

NEW AUSTRALIAN ASILIDÆ,

With Notes on the Classification of the Asilinae,

By Arthur White.

[Received 20th August, 1917. Read 10th September, 1917. Issued separately 22nd January, 1918.]

Subfamily Dasypogoninae.

CHRYSOPOGON, *Röder.*

This genus is distinguished by a stout spine on each side of the thorax, and antennæ with the third antennal joint rounded and without a style; the only other genus with similar thoracic spines is *Opseostlenqis*, containing a single West Australian species, which is distinguished by the pointed antennal style, and differently formed moustache.

Nine Australian species have so far been described, and two others are now added, one of these being from New South Wales, the other from Victoria.

CHRYSOPOGON PALLIDIPENNIS, *Sp. nov.*

Moustache white; face yellow, with a black median stripe; antennæ yellow; thorax and abdomen red-brown, the fourth and fifth abdominal segments with pale hind-margins; legs entirely yellow; wings tinged faintly with brown.

Length. Female, 11 mm.

Hab. Sydney, N.S.W.

Female. Face bright yellow, with a broad black median stripe, which extends from the antennæ to the moustache; moustache consisting of a single row of white bristles. Antennæ yellow, the third joint a little darker than the first and second, and with the apex darkened; all joints are slender, the third being hardly broader than the first, and of uniform breadth throughout; first and second joints with a few short inconspicuous bristles. Thorax red-brown, with the neck and sides yellow; anterior, lateral, and posterior margins marked with white

[The manuscript of this paper was found among Mr. White's papers after his death, and was forwarded to the Society by the author's brother and executor. The MS. was apparently only a first draft which the author intended to rewrite before publication. The Editor has, however, felt at liberty to correct only obvious clerical errors, and the paper, therefore, appears without the advantage of final revision by the author.]

tomentum, and a small white tomentose spot behind each shoulder tubercle; scutellum dark yellow. Abdomen red-brown, coarsely punctate, with inconspicuous yellowish side-spots, the fourth and fifth segments with narrow yellowish hindmargins. Legs with femora, tibiæ, and tarsi yellow, the femora clouded with brown beneath; femora bare, tibiæ with a few black bristles; anterior tibiæ with a terminal curved spine. Wings almost hyaline, but with a brown tinge, which is most marked along the costal margin; first posterior cell wide open; fourth posterior cell slightly contracted towards the wing margin; halteres yellow.

This species bears no resemblance to any of the described Australian species; it may be at once recognised by its red-brown colouration, yellow legs, almost hyaline wings, and small size. It is at present only known from a single specimen, which was taken by Dr. Ferguson at Sydney on December 26, 1914.

CHRYSOPOGON RUBIDIPENNIS, *Sp. nov.*

Moustache pale yellow; face, front, antennæ, and thorax red-brown; abdomen dark red-brown, with pale red-brown lateral spots; legs red-brown; wings brown, darkest along the costal margin.

Length. Female, 14 mm.

Hab. Victoria.

Female. Face and front a uniform red-brown. Moustache composed of a single row of stiff pale yellow bristles. Antennæ red-brown, a little paler than the face, the third joint slightly broader than the first and second, both of which bear scattered black hairs. Thorax bright claret-red-brown, with three indistinct, darker, rugose stripes, the median one being the narrowest; scutellum similarly coloured to the thorax. Abdomen dark red-brown, punctate, with indistinct pale red-brown lateral spots. Legs with femora, tibiæ and tarsi red-brown; posterior femora with short black bristles; all tibiæ with a few black bristles, anterior tibiæ with a terminal curved spine. Wings brown, a very deep brown along the costal margin, the first basal and anal cells paler than the second basal cell, and the cells towards the wing-tip pale interiorly; all posterior cells wide open; halteres brownish yellow.

This species, if one has only the published descriptions to go by, might possibly be confused with *C. punctatus*, Ricardo. I have, however, examined the type of the latter species in the British Museum, and find that

the two species are really very distinct. *C. punctatus* is a deep black species, without a trace of red, and with very distinct white lateral spots, whereas *C. rubidipennis* is distinctly a reddish species, and the lateral spots are pale reddish and inconspicuous; the difference is very perceptible in the thorax, which in *C. rubidipennis* is a deep claret-red instead of black, and the legs are also red-brown instead of black; *C. rubidipennis* is also a slightly larger species.

C. rubidipennis is at present known from a single specimen taken by Mr. F. P. Spry in Victoria.

BRACHYRRHOPALA, Macq.

Of this genus, characterised by the club-shaped abdomen and anterior tarsi with a terminal curved spine, six Australian species have so far been described; one additional species is now added.

BRACHYRRHOPALA BELLA, *Sp. nov.*

Moustache black; thorax dull black, with sides and scutellum red; abdomen shining black, with apex yellow; femora red above, black beneath; tibiæ red, the posterior pair with basal half pale yellow; tarsi red; wings with basal three-eighths hyaline, apical five-eighths brown.

Length. Male, 10.5 mm.

Hab. Victoria.

Male. Moustache rather bushy, composed of fine black hairs. Face black, the lower two-thirds with golden tomentum. Front black, almost covered with brown tomentum. Antennæ entirely pale yellowish red, the first two joints with long black hairs. Thorax with the dorsum dull black, the neck, shoulder tubercles, anterior, lateral, and posterior margins, sides, and scutellum red. Abdomen with first to fourth segments shining black, fifth shining black with hindmargin yellow, sixth yellow, the whole bearing white lateral pubescence. Legs with all femora having the upper surface red, lower surface black, anterior and middle tibiæ red, posterior tibiæ with basal half pale yellow, apical half red; all tarsi red; femora and tibiæ with abundant black pubescence, femora with also apical black bristles, middle and posterior tibiæ and posterior tarsi with a few extremely long black bristles. Wings with the basal three-eighths completely hyaline, apical three-eighths brown, the line of demarcation between the two portions clearly marked; in the brown portion the centre of the discal cell is semi-hyaline; halteres yellow.

This species is easily recognised by the parti-coloured wings, black moustache, red and black thorax and shining black abdomen. It can only be confused with *B. ruficornis*, Macq. The latter species is not represented in the British Museum Collection, but, according to Miss Ricardo's description, it is a much smaller species, with the wings basally brown and apically hyaline, instead of vice-versa, the moustache is yellow, the thorax black instead of black and red, and abdomen black with yellow bands, instead of black with only the extreme tip yellow.

B. bella is at present only known from a single specimen taken in Victoria by Mr. French.

SAROPOGON, *Loew*.

This genus consists of small species, in which the anterior tibiae possess a terminal curved spine, antennæ with a small terminal style, scutellum with marginal bristles, and femora without bristles on the underside. Five Australian species have so far been described; an additional species is now added.

SAROPOGON DISSIMULANS, *Sp. nov.*

Face and front pale brown, moustache white; antennæ red; thorax brown, with a broad brown dorsal stripe, edged with light yellow-brown, and bordered anteriorly with a patch of very dark brown, and with shoulders yellowish white; scutellum grey; abdomen black, with grey hindmargins, which are partially interrupted in the middle; legs brownish-yellow, the middle and posterior femora black above; wings hyaline, the marginal cell closed; fourth posterior cell narrowly, and anal cell very narrowly, open.

Length. Male, 11 mm.

Hab. Orange, N.S.W.

Male. Face whitish, with a little brown tementum; moustache composed of a single row of stiff white bristles. Front pale brown; ocellar tubercle with long divergent black bristles. Antennæ slightly longer than the head, the first joint a little longer than the second; the third twice the length of the first two together, nearly straight above, but curved below, and terminated by a very small blunt style; the three joints are red, the style black, and the first and second joints bear white bristles. Thorax mottled with various shades of brown; the greater part of the dorsum a bright yellow-brown, with a broad dull brown median stripe, which is divided centrally by a very fine

longitudinal dark brown line, is edged outwardly on each side with light yellow-brown, and is bordered anteriorly on each side by a lengthened irregular patch of very dark brown; shoulders whitish, with a dark brown spot beneath the shoulder tubercles; thorax bears white lateral pubescence, short black median bristles, and long black and yellow lateral and posterior bristles; scutellum light grey, with two long, black, convergent, terminal bristles. Abdomen with one segment grey, remainder black, with pale hindmargins, which, according to the direction of the light, vary in colour from grey to brown, and are partially interrupted in the middle; the whole of the dorsum is powdered with brown tomentum, and the sides bear a little very short white pubescence; genitalia somewhat swollen, dark brown, with abundant white pubescence. Legs with femora and tibiæ brownish-yellow, the middle and posterior femora with the upper surface black, posterior tibiæ with apex brown, tarsi brown, the anterior pair with first joint brownish-yellow; femora with a little white pubescence; tibiæ with white bristles; tarsi with both white and black bristles. Wings hyaline; marginal cell closed, the radial vein being sharply curved up at its end so as to close the cell close to the wing-margin; first posterior cell wide open; fourth posterior cell narrowly, and anal cell very narrowly, open; halteres brown.

This species in the male, the only sex known, bears an extremely close resemblance to the small brown species of the genus *Rhabdotoitamus*: it may, however, be distinguished by the different form of the marginal cell, by the open fourth posterior cell, and by the antennæ being without any arista.

This interesting species is at present known from a male taken by Dr. Ferguson at Orange, N.S.W., on November 24, 1914.

CRYPTOPOGON, *Gen. nov.*

Wings with three submarginal cells, the upper branch of the cubital fork being connected with the radial vein by a cross-veinlet; marginal cell broadly open; all posterior cells open; anal cell closed; antennæ with a short pointed style; anterior tibiæ without a terminal curved spine; tarsi with long bristles.

Face rather narrow, widening gradually from base of antennæ to oral margin; moustache confined to the oral margin, and consisting of long stiff bristles. Front very wide above, but owing to the converging eyes narrowed to half its breadth at the base of the antennæ; vertex moderately excavated, and with a conspicuous ocellar tubercle.

Antennæ slightly longer than the head, the first and second joints short, and of about equal length, the third twice the length of the first two together, and provided with a short pointed style. Thorax almost bare of pubescence, but with lateral and posterior bristles; scutellum without bristles. Abdomen rather broad, and not in the least petiolate, altogether without bristles. Legs with femora somewhat swollen, practically bare, but with a few small, inconspicuous apical and pre-apical bristles; tibiæ slender, with long, fine bristles; tarsi with remarkably long bristles. Wings with three submarginal cells, the upper branch of the cubital fork being connected with the radial vein by a cross-veinlet; marginal cell broadly open; the three basal cells of almost equal length; all posterior cells wide open; anal cell closed.

This genus is proposed for a remarkable species, of which Dr. Ferguson took a number of specimens at Nevertire, New South Wales. The species in shape and markings bears a close resemblance to the Therevidæ, and has, indeed, been identified as such by a well-known authority; it is, however, a true Asilid. In the character of the three submarginal cells the genus agrees with the Palæarctic and North American genus *Pogonosoma*, of the subfamily *Laphrinæ*; from this genus, however, it may be at once distinguished by the open marginal cell, and the widely open first and fourth posterior cells.

It is worth noting that this curious genus comes from one of the entomologically little known inland districts; it probably does not extend to the coastal region. Only a single species is at present known, but it is not unlikely that other species will come to hand when the inland Australian fauna is properly investigated.

CRYPTOPOGON VERNACULUS, *Sp. nov.*

Face white; moustache pale yellow; antennæ black; thorax light brown, with eight white spots; abdomen black, with foremargins of segments silvery-white, the white colouration being narrow centrally, broad laterally, femora grey; tibiæ and tarsi brownish yellow, with apices grey; bristles of legs white: wings hyaline.

Length. Female, 6.5 - 8 mm.

Hab. Nevertire, N.S.W.

Female. Face white, projecting below; moustache pale yellow. Front brown, blackish at vertex, the whole bearing a little white tomentum. Antennæ black. Thorax light brown, with neck and shoulders whitish, the dorsum bearing eight more or less distinct whitish tomen-

tose spots, in addition to two short white lines on the anterior margin, and a fine white dorsal line, which extends from the anterior margin to a little beyond the middle of the dorsum; the whole dorsum bears very short stiff black pubescence, and there are also a few long black lateral and posterior bristles; scutellum small, black, without bristles. Abdomen black, with foremargins of segments silvery-white, the white colouration being narrow centrally, broad laterally; the anal segment may be entirely white or only a little whitish; the abdomen is bare, except for a little very short pubescence, which is white on the anterior segments, black at apex. Legs with the femora swollen, with inconspicuous white pubescence, and one or two small, white apical bristles; tibiae brownish yellow, apex black, the whole bearing scattered, long, white bristles; tarsi brownish-yellow, with apex black, the whole bearing remarkably long white bristles. Wings hyaline, but the course of the veins sometimes shaded faintly with brown; the posterior cells are open, the only one showing any sign of contraction being the fourth, which is narrowed on the wing margin to about half its breadth; anal cell closed, and connected with the wing margin by a short petiole; halteres brown.

This species is remarkably distinct. It can be at once recognised by its venation and by the black and white abdomen. As before mentioned, it bears a very close resemblance to a *Therevid*, but its true relationship can be easily ascertained by examining the form of the face, moustache, antennæ, proboscis, and slender neck.

This interesting species was discovered by Dr. Ferguson, who tells me that he found it occurring commonly on the edges of a dam at Nevertire, N.S.W., on March 20, 1915. It is suggestive that it occurred in company with two species of *Therevidæ*, of about the same size, one of which, an undescribed species of *Lonchorhynchus*, resembles it almost exactly in colouration, the thorax being a similar tint of brown, with similar white spots, and the abdomen being also black and white, though the white colour occupies the hind instead of the foremargins; the general resemblance between the two species is, however, very striking, and would suggest either mimicry or a parallel development of species of two distinct families brought about by similar conditions.

STENOPOGON, Loew.

Of this genus two species are recognised in Miss Ricardo's revision of the family; a third, perfectly distinct species, however, occurs not uncommonly in New

South Wales. The three species are distinguished as shown in the following table:—

Table of the Australian Species of Stenopogon.

1. Bristles of tibiæ entirely or principally black;
large species. ELONGATUS, Macq.
Bristles of legs pale yellow; smaller species 2
2. All femora black; veins of wing black.

NICOTELES, Walk.

Anterior femora with basal two-thirds black,
apical third reddish-yellow; middle femora en-
tirely reddish-yellow; posterior femora black.

Wings yellow, with foreborder and anterior
veins bright yellow.

FLAVIPENNIS, Sp. nov.

Note. The characters given in the above table easily distinguish *S. flavipennis* from *S. nicoteles*, and from the ordinary varieties of *S. elongatus*. In Tasmania, however, a scarce variety of *S. elongatus* occurs, in which the bristles of the legs are yellow; from this variety *S. flavipennis* is distinguished by the yellow instead of hyaline wings, by the reddish-yellow instead of black middle femora, and by the smaller size. It may be mentioned that both *S. elongatus* and *S. flavipennis* occur commonly in New South Wales, without showing any intermediate variations.

STENOPOGON FLAVIPENNIS, Sp. nov.

Face and moustache yellowish-white; front black; thorax black, with white tomentum at sides; abdomen black with white side-stripes; anterior femora with basal two-thirds black, apical third reddish-yellow; middle femora entirely reddish-yellow; posterior femora black; all tibiæ reddish-yellow, with extreme base black; tarsi black; bristles of tibiæ reddish yellow; wings yellow, the foreborder bright yellow; halteres light yellow.

Length. Female, 11 mm.

Hab. Sydney, N.S.W.

Female. Face and moustache yellowish white. Front black, with long black hairs. Antennæ black. Thorax black, with white tomentum at sides; thoracic pubescence black; thoracic bristles white; scutellum black. Abdomen black, shining, with indistinct white side-stripes, and sparse white pubescence. Legs with anterior femora having basal two-thirds black, apical third reddish-yellow; middle femora entirely reddish-yellow; posterior femora entirely black; all tibiæ reddish-yellow, with extreme base black; tarsi black; all femora with long, dense, white pubescence; anterior and middle femora without bristles;

posterior femora with short, black, spine-like bristles below, and a few longer ones at sides; all tibiæ with bristles, which are coloured similarly to the parts on which they occur—reddish-yellow on the reddish-yellow portions, and black on the black apical portions; tarsi with black bristles. Wings with the characteristic venation of the genus; all posterior cells open, but the fourth considerably constricted on the wing margin; second posterior cell, though wide open, is narrower on the wing margin than above, where it bulges into the third posterior cell; the wings are yellow, with the foremargin bright yellow; halteres light yellow.

This species bears a close resemblance to *S. elongatus*, but may be distinguished by the reddish-yellow instead of black tibial bristles, by the bright yellow instead of hyaline or brownish wings, by the light yellow instead of brown halteres, and by the smaller size.

Several specimens of this species have been kindly sent me by Dr. Ferguson, from New South Wales, where it appears to be not uncommon.

Subfamily Laphrinæ.

Therutria, Loew.

This genus is characterised by a curved spine on apex of the anterior tibiæ, face with a prominent tubercle, covered with a large bushy moustache, and wings with the fourth posterior cell open, or occasionally bluntly closed on the actual wing margin, and never closed above the margin, and connected thereto by a small veinlet, as in all the Australian species of *Laphria*. Three species have so far been described; a fourth is now added.

Therutria pulchripes, *Sp. nov.*

Moustache black and white (♂) or white (♀); thorax and abdomen black, the latter with yellow side-spots; femora with basal two-thirds yellow, apical third black; tibiæ similarly coloured to the femora; wings brownish, the fourth posterior cell either narrowly open or just closed on the wing-margin.

Length. Male and female, 15 mm.

Hab. New South Wales (Leura), and Victoria.

Male. Face and front black; moustache bushy, composed of intermixed black and white hairs; beard white. Antennæ black, the first and second joints of equal length, bearing black hairs, the third about one and a half times as long as the first two together. Thorax black, with

shoulder tubercles brown, and a yellow spot on each side, a little above and in front of the base of wings, the whole bearing black lateral pubescence, which is most conspicuous anteriorly, and black bristles; scutellum black, and bearing numerous black marginal bristles. Abdomen black, with yellow side-spots, and white lateral pubescence, the first segment bearing also white lateral bristles. Legs with femora having the basal two-thirds bright yellow, apical third black, devoid of bristles, but with abundant long soft pubescence, that on the yellow portion being white, on the black portion black; tibiæ with basal two-thirds bright yellow, apical third black, with short white and black pubescence disposed as on the femora, the whole bearing also stiff black bristles; tarsi black, with black bristles. Wings greyish-brown; the first posterior cell open, but narrowed on the margin to about half its breadth; fourth posterior cell very narrowly open, or closed bluntly on the extreme wing margin; anal cell very narrowly open. Halteres brown.

Female resembles the male very closely, but the moustache is entirely white, and the abdominal lateral pubescence somewhat shorter.

This species resembles *Therutria amaracus*, Walk., very closely, but differs in the femora having at least the apical third black instead of only the extreme apex, also in the coloured portion of the femora and tibiæ being a bright yellow of the same tint, instead of, as in *T. amaracus*, the femora being orange-red and the tibiæ pale-yellow.

T. pulchripes also differs from *T. amaracus* in the whiter moustache, and the more narrowed fourth posterior cell.

Of this species, a male from Leura, N.S.W., was kindly given me by Dr. Ferguson, and a female from Victoria by Mr. C. French, Jr.

METALAPHRIA, *Ricardo*.

The species contained in this genus bear a very close resemblance to those of *Therutria*, but are distinguished by the face being flat, without a tubercle, and by the moustache consisting of a single row of hairs confined to the oral opening. The genus was proposed by Miss Ricardo for a North Australian species; a New South Wales species is now added.

METALAPHRIA AURIFACIES, *Sp. nov.*

Face golden; moustache and antennæ black; front grey; thorax black, with golden shoulder spots; abdomen

black, with sides yellow; femora red; tibiæ and tarsi black; wings brownish.

Length. Male, 11 mm.

Hab. Sydney, N.S.W.

Male. Face dark golden; moustache consisting of about nine long, bristle-like, black hairs, which project horizontally; beard white. Palpi prominent, black, with abundant white hairs. Antennæ black, the first and second joints of equal length, and bearing stiff black hairs, the third one-and-a-half times the length of the first two together. Front grey, with a bunch of black hairs on either side of the middle; ocellar tubercle black, with long bristle-like hairs. Thorax black, with golden shoulder-spots, and with shoulder tubercles, lateral and posterior margins yellow; thoracic bristles black; scutellum pale golden, with two long, black, converging, marginal bristles. Abdomen black, punctate, with sides yellow, practically bare, but with a tuft of white hairs on each side of the first segment; genitalia swollen, with white pubescence. Legs with femora red, bare, the posterior pair with a short stripe, and apex black; anterior tibiæ red, middle tibiæ red with apex broadly black, posterior femora wholly black; all tibiæ bear long white bristles, which are much the most numerous on the posterior pair; the anterior and middle tibiæ also bear short black bristles; tarsi black, with black bristles, the first joint of anterior and middle tarsi red at base. Wings brownish; the first posterior cell wide open, the fourth also open, but narrowed on the wing margin to less than half its breadth; anal cell very narrowly open. Halteres yellow.

This species is very distinct from the only other known Australian species, *M. australis*, Ricardo. The abdomen is black, with sides yellow, instead of black with apex red, the moustache black, instead of yellowish-white, the antennæ black, instead of reddish-yellow, and the posterior tibiæ black with white bristles, instead of red with black bristles; it is also larger in size.

M. aurifacies is at present only known from a single specimen, taken by Dr. Ferguson at Roseville, Sydney, on December 26, 1914.

ATOMOSIA, Macq.

This genus comprises small species, which have the cross-veins closing the discal and fourth posterior cells parallel; the anterior tibiæ are without an apical curved spine, and all the tibiæ and tarsi bear remarkably long

hair-like bristles. One Australian species was described by Miss Ricardo, and a second species is now added.

ATOMOSIA CULICIVORA, Sp. nov.

Face and moustache silvery white; antennæ black; thorax shining black; abdomen black, coarsely punctate, and with small white lateral bristles; femora yellowish-red, the posterior pair with a broad black band near the base; anterior and middle tarsi light brown; posterior tibiæ a shining dark brown; tarsi brown; wings tinged evenly with brown.

Length. Female, 6 mm.

Hab. Eidsvold, Queensland.

Female. Face and moustache silvery white, the moustache consisting of a fringe of drooping bristle-like hairs, which are confined to the oral margin; front similarly coloured to the face, with a small, black, much up-standing ocellar tubercle, which bears two small black bristles. Thorax shining black, with short black pubescence and black lateral bristles; scutellum black, with about four very fine marginal hair-like bristles. Abdomen deep black, coarsely punctate, with short white lateral bristles, and apex with long black hairs. Legs with femora yellowish-red, the posterior pair with a broad black band, which commences close to the base, and extends to beyond the middle; anterior and middle tibiæ dull pale brown; posterior tibiæ shining dark brown; tarsi brown; the femora are practically bare, but the middle pair have one, and the posterior pair two, black bristles on the upper side, but this number may not be constant: tibiæ and tarsi with numerous very long, black, hair-like bristles, and, in addition, the posterior tibiæ bear a remarkably long black bristle on the upper side; the tibiæ are also provided with a fringe of white pubescence on the lower side. Wings tinged evenly with brown; the first posterior cell wide open, the fourth closed considerably above the wing margin, the cross-vein closing it in an almost straight line with that closing the discal cell; anal cell closed. Halteres yellowish-white.

This species is easily distinguished from *A. australis*, Ricardo, the only other known Australian species, by the wings being evenly tinged with brown, instead of being hyaline, with the wing-veins, and particularly the base of the cubital fork, being conspicuously suffused with brown, by the femora being yellowish-red instead of black, and by the abdomen being deep black instead of purple or blue-black.

Two specimens of this species, taken by Dr. T. L. Bancroft at Eidsvold, Queensland, were kindly sent me for examination by Dr. Ferguson. Dr. Bancroft supplies the interesting information that the species preys on mosquitos. Date of capture, March 28, 1915.

LAPHRIA, *Meig.*

Of this genus ten Australian species have so far been described; two additional species are now added.

LAPHRIA VARIANA, *Sp. nov.*

Face covered with procumbent golden hairs; moustache black and golden; thorax black, with four yellowish-white spots; abdomen golden-yellow, with first segment and genitalia black; femora with basal half golden-yellow, apical half black; tibiæ golden-yellow with base and apex black; tarsi black; wings brown, a little hyaline at base.

Length. Male, 12.5 mm.

Hab. Tweed River, New South Wales.

Male. Face covered with long, procumbent, golden hairs; moustache bushy, black above, golden below; beard pale yellow. Front black, with long black hairs on vertex. Antennæ black, the first joint twice the length of the second, the third slightly longer than the first two together. Thorax velvet black, with pale yellow shoulder spots, and a similar spot on either side of the dorsum, the whole bearing black pubescence, and black lateral bristles; scutellum black. Abdomen rather narrow, first segment black, second to sixth segments golden yellow, all bearing golden-yellow pubescence; genitalia black, with long black hairs. Legs black and golden-yellow, the femora with rather more than the basal half yellow, remainder black; tibiæ golden-yellow, with base and apex black, the posterior pair much curved, and with the black basal portion occupying a third of their length; tarsi black; the legs are clothed with long, dense pubescence, which is yellow on the yellow parts, black on the black parts. Wings brown, but a little hyaline at the base; first posterior cell open, but a little contracted towards the wing margin; fourth posterior and anal cells closed; halteres yellow.

This species is remarkably distinct; it can be distinguished at once from all the other Australian species of *Laphria* by the yellow abdomen. The only specimen at present known was kindly sent me by Dr. Cleland; it was taken at the Tweed River, N.S.W.

LAPHRIA COMATA, *Sp. nov.*

Face bearing long white hairs; moustache black; thorax greenish-black; abdomen blue-black; anterior femora entirely blue-black; middle femora with basal half yellow, apical half blue-black; posterior femora with basal two-thirds yellow, apical third blue-black; all tibiæ blue-black; wings brownish, darkest at the tips, and with the base hyaline.

Length. Male, 16 mm.

Hab. Victoria.

Male. Face bearing long white hairs; moustache black, large and bushy; beard white. Front black. Antennæ black, the first joint twice the length of the second, the third considerably broadened, and about one-and-a-half times the length of the first two together; the first and second joints bear long black hairs. Thorax shining greenish-black, with whitish shoulder spots, abundant black pubescence, and black lateral bristles; scutellum similarly coloured to the thorax, with six long, semi-erect, black marginal hair-like bristles. Abdomen slender, shining blue-black, with white lateral spots and white lateral pubescence; genitalia with stiff black hairs. Legs with anterior femora wholly blue-black, middle femora with basal half yellow, apical half blue-black; posterior femora with basal two-thirds yellow, apical third blue-black; all tibiæ blue-black; tarsi black; the femora bear abundant long pubescence, which is yellow on the yellow parts, black on the black parts; tibiæ with long white and black pubescence, and also black bristles; tarsi with black bristles. Wings brownish, darkest at the tips, and with the base hyaline; the first posterior cell is much contracted on the wing-margin, the fourth posterior and anal cells closed; halteres yellow.

This species is distinguished by the colouring of the femora. It resembles both *L. telecles* and *L. rufifemorata*, but is distinguished from the former species by having both the middle and posterior femora partly yellow, whereas in *L. telecles* only the posterior pair are partly yellow, and from *L. rufifemorata* by the anterior femora being entirely black, instead of, as in that species, all the femora being partly yellow. *L. comata* is further distinguished from both these species by the marginal bristles of the scutellum being black instead of yellowish, and by their being fewer in number, stiffer, and more erect, also by the strong bristles of the tibiæ.

This species is at present only known from a single Victorian specimen, kindly given me by Mr. C. French, Jun.

Subfamily Asilinæ.

Some suggestions are here given for a slight revision of the Australian genera belonging to this subfamily.

The old genus *Asilus*, on account of the vast number of species that it contained, was divided up by Loew into a number of subsidiary groups, which are regarded by different entomologists either as true genera or as subgenera of *Asilus*. The groups more particularly referred to the species of the palæarctic and nearctic regions, and in classifying these they have proved a great convenience. An attempt has also been made to include the Australian species in the same groups, but I think incorrectly. I have carefully compared the Australian with the principal palæarctic groups, and have come to the conclusion that the differences shown by the former are too considerable to admit of their being placed together; there is a considerable resemblance between the groups of the two regions, but this resemblance seems to have been merely the effect of an independent development proceeding on parallel lines. To give an illustration, an Australian species has been placed in the genus *Dysmachus* under the name of *D. rudis*. Now, although it resembles *Dysmachus* in having a mane of long bristles descending to the anterior margin of the thorax, it differs in the fundamental character of the ovipositor, for whereas in *Dysmachus* the terminal lamellæ are wedged in beneath the upper piece of the ovipositor, as is also the case with *Eutolmus*, in the Australian species they are free, thus showing its relationship with quite different groups. As to the Australian species of *Neotamus*, a few of these are fairly typical, though even of these one species has the tibiæ completely black, instead of the usual orange; but there are also a large number of other species at present included in the genus, which show every gradation between it and *Cerdistus*, *Machimus*, *Epitriptus*, and *Stilpnogaster*, though at the same time not agreeing exactly with any of them. Under the circumstances a somewhat different system of classification of the Australian species seems to be called for. Now, when the whole of these species are considered, they will be found to fall into five main groups, which I regard as true genera; of these *Ommatius*, *Blepharotes*, and *Pararatus* require but short notice, as their limits are well defined, and they contain only a small number of species. *Ommatius* is distinguished at once by the feathered antennal style, *Blepharotes* by the broad abdomen with lateral tufts of hair, and *Pararatus* by the short and thickened antennal style. When, however, these three genera are separated off, the great majority of the Australian species will still remain unaccounted for. Now, these

numerous species will be found to fall into two groups, in one of which the ovipositor is small, and not laterally compressed, the male genitalia are globular, and distinctly broader than the preceding abdominal segment, and the species are large and brightly coloured; in the other group the ovipositor is large and laterally compressed, the male genitalia not globular, and not broader than the preceding abdominal segment, or hardly so, and the species are of small or medium size, and are not brightly coloured; the two groups I propose placing under the existing names of *Asilus* and *Neoitamus*. It will now be found that each of these genera breaks up naturally into minor groups, which may be treated either as subgenera of *Asilus* and *Neoitamus* respectively, or as true genera; these groups are as follows:—

Genus *ASILUS*, L.

Subgenus *ASILUS* (*sensu stricto*).

NEOARATUS, Ricardo.

Genus *NEOITAMUS*, Ost-Sack

Subgenus *TRICHOITAMUS*, *s.g. nov.*

NEOITAMUS (*sensu stricto*).

RHABDOTOITAMUS, *s.g. nov.*

The distinguishing characters of these groups are shown in the table below.

Besides the genera already referred to, the following genera, or subgenera, *Glaphyropyga*, *Dysmachus*, *Machimus*, *Heligmoneura*, and *Cerdistus* have been recorded from Australia, but probably none of these really occur, taking them in their strict sense. The species described by Schiner under *Glaphyropyga* is unknown; Miss Ricardo suggests that it may be a *Heligmoneura*, but in the absence of the type it is impossible to ascertain its true position. The species placed under *Dysmachus* does not belong to that genus, owing to the terminal lamellæ of the ovipositor being free; I have placed it in a new genus, *Trichoitamus*. *Machimus* was recorded doubtfully by Miss Ricardo from a specimen in bad condition; but probably no true *Machimus* occurs in Australia. The same is also true of *Heligmoneura*, so far as Australian species are concerned, although the genus is known to occur in New Zealand. The species described under *Cerdistus* probably belong to the subgenus *Neoitamus*, as defined below; as before mentioned, no satisfactory distinction can be found in Australian species between the two groups. It is worthy of note that in none of the

Australian species of *Neoitamus* is the sixth abdominal segment included in the ovipositor.

Of the subfamily *Asilinae* eight new species are here described; they comprise one *Ommatius*, one *Asilus*, two *Neoitamus*, and four *Rhabdotoitamus*.

Table of the Australian Genera of the Asilinae.

- | | | |
|----|---|----|
| 1. | Wings with three submarginal cells. | 2 |
| | Wings with only two submarginal cells. | 3 |
| 2. | Base of the cubital fork not nearly reaching back to the end of the discal cell. <i>PROMACHUS</i> , Loew. | |
| | Base of the cubital fork reaching back beyond the end of the discal cell. <i>PHILODICUS</i> , Walk. | |
| 3 | Lower branch of the cubital fork ending in or above the wing-tip | 4 |
| | Lower branch of the cubital fork ending below the wing-tip. | 5 |
| 4 | Ovipositor cylindrical, with a terminal circlet of spines <i>PROCTACANTHUS</i> , Macq. | |
| | Ovipositor laterally compressed, without a terminal circlet of spines. <i>ERAX</i> , Scop. | |
| | The following are comprised in the old genus <i>Asilus</i> :— | |
| 5. | Style of antennæ feathered. <i>OMMATIUS</i> , Wied. | |
| | Style of antennæ bare. | 6 |
| 6 | Abdomen very broad, with lateral tufts of hair. <i>BLEPHAROTES</i> , Westw. | |
| | Abdomen narrow, without lateral tufts of hair. | 7 |
| 7. | Antennal style short and thickened. <i>PARARATUS</i> , Ricardo. | |
| | Antennal style long and slender. | 8 |
| 8 | Ovipositor cylindrical, and not laterally compressed; genitalia of male globular; large, brightly coloured species <i>ASILUS</i> (<i>Sensu lato</i>). | 9 |
| | Ovipositor laterally compressed, considerably lengthened, and with the terminal lamellæ always free; genitalia of male not globular; species small, or of moderate size, and not brightly coloured. <i>NEOITAMUS</i> (<i>Sensu lato</i>). | 10 |
| 9 | Costal border of wing inflated in the male. <i>NEOARATUS</i> , Ricardo. | |
| | Costal border of wing not inflated in either sex. <i>ASILUS</i> , L. | |

10. Thorax with long bristles, which extend from the anterior to the posterior margin.

TRICHOITAMUS, *Gen. nov.*

Thorax with the bristles on the anterior half much shorter than those on the posterior half 11

11. Black or grey species with the ovipositor often greatly elongated, femora always entirely black.

NEOITAMUS, *Ost-Sack.*

Brownish species, with the ovipositor usually not so elongated, femora never entirely black, and usually striped longitudinally, the upper surface being black, the lower red, yellow, or light brown.

RHABDOTOITAMUS, *Gen. nov.*

OMMATIUS, *Wied.*

Of this genus, distinguished by the feathered antennal style, nine Australian species have so far been described; one additional species is now added.

OMMATIUS OBSCURUS, *Sp. nov.*

Face grey; moustache black above white below; thorax, abdomen, and legs black, the tibiæ a little rusty at the knees; scutellum with two black marginal bristles; wings almost hyaline, but tinged faintly with brown along the costal margin.

Length. Male, 8 mm.

Hab. Milson Is., N.S.W.

Male. Face grey; moustache composed of long black bristles above, and a few white bristles below. Front grey, with ocellar tubercle black. Antennæ black. Thorax black, with a little grey tomentum on shoulders, at sides, and along the posterior margin, the whole bearing short anterior and long posterior bristles; scutellum black, with two long black marginal bristles. Abdomen black, the hindmargins of segments very narrowly brown, almost bare, but with a little white pubescence at base. Legs black, the tibiæ brown at the knees; femora with white pubescence; tibiæ and tarsi with black bristles, the anterior tarsi bearing also a few white bristles, but the latter character may not be constant. Wings rilled, but not inflated, almost hyaline, but with the costal margin tinged with brown, especially towards the tips. Halteres dull yellowish-white bordered with brown.

The only other small Australian species of *Ommatius* with black legs are *O. pilosus*, from Tasmania and South

Australia, and *O. levis* from Tasmania; from the former of these species *O. obscurus* is distinguished by the much less hairy body and legs, and by the wings in the male being without any sign of inflation, from the latter by the almost hyaline wings, whilst from both these species it is distinguished by the scutellum bearing only two marginal black bristles instead of numerous white ones.

O. obscurus is at present only known from a male taken by Dr. Ferguson at Milson Is., N.S.W., on April 10, 1914.

ASILUS, L.

Of this genus a very large number of Australian species were originally described, but only ten of these seem to belong to the genus in its restricted sense; one additional species is now added.

ASILUS AUREUS, *Sp. nov.*

Antennæ with basal two-thirds of first joint yellow, remainder of first and all of second and third joints black; thorax pale yellow, with a broad velvet black centre stripe, and shorter similarly coloured interrupted side stripes; abdomen entirely golden yellow; legs golden yellow, the bristles of tibiæ entirely black.

Length. Female, 16 mm.

Hab. Victoria (?Ouyen, Mallee.)

Female. Face yellow; moustache pale yellow, with a few black hairs beneath. Antennæ with the basal two-thirds of first joint yellow; apex of first joint and all of second and third joints black; style much shorter than the third joint. Front yellow, with the ocellar tubercle brownish. Thorax pale yellow, with a broad velvet black centre stripe and shorter, similarly coloured interrupted side stripes; bristles of thorax black; scutellum black, with a little yellow tomentum, and two marginal long black bristles. Abdomen entirely bright golden yellow, the posterior margins of segments with black bristles: ovipositor short, conical. Legs golden yellow, with the knees and tips of tarsi black; bristles of femora mostly black, but with a few white ones, those of tibiæ and tarsi entirely black. Wings hyaline, shaded with grey at tips and along the inner margin, with the veins black.

This species may be easily recognised by its bright golden-yellow abdomen and legs; of the already described Australian species it bears the closest resemblance to *A. hyagnis*, *Walk.*, but may be distinguished from that species by the antennæ being only yellow at the base instead of entirely yellow, the abdomen golden-yellow instead of ochre-

yellow, the abdominal bristles black instead of yellow, the bristles of the tibiæ entirely black instead of mostly yellow, and veins of wings black instead of light brown.

This description is taken from a specimen kindly sent me for examination by Mr. Spry. Other specimens are in the collection of the British Museum.

TRICHOITAMUS, *Gen. nov.*

This genus is proposed for the species previously placed in the genus *Dysmachus* (*D. rudis*, *Wlk.*), but which the structure of the ovipositor shows does not belong to that genus. It may be characterised as follows:—

Thoracic bristles long on the anterior as well as the posterior half; abdomen with lateral bristles; ovipositor laterally compressed, and with the terminal lamellæ free.

Face bearing a large bushy moustache, which reaches almost to the base of the antennæ. Antennæ with the first joint twice the length of the second, the third slender, nearly twice as long as the first two together, and provided with a thin style, which is about half its length. Thorax bearing long dense bristles, which are long on the anterior as well as the posterior half. Scutellum with two long marginal bristles. Abdomen long and slender, with lateral hindmarginal bristles. Genitalia of the male lengthened, about the same breadth as, or a little broader than, the previous abdominal segment. Abdomen in the female consisting of seven segments, and a laterally compressed ovipositor, the latter having the terminal lamellæ free, the total length of the ovipositor being about equal to that of the two preceding abdominal segments together. Legs hairy and bristly, both femora and tibiæ bearing bristles. Wings with the ordinary venation of *Neoitamus*.

Of this genus only a single species, *T. rudis*, *Walk.*, is at present known. It occurs commonly in both New South Wales and Tasmania, and doubtless also in Victoria. It is fully described in both Miss Ricardo's Revision of the Australian Asilidæ, and in my Diptera-Brachycera of Tasmania, Part III.

NEOITAMUS, *Ost-Sack.*

The species remaining in this genus, even after removing the small brownish species with striped femora, which I have placed in a new genus, *Rhabdotoitamus*, are not quite a homogeneous group. The three species, *N. hyalipennis*, *N. vulgatus*, and *N. flavicinctus*, are fairly typical of the genus as applied to Palæarctic and Nearctic species, although in none of these is the sixth abdominal segment included in the ovipositor, whilst the third species named

has the tibiæ entirely black instead of the usual orange; the remaining five species, however, have the ovipositor shorter, and can hardly be described as typical, but as the difference between these and other species is a very slight one, and as all seem to be very nearly related, I should not feel justified in separating them. If any objection should be made as to these species being placed in the genus *Neoitamus*, it would be best to remove the whole of the eight species, and place them in a new Australian genus.

Some difference in length of the thoracic bristles is shown in the different species. In *N. flavicinctus* the bristles on the anterior half of the thorax are fairly long (though shorter than on the posterior half); this character connects the species with *Trichoitamus*, but it is distinguished from that genus by the greatly lengthened ovipositor and by the absence of abdominal lateral bristles. In *N. vulgatus* and *N. hyalipennis* the interior bristles are shorter, though still of fair length, in the remaining species shorter still. *N. lividus* differs somewhat from the other species in the blue-black colouration, and the more conspicuous abdominal lateral bristles; it may show some relationship with the genus *Stilpnogaster*, but is too nearly allied to the other Australian species of *Neoitamus* to be separated from them.

The genus, so far as the Australian species are concerned, may be characterised as having the abdomen slender, either without lateral bristles or with small inconspicuous ones; genitalia of the male lengthened, but not broader than the preceding abdominal segment, or hardly so; ovipositor in the female laterally compressed, and sometimes greatly elongated, but the amount of elongation varying in the different species; legs with the femora entirely black.

Taking the genus in this sense, eight Australian species are at present known to occur. They are distinguished as follows:—

Table of the Australian Species of Neoitamus.

1. Abdomen a uniform shining blue-black, with black lateral bristles; tibiæ dark brown.

LIVIDUS, *Sp. nov.*

Abdomen never shining blue-black, and with the hindmargins of segments white, yellow, or pale brown.

2

2. Tibiæ entirely black; hindmargins of abdominal segments yellow.

FLAVICINCTUS, *White.*

Tibiæ always partly red, brown, or yellow.

3

- 3 Wings with four distinct brown spots.
MACULATUS, *White*.
 Wings without any sign of spots except in *N. caliginosus*, in which small indistinct spots are sometimes visible. 4
- 4 Scutellum with four marginal bristles. 5
 Scutellum with two marginal bristles. 6
5. Scutellar bristles usually yellow, but sometimes black; large species with elongated ovipositor.
HYALIPENNIS, *Ricardo*.
 Scutellar bristles black; very small species, with a less elongated ovipositor.
DIVARICATUS, *Sp. nov.*
6. Wings with the second posterior cell conspicuously contracted at a short distance from the wing margin; anterior tibiæ blackish; ovipositor with the terminal lamellæ unusually short.
ABDITUS, *White*.
 Wings with the second posterior cell broad, and not contracted. 7
7. Bristles of abdomen white; moustache of female largely black.
VULGATUS, *White*.
 Bristles of abdomen black; moustache of female almost entirely white; wings usually suffused with brown at apex of second basal cell, at anterior cross-vein, and at base of cubital fork.
CALIGINOSUS, *White*.

The above species occur as follows:—

<i>N. lividus</i>	...	New South Wales, Victoria.
<i>N. flavicinctus</i>	...	Tasmania.
<i>N. maculatus</i>	...	Western Australia.
<i>N. hyalipennis</i>	...	Tasmania, Victoria.
<i>N. divaricatus</i>	...	New South Wales.
<i>N. abditus</i>	...	Tasmania.
<i>N. vulgatus</i>	...	New South Wales, Tasmania.
<i>N. caliginosus</i>	...	New South Wales, Tasmania.

NEOITAMUS LIVIDUS, *Sp. nov.*

Thorax black with an indistinct single or double centre stripe; abdomen shining blue-black, with short hind-marginal black bristles; femora black, tibiæ dark brown, with white and black bristles; wings hyaline with very distinct black veins; the anterior cross-vein situated well

beyond the middle, and almost in a line with the veinlet closing the fourth posterior cell.

Length. Male, 10.5 mm; female, 12 - 14 mm.

Hab. Healesville, Victoria, and Milson Is., New South Wales.

Female. (As this sex is the most distinct, and shows the specific characters most clearly, I describe it first.) Face with a large tubercle, which is grey, and bears a bushy moustache of black and white hairs, the black predominating; face above the tubercle, and the front black. Thorax black, with an indistinct black centre stripe; anterior half bearing very short black bristles, posterior half with long black, and about two slender white ones; scutellum similarly coloured to the thorax, and bearing two long white marginal bristles, as well as short black bristle-like hairs. Abdomen shining blue-black, the hindmargins of segments similarly coloured, and only distinguished by their smoother appearance, the whole bearing short, stiff, bristle-like pubescence and short black, lateral, hindmarginal bristles; ventral surface brownish-black. Legs with femora black, tibiæ and first tarsal joint dark brown, remaining tarsal joints black; femora and tibiæ with both white and black bristles; tarsi with black bristles. Wings hyaline, the veins black and prominent; cubital fork long and slender, contracted in the middle, and spread out somewhat widely as it reaches the wing-margin; second posterior cell with the enclosing veinlets a little waved on both sides; anterior cross-vein situated well beyond the middle of the discal cell, and almost in a line with the veinlet closing the fourth posterior cell; halteres light brown, with rim dark brown.

Male agrees fairly well with the description of the female given above, but the black thorax is mottled at the sides with grey, and there is a distinct black double median stripe: the abdomen is more pubescent, and on the legs white bristles predominate over the black, and extend to the tarsi.

This species, especially in the female, is very distinct in appearance from the other members of the genus; it may be distinguished by the uniform blue-black colouration of the abdomen, and by the anterior cross-vein being situated over the apical half of the discal cell instead of near the middle, as in the other species.

Of this species I took two females settled on tree-trunks in the bush at Healesville, Victoria, on December 13, 1914, and Dr. Ferguson has kindly sent me a male, taken by himself, at Milson Is., N.S.W., on October 31, 1914.

NEOITAMUS DIVARICATUS, *Sp. nov.*

Thorax black, with shoulders and sides white; scutellum with four black marginal bristles; abdomen black, with hindmargins of at least the second and third segments white; femora black; tibiæ with basal two-thirds brownish-yellow or bright yellow, remainder black or brown; bristles of legs entirely black; wings brownish or hyaline.

Length. Male, 11.5 mm; female, 10.5 mm.

Hab. Roseville, Sydney, N.S.W.

Male. Face black, with a large grey tubercle, the latter bearing a bushy black and white moustache, the black predominating. Antennæ and front black, the latter bearing black hairs. Thorax black, with shoulders and sides white, and an indistinct double black median stripe; thoracic bristles entirely black; scutellum black, with four long black marginal bristles, as well as black hairs. Abdomen black, with hindmargins of segments white, those of the second and third segments being most distinct, the whole bearing white lateral pubescence, but without bristles. Femora entirely black, with white pubescence, few black apical bristles above, and a few very short black bristles below; tibiæ with basal two-thirds brownish yellow, apical third and tarsi black; both tibiæ and tarsi with black bristles. Wings brownish, the second posterior cell not contracted.

Female resembles the male, but the moustache is composed almost equally of black and of white hairs; the basal two-thirds of tibiæ are bright yellow, and the wings are hyaline; ovipositor considerably lengthened.

This species may be readily recognised by the four scutellar bristles, which are black in both sexes, in conjunction with the small size; the only other Australian species having four scutellar bristles is *N. hyalipennis*, which is a very much larger species, with the scutellar bristles usually yellow.

N. divaricatus has been taken at Roseville, Sydney, by Dr. Fergusson, to whom I am indebted for a specimen of each sex.

RHABDOTOITAMUS, *Gen. nov.*

Small brownish species, having the ovipositor laterally compressed, but not usually so elongated as in *Neoitamus*; femora never wholly black, and usually striped longitudinally, the upper surface being black, the lower surface red, yellow, or light brown.

Face with the lower part occupied by a tubercle of moderate size, which bears a bushy moustache. Antennæ

slender, the first joint about twice the length of the second, the third about the same length as the first two together, and terminated by a slender style, which varies somewhat in length in the different species. Thorax with the bristles on the anterior half very short, on the posterior half long; scutellum with marginal bristles. Abdomen slender, with lateral bristles, which are longer in the male than in the female; genitalia of the male about equal in breadth to the preceding abdominal segment, lengthened, and never globular; ovipositor laterally compressed, sometimes considerably elongated, but usually not so much so as in *Neoitamus*, the terminal lamellæ always free. Legs with the femora never entirely black, and, in all except one rather aberrant species, longitudinally striped, the upper surface being black, the lower red, yellow, or light brown; tibiæ coloured similarly to the lighter part of the femora, with the apex black; femora, tibiæ, and tarsi with long bristles. Wings hyaline or brownish, rilled, but not inflated, and with the normal venation of *Asilus*.

The species comprised in this genus form a very characteristic Australian group. They can be recognised at once by their longitudinally striped femora. In appearance they most closely resemble the palæarctic genus *Epitriptus*, Loew, but are distinguished from that genus by the differently striped legs, by the larger and more swollen genitalia of the male, and by the more slender and more elongated ovipositor. Seven species are at present known, some of these occur settled on the ground, others among long grass, but I have never met with any of them on fences, logs, or tree-trunks, in which situation the true species of *Neoitamus* so commonly occur.

Table of the Australian Species of Rhabdotoitamus.

- | | |
|--|----|
| 1. Bristles on the posterior half of thorax white, or mostly so; bristles on the scutellum always white or yellow. | 2 |
| Bristles on the posterior half of thorax entirely black, except in <i>R. lautus</i> , where a few small white ones may be present adjoining the scutellum. | 4 |
| 2. Femora not striped, and mostly black, only the base of the middle pair, and the basal third of the posterior pair being yellow. | |
| VOLATICUS, <i>Sp. nov.</i> | |
| Femora striped longitudinally. | 3. |
| 3. Femora broadly black above, red (♂) or yellow-brown (♀) below; tibiæ yellow-brown in both sexes. | |
| GRAMINIS, <i>White.</i> | |

Femora and tibiæ extensively bright orange.

CLARIPES, *Sp. nov.*

4. Scutellar bristles yellow; bristles of the legs mostly yellow. MISTIPES, *Macq.*
Scutellar bristles black. 5

5. Antennæ with first joint red; abdomen brown, with the segmentations only indistinctly paler.

BRUNNEUS, *White.*

Antennæ entirely black; abdomen with the segmentations distinct. 6

6. Abdomen dark red-brown or blackish, but always with a red-brown tinge in places, the segmentations white, the white colouration being confined to the hindmargins of segments; femora with the lower surface orange-brown, the line of demarcation between this and the black upper surface not very distinct.

RUSTICANUS, *Sp. nov.*

Abdomen black, without any red brown-tinge, the pale segmentations not confined to the hindmargins of segments, but extended forwards on either side; femora with the lower surface pale yellow, the line of demarcation between this and the deep black upper surface very distinct.

LAUTES, *Sp. nov.*

RHABDOTOITAMUS VOLATICUS, *Sp. nov.*

Face pale yellow; moustache white; thorax light brownish grey, with a broad black centre-stripe and similarly-coloured interrupted side-stripes; posterior thoracic bristles white, or largely so; abdomen black, with more or less yellowish tomentum, and slender white lateral bristles, femora black, with base of middle pair, and basal third of posterior pair, yellow; tibiæ light yellow-brown, with apex and tarsi black; wings hyaline or tinged with grey towards the tips.

Length. Male and female, 11.5 mm.

Hab. Milson Is., N.S.W.

Male. Face pale yellow; moustache scanty, entirely white. Antennæ black, the first joint twice the length of the second, the third about as long as the first two together, and terminated by a slender style which is about equal to it in length. Front light grey-brown, the ocellar tubercle black. Thorax light brownish-grey, the shoulders whitish, with a broad black median stripe, and an interrupted black stripe on either side; bristles on anterior half extremely short, black, on posterior half long,

mostly white, but with a few black ones; scutellum grey, with two white, weak, marginal bristles. Abdomen black, with yellowish tomentum, which is most conspicuous towards the hindmargins of segments, the sides with long slender white hindmarginal bristles, and short black bristly pubescence; genitalia long, with black pubescence. Legs with femora black, the base of middle pair, and basal third of posterior pair, yellow; tibiæ light yellow-brown, with apex and tarsi black; all joints with numerous white, and a few black, bristles. Wings tinged with grey towards the tips; cubital fork long, and hardly contracted; second posterior cell a little waved, both above and below, and slightly contracted; the mediastinal and subcostal veins where they approach the costa are darkened, which gives the wings a stigma-like appearance; halteres yellow.

Female resembles the male very closely, but the white bristles of the thorax are fewer in number, the median thoracic stripe is narrowly divided, the abdominal lateral bristles are smaller, and less conspicuous, and the anterior femora have the base narrowly yellow instead of being entirely black; the abdomen consists of seven obvious segments in addition to the ovipositor, the latter being laterally compressed, long, and slender.

This species is distinguished from all the other species of *Rhabdotoitamus* by the leg being unstriped; it seems to be nearly allied to *Neoitamus*, but I have separated it from that genus on account of the femora being partly yellow, and the presence of white thoracic bristles, in conjunction with the smaller and less bushy moustache, and general appearance.

Of this species a specimen of each sex were taken by Dr. Ferguson at Milson Island, N.S.W., on October 31, 1914. In my *Diptera-Brachycera* of Tasmania, Part III., I referred to these specimens as varieties of *N. graminis*, but I now consider that they represent a distinct species.

RHABDOTOITAMUS CLARIPES, *Sp. nov*

Face light yellow; moustache white (♂) or yellow (♀); thorax light brown, with one broad dorsal and two lateral black stripes; bristles on posterior half of thorax mostly white; abdomen black with hindmargins of segments yellow-brown; legs extensively bright orange; wings hyaline or brownish.

Length. Male, 11.5 mm; female, 15 mm.

Male. Moustache white, scanty. Antennæ and front black. Thorax light brown, with one broad dorsal and

two lateral black stripes; bristles on anterior half of thorax black, extremely short, on posterior half of thorax long and mostly white; scutellum grey, with two weak white terminal bristles. Abdomen black, with hindmargins of segments yellow-brown, the sides with white and yellow bristles, the latter being especially long on the hindmargins of the fourth abdominal segment; genitalia somewhat swollen, and bearing short black bristle-like pubescence. Legs with femora bright orange, with apex black, the black colour being carried back stripe-like on the outer sides, so that, viewed from in front, the femora are almost half black, whilst, viewed from behind, they are bright orange, with only the apex black; tibiæ bright orange, with apex black; tarsi black, with the first joint brownish; femora with black apical and pre-apical bristles, and, also, on the lower surface, with long white hair-like bristles; tibiæ and tarsi with black bristles. Wings tinged with brown, particularly along the costal margin; the mediastinal and subcostal veins brown, remaining veins black; the cubital fork not contracted, and spread out as it reaches the wing-margin; second posterior cell waved both above and below. Halteres orange-brown.

Female resembles the male, but the black stripes on the outer side of the orange posterior femora extend from base to apex, the abdominal lateral bristles are much shorter, and the abdomen is produced into a long narrow ovipositor; the abdomen consists of seven segments, in addition to the ovipositor.

This species is easily distinguished from all the other known species of *Rhabdotoitamus* by the bright orange femora and tibiæ, in conjunction with the white thoracic bristles. Specimens of the female, taken at Leura, N.S.W., and of the male, taken at Roseville, Sydney, on February 20, 1916, have kindly been sent me by Dr. Ferguson.

RHABDOTOITAMUS CRAMINIS, White.

Syn. *Neoitamus graminis, White.*

This species is at present only known with certainty to occur in Tasmania, where it seems to be generally rare. It resembles *R. volaticus*, but may be distinguished by the femora being distinctly striped, instead of having only the base yellow, and by the wings having the cubital fork more widely open on the wing margin, and by the broader and less sinuated second posterior cell. It occurs amongst long grass on high ground.

RHABDOTOITAMUS MISTIPES, *Macq.*Syn. *Neoitamus mistipes*, *Macq.*

This species, which is unknown to me, was described by Macquart, from Mount Gambier, South Australia.

It is described as having the thorax blackish-brown, covered with yellowish tomentum, with two median and two lateral black stripes; thoracic bristles entirely black; scutellum with two weak yellow marginal bristles; abdomen blackish-brown, with yellowish tomentum, and yellow lateral bristles; femora black above, yellow below; tibiæ yellow with apical third black; bristles of tibiæ and tarsi yellow; wings hyaline.

This species should be readily distinguished from the other species, having the thoracic bristles entirely black, by the yellow scutellar bristles, in conjunction with the yellow bristles of the legs.

RHABDOTOITAMUS BRUNNEUS, *White.*Syn. *Neoitamus brunneus*, *White.*

This is probably the commonest and most widely distributed species of the genus. It occurs in New South Wales, Victoria, and Tasmania. It may be recognised without difficulty by its uniform brown colouration, and by the first antennal joint being red, instead of black, as in the other known species. It occurs settled on the ground on roads and on warm hillsides.

RHABDOTOITAMUS RUSTICANUS, *Sp. nov.*

Face yellowish-white; moustache black above, white below; thorax yellow-brown, with two well-separated black median stripes, and two doubly-interrupted side stripes; bristles of thorax entirely black; scutellum with two black marginal bristles; abdomen dark red-brown or blackish, but always with a red-brown tinge in places, the segmentations white, the white colouration being confined to the hindmargins of segments; femora with the upper surface black, the lower surface orange-brown, the line of demarcation between the black and orange-brown not very distinct; wings hyaline or tinged faintly with brown.

Length. Male, 11 mm; female, 11-12 mm.

Hab. Fern Tree Gully, Victoria.

Male. Face yellowish-white, the moustache rather bushy, consisting of black hairs above, white hairs below. Front yellow-brown, with the ocellar tubercle black. Antennæ black, the first two joints bearing black hairs.

Thorax yellow-brown, with two well-separated black median stripes, and two doubly-interrupted black side-stripes; thoracic bristles entirely black, very short on anterior half, very long on posterior half; scutellum grey, with two black marginal bristles. Abdomen dark red-brown or blackish, but always with a red-brown tinge in places, with very short black lateral bristles; genitalia dark red-brown, with very short stiff black pubescence. Legs with the femora black above, orange-brown below, the line of demarcation between the black and orange-brown not very distinct; tibiae and tarsi orange-brown, with apices of joints black; the posterior femora have white hair-like bristles below, and all femora stiff black apical and pre-apical bristles above; tibiae and tarsi with black bristles. Wings hyaline or tinged faintly with brown; the cubital fork hardly contracted, the second posterior cell broad, not waved, and of equal breadth throughout. Halteres brown.

Female resembles the male very closely, but more black hairs are present in the moustache, and the abdomen is produced into a long slender ovipositor.

This species may be distinguished from *R. lautus*, which it most closely resembles, by the much darker legs, which are orange-brown instead of pale yellow, by the less contrasted femora, by the red-brown colouration of the abdomen, and by the whitish segmentations being altogether confined to the hindmargins of the abdominal segments. From *R. mistipes* it is distinguished by the black scutellar bristles, and black bristles of the legs, and from *R. brunneus* by the distinctly banded abdomen, and by the first antennal joint being black instead of red.

This species I found occurring commonly settled on the ground on the top of the hills at Fern Tree Gully, Victoria, on December 12, 1914, and I took another specimen settled on a log on the 16th of the same month. It is not known to occur outside Victoria.

RHABDOTOITAMUS LAUTUS, *Sp. nov.*

Face pale yellow; moustache black above, yellow below; thorax pale yellow-brown, with two closely-adjacent dark brown median stripes, and two doubly interrupted brown side-stripes; bristles of thorax black, but few short white posterior ones may be present; scutellum with two black marginal bristles; abdomen deep black, with the hindmargins of segments pale yellow-brown, the yellow-brown colour being carried forward on each

side of the segments; femora deep black above, light yellow beneath; tibiæ light yellow, with apex black; wings hyaline.

Length. Male, 11 mm.

Hab. Fern Tree Gully and Warburton District, Victoria.

Male. Face pale yellow; moustache rather bushy, the upper half black, lower half yellow. Antennæ entirely black, the first two joints bearing black hairs. Front pale yellow-brown, the ocellar tubercle black. Thorax pale yellow brown, with two closely adjacent dark brown median stripes and two doubly-interrupted brown side stripes; thoracic bristles black, but a few short white posterior ones may be present, those on the anterior half of medium length (distinctly longer than in *R. rusticanus*), those on the posterior half very long; scutellum grey, with two long black marginal bristles. Abdomen deep black, with the hindmargins of segments pale yellow-brown, the yellow-brown colour being carried forward on each side of the segments, the whole bearing long, slender, pale yellow hindmarginal bristles; genitalia black, with black and yellow pubescence. Legs with the femora deep black on upper surface, light yellow on lower surface; tibiæ light yellow with apex black; tarsi yellow-brown, with apices of joints black, the posterior pair with the second to fifth joints almost entirely black; femora with long white hair-like bristles below, and stouter black apical and pre-apical bristles above; tibiæ and tarsi with both black and white bristles, the white the longest, but the black predominating. Wings slightly tinged with grey; the cubital fork hardly contracted, but considerably spread out as it joins the wing-margin; the second posterior cell not waved, and of almost equal breadth throughout. Halteres brownish-yellow.

Variation. In the type and cotype, the white thoracic bristles are small and inconspicuous, but in a specimen from Warburton district, two of the long thoracic bristles are also white.

This species is most easily identified by the colouring of the legs, which are predominatingly light yellow, instead of orange-brown, as in *R. rusticanus*, the line of demarcation in the femora between this light yellow colour and the dark upper surface being very distinct. It is further distinguished from *R. rusticanus* by the pale colour of the abdominal hindmargins being continued forwards on each side of the segments, and by the long yellow instead of short black hindmarginal bristles, also

by the bristles of the tibiæ and tarsi being partly yellow instead of altogether black. From *R. mustipes* it is distinguished by the scutellar bristles being black instead of yellow, and from *R. brunneus* by the wholly black antennæ and the well-marked abdominal segmentations.

Should any doubt of its position arise on account of a few white thoracic bristles being present, *R. lautus* can be distinguished at once from *R. volaticus*, *R. graminis*, and *R. claripes* by the scutellar bristles being black instead of white or yellow.

Of this species I swept two males from long grass at Fern Tree Gully, Victoria, on December 16, 1914, and another male from Warburton District, Victoria, has been kindly sent me by Mr. Spry. The female is at present unknown.