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XI.—*New or little-known Tipulidæ (Diptera).—XXVII.*
Palæarctic Species. By CHARLES P. ALEXANDER, Ph.D.,
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The present paper is based on material from various parts of the Palæarctic Region. The interesting *Limnophila* from Novaya Zemlya, as well as a series of *Nephrotoma* from China, were included in collections sent to me for naming by Dr. Séguy of the Paris Museum. The various species from Japan were collected by my friends Messrs. Esaki, Hori, Kuwayama, Takahasbi, and Takeuchi. The large and

interesting *Brithura* was collected by Dr. Hervé-Bazin in China and presented by him to Dr. Joseph Bequaert, who very kindly gave the material to me. Additional Chinese material was received from my friend Professor Jacot. My sincere thanks are extended to all of the above gentlemen for their kindness in collecting this material. Except where stated to the contrary, the types are preserved in the writer's collection.

Limonia biceps, sp. n. (Figs. 2, 3.)

General coloration reddish testaceous, the pronotum and anterior præscutum darkened medially; wings uniformly pale brown, the stigma oval, darker brown; cell 1st M_2 open by the atrophy of m ; male hypopygium with the rostriform appendage of the ventral dististyle bearing a powerful spine beyond mid-length; a second spine at the basal mesal angle of this style.

Male.—Length about 9.5 mm.; wing 10 mm.

Rostrum and palpi black. Antennæ with the basal segment of the scape black, the 2nd segment greenish; flagellum greenish yellow, the basal segments oval, soon passing into elongate cylindrical, all with very long and conspicuous verticils. Head dark brown; vertex between the eyes narrower than the diameter of a single eye.

Pronotum dark brown, the sides of the posterior notum paler. Mesonotum shiny reddish testaceous, with greenish body tints, the præscutum with the anterior median portion blackened, the colour fading out behind and becoming obsolete near mid-length of the sclerite. Pleura shiny greenish testaceous, the green tints especially conspicuous near the legs. Halteres pale brown, brighter at extreme base of stem, the knobs darker. Legs with the coxæ and trochanters strongly tinged with green; femora obscure yellow, the tips broadly and conspicuously blackened, the amount subequal on all the legs; tibiæ testaceous-yellow, the tips narrowly blackened; tarsi black, the extreme proximal ends of basitarsi paler. Wings (fig. 2) with a uniform pale brown tinge, the stigma oval, darker brown; costal cell in vicinity of cross-vein h darker; veins brown. Venation: Sc moderately elongate, Sc_1 ending about opposite mid-length of Rs , Sc_2 near the extreme tip of Sc_1 ; tip of R_1 atrophied beyond r ; a short supernumerary cross-vein in cell Sc_1 , about its own length before r ; Rs long, arcuated at origin, about four times the short arcuated basal deflection of R_{4+5} ; cell 1st M_2 open by the atrophy of m ; basal deflection of Cu_1 at the fork of M .

Abdomen elongate, the tergites dark reddish brown, the incisures still darker; subterminal segments uniformly darkened; sternites more yellowish; hypopygium obscure yellowish. Male hypopygium (fig. 3) with the basistyles (*b*) relatively stout, the mesal lobe large. Ventral disti-

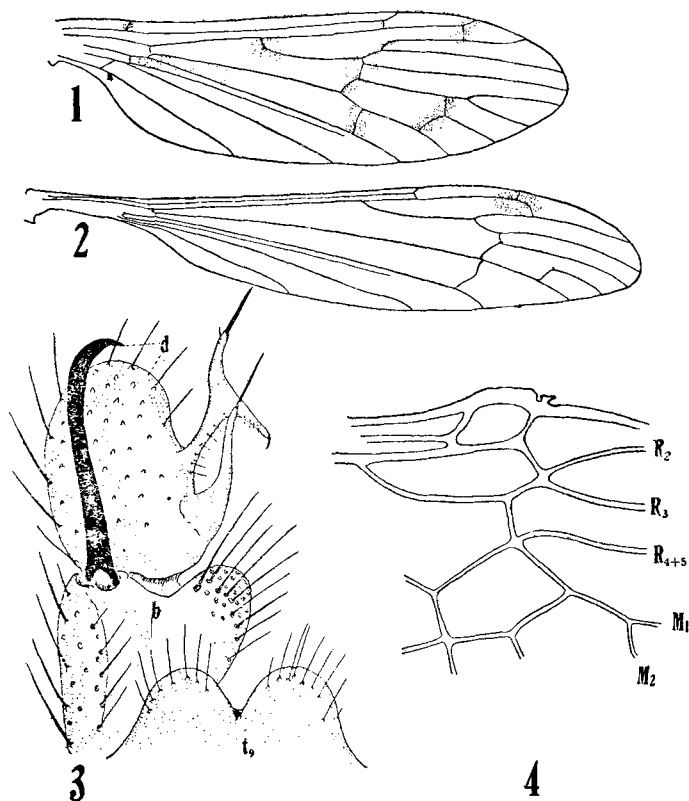


Fig. 1.—*Limnophila nocce-zembla*, sp. n.; wing.

Fig. 2.—*Limonia biceps*, sp. n.; wing.

Fig. 3.—*Limonia biceps*, sp. n.; male hypopygium. *b*=basistyle; *d*=dististyles; *t*₉=ninth tergite.

Fig. 4.—*Brithura fractistigma*, sp. n.; part of wing, to show venation. *R*=radial veins; *M*=medial veins.

style relatively small, the usual rostriform appendage proportionately very large and conspicuous, beyond mid-length extended into a long straight spine from a powerful gently curved base; the apex of the rostrum extends beyond

into a slender straight arm, tipped with a powerful curved seta; mesal face of ventral dististyle at base with a second long black spine that terminates a still longer, gently curved, slender basal portion. Dorsal dististyle a powerful nearly straight rod, the apical third gently curved and narrowed, the tip subacute.

Hab. Japan (Kiushiu).

Holotype, ♂, Gokanoshō, Higo-no-kuni, altitude 2500 ft., April 29, 1924 (*H. Hori*).

Elliptera jacoti, sp. n.

General coloration black, sparsely pruinose; wings tinged with brown; *Sc* short; R_2 faintly preserved as an apparent cross-vein shortly beyond the fork of *Rs*; R_3 running generally parallel to R_1 , cell R_2 at wing-margin very narrow; cell 1st M_2 open by the atrophy of the outer deflection of M_3 .

Male.—Length about 7 mm.; wing about 9.5 mm.

Female.—Length about 6 mm.; wing about 8 mm.

Rostrum and palpi dark brown. Antennæ brownish black throughout. Head black, grey-pruinose, especially anteriorly.

Pronotum and mesonotum shiny black, sparsely pruinose, the sides of the præscutum more heavily so; scutellum a little reddish caudo-laterally. Pleura black, pruinose. Halteres dark brown, the base of the stem narrowly yellowish. Legs with the coxæ yellow, the bases infuscated, more extensively on the fore coxæ; trochanters brownish yellow; remainder of the legs broken. Wings tinged with brown, the stigmal region not darkened; veins darker brown. Venation: *Sc* short, Sc_1 ending before (♀) or just beyond (♂) mid-length of the long *Rs*, Sc_2 a short distance beyond the origin of *Rs*; *Rs* faintly preserved as an apparent cross-vein a short distance beyond the fork of *Rs*; R_3 running generally parallel to R_1 , cell R_2 at wing-margin being only about one-half the width of cell 2nd M_2 ; basal deflection of R_{4+5} , $r-m$ and basal deflection of M_{1+2} in approximate alignment; cell 2nd M_2 about equal to its petiole; cell 1st M_2 open by the atrophy of the outer deflection of M_3 ; basal deflection of Cu_1 varying from more than one-half to nearly its own length before the fork of *M*.

Abdominal tergites brownish black, pruinose, the centres of the sternites paler.

Hab. China (Shantung).

Holotype, ♂, Taishan, mid-July 1923, on shaded wet rocks (A. P. Jacot).

Allotopotype, ♀.

Elliptera jacoti is named in honour of the collector, Professor Arthur P. Jacot. The species is most closely allied to *E. zipanguensis*, Alexander (Northern Japan).

Limnophila (Prionolabis) acutistylus, sp. n.

Allied to *L. auribasis*, Alexander; male hypopygium with the inner dististyle terminating in a small acute spine.

Male.—Length 7.5–8 mm.; wing 9.5–11 mm.

Female.—Length about 8 mm.; wing 8 mm.

Rostrum and palpi black. Antennæ black throughout, the flagellar segments short. Head black with a sparse yellowish-grey pollen.

Thorax black, sparsely dusted with yellow pollen. Halteres yellow. Legs with the coxæ and trochanters black; remainder of legs black, the bases of the femora extensively obscure yellow, broadest on the posterior femora where more than the basal two-thirds is included, narrowest on the fore femora where it includes less than the basal third. Wings with a greyish-yellow tinge, the base and costal region brighter yellow; stigma oval, brown; a spot at origin of *R*₃; seams along the cord and outer end of cell 1st *M*₂, and a very conspicuous cloud along vein *Cu* in cell *M*; veins darker brown, those in the yellow areas more flavous. Venation: *Sc*₂ a short distance from the fork of *R*₃, *Sc*₁ longer than *R*₂₊₃; basal deflection of *Cu*₁ near mid-length of the lower face of cell 1st *M*₂.

Abdomen black, dusted with yellow pollen. Male hypopygium nearly as in *L. (P.) auribasis*, differing chiefly in the structure of the inner dististyle; outer dististyle relatively slender, terminating in a long, gently curved point, with about two small teeth on mesal edge; inner style terminating in a small acute spine, with one or two smaller spines on outer edge before apex, the lateral angle with a blackened, relatively slender lobe that bears numerous long delicate setæ.

Hab. Japan (Kiushiu).

Holotype, ♂, Mt. Wakasugi, Chikuzen-no-kuni, altitude 2530 ft., April 19, 1924 (*H. Hori*).

Allotopotype, ♀.

Paratopotypes, 3 ♂ ♂.

“Collected near summit, beneath Japanese Cedar.”

Limnophila novæ-zemblæ, sp. n. (Fig. 1.)

Coloration (in alcohol) dark; flagellar segments subglobular; wings subhyaline with a brown pattern, chiefly arranged as seams along the cord and outer end of cell 1st M_2 ; Sc_2 near tip of Sc_1 ; r at tip of R_1 ; R_{2+3} short; cell 1st M_2 very large, its inner end arcuated; basal deflection of Cu_1 about its own length beyond the fork of M .

Female.—Length about 11 mm.; wing 8·7 mm.

Described from an alcoholic specimen.

Rostrum and palpi black. Antennæ dark brown throughout; basal segment elongate-cylindrical; flagellar segments subglobular, the terminal segments smaller, oval. Head black, possibly grey-pruinose in dry specimens.

Thorax black, any possible pruinosity destroyed by immersion in fluid. Halteres relatively short, pale, the knobs slightly infuscated. Legs with the coxæ dark, the trochanters paler brown; femora and tibiæ brown, their tips darker, the surface with short but strong spinous bristles that become longer and more delicate on the outer segments; terminal tarsal segments blackened. Wings (fig. 1) subhyaline with a sparse brown pattern; stigma small; brown spots at origin of R_s and on Sc_1 ; conspicuous brown seams along the cord and outer end of cell 1st M_2 ; a conspicuous suffusion in bases of cells M and Cu , more extensive in the former; prearcular region more or less infuscated; veins darkened. Trichiæ of wings, including the anal fringe, reduced to sparse spinous setæ, mostly very small. Venation: Sc_1 extending to beyond the origin of R_2 , Sc_2 about one-half the length of Sc_1 ; R_s long, feebly angulated and weakly spurred near origin; r less than its length from tip of R_1 ; R_{2+3} a little longer than r ; cell 1st M_2 very large, more than twice Cu_1 beyond it, the proximal end arcuated; petiole of cell M_1 and m subequal; basal deflection of Cu_1 about its own length beyond the fork of M ; anterior arculus weakly preserved.

Abdomen dark, the pleural membrane paler. Tergal valves of ovipositor very deep, blade-like, rather suddenly narrowed beyond mid-length to the subacute tips; sternal valves short.

Hab. Novaya Zemlya.

Holotype, ♀, Chaîne Fallières, 1908 (Mission Arctique Française; commandée par M. Charles Bénard).

Type in the collection of the Paris Museum.

Certain features of this fly suggest *Dactylolabis*, but the position of the basal deflection of Cu_1 prevents the inclusion

of the fly in this genus. Its arrangement in *Limnophila* is in the broad usage of the genus. The fly is widely different from any other known to the writer. The most recent summary of our knowledge of the crane-flies of Novaya Zemlya is in a paper by the writer ("Report of the Scientific Results of the Norwegian Expedition to Novaya Zemlya 1921. No. 5. The Crane-flies," pp. 1-16, figs. 3, 1922).

Pseudolimnophila horii, sp. n.

General coloration dark grey; wings pale brown, the base and costal region more yellowish; stigma oval, slightly darker brown; R_{2+3} relatively short, arcuated.

Male.—Length about 7.5 mm.; wing 9 mm.

Female.—Length about 7.5 mm.; wing 8 mm.

Rostrum and palpi brownish black. Antennæ dark brown, the extreme base of the first flagellar segment a trifle paler; flagellar segment cylindrical to fusiform, with relatively short verticils. Head dark brownish grey, paler on the orbits and anterior vertex.

Thorax dark grey, the præscutum and scutum with a sparse yellowish pollen. Halteres yellow. Legs with the coxæ brownish grey basally, the apical portions broadly pale; trochanters obscure yellow; femora light brown, the tips becoming a little darker, the bases a little brighter; tibiae and tarsi brown. Wings with a pale brown tinge, the base and costal region more yellowish; stigma oval, slightly darker brown than the ground-colour; veins brown, more flavous in the yellow areas. Venation: Sc_1 ending just beyond the fork of R_s , Sc_2 at its tip; R_s moderately elongate, arcuated; R_{2+3} relatively short, much shorter than in *P. kirishimensis*, about two-thirds the basal section of R_2 , gently arcuated and in alignment with R_2 ; basal deflection of Cu_1 from one-half to nearly its own length from the outer end of cell 1st M_2 ; anterior arculus lacking.

Abdomen dark brown, the sternites only a trifle paler than the tergites, in the female quite concolorous.

Hab. Japan (Kiushiu).

Holotype, ♂, Gokanosho, Higo-no-kuni, altitude 2500 ft., April 29, 1924 (*H. Hori*).

Allotopotype, ♀.

Pseudolimnophila horii is named in honour of Professor Hiroshi Hori, to whom I am indebted for many favours. The species is readily distinguished from *P. kirishimensis*, Alexander (Kiushiu), as well as from the additional Formosan species of the genus, by the dark grey coloration of the head and thorax.

Dictenidia fasciata semifasciata, subsp. n.

Male.—Length about 11 mm. ; wing 11 mm.

Generally similar to typical *fasciata*, Coquillett, differing as follows :—

Basal segment of the antennal flagellum conspicuously light yellow, the following two segments a little lighter-coloured at their distal ends. Genæ obscure yellow. Dorsopleural membrane sulphur-yellow. Knobs of halteres yellow. Legs with the black femoral tips narrower, occupying less than one-third of the segment. Wings with the broad dark medial cross-band of *fasciata* reduced to a brown seam in cells *C*, *Sc*, and *R*, and a faint cloud in cell *M*; cells *Cu*, 1st *A*, and 2nd *A* of the ground-colour.

Hab. Japan (Hokkaido).

Holotype, ♂, Nakakebo, Hitaka-no-kuni, August 12, 1923 (*S. Kuwayama*); collector's number 41.

Paratype, ♂, Sarabuto, Hitaka-no-kuni, August 8, 1923 (*S. Kuwayama*).

Tanyptera jozana fumibasis, subsp. n.

Male.—Length 13–17 mm. ; wing 11–13.5 mm.

Similar to typical *jozana* (Matsumura), differing as follows :—

Entire head and thorax jet-black, this colour including the pronotum and dorso-pleural membrane, which, in the typical form, are yellowish. Pleura not pruinose. Legs with the trochanters black; hind legs shorter with the tips of the femora more narrowly blackened. Wings with about the basal two-thirds heavily infumed, the wing-base, costal and subcostal cells yellowish; stigma dark brown. Abdomen black, the second and third tergites with the lateral margins broadly yellowish; tergites 4 to 8 with the pale margins more restricted; sternites and hypopygium black.

Hab. Japan (Honshiu).

Holotype, ♂, Chichibu, Musashi-no-kuni, May 31, 1919 (*R. Takahashi*).

Paratopotype, ♂, May 29, 1919 (*R. Takahashi*).

Brithura fractistigma, sp. n. (Fig. 4.)

Mesonotal præ-cutum chestnut-brown with four paler brown stripes; femora with a yellow subterminal ring; stigma of the male dilated, fractured.

Male.—Length 32 mm. ; wing 23.5 mm.

Female.—Length 42 mm. ; wing 26 mm.

Frontal prolongation of the head brown, almost black laterally; nasus distinct; palpi dark brown, the incisures of the basal segments yellow. Antennæ brownish black, the second scapal segment fulvous; verticils of the flagellar segments of two colours, the shorter ones black, the elongate ones yellow. Head dark brown medially above, including the conspicuous vertical tubercle, the genæ and broad orbital regions paler ochreous-brown.

Pronotum black medially, the scutellum yellow. Mesonotal præscutum rich chestnut-brown, passing into brownish black around the margins, with four very slightly paler brown stripes, in addition to a capillary median line of the same colour; scutal lobes similarly coloured but more greyish medially; median lobe of scutellum dusky brown, the lateral wings velvety brownish black, this colour passing caudad on to the lateral portions of the mediotergite of the postnotum, caudal margin of postnotal mediotergite paler brown. Pleura brown, the dorso-pleural region broadly ochreous-yellow; a broad grey longitudinal stripe extending from the fore coxæ across the sterno-pleurite to the metapleura. Halteres brownish yellow, the base of the knob darker. Legs with the coxæ and trochanters brownish grey, the latter reddish-tinged; femora yellow, the tips narrowly blackened; a conspicuous yellow subterminal ring that is co-extensive with the black tip; immediately preceding this ring a diffuse brown annulus occupying all except the relatively narrow yellow basal portion; tibiæ pale brown, the extreme base obscure yellow; tarsi black. Wings of the male (fig. 4, p. 387) with the costal margin at the stigma distorted into a blunt lobe that is incised to form a distal truncated tubercle; membrane yellow, variegated with dark brown and grey; stigma fulvous, margined with brown; dark brown spots at arculus; origin of *Rs*; along the cord; in the base of cell *2nd M*₂ and along both sides of vein *1st A* near mid-length, but isolated from the vein by a delicate pale margin; paler grey clouds in the wing-apex, including the outer half of each of cells *R*₂ and *R*₃, the distal two-thirds of *R*₅, and all of the remaining posterior cells, these further variegated by yellow marginal dashes; most of the cells are still further variegated by additional blotches of the ground-colour; cell *M* is variegated by a >-shaped grey cloud near mid-length; anal cells on distal halves clouded with brownish grey; cell *1st A* with two yellow marginal spots; veins bright horn-yellow, contrasting with the remainder of the wing. Venation: *Sc*₁ present, much longer than *Sc*₂; *r* subperpendicular to the fork of *R*₃₊₃; cell

1st M_2 high pentagonal, the basal section of M_{1+2} being the longest element; $r-m$ and $m-cu$ punctiform; m a little longer than the petiole of cell M_1 .

Abdominal segments dark velvety-brown, the extreme caudo-lateral angles of the segments narrowly ochreous; sternites a little variegated with reddish. Male hypopygium very large; caudal margin of tergite rounded and fringed with an abundance of yellow setæ; ninth sternite terminating in a blunt, blackened, median tubercle.

The female is generally similar to the male, differing chiefly in the sexual characters of a simple stigmal region of the wing and the pruinose scutellum and postnotum (probably also a normal male character). Base of tergal valve of ovipositor bright yellow; tergal valves long and slender, reddish horn-coloured.

Hab. China (Kiang-si).

Holotype, ♂, Kou-ling, near Kiu Kiang, altitude 1000 metres, August 6, 1919 (*J. Hervé-Bazin*).

Allotopotype, ♀, July 31, 1919 (*J. Hervé-Bazin*).

The types of this interesting crane-fly are in the writer's collection, through the kind interest of Drs. Hervé-Bazin and Joseph Bequaert.

Tipula ampliata, sp. n.

General coloration light grey, the præscutum with three darker grey stripes; a more or less complete capillary median brown vitta extending from the vertex to base of abdomen; wings whitish subhyaline and dark brown, cross-banded, the brown bands including the apex and two narrow arcuated areas before the cord; R_2 entire; male hypopygium with the 8th and 9th sternites unarmed.

Male.—Length about 17 mm.; wing 20 mm.

Frontal prolongation of head long, equal to the remainder of the head, dark grey above, paler laterally; nasus rudimentary or lacking; palpi moderately elongate, brownish black. Antennæ moderately elongate, if bent backward not attaining the wing-root; basal segment elongate, obscure fulvous; second segment pale brown; first flagellar segment pale at base, the remainder of the organ black; flagellar segments with moderate basal swellings, feeble incisions and verticils of moderate length. Head grey, the anterior vertex paler; a capillary brown median vitta extending from the vertical tubercle to the occiput.

Pronotum grey, the posterior notum pale, blackened medially. Mesonotal præscutum light grey, with three

darker grey stripes, the median stripe split by a narrow, median, black vitta that is a little widened near mid-length, ending before the suture; scutum light grey, the lobes vaguely darker medially; scutellum and postnotal medio-tergite clear light grey with a delicate, interrupted, median brown vitta. Pleura light grey, the sterno-pleurite, meron and anepisternum conspicuously marked with darker grey to produce an ill-defined longitudinal striping; dorso-pleural membrane buffy. Halteres pale, including the knobs. Legs with the coxæ pale grey; trochanters obscure brownish yellow; femora pale brown, more yellowish at base, passing into dark brown at tips; tibiæ and tarsi black. Wings with a dark brown and white subhyaline pattern; base and cells *C* and *Sc* more yellowish; the broad wing-apex is entirely dark; two narrow, basal, arcuate bands before the cord, one extending from *Rs* to the fork of *Cu*, following *Cu*₂ to the margin where it connects with the broad dark apex; these two areas enclose a large and conspicuous whitish area centring at cell 1st *M*₂ and including the apices of cells *R* and *M* and the bases of cells *R*₂, *R*₃, *R*₅, *M*₃, and *Cu*₁; the second narrow arcuate band crosses the basal cells near mid-length, broadening out at the caudal margin in cells 1st and 2nd *A*; the remainder of cells *R*, *M*, *Cu*, and *Anal* are conspicuously whitish subhyaline; veins brownish black, paler at the base and in the costal area. Venation: *R*₂ complete; *Rs* relatively short, arcuated; petiole of cell *M*₁ shorter than *m*.

Abdomen brownish yellow, the basal tergite and lateral margins of the other tergites faintly pruinose; terminal segments passing into dark greyish brown, with paler lateral and more narrow caudal margins. Male hypopygium moderately enlarged. Ninth tergite relatively large, the median area slightly convex, the short, blunt lateral lobes each with its caudal mesal angle produced caudad and mesad in a strong, obscure yellow spine. Eighth and ninth sternites unarmed.

Hab. Japan (Kiushiu).

Holotype, ♂, Gokanoshō, Higo-no-kuni, altitude 1000-3000 feet, May 3, 1924 (*H. Hori*).

Tipula sachalinensis, sp. n.

General coloration light grey, the mesonotal præscutum with three brown stripes; wings greyish brown, variegated with dark brown and subhyaline, somewhat as in *T. irrorata*, Macquart; abdomen dark-coloured, pollinose, the caudal

margins of the segments narrowly reddish; male hypopygium large.

Male.—Length 15 mm.; wing 15 mm.

Frontal prolongation of head black, the nasus very broad; palpi black. Antennæ with the scape black; flagellum broken; first scapal segment elongate, transversely crenulated. Head light grey; a narrow brown longitudinal line on vertex.

Mesonotal præscutum light grey with three dark brown stripes, the median stripe broadly light grey medially, bisected by a capillary dark brown median vitta; scutum grey, each lobe with two dark brown spots, the caudal one larger; scutellum grey with a median dark spot; postnotal mediotergite grey, the sides and a capillary median line dark-coloured. Pleura light grey, the dorso-pleural membrane obscure yellow. Halteres light brown, the knobs darker. Legs with the coxæ grey; trochanters dark reddish brown; femora reddish brown, the tips broadly blackened; tibiæ dark reddish brown, the tips blackened; remainder of tarsi black. Wings greyish brown, variegated with dark brown and subhyaline; a brown cloud at arculus and another at stigma; subhyaline areas as follows:—A large preareolar area including the base of cell *2nd A*; across cells *M* and *Cu*, at the base of cell *M* and beyond mid-length; before the stigma in cell *2nd R*₁; beyond the stigma in the basal half of cell *R*₂ and in the base of cell *R*₃; centre of cell *1st M*₂ and base of cell *M*₃ pale; veins dark brown. Venation: *m-cu* present, but short.

Abdomen dark, the segments dusted with yellowish grey; caudal margins of the segments narrowly reddish, narrowest on the basal segments, broader and more conspicuous on the distal segments. Male hypopygium large. Ninth tergite large, the caudal margin convexly rounded with a very small **U**-shaped median notch, with a small rounded knob at the base of the notch; a small tooth at the caudal margin of the notch and another slightly larger tooth more laterad, from which latter tooth the margin of the tergite slopes gradually to the base. Basistyle complete, oval; outer dististyle elongate-oval, the apex obtusely rounded; inner dististyle with the caudal lobes projecting, pale, pubescent. Ninth sternite with a **V**-shaped notch, the cephalic portions membranous, the notch with a pubescent lobe at its base, the margins of the **V** with mesally-directed yellow setæ. Eighth sternite with widely separated lateral lobes, each provided with mesally-directed yellow setæ that are decussate on the median line.

Hab. Japan (Karafuto).

Holotype, ♂, collected in 1902 (*Paul Labbé*).

Type in the collection of the Paris Museum.

Nephrotoma nigricauda, sp. n.

Related to *N. lineata* (Scopoli); general coloration yellow, the præscutum and scutum with conspicuous black stripes; wings tinged with yellow; stigma pale; abdomen obscure brownish yellow, the tergites trivittate with dark brown, the terminal segments shiny black; male hypopygium with the extensive eighth sternite deeply notched medially.

Male.—Length 12.5 mm.; wing 14 mm.

Frontal prolongation of head obscure yellow, the dorsum, including the nasus, conspicuously black; palpi brown. Antennæ of moderate length, if bent backward extending about to, or a little beyond, the base of the abdomen; basal segment orange, second segment pale brown; flagellum dark brown. Head yellow, the vertical tubercle conspicuous; a small dark spot on orbit at base of vertical tubercle; occipital brand broadly triangular, dark brown.

Pronotum sulphur-yellow, dark brown laterally. Mesonotum light yellow, the præscutum with three shiny black stripes, the anterior ends of the lateral stripes outcurved and here opaque velvety black; scutal lobes very extensively blackened, the areas continuous across the suture with the lateral præscutal stripes; scutellum obscure yellow, the median lobe more brownish posteriorly; postnotum clear sulphur-yellow, darkened posteriorly. Pleura shiny ferruginous, handsomely variegated with sulphur-yellow, this including the ventral portion of the mesepimeron, the dorsal margins of the mesosternum and a conspicuous area on the lateral sclerites of the postnotum. Halteres pale brown, the knobs broken. Legs with the coxæ and trochanters obscure reddish; femora similar, the tips conspicuously blackened; tibæ pale brown, the tips gradually blackened; tarsi black. Wings with a strong yellow tinge, the base, costal region, and a conspicuous seam along vein *Cu* more intensively yellow; stigma pale yellowish brown; wing-tip indistinctly darkened; a narrow seam along the basal deflection of R_{4+5} and $r-m$; veins dark brown. Venation: cell M_1 broadly sessile.

Abdomen obscure brownish yellow, the tergites narrowly trivittate with dark brown; sternites with an interrupted dark brown median stripe; tergites 7 to 9 and steraites

8 and 9 shiny black; outer dististyle pale. Male hypopygium with the ninth tergite large, the caudal margin with a deep but very narrow median notch; caudal margins of the lateral lobes shiny black. Eighth sternite extensive, the caudal margin with a very deep U-shaped median notch, from the base of which a narrower impressed line extends almost to the base of the sternite; adjacent margins of this incision without conspicuous setæ.

Hab. Japan (Hokkaido).

Holotype, ♂, Sapporo, Ishikari-no-kuni, end of July 1921 (*S. Kuwayama*).

Paratypes, ♂ ♂, Maruyama, near Sapporo, June 10, 1923 (*S. Kuwayama*).

Nephrotoma angustistria, sp. n.

General coloration yellow; antennæ of male moderately elongate; bases of flagellar segments pale; head with a conspicuous linear black line; lateral præscutal stripes straight; postnotum and scutellum black medially; wings yellow, the apex narrowly blackened; abdominal tergites narrowly trivittate with black; sternites with an interrupted black median vitta.

Male.—Length about 11·5 mm.; wing 11·5 mm.

Female.—Length 16–17 mm.; wing 15–15·5 mm.

Frontal prolongation of head yellow, with a dark brown lateral stripe; nasus elongate, tufted with a few black setæ; palpi dark brown, the terminal segment passing into dull orange. Antennæ of male moderately elongate, if bent backward extending to beyond the base of the abdomen; scape and basal segment of flagellum yellowish; flagellar segments brown, the basal enlargement of the segments obscure yellow; flagellar segments elongate, with a conspicuous basal enlargement. Head shiny yellow, with a linear black vitta extending from the vertical tubercle to the small occipital brand; sides of posterior vertex a little infumed.

Pronotum yellow. Mesonotal præscutum yellow with three shiny black stripes, the lateral stripes straight; scutum yellow, each lobe with a conspicuous black mark; scutellum brownish, darker medially; postnotal mediotergite yellow, more infuscated posteriorly, with a median dark brown dash. Pleura yellow, indistinctly variegated with pale brown. Halteres pale brown, the base of the stem and apex of knobs yellow. Legs with the coxæ yellow, the fore coxæ infuscated basally; trochanters yellow; femora yellow, passing

into brown, the tips conspicuously blackened; tibiæ obscure yellow, the tips narrowly dark brown; tarsi black. Wings strongly tinged with yellow, the base and cells *C* and *Sc* even more suffused; stigma oval, dark brown; wing-apex narrowly infuscated; a conspicuous brown seam on the anterior cord and narrower, less distinct ones, on the posterior cord and outer end of cell 1st M_2 ; veins beyond the cord narrowly and indistinctly seamed with brown; veins brown, paler in the flavous areas. Stigma with few macrotrichia (about eight). Venation: cell M_1 petiolate, this petiole a little shorter than *m*.

Abdominal tergites yellow, narrowly trivittate with black; the median stripe narrowly interrupted at the posterior margins of the segments, the lateral stripes continuous; sternites yellow, each segment with a median basal black dash; hypopygium black. Male hypopygium with the eighth sternite deeply incised medially, the caudo-lateral angles with a few yellow setæ. Ninth sternite extensive, near its base with a conspicuous median spine directed ventrad.

In the female, the antennæ are shorter; centre of scutellum darkened.

Hab. Japan (Hokkaido and Honshiu).

Holotype, ♂, Jozankei, Ishikari-no-kuni, Hokkaido, altitude 1000 ft., August 16, 1923 (*T. Esaki*).

Allotype, ♀, Yumoto, Shimotsuke-no-kuni, Honshiu, altitude 4830 ft., July 23, 1923 (*T. Esaki*).

Paratypes, ♀, with the allotype; ♂, Shimokebo, Hitakanokuni, Hokkaido, August 9-10, 1923 (*S. Kuwayama*); ♂ ♀, Sapporo, Ishikari-no-kuni, Hokkaido, May 17-June 20, 1923 (*S. Kuwayama*).

Nephrotoma ozenumensis, sp. n.

Resembling *N. hokkaidensis*, Alexander; body yellow with conspicuous black and blue-black markings; lateral præscutal stripes with a velvety-black spot at anterior end of each; wings greyish yellow, the apex narrowly seamed with brown; abdominal tergites with a broad black median stripe.

Female—Length 18 mm.; wing 15.5 mm.

Frontal prolongation of head yellow, the apex with an oval black dorsal spot that includes the nasus; palpi light brown, the second segment obscure yellow. Antennæ with the scape rufous; flagellum entirely black. Head light yellow; a small brown spot on vertex adjoining the margin

of the eye opposite the narrowest part of the vertex; occipital brand black, continued caudad on to the occiput.

Pronotum light yellow, the sides conspicuously blackened. Mesonotal præscutum yellow with three shiny blue-black stripes that narrowly restrict the interspaces, the lateral stripes with a deep velvety-black spot on lateral face of their cephalic ends; suture velvety black; scutal lobes blue-black, the median area yellow; scutellum blue-black, the parascutella yellow; postnotal mediotergite yellow with an inverted T-shaped black mark. Pleura yellow, the ventral margins of the anepisternum and sterno-pleurite conspicuously blackened; other dark markings on the propleura, the ventral portion of the pteropleurite, the meron, and a U-shaped brown ring on the postnotal pleurotergite. Halteres yellow, the knobs obscure. Legs with the coxæ reddish, the bases blackened, most extensively so on the fore coxæ; trochanters obscure yellow; femora brownish yellow, the tips extensively blackened, more broadly on the fore femora; tibiæ yellowish brown, passing into black at tips; tarsi dark brown. Wings tinged with greyish yellow, the base and cells *C* and *Sc* brighter; stigma relatively large, oval, dark brown; wing-apex narrowly infuscated; a narrow brown seam along the anterior cord; obliterative areas at proximal end of stigma and across the base of cell 1st M_2 ; veins dark brown, yellowish in the flavous areas. Numerous macrotrichia on the proximo-caudal region of the stigma. Venation: Sc_1 preserved; cell M_1 very narrowly sessile; *m-cu* long, at the fork of *M*.

Abdominal tergites yellow with a broad, black, uninterrupted median stripe, on segments 7 and 8 including the entire sclerites; lateral margins of tergites infuscated; sternites obscure yellow. Ovipositor reddish horn-colour, the base of the sternal valves blackened.

Hab. Japan (Honshiu).

Holotype, ♀, Lake Ozenuma, on boundary between Iwa-shiro-no-kuni and Kotsuke-no-kuni, altitude 5460 ft., July 25, 1923 (*T. Esaki*).

Nephrotoma flammeola, sp. n.

General coloration orange, the frontal prolongation of the head dark brown; mesonotal præscutum with three shiny blue-black stripes, the median stripe narrowly split by a velvety-black line; abdomen orange, the tergites with a median series of brownish-black triangles.

Male.—Length 13 mm.; wing 14 mm.

Frontal prolongation of the head dark brown, including the nasus; palpi dark brown, the last segment a little paler. Antennæ elongate, if bent backward extending almost to the end of the second abdominal segment; basal segment obscure orange; second segment brown; flagellum entirely black, the segments elongate. Head obscure orange, the region of the vertical tubercle clearer, the orbital region a little darkened; occipital brand very small.

Pronotum orange, narrowly infuscated laterally. Mesonotum orange-yellow, the præscutum with three shiny blue-black stripes, the broad median stripe split by an opaque velvety-black line, the outer margin of the stripe less distinctly margined with the same colour; lateral stripes with a velvety-black spot at their anterior ends, giving the stripes the appearance of being bent outward; scutal lobes very extensively blackened; posterior margin of postnotum a little darkened. Pleura reddish yellow, variegated with clear yellow, this including the mesepimeron and a large area on the postnotal pleurotergite between the bases of the wings and halteres. Halteres pale brown, the knobs a little paler. Legs with the coxæ and trochanters orange; remainder of the legs dark brown, the femoral bases are rather narrowly paler. Wings tinged with pale greyish brown; stigma rather pale brown; a faint brown seam on the deflection of R_{4+5} ; wing-base and cell *Sc* more yellowish; veins dark brown. Venation: *Rs* about two-thirds R_{2+3} , not in alignment with R_{4+5} ; cell *M*₁ short-petiolate, the petiole about equal to *m*; cell 1st *M*₂ small, strongly narrowed distally; *m-cu* at the fork of *M*.

Abdomen orange; a series of brownish-black triangles along the median line of the tergites, extending from the posterior half of tergite 2 through tergite 8; hypopygium pale brown. Male hypopygium very obliquely truncated, the eighth and ninth sternites relatively small; outer dististyle with the outer half very slender and attenuated.

Hab. Japan (Honshiu).

Holotype, ♂, Gifu, Mino-no-kuni, May 25, 1921 (K. Takeuchi).

Nephrotoma subpallida, sp. n.

General coloration yellow; occipital brand lacking; præscutum and scutum marked with black; antenna of male moderately elongate, the flagellum brown, with the bases of the more proximal segments indistinctly paler; knobs of

halteres yellow; abdomen orange-yellow, the tergites sparsely marked with brown.

Male.—Length 9·95 mm.; wing 9·5 mm.

Female.—Length 11·3 mm.; wing 10·3 mm.

Frontal prolongation of the head yellow, the nasus darker. Antennæ elongate, more than one-half the length of the body; scape yellow; basal segments of flagellum light brown; remainder of the flagellum black, the basal enlargements of segments 4 to 9 indistinctly paler. In the female, the antennæ are shorter and mostly pale. Head orange-yellow, passing into sulphur-yellow on the genæ; occipital brand lacking.

Pronotum orange-yellow. Mesonotal præscutum shiny yellow with three conspicuous shiny black stripes, the lateral pair with the anterior ends outcurved, velvety-black; lateral ends of the suture velvety-black; scutal lobes conspicuously blackened; median lobe of scutellum liver-brown; postnotum orange-yellow. Pleura orange-yellow, variegated with sulphur-yellow. Halteres brown, the knobs yellow. Legs yellow; in the male, the femoral tips narrowly dark brown; tibiæ with the tips narrowly darkened; tarsi infuscated. Wings faintly tinged with yellow, the costal and subcostal cells more suffused; stigma pale brown; veins dark brown. Venation: R_s shorter than R_{2+3} ; cell 1st M_2 small, elongate; cell M_1 short-petiolate.

Abdomen orange-yellow, the posterior margins of the tergites, with a triangular dark brown median area, these including segments 2 to 6; a circular spot on basal half of tergite 2; hypopygium and sternites orange-yellow. In the female, the markings are more ring-like.

Hab. Japan (Honshiu).

Holotype, ♂, Mt. Minomo, Settsu-no-kuni, June 22, 1922 (T. Esaki).

Allotopotype, ♀.

Paratopotype, ♂.

Nephrotoma ligulata, sp. n.

General coloration yellow; thoracic pleura conspicuously variegated with black; abdominal tergites trivittate with brownish black; eighth sternite of male hypopygium with a median liguliform appendage.

Male.—Length 8·5 mm.; wing 8 mm.

Frontal prolongation of head yellow, dorsally with a large oval brown area which includes the nasus; palpi brown, the incisures narrowly paler. Antennæ moderately elongate,

when entire, probably attaining the base of the abdomen; scape light yellow; flagellum dark brown; flagellar segments only slightly incised. Head orange-yellow, the occipital brand very large, extending cephalad on to the base of the vertical tubercle.

Pronotum yellow, the sides dark brown. Mesonotal præscutum whitish yellow, with three very broad, shiny black stripes that restrict the interspaces to capillary vittæ; lateral stripes outcurved, concolorous throughout; scutum yellow, the lobes almost entirely covered by large black areas, confluent across the suture with the lateral præscutal stripes; scutellum yellow, with a capillary brown median line that is gently widened posteriorly; postnotal mediotergite yellow, with a **1**-shaped brown mark. Propleura conspicuously dark brown. Mesopleura yellow, variegated with dark brown on the anepisternum and sternopleurite; postnotal pleurotergite darkened dorso-posteriorly. Halteres brown, the base of the stem and apex of knobs yellow. Legs with the coxæ yellow; basal half of fore coxæ and base and apex of hind coxæ dark brown; trochanters yellow; femora yellow, the tips narrowly blackened; tibiæ pale brown, the tips narrowly infuscated; tarsi brown. Wings with a faint yellow tinge, cell *Sc* and the wing-base more saturated; stigma small, oval, dark brown; very indistinct pale brown seams on *r-m* and deflection of R_{4+5} ; wing-tip faintly darkened; veins brown. Venation: *Rs* one-third longer than R_{2+3} ; cell 1st M_2 elongate, almost parallel-sided; cell M_1 broad, sessile; *m-cu* close to the fork of *M*, the distance about equal to *r-m*.

Abdomen yellow, the tergites trivittate with brownish black; median stripe very indistinctly interrupted at the posterior margins of the intermediate segments; lateral stripes broadly interrupted basally; tergite 7 black, yellow basally; tergite 8 black; hypopygium brown; sternites yellow, sternites 7 and 8 black. Male hypopygium with the sternite small, black, depressed dorso-medially, the caudal margin denticulate; outer dististyle yellow, a little infuscated basally, this style not conspicuously attenuated apically. Eighth sternite with a flattened, median, tongue-like lobe, the sides parallel, the apex subtruncate and finely pubescent.

Hab. China (Mongolia).

Holotype, ♂, Vallée de la Selenga, 50 verstes au N.E. de Bandre-Koure, altitude 1225 metres, August 1909 (*Dr. du Chazaud*); Mission de Lacoste.

Type in the collection of the Paris Museum.

Nephrotoma bispinosa, sp. n.

General coloration yellow, extensively variegated with black; a broad median line on vertex; a dark area on dorso-pleural region of thorax before the wing-root; abdominal sternites with an interrupted median brown stripe; male hypopygium with the ninth tergite terminating in two acute black spines; ninth sternite with a small protuberant median lobe at the base of the notch.

Male.—Length 12.5 mm.; wing 11.3 mm.

Frontal prolongation of head brownish yellow, clearer latero-ventrally, the dorsum apically dark brown, this mark including the nasus; palpi brown, the first segment and base of the second paler. Antennæ with the first scapal segment yellow, narrowly darkened apically, second segment grey-pruinose; flagellum dark brown, the segments only moderately incised. Head orange-yellow, more sulphur-yellow anteriorly; occipital band very conspicuous, black, sending a broad median line cephalad almost to the summit of the vertical tubercle.

Pronotum yellow, dark brown laterally. Mesonotal præscutum yellow with three shiny black stripes that are well separated from one another by lines of the ground-colour; lateral stripes strongly outcurved; scutal lobes extensively blackened, the marks confluent with the lateral præscutal stripes; outer ends of pseudosutural foveæ velvety-black; scutellum dark brown; postnotal mediotergite sulphur-yellow with a broad median black stripe that is expanded across the posterior end of the sclerite. Pleura with the propleura brownish black; conspicuous brownish-black areas on the anepisternum, occupying most of the sclerite, together with a narrow brown seam along the suture, encroaching on the cephalic margin of the epimeron; a large triangular area occupying the dorso-pleural region cephalad of the wing-root; sides of the sterno-pleurite extensively dark brown; postnotal pleuro-tergite yellow, conspicuously bordered by dark brown. Halteres pale brown, orange at base, the apex of each knob yellow, the base more infuscated. Legs with the coxæ reddish brown, more or less infuscated basally; trochanters orange; fore femora dark brown with about the basal third obscure brownish orange; posterior femora obscure brownish orange with the extreme tips darkened; remainder of legs dark brown. Wings greyish yellow, cell *Sc* more yellowish; stigma small, oval, dark brown; a conspicuous brown seam

along $r-m$ and the basal deflection of R_{4+5} ; extreme apex of wing in cells R_3 and R_5 darkened; veins dark brown. Venation: Rs longer than R_{2+3} , gently arcuated; cell M_1 broadly sessile; fusion of Cu_1 with M some distance before the fork of the latter, the distance greater than $r-m$.

Abdomen orange, the tergites conspicuously trivittate with black, the median stripe broadly interrupted both at the base and apex of each segment; lateral stripes interrupted caudally; segments 7 and 8 dark brown, the former with a basal sublateral pale area; hypopygium reddish, the tergite black; sternites obscure orange, with a conspicuous interrupted median stripe. Male hypopygium with the ninth tergite blackened, the caudal portion cut off from the base by a semicircular impressed line, the median apical portion deeply split medially by a narrow incision; surface microscopically spinulose; from beneath the lateral margins of the tergite on either side juts a slender black chitinized spine directed caudad. Outer dististyle not conspicuously attenuate apically. Ninth sternite deeply notched medially, at the base of the notch with a small but conspicuous median lobe, directed caudad. Eighth sternite unarmed.

Hab. China (Mongolia).

Holotype, ♂, Vallée près de la Koure de Bandie, altitude 1500 metres, 1909 (*Dr. du Chazaud*); Mission de Lacoste.

Type in the collection of the Paris Museum.

Nephrotoma duchazaudi, sp. n.

General coloration yellow; terminal segment of palpus orange; propleura yellow; wings with Rs shorter than R_{2+3} ; male hypopygium with the eighth sternite extensive, notched medially, the notch densely filled with abundant long yellow setæ.

Male.—Length about 11 mm.; wing 12.7 mm.

Frontal prolongation of head clear yellow above, including the nasus, the sides darkened; palpi light brown, the terminal segment bright orange. Antennæ of moderate length; scape yellow; the elongate first segment of flagellum light brown; remaining flagellar segments dark brown, deeply incised beneath. Head light yellow, the occipital brand large but pale brown in colour, elongate-triangular in outline.

Pronotum yellow. Mesonotal præscutum yellow, with three conspicuous black stripes, the lateral stripes straight; scutum yellow, each lobe with two distinctly separated black

areas; scutellum yellow, very indistinctly darkened medially, more distinctly so behind; postnotum pale yellow with a **L**-shaped pale brown mark. Propleura yellow. Pleura yellow, very sparsely and indistinctly variegated with reddish brown; a brown spot cephalad of the root of the halter; sides of sterno-pleurite more conspicuously darkened. Halteres pale brownish yellow throughout. Legs with the coxæ yellow, faintly darker basally; trochanters yellow; femora pale brown, the tips very indistinctly darkened; tibiæ pale brown; tarsi darker. Wings with a faint yellowish tinge, the base and cells *C* and *Sc* more saturated; stigma small, oval, dark brown; a narrow but distinct brown seam along *r-m* and the basal deflection of R_{4+5} on the distal side; wing-tip narrowly but distinctly darkened; veins brown. Venation: *Rs* straight, shorter than R_{2+3} ; cell M_1 short-petiolate; fusion of Cu_1 and *M* close to the fork of the latter.

Abdomen yellow, the tergites very narrowly trivittate with dark brown; tergite 8 and caudal half of 7 dark brown; sternites yellow, with a series of linear brown dashes on the basal half of the segments; hypopygium yellow. Male hypopygium relatively large. Ninth tergite massive, the caudal margin with a relatively small semi-circular median depression, the slopes highly polished; caudo-lateral angles of this depressed area produced into large yellow lobes that are separated by a narrow median notch, the surface provided with numerous black spines and spinous bristles, the more lateral one a conspicuous enlarged tubercle. Outer dististyle with the apex conspicuously long-attenuate, the margins provided with long yellow setæ. Ninth sternite with a small pendulous lobe in the notch, somewhat as in *N. bispinosa*, but more bifid at apex. Eighth sternite dark basally, very extensive, deeply notched medially, the notch filled with abundant dense yellow setæ, decussate across the median line; dorso-caudal angles of sternite produced slightly mesad and here provided with long yellow setæ.

Hab. China (Mongolia).

Holotype, ♂, Bords du Tarim, July 1909 (*Dr. du Chazaud*); Mission de Lacoste.

Type in the collection of the Paris Museum.

Nephrotoma rectispina, sp. n.

General coloration yellow; thoracic stripes black, the lateral stripes straight; wings tinged with yellow, the tip and

a seam along the cord brown; abdominal tergites trivittate with dark brown; male hypopygium with two long straight spines jutting caudad from the genital chamber.

Male.—Length 13.5 mm.; wing 12.8 mm.

Frontal prolongation of head yellow, the apex medially, together with the nasus, brown; palpi pale brown, the last segment and mouth-parts yellow. Antennæ moderately elongate, if bent backward extending to beyond the base of the abdomen; scape yellow; flagellar segments bicolorous, the basal enlargement dark brown, the remainder of each segment yellow, except the anterior or ventral face which is infuscated. Head orange; occipital brand brown, small, but sending a brown line cephalad on to the vertex.

Pronotum yellow. Mesonotal præscutum shiny yellow, with four narrow dark brown stripes, the intermediate pair sometimes confluent except anteriorly; lateral stripes straight; scutum yellow, the lobes with the cephalic half dark brown; scutellum light yellow; postnotum with the mediotergite brown, the cephalic half with an extensive yellowish median area. Pleura white, variegated with yellow, the white areas including the postnotal pleurotergite except the infuscated dorsal angle. Halteres pale brown, the knobs indistinctly yellowish. Legs with the coxæ testaceous-yellow; trochanters yellow; femora brownish yellow, narrowly tipped with black; remainder of legs broken. Wings tinged with yellow; cells *C* and *Sc* more strongly yellow; stigma small, oval, dark brown; wing-tip narrowly darkened; a narrow but conspicuous brown seam along the cord, slightly obliterated at the fork of *M*; veins dark brown. Venation: cell *M*₁ very short-petiolate; fusion of *M* and *Cu* a little less extensive than the free portion of *M* beyond this.

Abdomen yellow, the tergites with a broad median and very narrow lateral brownish-black stripes that are narrowly interrupted at the bases of the segments; tergite 1 brown, pale yellow medially and laterally; tergite 7 brownish black, yellow sublaterally at base; tergite 8 brownish black; sternites yellow, with a median brown stripe; hypopygium shiny obscure yellow. Male hypopygium with the ninth tergite terminating in a small conical lobe on either side, the space between these lobes gently convex and provided with abundant black spinules. Outer dististyle not unusually attenuated, yellow. What seem to be the gonapophyses jut caudad from the genital chamber as long yellow spines, these straight or nearly so, lying generally

parallel, the acute tips narrowly blackened and directed gently mesad. Eighth sternite unarmed.

Hab. China (Kwei-chow).

Holotype, ♂, Anshoufu, Gan Chouen Fou, 1912 (*Père Cavalerie*).

Paratopotype, ♂.

By Riedel's key to the Palæarctic species of the genus (*Deutsch. Ent. Zeitschr.* 1910, pp. 413-417), the present form runs to *N. lamellicornis* (Schummel) or *N. schummeli* (Riedel), very different flies.

XLI.—*Two new Genera and a new Species of Oriental Hypeninae* (Noctuidæ). By Sir GEORGE F. HAMPSON, Bart.

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[IN view of the fact that these names, which exist with the descriptions in manuscript in the British Museum, are required for immediate use, it is considered advisable to publish them at once.—W. H. T. TAMs.]

GENUS RAPHISCOPA, nov.

Type, *R. invenusta*.

Proboscis fully developed; palpi of male with the 1st joint upturned to about middle of frons and rather broadly scaled in front, the 2nd and 3rd recurved over head and extending to beyond the metathorax, the 2nd the shorter and broadly scaled above, the 3rd hollowed out on inner side and containing a tuft of hair; frons smooth; eyes large, round; antennæ of male with long bristles and cilia, the shaft contorted and with tuft of hair above at about two-thirds length; thorax clothed with hair and scales mixed and without crests; fore tibiæ and 1st joint of tarsi of male covered by a thickly scaled sheath enclosing fringes of hair, the mid and hind tibiæ with slight tufts of hair at middle and extremity; abdomen with some rough hair at base of dorsum, but without crests. Fore wing with the costa arched towards apex which is somewhat produced, the termen evenly curved, crenulate; vein 3 from well before angle of cell; 5 from just above angle; 6 from