

## REVISION OF THE *STENUS*-SPECIES OF NEW GUINEA. PART II<sup>1</sup> (Coleoptera: Staphylinidae)<sup>2</sup>

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*Abstract*: This paper is the 2nd part of a revision of the genus *Stenus* from New Guinea. Included are a key to the New Guinean species and descriptions of the following new species: (all subgenus *Hypostenus*): *agricola*, *calosoma*, *callithrix*, *callopietes*, *callimorphus*, *midas*, *croesus*, *odysseus*, *penelope*, *telemachus*, *circe*, *eumaius*, *phaeax phaeax*, *phaeax peculiaris*, *hornabrooki*, *pretiosus*, *magnepunctatus*, *triton*, *poseidon*, *amphitrite*, *giluwemontis*, *moroensis*, *lasti*, *bacchus*, *nigrescens*, *conflictatus*, *gressitti*. Phylogenetical and biogeographical remarks are given. The New Guinean *Stenus*-fauna is primarily Oriental.

The second part of the revision of the *Stenus*-species of New Guinea comprises all species which—according to definition—belong to the subgenus *Hypostenus* Rey except *S. thalassinus* Puthz, *S. interfulgio* Last, and *S. cyaneotinctus* Puthz which have been treated in part I, because they belong phylogenetically to the *gigas*-group.

The *Hypostenus* of New Guinea are very numerous and in several cases very closely related, their degree of differentiation is much lower than that of the species described in part I.

First I give a key which is followed by descriptions. A discussion of the results of the complete revision is given at the end.

Explanatory remarks on key: If not otherwise indicated “pronotal punctation” and “elytral punctation” mean dorsal punctation of the pronotum and punctation of the sutural half of elytra (about “Scheibe” as called in German keys) without regard to the punctation of the anterior, posterior, and lateral declining portions of elytra. The lateral punctation of pronotum and elytra mostly is denser and often coarser.

Concerning the posterior margins of the 9th sternite of ♂ and the valvifer of ♀ (which generally looks about as one half of the male's 9th sternite) “acute” means forms as given in fig. 15, 19, 21, 28, 32 “rounded (serrated)” forms as in fig. 30, 34 (= outline of sclerite apicolaterally rounded, margin of sclerite at higher enlargement serrated).

When numbers are given concerning the apical notch of the male's 8th sternite e. g. “90: 30” means length of sternite (90), depth of emargination (30).

Because ground-sculpture (e. g. reticulation) is an important taxonomic character, specimens have to be clean for study.

For identification strong light should be used. If light is weak and comes from very inclined direction, punctures appear larger because of shadow.

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Some species are repeatedly listed, names and places in brackets indicate exceptions from usual form.

KEY TO THE *Stenus*-SPECIES FROM NEW GUINEA, PART II

The species below are distinguished from those treated in part I of the revision (key-numbers 1-50) by the following characters: Tarsi distinctly bilobed, abdomen with segments 4-6 laterally immargined, 10th tergite without distinct median tip posteriorly ..... "Hypostenus"

- 51 (52). 10th tergite not rounded at posterior margin but with an acute tip apicolaterally, posterior margin between the lateral tips distinctly emarginated (fig. 42, Puthz 1969 b). Aedeagus (fig. 43-45, 47, Puthz 1. c.). 2.7-3.6 mm. ORIENTAL REGION, NEW CALEDONIA, AUSTRALIA, NEW GUINEA.....**cursorius** L. Benick
- 52 (51). 10th tergite lacks apicolateral tips.....
- 53 (54). 10th tergite with the posterior margin irregularly serrated (fig. 4, Puthz 1970 d), aedeagus (fig. 6, 1. c.). 5.5-6.0 mm. NEW IRELAND, NEW BRITAIN, MANUS, NEW GUINEA: W. Highlands ..... **hestiocorus** Puthz
- 54 (53). 10th tergite with the posterior margin smooth, rounded, blunt, or shallowly concave.....
- 55 (58). Strikingly pubescent and very robust species: pubescence long, thin, and erect, setae of the posterior half of pronotum erect directed towards the head. Punctuation fine and sparse, especially that of elytra and abdomen, elytral punctures distinctly smaller than basal cross section of 3rd antennal segment, interstices much larger than punctures. Abdomen lacks ground-sculpture. ♂♂ with more or less bent metatibiae. These species should be separated from the species of the *calosoma*-complex, which are also strikingly pubescent but slender and coarsely and densely punctate..... **gloriosus**-complex
- 56 (57). Head, pronotum, and abdomen greenish, elytra violet or aeneous. Pronotum in relation to elytra much more slender, not vaulted anteriorly and without strong lateral impression. Elytral punctuation sparser, punctuation of abdomen very fine and sparse, interstices at least 2 × as large as punctures. Aedeagus (fig. 3, Last 1970). 6.0-8.0 mm. NEW GUINEA: E. Highlands..... **gloriosus** Last
- 57 (56). Head and abdomen greenish-blue, pronotum and elytra blue. Pronotum in relation to elytra distinctly broader, vaulted in anterior 1/3 because of a broad lateral impression. Elytral punctuation denser, punctuation of abdomen coarser and much denser, interstices mostly slightly larger than punctures. Aedeagus (fig. 1). 6.0-7.5 mm. NEW GUINEA: E. Highlands..... **regressus** Last
- 58 (55). Not strikingly pubescent *or* differently pubescent (setae of the fore-parts stronger and more recumbent), more slender species. ....
- 59 (64). Frons with 5 distinct shining plaques which are separated by punctuation, pronotum about as long as broad, not distinctly or much longer than broad. 9th sternite or valvifer apicolaterally with a distinct tooth which mainly consists of the somewhat rolled sides of those sclerites..... **piliferus**-group
- 60 (61). More robust, punctuation distinctly sparser, interstices more distinctly shiny, with a dark steel-blue tint. Interstices of elytral and pronotal punctuation often much larger than diameter of punctures. Punctuation of abdomen remarkably fine and sparse, interstices on 6th tergite 3-4 × as large as diameter of punctures. Aedeagus (fig. 24). 4.0-4.5 mm. NEW GUINEA: Morobe; WEST IRIAN ..... **agricola** n. sp.

- 61 (60). More slender and mostly smaller insects, less shiny because of denser punctation, without a steel-bluish tint, rather with an aeneous tint. Interstices of elytral and pronotal punctation only seldom or not larger than diameter of punctures. Punctation of abdomen distinctly denser, interstices on tergite 6 at least  $2 \times$  as large as diameters of punctures, which are generally larger .....
- 62 (63). Punctation of elytra on average finer. 8th sternite of male with the apical notch more rounded, apical portion of median lobe different (fig. 25 and other forms!). 3.5-4.5 mm. NEW GUINEA : Sepik, E. Highlands, Morobe ; PAPUA : Central. AUSTRALIA. .... **piliferus obesulus** Fauvel
- 63 (62). Punctation of elytra distinctly coarser. 8th sternite of male with the apical notch more acute, apical portion of median lobe about as in fig. 13 (Puthz 1970 b). 3.5 mm. MUSSAU-Island ..... **piliferus mussauensis** Puthz
- 64 (59). Frons without five separate shining plaques, pronotum distinctly or (in most cases) much longer than broad. 9th sternite or valvifer apically serrated *or* with an apicolateral tooth, which is not formed by rolled sides of the sclerite .....
- 65 (102). Metallic (blue-green-violet-coppery), generally large species with thin (spider-like), very long antennae, palpi, and legs. Antennae remarkably long, when reflexed more than the last 4 segments extending beyond the posterior margin of pronotum. Pronotum and elytra (in some cases also the abdomen) generally very coarsely and densely punctate, elytral punctures often slightly coalescent transversely. Some species are remarkably densely pubescent and reticulated. ....
- Some of the following taxa are very similar in their exoskeletal characters and make it difficult to arrange them into a dichotomous key ; therefore species will be quoted repeatedly. Often a sure identification is only possible by having sufficient ♂ material for comparison. The identification is also difficult because - presumably - as present we only know about half of the species actually living in New Guinea and because of the insufficient knowledge of the variability of known taxa. ....
- 66 (73). Punctation of fore-parts very dense, punctation of the abdomen very coarse and dense especially along the sides of tergites. Pubescence remarkably long but more or less recumbent. In some species the last 2 or 3 abdominal segments brownish or reddish, conspicuously less metallic than anterior segments ..... **calosoma**-complex
- 67 (70). 8th tergite with the punctation not visible because of the extremely dense and long pubescence.....
- 68 (69). Punctation of abdomen finer and slightly less dense, largest punctures of the middle of tergite 5 at most equal to widest cross section of 3rd antennal segment, in posterior middle the punctation is distinctly less dense than on the sides, interstices can be as large as diameters of punctures, in any case they are larger than half the diameter of a puncture. Aedeagus (fig. 3). 5.0-6.0 mm. WEST IRIAN : NE..... **calosoma** n. sp.
- 69 (68). Punctation of abdomen coarser and denser, largest punctures of the middle of tergite 5 distinctly exceed widest cross section of 3rd antennal segment, in posterior middle the punctation is distinctly denser, interstices at most as large as  $1/2$  the diameter of a puncture, generally smaller. 5.5-6.5 mm. WEST IRIAN : Bomberai..... **callithrix** n. sp.
- 70 (67). 8th tergite with the pubescence less dense, punctures distinctly visible between setae .....
- 71 (72). Frons coarsely and moderately densely punctate, largest punctures exceed

- widest cross section of 3rd antennal segment. Punctuation of abdomen coarse but not very dense, interstices of tergite 7 frequently nearly as large as diameter of punctures, abdominal pubescence distinct but not remarkably dense. Aedeagus (fig. 2). 6.7-7.0 mm. PAPUA: Northern.....**callimorphus** n. sp.
- 72 (71). Frons finely and sparsely punctate, largest punctures very distinctly smaller than widest cross section of 3rd antennal segment. Punctuation of abdomen coarse and very dense, interstices of tergite 7 at most as large as half the diameter of a puncture, generally smaller. 7.0-8.0 mm. WEST IRIAN: NE...**callopiestes** n. sp.
- 73 (66). Punctuation of fore-parts very dense *or* less dense. Punctuation of abdomen less dense, also that along the sides of tergites, interstices at least as large as diameter of punctures. Species with differently dense pubescence. Last 2 or 3 abdominal segments distinctly metallic (at least its base), at most slightly infuscate..... **odysseus**-group
- 74 (77). Pubescence of pronotum and elytra remarkably dense, long, and shiny, especially conspicuous at the sides of the pronotum .....
- 75 (76). Lateral outline of pronotum different: greatest width behind middle, sides from that point towards anterior margin first nearly straight (in a distance which is about 1/2 as long as the pronotum), but in anterior 9th distinctly restricted. Aedeagus (fig. 5, 7). 6.0-7.3 mm. NEW GUINEA: E. Highlands, W. Highlands .....
- 76 (75). Lateral outline of pronotum different: greatest width behind middle, sides from that point towards anterior margin distinctly obliquely narrowed. Apex of median lobe in lateral aspect (fig. 8). 6.7-7.5 mm. PAPUA: S. Highlands.....
- 77 (74). Pubescence of pronotum and elytra normal, not remarkably dense and shiny .....
- 78 (79). Head distinctly broader than elytra. Apex of median lobe in lateral aspect (fig. 9). 6.0-7.0 mm. NEW GUINEA: Morobe.....**odysseus** n. sp.
- 79 (78). Head at most as broad as elytra, in most species distinctly narrower .....
- 80 (85). Punctuation of elytra less coarse and less dense, not coalescent transversely, interstices in sutural third often larger, sometimes much larger than half the diameter of a puncture .....
- 81 (82). Interstices of elytral punctation smooth and shiny, without reticulation. Aedeagus (fig. 6). 6.5-7.5 mm. PAPUA: Mt Tafa .....
- 82 (81). Interstices of elytral punctation distinctly reticulate (reticulation sometimes very faint in *kuborensis*) .....
- 83 (84). Elytral punctation sparser, interstices generally larger than half the diameter of a puncture. Elytra longer and broader. Punctuation of head sparser. ♂: toothlike carinae of sternite 5 visible in dorsal aspect of abdomen, 4th sternite in posterior middle very finely and densely punctate. Aedeagus (fig. 4). 7.0-8.0 mm. NEW GUINEA: NE: Bismarck Range.....**penelope** n. sp.
- 84 (83). Elytral punctation less sparse, interstices slightly larger or as large as half the diameter of a puncture. Elytra shorter and narrower. Punctuation of head slightly denser. ♂: toothlike carinae of sternite 5 not visible in dorsal aspect of abdomen, 4th sternite in posterior middle very finely but less densely punctate, about as dense as on the sides of sternite. Lateral aspect of median lobe (fig. 10). 6.0-7.0 mm. NEW GUINEA: W. Highlands, E. Highlands, (S. Highlands). .....
- 85 (80). Punctuation of elytra coarser and very dense, often some punctures coalesce transversely, interstices on sutural third of elytra (mostly) distinctly smaller than half the diameter of a puncture, if larger this is an exception .....
- 86 (91). Posterior middle of frons more densely punctate, interstices mostly smaller than

- diameter of punctures (in doubtful specimens see also species under no. 91).....
- 87 (88). Interstices of elytral punctation at enlargement of 50 × with perceptible reticulation, abdomen throughout densely and deeply reticulated. Lateral aspect of median lobe (fig. 10). 6.0-7.0mm. NEW GUINEA : W. Highlands, E. Highlands, (S. Highlands)..... **kuborensis** Last
- 88 (87). Interstices of elytral punctation without reticulation, tergites 4-6 at enlargement of 50 × very faintly reticulate or smooth.....
- 89 (90). Knees broadly and distinctly infusate including at least half the metatibiae. Abdominal punctation coarser, punctures of tergite 6 as large as basal cross section of 3rd antennal segment. 6.0-7.5 mm. NEW GUINEA : Mt Kaindi ..... **circe** n. sp.
- 90 (89). Knees scarcely infusate, only the apices of femora narrowly infusate. Abdominal punctation finer, punctures of tergite 6 scarcely as large as basal cross section of 3rd antennal segment. 6.0-7.0 mm. NEW GUINEA : E. Highlands... **telemachus** n. sp.
- 91 (86). Posterior middle of frons more sparsely punctate, interstices often larger than diameter of punctures.....
- 92 (93). Elytral punctation finer, largest punctures distinctly smaller than widest cross section of 2nd antennal segment, interstices distinctly reticulate. Lateral aspect of median lobe (fig. 10). 6.0-7.0 mm. NEW GUINEA : W. Highlands, E. Highlands, (S. Highlands) ..... **kuborensis** Last
- 93 (92). Elytral punctation coarser, largest punctures about equal to widest cross section of 2nd antennal segment. The following taxa are extremely similar, characters of the exoskeleton may facilitate determination but for sure identification ♂♂ are necessary in most cases. ....
- 94 (95). Smaller species : 5.0-5.5 mm. Aedeagus (fig. 2, Puthz 1970d). NEW IRELAND... **sagittalis** Puthz
- 95 (94). Larger species, exceeding 5.5 mm.....
- 96 (99). Pronotum in relation to head and elytra broader, not remarkably narrower than both. General facies of species more parallel and more robust.....
- 97 (98). Punctuation of head coarser. Abdomen with a dense and deep reticulation. ♂ : 5th and 6th sternites with remarkable lateral carinae. 6.0-7.3 mm. NEW GUINEA : Morobe..... **eumaius** n. sp.
- 98 (97). Punctuation of head finer. Abdomen less densely and less deeply reticulate. ♂ : 5th sternite lacks remarkable lateral carinae, but 6th has such. Aedeagus (fig. 1, Puthz 1970a). 7.0-8.0 mm. NEW GUINEA : Hudewa, Purosa, Okasa ..... **cribricollis** Lea
- 99 (96). Pronotum in relation to head and elytra more slender, remarkably narrower than both. Taxa of which the general facies is less parallel and more slender. ....
- 100 (101). Apex of median lobe (fig. 12). 6.5-8.0 mm. NEW GUINEA : Morobe..... **phaeax phaeax** n. sp.
- 101 (100). Apex of median lobe (fig. 13). 6.5-8.0 mm. NEW GUINEA : Morobe..... **phaeax peculiaris** n. ssp.
- 102 (65). Metallic (blue-green-violet-coppery) *or* not metallic, blackish species of different length. Antennae, palpi, and legs mostly shorter although (mostly) even long and thin, when reflexed only exceptionally more than last 4 segments of antennae extending beyond the posterior margin of pronotum. Species with those exceptional long antennae either have entirely yellowish legs or their elytra are at most somewhat longer than broad (but not *much* longer), and the punctuation of the fore-parts is sparser.

Punctuation of fore-parts (mostly) sparser, less coarse, not transversely coalescent.

- Females of some of the following species cannot be identified with certainty. ....
- 103 (106). Interstices of elytral punctation at  $50\times$  distinctly or perceptibly reticulated (clean surface is necessary !), (in *hagenensis* reticulation can be nearly obsolete). Abdomen distinctly reticulated. ....
- 104 (105). Punctuation of elytra coarse, regular, and dense, largest punctures distinctly larger than widest cross section of 2nd antennal segment, interstices in sutural half mostly smaller than half the diameter of a puncture. Punctuation of frons and of anterior half of pronotum fine and sparse. Head broader in relation to elytra. ♂: 8th sternite with a deep and narrow excision in about posterior half, aedeagus (fig. 29). 5.0-6.3 mm. NEW GUINEA: Morobe; PAPUA: Central, Northern ..... **visendus** Last
- 105 (104). Punctuation of elytra less coarse, more irregular, and less dense, largest punctures distinctly smaller than widest cross section of 2nd antennal segment, generally about equal to widest cross section of 3rd antennal segment, (or smaller), interstices in sutural half generally larger than half the diameter of a puncture, often even larger than diameter of punctures. Punctuation of frons coarse and in any case laterally-dense. Anterior half of pronotum moderately coarsely and moderately densely punctate. Head narrower in relation to elytra. ♂: 8th sternite with a notch less deep and broader in about posterior 4/11, aedeagus (fig. 22, 23). 5.0-6.3 mm. NEW GUINEA: W. Highlands, E. Highlands; PAPUA: S. Highlands ..... **hagenensis** Last
- 106 (103). Interstices of elytral punctation without reticulation. Abdomen with or without reticulation. Mostly species which are metallic, some of them strikingly lustrous-metallic .....
- 107 (142). Whole abdomen reticulated, i. e. tergites 4-6 also (at  $50\times$ , having a clean specimen) .....
- 108 (125). Interstices of elytral punctation in sutural half in any case distinctly larger than diameter of punctures, largest punctures smaller than widest cross section of 2nd antennal segment.....
- 109 (110). Elytra at suture diverging at posterior 2/3, they are slightly broader than head. ♂: 8th sternite with a subtriangular notch in about posterior 1/3, aedeagus (fig., Puthz 1972b). 5.4-6.0 mm. NEW GUINEA: Morobe..... **archboldi** Puthz
- 110 (109). Elytra at suture not diverging, elytra closely contiguous .....
- 111 (114). More slender species, head, in relation to elytra, broader, very distinctly broader than elytra at shoulders 9th sternite and valvifer apicolaterally acute .....
- 112 (113). 10th tergite at posterior margin rounded. Aedeagus (fig. 26). 5.0-6.5 mm. PAPUA: S. Highlands; NEW GUINEA: W. Highlands ..... **giluwemontis** n. sp.
- 113 (112). 10th tergite at posterior margin distinctly concave. Aedeagus (fig. 16). 5.5-7.5 mm ..... (**cheesmanianus** Cameron)
- 114 (110). Broader and more robust species, head, in relation to elytra, narrower, narrower than elytra at shoulders or about as broad as. 9th sternite and valvifer apicolaterally acute or rounded (serrated).....
- 115 (118). 9th sternite or valvifer apically rounded (serrated) (e. g. fig. 34) .....
- 116 (117). Larger species, antennae longer, when reflexed more than last 3 segments extending beyond the posterior margin of pronotum. Punctuation of frons finer, largest punctures distinctly smaller than widest cross section of 3rd antennal segment, at most as large as basal cross section of 3rd antennal segment. Last 3 antennal segments more slender, segment 9 at least  $3\times$  as long as broad. ♂: 8th sternite with a rounded notch in about posterior 1/4, aedeagus (fig. 23). 6.0-7.2 mm. PAPUA: S. Highlands.....**gressitti** n. sp.
- 117 (116). Smaller species with distinctly shorter antennae, when reflexed less than last 3

- segments extending beyond the posterior margin of pronotum. Punctuation of frons coarser, diameter of largest punctures distinctly wider than basal cross section of 3rd antennal segment, at places as large as widest cross section of that segment. Last 3 antennal segments shorter, segment 9 at most 2.5 × as long as broad. ♂ : 8th sternite with a broad emargination in about posterior 7th, aedeagus (fig. 33). 4.5-5.7 mm ..... (**conflictatus** n. sp.)
- 118 (115). 9th sternite and valvifer different, apicolaterally at least acutely produced (e. g. fig. 15, 19, 21, 28, 32) .....
- 119 (120). 10th tergite at posterior margin broadly rounded or (at most) truncate. Species mostly more coarsely punctate and with very shallow abdominal reticulation. ♂ : 8th sternite with a rounded notch in about posterior 2/5, aedeagus (fig. 27). 5.5-7.5 mm. PAPUA : Mt Tafa ; NEW GUINEA : W. Highlands, Morobe ..... **cheesmanae** Cameron
- 120 (119). 10th tergite at posterior margin concave, sometimes only shallowly but distinctly emarginated .....
- 121 (124). Elytral punctuation about as coarse or slightly coarser and about as dense as that of pronotum.....
- 122 (123). Species slightly finer and less densely punctate. ♂ : 8th sternite with a subtriangular notch in about posterior 2/5 (93 : 36), aedeagus (fig. 17). 5.0-6.0 mm. NEW GUINEA : Madang..... **moorensis** n. sp.
- 123 (122). Species slightly more coarsely and more densely punctate. ♂ : excision of sternite 8 deeper (90 : 38), aedeagus (fig. 18). 5.5-6.2 mm..... (**lasti** n. sp.)
- 124 (121). Elytral punctuation distinctly finer and sparser than that of pronotum. ♂ : 8th sternite with a triangular notch in about posterior 2/5, aedeagus (fig. 3, Puthz 1969c). 6.5 mm ..... (**lorianus** Puthz)
- 125 (108). Interstices of elytral punctuation distinctly smaller than diameter of punctures, only exceptionally as large .....
- 126 (131). Largest elytral punctures as large or larger than widest cross section of 2nd antennal segment .....
- 127 (128). Smaller species, less than 5.0 mm, fore-parts very coarsely punctate, largest punctures of frons distinctly larger than widest cross section of 3rd antennal segment. (Reticulation of abdomen almost imperceptible). 4.3-4.8 mm ..... (**magnepunctatus** n. sp.)
- 128 (127). Larger species, exceeding 5.0 mm, fore-parts much less coarsely punctate, largest punctures of frons at most as large as widest cross section of 3rd antennal segment .....
- 129 (130). Pronotum broader and with a broad transverse impression in posterior half. 9th sternite and valvifer rounded at serrated posterior margin. Reticulation of abdomen almost visible. Aedeagus (fig. 38). 6.0-6.5 mm.....(**triton** n. sp.)
- 130 (129). Pronotum narrower and with lateral impressions only in posterior 1/2. 9th sternite and valvifer apicolaterally acute. Reticulation of abdomen distinct or very shallow. Aedeagus (fig. 16). 5.5-7.5 mm..... (**cheesmanianus** Cameron)
- 131 (126). Largest elytral punctures distinctly smaller than widest cross section of 2nd antennal segment .....
- 132 (133). 9th sternite and valvifer at posterior margin rounded (serrated). Aedeagus (fig. 23). 6.0-7.2 mm ..... (**gressitti** n. sp.)
- 133 (132). 9th sternite and valvifer apicolaterally acute .....
- 134 (135). More robust species with broader pronotum having a broad transversal impression in posterior half. Middle of frons callus-like elevated. ♂ : 8th sternite with a subtriangular notch in about posterior 2/5, aedeagus (fig. 20). 6.0-8.0 mm. NEW GUINEA : E. Highlands ; PAPUA : S. Highlands ..... **interminatus** Last

- 135 (134). Less robust, more slender species with less broad pronotum having only lateral impressions in posterior 1/2.....
- 136 (139). Head in relation to elytra broader, distinctly broader than elytra at shoulders.....
- 137 (138). Elytral punctation coarser and denser. 10th tergite at posterior margin at least shallowly emarginated. ♂: 8th sternite with a subtriangular notch in about posterior 3rd, aedeagus (fig. 16). 5.5-7.5 mm. PAPUA: Central; NEW GUINEA: W. Highlands, E. Highlands, Morobe..... **cheesmanianus** Cameron
- 138 (137). Elytral punctation finer and less dense (especially in sutural 3rd). 10th tergite at posterior margin rounded or (at most) truncate. Aedeagus (fig. 26). 5.0-6.5 mm.....(**giluwemontis** n. sp.)
- 139 (136). Head in relation to elytra narrower, at most as broad as elytra at shoulders.....
- 140 (141). Abdominal punctation less fine, punctures of tergite 4 about as large as basal cross section of 3rd antennal segment. 10th tergite at posterior margin rounded. Aedeagus (fig. 27). 5.5-7.5 mm. PAPUA: Mt Tafa; NEW GUINEA: W. Highlands, Morobe..... **cheesmanae** Cameron
- 141 (140). Abdominal punctation finer, punctures of tergite 4 much smaller than basal cross section of 3rd antennal segment. 10th tergite at posterior margin distinctly concave. Aedeagus (fig. 18). 5.5-6.2 mm. NEW GUINEA: Moife..... **lasti** n. sp.
- 142 (107). At least tergites 4 and 5 without reticulation.....
- 143 (168). Interstices of elytral punctation often larger than diameter of punctures.....
- 144 (145). Greatest diameter of elytral punctures more than or equal to diameter at widest cross section of 2nd antennal segment. 9th sternite (fig. 32), aedeagus (fig. 31). 5.5-6.3 mm. NEW GUINEA: E. Highlands, Morobe ..... **hornabrooki** n. sp.
- 145 (144). Greatest elytral punctures distinctly less than widest cross section of 2nd antennal segment. 9th sternite and valvifer apicolaterally rounded (serrated) or acute .....
- 146 (149). Shiny black species, at most with an indistinct coppery-violet tint, neither blue nor green. 9th sternite and valvifer apicolaterally rounded (serrated). ♀♀ very difficult to determine. ....
- 147 (148). Head in relation to elytra broader, distinctly broader than pronotum. Aedeagus (fig. 35). 4.5-5.2 mm. NEW GUINEA: Morobe ..... **planus** Last
- 148 (147). Head in relation to elytra narrower, feebly broader than pronotum. Aedeagus (fig. 36). 5.0-6.5 mm. NEW GUINEA: E. Highlands, Madang, Morobe..... **nigrescens** n. sp.
- 149 (146). Intensive metallic species: greenish-bluish-violet-coppery. 9th sternite and valvifer apicolaterally rounded (serrated) or acute .....
- 150 (151). Head in relation to elytra broader, distinctly broader than elytra at shoulders. ♂: 8th sternite with a subtriangular notch in about posterior 3rd, 9th sternite apicolaterally acute, aedeagus (about as in fig. 31). 5.0-5.8 mm. WEST IRIAN: Star Mts, Wisselmeren..... **pretiosus** n. sp.
- 151 (150). Head in relation to elytra narrower, at most about as broad as elytra at shoulders. 9th sternite and valvifer apicolaterally rounded (serrated) or acute.....
- 152 (163). Interstices of elytral punctation in sutural half generally larger or much larger than diameter of punctures .....
- 153 (158). 9th sternite or valvifer apicolaterally acute.....
- 154 (157). Tergite 6 without reticulation (at 60 ×) .....
- 155 (156). Punctuation of pronotum distinctly somewhat coarser than that of elytra. ♂: 8th sternite with a triangular notch in posterior 2/5 (fig. 4, Puthz 1969c), 9th sternite (fig. 5, 1. c.), aedeagus (fig. 6, 1. c.), median lobe trident-like. 5.8-6.5 mm. PAPUA: Mondo, Moroka..... **neptunus** Puthz
- 156 (155). Punctuation of elytra distinctly coarser than that of pronotum. ♂: 8th sternite



- with a deeper notch (94: 35), 9th sternite (fig. 28), aedeagus (fig. 27). 5.5-7.5 mm. PAPUA: Mt Tafa; NEW GUINEA: W. Highlands, Morobe.....  
 ..... **cheesmanae** Cameron
- 157 (154). Tergite 6 at 60 × perceptibly or distinctly reticulated. ♂: 8th sternite with a triangular notch in about posterior 2/5 (fig. 2, Puthz 1969c), aedeagus (fig. 3, 1. c.). 6.5 mm. NEW GUINEA: S.E.: Moroka (?)..... **lorianus** Puthz
- 158 (153). 9th sternite and valvifer apicolaterally rounded (serrated) .....
- 159 (162). Penultimate antennal segments longer, at least 2 × as long as broad .....
- 160 (161). Shiny bluish-violet, elytra distinctly but not much longer than broad. Punctuation of pronotum moderately coarse and not very dense, dorsal punctures about as large as widest cross section of 3rd antennal segment. ♂: 8th sternite with a triangular notch in about posterior 3rd, aedeagus (fig. 37). 5.0-6.0 mm. NEW GUINEA: Morobe..... **poseidon** n. sp.
- 161 (160). Shiny greenish-aeonous, elytra much longer than broad. Punctuation of pronotum moderately fine and very sparse, dorsal punctures distinctly smaller than widest cross section of 3rd antennal segment. ♂ unknown. 6.0-6.5 mm. WEST IRIAN: NW: Nabire .....
- ..... **amphitrite** n. sp.
- 162 (159). Penultimate antennal segments distinctly less than 2 × as long as broad. Aedeagus (fig. 33). 4.5-5.7 mm .....
- .....(**conflictatus** n. sp.)
- 163 (152). Interstices of elytral punctuation in sutural half often or repeatedly but not generally larger, not at all much larger than diameter of punctures .....
- 164 (165). Smaller species with shorter penultimate segments of antennae. 9th sternite or valvifer as in fig. 34. 4.5-5.7 mm. NEW GUINEA: E. Highlands, Madang .....
- ..... **conflictatus** n. sp.
- 165 (164). Larger species with longer penultimate antennal segments. 9th sternite or valvifer apicolaterally acute (fig. 15).....
- 166 (167). Punctuation of frons coarser and denser. Aedeagus (fig. 14). 5.5-6.5 mm. NEW GUINEA: E. Highlands.....**bacchus** n. sp.
- 167 (166). Punctuation of frons less coarse and more distant. Aedeagus (fig. 27). 5.5-7.5 mm .....
- ..... (**cheesmanae** Cameron)
- 168 (143). Interstices of elytral punctuation smaller than diameter of punctures (can be as large at places, exceptionally).....
- 169 (170). Black species, at most with lead-colored luster. ♂: 8th sternite with a deep and narrow excision in about posterior 2/5, aedeagus (fig. 17, Benick 1938; fig. 2, Scheerpeltz 1957). 4.8-6.0 mm. NEW GUINEA: Morobe; WEST IRIAN, SUMBAWA, SUMBA, JAVA.....**crinitus** L. Benick
- 170 (169). More or less strongly metallic species: bluish-violet-coppery .....
- 171 (178). Elytral punctuation coarser, largest punctures as large or larger than widest cross section of 2nd antennal segment .....
- 172 (173). Smaller species. ♂ unknown. 4.3-4.8 mm. PAPUA: Central ...**magnepunctatus** n. sp.
- 173 (172). Larger species, exceeding 5.0 mm
- 174 (175). Punctuation of pronotum strikingly finer and sparser than that of elytra. Head narrower than elytra at shoulders, pronotum with a remarkable and broad transversal impression in posterior half, elytra slightly longer than broad. ♂: 8th sternite with a subtriangular notch in about posterior 3rd, aedeagus (fig. 38). 6.0-6.5 mm. WEST IRIAN: NE .....
- ..... **triton** n. sp.
- 175 (174). Punctuation of pronotum about as coarse and scarcely sparser than that of elytra. Pronotum without the distinctive transversal impression in posterior 1/2 (but can have lateral impressions!) .....
- 176 (177). Head distinctly narrower than elytra at shoulders (less parallel species). Elytra less longer than broad. ♂: 8th sternite with a triangular notch in about pos-

- terior 5th, aedeagus (fig. 31). 5.5-6.3 mm. NEW GUINEA: E. Highlands, Morobe ..... **hornabrooki** n. sp.
- 177 (176). Head not narrower than elytra at shoulders (more parallel species), elytra much longer than broad. ♂: 8th sternite with a narrow excision in about posterior 1/2 aedeagus (fig. 1, Puthz 1969c). 5.5-6.5 mm. "Ramoi env. Sovong"; PAPUA: Western, Northern, Central; WEST IRIAN: NE ..... **coelestis** Fauvel
- 178 (171). Elytral punctation finer, diameter or largest punctures distinctly smaller than widest cross section of 2nd antennal segment.....
- 179 (180). Smaller species with shorter penultimate segments of antennae and apically rounded (serrated) 9th sternite or valvifer. Aedeagus (fig. 33). 4.5-5.7 mm.....  
..... (**conflictatus** n. sp.)
- 180 (179). Larger species with longer penultimate segments of antennae and apicolaterally acute 9th sternite or valvifer. Aedeagus (fig. 16). 5.5-7.5 mm .....  
..... (**cheesmanianus** Cameron)

#### 4. *The cursorius-group* Map 1.

Small "*Hypostenus*" — species, not exceeding 4.0 mm, antennae short, frons very broad and flat, pronotum short. General appearance dull, punctation and ground sculpture extremely dense, pubescence short but conspicuous, silvery or golden shiny. Legs reddish-yellow or yellowish/blackish, those of ♂♂ without special sexual characters. Sternites of ♂ lack special characters, 8th sternite more or less shallowly emarginated, 9th sternite or valvifera apicolaterally regularly serrated, outline round, 10th tergite with apomorphic characters (fig. 260, Puthz 1971c): forks, anchors, or at least one distinct apicolateral tooth on each side, between them distinctly emarginated. Aedeagus of a very similar type, median lobe with a narrow, lancetlike apical portion; inside there are longitudinal expulsion-bands, a tube-like internal sac, and some other membranous structures, no strongly sclerotized elements.

#### ***Stenus (Hypostenus) cursorius* L. Benick, 1921**

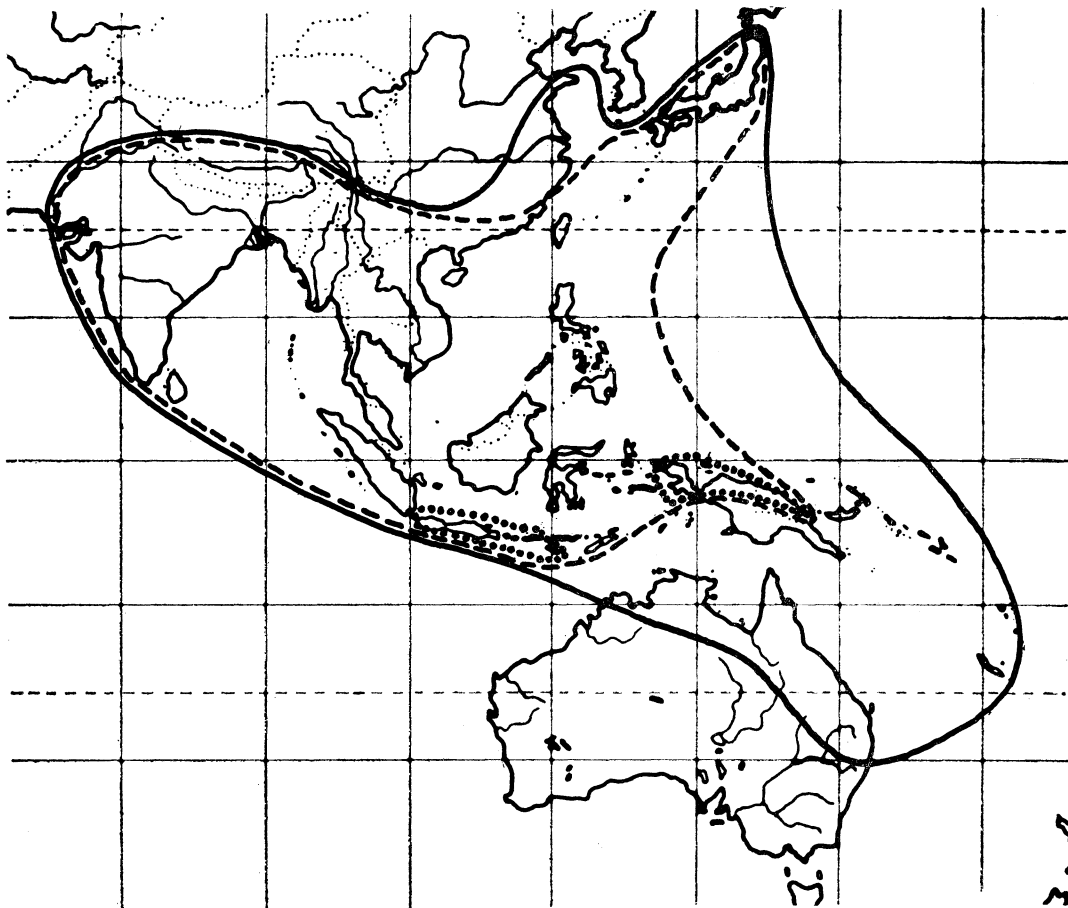
*Stenus cursorius* L. Benick, 1921, *Ent. Mitt.* **10**: 193 (n. n.) — L. Benick, 1938, *Stettin. Ent. Ztg.* **99**: 5, 26. — Puthz, 1969, *Bull. Inst. R. Sci. Nat. Belg.* **45** (9): 26 f. figs. — Puthz, 1970, *Mem. Natn. Mus. Vic.* **31**: 65 f.

*Stenus planifrons* Fauvel, 1889 (nec Rey 1884), *Revue Ent.* **8**: 253. — Fauvel, 1903, *l. c.* **22**: 262.

This widely distributed species (compare fig. 39) was firstly recorded from New Guinea by me 1970. In coll. Fauvel (Brussels) there is 1 ♂: "Ile des lacs N<sup>lle</sup> Guinée/Friedrich-Wilhelmshafen".

#### 5. *The piliferus-group* Map 2.

Small "*Hypostenus*" — species, not exceeding 4.5 mm, antennae short, narrow frons with 5 distinct shining plaques (elevated median portion, antennal tubercles, and a small area near inner eye margin posteriorly); pronotum short and convex, not or only slightly longer than broad. General appearance shiny, punctation differently coarse and dense, interstices smooth (in some species faint microsculpture on abdomen). Legs reddish-yellow, apices of femora distinctly infuscated, basal portion of tibiae lighter than apical portion, tarsi short and broad, legs of ♂ lack special sexual characters as does the



Map 1. Distribution of the Oriental species of the *cursorius*-group (—), *cylindricollis*-group (-----), and *Stenus crinitus* Benick (.....).

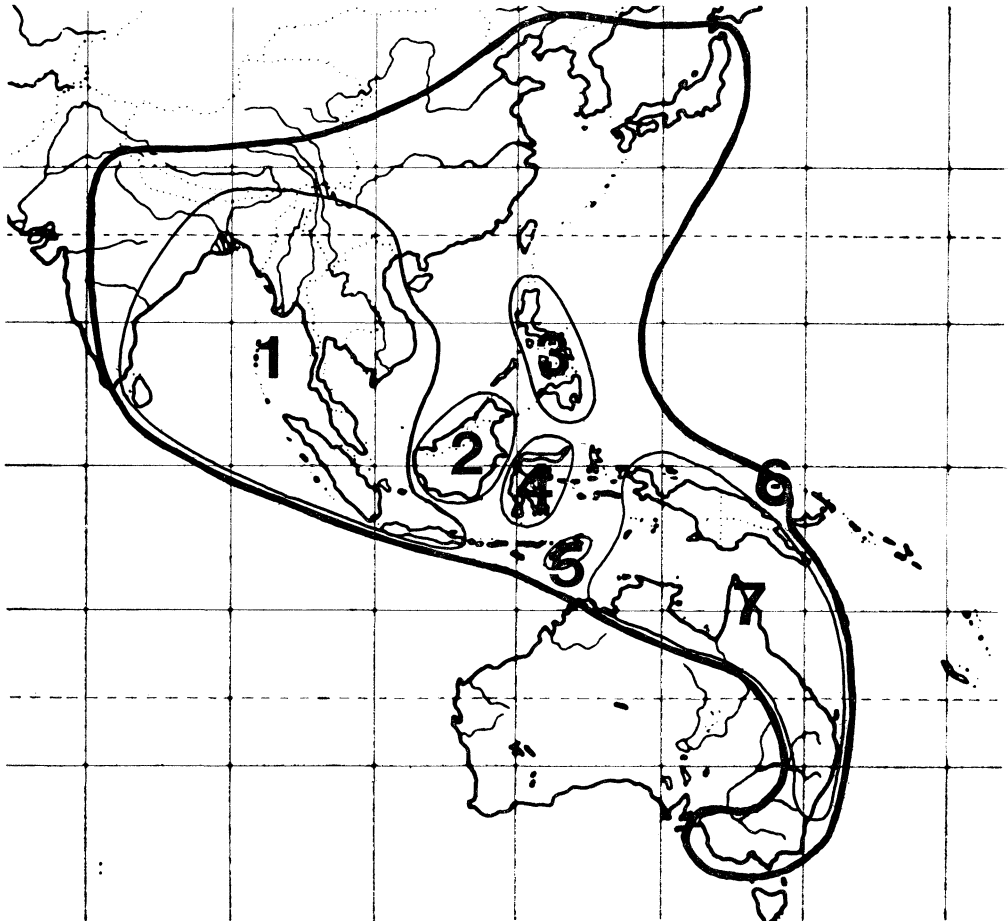
ventral side of abdomen. 8th sternite of ♂ more or less deeply and narrowly emarginated. 9th sternite or valvifera apicolaterally with a distinct tooth, which mainly consists of the somewhat rolled sides of those sclerites (exception: one Australian species), 10th tergite more or less narrowly rounded at smooth posterior margin. Aedeagus with a long median lobe its apical portion more or less triangular or lanceolate (cf. fig. 4-5, Puthz 1966; 11-14, Puthz 1970b), no strongly sclerotized inner structures but membranous elements, internal sac tube-like, set with different weakly sclerotized hooks.

***Stenus (Hypostenus) piliferus obesulus* Fauvel, 1878** Fig. 25.

*Stenus piliferus obesulus*; Puthz, 1970, *Mem. Natn. Mus. Vic.* 31: 67 f. figs.

*Stenus obesulus* Fauvel, 1878, *Annali Mus. Civ. Stor. Nat. Giacomo Doria* 13: 506.

*Stenus piliferus*; Last, 1970, *J. Nat. Hist.* 4: 358.



Map 2. Distribution of the *piliferus*-group. Numbers indicate areas of subspecies of *Stenus piliferus* Motschulsky : (1) *piliferus piliferus* Motschulsky, (2) *piliferus conulus* Benick, (3) *piliferus banosanus* Benick, (4) *piliferus sulawesicus* Puthz, (5) *piliferus timoricola* Puthz, (6) *piliferus mussauensis* Puthz, (7) *piliferus obesulus* Fauvel.

Material studied: (from New Guinea): 1 ♂, 1 ♀ : Papua: Central: Loloki, ca. 10 m N of Pt. Moresby, 19.III.1965, M. E. Bacchus (BM, coll. m.); 1 ♀ : Morobe: Gusap, Markham Valley c. 90 m W of Lae, 1000 ft., 27.-30.I.1965, M. E. Bacchus (BM); 10 ♂♂, 5 ♀♀ : Eastern Highlands: Okusa, subdistr. Okapa, 20.IV.1965, Hornabrook (BM, coll. Hornabrook, Last, coll. m.); 1 ♀ : Sepik, 21.III.1965, Hornabrook (BM); 1 ♂ : Sepik: Yentchan, Main River, running on mud of creek, 18.III.1965, Hornabrook (BM).

Punctuation and shape of the apex of the aedeagus are distinctly variable in this subspecies (cf. Puthz 1970b). Parameres longer than median lobe, apical portion of median lobe as in fig. 25 or more slender (about as in fig. 11, Puthz 1970 b).

This insect is also known from Australia.

***Stenus (Hypostenus) agricola* Puthz, new species** Fig. 24.

Etymology: the peasant.

This new species belongs to the *piliferus*-group.

Shining black with a very weak steel-blue tint, coarsely and sparsely punctate, shortly pubescent. Antennae yellowish, club infuscated. Palpi yellowish. Legs reddish yellow, femora at apices dark brown or blackish, the dark color sharply separated from the lighter base, about basal half of tibiae yellowish, apical half light brown, tarsi light brown. Clypeus and labrum blackish, densely pubescent.

Length: 4.0-4.5 mm.

♂. Holotype (BMNH): Dutch New Guinea: Lake Sentani., Iffar, VIII.1936, L. E. Cheesman; paratypes: 1 ♀: Morobe: Gusap, Markham Valley c. 90 m W of Lae, 1000 ft., 27.-30.I.1965, Stn. no. 166, M. E. Bacchus (coll. m.); 1 ♀: Toivora, 15.IX.1971, Hornabrook (coll. Last).

*Head* well as broad as elytra at shoulders, distinctly narrower than greatest width of elytra (34: 43), frons narrow (average distance between eyes: 16) with a broad and smooth median callus which is distinctly convergent anteriorly. Antennal tubercles and a small area near each inner eye margin posteriorly also smooth; longitudinal furrows and side portions of frons with the punctation moderately fine and close, largest punctures slightly smaller than widest cross section of 3rd antennal segment, interstices generally smaller than diameter of punctures. *Antennae* (in ht damaged) moderately slender and short, when reflexed extending beyond the middle of pronotum, penultimate segments slightly longer than broad. *Pronotum* about as long as broad (30: 29), convex, slightly concave in its posterior fourth. Punctation coarse and sparse, largest punctures well as large as widest cross section of 2nd antennal segment, posterior middle and a longitudinal area on each side of the middle impunctate, interstices on rest of surface sometimes as large as diameter of punctures, sometimes smaller. *Elytra* distinctly broader than head (43: 34), about as long as broad, humeri prominent, sides towards posterior margin distinctly but not much divergent, restricted in posterior fourth, posterior margin deeply emarginated (sutural length: 33). Sutural and humeral impressions shallow, two other shallow impressions on the sides include a shallow callus. Punctation very coarse and moderately sparse, largest punctures conspicuously larger than widest cross section of 2nd antennal segment, interstices in sutural half often distinctly larger than diameter of punctures, smaller in lateral half. *Abdomen* distinctly narrowed posteriorly, basal furrows of first segments deep. Punctation of tergite 3 moderately coarse and sparse, slightly finer than that of pronotum, tergites 4-6 distinctly finer and sparser punctate, punctures nearly as large as one eye facet, interstices - especially medially - 3 times or more as large as diameter of punctures, tergite 7 and 8 with the fine punctation about twice as dense as that of tergite 6. *Legs* moderately robust, posterior tarsi about three fifth of the metatibial length, 1st segment nearly as long as the 2 following together, slightly shorter than the last.

The whole insect (also the tip of abdomen) without microsculpture on surface.

♂: 7th sternite in posterior middle finer and denser punctate and pubescent than on the sides. 8th sternite with a subtriangular, narrow notch in about posterior 4th. 9th sternite with a distinct apicolateral tooth. 10th tergite narrowly rounded. *Aedeagus* (fig. 24).

♀: 8th sternite rounded at posterior margin. Valvifera with an apicolateral tooth. 10th tergite rounded.

*Stenus agricola* n. sp. can be separated from *S. piliferus obesulus* Fauv. by its robust

appearance, the broader median portion of frons, coarser and sparser punctation of the fore parts, finer and sparser punctation of the abdomen, faint steel-bluish tint, and the aedeagus.

6. *The cylindricollis-group* Map 1.

Long and slender "*Hypostenus*" — species, non-metallic (exceptions), sometimes elytra with yellowish markings, 5 mm and more in length, antennae, palpi, and legs long, frons moderately broad or narrow, mostly flat, pronotum distinctly longer than broad, more or less parallel-sided. General appearance shiny, punctation differently coarse and dense, interstices generally smooth (exceptions), pubescence very distinct, in numerous species the abdominal pubescence long and erect. Legs generally yellowish, 1st segment of posterior tarsi about as long as the 3 following together, much longer than the last. Legs of males lack special sexual characters, ventral side of abdomen in males with different impressions but without striking characters like teeth, horns etc., 8th sternite differently, mostly deeply, emarginated, 9th sternite and valvifera apicolaterally serrated (comp. fig. 80, Puthz 1969b). 10th tergite at smooth posterior margin rounded or shallowly emarginated. Aedeagus (comp. figs. 4, Puthz 1967; 25, Puthz 1968a; 77, 88, Puthz 1969b; 8, Puthz 1970c; 3, Puthz 1971 b) long and (mostly) slender, apical portion of median-lobe very different in shape, mostly with two ventrolateral areas of accumulated short setae; inside there are long and narrow expulsion-bands, an apical expulsion-clasp with two anterior corns, internal sac long and slender, tube-like.

*Stenus* (*Hypostenus*) *crinitus* L. Benick, 1926

*Stenus crinitus* L. Benick, 1926, *Ent. Mitt.* 15: 269 f. — Puthz, 1967, *Ark. Zool.* (2) 19: 295 f. — Last, 1970, *J. Nat. Hist.* 4: 359.

*Stenus cylindricollis*; L. Benick, 1938, *Stettin. Ent. Ztg.* 99: 43, fig. 17.

*Stenus sericeovillosus* Scheerpeltz, 1957, *Verh. naturf. Ges. Basel* 68: 252-255 fig.

Material studied from New Guinea: 1 ♂: Golf Huon (Mus. Brussels); 1 ♀: Buana, Sarawaged Range, 3000 ft., 20-30 m N of Lae, III.1966, Hornabrook (BM); 1 ♂, 1 ♀: Waris, S. of Hollandia, 450-500 m, VIII.1959, T. C. Maa (BISHOP).

A widely distributed species, known also from Java, Sumbawa, Sumba.

7. *The "New Guinea-group"*

All hitherto known New Guinean *Hypostenus* which have not been quoted above belong to a complex of related species. At present I cannot separate this complex into monophyletic groups. It seems to be highly probable that the reason for this situation is found in low degree of diversity at species level, in biogeographical history of *Stenus*, and in our insufficient knowledge of *all* species actually living in that large island.

The complexes preliminarily defined below represent the attempt to put the high number of species in an order. Because of close relationship there are some species which have been attributed to one or other complex artificially.

*7 a. gloriosus-complex*

Large and robust, bright-metallic and shiny with a very peculiar pubescence: setae are very long, erect, and thin, distinctly finer than the shorter ones of clypeus and labrum. Head small, much narrower than elytra, frons nearly flat; pronotum distinctly but not much longer than broad, elytra about as long as broad, 8th tergite with an apicomedial area closely set with short and strong setae, 9th sternite or valvifer apicolaterally with a distinct tooth, 10th tergite at smooth posterior margin rounded. Legs of male lack spines, but metatibiae more or less strongly curved. Ventral side of male's abdomen has strong impressions and remarkable side-carinae and/or corns.

***Stenus (Hypostenus) gloriosus* Last, 1970**

*Stenus gloriosus* Last, 1970, *J. Nat. Hist.* 4: 348 f. fig.

Material studied: types (BMNH, coll. Last, coll. Hornabrook); 1 ♀: Eastern Highlands: Waisa near Okapa, ca. 5000 ft., 15.II.1965, M. E. Bacchus, Stn. no. 193 (BM); 1 ♀: Okapa, ca. 5000 ft., 4.-15.II.1965, Stn. no. 170, M. E. Bacchus (BM); 1 ♀: Okapa, II.1968, Hornabrook (coll. m.); 1 ♀: 13 km SE Okapa, 1650-1870 m, 26.VIII.1964, J. & M. Sedlacek (BISHOP).

*Additional remarks:* The coloration varies: head, pronotum, and abdomen can be sea-green or bluish, elytra can be violet or broze-coppery.

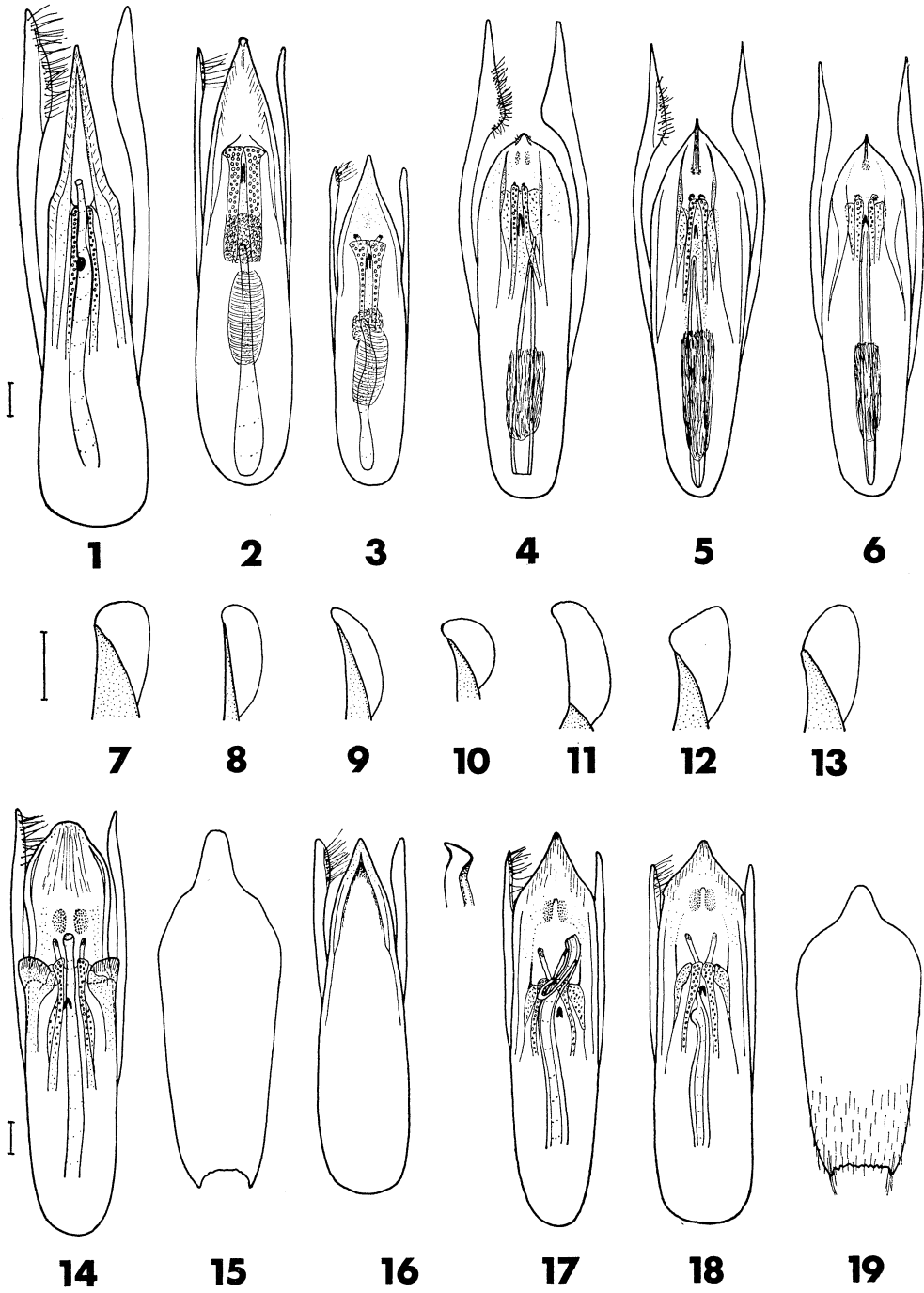
♂: Metasternum in posterior middle shallowly impressed, finely and sparsely punctate, interstices smooth. 3rd sternite finely and sparsely punctate, 4th sternite in posterior middle somewhat shallowed with the punctation and pubescence slightly denser than on the sides, 5th sternite with a distinct impression in posterior middle, its punctation and pubescence much denser than on the sides, posterior margin shallowly emarginated, 6th sternite with a broad and deep impression in posterior half, the sides of which are carinated and elevated posteriorly forming a broad tooth (on each side of the sternite), apex of the tooth distinctly separated from posterior margin of sternite (in lateral aspect!), sides of the carinae extremely finely and densely punctate and pubescent, posterior margin of sternite broadly emarginated, 7th sternite medially with the punctation denser than on the sides, posterior margin with an extremely shallow emargination in middle. 8th sternite with a subtriangular notch in posterior two fifth (95: 38). 9th sternite with a distinct tooth apicolaterally. *Aedeagus* about as in fig. 3 (Last 1970), the medianlobe more slender as figured there.

***Stenus (Hypostenus) regressus* Last, 1970** Fig. 1.

*Stenus regressus* Last, 1970, *J. Nat. Hist.* 4: 353.

Material studied: ♂ holotype (BMNH): Eastern Highlands: Okapa, 30.I.1965, Hornabrook; 3 ♀♀: Lufa, II.1971, Hornabrook (coll. Hornabrook, Last, coll.m).

*Additional remarks:* Head very small, only slightly broader than pronotum (49:43), narrower than elytra at shoulders, middle of frons slightly elevated, punctation moderately coarse and sparse, largest punctures as large as basal cross section of 4th antennal segment, interstices generally larger or much larger than punctures. Pronotum distinctly but not much longer than broad (52:43), broadest behind middle, sides from broadest point towards anterior margin nearly parallel, except in anterior 5th, to-





wards posterior margin distinctly concavely narrowed. The sides with a remarkably broad but moderately deep impression, this impression makes the anterior portion of pronotum look swollen. Elytral punctation distinctly finer than that of pronotum, punctures almost half as large as those of the middle of pronotum, interstices distinctly larger than punctures (on pronotum only in dorsal middle larger than punctures, on the rest smaller). The whole insect lacks microsculpture.

♂: Metatibiae distinctly bent. Metasternum in posterior middle distinctly impressed, finely and sparsely punctate, interstices smooth. 3rd sternite with a very shallow emargination in the middle of the posterior margin, before it broadly and triangularly shallowed, finely and densely punctate and pubescent, 4th sternite in posterior half with a very broad impression, the divergent sides of which are carina-like elevated, carinae not extending beyond the posterior margin of sternite, which has a broad and shallow emargination, punctation and pubescence of impression extremely dense and fine; impression of sternite 5 (in its posterior half) deeper and broader than that of sternite 4, sides of impression stronger carinated (in lateral aspect resembling a dorsal fin of a shark), also not extending beyond the posterior margin of sternite, which is broadly and shallowly emarginated; 6th sternite with a somewhat shorter but also very broad posterior impression, the sides of which are carinated and more divergent than those of sternite 5, the carinae become much more erect posteriorly, where they form an acute tooth on each side of the impression (in lateral aspect), they are visible also in dorsal aspect of the abdomen, posterior margin of sternite 6 broadly and shallowly emarginated; sternite 7 medially much denser punctate and pubescent than laterally, posterior middle narrowly and shallowly emarginated. 8th sternite with a very deep triangular excision in about posterior half (113: 53). 9th sternite with a distinct but short and broad apical tooth laterally. 10th tergite broadly rounded at posterior margin. *Aedeagus* (fig. 1).

♀: 8th sternite with the posterior margin rounded. Valvifera apicolaterally with a distinct tooth. 10th tergite rounded.

#### 7 b. *calosoma*-complex

Long and slender, metallic species, 5 mm and more in length, legs, palpi, and antennae yellowish, thin, spider-like, when reflexed more than the last 4 antennal segments extend beyond the posterior margin of pronotum. Head slightly broader than elytra, frons differently broad, flat, pronotum much longer than broad, nearly parallel-sided, elytra also much longer than broad and parallel-sided, both with the punctation coarse and very dense, somewhat coalescent. Abdomen coarsely punctate, sides of tergites very densely, middle of tergites differently densely punctate. 8th tergite without a small area

Fig. 1-6. Ventral aspect of aedeagus: 1, *Stenus (Hypostenus) regressus* Last (holotype); 2, *S. (H.) callimorphus* n. sp. (holotype); 3, *S. (H.) calosoma* n. sp. (holotype); 4, *S. (H.) penelope* n. sp. (holotype); 5, *S. (H.) midas* n. sp. (paratype); 6, *S. (H.) virideus* Cameron (paratype). Fig. 7-13. Lateral aspect of apex of median lobe: 7, *S. (H.) midas* n. sp. (paratype); 8, *S. (H.) croesus* n. sp. (holotype); 9, *S. (H.) odysseus* n. sp. (holotype); 10, *S. (H.) kuborensis* Last (Tomba, Mt Hagen); 11, *S. (H.) eumaius* n. sp. (holotype); 12, *S. (H.) phaeax* n. sp. (holotype); 13, *S. (H.) phaeax peculiaris* n. ssp. (holotype). Fig. 14, 15. *S. (H.) bacchus* n. sp. (holotype): 14, ventral aspect of aedeagus; 15, 9th sternite. Fig. 16. *S. (H.) cheesmanianus* Cameron (Mt Kainde), ventral aspect of aedeagus (without inner structures) and lateral aspect of the apex of median lobe. Fig. 17. *S. (H.) moroensis* n. sp. (paratype), ventral aspect of aedeagus. Fig. 18, 19. *S. (H.) lasti* n. sp. (holotype): 18, ventral aspect of aedeagus; 19, 9th sternite. Scale = 0.1 mm

of densely set setae in posterior middle but densely clothed with long setae throughout whole posterior three fifth (exception: *callimorphus*). Legs very slender, posterior tarsi about half the length of metatibiae, 1st segment about as long as the 3 following together, distinctly longer than the last. Except head the rest of surface reticulated. Legs of males lack special sexual characters, sternites without striking sexual characters (as have other complexes). 8th sternite with a deep triangular excision posteriorly, 9th sternite or valvifer apically serrated. Aedeagus long and slender, parameres not extending beyond the apex of medianlobe (but males of 2 species unknown !) which has no special median carina. Inside there are longitudinal expulsion-bands, an expulsion mechanism (clasp) with two anteriolateral corns apically, a strongly sclerotized hook in posterior middle near expulsion clasp, membranous elements showing different microstructures, and a tube-like internal sac of moderate length.

***Stenus (Hypostenus) calosoma* Puthz, new species**      Fig. 3.

Etymology: having a beautiful body.

Very beautiful, distinctly but not brightly, shiny, violet-greenish-bluish metallic, 7th tergite in posterior 3rd brownish, 8th-10th segments reddish brown, coarsely and very densely punctate and reticulated, pubescence dense and shiny, 8th tergite extremely densely set with long recumbent setae, like a coat. Antennae, palpi, and legs yellowish, apices of tarsal segments infuscated. Clypeus bright metallic, anterior margin yellowish, labrum entirely reddish yellow.

Length: 5.0-6.0 mm.

♂. Holotype (BISHOP 9730): West Irian: Waris, S of Hollandia, 450-500 m, 24.-31. VIII.1959, T. C. Maa; 3 ♂♂, 2 ♀♀ - paratypes: ibidem 1.-18.VIII.1959, sweeping, T. C. Maa (BISHOP, coll. m.).

*Head* distinctly broader than elytra (43: 41), eyes very large, frons narrow (average distance between eyes: 21) and flat, median portion impunctate, side portions coarsely and densely punctate, diameter of a puncture larger than widest cross section of 3rd antennal segment, interstices generally smaller than half the diameter of a puncture. *Antennae* extremely long and slender, when reflexed more than the last 4 segments extend beyond the posterior margin of the pronotum. *Pronotum* much longer than broad (38: 27), nearly parallel-sided, punctation very regular, coarse, and extremely dense, slightly coalescent, diameter of punctures about as large as widest cross section of 3rd antennal segment, interstices, which are deeply reticulated, much smaller than half the diameter of a puncture. *Elytra* distinctly narrower than head (41: 43), much longer than broad (53: 41), shoulders prominent, sides parallel, restricted in posterior 5th, posterior margin deeply emarginated (sutural length: 45). No distinct impressions. Punctation distinctly coarser than on pronotum but slightly less dense and more distinctly coalescent transversely, diameter of a puncture nearly as large as widest cross section of 2nd antennal segment, much larger than cross section of 3rd antennal segment, densely reticulated interstices smaller than half the diameter of a puncture. *Abdomen* slightly narrowed behind, basal furrows of first segments very deep, its pubescence divergent towards the posterior margins of tergites, punctation moderately coarse and dense, punctures of tergite 3 about as coarse as those near the eyes, punctures of tergite 6 distinctly finer, about as large as basal cross section of 3rd antennal segment, interstices on sides of tergites generally smaller than half the diameter of a puncture, in posterior middle of tergites much larger, can be slightly larger than diameter of punctures. Punctation of tergite 7 dense, twice as fine as that of

the 6th tergite. Punctuation of tergite 8 (except on its basal two fifths, which can only be seen by dissecting the last segments) not visible because the dense "coat" of setae. 10th tergite finely and sparsely punctate with blackish setae. Legs very slender, posterior tarsi about half the length of the metatibiae.

Except head and tergite 10 the whole insect is densely reticulated but nevertheless shiny in general appearance.

♂ : Punctuation of the middle of metasternum coarse and pretty dense, interstices reticulated. Punctuation of sternite 3 and 4 coarse and dense, 5th sternite in posterior middle with a narrow triangular area set with fine and sparse punctures, 6th sternite about as 5th, but the triangular area broader and more distinct, very finely and moderately densely punctate and pubescent, 7th sternite medially with a fine, granular punctuation and pubescence. 8th sternite with a triangular notch in about posterior 4th (86 : 20). 9th sternite apically serrated, ventrally with a median furrow. 10th tergite at smooth posterior margin rounded. *Aedeagus* (fig. 3).

♀ : 8th sternite broadly rounded at posterior margin. *Stenus calosoma* n. sp. can be easily separated from most of its relatives by the coat-like pubescence of tergite 8, from its sister species *S. callithrix* (s. b.) by coarser and denser abdominal punctuation.

***Stenus (Hypostenus) callithrix* Puthz, new species**

Etymology : beautifully pubescent.

This is the sister species of *S. calosoma* Puthz.

In nearly all respects similar to *calosoma*, but larger, frons broader, abdomen distinctly coarser and denser punctate, interstices in posterior middle of tergites generally smaller than half the diameter of a puncture, the pubescence throughout more erect, especially that of abdomen, that of tergite 8 slightly less dense and less shiny.

Length : 5.5-6.5 mm.

♀. Holotype (BISHOP 9731) : West Irian : Vogelkop : Fak Fak, S. coast of Bomberai 100-700 m, 5.VI.1959, T. C. Maa ; ♀ paratype (coll. m.) : ibidem 700-900 m, 9.VI.1959, J. L. Gressitt.

***Stenus (Hypostenus) callopistes* Puthz, new species**

Etymology : a fop or dandy.

Except the head all other parts of the insect are coarsely and very densely punctate and distinctly reticulated but nevertheless very beautifully sea-greenish-violet shiny (except the posterior portion of segment 8 and the following ones, which are reddish-brownish), pubescence remarkable, especially that of abdomen, recumbent. Antennae, palpi, and legs yellowish or slightly light-brownish, apices of tarsal segments infuscated. Anterior margin of polished clypeus reddish yellow as also the anterior 3rd of the labrum, both sparsely pubescent.

Length : 7.0-8.0 mm.

♀. Holotype (BISHOP 9732) : West Irian : Swart Valley : W. Fork, 1500-1950 m, 13.XI.1958, J. L. Gressitt ; ♀-paratype : Swart Valley : Karubaka, 1300 m, 17.XI.1958, *Freycinetia*, J. L. Gressitt (coll. m.).

*Head* slightly broader than elytra (53 : 52), frons broad (average distance between eyes : 30), regularly concavely excavated, polished, on each side portion some fine scattered punctures,

their diameter smaller than basal cross section of 3rd antennal segment: punctures set in about one longitudinal row (separating the middle portion of frons from the side portions) and scattered on side portions, widely separated from inner eye margins, which are not accompanied by a puncture series as common in other *Stenus*-species. *Antennae* very long and slender as usual in the *calosoma*-complex. *Pronotum* much longer than broad (50: 35) and nearly parallel-sided, posterior 5th constricted. Behind middle there can be seen a broad but deep lateral impression. Punctuation coarse and extremely dense, often confluent, diameter of a puncture about as large as medial cross section of 3rd antennal segment, interstices generally smaller than half the diameter of a puncture. *Elytra* slightly narrower than head (52: 53), at first glance slightly broader (because of optical deception), much longer than broad (69: 52), shoulders prominent, sides parallel, restricted in posterior 7th, posterior margin deeply emarginated (sutural length: 45). Sutural and humeral impressions shallow. Punctuation distinctly but slightly coarser than on pronotum and more transversely confluent, interstices smaller than half the diameter of a puncture. *Abdomen* slightly narrowed behind, basal furrows of first segments deep, pubescence long and recumbent, setae arranged longitudinally curved towards the middle, that of tergite 8 dense but not "coat"-like, punctuation and groundsculpture distinctly visible between setae. Punctuation throughout coarse and very dense, on first tergites about as coarse as on pronotum, on tergite 7 slightly finer than on tergite 6, not twice as fine. 10th tergite finely and sparsely punctate. Interstices of abdominal punctuation generally smaller than half the diameter of a puncture, larger in posterior middle of tergites. *Legs* as in the related species.

Head without groundsculpture, interstices of pronotum indistinctly reticulated, those of elytra and, still more distinct, those of abdomen with distinct but not very deep reticulation.

♀: Sexual characters as in the related species. For to distinguish the new species from other New Guinean species see key above.

***Stenus (Hypostenus) callimorphus* Puthz, new species**      Fig. 2.

Etymology: having a beautiful appearance.

Moderately shiny, bluish-greenish-violet-metallic, head coarsely but sparsely punctate, pronotum and elytra coarsely and very densely punctate, abdomen coarsely and moderately densely punctate, distinctly but not conspicuously pubescent. Antennae, palpi, and legs yellowish, apices of tarsal segments infuscated. Anterior margin of clypeus and anterior half of labrum reddish yellow, densely pubescent.

Length: 6.0-7.0 mm.

♂. Holotype (BISHOP 9733): Papua: Northern: Daradae Plantation, 500 m, 80 km N to Port Moresby, 7.IX.1957, sweeping, T. C. Maa.

*Head* slightly broader than elytra (49: 48), frons moderately narrow (average distance between eyes: 26), deeply concavely excavated, punctuation coarse and sparse, largest punctures as large as widest cross section of 3rd antennal segment, middle portion of frons nearly impunctate as are small areas near antennal tubercles and near inner eye margins posteriorly, interstices on rest of frons generally larger than half the diameter of a puncture, at places as large as punctures. *Antennae* very long and slender, as usual in the *calosoma*-complex. *Pronotum* distinctly longer than broad (42: 33), sides nearly parallel, restricted in posterior quarter. Slightly behind the middle there is a broad and shallow transverse impression (more distinct laterally than dorsally). Punctuation coarse and very dense, diameter of a puncture distinctly larger than widest cross section of 3rd antennal segment but smaller than widest cross section of 2nd antennal segment, interstices smaller than half the diameter of a puncture.

*Elytra* nearly as broad as head (48: 49), much longer than broad (62: 48), shoulders prominent, sides parallel, restricted in posterior 6th, posterior margin deeply emarginated (sutural length: 52). Impressions very shallow. Punctuation slightly coarser than on pronotum but a little transversely confluent, interstices narrower than half the diameter of a puncture. *Abdomen* slightly narrowed behind, basal furrows of first segments very deep. Punctuation coarse and very dense on the sides, much sparser in dorsal middle where interstices are generally larger than half the diameter of a puncture, sometimes as large as punctures. Largest punctures of tergite 5 as large as medial cross section of 3rd antennal segment, punctures of tergite 7 about as large as basal cross section of 3rd antennal segment, 8th tergite (except base) with very fine and shallow, scattered punctures as also the 10th tergite. *Legs* about as in the related species.

Head without groundsculpture, interstices of pronotal and elytral punctuation faintly reticulated, reticulation of the whole abdomen shallow but distinct.

♂: *Metasternum* coarsely and densely punctate, interstices smooth, in posterior middle with a very narrow shining line. 3rd sternite coarsely and densely punctate, 4th sternite with a broad but not deep impression in posterior two fifths, impression finely and densely punctate and pubescent, interstices reticulated, a narrow area before posterior margin shiny, 5th sternite with a resembling impression of greater depth, posterior margin very shallowly and broadly emarginated, impression of 6th sternite deeper than that of 5th, posterior margin shallowly emarginated, 7th sternite broadly shallowed along middle, finely and densely punctate and pubescent, interstices reticulated and about as large as diameter of punctures. 8th sternite with a triangular notch in about posterior third (103: 32). 9th sternite at posterior margin nearly regularly serrated. 10th tergite at smooth posterior margin rounded. *Aedeagus* (fig. 2).

The new species can be easily distinguished from its relatives as quoted in the key above.

### 7 c. *odysseus-complex*

The species of this complex are closely related to those of the *calosoma-complex*, I only give the differences: Legs often with dark knees, head generally narrower than elytra but broader than elytra at shoulders, pronotum (mostly) more convex, punctuation of pronotum and elytra differently coarse and dense, abdominal punctuation sparser, that of the sides of tergites less dense, 8th tergite finely and very sparsely pubescent, no small area of densely set setae posteriomediaally. Some species are distinctly reticulated, others at parts, some not. Sternites of males (mostly) with striking sexual characters as are strong carinae, lateral corns etc. *Aedeagus* with long parameres which extend well beyond the apex of medianlobe which has differently shaped ventromedian carinae resembling an axe (see fig. 7-13).

### *Stenus* (*Hypostenus*) *midas* Puthz, new species      Fig. 5, 7.

*Etymology*: king of Phrygia who got the power of turning every thing that he touched into gold.

Dark blue with greenish and violet tint at places, moderately shiny, pronotum and elytra coarsely and very densely punctate, head and abdomen finer and sparser punctate, pubescence conspicuous, recumbent. Basal two thirds of antennae yellowish brown, last 4 segments distinctly paler. Palpi pale-yellow. Legs yellowish brown, bases of femora paler. Anterior margin of clypeus and anterior half of labrum yellowish till brownish,

both sparsely pubescent.

Length: 6.0-7.3 mm.

♂. Holotype (BISHOP 9734) and 5 ♂♂, 11 ♀♀ paratypes: New Guinea, Eastern Highlands: Kassam, 1350 m, 48 km E. of Kainantu, 7.XI.1959, T. C. Maa; 7 ♂♂, 9 ♀♀ paratypes: ibidem, 28.X.1959, sweeping, T. C. Maa; 3 ♂♂, 4 ♀♀ paratypes: ibidem, 30.X.1959, T. C. Maa; 1 ♀ paratype: Western Highlands: Ahl Valley, Nondugl, 1750 m, 8. VII.1955, J. L. Gressitt. Paratypes in Bishop, BMNH, Mus. Geneva, coll. Last, coll. m.

*Head* slightly narrower than elytra (46: 47), frons broad (average distance between eyes: 25), sinuously-concavely excavated, finely and sparsely punctate, diameter of a puncture distinctly smaller than basal cross section of 3rd antennal segment, interstices generally larger than diameter of punctures. *Pronotum* much longer than broad (44: 33), widest behind middle (not very distinct), posterior 4th restricted as also about anterior 9th, rest of sides subparallel. Behind middle a distinct transverse impression, which also can be seen in lateral aspect of the whole pronotum. Punctuation coarse and very dense, very slightly confluent, diameter of a puncture distinctly larger than widest cross section of 3rd antennal segment, interstices distinctly smaller than half the diameter of a puncture. *Elytra* slightly broader than head (47: 46), much longer than broad (65: 47) shoulders prominent, sides parallel except posterior 10th, which is restricted, posterior margin deeply emarginated (sutural length: 55). Sutural and humeral impressions visible. Punctuation about as dense as on pronotum but distinctly a little coarser than there. *Abdomen* moderately narrowed behind, basal furrows of first segments deep. Punctuation moderately sparse and differently dense: punctures of tergite 3 about as large as basal cross section of 3rd antennal segment, interstices generally slightly smaller than diameter of punctures, punctures of tergite 6 about as large as those on frons, interstices distinctly larger than diameter of punctures, 10th tergite with few extremely fine punctures.

Head without microsculpture, interstices of pronotal and elytral punctuation faintly reticulated, the whole abdomen with distinct, about isodiametrical groundsculpture.

♂: *Metasternum* coarsely and densely punctate, interstices distinctly reticulated except those of posterior middle, which form a narrow, longitudinal, shiny area. 4th sternite shallowed in posterior middle, where punctuation and pubescence are extremely fine and dense, 5th sternite in posterior half with a broad impression, the sides of which are carinated forming (on each side) a very prominent corn (lateral aspect: a curved tooth) which slightly extends beyond the sternite's posterior margin and which cannot be seen in dorsal aspect of the abdomen. Impression and inner side of corns very finely and densely punctate and pubescent. 6th sternite shallowed in posterior two fifth, punctuation equal to that of sternite 5. 7th sternite in posterior middle finely (but nevertheless twice as coarsely than in middle of sternite 6) and moderately densely punctate and pubescent. 8th sternite with a subtriangular notch in about posterior 3rd (106: 32). 9th sternite at posterior margin rounded-serrated. 10th tergite rounded. *Aedeagus* (fig. 5, 7).

♀: 8th sternite at posterior margin broadly rounded.

Variability: In some specimens the punctuation of tergite 3 is sparser, interstices slightly larger than diameter of punctures. In other specimens the reticulation of the base of abdomen is very shallow. The coloration of the knees can be brownish or yellowish-brown.

***Stenus (Hypostenus) croesus* Puthz, new species** Fig. 8.

*Etymology*: a fabulously rich Lydian king.

This is the sister species of *S. midas*. Because of very close resemblance I only describe the differences.

♂. Holotype (BISHOP 9735): Papua: S. Highlands: Mendi, 1660 m, 8.X.1958 J. L. Gressitt.

Length: 6.7-7.5 mm.

Head and abdomen dark blue, pronotum and elytra bluish green. Palpi less pale in *midas*. Head narrower than elytra (46: 48), frons slightly denser punctate. Pronotum slightly longer than in *midas* (47: 33), distinctly broader behind middle, sides from that point towards anterior margin distinctly convergent, concavely narrowed in posterior portion behind broadest point: lateral outline therefore remarkably different from that of *midas*. Elytral punctation less distinctly coarser than that of pronotum. Punctuation of abdomen different, first tergites less coarsely punctate, last ones coarser punctate, punctures of tergite 7 about as coarse as those on frons. First segments of abdomen without groundsculpture.

♂: about as in *midas* but the aedeagus different: apical portion of medianlobe distinctly narrower, the apex much longer and different in lateral aspect (fig. 8).

***Stenus (Hypostenus) odysseus* Puthz, new species** Fig. 9.

Etymology: king of Ithaca, hero of the Odyssey.

Sea-green, shiny, coarsely and moderately densely punctate, slightly pubescent. Antennae reddish yellow, palpi yellowish, legs reddish yellow, knees very slightly infuscated, apices of tarsal segments distinctly infuscated. Anterior margin of clypeus narrowly brownish, anterior half of labrum reddish brown.

Length: 6.0-7.0 mm.

♂. Holotype (BISHOP 9736): New Guinea: Morobe: Mt. Piora, 2100-2800 m, 14.VI. 1966, J. L. Gressitt.

*Head* distinctly broader than elytra (48: 45), frons broad (average distance between eyes: 24), concavely excavated. Punctuation coarse and dense, diameter of a puncture as large as basal cross section of 3rd antennal segment, interstices in posterior middle generally smaller than half the diameter of a puncture, larger on the side portions of frons; anterior two thirds of middle portion and an area posteriorly, near inner eye margins, impunctate. *Pronotum* much longer than broad (40: 31), broadest distinctly behind middle, slightly concavely and (anteriorly) convexly narrowed towards anterior margin, distinctly concavely narrowed towards posterior margin. Punctuation distinctly but not much coarser than on head, largest punctures about equal to medial cross section of 3rd antennal segment, interstices dorsally generally slightly larger than half the diameter of a puncture, seldom (in longitudinal middle) as large as diameter of a puncture, interstices of pronotal sides mostly smaller than half the diameter of a puncture. *Elytra* narrower than head (45: 48), much longer than broad (56: 45), shoulders prominent, sides subparallel, restricted in posterior 6th, posterior margin deeply emarginated (sutural length: 47). Sutural impression short, broad, and distinct, humeral impression less distinct, two further impressions laterally in posterior half of each elytron. Punctuation slightly coarser than on pronotum, interstices equal to diameter of punctures or larger. *Abdomen* slightly narrowed posteriorly, basal furrows of first segments deep. Punctuation moderately fine and sparse, diameter of a puncture of tergite 4 about as large as one eye facet, interstices medially as large as diameter of punctures or larger, punctuation of tergite 7 slightly finer but distinctly sparser, 10th tergite with few very fine punctures.

Near inner eye margins there can be seen a very shallow reticulation, pronotum and elytra without microsculpture, the whole abdomen very distinctly, nearly isodiametrically reticulated.

♂: Metasternum moderately coarsely and not very densely punctate, interstices smooth, pos-

terior middle very narrowly shiny. 5th sternite in posterior middle finer and somewhat denser punctate and pubescent than on the sides, 6th sternite in posterior middle yet finer and denser punctate than 5th, 7th sternite at posterior margin very shallowly and broadly emarginated, posteriomedially finely and densely punctate and pubescent. 8th sternite with a triangular notch in about posterior 5th (98:23). 9th sternite apically serrated. 10th tergite rounded at posterior margin. *Aedeagus* resembling that of *midas* (fig. 5), but the medianlobe narrower and its apex different in lateral aspect (fig. 9).

*Stenus odysseus* n. sp. can be distinguished from all other relatives by its broad head and/or the not very distinct pubescence.

**Stenus (Hypostenus) virideus** Cameron, 1939      Fig. 6.

*Stenus virideus* Cameron, 1939, *Ann. Mag. Nat. Hist.* (11) 3: 140 f.—Puthz, 1971, *Annlis Mus. r. Afr. cent. Ser. 8° No.* 187: 14.

Material studied: ♂ holotype (BMNH) and 3 ♂♂, 1 ♀ paratypes: Papua: Mt. Tafa, 8500–8550 ft., II.1934, L. E. Cheeman (BM, FMCh, coll. m.).

*Additional remarks*: Length: 6.5–7.5 mm.

♂: Metasternum moderately coarsely and not very densely punctate, interstices about equal to diameter of punctures, smooth. 3rd sternite coarsely and densely punctate, interstices reticulated, 4th sternite with a broad but shallow impression in posterior half, its punctation fine and moderately dense, posterior margin very shallowly and broadly emarginated, 5th sternite with a deeper impression in posterior half, the sides of which are carinated, posteriorly elevated, and divergent, distinctly extending beyond the posterior margin of the sternite, visible in dorsal aspect of the abdomen, punctation and pubescence of impression very fine and dense, 6th sternite with a shallow impression medially, impression becomes shallower towards the posterior margin of sternite, which is very broadly and nearly imperceptibly emarginated, punctation very fine, shallow, and dense, 7th sternite near posterior margin denser and finer punctate and pubescent than on the sides. 8th sternite with a triangular notch in about posterior 3rd (106:30), 9th sternite at rounded posterior margin finely serrated, 10th tergite broadly rounded at posterior margin. *Aedeagus* (fig. 6), lateral aspect of the apex of medianlobe resembles those of fig. 8 and 9.

♀: 8th sternite broadly rounded at posterior margin.

**Stenus (Hypostenus) penelope** Puthz, new species      Fig. 4.

Etymology: wife of Odysseus.

Dark blue with greenish and olive tint, shiny, moderately coarsely and moderately densely punctate, slightly pubescent. Antennae with about first 4 segments yellowish brown, medial segments infuscated, brownish or a little darker, last 3 segments distinctly lighter. Palpi yellowish, apices of 2nd and 3rd segments can be infuscated. Legs yellowish, apical two fifths of femora, about basal two thirds of tibiae, and the apices of tarsal segments dark brown, conspicuously darker than the rest of legs. Anterior margin of clypeus narrowly brownish, about anterior 3rd of labrum reddish brown, both set with long and golden shiny setae.

Length: 7.0–8.0 mm.

♂. Holotype (BISHOP 9737): New Guinea NE.: Simbai, Bismarck Range, 1700 m,



28.V.1966, J. L. Gressitt: ♀ - paratype: ibidem (coll. m.).

*Head* distinctly narrower than elytra (50: 57), frons broad (average distance between eyes: 26), concavely but not very deeply excavated. Punctuation moderately coarse and moderately dense, diameter of a puncture nearly as large as basal cross section of 3rd antennal segment, interstices mostly larger than or as large as diameter of punctures, anterior half of the middle portion of frons and an area posteriorly near inner eye margins impunctate. *Pronotum* much longer than broad (49: 36), broadest distinctly behind middle, from there towards anterior margin first shallowly concavely, then nearly straightly narrowed, towards posterior margin very distinctly concavely narrowed. In posterior half there are distinct lateral impressions. Punctuation slightly or distinctly coarser than on head and much denser, interstices generally about half as large as diameters of punctures, larger near anterior margin and in dorsal middle where can be seen a small, longitudinal, impunctate area. *Elytra* distinctly broader than head (57: 50), much longer than broad (70: 57), shoulders prominent, sides subparallel, slightly divergent in posterior half, restricted in posterior 5th, posterior margin deeply emarginated (sutural length: 58). Sutural impression distinct, humeral impression and one lateral impression slightly behind middle less distinct. Punctuation about as coarse as that of the dorsal middle of pronotum but distinctly less dense, interstices generally larger than half the diameter of a puncture, often as large as or slightly larger than diameter of puncture (holotype) or sometimes as large as (paratype). *Abdomen* moderately narrowed posteriorly, basal furrows of first segments very deep. Punctuation moderately coarse and sparse, diameter of a puncture of tergite 4 about as large as one eye facet, interstices in the middle of tergites larger than diameter of a puncture, less large on the sides. Punctuation of tergite 7 distinctly finer and sparser than that of tergite 6. 10th tergite with few fine punctures.

Side portions of frons reticulated, pronotum without distinct ground-sculpture, elytra distinctly but shallowly reticulated, abdomen densely and deeply, about isodiametrically reticulated.

♂: *Metasternum* coarsely and moderately densely punctate, interstices reticulated, in posterior middle a smooth line which is broader than the diameter of a puncture. 4th sternite in posterior half shallowly and about semicircularly impressed, impression very finely and densely punctate and pubescent, posterior margin with a shallow and broad emargination. 5th sternite with a very broad and deep impression in posterior two fifths, sides of impression strongly carinated, carinae prolonged into a long and prominent tooth, which is about as long as the 1st antennal segment (lateral aspect!) and can be seen in dorsal aspect of the abdomen. The tooth does not arise from the posterior margin of sternite but is separated from it by a distance about as wide as the width of apex of metatibiae, punctuation of impression about as that of sternite 4, posterior margin distinctly but shallowly and broadly emarginated. 6th sternite with a shallow impression, which is finely and moderately densely punctate and pubescent, posterior margin with a shallow and broad emargination. 7th sternite with its medial punctuation and pubescence moderately fine and moderately dense, interstices larger than diameter of punctures, posterior margin shallowly but less broadly emarginated than that of 6th sternite. 8th sternite with a triangular notch in about posterior 3rd (109: 37). 9th sternite rounded at posterior margin and extremely finely crenulated. 10th tergite narrowly rounded at posterior margin. *Aedeagus* (fig. 4), the apex of medianlobe with a very short and slightly prominent carina.

♀: 8th sternite broadly rounded at posterior margin.

*Stenus penelope* n. sp. can be distinguished from its relatives either by the sparse pubescence or the reticulation of elytra. It resembles mostly *S. kuborensis* Last, from which it can be separated by the sexual characters of the male, larger elytra which are sparser punctate, and the relatively less robust pronotum.

**Stenus (Hypostenus) kuborensis** Last, 1970 Fig. 10.*Stenus kuborensis* Last, 1970, *J. Nat. Hist.* 4: 352

This species also belongs to the *odysseus*-complex. The description was based on a single female.

Material studied: ♀ holotype (BMNH): New Guinea: Western Highlands: Garua, Kubor Range, Kup, 6500 ft., 31.X.1965, Hornabrook; 2 ♂♂, 3 ♀♀: W. Highlands: Tomba, slopes of Mt. Hagen, 2500-2560 m, 24.V.1963, J. Sedlacek (BISHOP, coll. m.); 1 ♂: E. Highlands: Goroka, 8400 ft., 18.III.1971, Hornabrook (coll. Last); 1 ♀ (cf. det.): E. Highlands: Daulo Pass, 3000 m (Asaro-Chimbu div.), 13.VI.1955, J. L. Gressitt (BISHOP); 1 ♀ (cf. det.): S. Highlands: Mt. Giluwe, 2550 m, 27.V.1963, J. Sedlacek (BISHOP).

*Additional remarks:* This species is distinctly variable.

*Head* about as broad as elytra, frons moderately coarsely and moderately densely punctate, largest punctures about as large as basal cross section of 3rd antennal segment, interstices in posterior middle generally slightly smaller than diameter of punctures. *Pronotum* coarser and denser punctate, dorsomedially with an abbreviated longitudinal shining area, which is at most as broad as one neighbouring puncture. *Elytra* with the punctation variable, about as coarse as that of pronotum but differently dense: interstices slightly larger *or* distinctly smaller than half the diameter of a puncture, with distinct *or* very faint microsculpture. *Abdomen* moderately coarsely and moderately densely punctate (slightly coarser than in middle of frons), distinctly *or* faintly reticulated. Knees of legs distinctly but not strongly infuscated. Length: 6.0-7.0 mm.

♂: *Metasternum* coarsely but not very densely punctate, interstices reticulated, often as large as diameter of punctures. 4th sternite posteriomediaally with the punctation much finer and shallower but about equally sparse as on the sides. 5th sternite in posterior two thirds very broadly shallowed, shallowly impressed between bases of the carina-toothlike sides of impression, extremely finely and moderately densely punctate and pubescent. 6th sternite shallowed in posterior middle and punctate as 5th. 7th sternite medially finely and moderately densely punctate and pubescent, punctation twice as coarse as that of sternite 6. 8th sternite with a triangular notch in about posterior 3rd (101: 31). 9th sternite at posterior margin rounded-serrated. 10th tergite at posterior margin moderately narrowly rounded. *Aedeagus* about as in fig. 5, but parameres are longer and apex of medianlobe with a different lateral aspect (fig. 10).

♀: 8th sternite broadly rounded at posterior margin.

**Stenus (Hypostenus) telemachus** Puthz, new species

*Etymology:* son of Odysseus.

Shiny blue with a greenish tint, coarsely and closely punctate, shortly pubescent. Antennae yellowish, slightly infuscated towards apex. Palpi yellow. Legs yellowish, apical portion of femora nearly brownish, also the apices of tarsal segments. Clypeus and labrum bluish, anterior margin of the latter yellowish brown.

Length: 6.0-7.0 mm.

♂. Holotype (BMNH): New Guinea: E. Highlands, Okapa, II.1968, Hornabrook.

*Head* narrower than elytra (44: 50), frons moderately broad (average distance between eyes: 24), broadly concavely excavated, anterior portion smooth, posterior portion coarsely and dense-

ly punctate, largest punctures about as large as widest cross section of 3rd antennal segment, interstices posteriomedially in general distinctly smaller than half the diameter of a puncture, much larger near inner eye margins posteriorly. *Pronotum* much longer than broad (41:31), broadest behind middle, sides towards anterior margin nearly straightly convergent, towards posterior margin concavely narrowed. Dorsal punctation coarse and dense, diameter of a puncture as large as widest cross section of 3rd antennal segment, interstices generally smaller than half the diameter of a puncture. *Elytra* distinctly broader than head (50:44), much longer than broad (62:50), sides towards posterior margin distinctly but not strongly divergent, distinctly restricted in posterior 4th, posterior margin deeply emarginated (sutural length: 53). Sutural and posteriolateral impressions shallow. Punctation distinctly coarser than on pronotum and often transversely confluent, interstices smaller than half the diameter of a puncture. *Abdomen* slightly narrowed towards apex, basal furrows of first segments deep. Punctation moderately coarse and moderately sparse, punctures of tergite 6 nearly as large as basal cross section of 6th antennal segment, interstices generally larger than diameter of punctures.

Fore-parts without microsculpture, tergites 3-6 with very faint ground sculpture, 7th-9th tergites more distinctly reticulated.

♂: Metasternum coarsely and moderately densely punctate, interstices reticulated, in posterior middle a narrow impunctate area. 5th sternite with an extremely shallow emargination at posterior margin, medially slightly finer but somewhat denser punctate than on the sides, 6th sternite shallowed in posterior middle, finely and moderately densely punctate and pubescent, interstices smooth. 7th sternite posteriomedially also finer and denser punctate and pubescent than on the sides. 8th sternite with a triangular notch in about posterior 5th (95:21). 9th sternite at posterior margin rounded-serrated. 10th tergite narrowly rounded at posterior margin. *Aedeagus* very similar to fig. 6, but the apical portion of medianlobe more straightly narrowed towards apex, apex in lateral aspect about as fig. 9.

*Stenus telemachus* n. sp. can be distinguished from *S. odysseus* by its narrower head and the nearly smooth interstices of abdominal punctation, from *S. penelope* by its light bases of tibiae, much coarser and denser elytral punctation and the nearly smooth interstices of abdominal punctation, from *S. virideus* by its coarser and denser punctation of the posterior middle of frons and elytra and its finer and denser abdominal punctation, from *S. circe* by its light bases of tibiae, coarser and denser punctation of frons, coalescent elytral punctation, and finer and denser abdominal punctation, from *S. kuboensis* by coarser and denser punctation of frons and elytra and nearly smooth interstices of abdominal punctation, from *S. cribricollis* and *S. eumaius* by its narrower pronotum and much coarser and denser punctation of frons, from *S. phaeax* by its coarser and denser punctation of front and the nearly smooth interstices of abdominal punctation.

#### ***Stenus* (*Hypostenus*) *circe* Puthz, new species**

**Etymology:** a famous sorceress in Homer's *Odyssey* who turned men into swine.

Greenish or bluish, sometimes with an olive tint, shiny, coarsely and densely punctate, slightly pubescent. Antennae with the basal segments yellowish, medial segments infuscated, apical segments lighter. Palpi yellow. Legs yellowish, about apical 3rd of femora, basal three fifths of tibiae, and apices of tarsal segment strongly infuscated, nearly blackish. Anterior margin of clypeus and labrum narrowly yellowish.

**Length:** 6.0-7.5 mm.

♂. Holotype (Museum Budapest) and 2 ♂♂ paratypes: New Guinea: Mt. Kaindi, 2400 m, 15.-16.IV.1965, J. Balogh & J. J. Szent-Ivany (Mus. Budapest, coll. m); 1 paratype (abdomen is lacking): Kaindi, 1.X.1962, J. & M. Sedlacek (BISHOP).

*Head* distinctly or slightly narrower than elytra (47: 51-holotype), frons broad, concavely excavated, punctation moderately coarse and moderately dense, diameter of a puncture about as large as basal cross section of 3rd antennal segment, interstices generally larger than half the diameter of a puncture, at places as large as punctures. Only the area around the bases of antennae and an area near inner eye margin posteriorly impunctate or very sparsely punctate. *Pronotum* much longer than broad (46: 34), distinctly broadest behind middle, from there towards anterior margin first slightly concavely, then nearly straightly narrowed, towards posterior margin very distinctly concavely narrowed, posteriolateral impressions shallow. Punctation moderately coarse and dense, diameter of a puncture slightly larger than basal cross section of 3rd antennal segment, interstices dorsally generally slightly smaller than half the diameter of a puncture, slightly larger near anterior margin and in posterior middle, but no distinct impunctate areas there, lateral punctation of pronotum denser. *Elytra* distinctly or slightly broader than head, longer than broad (61: 51), shoulders prominent, sides subparallel (slightly divergent in posterior half), restricted in posterior 5th, posterior margin deeply emarginated (sutural length: 53). All impressions very shallow. Punctation remarkably coarser than that of pronotum, diameter of a puncture can be a little larger than widest cross section of 3rd antennal segment, polished interstices smaller than half the diameter of a puncture. *Abdomen* moderately narrowed behind, basal furrows of first segments very deep, punctation moderately coarse and moderately sparse, punctures of tergite 4 about as coarse as those on head, interstices distinctly larger than diameters of punctures, can be twice as large, punctation of the basal half of tergite 7 nearly equal to that of tergite 4, but distinctly finer and sparser in posterior half of the 7th tergite. 10th tergite with few very fine punctures.

Distinct groundsculpture can be seen only on tergites 7-10, the other tergites may be extremely, indistinctly reticulated.

♂: *Metasternum* coarsely and densely punctate, interstices smooth as is also a narrow line in posterior middle. 3rd sternite coarsely and moderately densely punctate, interstices shallowly reticulated, 4th sternite similar, but near posterior margin medially with some finer and closer punctures, 5th and 6th sternite in posterior half shallowed, finer and denser punctate and pubescent than on the sides, no apical emargination, 7th sternite not shallowed but with the punctation and pubescence finer and denser than on the sides. 8th sternite with a triangular notch in about posterior 5th (103: 23). 9th sternite at posterior margin rounded-serrated. 10th tergite narrowly rounded at posterior margin. *Aedeagus* resembling that of *midas* (see fig. 5) but the medianlobe slightly narrower, its apex about as in fig. 9.

*Variability*: One ♂-paratype differs distinctly from the holotype in following respects: head broader, slightly narrower than elytra (48: 49), punctation of frons coarser and denser, sides of pronotum from broadest point towards anterior margin more straightly narrowed, abdominal punctation slightly denser, a very shallow, nearly invisible reticulation on tergites 3-6. Sexual characters as in the holotype.

3 ♀♀ from Wau: Mt. Missim, 22. - 24.IV.1965, Haus Copper, J. Balogh & J. J. Szent-Ivany (Museum Budapest, coll. m.) presumably belong to a new species which closely resembles *S. circe*: they differ from *circe* by their strong abdominal reticulation and some other minor characters.

*Stenus circe* n. sp. can be distinguished from its relatives as quoted in the key above.

***Stenus (Hypostenus) cribricollis* Lea, 1931**

*Stenus cribricollis* Lea, 1931, *Rec. S. Austr. Mus.* 4: 366.—Puthz, 1970, *Mem. Natn. Mus. Vict.* 31: 51 figs.—Last, 1970, *J. Nat. Hist.* 4: 349 fig.

Material studied: ♂. Holotype (S. Austr. Mus.) and 2 ♂♂, 2 ♀♀ from Last (l. c.) (BM, coll. Hornabrook, Last, coll. m.).

***Stenus (Hypostenus) eumaius* Puthz, new species** Fig. 11.

Etymology: famous swineherd from Homer's *Odyssey*, who helped Odysseus when he came back to Ithaca.

This new species closely resembles *S. cribricollis* Lea and *S. phaeax* m.

Deep royal blue with violet and greenish tint somewhere, moderately shiny, except head very coarsely and densely, on elytra slightly confluent punctate, moderately pubescent. Antennal base yellowish, 6th and 7th segments infuscated, last 4 segments pale. Palpi pale-yellow. Legs yellowish brown, apices of tarsal segments infuscated. Anterior margin of clypeus narrowly yellowish brown, labrum brownish, anteriorly lighter.

Length: 6.0–7.3 mm.

♂. Holotype (Museum Budapest): New Guinea: Morobe: Haus Copper, Wau, Mt. Missim, 22.–24.IV.1965 J. Balogh & J. J. Szent-Ivany.

*Head* distinctly narrower than elytra (51: 57), frons broad (average distance between eyes: 27), concave, its median portion distinctly broader than each of the side portions. Punctuation moderately fine and sparse, diameter of a puncture smaller than basal cross section of 3rd antennal segment, interstices larger than diameter of punctures, anterior two thirds of median portion sparser punctate than rest of frons, set only with some punctures. *Pronotum* robust, much longer than broad (53: 39), broadest behind middle, towards anterior margin first nearly straightly, then convexly narrowed, towards posterior margin concavely narrowed (sides—at first glance—in comparison to those of the pronota of other species of the *odysseus*-complex—more subparallel). Posteriolateral impressions distinct but not very deep. Punctuation very coarse and dense, seldom coalescent, diameter of a puncture slightly smaller than medial cross section of 2nd antennal segment, interstices distinctly smaller than half the diameter of a puncture. *Elytra* distinctly broader than head (57: 51), much longer than broad (69: 57), shoulders prominent, sides nearly parallel, restricted in posterior 6th, posterior margin deeply emarginated (sutural length: 57). Sutural impression distinct, other impressions shallow. Punctuation very coarse and dense, somewhat coalescent transversely, diameter of a puncture can be as large as widest cross section of 2nd antennal segment, interstices smaller than half the diameter of a puncture. *Abdomen* slightly narrowed behind, basal furrows of first segments very deep. Punctuation moderately coarse and moderately sparse, punctures of tergite 4 as large as basal cross section of 3rd antennal segment, interstices mostly larger, but not much larger than diameter of punctures, punctuation of tergite 7 (except base) distinctly finer and sparser than that of tergite 6, 10th tergite with few fine punctures.

Fore-parts without groundsculpture (some interstices of elytra seem to have extremely faint groundsculpture at 150 ×), the whole abdomen deeply and densely, about isodiametrically reticulated.

♂: Metatibiae slightly bent. Metasternum coarsely and densely punctate and pubescent, interstices shallowly reticulated, a very narrow area in posterior middle impunctate. 3rd sternite

with a semicircular impression near posterior margin, moderately coarsely, shallowly, and very densely punctate and pubescent, interstices deeply reticulated. 4th sternite in posterior half with a very broad and deep impression the divergent sides of which are roundly carinated, impression shallowly, finely, and very densely punctate and pubescent, interstices reticulated, posterior margin broadly emarginated. Impressions of 5th and 6th sternites deeper than that of tergite 4, sides of impressions strongly carinated, carinae elevated forming broad and apically rounded teeth (in lateral aspect!), impressions very densely and closely punctate, pubescence brush-like, interstices reticulated, posterior margins of sternites broadly and shallowly emarginated. 7th sternite shallowed in posterior middle, finely and very densely punctate and pubescent, before posterior margin somewhat sparser punctate, posterior margin with a shallow but distinct, triangular excision. 8th sternite with a triangular notch in about posterior 4th (103:28). 9th sternite rounded at finely crenulated posterior margin. 10th tergite broadly rounded at posterior margin. *Aedeagus* closely resembling that of *cribricollis* Lea (fig. 1, Puthz 1970a), but the medianlobe anteriorly sharper concave in an angle of about 120°, lateral aspect of apex (fig. 11).

*Stenus eumaius* n. sp. resembles very closely *S. cribricollis* Lea, it can be distinguished from that species by the deeper reticulation of abdomen, slightly coarser punctuation of head, and by the sexual characters of the male.

***Stenus (Hypostenus) phaeax* Puthz, new species**      Fig. 12.

Etymology: inhabitant of Scheria, an island which has been visited by Odysseus.

This new species resembles *S. cribricollis* Lea and *S. eumaius* m.

Deep royal blue with violet tint (may have also greenish tint), except on head and abdomen the punctuation is very coarse and dense, on elytra slightly convergent transversely, moderately pubescent. Base of antennae yellowish, medial segments can be slightly infuscated, last 4 segments pale yellow as are the palpi. Legs yellowish brown, knees slightly darker, apices of tarsal segments distinctly darker. Anterior margin of clypeus narrowly yellowish brown, clypeus reddish yellow.

Length: 6.5-8.0 mm.

♂. Holotype (BMNH): New Guinea: Morobe: Herzog Mts., Vagau, ca. 4000 ft., 4.-17.I.1965, Stn. No. 137, M. E. Bacchus; 1 ♂, 2 ♀♀ paratypes: Morobe: Wau, Mt. Missim, 1600 m, 17.III.1966, J. L. Gressitt (BISHOP, coll. m.); ♀ paratype: Wau, 1200 m, 20.X.1965, J. & M. Sedlacek (BISHOP); ♀ paratype: Wau, 1300 m, 24.VII.1961, J. Sedlacek (BISHOP).

Because of close resemblance to *S. eumaius* I describe only the differences: Less robust, head seems to be broader because pronotum is more slender, punctuation of frons finer, diameter of a puncture about as large as one eye facet, interstices nearly as large as diameter of punctures, median portion of frons anteriorly distinctly less sparsely punctate, interstices about twice as large as diameter of punctures. Pronotum different in shape: less distinct broadest behind middle, towards anterior margin first nearly parallel, then distinctly, but also straightly restricted, towards posterior margin very distinctly concavely narrowed (pronotum less broad than in *eumaius*: width of head: width of pronotum=49:34, in *eumaius*=51:39), posteriolateral impression deeper, more conspicuous, punctuation as dense but slightly less coarse. Abdomen distinctly but not much finer and sparser punctate, punctures of tergite 4 as large as one eye facet, interstices

often twice as large as diameter of a puncture, punctation of tergite 7 slightly sparser than that of tergite 6. Reticulation of abdomen less deep and therefore less conspicuous.

♂: Metasternum coarsely and moderately densely punctate, interstices reticulated, a very narrow area in posterior middle impunctate. 4th sternite near posterior margin with a semi-circular and shallow impression which is finely and densely punctate and pubescent, interstices reticulated. 5th sternite with a broad and moderately deep impression the sides of which are carinated, in lateral aspect the carinae form acute teeth which distinctly extend beyond the sternite's posterior margin, but which cannot be seen in dorsal aspect of the abdomen, punctation and pubescence of impression fine and dense. 6th sternite in posterior middle broadly and distinctly impressed, punctation and pubescence fine and dense, posterior margin shallowly and broadly emarginated. 7th sternite with the posteriomedial punctation fine and moderately dense, posterior margin extremely shallowly emarginated. 8th sternite with a triangular notch in about posterior 3rd (106: 29). *Aedeagus* principally as in fig. 5 but the apex of medianlobe much different in lateral aspect (fig. 12).

♀: 8th sternite broadly rounded at posterior margin.

***Stenus (Hypostenus) phaeax peculiaris* Puthz, new subspecies** Fig. 13.

Etymology: a special form of *phaeax*.

One specimen (holotype ♂, BISHOP 9738) from Wau Creek, 1200–1300 m, J. Sedlacek differs from *phaeax* by denser abdominal punctation, slightly different ventral characters of the male, and the shape of the apex of medianlobe (fig. 13). At present we do not know large series of one species of the *odysseus*-complex s. str., therefore the degree of individual variability is unknown. Any genital difference which can be distinctly tested should be named: because of only slight differences to *phaeax* I describe this male as a subspecies. May be that *phaeax peculiaris* represents an extreme variation of the nominate species. But this can only be decided after having collected numerous specimens of *phaeax* in same habitats.

♂: teeth of 5th sternite do not extend beyond the posterior margin of sternite.

**7 d. *visendus*-complex**

The species of this (artificial) complex are insufficiently characterized by regular punctation, broad frons, and regularly convex facies of elytra and pronotum.

***Stenus (Hypostenus) visendus* Last, 1970** Fig. 29, 30.

*Stenus visendus* Last, 1970, *J. Nat. Hist.* 4: 347.

Material studied: ♀ holotype (BMNH): Morobe: Buana, Sarawaged Range, 3000 ft., 20–30 miles N of Lae, III.1966, Hornabrook; ♀ paratype (BMNH) (found amongst paratypes of *cheesmanianus* Cameron!): Papua: Kokoda, 1200 ft., VI.1936, L. E. Cheesman; ♂ from same locality, also paratype of "*cheesmanianus* Cam." (Field Museum Chicago); 4 ♂♂, 3 ♀♀: Morobe: Wau, 1100 m, 29.VIII.1961, J. & M. Sedlacek (BISHOP, coll. m.); ♀: Wau, 900 m, 20.X., J. & M. Sedlacek (BISHOP); ♀: Wau, 2000 m, Edie Creek, 17.6 km West, 20.VIII.1961, J. & M. Sedlacek (BISHOP); ♀: Papua: Central: Owen Stanley Range, Goilala, Loloipa, 21–31.XII.1957, W. W. Brandt (BISHOP); ♀: Wau, 1200 m, 15.

XII. 1961, J. Sedlacek & G. Monteith (BISHOP); ♀: Mt. Wilhelm, 3000 m, 4.VII.1955, J. L. Gressitt (BISHOP).

*Additional remarks*: Bluish with greenish and/or violet tint, shiny, head and abdomen finely and sparsely punctate, pronotum coarser and slightly densely punctate, elytra with very coarse and dense punctation: largest punctures larger than widest cross section of 2nd antennal segment, interstices generally smaller than half the diameter of a puncture. Pronotum broadest in anterior half having a broad lateral impression in posterior half, punctation of anterior half finer than that of posterior half.

The whole insect with distinct but shallow reticulation, which can lack in portions of the head.

♂: Metasternum coarsely and densely punctate and pubescent, interstices reticulated. 3rd sternite before posterior margin with a small medial area which is shallowed, finer and denser punctate and pubescent than the sternite's sides. 4th sternite in posterior half with a shallow impression, which is finely and moderately densely punctate and pubescent, posterior margin very shallowly emarginated. 5th sternite in posterior two fifths distinctly but not very deeply impressed, impression deeper and broader than that of sternite 4, punctation about equal, posterior margin with a shallow and broad emargination. 6th sternite with a long medial impression which is yet deeper than that of sternite 5, posterior margin broadly and shallowly emarginated. 7th sternite with the posteriomedial punctation moderately fine and dense. 8th sternite with a very deep and narrow notch in about posterior half (78: 38). 9th sternite (fig. 30). 10th tergite broadly rounded at posterior margin, the apical middle can be very shallowly emarginated. *Aedeagus* (fig. 29), apical portion of medianlobe curved towards ventral side.

♀: 8th sternite round at posterior margin, the middle very slightly and broadly produced.

**Stenus (Hypostenus) hornabrooki** Puthz, new species      Fig. 31, 32.

(*Stenus visendoides* Puthz *in. litt.*)

Etymology: dedicated to Dr R. Hornabrook.

This new species resembles *S. visendus* Last, but the fore parts lack reticulation etc.

Shiny, bluish-violet, punctation, in general, coarse but very variable in denseness, shortly pubescent. Antennae, palpi, and legs yellowish, tarsal segments apically dark. Labrum metallic, anterior margin light brownish.

Length: 5.5–6.3 mm.

♂. Holotype (BMNH) and 1 ♂, 3 ♀♀ paratypes: New Guinea: Eastern Highlands: Okapa, 10.VIII.1964, R. Hornabrook (BM, coll. Hornabrook, coll. Last, BISHOP, coll. m.); paratypes: 1 ♂: ibidem, IX.1964, Hornabrook; 1 ♂: ibidem, XI.1964, Hornabrook; 1 ♂: ibidem, II.1968, Hornabrook; 1 ♀: Mage, 5800 ft., near Okapa, 5.VI.1965, Hornabrook; 1 ♀: Indona, 17.XI.1965, Hornabrook; 1 ♀: Morobe: Buana, Sarawaged Range 3000 ft., 20–30 mi. SW of Lae, III.1966, Hornabrook (in: BM, coll. Hornabrook, Last, coll. m.).

*Head* distinctly narrower than elytra (43: 48), frons broad (average distance between eyes: 23) and nearly flat, median portion nearly impunctate, side portions with numerous coarse punctures. *Antennae* slender, when reflexed about the last 3 segments extending beyond the posterior margin of pronotum, penultimate segments much longer than broad. *Pronotum* distinctly longer than broad (42: 32), nearly parallel-sided, concavely narrowed in posterior



4th. Punctuation coarse and dense, largest punctures as large or distinctly larger than widest cross section of 3rd antennal segment, interstices generally smaller than diameter of punctures, in some specimens at places larger, in other specimens distinctly smaller. *Elytra* distinctly broader than head (48:43), longer than broad (55:48), shoulders prominent, sides slightly divergent posteriorly, posterior margin deeply emarginated (sutural length:45). No distinct impressions. Punctuation variable: sparser on inner two thirds than laterally, very coarse or coarse, largest punctures (in holotype) as large as widest cross section of 2nd antennal segment, interstices generally smaller than diameter of punctures, *or* (some paratypes) distinctly (although slightly) smaller than widest cross section of 2nd antennal segment, interstices generally larger than diameter of punctures. *Abdomen* moderately narrowed behind, basal furrows of first segments deep, punctuation fine to very fine and sparse to very sparse.

Except the tip of abdomen (segment 7 and following ones) the whole insect without ground-sculpture.

♂: *Metasternum* with the medial punctuation fine and sparse, interstices distinctly larger than diameter of punctures, at places twice as large, shiny, posterior middle impressed. Punctuation of sternites fine and differently dense, no reticulation except on 7th sternite, no medial impressions, no apical emarginations. 8th sternite with a triangular notch in about posterior 5th. 9th sternite (fig. 32). 10th tergite very broadly rounded or truncate at posterior margin. *Aedeagus* (fig. 31).

♀: 8th sternite rounded at posterior margin, medially roundly produced.

*Stenus hornabrooki* n. sp. can be distinguished from its sister species *S. visendus* Last by coarser pronotal punctuation, sparser punctuation of the inner two thirds of elytra, and smooth interstices.

#### ***Stenus* (*Hypostenus*) *pretiosus* Puthz, new species**

Etymology: splendid.

This new species also resembles *S. visendus* Last.

Shiny, bluish or greenish, at places with a violet tint, fore parts moderately coarsely and sparsely punctate, abdomen finely and sparsely punctate, pubescence of abdomen longer than that of the fore parts. Antennae, palpi, and legs yellowish. Anterior margin of clypeus and labrum narrowly brownish.

Length: 5.0–5.8 mm.

♂. Holotype (BISHOP 9739): West Irian: Star Mts., Sibil Val., 1245 m, 18.XI.–8.XI. 1961, L. W. Quate; ♀ paratype (coll. m.): West Irian: Wisselmeren, Kamo-Debei div., 1700 m, 13.VIII.1955, J. L. Gressitt.

*Head* distinctly but not much narrower than elytra (42:43), frons broad (average distance between eyes:22), flat, punctuation of middle portion moderately fine and sparse, largest punctures smaller than basal cross section of 3rd antennal segment, near inner eye margins there are larger punctures, which can be as large as medial cross section of 3rd antennal segment, interstices larger than diameter of punctures, often twice as large or yet larger. *Antennae* slender, when reflexed about last 3 segments extending beyond the posterior margin of pronotum. *Pronotum* distinctly longer than broad (40:30), broadest in anterior half where the sides are subparallel except in restricted anterior 5th, sides concavely narrowed in posterior 3rd, lateral impression broad and shallow. Punctuation moderately coarse and moderately dense, diameter of a puncture well as large as widest cross section of 3rd antennal segment, interstices generally nearly equal to diameter of punctures, much smaller on the sides of pronotum. *Elytra* dis-

tinctly broader than head (43: 42), distinctly longer than broad (51: 43), shoulders prominent, sides subparallel, restricted in posterior 6th, posterior margin deeply emarginated (sutural length: 43). No impressions. Punctuation of inner half nearly as coarse as that of the pronotum but much more sparse, interstices generally twice as large as diameter of punctures. The lateral half or third of elytra has larger punctures, which become closer towards lateral margin. *Abdomen* slightly narrowed behind, basal furrows of first segments very deep. Punctuation (except on bases of first tergites) very fine and sparse, punctures distinctly smaller than one eye facet, interstices about twice as large as diameter of punctures.

Except the tip of abdomen (segments 7-10) the whole insect without groundsculpture.

♂: *Metasternum* with the punctuation fine and sparse, interstices smooth. 3rd and 4th sternite medially much finer punctate than laterally. 5th sternite with a broad and very shallow impression in posterior half, its punctuation and pubescence finer than on the sides. 6th sternite with a very broad and deep impression in posterior half, the sides of which are strongly and broadly carinated (in lateral aspect the carinae extend beyond the posterior margin of sternite), impression extremely finely and densely punctate and pubescent, interstices reticulated posterior margin of sternite broadly emarginated. 7th sternite with its medial punctuation distinctly denser than its lateral punctuation, before posterior margin (which is very shallowly emarginated) impunctate but reticulated. 8th sternite with a subtriangular notch in about posterior 3rd (79: 23). 9th sternite about as in fig. 32. 10th tergite at smooth posterior margin shallowly emarginated. *Aedeagus* much resembling that of *hornabrooki* (fig. 31), but the medianlobe slightly more slender.

♀: 8th sternite rounded at posterior margin.

*S. pretiosus* n. sp. can be distinguished from *S. hornabrooki* by its shorter pronotum, denser punctuation of the middle portion of frons, sparser punctuation of the inner half of elytra, and the sexual characters, from *S. visendus* by smooth interstices of the punctuation.

### ***Stenus (Hypostenus) magnepunctatus* Puthz, new species**

*Etymology*: coarsely punctate; with large punctures.

This new species somewhat resembles *S. visendus* Last. It can be easily identified because its minor length (4.3-4.8 mm) and very coarse punctuation of the fore parts.

Dark violet-bluish, shiny, very coarsely and densely punctate, slightly pubescent. *Antennae*, palpi, and legs yellowish. Anterior margin of clypeus narrowly brownish. Labrum dark brown, anterior margin lighter.

Length: 4.3-4.8 mm.

♀. Holotype (BISHOP 9740): Papua: Central: Bisianumu, NE of Pt. Moresby, 500 m, 7.VI.1955, *Crotalaria* sec. growth, J. L. Gressitt.

*Head* slightly broader than elytra at shoulders, frons broad (average distance between eyes: 19), flat, punctuation coarse and moderately dense, diameter of a puncture as large as widest cross section of 3rd antennal segment, interstices near inner eye margins and in extreme middle generally larger than diameter of punctures, on the rest smaller. *Antennae* moderately slender, when reflexed about last 3 segments extend beyond the posterior margin of pronotum. *Pronotum* distinctly longer than broad (33: 27), broadest behind middle, sides from there towards anterior margin first nearly parallel, convergent in anterior 5th, towards posterior margin concave. No distinct impressions. Punctuation very coarse and pretty dense, diameter of a puncture larger than cross section of 3rd antennal segment, slightly smaller than section of 2nd antennal segment, interstices generally nearly as large as half the diameter of a puncture, at places larger.

*Elytra* distinctly broader than head (41: 35.5) and distinctly longer than broad (48: 41), shoulders prominent, sides subparallel, restricted in posterior 5th, posterior margin deeply emarginated (sutural length: 39!). Impressions very shallow, indistinct. Punctuation yet coarser than that of pronotum, largest punctures larger than widest cross section of 2nd antennal segment, shiny interstices distinctly smaller than half the diameter of a puncture. *Abdomen* slightly narrowed behind, basal furrows of first segments deep. Punctuation fine and sparse, coarser anteriorly on tergite 3. Punctures of tergite 5 about equal to one facet, interstices twice as large or yet larger.

Except segments 6-10, which are distinctly reticulated, the whole insect without groundsculpture, tergite 5 has very faint, nearly indistinct reticulation.

♀: 8th sternite rounded at posterior margin, medially slightly produced. Valvifera apico-laterally serrated. 10th tergite at smooth posterior margin very broadly rounded.

### ***Stenus (Hypostenus) coelestis* Fauvel, 1878**

*Stenus coelestis* Fauvel, 1878, *Annali Mus. civ. Stor. nat. Giacomo Doria* 12: 224. — Fauvel, 1879, *l. c.* 15: 82. — Bernhauer, 1915, *Dt. ent. Z.*: 183. — Cameron, 1931, *Rec. S. Austr. Mus.* 4: 357. — Cameron, 1937, *Nova Guinea (N. S.)* 1: 93. — Puthz, 1969, *Bull. Inst. r. Sci. nat. Belg.* 45 (9): 17 f. — Puthz, 1969, *Annali Mus. civ. Stor. nat. Giacomo Doria* 77: 645 f. fig.

Material studied: ♂. Holotype (Museum Genova): Ramoi near Sovong, Beccari; 2 ♂♂: Fly River, L. M. D'Albertis (Inst. r. Sci. nat. Belg., Mus. Genova); 7 ♂♂, 5 ♀♀: NE Papua: Mt. Lamington, 1300-1500 ft., C. T. McNamara (Deutsches Entomologisches Institut, CSIRO Canberra, Field Museum Chicago, coll. Scheerpeltz, coll. m.); 1 ♂, 1 ♀: Papua: Nr. Port Moresby, Brown R., 17.VI.1957, under leaves of Banana, D. E. Hardy (BISHOP, coll. m.); 1 ♂: NE. Bubia, Markham V., 50 m, 17.IX.1955, J. L. Gressitt (BISHOP); 1 ♂, 1 ♀: West Irian: Waris, S. of Hollandia, 450-500 m, 1.-7.VIII.1959, at light, T. C. Maa (BISHOP).

Description of sexual characters see Puthz 1969c.

### ***Stenus (Hypostenus) hestiocorus* Puthz, 1970**

*Stenus hestiocorus* Puthz, 1970, *Steenstrupia* 1: 86 ff. figs.

Material studied: types (l. c.) and 1 ♂: New Guinea NE: Ahl V. Nondugl, 1750 m, 8.VII.1955, J. L. Gressitt (BISHOP).

The species was described from New Ireland, New Britain, and Manus, the record given here is the first one for New Guinea.

### **7 e. *neptunus*-group**

The species of this complex are characterized by the aedeagus: the apex of medianlobe has a trident-like shape, more or less distinct in the different group members.

### ***Stenus (Hypostenus) triton* Puthz, new species** Fig. 38.

Etymology: a sea god, son of Poseidon and Amphitrite.

Shiny, dark blue with an olive tint, head and pronotum moderately coarsely, sparsely punctate, elytra very coarsely and densely punctate, abdomen finely and sparsely punctate,

distinctly pubescent. Antennae, palpi, and legs yellowish brown, apices of tarsal segments infuscated. Anterior margin of clypeus narrowly, anterior half of labrum infuscated.

Length: 6.0-6.5 mm.

♂. Holotype (BISHOP 9741): West Irian: Swart Valley, Karubaka, 1400 m, 21.IX.1958, J. L. Gressitt.

*Head* about as broad as elytra at shoulders, much narrower than greatest width of elytra (41: 52), frons broad (average distance between eyes: 23) with two very shallow longitudinal furrows, median portion, which is nearly impunctate and almost even, broader than each of the side portions, which have moderately coarse punctures, their diameter nearly equal to basal cross section of 3rd antennal segment, interstices generally larger than diameter of punctures. *Antennae* slender, when reflexed about last 3 segments extend beyond the posterior margin of pronotum. *Pronotum* distinctly longer than broad (40: 33), broadest in anterior half, having a deep and broad impression slightly behind middle. Dorsal punctation moderately coarse and sparse, punctures about as large as those near eyes, interstices distinctly larger than diameter of punctures, can be twice as large, lateral punctation of the pronotum much coarser and denser. *Elytra* much broader than head (52: 41), distinctly, but not much, longer than broad (57: 52), shoulders prominent, sides subparallel, restricted in posterior 6th, posterior margin deeply emarginated (sutural length: 45). Sutural impression distinct. Punctuation very coarse and dense, sparser near suture than laterally, largest punctures larger than widest cross section of 3rd antennal segment, interstices about as large as half the diameter of a puncture, seldom larger, laterally distinctly smaller. *Abdomen* moderately narrowed behind, basal furrows of first segments deep. Punctuation (except on bases of first tergites) fine and sparse, punctures nearly as large as one eye facet, interstices larger than diameter of punctures, often twice as large.

Fore parts without groundsculpture, segments 7-10 distinctly reticulated, reticulation of 6th tergite visible, tergites 3-4 have nearly imperceptible groundsculpture (at high magnification).

♂: *Metasternum* coarsely and pretty densely punctate, interstices shallowly but distinctly reticulated. 4th sternite with the posteriomedial punctation and pubescence fine and dense. 5th sternite posteriomedially very shallowly impressed, finely and densely punctate, posterior margin very shallowly emarginated. 6th sternite anteriomedially shallowed, posteriomedially with a nearly semicircular, moderately deep impression, anteriorly moderately finely, shallowly, and very densely punctate, punctation and pubescence of impression extremely fine and dense, posterior margin of sternite distinctly but shallowly emarginated. 7th sternite medially shallowed, finer and denser punctate and pubescent than on the sides, posterior margin extremely shallowly emarginated. 8th sternite with a subtriangular notch in about posterior 3rd (80: 30). 9th sternite apically serrated. 10th tergite at smooth posterior margin shallowly emarginated. *Aedeagus* (fig. 38).

### ***Stenus (Hypostenus) neptunus* Puthz, 1969**

*Stenus neptunus* Puthz, 1969, *Annali Mus. civ. Stor. nat. Giacomo Doria* 77: 650 ff. figs.

Material studied: ♂. Holotype (BMNH): Papua: Mondo, 5000 ft., I.1934, L. E. Cheesman; ♀ paratype (Museum Genova): SE: Moroka, 1300 m, VII-XI.1895, Loria.

### ***Stenus (Hypostenus) poseidon* Puthz, new species**      Fig. 37.

Etymology: god of the sea, having a trident as a scepter.

This new species resembles *S. neptunus* Puthz and *S. triton* n. sp.

Bluish with violet tint, shiny, moderately coarsely and moderately densely punctate, slightly pubescent. Antennae, palpi, and legs yellowish, apices of tarsal segments infuscated. Anterior margins of clypeus and labrum brownish.

Length: 5.0–6.0 mm.

♂. Holotype (BISHOP 9742): NE: Kassam, 1350 m, 48 km E. of Kainantu, 28.X.1959, T. C. Maa; ♀ paratype: ibidem (coll. m.).

*Head* narrow, nearly as broad as elytra at shoulders, frons broad (average distance between eyes: 21) with two shallow longitudinal furrows, median portion, which is nearly flat, about as broad as each of the side portions. Punctuation moderately fine and sparse, largest punctures smaller than basal cross section of 3rd antennal segment, interstices larger than diameter of punctures, middle portion and posterior side portions impunctate. *Antennae* slender, when reflexed about last 3 segments extend beyond the posterior margin of pronotum. *Pronotum* slender, much longer than broad (41: 30), broadest behind middle, sides from there towards anterior margin nearly straightly, towards posterior margin distinctly concavely narrowed. A distinct lateral impression in posterior half. Punctuation moderately coarse and not very dense, diameter of a puncture nearly as large as cross section of 3rd antennal segment, interstices generally slightly larger than diameter of punctures, much smaller on the sides of pronotum. *Elytra* much broader than head (39: 48), somewhat longer than broad (55: 48), shoulders prominent, sides subparallel, restricted in posterior 5th, posterior margin deeply emarginated (sutural length: 46). Sutural impression shallow. Punctuation about as coarse as that of pronotum but distinctly sparser, interstices distinctly larger than diameter of punctures, can be twice as large. *Abdomen* moderately narrowed behind, basal furrows of first segments deep. Punctuation (except on extreme bases of first tergites) very fine and sparse, punctures distinctly smaller than one eye facet, interstices 3 × or more as large as diameter of punctures.

Except last 3 segments the whole insect without groundsculpture.

♂: Metasternum in posterior middle coarsely and moderately densely punctate and pubescent, interstices smooth. Sternites about as in *neptunus* Puthz. 8th sternite with a triangular notch in about posterior 3rd (86: 30). 9th sternite apically serrated. 10th tergite at smooth posterior margin very broadly rounded. *Aedeagus* (fig. 37), medianlobe with the "trident-shape".

♀: 8th sternite broadly round at posterior margin.

*Stenus poseidon* n. sp. is distinguished from *S. triton* by its finer and sparser elytral punctuation, from *S. neptunus* by its finer punctuation of pronotum, from both by the sexual characters.

### ***Stenus* (*Hypostenus*) *amphitrite* Puthz, new species**

*Etymology*: in Greek mythology wife of Poseidon.

This new species is remarkable by its greenish-aeneous luster, fine and sparse punctuation, and the shiny pubescence.

Strongly shiny, greenish with a slight aeneous tint, finely and sparsely punctate, distinctly pubescent. Antennae, palpi, and legs reddish yellow, antennal club and apices of tarsal segments infuscated. Anterior margin of clypeus reddish yellow, anterior three fifths of labrum reddish yellow.

Length: 6.0–6.5 mm.

♀. Holotype (BISHOP 9743): West Irian: Nabire, S. Geelvink Bay, 0–30 m, 2. – 9.VII. 1962, J. L. Gressitt.

*Head* about as broad as elytra at shoulders, frons broad (average distance between eyes: 22) with two very shallow, nearly indistinct longitudinal furrows, median portion flat, slightly broader than each of the side portions. One series of punctures near inner eye margins, some scattered punctures in longitudinal furrows, rest impunctate. Largest punctures nearly as large as basal cross section of 3rd antennal segment. *Antennae* slender, when reflexed last 3 segments extend beyond the posterior margin of pronotum. *Pronotum* distinctly longer than broad (39: 31), broadest behind middle, sides from there towards anterior margin straightly convergent, towards posterior margin distinctly concave. A lateral impression in about middle, one other near posterior margin: both include a posteriolateral slight callosity. Punctuation moderately fine and very sparse, diameter of a puncture about as large as basal cross section of 3rd antennal segment, interstices twice as large or still much larger. *Elytra* much broader than head (48: 41), much longer than broad (60: 48), shoulders prominent, sides subparallel, restricted in posterior 7th, posterior margin very deeply emarginated (sutural length: 50). Sutural and humeral impressions distinct but not deep. Punctuation a little coarser than on pronotum but also very sparse, interstices can be  $4 \times$  as wide as diameter of punctures. Each puncture with a semierect seta. *Abdomen* moderately narrowed behind, basal furrows of first segments deep. Punctuation fine and sparse, pubescence remarkable; punctures smaller than one eye facet, interstices at least twice as large as diameter of punctures.

Tergite 7 is anteriorly and posteriorly reticulated, tergite 8 is totally reticulated, the rest of the insect without groundsculpture.

♀: 8th sternite rounded at posterior margin. Valvifera apically rounded. 10th tergite at smooth posterior margin rounded.

***Stenus (Hypostenus) giluwemontis* Puthz, new species**      Fig. 26.

Etymology: inhabitant of Mt. Giluwe.

This new species is the sister species of *S. cheesmanae* Cameron.

Shiny, blackish-olive with greenish, bluish, violet, or coppery tint, moderately coarsely and moderately densely punctate, slightly pubescent. Antennae, palpi, and legs reddish yellow, apices of tarsal segments infuscated. Anterior margins of clypeus and labrum narrowly yellowish brown.

Length: 5.0–6.5 mm.

♂. Holotype (BISHOP 9744): New Guinea SE: Mt. Giluwe, 2500 m, 6.VI.1953, J. Sedlacek; paratypes: 3 ♂♂: ibidem, 2550 m, 27.V.1963, J. Sedlacek; 2 ♂♂: NE, Lake Sirunki, 2600–2700 m, 15.VI.1963, J. Sedlacek; ♂: Tomba, slopes of Mt. Hagen, 2500–2650 m, 24.V.1963, J. Sedlacek (BISHOP, coll. m.); 1 ♀ (cf. det.): NE Above Kerowagi, 2300 m, 6.VII.1955, J. L. Gressitt (BISHOP).

*Head* distinctly but not much narrower than elytra (42: 47), frons moderately broad (average distance between eyes: 42) with two shallow but distinct longitudinal furrows, median portion about as broad as each of the side portions, shallowly elevated. Punctuation moderately coarse and moderately dense, diameter of a puncture about as large as basal cross section of 3rd antennal segment, interstices mostly about as large as diameter of punctures, smaller on posterior portion of frons. *Antennae* slender, when reflexed about last 3 segments extend beyond the posterior margin of pronotum. *Pronotum* much longer than broad (42: 32), broadest distinctly behind middle, sides from there towards anterior margin nearly straightly convergent, towards posterior margin distinctly concave. A shallow lateral impression in posterior half. Punctuation about as coarse as on head and moderately dense, interstices generally slightly larger than diameter of punctures, smaller on the sides of pronotum. *Elytra* distinctly broader

than head (47: 42), distinctly, but not much, longer than broad (53: 47), shoulders moderately prominent, sides slightly divergent towards posterior margin, restricted in posterior 5th, posterior margin very deeply emarginated (sutural length: 43). Some shallow impressions make the elytra appear slightly uneven. Punctuation slightly coarser than on pronotum, largest punctures can be as large as medial cross section of 3rd antennal segment, interstices in sutural half generally slightly larger than diameter of punctures, less large laterally. *Abdomen* distinctly narrowed behind, basal furrows of first segments deep. Punctuation throughout (except on bases of first tergites) fine and sparse, diameter of punctures nearly as large as one eye facet, interstices twice as large or yet larger than diameter of punctures.

Fore parts without groundsculpture, the whole abdomen deeply and densely, nearly isodiametrically reticulated.

♂: Metasternum finely and sparsely punctate, interstices reticulated as are also the areas around coxae. 3rd sternite posteriomediaally finer and slightly denser punctate than on the sides. 4th sternite shallowed in posterior middle, very finely and densely punctate and pubescent, posterior margin shallowly emarginated. 5th sternite with a broad impression in posterior half, which is finely and densely punctate and pubescent, posterior margin with a shallow emargination. 6th sternite about as 5th, but the impression somewhat deeper. 7th sternite medially shallowed, denser punctate and pubescent than on the sides. 8th sternite with a triangular notch in about posterior 3rd (84: 27). 9th sternite apicolaterally with a distinct tip, apicomediaally deeply emarginated. 10th tergite at smooth posterior margin narrowly rounded. *Aedeagus* (fig. 26) resembling that of *S. cheesmanae* Cameron.

Variability: The punctuation of the fore parts can be denser than in the holotype.

***Stenus* (*Hypostenus*) *cheesmanae* Cameron, 1939** Fig. 26, 27.

*Stenus cheesmani* Cameron, 1939, *Ann. Mag. nat. Hist.* (11) 3: 141 f. — Last, 1970, *J. nat. Hist.* 4: 358 fig.

Material studied: ♂. Holotype (BMNH) and 5 ♂♂, 3 ♀♀ paratypes + 1 ♂ ("*coelestis* Fv." det. G. J. A): Papua: Mt. Tafa, 8500 ft., II.1934, L. E. Cheesman (BM, Field Museum Chicago, coll. m.); 2 ♂♂: Mt. Kaindi, 2400 m, 15.–16.IV.1965, J. Balogh et J. J. Szent-Ivany (Museum Budapest, coll. m.); 1 ♂: Morobe: Edie Creek, Bulldog Rd., 9700 ft., 20.IX.1964, M. E. Bacchus, Stn. No. 13 (BM); 1 ♂: Daulo Pass, 2400 m, 7.VII.1963, J. Sedlacek (BISHOP); 1 ♂, 1 ♀: Mt Hagen, 27.III.1966, 8400 ft., Hornabrook (coll. Hornabrook, coll. Last).

*Additional remarks*: The name of the species was a *lapsus calami*, because it should have been a dedication to Miss L. E. Cheesman.

♂: Metasternum coarsely and densely punctate, interstices reticulated, a narrow area in posterior middle impunctate. 3rd sternite posteriomediaally finely and densely punctate and with long pubescence. 4th sternite with a broad and shallow impression in posterior half, finely and densely punctate and pubescent, posterior margin broadly and shallowly emarginated. Impression of the posterior middle of sternite 5 yet deeper than that of sternite 4, posterior margin deeper emarginated. 6th sternite with a long and moderately broad impression, posterior margin distinctly emarginated. 7th sternite medially finely and densely punctate and pubescent. 8th sternite with a deep, rounded notch in about posterior two fifths (94: 35), inner margin membranous. 6th sternite (fig. 28). 10th tergite at smooth posterior margin rounded. *Aedeagus* (fig. 27).

Variability: The abdominal reticulation can be distinct or almost obsolete, the elytral

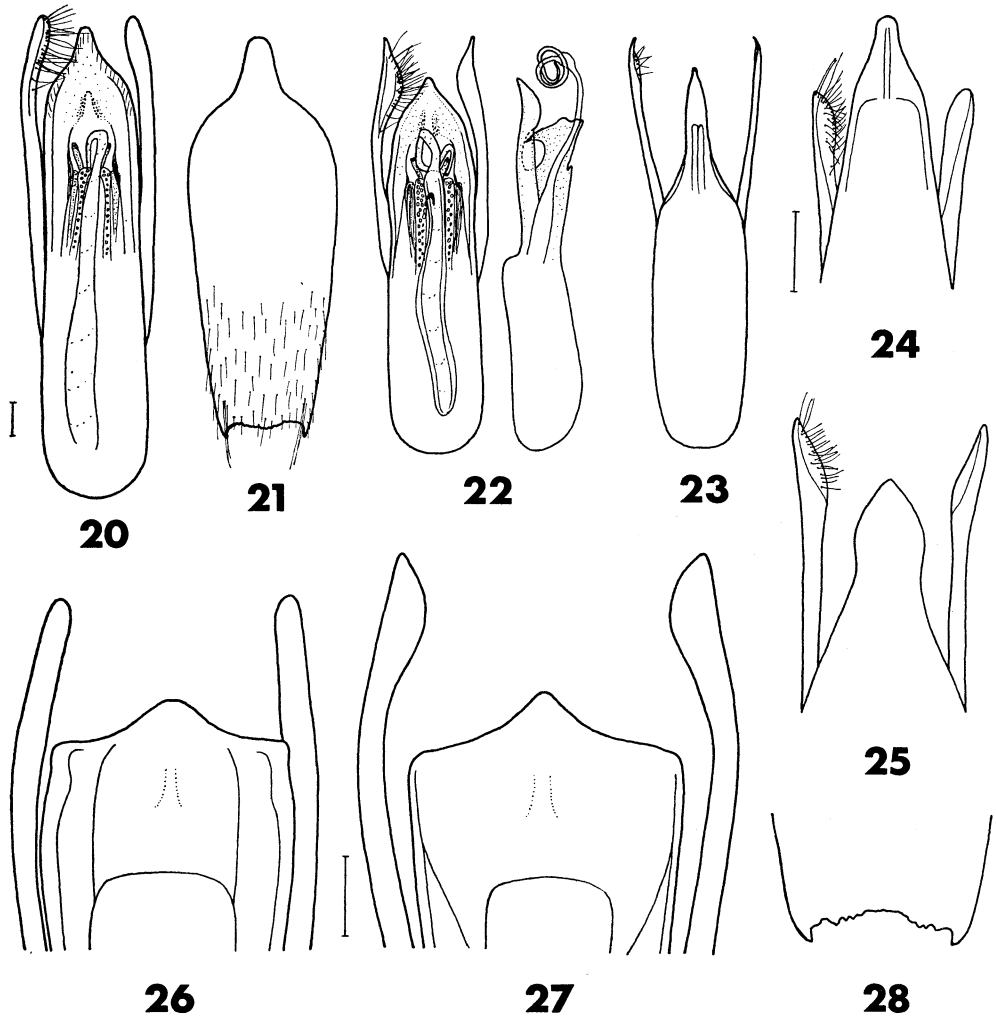


Fig. 20, 21. *Stenus (Hypostenus) interminatus* Last (nr. Okapa): 20, ventral aspect of aedeagus; 21, 9th sternite. Fig. 22. *S. (H.) hagenensis* Last (Tomba, Mt Hagen), ventral aspect of aedeagus and lateral aspect (internal sac somewhat expelled). Fig. 23. *S. (H.) gressitti* n. sp. (holotype) outline of aedeagus. Fig. 24-27. Outline of apical portion of aedeagus: 24, *S. (H.) agricola* n. sp. (holotype); 25, *S. (H.) piliferus obesulus* Fauvel (env. Pt. Moresby); 26, *S. (H.) giluwemontis* n. sp. (paratype); 27, *S. (H.) cheesmanae* Cameron (paratype). Fig. 28. Posterior portion of 9th sternite of *S. (H.) cheesmanae* Cameron. Scale = 0.1 mm.

punctuation differs in coarseness and denseness from specimen to specimen, therefore *S. cheesmanae* is repeatedly listed in the key above.



## 7f. "rest"-complex

This complex comprises all species which could not be assigned to one of the above complexes.

***Stenus (Hypostenus) hagenensis* Last, 1970** Fig. 22.

*Stenus hagenensis* Last, 1970, *J. Nat. Hist.* 4: 350 f.

Material studied: ♂. Holotype (BMNH): Mt Hagen, 8400 ft., 27.III.1966, Hornabrook; 2 ♂♂, 1 ♀ paratypes: Buana, Sarawaged Range, 3000 ft., III.1966, Hornabrook (coll. Hornabrook, Last, coll. m.); 7 ♂♂, 8 ♀♀: Tomba, slopes of Mt. Hagen, 2500-2650 m, 24.V.1963, J. Sedlacek (BISHOP, coll. m.); 3 ♂♂, 1 ♀: ibidem, 2450 m, 23.V.1963, J. Sedlacek (BISHOP, coll. m.); 1 ♂: ibidem, 2450 m, 22-24.V.1963, J. Sedlacek (BISHOP); 2 ♂♂, 3 ♀♀: Lake Sirunki, 2550 m, 17.VI.1963, J. Sedlacek (BISHOP, coll. m.); 1 ♂, 1 ♀: Kepilam, 2490 m, 23.VI.1963, J. Sedlacek (BISHOP, coll. m.); 6 ♂♂, 1 ♀: Mt. Wilhelm, 3000 m, 2.VII.1955, J. L. Gressitt (BISHOP coll. m.); 10 ♂♂, 10 ♀♀: ibidem, 4.VI.1955, J. L. Gressitt (BISHOP, coll. m.); 2 ♀♀: Daulo Pass, 2400 m, 7.VII.1963, J. Sedlacek (BISHOP); 1 ♀: Daulo Pass, 3.II.1971, Hornabrook (coll. Last); 2 ♂♂, 1 ♀: Lufa, II.1971, Hornabrook (coll. Last); 1 ♂, 1 ♀: Marifunga, 25.IV.1971, Hornabrook (coll. Last); 1 ♂, 1 ♀: ibidem, 23.X.1971, Hornabrook (coll. Last); 2 ♀♀: Goroka, 8400 ft, 18.III.1971, Hornabrook (coll. Last); 1 ♂: Mt. Giluwe, 2550 m, 27.V.1963, J. Sedlacek (BISHOP); 1 ♂: ibidem, 2300-2400 m, 5.V.1963, J. Sedlacek (BISHOP).

*Additional remarks:* This is a very variable species, some specimens have nearly smooth interstices of elytral punctation, but in most cases the reticulation is very distinct.

♂: Metasternum finely and sparsely punctate, posteriomedially with a narrow longitudinal impression, interstices reticulated. Area around coxae smooth. 3rd sternite with the medial punctation fine and sparse, interstices nearly smooth. 4th sternite in posterior half moderately impressed, extremely finely and moderately densely punctate and pubescent, posterior margin broadly but shallowly emarginated. 5th sternite with a broad impression which is divergent posteriorly, sides of impression elevated forming cariniformous teeth, posterior margin broadly and shallowly emarginated, punctation and pubescence of impression extremely fine and dense. 6th sternite with a similar but less broad impression. 7th sternite with the medial punctation and pubescence fine and pretty dense, posterior margin with a narrow and very shallow notch medially. 8th sternite with a subtriangular notch in about posterior two fifths. 9th sternite apicolaterally with an indistinct, small tooth or totally serrated. 10th tergite posteriomedially shallowly emarginated. *Aedeagus* (fig. 22), internal sac with a long and slender, curved tube which is more or less seen in different specimens (cf. fig. 22, right).

♀: 8th sternite rounded at posterior margin. 10th tergite with a shallow apicomedia emargination.

***Stenus (Hypostenus) interminatus* Last, 1970** Fig. 20, 21.

*Stenus interminatus* Last, 1970, *J. Nat. Hist.* 4: 351 f.

Material studied: types (BMNH, coll. Hornabrook, coll. Last, coll. m.); 2 ♂♂, 1 ♀: 13 km SE Okapa, 1650-1870 m, 26.VIII.1964, J. & M. Sedlacek (BISHOP, coll. m.); 1 ♂:

Purosa, 20–26 km SE Okapa, 1800–2020 m, 28.VIII.1964, J. & M. Sedlacek (BISHOP); 1 ♂: Waisa, South Fore, 28.II.1966, Hornabrook (coll. Last); 1 ♂, 4 ♀♀: Anga Gorge, E. of Mendi, 14.X.1958, J. L. Gressitt (BISHOP, coll. m.).

*Additional remarks:* Head distinctly narrower than elytra (48: 60 (male from nr. Okapa); 44: 52 (male from Anga Gorge)), middle portion of frons distinctly but not much elevated, punctation fine and sparse, diameter of a puncture at most as large as basal cross section of 3rd antennal segment, interstices generally slightly larger than diameter of punctures. Pronotum long and broad (40: 51//35: 47) with a broad and remarkable transversal impression slightly behind middle. Punctation distinctly coarser than on head, can be denser (see below). Elytra slightly longer than broad (60: 63//52: 57), coarsely and moderately densely punctate, interstices generally smaller than diameter of punctures.

♂: 3rd sternite posteriomedially finer punctate than on the sides. 4th sternite in posterior middle with the punctation and pubescence finer and denser than on the sides. 5th sternite with a broad but shallow impression in posterior middle, which is very finely and densely punctate and pubescent, posterior margin broadly and shallowly emarginated. 6th sternite with a broad and deep impression in posterior middle which is extremely densely set with very fine punctures and a coat-like pubescence, posterior margin broadly emarginated. 7th sternite shallowed along middle, medial punctation denser than on the sides. 8th sternite with a subtriangular notch in about posterior two fifths (105: 42). 9th sternite (fig. 21). 10th tergite broadly rounded at smooth posterior margin which can be slightly concave. *Aedeagus* (fig. 20).

♀: 8th sternite rounded at posterior margin.

Variability: The specimens from Anga Gorge (Papua) are less long and more slender than those from Eastern Highlands (New Guinea), their punctation of the fore parts is distinctly less coarse and sparser (f. e.: interstices on pronotum generally about as large as diameter of punctures; in "nr. Okapa"—specimens about equal to half the diameter of punctures or slightly larger), their coloration darker, less blue-metallic. Because no distinct differences in sexual characters could be observed, these specimens should be regarded as belonging to the space of variation.

### ***Stenus (Hypostenus) archboldi* Puthz, 1972**

*Stenus archboldi* Puthz, 1972, *Reichenbachia* 14, no. 10

Material studied: ♂. Holotype (American Museum of Natural History, New York) and 3 ♂♂, 3 ♀♀—paratypes: Morobe: Cromwell Mts., Mt. Ulur Camp, 7800 ft., VIII.1964, H. M. van Deusen leg. (AMNH, coll. m., Museum Geneva).

### ***Stenus (Hypostenus) cheesmanianus* Cameron, 1939** Fig. 16.

*Stenus cheesmanianus* Cameron, 1939, *Ann. Mag. Nat. Hist.* (11) 3: 142.—Last, 1970, *J. Nat. Hist.* 4: 352 f. fig.

Material studied: ♂. Holotype (BMNH) and 2 ♂♂, 2 ♀♀ paratypes (ibidem): Papua: Mt. Tafa, 8500 ft., II.1934, L. E. Cheesman. 1 ♂, 3 ♀♀: Mt. Kaindi, 2400 m, 15.–16.IV, 1955, J. Balogh & J. J. Szent-Ivany (Museum Budapest, coll. m.); 1 ♀: ibidem, 2350m, 7.IV.1966, J. L. & M. Gressitt (BISHOP); 3 ♂♂: Daulo Pass, 2400 m, (Asaro-Chimbu div.), 16.VI.1955, J. L. Gressitt (BISHOP, coll. m.); 1 ♂: ibidem, 2800 m, 14.VI.1955, J. L. Gressitt

(BISHOP); 1 ♀ (cf. det.): ibidem, 3000 m, 13.VI.1955, J. L. Gressitt (BISHOP); 1 ♂, 1 ♀: Wau, 2400 m, 9.-12.I.1962, J. Sedlacek (BISHOP); 1 ♀: ibidem, 1100 m 29.VIII.1961, J. & M. Sedlacek (BISHOP); 1 ♂: Lufa, II.1971, Hornabrook (coll. Last); 1 ♂, 3 ♀♀: Mt. Elandora, 7000-8000 ft., 17.X.1965, Hornabrook (coll. Hornabrook, coll. Last); 1 ♂: Marifunga, 25.IV.1971, Hornabrook (coll. Last); 2 ♀♀: Moife, 2100 m, 7.-14.X.1959, clearing, swept ex vegetation, T. C. Maa (BISHOP); 2 ♀♀: Simbai, Bismarck Range, 1700 m, 28.V.1966, J. L. Gressitt (BISHOP); 2 ♂♂, 1 ♀: Mt. Kainde, 8000 ft., 22.IX.1964, Stn. No. 20, M. E. Bacchus (BM, coll. m.).

*Additional remarks:* One of the original paratypes belonged to *visendus* Last one other (from Mondo) is the holotype of *neptunus* Puthz (see above). Length: 5.5-7.5 mm (!).

♂: Metasternum coarsely and moderately densely punctate, interstices with faint reticulation. Sternites as described by Cameron. 8th sternite with a subtriangular notch in about posterior 3rd (91: 29), inner margin membranous. 9th sternite apicolaterally with a distinct but short tooth, apicomediaally serrated. 10th tergite at smooth posterior margin shallowly emarginated. *Aedeagus* (fig. 16), apex of medianlobe with an axe-like medial carina. *Stenus cheesmanianus* is very variable: in some specimens the reticulation of tergite 3-5 is obsolete, other specimens differ in coarseness and denseness of elytral punctation (see key).

***Stenus (Hypostenus) moroensis* Puthz, new species** Fig. 17.

*Etymology:* name derived from the locality Moro.

This new species resembles *S. cheesmanianus* Cameron.

Shiny, bluish-violet, at places slightly greenish, moderately finely and moderately sparsely punctate, slightly pubescent. Antennae, palpi, and legs yellowish red, apices of tarsal segments infuscated. Anterior margins of clypeus and labrum narrowly brownish.

Length: 5.0-6.0 mm.

♂. Holotype (BMNH) and 1 ♂, 2 ♀♀ paratypes: New Guinea: Madang, Finisterre Mts., Moro Camp, 5550 ft., 30.X. - 15.XI.1964, M. E. Bacchus, Stn. No. 78 (BM, coll. m.); 1 ♂ paratype: Finisterre Range, Saidor, Matoko, 28.VIII. - 5.IX.1958, W. W. Brandt (BISHOP).

*Head* slightly broader than elytra at shoulders (43), frons moderately broad (average distance between eyes: 21) with two shallow longitudinal furrows, median portion about as broad as each of the side portions, very shallowly elevated. Punctuation moderately fine and moderately sparse, diameter of a puncture nearly as large as cross section of 3rd antennal segment, interstices generally slightly larger than diameter of punctures, larger in extreme middle and an area near inner eye margins posteriorly. *Antennae* moderately slender, when reflexed nearly last 3 segments extending beyond the posterior margin of the pronotum. *Pronotum* distinctly longer than broad (41: 33), widest behind middle, sides from there towards anterior margin first nearly straight (or slightly convergent), anteriorly distinctly restricted, towards posterior margin distinctly concave. Posteriolateral impression shallow. Punctuation about as coarse as on head, interstices mostly about equal to diameter of a puncture, at places larger or smaller. *Elytra* much broader than head (50: 43), slightly longer than broad (56: 50), shoulders prominent, sides subparallel, restricted in posterior 6th, posterior margin deeply emarginated (sutural length: 48). Sutural impression distinct, humeral impressions indistinct. Punctuation slightly coarser than on pronotum, diameter of a puncture about equal to basal cross section of 3rd antennal segment,

interstices generally slightly larger than diameter of punctures. *Abdomen* moderately narrowed behind, basal furrows of first segments deep. Punctuation (except on bases of first tergites) fine and very sparse, diameter of a puncture distinctly smaller than one eye facet, interstices at least twice as large as diameter of punctures.

Fore parts without groundsculpture, abdominal segments 3-6 with faint reticulation, 7th-10th tergite densely and deeply reticulated.

♂ : 3rd sternite posteriomediaally slightly denser and finer punctate than on the sides. 4th sternite posteriomediaally finely and moderately densely punctate and pubescent, shallowly emarginated at posterior margin. 5th sternite with a moderately broad and shallow impression in posterior half, its punctuation and pubescence very fine and dense, posterior margin shallowly emarginated. 6th sternite in posterior half with a broad deep impression, of which the sides are roundly carinated, inner punctuation and pubescence extremely fine and dense, posterior margin broadly and shallowly emarginated. 7th sternite flattend along middle, denser punctate and pubescent than on the sides. 8th sternite with a subtriangular excision in about posterior two fifths (93 : 36), of which the inner margin is membranous. 9th sternite about as in fig. 19. 10th tergite distinctly but shallowly emarginated at smooth posterior margin. *Aedeagus* (fig. 17).

♀ : 8th sternite rounded at posterior margin.

Variability : The paratype from Matoko is remarkably sparser punctate than the holotype.

***Stenus (Hypostenus) lasti* Puthz, new species**      Fig. 18, 19.

*Etymology* : I dedicate this new species to my dear colleague and friend Horace R. Last, England.

This new species is very closely related with *S. moroensis*. A full description is not necessary, a comparison will be sufficient.

Violet with bluish tint somewhere, shiny, fore parts with the punctuation moderately coarse and moderately dense, abdomen finely and sparsely punctate, pubescence indistinct. *Antennae*, *palpi*, and *legs* yellowish or pale brownish, apices of tarsal segments infuscated. Anterior margins of *clypeus* and *labrum* narrowly brownish.

Length : 5.5-6.2 mm.

♂. *Holotype* (BISHOP 9745) (elytra and abdomen separated from the somewhat damaged specimen) : NE : Moife, 2100 m, 7.-14.X.1959, clearing, swept ex vegetation, T. C. Maa.

Punctuation of fore parts somewhat coarser and denser than in *moroensis*, interstices of pronotal and elytral punctuation slightly smaller than diameter of punctures, interstices of abdominal punctuation generally twice as large as diameter of punctures.

♂ : Ventral characters of abdomen about as in *moroensis* but the 8th sternite with a deeper emargination in about posterior two fifths (90 : 38). 9th sternite (fig. 19). 10th tergite at smooth posterior margin with a broad and distinct emargination. *Aedeagus* (fig. 18), apical portion of medianlobe broader and shorter than in *moroensis* having a more distinct although minute lateral corner.

***Stenus (Hypostenus) lorianus* Puthz, 1969**

*Stenus lorianus* Puthz, 1969, *Annali Mus. civ. Stor. nat. Giacomo Doria* **77** : 646-649 figs.

Material studied: ♂. Holotype (Museum Genova): New Guinea SE: Moroka, 1300 m, VII.-XI.1893, Loria.

***Stenus (Hypostenus) bacchus*** Puthz, new species      Fig. 14, 15.

Etymology: Roman god of wine *and* name of the collector of the holotype.

This new species is remarkable by its small head, very large elytra, and strong metallic lustre.

Strongly shiny, greenish-blue, moderately and distantly punctate, shortly pubescent. Antennae, palpi, and legs pale brownish, apices of tarsal segments infuscated. Anterior margins of clypeus and labrum very narrowly brownish.

Length: 5.5-6.5 mm.

♂. Holotype (BMNH): Eastern Highlands: Wanatabe Valley near Okapa, ca. 5000 feet, 5.II.1965, Stn. No. 174, M. E. Bacchus.

*Head* distinctly narrower than elytra at shoulders (43), frons moderately broad (average distance between eyes: 22) with two shallow longitudinal furrows, median portion about as broad as each of the side portions, feebly elevated. Punctuation moderately fine till moderately coarse, largest punctures (near median portion) equal to basal cross section of 3rd antennal segment, interstices smaller than diameter of a puncture except in middle and near inner eye margins posteriorly. *Antennae* long and slender, when reflexed more than last 3 segments extending beyond the posterior margin of pronotum. *Pronotum* distinctly but not much longer than broad (42: 34), broadest behind middle, sides in anterior three fifths slightly convex, in posterior two fifths distinctly concave. A shallow lateral impression behind middle. Punctuation about as in frontal furrows, interstices often larger than diameter of punctures and as often distinctly but not much smaller. Lateral punctuation distinctly denser than dorsal one. *Elytra* much broader than head (57: 43), slightly longer than broad (63: 57), shoulders strongly prominent, sides subparallel, restricted in posterior 6th, posterior margin very deeply emarginated (sutural length: 50). Sutural impression distinct but shallow and short, humeral impressions almost imperceptible. Punctuation about as coarse as on pronotum, but sparser and more regular, interstices generally larger or as large as diameter of punctures (smaller on lateral third). *Abdomen* slightly narrowed behind, basal furrows of first segments deep. Punctuation (except on bases of first segments) very fine and sparse, punctures distinctly smaller than one eye facet, interstices twice as large as diameter of a puncture, or still larger.

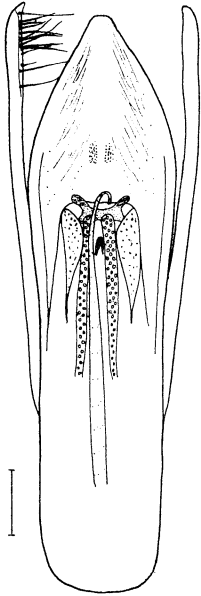
Except segments 7-10 which have feeble reticulation the whole insect without groundsculpture.

♂: *Metatibiae* bent in apical 3rd. 4th sternite posteriomedially shallowed, much denser punctate and pubescent than on the sides, interstices smooth, posterior margin shallowly emarginated. 5th sternite in posterior middle with a broad but not deep impression, which is very finely and very densely punctate and pubescent, posterior margin with a broad emargination. Impression of sternite 6 deeper than that of 5th, punctuation and pubescence similar. 7th sternite medially broadly shallowed, finer and denser punctate and pubescent than on the sides, interstices reticulated. 8th sternite with a deep subtriangular excision in about posterior two fifths (98: 40). 9th sternite (fig. 15). 10th tergite rounded at smooth posterior margin. *Aedeagus* (fig. 14).

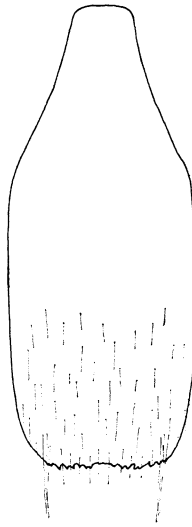
♀: Unknown.

***Stenus (Hypostenus) planus*** Last, 1970      Fig. 35.

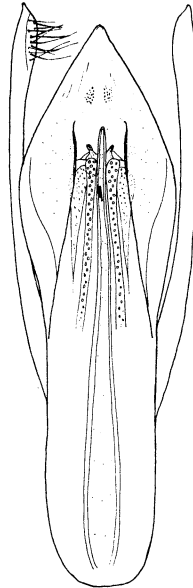
*Stenus planus* Last, 1970, *J. Nat. Hist.* 4: 353.



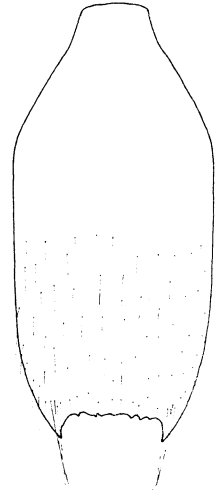
**29**



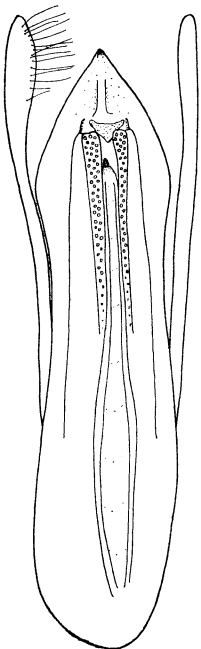
**30**



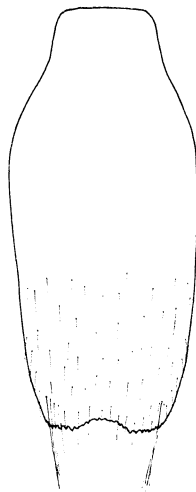
**31**



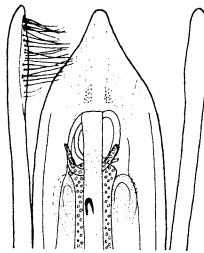
**32**



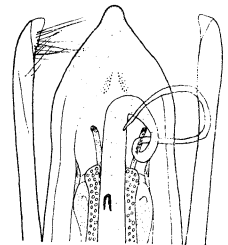
**33**



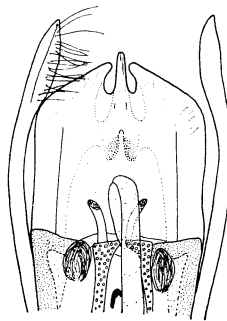
**34**



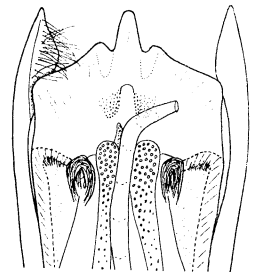
**35**



**36**



**37**



**38**

Material studied: ♂. Holotype (BMNH): Morobe, Buana, Saruwaged Range, 20-30 miles north of Lae, 3000 feet, III.1966, Hornabrook.

Additional remarks (see also below): The paratype of *S. planus* from Mt. Michael belongs to the new species *nigrescens* (s. b.). Both are sister species and very difficult to separate without studying the male's sexual characters.

♂: Ventral characters of abdomen about as in *nigrescens*, but sternite 5 posteriomediaally finer and denser punctate and pubescent. 8th sternite with a less deep triangular notch apically (72: 19). *Aedeagus* (fig. 35) principally as that of *nigrescens*, but the parameres longer and different in apical shape, apical portion of medianlobe more slender, sides less curved.

***Stenus (Hypostenus) nigrescens* Puthz, new species** Fig. 36.

Etymology: blackish.

This new species very closely resembles *S. planus* Last; both species are relatively easily to separate from all other New Guinean *Stenus* by their blackish lustre.

Shiny black with an aeneous lustre, head, pronotum, and abdomen sometimes with a dark bluish or violet tint. Punctuation of fore parts moderately coarse and pretty sparse, that of abdomen extremely fine and sparse. Pubescence short. Antennae, palpi, and legs yellowish, apices of tarsal segments infuscated. Clypeus and labrum dark, anterior margins of both brownish.

Length: 5.0-6.5 mm.

♂. Holotype (coll. Puthz): Madang: Gogol River, light trap, 4.XII.1969, S. Haering; paratypes: 1 ♂: Eastern Highlands: Mt. Michael, 10,500 ft., 18.VII.1964, Hornabrook (coll. Last); 1 ♂: Eastern Highlands: Upper Chimbu-Kerowagi div., 2800 m, 6.VII.1955, J. L. Gressitt (BISHOP); 2 ♂♂: Morobe: Mt. Kaindi, 2350 m, 7.IV.1966 (6360), J. L. & M. Gressitt (BISHOP, coll. m.); 1 ♀: Summit of Mt. Kaindi, 8000 ft., 2.IX.1964, M. E. Bacchus, Stn. No. 20 (BMNH); 1 ♀: Mt. Wilhelm, 3000 m, 4.VII.1955, J. L. Gressitt (BISHOP).

*nigrescens* n. sp. (holotype)

width of head: 38; pronotum: 30 broad, 37 long; elytra: 53 broad, 58 long, 50 suture. 8th sternite of ♂: 82: 22

Punctuation of head coarse and moderately sparse, largest punctures larger than basal cross section of 3rd antennal segment. Punctuation of pronotum slightly coarser. Elytral punctuation on sutural 3rd sparser, interstices often twice as large as, generally distinctly larger than diameter of punctures. Abdominal punctuation finer. Medianlobe (fig. 36).

*planus* Last (holotype)

width of head: 37; pronotum: 29 broad, 35 long; elytra: 47 broad, 53 long, 43 suture. 8th sternite of ♂: 72: 19

Punctuation of head moderately coarse and moderately sparse, largest punctures at most as large as basal cross section of 3rd antennal segment. Punctuation of pronotum slightly finer. Elytral punctuation on sutural 3rd less sparse, interstices generally equal to diameter of punctures, at places slightly larger. Abdominal punctuation less fine.

Medianlobe (fig. 35).

Fig. 29-34. Ventral aspect of aedeagus and 9th sternite: 29, 30 *Stenus (Hypostenus) visendus* Last (Wau); 31, 32, *S. (H.) hornabrooki* n. sp. (paratype); 33, 34, *S. (H.) conflictatus* n. sp.

Fore parts and anterior portion of abdomen without groundsculpture, tergite 7 has very faint reticulation, tergites 8-10 are distinctly reticulated.

♂ : 3rd and 4th sternite medially near posterior margin sparser punctate than on rest of sternite. 5th sternite shallowed in posterior 3rd, punctuation finer and distinctly denser than on the sides, posterior margin very shallowly emarginated. 6th sternite with a broad but short medial impression in posterior 3rd, the sides of which are extremely densely and finely punctate and pubescent, punctuation of the impression's middle very fine but less dense, posterior margin shallowly emarginated. 7th sternite medially shallowed, finer and denser punctate and pubescent than on the sides. 8th sternite with a triangular notch in about posterior 4th. 9th sternite at posterior margin shallowly concave, margin serrated throughout. 10th tergite at posterior margin truncate or very slightly emarginated.

♀ : 8th sternite at posterior margin rounded.

**Stenus (Hypostenus) conflictatus** Puthz, new species      Fig. 33, 34.

**Etymology:** Metaphorical: a species which is very difficult to identify because of high degree of variability.

This is a remarkably variable species. The holotype will be described in detail, variations are indicated below.

Shiny, mainly bluish-violet or greenish with tints of the same colors somewhere, moderately coarsely and moderately densely punctate (variations !), slightly pubescent. Antennae, palpi, and legs yellowish or pale brownish, apices of tarsal segments infuscated. Anterior margins of clypeus and labrum narrowly brownish.

Length: 4.5-5.7 mm.

♂. Holotype (BMNH) and 3 ♂♂, 1 ♀ paratypes: Madang: Finisterre Mountains, Moro C. 5550 ft., 30.X.-15.XI.1964, Stn. No. 78, M. E. Bacchus (BM, coll. m.); paratypes: 3 ♂♂, 4 ♀♀: E. Highlands: Wanatabe Valley, near Okapa, c. 5000 ft., 5.II.1965, Stn. No. 174, M. E. Bacchus (BM, coll. m.); 1 ♂: 13 km SE Okapa, 1650-1870 m, 26.VIII.1964, J. & M. Sedlacek (BISHOP); 1 ♀: 24-26 km SE Okapa, 1800-1900 m, 25.VIII.1964, J. & M. Sedlacek (BISHOP); doubtful females: 1 ♀: Okapa, 9.II.1966, Hornabrook (coll. Last); 1 ♀: Agakomatuso, 4-5000 ft., 17.X.1965, Hornabrook (coll. Last).

*Head* about as broad as elytra at shoulders, much narrower than greatest width of elytra (38: 47), frons broad (average distance between eyes: 20) with two indistinct longitudinal furrows, median portion broader than each of the side portions, slightly impressed in middle, slightly elevated behind. Punctuation differently coarse and moderately dense, largest punctures slightly larger than basal cross section of 3rd antennal segment, smallest punctures distinctly smaller, interstices in extreme middle of frons, around antennal tubercles, and posteriorly near inner eye margins distinctly larger than diameter of punctures, on the rest distinctly smaller. *Antennae* moderately long, when reflexed less than last 3 segments extending beyond the posterior margin of pronotum, penultimate segments forming a distinct club. *Pronotum* distinctly longer than broad (35: 29), widest behind middle, sides concave in posterior two fifths, more or less straightly, slightly convergent in anterior three fifths, posteriolateral impressions shallow. Puncta-

(holotype). Fig. 35-38. Ventral aspect of apical portion of aedeagus: 35, *S. (H.) planus* Last (holotype); 36, *S. (H.) nigrescens* n. sp. (holotype); 37, *S. (H.) poseidon* n. sp. (holotype); 38, *S. (H.) triton* n. sp. (holotype). Scale = 0.1 mm.



tion moderately coarse and dense, about as coarse as on the front's middle portion, interstices generally distinctly smaller than diameter of punctures, can be (at places) less than half as large or also larger than diameter of puncture. *Elytra* much broader than head (47: 38), much longer than broad (54: 47), shoulders prominent, sides subparallel, distinctly restricted in posterior 5th, posterior margin very deeply emarginated (sutural length: 44). Sutural impression distinct, humeral impressions very shallow. Punctuation slightly coarser than on pronotum, slightly less dense, interstices about as large as diameter of punctures (cf. below). *Abdomen* moderately narrowed behind, basal furrows of first segments deep. Punctuation (except on bases of first tergites) fine and sparse, slightly less fine anteriorly than behind, punctures of tergite 3 about equal to one eye facet, interstices generally distinctly larger than diameter of punctures (not twice as large), punctures of tergite 6 distinctly a little finer than one eye facet, their interstices generally about twice as large as diameter of punctures.

Fore parts without groundsculpture, tergites 3-6 at 50 × not perceptibly reticulated, at much higher magnification (200 ×) with indistinct trace of groundsculpture. 7th-10th tergites with distinct but shallow reticulation (see below).

♂: Metasternum with the medial punctuation moderately coarse and sparse, a narrow longitudinal area in posterior middle impunctate, interstices smooth. 3rd-5th sternite near posterior margin medially sparser punctate than anteriorly, punctures finer than those of the sides. 6th sternite posteriomedialely somewhat shallowed, slightly finer but distinctly denser punctate and pubescent than on the sides, posterior margin very shallowly emarginated. 7th sternite medially much denser punctate and pubescent than on the sides, interstices reticulated. 8th sternite with a broad and round emargination in about posterior 7th (83: 11). 9th sternite (fig. 34). 10th tergite at smooth posterior margin broadly rounded. *Aedeagus* (fig. 33).

♀: 8th sternite rounded at posterior margin. Variability: Punctuation of the fore parts differently coarse and—especially—differently dense.—Abdomen can have faint reticulation at 50 ×.—Middle portion of frons can be flat throughout. (cf. also key).

***Stenus* (*Hypostenus*) *gressitti* Puthz, new species**      Fig. 23.

**Etymology:** I dedicate this remarkable species to Prof. J. L. Gressitt, one of the pioneers in exploration of the Pacific fauna.

This new species is remarkable by its small head, very long antennae, very large elytra, slight metallic lustre, and the abdominal reticulation.

Shiny, blackish with feeble bluish, olivaceous, or aeneous tints at places, moderately finely and not densely punctate, moderately pubescent. Antennae, palpi, and legs yellowish, knees, apices of tarsal segments, and (very feebly) last antennal segments slightly infuscated. Anterior margins of clypeus and labrum infuscated.

Length: 6.0-7.2 mm.

♂. Holotype (BISHOP 9746): Papua: Anga Gorge, 1500 E of Mendi, 14.X.1958, J. L. Gressitt. Left elytron of holotype somewhat monstrous.

**Head** distinctly narrower than elytra at shoulders (39), frons moderately broad (average distance between eyes: 20) with two shallow longitudinal furrows, median portion about as broad as each of the side portions, smooth. Punctuation fine and sparse, punctures much smaller than basal cross section of 3rd antennal segment, interstices larger than diameter of punctures. **Antennae** very long, when reflexed more than last 4 segments extending beyond posterior margin of pronotum, segment 10 twice as long as broad, segment 9 at least 2.5 × as long as broad. **Pronotum** distinctly longer than broad (40: 32), broadest behind middle, sides

from there towards anterior margin first nearly straightly convergent, anteriorly convex, towards posterior margin very distinctly concavely narrowed. Punctures different in diameter, largest punctures nearly equal to basal cross section of 3rd antennal segment, smallest punctures about as large as one eye facet, interstices dorsally about as large as diameter of punctures or slightly larger, distinctly smaller laterally. *Elytra* very large, much broader than head (53 : 39), somewhat longer than broad (61 : 53), shoulders strongly prominent, sides slightly convex, posterior margin very deeply emarginated (sutural length : 44). Sutural and some lateral impressions distinct. Punctuation distinctly coarser than on pronotum and more equal in coarseness, diameter nearly or as large as basal cross section of 3rd antennal segment, interstices generally larger than diameter of punctures (in sutural third), smaller but not much smaller on the rest. *Abdomen* moderately narrowed behind, basal furrows of first segments deep. Punctuation (except on bases of first tergites) fine and sparse, diameter of a puncture nearly as large as one eye facet, interstices twice as large. Punctuation on last 4 tergites finer and sparser.

Fore parts without groundsculpture, the whole abdomen has shallow but distinct reticulation.

♂ : *Metasternum* moderately coarsely and not densely punctate, interstices reticulated. 4th-7th sternites medially with a broad impression, which is very shallow at sternite 4, deepest at sternite 6, punctuation and pubescence very fine and very dense, all sternites shallowly emarginated at posterior margin. 8th sternite with a rounded notch in about posterior 4th (84 : 23). 9th sternite apically serrated. 10th tergite at smooth posterior margin with a shallow emargination. *Aedeagus* (fig. 23).

♀ : Unknown.

#### DISCUSSION

The total number of *Stenus*-species and subspecies so far found in New Guinea is 71. New Guinea therefore has the richest *Stenus*-fauna of all islands of the world. Madagascar has 38 taxa recorded thus far (Puthz 1972a).

Most of the collections have been made in NE New Guinea, less in Papua, and much less in West Irian (especially central and western). At present the distribution of known taxa is the following:

NE New Guinea :	ca. 80 %
Papua :	ca. 25 %
West Irian :	ca. 18 %.

New collections, especially in western New Guinea, will lead to a result, which is more adequate to the real distribution of taxa in whole New Guinea.

The New Guinean *Stenus*-fauna is composed of at least 7 different groups: 5 of them are monophyletic the remaining 2 (1 of them with about half of the total species number !) consist of many very closely related species which I cannot divide sufficiently into monophyletic groups or complexes. The reason for this situation is probably found in the low degree of differentiation at species level and in evolutionary history. For example: (1) there is no brachypterous *Hypostenus* in New Guinea, although a lot of them have been found at high altitudes, (2) most of the *Hypostenus* are of about the same length and coloration, (3) males of numerous species have excessive sexual characters at ventral side of abdomen, (4) most species (New Guinea-group) have similar inner structures of aedeagus, etc. This leads to the result that most of the New Guinean

*Stenus* are in an early stage of speciation as is known from other New Guinean insect groups too.

Most of the New Guinean *Stenus* are endemics of the Melanesian subregion (terminology after Franz 1970), some also live in Australia and the Bismarck Archipelago: 3 in Australia, 3 in New Britain, 1 in New Ireland, 1 in Manus: this proves once more that the fauna of the Bismarck Archipelago is closely related to that of New Guinea (of 5 known taxa only 2 are endemics in the Bismarck Archipelago). The same can be stated for the fauna of the Moluccas: the only known species, *Stenus bucephalus* L. Benick, is closely related to New Guinean species and has no affinities to the Malayan fauna.

One of the New Guinean *Stenus* also lives in Queensland (Puthz 1970b: 56) because of faunal interchange in the pleistocene. The monophyletic group to which this species (*caviceps* Fauvel) belongs (*prismalis*+*cupreipennis*-groups) is of special interest: it has 10 species in New Guinea, 1 of them also in New Britain (*dahli*), 1 other also in New Britain and New Ireland (*illiesi*), 2 species in the Solomons (*aglaia*, *aphrodite*), and 14 species in Australia (Qld, NSW, Vic, S. Aust., W. Aust.: all in areas where average yearly rainfall is over 20 inches). Because all these taxa are winged and some of them have a wide range (*illiesi*, *cupreipennis*, *villosiventris*) a migration from the Melanesian continent into Australia *or vice versa* must be assumed. I cannot decide which has been the direction of migration, the differentiation of species is as high in the Melanesian as in the Australian representatives. Certainly this group is phylogenetically derived from the Oriental stock. Because of its high degree of differentiation, connections with the Oriental stem must have been broken early.

Only 3 species have a wider distribution: *cursorius* (Map 1) and *piliferus* (Map 2) are known from the whole Oriental region *and* the Australian region, *crinitus* (Map 1) from the Malayan subregion and New Guinea.

The composition of the New Guinean *Stenus*-fauna is summarized in the following:

- 1 afro-indian group (*cursorius*-group: Puthz 1971c: 162),
- 2 Oriental groups *s. str.* (*piliferus*-group, *cylindricollis*-group: Puthz 1971b, 1972c),
- 4 Melanesian groups (with 94 % of all taxa!).

Relatives (i. e. sister groups) of *all* groups endemic in the Melanesian subregion are found in the Oriental region. This confirms the statements of Gressitt (1961: 42): "the insect fauna (of New Guinea) is primarily Oriental" and of Franz (1970: 43): "Einen sehr hohen Anteil an Endemiten weist besonders die Fauna ( ) der melanesischen Subregion auf. Auch hier herrscht aber der orientalische Einfluss vor dem irgend einer anderen tiergeographischen Region vor."

Faunal affinities between the Philippines and New Guinea – recorded from other insect groups – are also found in the *Stenus* (*capitalis*, *visendus*-complex) but are slight.

The high number of very closely related New Guinean species can be explained by the rich environment and different available niches especially in the NE of that island.

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