furrow between base of antennæ. Clypeus large, with right-angled teeth; supra-clypeal furrow deep but not sharp. 3rd antennal joint $\frac{1}{6}$ — $\frac{1}{3}$ longer than 4th. Thorax nearly smooth, strongly shining with almost indistinct fine puncture; limit between scutellum and its appendage marked by large punctures; two or three indistinct puncture on middle of scutellum; rest of scutellum, its appendage and post-scutellum quite polished, strongly shining. Abdominal tergites smooth, not striated. Length of ♀ 7-8 mm.

Holotype ♀ from Dal above Dharmsala, Punjab, alt. 5,500 ft., 31-v-1926; S. L. Hora, in the Indian Museum, Calcutta, Registered No. $\frac{853}{H3}$. *Paratype* labelled Phagu-Kufri, Simla Hills; alt. 9,000—8,000 ft., N. Annandale and S. Kemp; in the author's collection.

In the females of the genus *Laurentia* A. Costa, there are in the hind-wings generally two closed middle cells, as in the males, but the character is not apparently quite stable and I am, therefore, not separating *L. punjabica*, sp. nov. with a single closed middle cell in the hind-wing of ♀ into a distinct genus. The new species described above also differs in the malar space being hardly longer than the diameter of an ocellus whereas in other species it is twice as long; the clypeus is also not truncate but rounded or angularly but not deeply emarginate.

I have also examined an unidentified ♂ in the collection of the Indian Museum, Calcutta, from the Yarkand collection.

Tribe SELANDRIINI.

Genus *Darjilingia*, nov.

Belongs to the tribe Selandriini and is related to the genera *Taxonus* Htg., *Parasiobla* Ashm. and *Ametastegia* A. Costa.

Fore-wings with 2 radial and 4 cubital cells, 2nd and 3rd about equal in length or 3rd a little longer; each with a recurrent vein; basal vein joins sub-costa shortly before the origin of cubitus and runs parallel to the first recurrent vein; nervellus reaches discoidal cell about basad of the middle; lanceolate cell with an oblique cross-vein joining the brachium at an angle of about 60°. Hind-wings without closed middle cells and without surrounding nervures; lanceolate cell not petiolate. Body elongated. Head a little wider than thorax, with protuding eyes and strongly narrowed behind them. Inner margins of eyes nearly parallel. Malar space distinct, hardly shorter than the diameter of an

ocellus. Clypeus slightly convex, very widely and deeply emarginated, with the lateral teeth usually sharp and protuding; labrum big and flat, obtusely angulated at apex. Antennae nearly as long as the whole body, scape twice as long as wide, oval somewhat wider than pedicel; pedicel roundly triangular, hardly wider than long; flagellum equally thick, but distinctly compressed; 3rd joint as long as or $\frac{1}{4}$ shorter than 4th, in ♂ equal to 5th; in ♀ longer. Antennal organs absent. The mesopleurae without presternae. Hind basi-tarsus as long as all the succeeding tarsal joints; all of them are slightly, but distinctly compressed. Claws with big, flattened basal lobe and a sub-apical tooth, which is much longer than apical.

Genotype.—*Darjilingia gribodoi* (Konow).

Darjilingia gribodoi (Konow).

One ♂ captured at Darjeeling, Eastern Himalayas, alt. ca. 7,000 ft., 6-vi-1917; E. Brunetti.

Taxonus gribodoi was supposed to be from Borneo, but a large number of sawflies supposed to have been captured in Borneo by Gribodoi have later proved to have come from Burma.

A redescription of the species based on the specimen from Darjiling is given below.

Black; clypeus, labrum, supra-clypeal triangle, last three antennal joints, margin of pro-notum, a spot on scutellum, upper fourth and an oval spot near the hind margin of mesopleurae, meta-pleurae and four apical joints of the hind tarsi yellowish white; three basal joints of antennae, tegulae, legs and most of abdomen reddish yellow to light reddish brown; base of coxae, two basal abdominal segments and hind metatarsi black; abdominal segments above with indications of dark-brown bands; wings clear, apical half hyaline; venation, costa and stigma dark brown.

Head, thorax and abdomen smooth and strongly shining; hind orbits margined below and behind, but not above. Post-ocellar area convex, in ♂ nearly twice as wide as long, in ♀ quadrate or slightly longer than wide (in type of *T. pulchripes* Cam.), with deep sub-parallel or slightly curved lateral furrows that do not reach hind margin; post-ocellar furrow distinct and angulated. Frontal area indistinct. Supra-antennal pit big and deep, continued upwards to the middle ocellus as a shallow, but distinct middle fovea. Antennal furrows shallow, but distinct and complete; supra-clypeal furrow sharp and deep. Scutellum slightly convex. Length 6 mm.

Since the preparation of the above manuscript I have examined the type of *Taxonus pulchripes* Cam. 1899, and find that it is a synonym of *gribodoi* Konow. The type of *pulchripes* is labelled "Khasia Hills, Assam"

Genus **Indostegia**, nov.

The genus *Indostegia* belongs to the tribe Selandriini and is closely allied to *Parasiobla* Ashm., *Ametastegia* A. Costa, *Indotaxonus* Malaise and the above described new genus *Darjilingia*.

The venation of the wings is as in *Darjilingia*, but the cross-vein of the lanceolate cell is more oblique, joining the brachium at an angle of 35-40°. Except for the post-ocellar area the head has a distinct hind margin and frontal area. Hind orbits as wide as maximal width or facette eye. Inner margins of eyes parallel, malar space is long, $1\frac{1}{2}$ times as long as the diameter of an ocellus. Clypeus slightly convex, at the apex very widely and deeply incised, with sharp, somewhat depressed lateral teeth as in *Taxonus agrorum* Fall. Labrum large, flat, and shining. Antennae as long as the entire animal; flagellum, except for the three basal joints, very strongly flattened and tapering towards apex; scape $1\frac{1}{2}$ times longer than wide, oval, with truncate apex, $1\frac{1}{2}$ times wider than the pedicel; pedicel as long as wide at apex. Mesopleural episternae without presternae. Hind basi-tarsi hardly flattened, as long as all succeeding joints. Claws nearly cleft, sub-apical tooth a trifle shorter than apical; basal lobe very minute, but distinct (as in the genus *Parasiobla* Ashm.).

Genotype.—*Indostegia apicicornis*, gen. et sp. nov.

***Indostegia apicicornis*, sp. nov.**

Reddish brown; labrum, 7th and 8th antennal joints, margin of pro-notum, all trochanters with apex of coxae and utmost base of femorae and hind tarsi yellowish white. A spot covering frontal area, 4th-6th and 9th antennal joints, centre of the meso-notal middle-lobe, metathorax, including appendage of scutellum, postscutellum and base of all coxae black; inside of femorae, especially the hind ones, first abdominal segment and the sawsheath blackish. The ground colour of the abdomen is light reddish yellow, but this colour is covered with very dark brown spots and bands so that it is only visible as fine lines between the segments, on the sides of 2nd to 5th tergites and in the middle of the basal sternites. Wings hyaline; venation dark brown; costa and stigma brown, sub-costa between stigma and connecting point to the base of the cubital vein yellowish white.

Head and mesonotum smooth and shining. Maximum width of the head over and behind eyes equal. Post-ocellar area convexly raised, as long as wide, lateral furrows deep, hardly curved and nearly parallel. Post-ocellar furrow distinct, angulated, at the very angle interrupted by a minute middle-carine, which does not reach the middle of the area. Antennal furrows complete. Frontal area distinct, below surrounded by a blunt wall, that extends down between the antennae and encloses the rather large supra-antennal pit. Supra-clypeal furrow deep; clypeus densely punctured, opaque. 3rd, 4th and 5th antennal joints about equal and 9th longer than 8th. Scutellum nearly flat, the limit between it and the appendage marked with big punctures, the appendage and at least the hind part of scutellum with very shallow and feeble, wrinkled punctures. Lateral parts of pronotum finely wrinkled, but mesopleurae very coarsely, rather reticulately punctured. Meso-sternum and the abdominal segments quite smooth and strongly shining. Length 9 mm.

One ♀, holotype from Darjeeling, Himalayas, alt. 7,000 ft.; 2-vi-1917; E. Brunetti.

Holotype in the collection of the Zoological Survey of India (Indian Museum), Calcutta ; Regd. No. $\frac{854}{H3}$.

Genus **Stromboceros** Konow, *s. lat.*

Stromboceros sikkimensis, sp. nov.

Black with a bluish tinge ; utmost apex of femorae and front side of tibiae of four front legs, apical third of coxae, and more or less the trochanters of hind legs in ♀ the basal $\frac{3}{4}$ of tibiae and of tarsi, in ♂ only basal half of tibiae white. Wings clear, against the apex somewhat hyaline, nervation, costa and stigma brownish black. First abdominal segment in ♀ with distinct, the following segments in both sexes with indistinct white margins and in ♀ the 7-9 tergites in the middle with big triangular, whitish membranous blotches.

Head and thorax quite smooth and strongly shining. Head strongly narrowed behind eyes, lower half strongly carinated, the upwardly diminishing carina obliterated above middle of eyes. Hardly convex post-ocellar area narrowing forwards, behind as wide as long, post-ocellar furrow absent, but lateral ones fine and rather deep, strongly curved forwards, behind not reaching nearly angularly broken hind margin. Circum-ocellar furrow distinct, inter-ocellar much shallower. In ♀ pentagonal area flat and distinct, but hardly so in ♂. Supra-antennal pit large and round, from above nearly surrounding a minute tubercle. Antennal furrows nearly obsolete, but on each side and a little above supra-antennal pit each furrow deepens into a round pit, as large as the supra-antennal. Supra-clypeal area small, nearly quadrate, furrow fine, but distinct. Clypeus in the middle with an angularly raised, transverse ridge, at the apex depressed and very shallowly, somewhat angularly, emarginated, nearly truncate. Labrum is small and roundly angulated. Malar space short, but distinct, about as long as half the diameter of an ocellus. Inner margins of eyes nearly parallel, hind orbits not specially wide. Antennae longer than thorax and head together, but shorter than abdomen, flagellum from middle strongly tapering towards apex, in both sexes with antennal organs. 3rd and 4th joints sub-equal, pedicel sub-conical, distinctly longer than its apical width ; scape more rounded, larger than the pedicel and about twice as wide. Antennae with very short, black pile, but especially in ♂ there is at the very apex of the flagellar joints a pointed, minute brush of longer hairs which make the flagellum look somewhat serrate. Thorax and abdomen with scutellum and mesopleurae normal. Saw-sheath seen from above sharp-pointed, triangular, apical angle of about 40°. Hind basi-tarsus distinctly longer than all the succeeding joints. Claws without basal lobe, at the apex cleft, with the hardly shorter sub-apical tooth behind the apical. Length of ♀ 8.5 mm., ♂ 7 mm.

One ♀ *Holotype*, from Singhik, Sikkim, alt. 5,000 ft. ; Maj. R. W. G. Hingston ; in the collection of the British Museum (Nat. Hist.), London.

2 ♂, both from Darjeeling, E. Himalayas, alt. ca. 7,000 ft., 6-vi-17 ; E. Brunetti.

The ♂ *allotype* returned to the Zoological Survey of India (Indian Museum), Calcutta, Regd. No. $\frac{855}{H3}$; the *paratype* in the author's collection.

This new species is very like *Neostromboceros* Rhw. (*Stypoza* Enderl.), but the claws of that genus have a large basal lobe and the sub-apical tooth is stronger and usually longer than the apical one. In this and other respects this new species comes near to *Stromboceridea jacobsoni* Fors. and to some South-American *Stromboceros* Knw., *s. lat.* The author hopes to be able to undertake a revision of the genus *Stromboceros* in the near future, and it is likely that *S. jacobsoni* Fors. and the above described species will, as a result, have to be separated in a distinct genus if characters can be found to distinguish them from some of the South American forms.

Genus *Malachiella*, nov. ¹

The genus *Malachiella* belongs to the tribe Selandriini. The nervation of the wings is very like that of *Heptapotamius* Mal.², but the cross-vein of the lanceolate cell is much more oblique and the 3rd cubital cell, at least along the cubitus, is as long as the 2nd. The nervellus is just basad of the middle of the discoidal cell. The eyes are very prominent and the head, which is rounded, therefore, becomes narrower behind the eyes; the hind margin of the head is not visible. Between the very deep and wide, straight and parallel lateral furrows the post-ocellar area is strongly convex and wider than long. Antennal furrows are wide and shallow. The frontal crest is missing. The inner margins of the eyes are strongly convergent. The malar space is distinct and not quite as long as the diameter of an ocellus. The clypeus is rather long, only $\frac{1}{4}$ wider than long; in the middle deep, semi-circularly incised with two prominent, rather sharp teeth. The labrum is flat. The antennae are stout, hardly longer than head and thorax together, distinctly compressed, hardly widened at all before the apex. The scape is twice as long as wide; wider than the pedicel; this latter one a little longer than wide, the 3rd joint also a little longer than the 4th. No presternae are distinguishable. The hind basi-tarsus is as long as all the succeeding joints. The claws are divided, the sub-apical tooth being much shorter than the apical; the basal lobe is distinguishable only after dissection.

Genotype.—*Malachiella rufithorax*, gen. et sp. nov.

Malachiella rufithorax, sp. nov.

Black; pro- and meso-notum, tegulae, scutellum and upper part of mesopleurae dark red. Trochanters, especially the hind ones, dirty white. All knees and the front-side of the anterior tibiae light brown, remainder of the legs more or less dark brown to black. Basal half of wings clear, apical half hyaline or light infuscated; veins, stigma and costa brownish black.

Minutely punctured, shining. Post-ocellar area, if taken to the abrupt end of the lateral furrows, twice as wide as long, otherwise quadrate. Post-ocellar furrow hardly visible, inter-ocellar deep, sharp.

¹ Named in honour of Herr N. Mallach, Berlin.

² The description of *Heptapotamius* Mal. is being published in the *Entom. Tidskrift, Stockholm*,

Pentagonal area raised, but not very distinct. From the lower ocellus extends downwards a shallow furrow ending in the punctiform supra-antennal pit, bordered on both sides by obtuse ridges reaching from this pit nearly to the lower ocellus. Supra-clypeal furrow distinct. Thorax normal. Scutellum rather flat. Sawsheath rather long, seen from above narrow. Length ♀ 7—7.5 mm., ♂ unknown.

4 ♀, from Himalayas and Assam; the type from Darjeeling, alt. 7,000 ft.; 10-vi-17, E. Brunetti; the paratypes from Simla, alt. 6,000—7,000 ft., jungle, VIII-IX-25, B. Chopra; Shillong, Assam; vi-1903; R. Turner.

The *type* belongs to the Indian Museum, Calcutta, Regd. No. $\frac{856}{H3}$, the *paratypes* are in the British Museum (Nat. Hist.), London, and in the private collection of the author.

Tribe BLENNOCHAMPINI.

Genus **Tomostethus** Konow.

I consider *Eutomostethus* Ensl. to be a sub-genus of *Tomostethus* Konow.

Tomostethus (Eutomostethus) assamensis Rohwer.

13 ♂, 13 ♀, all from Darjeeling, alt. 7,000 ft., 26-v—8-vi-1917; E. Brunetti.

Tribe ARGINI.

Genus **Cibdela** Konow.

Cibdela janthina Klug.

One ♂, 3 ♀ labelled "Above Tura, Garo Hills, Assam, alt. 3,500—3,900 ft., 15-vii—30-viii-1917; S. Kemp"

Genus **Pamsilota** Konow.

Pamsilota sinensis Kby., forma **typica**.

2 ♂, 1 ♀. Both ♂ were taken together with the colour-form *nigriceps* Rhw. "Above Tura, Garo Hills, at. 3,500—3,900 ft., 15-vii—30-viii-1917; S. Kemp"; the ♀ is labelled "Marianbari, Tea Estate near Pankhabari, alt. ca. 5,000 ft., E. Himalayas, 25-ii-1928; Gopi Ram".

Pamsilota sinensis Kby. var. **nigriceps** Rhw.

3 ♂, 2 ♀. Both ♀ and one ♂ labelled "Above Tura, Garo Hills, alt. 3,500—3,900 ft.; 15-vii—30-viii-1917; S. Kemp"; one ♂; "Kalimpong, Darjeeling distr., alt. 4,500 ft., 24-iv—10-v-1915; F. H. Gravely"; one ♂: "Balasan Forest, alt. ca. 400—500 ft., E. Himalayas; 3-iii-28; Gopi Ram".

In addition to the above material I have before me specimens from Sikkim, Tonkin, China and Java. I have also studied the types in the British Museum, London (except that of *microcephala* Voll.). All those from Java, 2 ♂ and 3 ♀ which were reared from cocoons, but from

different places, resemble each other in sculpture, but not in colour, size or nervation, and are easily distinguished from all the continental specimens. As *P. microcephala* Voll. was described from Java, I consider the Javanese insects to belong to that species. The ♀ from China has the clypeus at the apex nearly truncate, and the 3rd cubital cross-vein distinctly S-formed, so that the 3rd cubital cell is nearly $\frac{1}{2}$ longer on the radius than on the cubitus. Usually the difference is much less and the cross-vein is curved in a simple arc. The two ♂ from the Garo Hills were probably taken at the same time, but one of them has the 2nd cubital cell longer than the 3rd and the cross-vein interstitial, but the other has the 3rd longer and the veins not interstitial. Exactly the same condition is to be seen in the two ♀ from Java, that emerged on the same date and also in two reared ♂ from another lot, from the same island. The cross-veins cannot, therefore, be considered as a reliable distinguishing character in this genus, certainly not more than the colour and the size.

The three Asiatic species may be distinguished as follows :—

- I. Supra-clypeal area roundly raised, distinctly flattened in middle, the flattened space of a pentagonal form and nearly opaque. Saw-sheath seen from above not shorter than basal width. (Distribution : Java)
- P. microcephala* Vollenhoven.
- a. Head, mesosternum, scutellum, metathorax, back of abdomen and saw-sheath bluish black, other parts of thorax red, and of abdomen reddish yellow
forma *typica*.
- b. ♀ Thorax red, only the very tip of scutellum and the boundary line between mesopleuræ and mesosternum infuscated; abdomen as in forma *typica*
var. *rufinus*, nov.
- c. ♂ Bluish black, only in under half of notum and upper apex of mesopleuræ with reddish colour breaking through
var. *melanis*, nov.
- II. Supra-clypeal area evenly, roundly raised, not flattened in middle; smooth, shining. Head, mesosternum and major part of legs black.
- A. Saw-sheath of ♀ elongated, each half seen from above nearly twice as long as basal width; thorax red, only mesosternum black.
- i. Abdomen reddish yellow, without any black colouring. (Distribution : Assam, China)
P. sinensis Kirby. (forma *typica*).
- ii. Abdomen black above, otherwise as in forma *typica*. (Distribution : Himalayas, Assam, Burma; China)
P. sinensis var. *nigriceps* Rohwer.
- B. Saw-sheath short; each half, when seen from above, as long as basal line. Post-ocellar furrow distinct. Base of abdomen above and most of scutellum black.
- i. Mesonotum and mesopleuræ red; abdomen reddish yellow, tergites almost all black above. (Distribution : China)
P. interstitialis Cameron. (forma *typica*).
- ii. Thorax quite black; only basal abdominal tergites black. (Distribution : Tonkin)
P. interstitialis var. *euterpe* Turner.

Genus **Arge** Schrenck.**Arge praesternalis**, sp. nov.

Metallic deep blue; thorax red, metathorax, scutellum, mesosternum and the under third of mesopleurae bluish. Antennae and palps black. Fore-wings strongly, hind-wings less infuscated, with a violet tinge. Nervation, costa and stigma black. Legs metallic deep-blue.

Head behind the eyes strongly widened, then rounded, not margined. Post-ocellar area nearly twice as wide as long, lateral furrows hardly visible, post-ocellar furrow distinct, area raised a little, but not reaching the level of ocelli. Inter- and circum-ocellar furrows very fine, but distinct. Supra-antennal pit semi-circular, large. Just below the middle ocellus is another equally large and round, but very much shallower pit. High and sharp inter-antennal ridges are most elevated between the antennae and are nearly parallel, only converging very little from that point upwards and downwards; upwards they hardly reach beyond the supra-antennal pit, but do not meet below and extend to $\frac{1}{3}$ of the distance from the base of the antennae to the bottom of the clypeal emargination. Under-face roundly raised but not carinated, clypeus with minute, scattered punctures. The missing supra-clypeal furrow marked with very minute, longitudinal wrinkles. Apex of clypeus comparatively deeply, roundly incised. Antennae hardly longer than thorax; scape conical; pedicel sub-cylindrical, a little shorter than scape, apical half of the flagellum strongly flattened, $\frac{1}{2}$ before the apex at least twice as high as thick. Thorax and abdomen quite smooth and strongly shining. Mesopleurae along pro-notum from parapterum down, with a furrow separating off a narrow, but distinct prae-sternum, which becomes a little wider downwards. Saw-sheath, seen from above, rounded, shell-like. Length 13 mm.

One ♀, from Tura, Garo Hills, Assam, alt. 1,200—1,500 ft., 15-vi—15-vii-1917; S. Kemp. *Type* in the Indian Museum; Regd. No. $\frac{857}{H3}$.

Superfamily SIRICIDAE.

Genus **Paururus** Konow.**Paururus juvenus** (Linn.).

2 ♂ labelled "Kohala, alt. 2,000 ft., Murree Sub-divn., Punjab, Sta. 34, 30-ix-1928; H. S. Pruthi"