

DOLICHURUS KNOWN FROM S. AND S.E. ASIA
WITH A KEY TO THE SPECIES
(HYM., SPHECOIDEA: AMPULICIDAE)

By K. TSUNEKI

In the following list of the species the literature in which the species is only listed was omitted.

1. DOLICHURUS ABDOMINALIS F.SMITH

Dolichurus abdominalis F.Smith, 1860, Jour. Proc. Linn. Soc. Lond., Zool., Suppl. to Vol. IV: 83 (♂, Makassar).

2. DOLICHURUS TAPROBANAЕ F.SMITH

Dolichurus taprobanae F.Smith, 1869, Trans. Ent. Soc. Lond., p.304 (♂, really ♀). -: Bingham, 1897, Fauna Brit. Ind., Hym., 1: 260 (♀). -: Turner, 1912, Ann. Mag. Nat. Hist., Ser. 8, 10: 367 (♀ ♂, Ceylon, Nicobar Is. Sikkim); 1917, Mem. Dept. Agr. Ind., Ent. Ser., p. 175 (Ind.). -: Krombein, 1979, Smithsonian Contr. Zool., 298: 13 (♀ ♂, redescr., Synonymy, refs., Sri Lanka).
Dolichurus bipunctatus Bingham, 1896, Jour. Linn. Soc. Lond., Zool., 25: 439 (♂, Burma). -: Bingham, 1897, loc. cit., p. 260, India). -: Turner, 1912, loc. cit., p. 364 (♂, Burma, Assam, Sikkim, India). -: Krombein, 1979, loc. cit., p. 14.
Dolichurus clavipes Cameron, 1897, Mem. Proc. Manchester Lit. Phil. Soc., 41: 18 (nec Dhlb., 1829). -: Bohart & Menke, 1976, Sphecid Wasps of the World, p. 69. -: Krombein, 1979, l.c., p.14.
Dolichurus reticulatus Cameron, 1899, Ann. Mag. Nat. Hist., Ser. 7, 4: 56 (♂, Tensasirim). -: Krombein, 1979, l.c., p. 14.

3. DOLICHURUS STANTONI (ASHMEAD)

Thyreosphex stantoni Ashmead, 1904, Canad. Ent., 36: 282 (♂, Manila).
Dolichurus stantoni: Rohwer, 1910, U. S. Natl. Mus. Proc., 37: 659.
Dolichurus stantoni: Williams, 1919, Bull. Hawaii Sug. Pl. Ass. Exp. Sta. Ent. Ser., 14 (2): 111 (biol.). -: Tsuneki, 1992, preceding paper, p. 8 (♀ ♂, figs.)

4. DOLICHURUS GILBERTI TURNER

Dolichurus gilberti Turner, 1912, Ann. Mag. Nat. Hist., X (8): 365 (♀ ♂, India: Assam)

5. DOLICHURUS ABBREVIATUS STRAND

Dolichurus abbreviatus Strand, 1913, Arch. Naturg., A, p. 154 (♂ ♀, Taiwan). -: Yasumatsu, 1936, Tenthredo, I (3): 221 (2 ♂, Taiwan, redescr.). -: Tsuneki, 1967, Etizenia, 21: 5 (1 ♂ 2 ♀, Taiwan).

6. DOLICHURUS LEIOCEPS STRAND

Dolichurus leioceps Strand, 1913, Arch. Naturg., A, p. 156 (♀, Taiwan). -: Yasumatsu, 1936, Tenthredo, I (2): 223 (♀, Taiwan, redescr.).

7. DOLICHURUS AMAMIENSIS TSUNEKI ET IIDA

Dolichurus amamiensis Tsuneki et Iida, 1964, Akitu, XI: 41 (♀, Ryukyū: Amami-Oshima). Tsuneki, 1967, Etizenia, 21: 13 (3 ♀ 3 ♂, Taiwan, ♂ as puliensis). -: Tano et

Tsuneki, 1970, Life Study, 14 (2): 40 (♀ ♂, Is. Iriomote, Myukyu, puliensis =♂).
Tsuneki, 1976, Steenstrupia, 4: 34 (11 ♀ 8 ♂, Philippines: Palawan, Balabac, Taiwan, suppl. descr.). -: Tsuneki, 1992, preceding paper, p. 14 (♀ ♂, redescr.)

8. DOLICHURUS FORMOSANUS TSUNEKI

Dolichurus formosanus Tsuneki, 1967, Etizenia, 21: 6 (♀, Taiwan). -: Tsuneki, 1977 (1 ♀, Taiwan).

9. DOLICHURUS SHIROZUI TSUNEKI

Dolichurus shirozui Tsuneki, 1967, Etizenia, 21: 8 (♂, Taiwan).

10. DOLICHURUS MACULICOLLIS TSUNEKI

Dolichurus maculicollis Tsuneki, 1967, Etizenia, 21:11 (♂, Taiwan).

11. DOLICHURUS OMBRODES NAGY

Dolichurus ombrodes Nagy, 1971, Boll. Soc. Ent. Ital., 103 (5-6): 106 (♂, Taiwan)

12. DOLICHURUS DROMEDARIUS NAGY

Dolichurus dromedarius Nagy, 1971, Boll. Soc. Ent. Ital., 103 (5-6): 106 (♂, Taiwan).

13. DOLICHURUS ALORUS NAGY

Dolichurus alorus Nagy, 1971, Ibid., p. 106 (♀, Taiwan).

14. DOLICHURUS OXANUS NAGY

Dolichurus oxanus Nagy, 1971, Ibid., p. 107 (♀, Celebes).

15. DOLICHURUS PEMPUCHIENSIS TSUNEKI

Dolichurus pempuchiensis Tsuneki, 1972, Etizenia, 60: 9 (♀, Taiwan).

16. DOLICHURUS PIGMAEUS TSUNEKI

Dolichurus pigmaeus Tsuneki, 1976, Steenstrupia, 4: 35 (♂, Balabac). -: Tsuneki, 1992, preceding paper, p. 25 (♂, redescr. Palawan).

17. DOLICHURUS APICIORNATUS TSUNEKI

Dolichurus apiciornatus Tsuneki, 1977, Spec. Publ. Jap. Hym. Ass., 2: 1 (♀, Taiwan).

18. DOLICHURUS LANKENSIS KROMBEIN

Dolichurus lankensis Krombein, 1979, Smithsonian Contr. Zool., 298: 15 (♀ ♂, Sri Lanka, figs.).

19. DOLICHURUS SILVICOLA KROMBEIN

Dolichurus silvicola Krombein, 1979, Ibid., p. 17 (♀ ♂, Sri Lanka, figs.).

20. DOLICHURUS ALBIFACIES KROMBEIN

Dolichurus albifacies Krombein, 1979, Ibid., p. 18 (♀ ♂, Sri Lanka, figs.).

21. DOLICHURUS AMAMIENSIS KROMBEIN (nec Tsuneki et Iida)

Dolichurus amamiensis: Krombein, 1979, Smithsonian Contr. Zool., 298: 20 (nec Tsuneki et Iida, ♂ ♀, Sri Lanka).

22. DOLICHURUS ARIDULUS KROMBEIN

Dolichurus aridulus Krombein, 1979, Ibid., p. 21 (♂ ♀, figs.).

23. DOLICHURUS MINDANAONIS TSUNEKI

Dolichurus mindanaonis Tsuneki, 1992, Spec. Publ. Jap. Hym. Ass., 38: 20 (♂, Mindanao, figs.).

24. DOLICHURUS RUGOSIFRONS TSUNEKI

Dolichurus rugosifrons Tsuneki, 1992, Ibid., present No., p. 21 (♂, Luzon and Leyte, figs.).

25. DOLICHURUS CLYPEALIS TSUNEKI

Dolichurus clypealis Tsuneki, 1992, Ibid., p. 23 (♂, figs.).

26. DOLICHURUS PALAWANENSIS TSUNEKI

Dolichurus palawanensis Tsuneki, 1992, Ibid., p. 26 (♂ ♀, figs.).

26b. DOLICHURUS PALAWANENSIS DAVAONIS TSUNEKI

Dolichurus palawanensis davaonis Tsuneki, 1992, Ibid., p. 29 (♀, figs.).

27. DOLICHURUS APOSANUS TSUNEKI

Dolichurus aposanus Tsuneki, 1992, Ibid., p. 31 (♂ ♀, figs.).

28. DOLICHURUS BAGUIONIS TSUNEKI

Dolichurus baguionis Tsuneki, 1992, Ibid., p. 34 (♀, figs.).

T E N T A T I V E K E Y T O T H E S P E C I E S

- ♀ (Visible gastral segments 6, with surface smooth and shining and pointed at apex, antenna 12-segmented, simple, mandible tridentate on inner margin, inner tooth of claw located at about 2/3 from base) 2
- ♂ (Visible gastral segment 3, with surface, except anterior inclination of Gf1, usually distinctly punctured and broadly rounded at apex; antenna 13-segmented, from A5 apically each gently down-curved, often some of which bear an erect seta in middle beneath; mandible always unidentate on inner margin; inner tooth of claw subapical) 2
- 2 G4-6 reddish brown (A3=A4×1.5, VW=A3+4, OOD:POD=2:1, frons longitudinally rugoso-striate, lamella black, smooth and shining, vertex shining, with sparse fine punctures, clypeus with median carina not reaching apex, thorax shining, finely punctured, mesopleuron rugulose, propodeum wider than long, posteriorly truncate, its angles without tooth, dorsum with five longitudinal carinae, two lateral forming raised margins and meeting at apex, three middle not meeting at apex, outer two parallel at base, curved, forming a broad enclosed area posteriorly, surface transversely striated, apical truncation coarsely rugulose, abdomen shining, in fore wing radius with abscissae l=3, a little shorter than 2), 9-10 mm, Assam, 5000 ft. gilberti Turner, 1912
- Gaster black 3

- 3 Pronotum with distinct anterior bordering carina 4
 - Pronotum without anterior bordering carina, or it is weak and quite indistinct among similar parallel striae 10
 4 Clypeus without median carina 5
 - Clypeus with median carina which is confined to basal half only 6
 5 Wings strongly infuscated, veins dark brown; mandible, antenna, tegula and legs dark castaneous (supraantennal area and propodeum pale pubescent, clypeus smooth and shining, head including lamella shagreened, rugosities prominent and shining frons and vertex without puncture, pronotum coarsely tuberculate, median impression well developed, anterior of the disc with a strong transverse carina, scutum sparsely punctate, scutellum rugose; GTs impunctate, GSs only sparsely punctate, tooth of claw at middle, in fore wing intercubitus 1 angular -- closely related to the genus Trirogma Westw.), 8.5 mm, Celebes (Bua-Kraeng, 5000 ft.)
oxanus Nagy, 1971
 - Wings hyaline; said parts not altogether dark castaneous (lamella semicircular, frons almost impunctate, length ratio of $A3:4:5=14:11:11$, $A3/aw > 4$, $A4/aw > 3$, OOD slightly more than POD, pronotum anteriorly finely, closely striate, mesopleuron minutely granular, dorsum of propodeum with 7 longitudinal carinae, outermost ones run straight to mid-lateral tooth of posterior declivity, next ones reach lateral teeth of top carina of the declivity, median three forming central area, parallel, not reaching apex, these carinae connected with the next by numerous carinulae, forming network; in fore wing radius with abscissa $1 \approx 3$ and slightly < 2 , 2 distinctly $<$ intercubitus 2, intercubitus 3 sinuate, cubitus within cell 3 $1:2 \approx 1:3$, within cell 2 $1 \approx 2$; gaster very minutely sparsely punctulate, tarsal claw with small vertical tooth near middle on inner margin), 8-8.5 mm, Taiwan
leioceps Strand, 1913
 6 On mesopleuron sternaulus lacking ($A3:A4+5=6.1-6.4:10$, episternum of mesopleuron with rugulose reticulation of fine mesh, propodeum with five carinae slightly converging toward apex to form a U-shaped area, surface between and laterad with transverse carinae, posterior margin with a strong transverse lamella interrupted along median area, abdomen virtually impunctate, GT1 without one or more rows of close tiny punctures), 5.2-9.2 mm, Sri Lanka
amamiensis Krombein, 1979* (nec Tsuneki et lida)
 - Mesopleuron with distinct sternaulus 7
 7 L of $A3:4:5 \approx 17:16:16$, $A4/aw \approx 4$ (lamella nearly as long as wide, frons irregularly, generally sparsely, moderately largely punctured, PLS 1-5 times Pd, OOD:OD:POD=7:5:8, pronotum with well developed tubercles, reaching near the NAW of the segment below, claws with perpendicular tooth beyond middle on inner margin, in fore wing abscissa 2 of radius : intercubitus 2 = 4:3), 11.5 mm, Taiwan
pempuchiensis Tsuneki, 1972
 - L of $A3$ much $A4=A5$ 8
 8 $A3:4:5 \approx 16:13:13$, $A3/aw=4.3-4.5$ (lamella and frons: Figs. 28-30 of the preceding paper, clypeus: Fig. 27, propodeum with sculpture typical: Fig. 32, claws: Figs. 34,35, sometimes in fore leg much less widely open: Fig. 33, inner ray very slightly oblique, apical margin of lamella variable in colour from black - brown - brownish white - white -- locally?), 6-8.5 mm, Luzon, Mindanao, Negros, Cebu
stantoni (Ashmead, 1904)
 - $A3:4:5$ mostly $18:14:14$ or $17:13:13$, $A3/aw=5.0-5.3$ 9
 9 Except L of $A3,4,5$ and $A3/aw$, very similar to stantoni, but never with apical margin of lamella brown to white, 6.5-8.5 mm, Iyukyu, Taiwan, Mindanao, Palawan, Balabac, Tawitawi and Thailand
amamiensis Tsuneki et lida, 1964
 - Very similar to amamiensis, but clypeus at base more highly raised, in profile surface line more strongly sinuate, lamella relatively longer, frons simply punctured, without rugae and striae, except for sparse ones at median area above lamella (on propodeum oblique carina of intermediate area always disturbed and incomplete), 6.5-8.0 mm, Taiwan
formosanus Tsuneki, 1967
 10 GT1 and 2 on disc smooth and shining and on sides densely punctate, mesopleuron densely punctate but not rugose (lamella black, concave and semicircular, pronotum with anterior border finely and densely punctate), 11.5 mm, Taiwan
alorus Nagy, 1971
 -- Without above combination of characters 11
 11 On mesopleuron sternaulus absent 12
 -- On mesopleuron sternaulus present 14
 12 Clypeus with median carina till apex, vertex laterally finely, moderately closely punctured, but on central broad area almost impunctate and smooth (head seen

- in front with vertex gently arched, frons very sparsely grossly punctured, partly mixed with minute ones, almost without rugae or striae, except median area above lamella, mandible virtually bidentate on inner margin, as basalmost tooth very minute and evanescent; pronotum anteriorly with close transverse rows of minute punctures; propodeum at central area markedly depressed, including at base a small tricarinate subarea and lacking medial carina, also oblique carina lacking on intermediate area; GT1 and 2 apically except middle with a dense assemblage of tiny punctures, tending to form puncture rows), 8.0 mm, Mindanao
- apusanus Tsuneki, 1992
- Clypeus ecarinate; vertex with dense small punctures, PIS=Pd, pronotal disc on basal half with close, fine, transverse striae 13
- 13 Vertex flat, frons more closely sculptured, adjacent to ocelli with larger, subcontiguous punctures; mandible except tip and fore tibia dark, 7.0 mm, Sri Lanka
lankensis Krombein, 1979
- Vertex arched, frons more delicately and sparsely sculptured, adjacent to ocelli with small punctures, PIS=0.5Pd; mandible and fore tibia beneath light red, 7.7 mm, Sri Lanka
aridulus Krombein, 1979
- 14 Clypeus with median carina till near apex 15
- Clypeus without median carina 18
- 15 Frons coarsely rugoso-reticulate, almost without striae or punctures (clypeus at medio-apical margin truncate or slightly emarginate, lamella black, markedly broader than long, thick, with apex very gently rounded; propodeum at intermediate area without oblique carina, posterior inclination from medio-apical point first radiately, then transversely rugoso-striate), 11-13 mm, Taiwan
abbreviatus Strand, 1913
- Frons not coarsely rugoso-reticulate, body smaller (GT1 and 2 at apical margin with dense assemblage of tiny punctures, in median part sparse, tending to form puncture-rows) 16
- 16 MxIOD:VW=10:0.62-0.68, A3:4:5=0.44:5:5 (lamella black, as long as wide and apex thickened; apical third of mandible red; vertex flat, slightly depressed below level of tops of eyes in large specimens, moderately rounded and not depressed in small specimens (= clavipes Cameron); frons mostly with strong, close, irregular wrinkles forming small pits laterally in large specimens, mostly smooth with a few scattered punctures in small specimens; vertex with scattered small punctures), 7.2-10.7 mm, Sri Lanka, Burma, Tenasserim, Nicobar Island, Sikkim, India
taprobanae F. Smith, 1869
- MxIOD:VW=10:7.0-7.2, L of A3,4,5=16,16,16 (Lamella with W:L=15:10, thick, vertex gently arched, with sides below and top above level of eyes, postero-laterally and on the verge to posterior inclination minutely and closely punctulate) ... 17
- 17 Lamella whitish at apical margin (frons longitudinally rugoso-punctate, vertex on broad central area practically impunctate), 8.0 mm, Palawan
palawanensis Tsuneki, 1992
- Lamella black, only slightly brownish at apical margin (frons simply sparsely punctured, punctures medium-sized; central area of vertex finely, sparsely, but distinctly punctured), 7.3 mm, Mindanao
palawanensis davaonis Tsuneki, 1992
- 18 Black long macrochaetae present at normal positions of clypeus, frons, pronotum and scutellum; clypeus black, not white maculated (lamella if measured till lower frontal macrochaetae quadrate, frons with a weak median carina and scattered medium-sized punctures that become closer and smaller laterad of ocelli, vertex with close small punctures, PIS=Pd; A1:A2+3=1:1.6; mesopleuron with close fine punctures in oblique rows, propodeum with a U-shaped enclosure bearing a complete median carina), 7.4-8.8 mm, exceptionally 11.5 mm, Sri Lanka
silvicola Krombein, 1979
- Macrochaetae lacking at normal positions; clypeus maculated with white (lamella broad, flat, from lateral to anterior margin white, tegula anteriorly and mid and tibial spurs also white) 19
- 19 Mandible except base and apex white (clypeus with medio-apical margin moderately emarginate; relative length of A3,4,5=6,5,5, VW=A3>1.4, frons with a few weak wrinkles above lamella, median keel evanescent, surface with small punctures, PIS smaller than Pd; mesopleuron with scattered small punctures; sides of GT2 and 3 and all of GT4 and 5 with moderately dense minute piliferous punctures), 5.5 mm, Sri Lanka
albifacies Krombein, 1979
- Mandible medianly reddish brown to brown (pronotum with median furrow; intermediate area of propodeum with oblique carina, radius with abscissae 2 > 3 > 1 and 2≠1+3) 20
- 20 Apex of clypeus incrassate and gently rounded out and reflected, with a single

- transverse white spot (relative length of $A3:4:5=6:5:4.5$, $A3/aw=6$, median area of frons above lamella with fine, weak, close, longitudinal striae, outer sides of which finely, sparsely and very weakly punctured, P1S mostly 2-3 times Pd, OOD:Od:POD=7:4:6, mesopleuron smooth and shining, with a few large shallow punctures on postero-ventral portion), 7.0 mm, Taiwan apiciornatus Tsuneki, 1977
- Apex of clypeus gently rounded out, but not reflected, white mark above apex cut into two parallel transverse bands by a brown line (L of $A3,4,5=17,17,16.5$, $A3/aw$ nearly 5, $VW:8x10D:1110D=18:29:25$, OOD:Od:POD=4:3:4, frons without marginated median area and except weak, short, shining median carina whole the surface densely punctured till anterior level of hind ocelli, punctures medium-sized, P1S < Pd, vertex behind punctured area till occipital margin smooth and shining), 8.5 mm, Luzon baguionis Tsuneki, 1992
- 21(♂) Gaster coarsely rugose and subopaque (frons strongly punctured, vertex smooth and shining, lamella semicircular, concave above, antenna fulvous beneath, palpi pale testaceous, pronotal tubercles distinct, central area of propodeum horse-shoe-shaped), 7.5 mm, Nakassar abdominalis F. Smith, 1860
- Gaster not coarsely rugose 22
- 22 Pronotum anteriorly with a distinct bordering carina separating dorsum from anterior inclination 23
- Pronotum without anterior bordering carina 27
- 23 On mesopleuron sternaulus lacking ($A3:A4+5=9:10$, mesopleuron irregularly finely rugulose, GT1-3, except basal inclination of 1 and depressed apical rim of 3, with moderately large punctures, P1S > Pd on GT1 and gradually closer on 2 and 3, apex of lamella, two pronotal spots and tibial spurs white), 3.6 mm, Sri Lanka amamiensis Krombein, 1979 (nec Tsuneki et Iida, 1964)
- Mesopleuron with sternaulus 24
- 24 GT1,2,3 with very minute punctules very sparsely scattered, virtually impunctate ($A3:4:5=14:14:14$ or $14:13:13$, episternum of mesopleuron above longitudinally, below obliquely, less strongly and closely punctate-striate, punctures elongate and partly appearing rugoso-punctate; white or whitish: apical margin broadly of lamella, tegula anteriorly, but often not, pronotal tubercles and tibial spurs), 3.3-6.0 mm, Luzon, Negros, Cebu and Mindanao stantoni (Ashmead, 1904)
- Disc of GT1 and all of GT2 and 3, except apical rim of 3, distinctly punctured..25
- 25 GT1-3 each nearly uniformly punctured, punctures fine, but much larger than in stantoni and distinct, PID mostly $\frac{1}{2}$ and partly 1.5-2 times Pd, only at puncture-rows P1 < Pd ($A3,4,5=15,14,14$, sculpture of episternum as in stantoni; white are apical margin of lamella and tubercles of pronotum; tegula always light brown), 3.5-6.5 mm, Kyukyu, Taiwan, Palawan, Balabac, Tawitawi, Thailand amamiensis Tsuneki et Iida, 1964
- GT1-2 with median area, often on 2 at posterior half, and posterior marginal area broadly impunctate, remainder distinctly punctured and GT3 wholly evenly, more finely and closely punctured 26
- 26 Punctures on GT1 comparatively larger, on disc P1S \approx Pd and on sides P1S < Pd, on GT2 punctures slightly smaller, everywhere P1S < Pd, especially more strongly so on sides, and posteriorly more or less rugosely confluent, on 3 punctures much finer and denser, more broadly rugoso-punctate ($A3,4,5=16,16,16$; episternum above longitudinally, finely, closely striate, below obliquely, somewhat sparsely rugoso-striate, sculpture antero-ventrally weaker, becoming nearly smooth, with a few scattered punctures; white are apical margin of lamella and often pronotal tubercles), 5.5-6.0 mm, Luzon and Leyte rugosifrons Tsuneki, 1992
- Punctures on GT1 medium-sized, but smaller than in preceding species and much sparser, P1S 2-10 times, mostly 7-10 times Pd; GT2 medianly narrowly and posteriorly broadly impunctate, remaining area toward sides first sparsely, gradually closely and finely punctured, at sides P1S Pd; GT3 more finely, closely and uniformly punctured, punctures mostly transversely rowed, P1S < Pd; on marginal area medianly more finely but sparsely and laterally more minutely and indistinctly punctulate ($A3,4,5=16,16,16$; episternum posteriorly, except smooth ventral corner, strongly, closely punctured, thence anteriorly, on roundly raised central area punctures obliquely elongate, but after a short distance they abruptly become weak, rounded, indistinct in outline and surface shows oblique, sparse shadows only and generally well shining; lamella apically brownish white, often in two white spots, pronotal tubercles black), 4.5-5.2 mm, Mindanao mindanaonis Tsuneki, 1992
- 27 Clypeus with white marks 28
- Clypeus black, at most apical margin brownish 29
- 28 Mandible ferruginous (clypeus except median line white, apical margin of la-

- mella and pronotal tubercles also white, frons finely striate in the centre, medianly strongly keeled, sides of frons and vertex shining, with minute, setiferous punctures; GT1 and 2 shining, with minute, very scattered punctures), 6.0 mm, Taiwan ombrodes Nagy, 1971
- Mandible medianly white (clypeus except narrow basal margin and median bar white other white; palpi, broad lateral and apical margin of lamella, pronotal dorsum except narrow median strip, anterior half of tegula, mid and hind tibial spurs, rarely small spot in middle of scutum; GT1 posterolaterally, sides of 2, all of 3 with minute sparse punctures, otherwise impunctate), 5.0 mm, Sri Lanka albifacies Krombein, 1979
- 29 Vertex shining, finely but densely punctate (lamella anteriorly white and strongly bilobed, frons strongly reticulate, pronotum scarcely striate in the anterior half, well developed tubercle situated on the side, black, median depression deep and sectate; abdomen finely and densely punctate; antenna, legs and veins castaneous, mandibles at apex and tegulae reddish), 4.5 mm, Taiwan dromedarius Nagy, 1971
- Not above combination of characters 30
- 30 On mesopleuron sternaulus distinct 31
- On mesopleuron sternaulus evanescent or lacking 35
- 31 GT1 medianly narrowly and apically broadly, GT2 apically more narrowly and shortly impunctate, remainder of these and GT3 with moderately large dense punctures, PIS < Pd (mesopleuron with scattered small punctures, PIS 2 or more times Pd, except posterior marginal area; frons ruguloso-reticulate with small mesh, vertex finely, sparsely punctured; white are apical rim of lamella, pronotal tubercles and spot on tegula), 4.5-8 mm, Sri Lanka silvicola Krombein, 1979
- GT1 and 2 more uniformly punctured 32
- 32 Mesopleuron almost smooth and polished; in fore wing cubital cells 2 and 3 similar in form and size (lamella semicircular, from lateral to apical margin white, pronotal tubercles also white, VW=A3+4, A3,4,5=14,16,16, A3/aw=3.4, setae on segments ?, frons above lamella rugoso-striate, sides coarsely but not strongly reticulate, vertex finely, sparsely and weakly punctured; central area of propodeum with median carina disturbed, intermediate area without oblique carina; punctures on GT1-3 medium-sized, PIS=Pd), 6.2 mm, Taiwan maculicollis Tsuneki, 1967
- Mesopleuron distinctly sculptured, cubital cells 2 and 3 different in form and size 33
- 33 Frons longitudinally rugoso-striate; the tooth on inner margin of mandible e-rected, curved basally, acutely pointed and very marked (apical margin of lamella and pronotal tubercles white, A3,4,5=15,14,14, VW:MX100:SI100=99:33:25, vertex with fine, piliferous punctures, PIS = or slightly > Pd, episternum of mesopleuron above longitudinally, below obliquely, finely and closely striate, mixed with minute punctures scattered; punctures on GT1 small, PIS medianly slightly > Pd and laterally =Pd; GT2 and 3 similar, but punctures gradually smaller on 2 and 3), 3.3-4.0 mm, Palawan clypealis Tsuneki, 1992
- Frons strongly coarsely reticulate, except abbreviatus ?, inner tooth of mandible subapical, short, decumbent apically, not marked (wings slightly clouded toward apical margin, vertex finely, weakly and sparsely punctured) 34
- 34 Lamella subquadrate, broader than long, thick, apical margin truncate, black, without median incision (L of A1=A3=A4, propodeum with central area subtriangular, medial carina disturbed apically into oblique network, intermediate area without oblique carina; gaster strongly and closely punctured), 5.5-6.5 mm, Taiwan abbreviatus Strand, 1913
- Lamella at base parallel-sided, apically semicircular, apex margined broadly with white and medianly triangularly incised (L of A3,4,5=15,15,15, when fully developed A5-10 each with a brownish seta in middle beneath; episternum postero-ventrally with a smooth and shining area, posteriorly above there closely punctured, punctures comparatively large, forming oblique rows and extended anteriorly, gradually weaker and sparser, with some fine striae below scrobal furrow, at central area punctures very sparse and evanescent, thence anteriorly surface almost smooth and shining; propodeum with central area deeply depressed, medial carina not reaching apex, intermediate area without oblique carina; gaster with punctures strong and dense, PIS < Pd, and laterally denser, but often on median area PIS=Pd), 6.3-7.0 mm, Palawan palawanensis Tsuneki, 1992
- 35 GT1 medianly thoroughly or on posterior half broadly, and apical marginal verge to posterior inclination narrowly, impunctate, remainder with medium-sized punctures and or rugosed puncture-rows, on disc PIS > Pd, but laterally gradually = and < Pd; GT2 similar to GT1 or simply closely punctured as on 3 (L of A3,4,5=15,

- 16,16, A3/aw=4, when well developed A4-10 each with a seta in middle beneath, mandibular inner tooth subapical, short, appressed to apical tooth; lamella basally convergent, apical half semicircular, white margined and triangularly incised in middle; frons coarsely reticulate; pronotal tubercles white, dorsum of propodeum with central area depressed, without distinct median carina, intermediate area without oblique carina; episternum of mesopleuron obliquely, somewhat irregularly punctato-rugoso-striate, anteriorly weaker), 7.5 mm, Mindanao (Mt. Apo) apusanus Tsuneki, 1992
- Gaster more uniformly punctured 36
- 36 Episternum of mesopleuron with scattered tiny punctures, otherwise smooth and glossy (A5-11 each with a longer erect seta in middle beneath, Vw=A3×1.8-2, vertex with scattered tiny punctures; disc of Gfl-3 with moderately large punctures, PIS mostly =Pd; apical margin of lamella and pronotal tubercles white), 5.5-8.0 mm, Sri Lanka, Burma, Tenasserim, Nicobal Is., Sikkim, Assam, India taprobanae Smith, 1869 (syn.: bipunctatus Bingham, clavipes Cameron and reticulatus Cameron) 37
- Episternum of mesopleuron differently sculptured 37
- 37 Episternum ruguloso-reticulate (flagellomeres without setae) 38
- Episternum rugoso-striate or rugoso-punctate 39
- 38 Vertex with small punctures, mostly PIS=Pd, mid and hind Tl much paler than other tarsal segments; rugulose reticulation of frons and mesopleuron of smaller mesh (apical margin of lamella and pronotal tubercles white, punctures on gaster moderately large, PIS mostly =0.5Pd), 4.7 mm, Sri Lanka aridulus Krombein, 1979
- Vertex with very scattered fine punctures; mid and hind Tl not conspicuously paler than other tarsal segments, rugulose reticulation of frons and mesopleuron of coarser mesh (white are apical margin of lamella, pronotal tubercles, tibial spurs; punctures on gaster similar in size, but mostly PIS=Pd), 4.5 mm, Sri Lanka lankensis Krombein, 1979
- 39 Episternum above longitudinally, below obliquely fairly closely rugoso-striate, with fine punctures scattered between (frons coarsely but not strongly reticulo-rugoso-punctate, with a feeble median carina and some lateral longitudinally arcuate puncture-rows, L of A3,4,5=15,14,14, A3/aw=4; propodeum on central area median carina distinct and on intermediate area oblique carina present), 4.0 mm, Balabac and Palawan pigmaeus Tsuneki, 1976
- Episternum posteriorly strongly closely punctured, mixed with rugae, punctures gradually finer and sparser anteriorly (frons strongly, coarsely reticulate, L of A3,4,5=14,16,16, A3/aw=3.3; central area of propodeum subtriangular, irregularly, sparsely ruguloso-striate, without distinct median carina, intermediate area with oblique carina; Gfl-3 with dense, medium-sized punctures, punctures on each segment slightly sparser posteriorly; apical margin of lamella and pronotal tubercles white), 8 mm, Taiwan shirozui Tsuneki, 1967

SIMPLE KEY BASED MAINLY ON COLOUR

- 1 ♀ (antenna 12-segmented, visible G 6) 2
- ♂ (antenna 13-segmented, visible G 3) 22
- 2 Supraantennal lamella at apical margin white, at least brownish white 3
- Lamella black 7
- 3 Clypeus maculated with white 4
- Clypeus black 6
- 4 Mandible, except base and apex, white, Ceylon albifacies Krombein, 1979
- Mandible medianly brown 5
- 5 Clypeus with a white spot at apical area, Taiwan apiciornatus Tsuneki, 1977
- Clypeus with two parallel white bands at apical area, Philippine baguionis Tsuneki, 1992

6	Clypeus with median carina till apex, pronotum without anterior carina, Philippine	<u>palawanensis</u> Tsuneki, 1992	
-	Clypeus with median carina confined to basal half only, pronotum with anterior carina, Philippine	<u>stantoni</u> (Ashmead, 1904)	
7	G4-6 reddish brown, Assam	<u>gilberti</u> Turner, 1912	
-	Gaster black		8
8	Clypeus with median carina		9
-	Clypeus without median carina		17
9	Median carina of clypeus confined to basal raised part alone		10
-	Median carina of clypeus till near apex		14
10	Mesopleuron without sternaulus, Ceylon	<u>amamiensis</u> Krombein, 1979 (nec Tsuneki et Iida, 1964)	
--	Mesopleuron with sternaulus		11
11	A3,4,5 subequal in length, 11.5 mm, Taiwan	<u>pempuchiensis</u> Tsuneki, 1972	
--	A3 markedly longer than A4 which is equal to A5		12
12	A3/aw=4, Philippine (see also couplet 6)	<u>stantoni</u> (Ashmead, 1904)	
-	A3/aw=5		13
13	Dorsal half of clypeus rather gently raised, Hyukyu, Taiwan, Philippine, Thai	<u>amamiensis</u> Tsuneki et Iida, 1964	
--	Dorsal area of clypeus much more strongly elevated	<u>formosanus</u> Tsuneki, 1967	
14	Mesopleuron without sternaulus, Philippine	<u>apusanus</u> Tsuneki, 1992	
--	Mesopleuron with sternaulus		15
15	Frons coarsely rugoso-reticulate, 11-13 mm, Taiwan	<u>abbreviatus</u> Strand, 1913	
--	Frons otherwise sculptured, body smaller		16
16	Frons mostly with strong close irregular wrinkles, Ceylon, India, Indochina	<u>taprobanae</u> Smith, 1869	
--	Frons with large scattered punctures, near median area longitudinally, arcuately rugoso-punctate, Philippine	<u>palawanensis davaonis</u> Tsuneki, 1992	
17	Pronotum with anterior carina		18
--	Pronotum without anterior carina		19
18	Wings very infuscated, Celebes	<u>oxanus</u> Nagy, 1971	
--	Wings almost hyaline, Taiwan	<u>leioceps</u> Strand, 1913	
19	Head very finely sparsely punctured, Gf1 and 2 with sides densely punctate, rest smooth and shining, Taiwan	<u>alorus</u> Nagy, 1971	
--	Not as above		20
20	Mesopleuron with sternaulus, Ceylon	<u>silvicola</u> Krombein, 1979	
--	Mesopleuron without sternaulus		21
21	Head seen in front with vertex flat, Ceylon	<u>lankensis</u> Krombein, 1979	
--	Head seen in front with vertex gently arched, Ceylon	<u>aridulus</u> Krombein, 1979	
22	(♂) Lamella black (pronotal tubercles black)		23
--	Lamella at apical margin pale brown or white		25
23	Tibial spurs whitish (gaster black, lamella punctured, not smooth), Assam	<u>gilberti</u> Turner, 1912	
--	Body and appendages entirely black		24
24	Gf1 strongly rugose, Makassar	<u>abdominalis</u> Smith, 1860	
--	Gf1 closely punctured, Taiwan	<u>abbreviatus</u> Strand, 1913	
25	Apical margin of lamella narrowly brownish		26
--	Apical margin of lamella white		27
26	Pronotal tubercles white, Ceylon, India, Indochina	small form of <u>taprobanae</u> Smith, 1969 (= <u>clavipes</u> Cameron, 1897 nec Dahlbom, 1829)	
--	Pronotal tubercles black, Philippine	<u>mindaonis</u> Tsuneki, 1992	
27	Apical white of lamella triangularly incised in middle (pronotal tubercles white)		28
--	Apical white of lamella not incised, but often gently bilobed		29
28	Tegula with a whitish arcuate spot (mesopleuron with sternaulus), Philippine	<u>palawanensis</u> Tsuneki, 1992	
--	Tegula castaneous (rarely pronotal tubercle black, mesopleuron without sternaulus), Philippine	<u>apusanus</u> Tsuneki, 1992	
29	Clypeus white maculated (lamella with lateral margins also white)		30
--	Clypeus black		31
30	Clypeus except (transverse ?) median line white, mandible ferruginous (pronotal tubercles white), Taiwan	<u>ombrodes</u> Nagy, 1971	
--	Clypeus except base and median bar white, mandible medianly white (palpi, pronotal dorsum except narrow median strip, anterior half of tegula, rarely a spot on scutum white), Ceylon	<u>albifacies</u> Krombein, 1979	

31	Pronotum entirely black (vertex finely densely punctulate), Taiwan	
		<u>dromedarius</u> Nagy, 1971
--	Pronotum with tubercles white	32
32	Clypeus without medial carina, Ceylon	<u>lankensis</u> Krombein, 1979
--	Clypeus with medial carina till apex	33
33	GTL-3 virtually impunctate, smooth and shining, Philippine	
		<u>stantoni</u> (Ashmead, 1904)
--	GTL-3 distinctly punctured	34
34	GTL medianly and apically impunctate, or very sparsely punctate, rest closely punctured	35
--	GTL almost evenly punctured	36
35	Apical smooth area of GTL occupies posterior half (anterior half of tegra white), Ceylon	
--	Apical smooth area of GTL confined to narrow verge to posterior constriction (tegra dark brown), Philippine	<u>silvicola</u> Krombein, 1979 <u>rugosifrons</u> Tsuneki, 1992
36	On mesopleuron sternaulus distinct	37
--	On mesopleuron sternaulus evanescent or lacking	40
37	Pronotum with anterior carina, Ayukyu, Taiwan, Philippine, Thai	
		<u>amamiensis</u> Tsuneki et Iida, 1964
--	Pronotum without anterior carina	38
38	Mesopleuron almost smooth and shining, Taiwan	<u>maculicollis</u> Tsuneki, 1967
--	Mesopleuron distinctly sculptured	39
39	Mesopleuron posteriorly strongly coarsely rugoso-punctate and striate, sculpture anterior weaker and more smooth and shining, Taiwan	
--	Mesopleuron uniformly, strongly, closely rugoso-striate, with feeble punctures scattered between, Philippine	<u>shirozui</u> Tsuneki, 1967 <u>clypealis</u> Tsuneki, 1992
40	Pronotum with anterior carina, Ceylon	
		<u>amamiensis</u> Krombein, 1979 (nec Tsuneki et Iida, 1964)
--	Pronotum without anterior carina	41
41	Mesopleuron with scattered tiny punctures, otherwise smooth and glossy, Ceylon, India, Indochina	
		<u>taprobanae</u> Smith, 1869
--	Mesopleuron strongly sculptured	42
42	Mesopleuron rugoso-reticulate, Ceylon	<u>aridurus</u> Krombein, 1979
--	Mesopleuron closely rugoso-striate, with scattered punctures between, Philippine	<u>pigmaeus</u> Tsuneki, 1976

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