

NEW OR LITTLE KNOWN TIPULIDAE FROM NEW CALEDONIA AND SAMOA

by CHARLES P. ALEXANDER
(Amherst, Massachusetts).

The present report is based on a small collection of crane-flies taken in New Caledonia in late May and June, 1928, by Professor T. D. A. and Mrs. Cockerell, together with a single species from Samoa received from Mr. E. H. Bryan, Jr. The types of the novelties from New Caledonia are preserved in my collection, through the kind interest of Professor Cockerell. The type of the Samoan *Limonia bryaniana* has been returned to Mr. Bryan and is preserved in the Bishop Museum, Honolulu. I extend my sincere thanks to Professor and Mrs. Cockerell, and to Mr. Bryan, for their kind interest in making known the interesting Tipulid fauna of the Pacific Islands.

Macromastix novocaledonica, sp. n.

General coloration fulvous yellow, the praescutum with four more or less distinct brown stripes; frontal prolongation of head long, exceeding the remainder of head; postnotal mediotergite dark brown, with a median yellow vitta; wings with a strong yellowish tinge, the stigma dark brown, conspicuous; abdominal tergites obscure yellow, the caudal margins of the segments infuscated, the amount decreasing on the outer segments.

Male. — Length 6-9 mm.; wing 8-11 mm.

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

Frontal prolongation of head long and slender, exceeding the remainder of the head, obscure brownish yellow, darker brown above; nasus lacking; palpi black. Antennae short, not extending far beyond the end of the frontal prolongation; first scapal segment pale at base, the remainder of the organ brownish black. Head deep fulvous orange, most intense on the vertex. In the female, the vertex is more infuscated, with the orbits broadly yellow.

Mesonotal praescutum orange-yellow to obscure yellow, in cases

with four brown stripes, the posterior ends better defined, in still other cases the stripes obliterated; scutum conspicuously dark brown; scutellum testaceous yellow; postnotal mediotergite dark brown, divided medially by a yellow vitta that widens out behind, not or scarcely reaching the anterior margin of the sclerite. Pleura chiefly pale yellow, the pteropleurite paler yellow; dorsal pleurotergite chiefly dark brown; dorso-pleural region infuscated anteriorly, the posterior half pale. Halteres infuscated, the extreme base of the stem yellow. Legs with the coxae and trochanters yellow; femora obscure yellow, the tips very narrowly blackened; tibiae brown, the tips passing into brownish black; tarsi black. Wings with a stroug

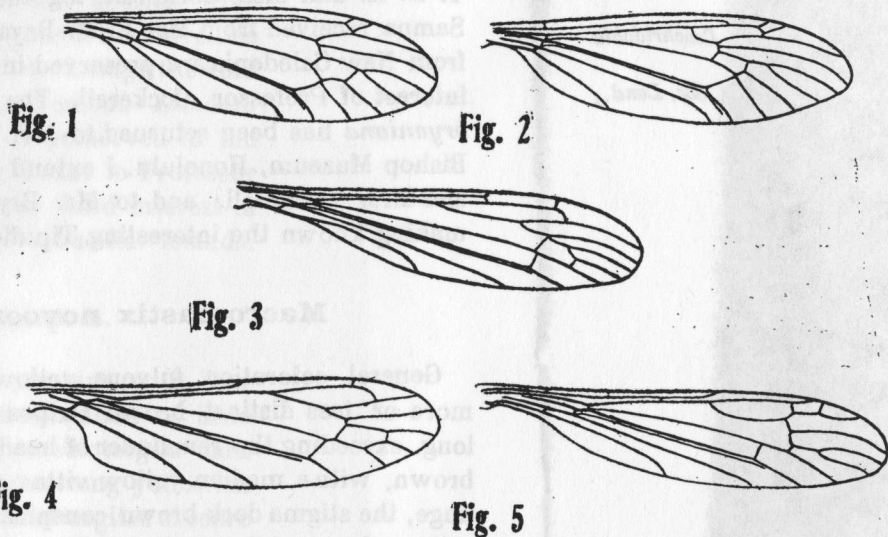


Fig. 1 à 5. — 1, Wing of *Macromastix novocaledonica*, sp. n. — 2, Wing of *Macromastix cockerellae*, sp. n. — 3, Wing of *Limonia (Limonia) bryaniana*, sp. n. — 4, Wing of *Limonia (Idioglochina) novocaledonica*, sp. n. — 5, Wing of *Gonomyia (Ptilostena) cockerelli*, sp. n.

yellowish tinge, iridescent, cell C more suffused; cell Sc brownish yellow; stigma conspicuous, dark brown; vague, scarcely evident seams on anterior cord; extreme wing-tip narrowly darkened; veins dark brown; costa in the stigmal region incrassated. Veins almost without macrotrichiae except on C , there being a few on the basal portion of Sc and others in the stigmal region on $Sc_2 \pm R_1$. Venation (Fig. 1): R_s moderately long, gently arcuated at origin; R_{2+3+4} elongate, exceeding $m-cu$; cell M_1 subsessile to short petiolate; M_{3+4} short, subequal to the basal section of M_3 , $m-cu$ thus appea-

ring to be at near midlength of cell $1st M_2$; vein $2nd A$ straight, the cell of moderate width.

Abdominal tergites bicolorous, the segments obscure yellow, the caudal margins of the segments broadly infuscated, the amount decreasing on the outer segments; second tergite with the basal ring entirely pale; sternites yellowish; hypopygium dark.

Hab. New Caledonia.

Holotype ♂, Plum Farm, May 30, 1928 (*T. D. A. Cockerell*).

Allotopotype ♀, June 7, 1928.

Paratopotypes, 6 ♂ ♀, June 3-7, 1928 (*T. D. A. and W. P. Cockerell*), *paratypes*, 2 ♂ ♂, Bourail, west coast, May 23, 1928 (*Cockerell*).

The present species is closely allied to *Macromastix tenuifrons* Alexander, of northern New Zealand.

Macromastix cockerellae, sp. n.

General coloration brownish yellow, the praescutum with four darker brown stripes; postnotum whitish cinereous, darkened behind; frontal prolongation of head short; wings whitish subhyaline, or with a faint dusky tinge; veins almost without macrotrichiae; R_{2+3} elongate; $m-cu$ in alignment with the short basal section of M_3 , the latter approximately one-half M_{3+4} .

Male. — Length about 6.5 mm.; wing 9 mm.

Female. — Length about 7.5 mm.; wing 11.5 mm.

Frontal prolongation of head relatively short and stout, about one-half the remainder of the head, obscure yellow, without nasus; palpi brown. Antennae with the scapal segments brownish testaceous; flagellum broken. Head broad, light brown.

Mesonotal praescutum brownish yellow, with four darker brown stripes, the intermediate pair confluent in front; scutal lobes darkened medially; scutum infuscated; postnotum whitish cinereous, the caudal portion darkened. Pleura chiefly whitish, the anepisternum, sternopleurite and meron slightly darkened. Halteres chiefly pale, the stem a little darkened outwardly, the apices of the knobs obscure yellow. Legs with the coxae obscure yellow, somewhat darker basally; trochanters obscure yellow; femora and tibiae brownish testaceous, the tips weakly infuscated; tarsi passing into brown. Wings whitish subhyaline or with a faint dusky tinge, cell Sc and the small stigma pale brown; veins dark brown. Veins without macrotrichiae except on costa, the prearcular portion of R , M , and a few

microscopic punctures on the basal half of *Sc*. Venation (Fig. 2): *Rs* relatively short, arcuated to subangulated; *R*₂₊₃ very long, about one-half longer than *m-cu*; *R*₂ in alignment with *R*₁₊₂; cell *M*₁ deep, its petiole nearly twice *m*; *m-cu* in alignment with the short basal section of *M*₃, at extreme outer end of cell *1st M*; *M*₃₊₄ approximately twice the basal section of *M*₃; vein *2nd A* short and straight, cell *2nd A* relatively wide.

Abdomen with the basal tergite yellowish testaceous; second segment obscure yellow medially, dark brown laterally; remaining tergites, including the hypopygium, dark brown; basal sternites yellow, the outer segments more bicolorous, the bases obscure yellow, the tips broadly darkened; subterminal segments uniformly darkened.

Hab. New Caledonia.

Holotype ♂, Bourail, west coast, May 26, 1928 (*T. D. A. Cockerell*).

Allotopotype ♀, May 22, 1928 (*W. P. Cockerell*).

This very distinct species of *Macromastix* is respectfully dedicated to Mrs. T. D. A. Cockerell.

« Since the above description was prepared I have received two males, that are considered as being paratypes, from Professor Cockerell. These were taken at Bourail on May 18th. A notable feature of the male lies in the fact that the antennae are very long and filiform, exceeding the body in length. »

***Limonia (Limonia) bryaniana*, sp. n.**

General coloration yellow; antennae moniliform, black, the basal segment ochreous; mesonotal praescutum buffy yellow, with three brownish fulvous stripes; knobs of halteres dark brown; posterior tarsi extensively white; wings with a strong brownish tinge, the veins darker; *r-m* much shortened to obliterated; male hypopygium with the ventral dististyle small, the apex heavily blackened, bidentate.

Male. — Length about 7 mm.; wing 8.7 mm.

Rostrum short, brownish black; palpi concolorous. Antennae with the first scapal segment ochreous, the remainder of the organ black; second scapal segment a little longer than the first flagellar; flagellar segments moniliform, nearly globular, with short apical necks, gradually decreasing in size and becoming more elongate outwardly; terminal segment long and slender, narrowed into an apical point; each flagellar segment with a unilaterally arranged seta of unusual

length. Anterior vertex and front narrow, obscure ochreous, the posterior vertex more brownish ochreous, darker medially.

Pronotum yellow, very narrowly darker medially. Mesonotal praescutum buffy yellow with three broad brownish fulvous stripes, the lateral stripes very broad, extending to the lateral margins of the sclerite; scutum yellowish fulvous, the median area and scutellum more testaceous brown; postnotum pale testaceous brown. Pleura obscure testaceous yellow, the dorso-pleural region a little darker. Halteres of moderate length, obscure yellow, the knobs dark brown. Legs with the coxae and trochanters obscure yellow; femora (posterior) brownish yellow to light brown; tibiae somewhat darker brown; tarsi brownish yellow, the terminal segments more

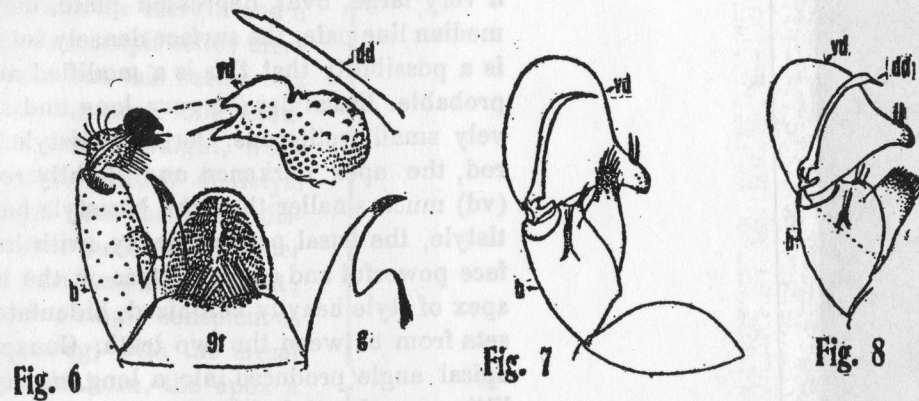


Fig. 6 à 8. — 6, Male hypopygium of *Limonia (Limonia) bryaniana*, sp. n. — 7, Male hypopygium of *Limonia (Dicranomyia) sordida* (Brunetti). — 8, Male hypopygium of *Limonia (Dicranomyia) illingworthi* (Alexander). — b = basistyle; dd = dorsal dististyle; g = gonapophysis; t = 9th tergite; vd = ventral dististyle.

infuscated; posterior tarsi with the basal two segments white, including the setae, the terminal segments infuscated; posterior legs much stouter than the others; claws long and slender, bearing an acute lateral spine at near midlength, in addition to the stouter basal spine. Wings with a strong brownish tinge, somewhat more suffused in the apical and anal cells; basal half of cell *Sc* darker; wing apex in cell *Sc*₂ and *R*₃ narrowly infused; stigma long-oval, slightly darker brown; veins dark brown. Costal fringe very long and conspicuous, longest on the basal half of wing, thence decreasing in length to the wing-lip. Venation (Fig. 3): *Sc* long. *Sc*₁ ending at midlength of the long *Rs*, *Sc*₂ at its tip; free tip of *Sc*₂ pale, without macrotrichiae, subequal to *R*₁; *R*₁₊₂ entirely atrophied, its position indi-

cated by a weak angulation of the combined vein R and R_2 ; R_3 long, only gently arcuated; veins R_{3+4} and R_{4+5} long, extending generally parallel to one another to the wing-margin; cell 1st M_2 very broad at base, obliterating or greatly reducing $r-m$; m strongly arcuated, the basal section of M_3 straight, transverse; $m-cu$ close to the fork of M .

Abdominal tergites dark brown, the caudal margins of the segments very narrowly and vaguely pale; basal sternites obscure yellow, the outer segments darker. Male hypopygium (Fig. 6) with the 9th tergite (9t) having the lateral lobes very broad, their mesal-caudal margins with numerous powerful setae that are slightly decussate; what appears to be a median lobe from beneath the tergite is a very large, oval, depressed plate, dark-colored, the margin and a median line pale, the surface densely set with microscopic setae; there is a possibility that this is a modified anal tube but this seems less probable. Basistyles (b) very long and slender, the mesal lobe relatively small, setiferous. Dorsal dististyle (dd) a nearly straight, weak rod, the apex darkened and slightly roughened. Ventral dististyle (vd) much smaller than the basistyle but longer than the dorsal dististyle, the basal portion fleshy, with long setae, those on the outer face powerful and curved, those on the inner face long and straight; apex of style heavily chitinized, bidentate, with a single conspicuous seta from between the two teeth. Gonapophyses (g) with the mesal apical angle produced into a long, nearly straight horn, the apex a little curved and darkened.

Hab. Samoa.

Holotype ♂, Vaea, Upolu, altitude 1100 feet, April 25, 1924 (*E. H. Bryan, Jr.*).

I take great pleasure in naming this very distinct *Limonia* in honor of the collector, Mr. Edwin H. Bryan, Jr.

Limonia (Thrypticomylia) subsaltens (Alexander).

One ♂, Plum Farm, New Caledonia, June 7, 1928 (*Cockerell*).

Edwards (*Insects of Samoa, Diptera Nematocera, Pt. VI, Fasc. 2: 77; 1928*) has discussed the structure of the male hypopygium. The rostral prolongation of the ventral dististyle is very slender, a little expanded before the tip and provided with two long strong setae. The rostral spines are placed on the style basad of the rostral prolongation, nearly equal in size and curvature, being long and slender, the outermost from a larger basal tubercle than the inner spine.

Limonia (Dicranomyia) illingworthi (Alexander).

New Caledonia: Noumea, May 16, 1928; Bourail, west coast, May 27, 1928 (*Cockerell*).

I cannot agree with my friend Edwards (*Ann. Mag. Nat. Hist., ser. 9, vol. 20: 237; 1927. — Insects of Samoa, Diptera Nematocera, Pt. VI, Fasc. 2: 76; 1928*) that the present species is identical with *L. (D.) sordida* (Brunetti). The two species are closely allied but the hypopygial distinctions between the two are apparently constant.

Limonia (Dicranomyia) sordida (Brunetti) is here described from material taken at Cherrapunji, Assam, October 18, 1920, by Senior-White, determined by Edwards. The structure of the hypopygium (Fig. 7) is as follows:

Basistyle (b) with the ventro-mesal lobe long, narrowed outwardly, the tip being narrowly obtuse; the finger-like lobe on the face of the basistyle is long and slender, the length more than four times the diameter at midlength; in addition to this tubercle, there is a short, low tubercle near the caudo-mesal angle of the basistyle. Rostral spines slightly longer. Dorsal dististyle narrowed gradually to the long acute tip.

Limonia (Dicranomyia) illingworthi is now represented in my collection by specimens from Fiji, New Caledonia and Northern Queensland. The structure of the hypopygium is as follows (Fig. 8):

Basistyle (b) with the ventro-mesal lobe very broad, not or scarcely narrowed outwardly, the apex subtruncated; finger-like lobe on face of basistyle short, the length scarcely twice the diameter at midlength; the second tubercle is lacking, but replaced by a group of powerful setae at this point. Rostral spines a little smaller and shorter. Dorsal dististyle (dd) more suddenly narrowed to the slender acute apex, a little expanded just before this point.

The condition obtaining between *sordida* and *illingworthi* thus is entirely analogous to that existing between *pseudomorio* Alexander, of Eastern Asia, and *occidua* Edwards, of Europe. Both couplets include vicarious representatives of species that are distinguishable chiefly by slight but apparently constant differences in the structure of the male hypopygium. The question of the distinctness or identity of such closely allied pairs of species becomes of more than ordinary importance, due to the vast range of the insects concerned.

Limonia (Dicranomyia) rapæ Alexander is still known only from female specimens from the Austral Islands. There is a possibility that these represent large, deeply-colored individuals of *illingworthi*

but the discovery of the male sex will be required to finally settle the relationship. Based on the female sex alone, the two forms certainly appear distinct, *rapæ* having strongly tinted wings, with the pattern unusually heavy for a member of the *liberta* group; the stigmal spot is oval, instead of being a relatively narrow seam to R_2 or sub-circular in outline; *m-cu* is immediately before the fork of M and the distal end of M has from eight to ten macrotrichiae.

***Limonia (Idioglochina) novocaledonica*, sp. n.**

General coloration dark brown, the praescutum with four still darker brown stripes; antennae dark brown; flagellar segments strongly produced, almost sessile; wings yellowish grey, the veins beyond the cord dark brown; abdomen dark brown, the caudal margins of the segments narrowly paler, more evidently so on the sternites.

Male. — Length 5-5.5 mm.; wing 7-8 mm.

Female. — Length about 5 mm.; wing 6 mm.

Antennae dark brown, darker than the rostrum; flagellar segments of the male strongly produced, as in *tusitala* Alexander, *vilæ* Edwards and other species; individual flagellar segments almost without necks. Head infuscated, a little brighter on the orbits.

Mesonotal praescutum dark castaneous, paler laterally, with four dark brown stripes, the intermediate pair not reaching the suture, in cases more or less confluent on the anterior half; in some specimens, the lateral praescutal stripes are distinctly darker in color than the intermediate pair; scutal lobes dark brown, the median area pale; scutellum and postnotum pale, slightly pruinose. Pleura reddish brown, the surface weakly pruinose. Halteres pale throughout. Legs with the coxae obscure yellow, the fore coxae slightly infuscated; remainder of the legs yellow, the terminal tarsal segments darkened. Wings yellowish grey, the base and costal region more yellowish; prearcular and costal veins and the longitudinal veins of basal third of wing yellowish, the remaining veins passing into brown. Costal vestiture short and spinous; longitudinal veins beyond the cord with regular series of small setae. Venation (fig. 4): Sc relatively short, Sc ending nearly three-fourths the length of R_s before the origin of the latter; Sc_2 very far from the tip of Sc_1 , the latter alone longer than R ; R_s straight, without macrotrichiae, nearly equal to R_{2+3} and nearly twice the basal section of R_{4+5} ; cell R_1 large; cell 1st M_2 relatively narrow; *m-cu* before the fork of M .

Abdomen dark brown, the caudal margins of the segments paler,

more conspicuously so on the sternites; hypopygium pale. Male hypopygium with the ninth tergite large, the caudal margin with a conspicuous V-shaped median notch, the sides more or less sinuous; lateral lobes broad, with stout spinous setae.

The female differs in the usual sexual characters, especially the venation and slightly less developed flagellar segments.

Hab. New Caledonia.

Holotype, ♂, Ngo Bay, at light, May 14, 1928 (*T. D. A. Cockerell*).

Allotopotype, ♀, pinned with the type.

Paratopotypes, 4 ♂ ♀.

Limonia (Idioglochina) novocaledonica seems to be most closely allied to *L. (I.) vilæ* Edwards, of New Hebrides, differing especially in the coloration of the body and wings.

***Gonomyia (Ptilostena) cockerelli*, sp. n.**

General coloration brownish grey; antennae black throughout; pleura dark brown, striped longitudinally with yellow; wings with a faint brownish yellow suffusion, the stigma slightly darker; R_2 distinctly preserved.

Female. — Length about 6.2 mm.; wing 6.2 mm.

Rostrum and palpi black. Antennae black throughout. Head brownish grey, somewhat brighter in front.

Pronotum dark brownish grey; anterior lateral pretergites restrictedly obscure yellow. Mesonotal praescutum brownish grey, with a still darker median stripe; humeral region and lateral margins obscure buffy; scutal lobes brown, each lobe variegated with darker brown; scutellum light brown; postnotum grey. Pleura dorsally dark brown, striped longitudinally with yellow; dorso-pleural region yellow; a yellowish stripe begins behind the fore coxa, broadening on the meron and metapleura; ventral sternopleurite more reddish brown. Halteres dusky, the knobs infuscated. Legs with the coxae and trochanters yellow; remainder of legs broken. Wings with a faint brownish yellow tinge, the base and costal region somewhat brighter; stigma a little darker than the ground-color, lying entirely between veins R_2 and R_3 ; veins dark brown, the prearcular veins, Sc , R and Cu paler. Venation (Fig. 5): R_2 preserved, approximately as long as R_{2+3+4} ; R_{3+4} about one-half longer than *m-cu*; *m-cu* more than its own length before the fork of M .

Abdomen dark brown, the basal sternites obscure yellow; caudal margins of the sternites narrowly yellow. Ovipositor with the tergal valves slender, reddish horn-color, strongly upcurved.

Hab. New Caledonia.

Holotype ♀, Dge, Ile Ouen, June 6, 1928 (T. D. A. Cockerell).

G. (P.) cockerelli is named in honor of Professor T. D. A. Cockerell, to whom I am very greatly indebted for specimens of Tipulidae from all parts of the World. It is readily told from all allied species by the venation, especially the retention of R_2 .

Description d'un Atherix du Japon

par E. SÉGUY (Paris).

Atherix Galloisi n. sp.

♀. Allongé, d'un noir brun légèrement luisant, couvert d'une pruinosité grise plus dense sur les pleures. Yeux séparés par un espace égal à deux fois la largeur du triangle ocellaire. Bande frontale d'un noir velouté au milieu, grise en haut et en bas. Occiput gris, à pilosité noire en haut, grise et blanche en bas. Trompe épaisse et longue, noire; palpes bruns. Antennes courtes: articles I et II égaux, noirs; III réniforme aussi long que les deux premiers réunis, roux; chète long, noir, à pubescence microscopique. — Dépression noto-pleurale à longues soies noires; hypopleure, mésopleure et hanches à soies blanches. Pattes brunes: fémurs jaunes; tibia II d'un brun clair. Balanciers jaunes à renflement noir. Ailes jaunies: une bande transversale brune, diffuse en arrière; cellule discale longue; fourche $MA_1 + R_4 + 5$ très longue. — Abdomen d'un noir velouté: vu d'arrière en avant on observe une ornementation d'un gris bleu: deux taches latérales sur les tergites I et II, tergite III à taches diffuses; IV et V avec une large bande postérieure; VI et VII avec une tache médiane. Sternites et cerques bruns. Pilosité blanchâtre en avant, noire en arrière et sur les côtés. — Long. 10,5 mm.

Japon: Tokyo, 27. VI. 1908 (Edme Gallois).

Diptera, t. V, fasc. 2, 15. XI. 1929
(Paris, P. Lechevalier).