

SPIXIANA	35	1	35–77	München, August 2012	ISSN 0341–8391
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New genera and species of platynine carabid beetles from New Guinea

(Coleoptera, Carabidae, Platynini)

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Baehr, M. 2012. New genera and species of platynine carabid beetles from New Guinea (Coleoptera, Carabidae, Platynini). *Spixiana* 35(1): 35–77.

Two new genera of platynine carabid beetles are described from New Guinea: *Cinctagonum* gen. nov. with the four new species *C. convexipenne*, *C. angulicolle*, *C. politum* from eastern Papua New Guinea, and *C. cordicolle* from central Papua Indonesia; and *Cistelagonum* gen. nov. with the new species *C. kaindi* from eastern Papua New Guinea. The species of the genus *Cinctagonum* are characterized by absence of the metathoracic wings, small body size, convex elytra, distinct yellow margins of pronotum and elytra, small but laterally protruded eyes, absence of the anterior marginal pronotal seta, and presence of only two discal elytral setae. The single species of *Cistelagonum* is characterized by cisteloid or calathoid shape, absence of the metathoracic wings, rounded basal angle of the pronotum, elongate, oval-shaped elytra, little protruded eyes, absence of the anterior marginal pronotal seta, presence of three discal elytral setae, and very slender legs bearing extremely elongate tibial spines.

Additional new species are described: in the genus *Laevagonum* Darlington *L. alticola* and *L. parafrustum*, both from Mt. Wilhelm in Papua New Guinea, and *L. huon* from Saruwaged Range on Huon Peninsula in northern Papua New Guinea; in the genus *Gastragonum* Darlington *G. wau* and *G. giluwe* from eastern and central Papua New Guinea, and *G. esulcatum* from eastern central Papua Indonesia; in the genus *Montagonum* Darlington *M. major* and *M. minor*, both from Saruwaged Range; in the genus *Nebriagonum* Darlington *N. persetosum* from Star Range at the border of Papua New Guinea and Papua Indonesia, and *N. bipunctatum* and *N. basipunctum* from Eastern Highlands in central Papua New Guinea; in the genus *Idiagonum* Darlington *I. capellae* from Star Range at the border of Papua New Guinea and Papua Indonesia; in the genus *Fortagonum* Darlington *F. longispinum* from Papua New Guinea and *F. sulcipenne* from central Papua Indonesia; in the species *Lithagonum annulicorne* Darlington the new subspecies *L. annulicorne reticulatum* from both political parts of New Guinea; in the genus *Colpodes* the peculiar new species *C. excisus* from Papua Indonesia.

For the species of *Cinctagonum* a key is provided. The keys of Darlington (1952) for *Gastragonum*, *Laevagonum*, and the subspecies of *Lithagonum annulicorne* (Mairdron), and those of Baehr for *Montagonum* (2008), *Nebriagonum* (2008), *Idiagonum* (2000), and *Fortagonum* (2001, 2008, 2009a, 2010c) are revised or partly revised and the new species are inserted in the keys.

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Introduction

New Guinea is home of a very large and diverse fauna of platynine carabid beetles which was first described and enumerated in the famous monograph about the New Guinean Carabidae written by P. J. Darlington (1952–1971). Darlington therein erected a couple of new genera and described many platynine species, including several quite peculiar ones. However, when Darlington wrote his book, only the fauna of the eastern part of New Guinea, present Papua New Guinea, was more or less satisfactorily explored, whereas the western part, former Irian Jaya, present Papua Indonesia, was barely collected. Hence it is not surprising that Baehr in a couple of papers (Baehr 1992, 1995, 1998, 2000, 2001, 2002, 2008, 2009a,b, 2010a,b,c,d) again considerably raised the number of species through description of several new species and a few additional genera mainly from the western half of New Guinea. This was possible, because in the meantime a number of European, American, and Australian collectors visited several areas in both parts of the island and, even when most of them were not carabidologist, collected a multitude of carabid specimens including quite large numbers of platynine beetles. However, in spite of these sampling efforts, New Guinea, including Papua New Guinea, still is far from being exhaustively or even systematically collected, and it is to be expected that a multitude of additional species and certainly also additional genera will be discovered, as collecting efforts are intensified and carried out more systematically, and by carabidologists.

The species described in the present paper were sampled by various collectors, some even many years ago. These old specimens either were collected shortly after Darlington finished his monograph, or they escaped from his notice, because they were collected by Hungarian entomologists at a time when exchange of material was difficult between some countries.

Many of the New Guinean platynine genera are unique and quite specialized in their external morphology which is largely caused by the loss of their flying ability through reduction of the metathoracic wings, and by the subsequent changes in size and shape of hind body and elytra. In many genera reductions of the normal number of tactile setae on head, pronotum, and elytra occurred which is rather uncommon in the platynine faunas of other regions. Hence the New Guinean platynine fauna in general seems to be quite unique, and this obscures the phylogenetic status of many genera and their possible relationships with Oriental, and in general Paleotropical, platynine genera. This applies the

more, because not even the relationships within the Oriental platynines are understood.

Reduction of the flight ability presumably was the most important factor for the development of the very high grade of species diversity within the New Guinean Platynini, and, as a consequence, many species seem to inhabit very restricted ranges. This, on the other hand, was probably caused by the existence of the large central mountain range that runs through the whole island, and of a number of other, isolated high ranges, which all are very rugged and are dissected by a multitude of deep river valleys. It is well known that montane species commonly tend to loose their flying ability. Hence, the rapid raise of the mountain ranges of New Guinea through the previous about five million years since emergence of most of New Guinea from the sea may represent the primary reason for the development of the very rich platynine fauna.

Methods

For dissection of the male and female genitalia specimens were soaked in a wet jar for one night, the genitalia were then cleaned for a short while in hot 4 % KOH. The descriptions follow the style of my most recent papers on New Guinean Platynini (Baehr 2008, 2009a, 2010a).

Measurements were taken using a stereo microscope with an ocular micrometre. Length of body was measured from the apical margin of the labrum to the apex of the elytra, measurements, therefore, may slightly differ from those taken by other authors. Length of pronotum was taken in middle, width of base at the position of the posterior marginal seta. Length of orbit was measured from the posterior margin of the eye, i.e. from the margin of the most posteriorly located ocellae, to the neck constriction.

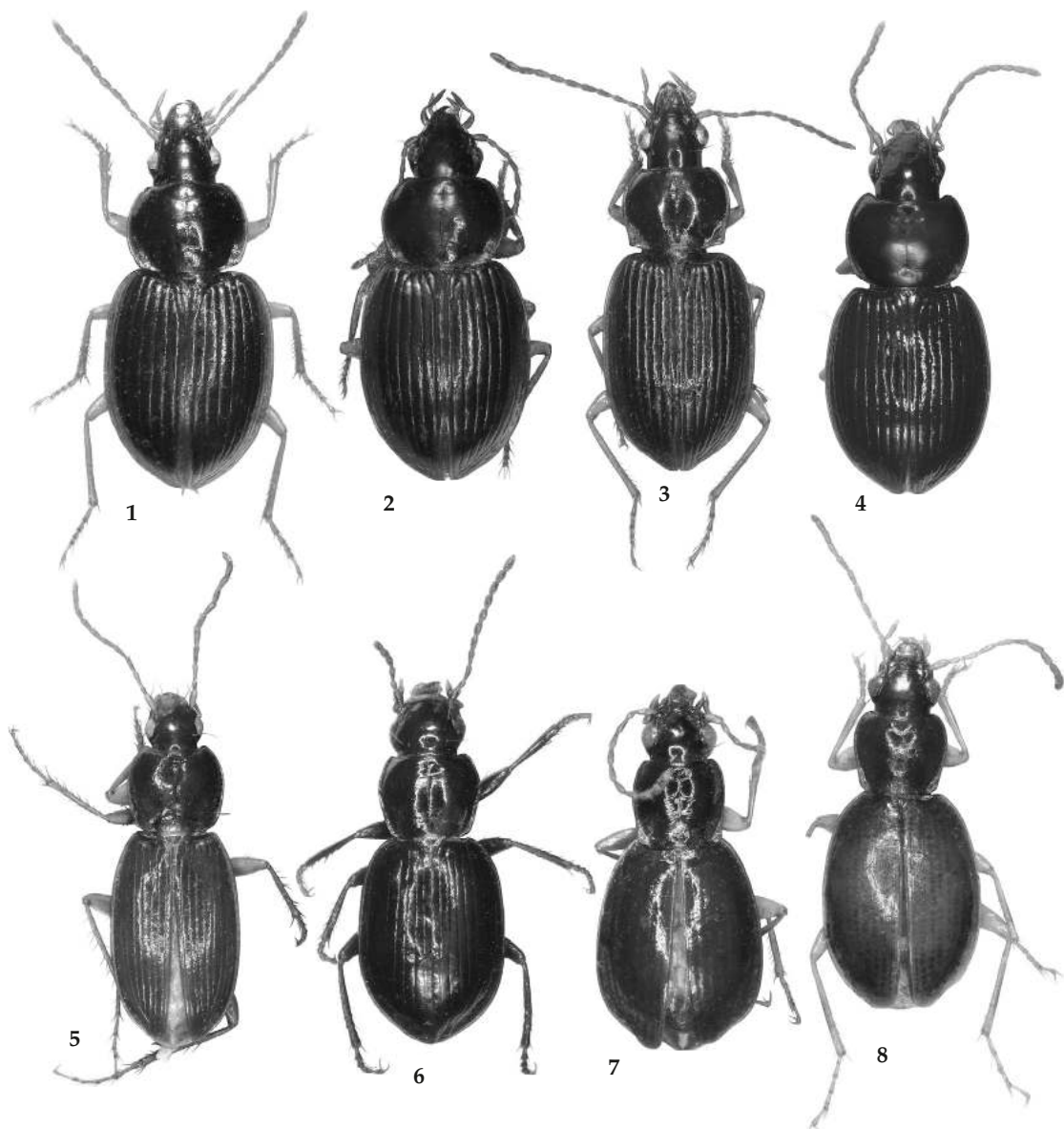
The wing and setae formula, introduced by Darlington (1952), is used here in the following sequence: presence/absence of hind wings (+w, –w); supraorbital setae; lateral pronotal setae; discal elytral setae (+ or –).

Label data are exactly noted in all specimens, including all chiffres and abbreviations. A longer space (“ ”) denotes a new line, “ / ” denotes a new label.

The habitus photographs of the new species were obtained with a digital camera using ProgRes Capture 2.6 and AutoMontage and subsequently were edited with Corel Photo Paint 11.

Abbreviations

CBM Working Collection M. Baehr, in Zoologische Staatssammlung, München
DEI Deutsches Entomologisches Institut, Müncheberg
MHNG Museum de l'Histoire Naturelle, Genève
MNHB Museum of Natural History, Budapest
SAMA South Australian Museum, Adelaide



Figs 1-8. Habitus. Body length in brackets. 1. *Cinctagonum convexipenne*, spec. nov. (5.6 mm). 2. *C. angulicolle*, spec. nov. (5.25 mm). 3. *C. cordicolle*, spec. nov. (5.0 mm). 4. *C. politum*, spec. nov. (5.0 mm). 5. *Cistelagonum kaindi*, spec. nov. (7.0 mm). 6. *Laevagonum alticola*, spec. nov. (4.8 mm). 7. *L. parafrustum*, spec. nov. (5.1 mm). 8. *L. huon*, spec. nov. (5.0 mm).

Geographical names

New Guinea presently is divided into two states: the eastern half is combined from former Papua and North-East New Guinea which until World War I were colonies of Australia and Germany, respectively; then they were united to the Australian mandates Papua and Territory of New Guinea. Today, together with the islands of the Bismarck Archipelago and Bougainville in Solomon

Islands, they form the independent state of Papua New Guinea.

The western half of the island formerly was a colony of the Netherlands, called Netherlands New Guinea. In the sixties of last century this part was annexed as a part of Indonesia, first called West Irian, then Irian Jaya, and today Papua. To avoid confusion, in the present paper it is called Papua Indonesia.

In the course of change of governments names of localities, mountains, and rivers have changed; less so in Papua New Guinea, where only some German names have changed since 1918, but radically in Papua Indonesia, where many towns, mountains, and rivers have been given Indonesian names. Because important work on the New Guinean fauna has been done before annexation of western New Guinea by Indonesia, names used in the older literature should be left, but the present name should be added, to allow localization as well in older as in recent maps.

Taxonomy

The most recent revision of the genus *Idiagonum* Darlington is in Baehr (2000) who described a couple of new species and extensively redescribed the species which Darlington (1952, 1971) had described. The most recent complete key to the species of *Fortagonum* Darlington is in Baehr (2001), but revised partial keys are provided in Baehr (2008, 2009a, 2010c).

No revisions of the genera *Gastragonum* Darlington, *Laevagonum* Darlington, *Montagonum* Darlington, and *Nebriagonum* Darlington are available, but Baehr (2008) when describing new species of *Montagonum* and *Nebriagonum*, provided revised keys to all species of both genera. Keys to the New Guinean species of the genus *Colpodes* (s.l.) and to the subspecies of *Lithagonum annulicorne* (Maindron) are in Darlington (1952).

Cinctagonum, gen. nov.

Type species: *Cinctagonum convexipenne*, spec. nov., by present designation.

Etymology. The name is composed of Latin *cinctum* which means “ringed” or “surrounded” and refers to the yellow margin of the elytra, and *Agonum*.

Diagnosis. Genus of Platynini, characterized by: body shape very convex with short and dorsally convex elytra; dark colour with more or less wide yellow elytral margin; absence of the metathoracic wings; presence of both supraorbital setae; presence of only the posterior marginal pronotal seta; presence of only two elytral discal setae, namely the middle and apical ones; small and elongate head; small, laterally little produced eyes; presence of a deep sulcus medially of eyes which posteriorly almost surrounds the eye; moderately elongate mandibles; elongate, impilose palpi; presence of a triangular mental tooth; wide, apically bisetose labium; narrow, hyaline paraglossae separated from labium and far surpassing the labium; large lacinia bearing a sparse row of elongate teeth along inner

margin; presence of a pair of very elongate mental and gular setae; rather short antenna; wide, not or little cordate pronotum; asetose prosternal process; edentate, more or less obtuse humerus; inarmate, incurved elytral apex; complete, well impressed and impunctate elytral striae; robust legs; impilose lower surface of 5th tarsomeres; not denticulate tarsal claws; widened and biserially squamose three basal tarsomeres of protarsus in males; moderately elongate, straight aedeagus lacking any sclerotized parts in the internal sac; moderately elongate gonocoxite 2 bearing two small ventro-lateral ensiform setae, one dorso-median ensiform seta and but a single, rather elongate, apical nematiform seta.

Distribution. The genus presently includes four species from all political parts of mainland New Guinea.

Identification and relationships. When using the key to the New Guinean platynine genera of Darlington (1952: 114), couplet 18 is reached which consists of the genus *Montagonum* Darlington that has a similar wing-and-setae formula at least as head and prothorax are concerned, and of the genera *Laevagonum* Darlington and *Fortagonum* Darlington, which, however, are very different either in body shape, either in their wing-and-setae formula, either in shape and structure of their male and female genitalia. According to shape and structure of aedeagus and genital ring, *Montagonum* and *Cinctagonum* indeed are rather similar, though in body size, body shape, and setosity of the elytra both genera are quite different. Nevertheless, *Montagonum* could represent the nearest related genus within the presently recorded New Guinean platynine genera.

Cinctagonum convexipenne, spec. nov.

Figs 1, 24, 40

Types. Holotype: ♂, “PNG, Morobe Pr. Wau, Kuper Rge. Biarue Camp, 2000m, 10.10.1992 leg. A. Riedel” (CBM). – Paratypes: 1 ♂, 1 ♀, same data (CBM); 1 ♂, “PA-PUA NG: Morobe Biarue Rd. Mt. Kolorong 2000m, 03.VI.1992 G. Cuccodoro #15D” (MHNG); 1 ♀, “PA-PUA NG: Morobe Biarue Rd. Mt. Kolorong 2200m, 08.VI.1992 G. Cuccodoro #1A” (MNHG).

Diagnosis. Easily distinguished from *C. cordicollis*, spec. nov. by the widely rounded basal angle of the pronotum, the shorter and more oval-shaped elytra, and the elongate aedeagus; from *C. angulicollis* distinguished by almost evenly rounded basal angle of the pronotum, slightly longer elytra, and larger eye; and from *C. politum* by the far less glossy surface and the narrower aedeagus.

Etymology. The name refers to the convex shape of the elytra.

Description

Measurements. Length: 4.8–5.6 mm; width: 2.2–2.5 mm. Ratios. Length of eye/length of orbit: 2.1–2.4; width/length of pronotum: 1.29–1.35; width of widest diameter/base of pronotum: 1.20–1.24; width base/apex of pronotum: 1.33–1.41; width pronotum/head: 1.63–1.67; length/width of elytra: 1.33–1.35; with elytra/pronotum: 1.35–1.43.

Wing-and-seta formula: –w ; ++ ; –+ ; –++.

Colour (Fig. 1). Black, in two specimens elytra slightly lighter, probably due to immaturity. Lateral margin of pronotum narrowly yellow, elytra with wide yellow or pale reddish margin that usually even widens apicad. Also sutural interval of elytra yellow. Palpi, antenna, and legs dirty yellow to pale reddish. Lower surface anteriorly black, abdomen more or less dark piceous, but elytral epipleura contrastingly yellow.

Head. Narrow and fairly elongate, much narrower than prothorax. Neck wide, without neck constriction. Eye small, laterally moderately projected, orbit rather short, $<0.5 \times$ as long as eye, oblique and convex, posteriad well separated from neck. Medially of eye with a narrow but deep sulcus. Clypeal suture barely recognizable. Behind clypeal suture on either side with a very shallow, irregularly sinuate impression. Labrum transverse, rectangular, apex straight. Mandible moderately elongate. Antenna rather short, surpassing base of pronotum by at most one antennomere, median antennomeres $c. 1.5 \times$ as long as wide. Both palpi slender and elongate, impilose, basal palpomere of maxillary palpus slightly thickened. Mentum with a rather elongate, triangular tooth. Gular setae very elongate. Both supraocular setae present and remarkably elongate, the anterior seta located mediad of eye, the posterior seta rather removed medio-posteriad from posterior margin of eye. Microreticulation rather distinct, fine, composed of isodiametric meshes, punctures absent, surface moderately glossy.

Prothorax. Wide, somewhat disciform, widest about at middle, laterally evenly convex throughout. Disk rather convex, lateral margin and lateral sulcus anteriorly narrow, considerably widened basad and there explanate. Apex more or less distinctly concave, anterior angle slightly projected, widely rounded. Basal angle almost evenly rounded, base in middle straight, laterad slightly oblique. Both, anterior and posterior transverse sulci extremely shallow, basal groove barely perceptible. Median line almost complete, shallow. Apex narrowly bordered throughout, base only laterally inconspicu-

ously bordered. Only the posterior marginal seta present, elongate, slightly removed antero-medial from basal angle. Disk impunctate, with more or less superficial microreticulation that is composed of extremely fine, extremely transverse meshes and lines which in fully coloured specimens are visible only at high magnification; surface glossy.

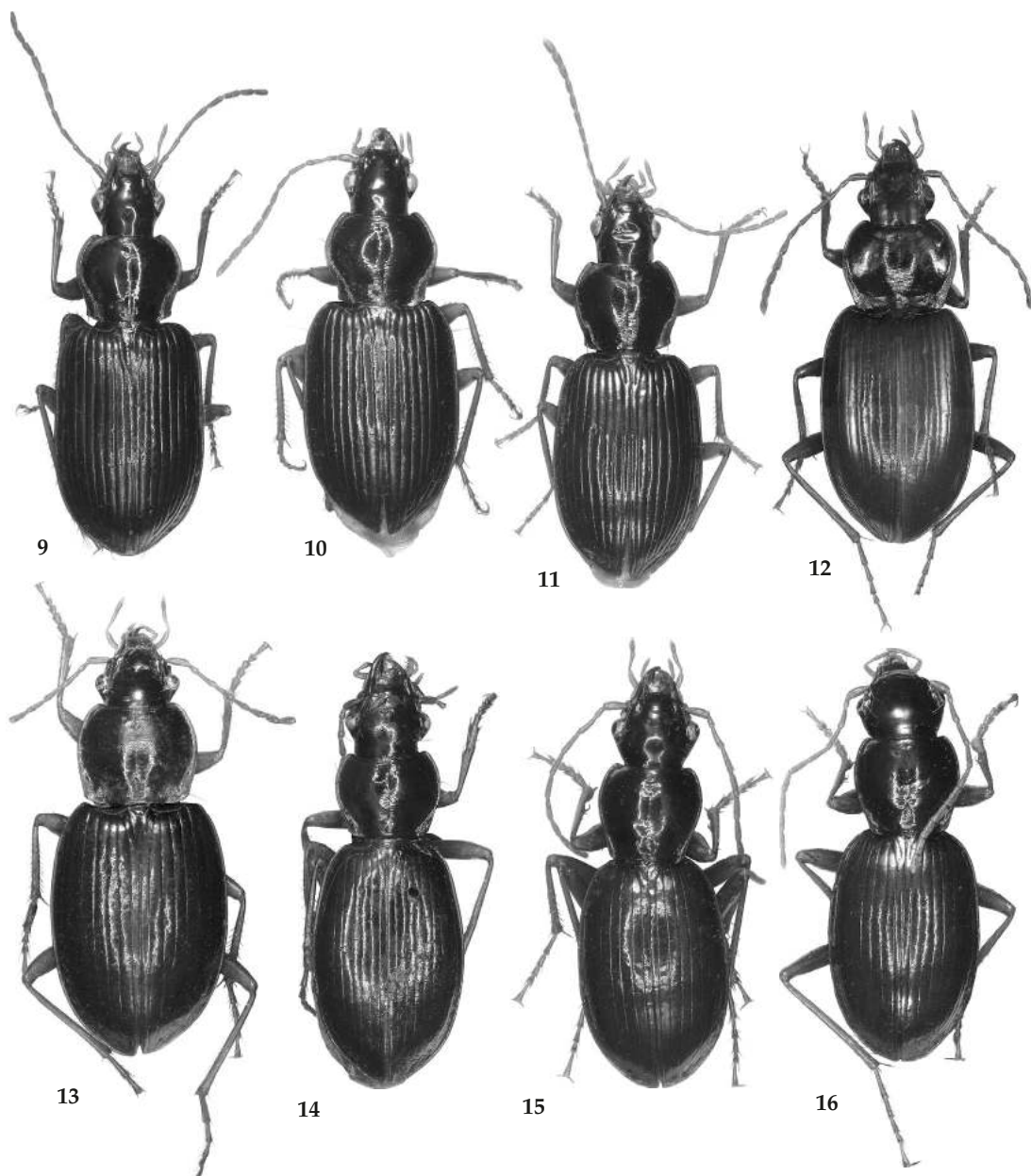
Elytra. Short and wide, reversely oviform. Dorsal surface very convex, lateral margin evenly convex throughout, without any traces of a preapical sinuosity. Widest diameter about at middle. Humerus very obtuse, almost rounded, apex rounded and slightly incurved towards suture. Striae complete, well impressed, impunctate, intervals slightly convex. 3rd interval with two discal punctures and setae which are situated slightly in front of middle and at apical third, adjacent to the 2nd stria. 15 marginal setae and 2 preapical seta at 7th stria present, humeral group of marginal series composed of 6 setae, series barely interrupted in middle. Intervals impunctate. Microreticulation extremely fine and superficial, visible only at very high magnification, composed of dense, transverse lines; surface fairly glossy. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum short, $c. 1.3 \times$ longer than wide at anterior border, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation, laterally rather rugose. Terminal sternum in male bisetose, in female quadrisetose.

Legs. Rather robust. Meso- and metatibiae laterally sulcate, 1st tarsomere of metatarsus externally sulcate, pro- and mesotarsus short; 4th tarsomeres of protarsus and mesotarsus deeply bilobed, of metatarsus but slightly excised. 5th tarsomeres asetose beneath. Three basal tarsomeres of male protarsus widened and biserially squamose.

Male genitalia (Fig. 24). Genital ring narrow and elongate, almost symmetric, with very elongate though wide, straight, rounded apex. Aedeagus moderately wide, straight, almost symmetric, lower surface little concave, in apical half almost straight. Apex moderately elongate, but sides in apical third suddenly narrowed, then regularly straight and oblique, tip very acute. Orificium elongate, slightly asymmetric. Internal sac folded but without sclerotized structures, some folds finely denticulate. Both parameres large and wide, with widely rounded apex.

Female gonocoxites (Fig. 40). Apical margin of ventral surface of gonocoxite 1 with 6 elongate ensiform setae. Gonocoxite 2 moderately elongate, rather curved, with fairly acute apex, with a small dorso-median ensiform seta situated slightly above



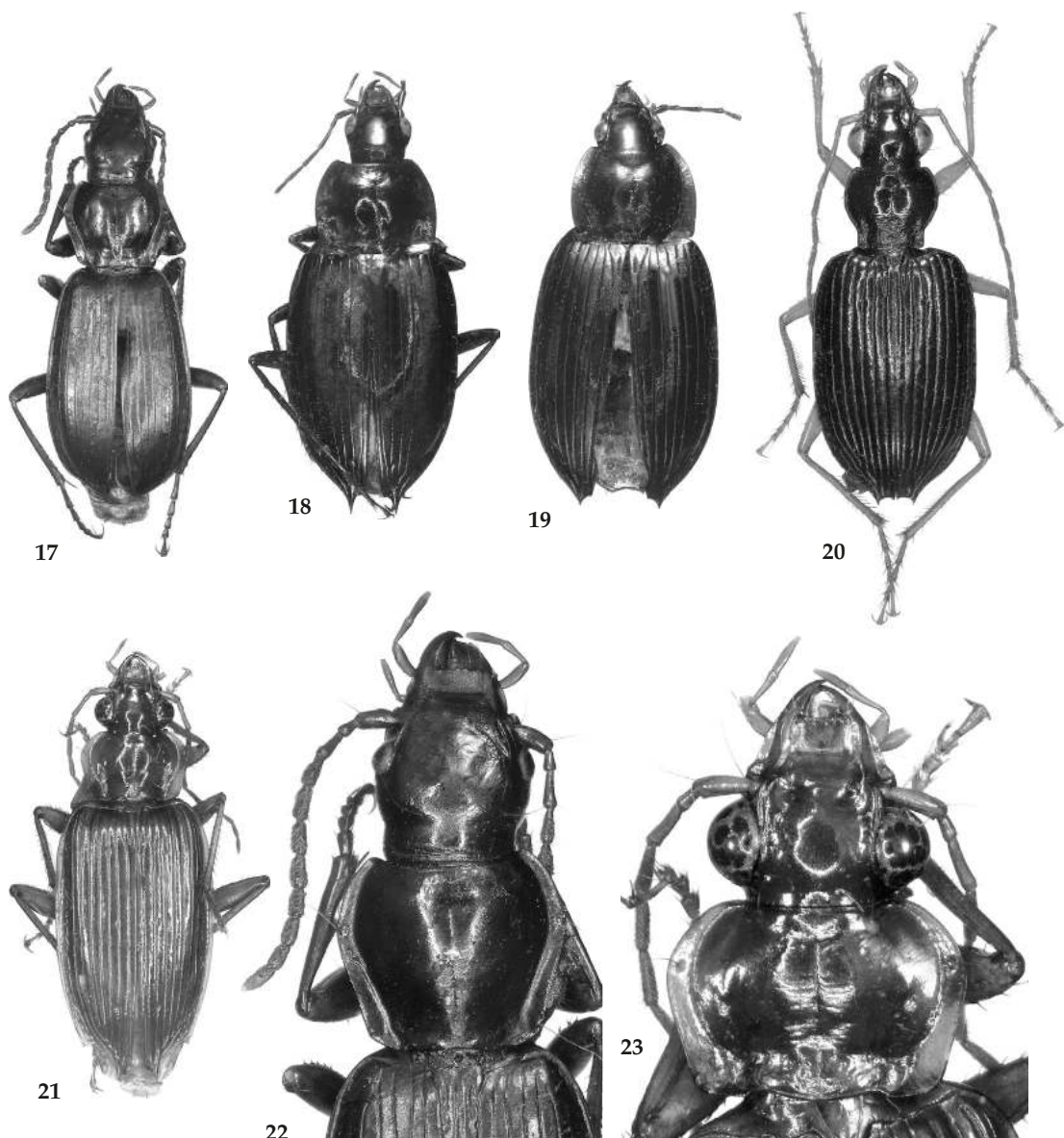
Figs 9-16. Habitus. Body length in brackets. 9. *Gastragonum wau*, spec. nov. (6.5 mm). 10. *G. giluwe*, spec. nov. (6.25 mm). 11. *G. esulcatum*, spec. nov. (6.0 mm). 12. *Montagonum major*, spec. nov. (10.9 mm). 13. *M. minor*, spec. nov. (9.2 mm). 14. *Nebriagonum persetosum*, spec. nov. (8.9 mm). 15. *N. bipunctatum*, spec. nov. (8.0 mm). 16. *N. basipunctum*, spec. nov. (8.3 mm).

middle, two rather small ventro-lateral ensiform setae located about in middle, and a single short ventro-median nematiform seta originating from an oval-shaped pit near apex.

Variation. Little variation noted, one specimen that probably is not fully coloured has rather pale

coloured elytra, longitudinal impressed elytral intervals, and in general more distinct microreticulation.

Distribution. Vicinity of Wau, Eastern Highlands of Papua New Guinea.



Figs 17- 21. Habitus. Body length in brackets. 17. *Idiagonum capellae*, spec. nov. (13.9 mm). 18. *Fortagonum longispinum*, spec. nov. (10.7 mm). 19. *F. sulcipenne*, spec. nov. (11.3 mm). 20. *Lithagonum annulicorne reticulatum*, subspec. nov. (8.0 mm). 21. *Colpodes excisus*, spec. nov. (12.0 mm).

Figs 22- 23. Head and pronotum. 22. *Idiagonum capellae*, spec. nov. 23. *Colpodes excisus*, spec. nov.

Collecting circumstances. Collected at medium altitude, probably by sieving litter in montane rain forest.

Cinctagonum angulicolle, spec. nov.

Figs 2, 41

Types. Holotype: ♀, "Papua NG, Morobe-pr. Saureri, 10 km s. Garaina, 1700-1900 m 25.-28.3.1998, A. Riedel" (CBM).

Etymology. The name refers to the slightly angulate basal angle of the pronotum.

Diagnosis. Easily distinguished from *C. cordicollis*, spec. nov. by the widely rounded basal angle of the pronotum and the shorter and more oval-shaped elytra; from *C. convexipennis* by the slightly angulate basal angle of the pronotum, slightly shorter elytra, and smaller eye; and from *C. politum* by the far less glossy surface.

Description

Measurements. Length: 5.25 mm; width: 2.4 mm. Ratios. Length of eye/length of orbit: 1.75; width/length of pronotum: 1.34; width of widest diameter/base of pronotum: 1.23; width base/apex of pronotum: 1.33; width pronotum/head: 1.65; length/width of elytra: 1.31; with elytra/pronotum: 1.38.

Wing-and-seta formula: -w ; ++ ; -+ ; -++.

Colour (Fig. 2). Black, lateral margin of pronotum narrowly and very indistinctly yellow, elytra with wide yellow margin that even widens apicad. Also sutural interval of elytra dirty yellow. Palpi, three basal antennomeres, and legs pale reddish, rest of antenna reddish-piceous to piceous. Lower surface anteriorly black, abdomen dark piceous, but elytral epipleura dirty yellow.

Head. Narrow and fairly elongate, much narrower than prothorax. Neck wide, without neck constriction. Eye small, laterally moderately projected, orbit moderately short, $>0.5 \times$ as long as eye, oblique and convex, posteriad well separated from neck. Mediad of eye with a narrow but deep sulcus. Clypeal suture very shallow. Behind clypeal suture on either side with a very shallow, irregularly sinuate impression. Labrum transverse, rectangular, apex straight. Mandible moderately elongate. Antenna rather short, surpassing base of pronotum by at most one antennomere, median antennomeres c. $1.5 \times$ as long as wide. Both palpi slender and elongate, impilose, basal palpomere of maxillary palpus slightly thickened. Mentum with a rather elongate, triangular tooth. Gular setae very elongate. Both supraocular setae present and remarkably elongate, the anterior seta located mediad of eye, the posterior seta rather removed medio-posteriad from posterior margin of eye. Microreticulation distinct, fine, consisting of isodiametric meshes, punctures absent, surface rather dull.

Prothorax. Wide, somewhat disciform, widest about at middle, laterally evenly convex throughout. Disk rather convex, lateral margin and lateral sulcus anteriorly narrow, considerably widened basad and there explanate. Apex slightly concave, anterior angle slightly projected, widely rounded. Basal angle very obtusely angulate, base slightly convex throughout, laterad slightly oblique. Both, anterior and posterior transverse sulci extremely shallow, ba-

sal groove impressed, somewhat linear. Median line almost complete, shallow. Apex narrowly bordered throughout, base only laterally inconspicuously bordered. Only the posterior marginal seta present, elongate, slightly removed antero-mediad from basal angle. Disk impunctate, with very superficial microreticulation that is composed of extremely fine, extremely transverse meshes and lines which are visible only at high magnification; surface rather glossy.

Elytra. Short and wide, reversely oviform. Dorsal surface very convex, lateral margin evenly convex throughout, without any traces of a preapical sinuosity. Widest diameter about at middle. Humerus obtuse, almost rounded, apex rounded and slightly incurved towards suture. Striae complete, well impressed, impunctate, intervals slightly convex. 3rd interval with two discal punctures and setae which are situated slightly in front of middle and at apical third, adjacent to the 2nd stria. 14–15 marginal setae and 2 preapical seta at 7th stria present, humeral group of marginal series composed of 6 setae, series barely interrupted in middle. Intervals impunctate. Microreticulation extremely fine and superficial, visible only at high magnification, composed of dense, transverse lines; surface rather glossy. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum short, c. $1.3 \times$ longer than wide at anterior border, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation, laterally rather rugose. Terminal sternum in female quadrisetose.

Legs. Rather robust. Meso- and metatibiae laterally sulcate, 1st tarsomere of metatarsus externally sulcate, pro- and mesotarsus short; 4th tarsomeres of protarsus and mesotarsus deeply bilobed, of metatarsus but slightly excised. 5th tarsomeres asetose beneath. Squamosity of male protarsus unknown.

Male genitalia. Unknown.

Female gonocoxites (Fig. 41). Apical margin of ventral surface of gonocoxite 1 with 5–6 elongate ensiform setae. Gonocoxite 2 fairly elongate, rather curved, with moderately acute apex, with a small dorso-median ensiform seta situated slightly above middle, two rather small, widely spaced ventro-lateral ensiform setae located above and below middle, and a single short ventro-median nematiform seta originating from an oval-shaped pit near apex.

Variation. Unknown.

Distribution. Central eastern Papua New Guinea. Known only from type locality.

Collecting circumstances. Collected at median altitude, probably by sieving litter in montane rain forest.

Cinctagonum cordicolle, spec. nov.

Figs 3, 25, 42

Types. Holotype: ♂, "Irian Jaya, Jayawijaya Pr. Diuremna 1900–2100 m, 9.–11.IX. 1992, leg. A. Riedel" (CBM). – Paratype: 1 ♀, same data (CBM).

Etymology. The name refers to the somewhat cordate shape of the pronotum.

Diagnosis. Easily distinguished from the other species by slightly cordiform shape of the pronotum, its wider base, larger eye, angulate humeral angle of the elytra, longer and more parallel-sided elytra, and narrower aedeagus which is more evenly narrowed to the apex.

Description

Measurements. Length: 4.9–5.0 mm; width: 2.1 mm. **Ratios.** Length of eye/length of orbit: 4.0; width/length of pronotum: 1.27–1.31; width of widest diameter/base of pronotum: 1.11–1.15; width base/apex of pronotum: 1.34–1.38; width pronotum/head: 1.48–1.53; length/width of elytra: 1.46–1.47; with elytra/pronotum: 1.40–1.46.

Wing-and-seta formula: –w ; ++ ; –+ ; –++.

Colour (Fig. 3). Black, elytra slightly iridescent. Lateral margin of pronotum narrowly yellow, elytra with more or less wide, rather inconspicuous, yellow margin that slightly widens apicad. Also apical third of sutural interval of elytra inconspicuously yellow. Palpi and basal antennomere pale reddish, rest of antennae slightly darker. Femora yellow, tibiae and tarsi pale reddish. Lower surface anteriorly black, abdomen dark piceous, but elytral epipleura rather contrastingly dirty yellow.

Head. Narrow and fairly elongate, much narrower than prothorax. Neck wide, without neck constriction. Eye comparatively large (in genus), laterally rather projected, orbit short, $< 1/4 \times$ as long as eye, oblique and convex, posterior well separated from neck. Medially of eye with a narrow but deep sulcus. Clypeal suture barely recognizable. Behind clypeal suture on either side with a very shallow, irregularly sinuate impression. Labrum transverse, rectangular, apex straight. Mandible moderately elongate. Antenna rather short, surpassing base of pronotum by almost two antennomeres, median antennomeres c. $1.5 \times$ as long as wide, or slightly shorter. Both palpi slender and elongate, impilose, basal palpomere of maxillary palpus slightly thickened. Mentum with a rather elongate, triagonal

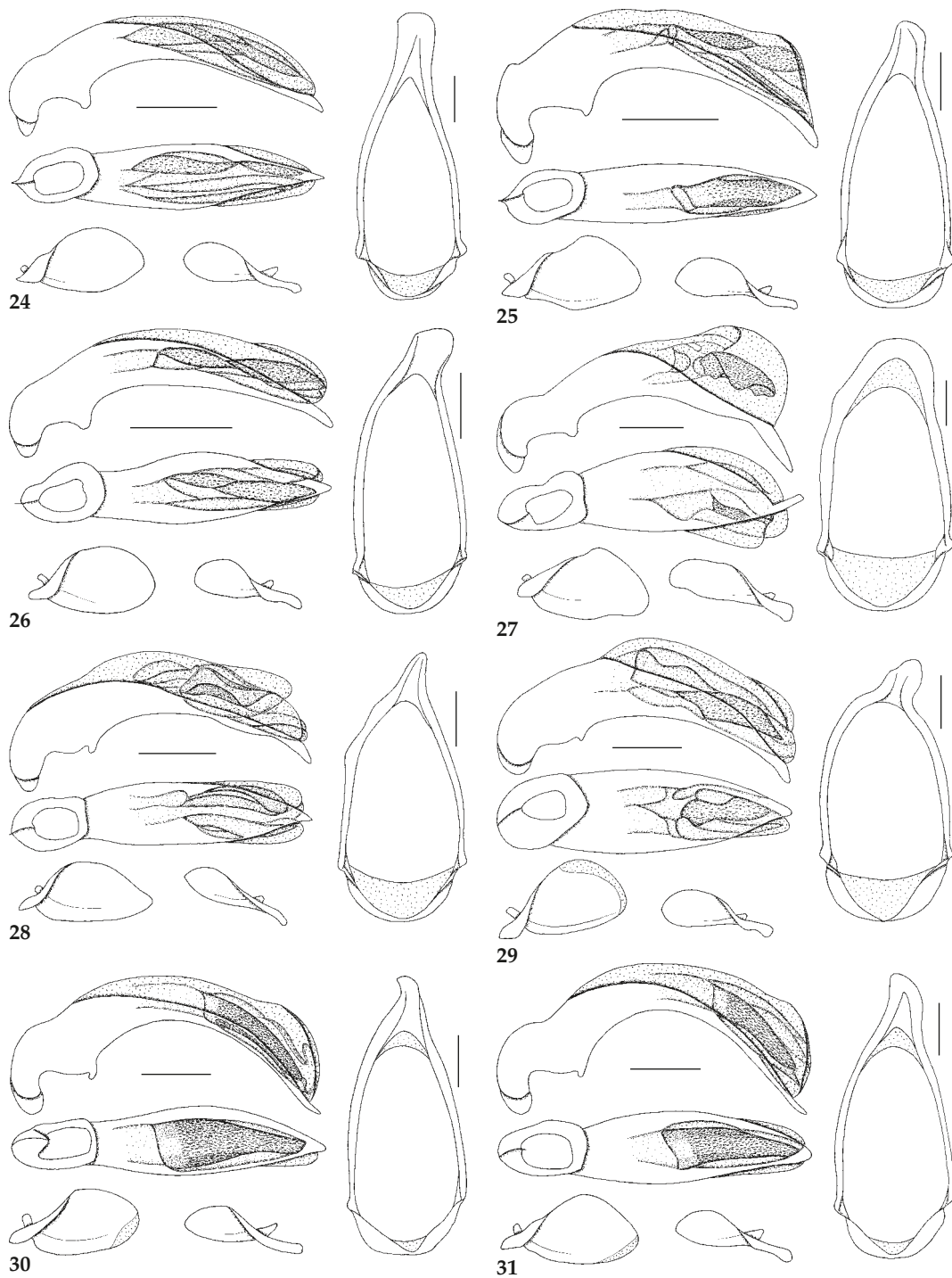
tooth. Gular setae very elongate. Both supraocular setae present and elongate, the anterior seta located mediad of eye, the posterior seta slightly removed medio-posteriad from posterior margin of eye. Microreticulation more or less superficial, fine, composed of isodiametric meshes, punctures absent; surface fairly to moderately glossy.

Prothorax. Wide, with wide base, very slightly cordiform, widest about at middle, laterally evenly convex for the apical $3/4$, then slightly sinuate. Disk moderately convex, lateral margin and lateral sulcus anteriorly narrow, in basal third suddenly widened and there explanate. Apex very slightly concave, anterior angle slightly projected, widely rounded. Base very slightly convex, basal angle almost rectangular, at tip slightly obtuse. Both, anterior and posterior transverse sulci extremely shallow, basal groove barely perceptible. Median line almost complete, shallow. Apex coarsely bordered, base narrowly and inconspicuously bordered. Only the posterior marginal seta present, elongate, very slightly removed antero-mediad from basal angle. Disk impunctate, with traces only of extremely superficial microreticulation that is composed of extremely fine, transverse lines which are visible only at very high magnification; surface rather glossy.

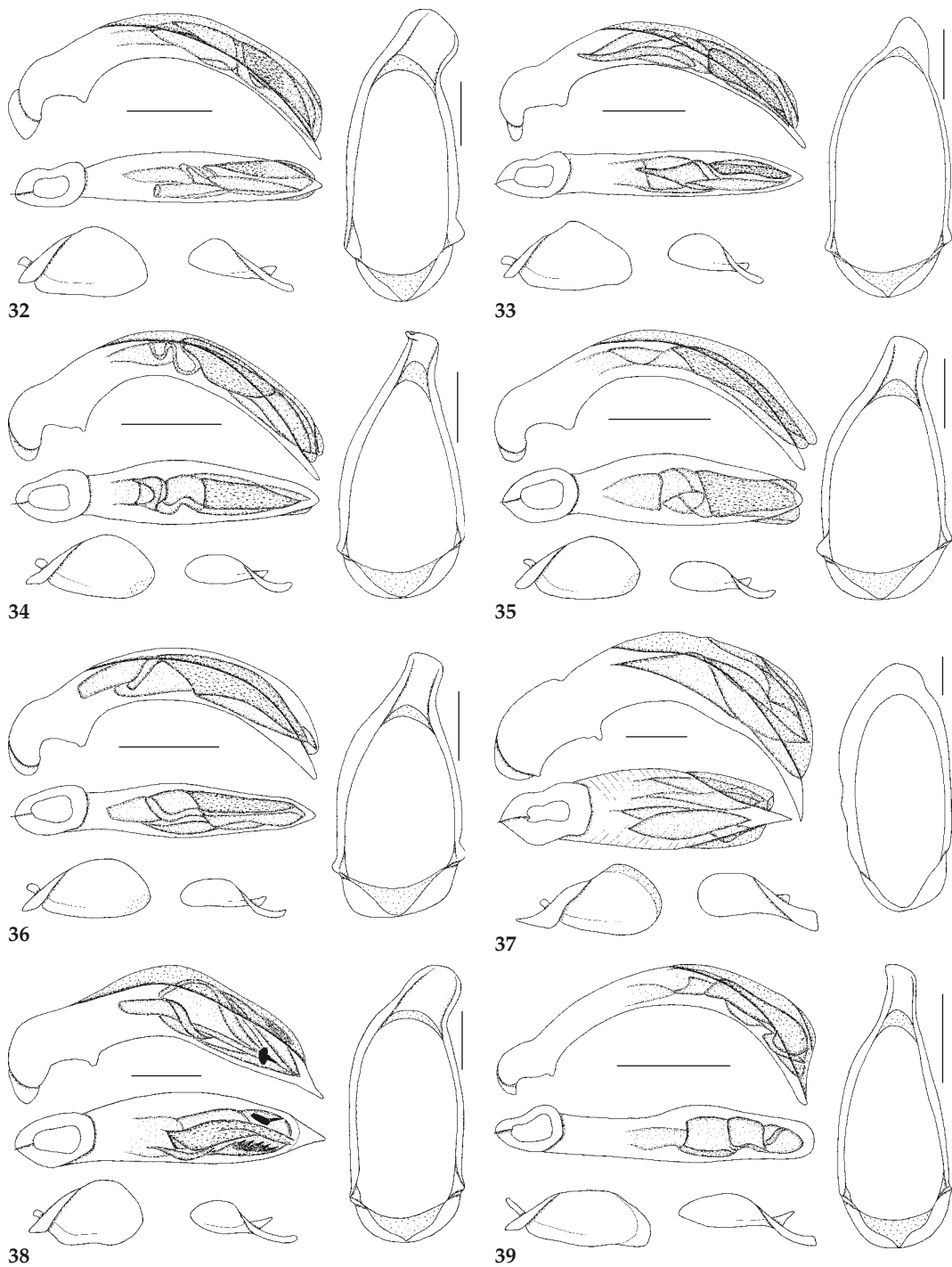
Elytra. Rather short and wide, reversely ovoid. Dorsal surface convex, lateral margin evenly convex, but with slight preapical sinuosity. Widest diameter about at middle. Humerus obtusely angulate, apex rounded and slightly incurved towards suture. Striae complete, well impressed, impunctate, intervals slightly convex. 3rd interval with two discal punctures and setae which are situated slightly in front of middle and at apical third, adjacent to the 2nd stria. 15–16 marginal setae and 2 preapical seta at 7th stria present, humeral group of marginal series composed of 6 setae, series barely interrupted in middle. Intervals impunctate. microreticulation virtually absent; surface glossy, slightly iridescent. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum rather short, almost $1.5 \times$ longer than wide at anterior border, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation, laterally rather rugose. Terminal sternum in male bisetose, in female quadrisetose.

Legs. Rather robust. Meso- and metatibiae laterally sulcate, 1st tarsomere of metatarsus externally sulcate, pro- and mesotarsus short; 4th tarsomeres of protarsus and mesotarsus shortly bilobed, of metatarsus but slightly excised. 5th tarsomeres asetose beneath. Three basal tarsomeres of male protarsus widened and biserially squamose.



Figs 24–31. Male aedeagus, left side and lower surface, left and right parameres, genital ring. 24. *Cinctagonum convexipenne*, spec. nov. 25. *C. cordicolle*, spec. nov. 26. *C. politum*, spec. nov. 27. *Cistelagonum kaindi*, spec. nov. 28. *Laevagonum alticola*, spec. nov. 29. *L. parafrustum*, spec. nov. 30. *Gastragonum wau*, spec. nov. 31. *G. giluwe*, spec. nov. Scale bars: 0.25 mm.



Figs 32-39. Male aedeagus, left side and lower surface, left and right parameres, genital ring. 32. *Montagonum major*, spec. nov. 33. *M. minor*, spec. nov. 34. *Nebriagonum transitum* Darlington. 35. *N. bipunctatum*, spec. nov. 36. *N. basipunctum*, spec. nov. 37. *Idiagonum capellae*, spec. nov. 38. *Fortagonum longispinum*, spec. nov. 39. *Lithagonum annulicorne reticulatum*, subspec. nov. Scale bars: 0.5 mm.

Male genitalia (Fig. 25). Genital ring narrow and elongate, almost symmetric, with elongate though rather wide, straight, rounded apex. Aedeagus rather narrow, straight, almost symmetric, lower surface gently concave throughout. Apex rather short, sides in apical third almost evenly, convexly narrowed, tip moderately acute. Orificium elongate, slightly asymmetric. Internal sac folded but without sclerotized structures, some folds finely denticulate. Both parameres large and wide, with widely rounded apex.

Female gonocoxites (Fig. 42). Apical margin of ventral surface of gonocoxite 1 with 6 elongate ensiform setae. Gonocoxite 2 rather elongate, rather curved, with fairly acute apex, with a rather small dorso-median ensiform seta situated slightly above middle, two rather small, slightly spaced ventro-lateral ensiform setae located above and below middle, and a single short ventro-median nematiform seta originating from an oval-shaped pit near apex.

Variation. In the female paratype the pale margin of the elytra is restricted to the marginal channel, the humeral angle is more angulate, the antenna is slightly shorter, and the microreticulation on the head is more distinct.

Distribution. Eastern central Papua Indonesia. Known only from type locality.

Collecting circumstances. Collected at median altitude, probably by sieving litter in montane rain forest.

Cinctagonum politum, spec. nov.

Figs 4, 26

Types. Holotype: ♂, "Papua Neuguinea Western Highl., 10 km e. Wapenamanda, 1500 m 11.3.1973, M. Baehr" (CBM).

Etymology. The name refers to the glossy surface of pronotum and elytra.

Diagnosis. Easily distinguished from all other species by the very glossy surface and the sparsely but rather coarsely punctate elytral striae.

Description

Measurements. Length: 5.0 mm; width: 2.15 mm. Ratios. Length of eye/length of orbit: 2.0; width/length of pronotum: 1.31; width of widest diameter/base of pronotum: 1.21; width base/apex of pronotum: 1.28; width pronotum/head: 1.58; length/width of elytra: 1.30; with elytra/pronotum: 1.35.

Wing-and-seta formula: -w ; ++ ; -+ ; -++.

Colour (Fig. 4). Black, lateral margin of prono-

tum extremely narrowly yellow, elytra with narrow yellow margin that slightly widens apicad. Also apical third of sutural interval of elytra inconspicuously dirty yellow. Palpi and antenna pale reddish, femora yellow, tibiae and tarsi fairly contrastingly reddish. Lower surface black, but elytral epipleura contrastingly dirty yellow.

Head. Narrow and fairly elongate, much narrower than prothorax. Neck wide, without neck constriction. Eye small, laterally moderately projected, orbit fairly short, c. $0.5 \times$ as long as eye, oblique and convex, posteriad well separated from neck. Medially of eye with a narrow but deep sulcus. Clypeal suture very shallow. Behind clypeal suture on either side with a shallow, irregular impression. Labrum transverse, rectangular, apex straight. Mandible moderately elongate. Antenna short, surpassing base of pronotum by at most one antennomere, median antennomeres c. $1.3 \times$ as long as wide. Both palpi slender and elongate, impilose, basal palpomere of maxillary palpus slightly thickened. Mentum with a rather elongate, triangular tooth. Gular setae very elongate. Both supraocular setae present and remarkably elongate, the anterior seta located mediad of eye, the posterior seta rather far removed medio-posteriad from posterior margin of eye. Microreticulation absent from frons, very superficial only on neck, there composed of moderately transverse meshes which are visible only at high magnification, punctures absent; surface very glossy.

Prothorax. Wide, somewhat disciform, widest about at middle, laterally evenly convex. Disk convex, lateral margin and lateral sulcus narrow, even basad little widened. Apex slightly concave, anterior angle slightly projected, widely rounded. Basal angle very slightly obtuse, almost rounded, base in middle straight, laterad slightly oblique. Both, anterior and posterior transverse sulci extremely shallow, basal groove barely perceptible. Median line incomplete, neither reaching apex nor base, very shallow. Apex and base narrowly bordered laterally, both not bordered in middle. Only the posterior marginal seta present, elongate, slightly removed antero-medial from basal angle. Disk impunctate, without any microreticulation, but near apex and base with traces of very superficial microreticulation that is composed of very fine, isodiametric to slightly transverse meshes which are visible only at very high magnification; surface very glossy.

Elytra. Short and wide, reversely oviform. Dorsal surface very convex, lateral margin evenly convex throughout, without any traces of a preapical sinuosity. Widest diameter about at middle. Humerus obtusely angulate, apex rounded and slightly incurved towards suture. Striae complete, deeply impressed, impunctate, intervals fairly convex. 3rd interval with

two discal punctures and setae which are situated slightly in front of middle and at apical third, adjacent to the 2nd stria. 13–14 marginal setae and 2 preapical seta at 7th stria present, humeral group of marginal series composed of 6 setae, series barely interrupted in middle. Intervals with scattered, rather coarse punctures, without microreticulation; surface remarkably glossy. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, aetose. Proepisternum and mesepisternum impunctate. Metepisternum very short, about quadrate, impunctate. Abdomen impunctate, though with distinct isodiametric microreticulation, laterally slightly rugose. Terminal sternum in male bisetose.

Legs. Rather robust. Meso- and metatibiae laterally sulcate, 1st tarsomere of metatarsus externally sulcate, pro- and mesotarsus short; 4th tarsomeres of protarsus and mesotarsus shortly bilobed, of metatarsus but slightly excised. 5th tarsomeres aetose beneath. Three basal tarsomeres of male protarsus widened and biserially squamose.

Male genitalia (Fig. 26). Genital ring narrow and elongate, rather asymmetric, with fairly elongate, wide, rounded apex which is curved right. Aedeagus wide in middle, remarkably narrowed towards apex, straight, almost symmetric, lower surface very little concave. Apex moderately elongate, but sides in apical third suddenly narrowed, then regularly straight and oblique, tip acute. Orificium elongate, slightly asymmetric. Internal sac folded but without sclerotized structures, some folds finely denticulate. Both parameres large and wide, with widely rounded apex.

Female gonocoxites. Unknown.

Variation. Unknown.

Distribution. Central Papua New Guinea. Known only from type locality.

Collecting circumstances. Little recorded, holotype collected at median altitude, probably under log in litter in montane rain forest.

Cistelagonum gen. nov.

Type species (by monotypy): *Cistelagonum kaindi*, spec. nov.

Etymology. The name is composed of Latin *Cistelum* which refers to the similarity of body shape to the beetle family Cisteliidae, and *Agonum*.

Diagnosis. Genus of Platynini, characterized by: body shape elongate with elongate, oviform, depressed elytra; uniformly reddish-brown colour; absence of the metathoracic wings; presence of both supraorbital setae; presence of only the posterior marginal pronotal seta which is far removed apicad from basal angle; presence of three elytral discal setae; small and elongate head; large but laterally very little produced eyes; absence of a deep sulcus medially of eyes; moderately elongate mandibles; elongate, impilose palpi; presence of a triangular mental tooth; wide, apically bisetose labium; narrow, hyaline paraglossae separated from labium and far surpassing the labium; large lacinia bearing a sparse row of elongate teeth along inner margin; presence of a pair of very elongate mental and gular setae; fairly elongate antenna; wide, rather narrow, disciform pronotum; aetose prosternal process; angulate humerus; inarmate, incurved elytral apex; complete, but lightly impressed, impunctate elytral striae; very elongate and slender legs; presence of sparse, but remarkably elongate lateral and dorsal tibial spines; impilose lower surface of 5th tarsomeres; not denticulate tarsal claws; widened and biserially squamose three basal tarsomeres of protarsus in males; wide and stout, remarkably asymmetric aedeagus with narrow and elongate, spiniform apex, lacking any sclerotized structures in the internal sac. Female genitalia so far unknown.

Distribution. The genus presently includes only the type species from eastern Papua New Guinea.

Identification and relationships. When using the key to the New Guinean platynine genera of Darlington (1952: 114), couplet 18 is reached which consists of the genus *Montagonum* Darlington that has a similar wing-and-setae formula at least as head and prothorax are concerned, and of the genera *Laevagonum* Darlington and *Fortagonum* Darlington, which, however, are very different either in body shape, either in their wing-and-setae formula, either in shape and structure of their male and female genitalia. Even when one species of *Montagonum*, *M. hornabrookianum* Darlington, has a comparable body shape, a rather similar prothorax that has the posterior marginal seta likewise far removed from base, *C. kaindi* is not closely related to *Montagonum*, because it lacks the deep sulcus medially of the eye, the aedeagus is very differently shaped and structured, and in *Montagonum* the legs are much stouter and the tibial spines are denser but far less elongate.

Cistelagonum kaindi, spec. nov.

Figs 5, 27

Types. Holotype: ♂, "NEW GUINEA /NE/ Wau, Mt. Kaindi 19–24.VIII.1969 / /No. NGW-R.6./ leg. Dr. J. Balogh" (MNHB). – Paratypes: 2♂♂, same data (CBM, MNHB).

Etymology. The name is a noun and refers to the type locality, Mt. Kaindi.

Diagnosis. As for genus.

Description

Measurements. Length: 6.1–7.0 mm; width: 2.2–2.35 mm. Ratios. Width/length of pronotum: 1.12–1.15; width of widest diameter/base of pronotum: 1.21–1.22; width base/apex of pronotum: 1.38–1.42; width pronotum/head: 1.64–1.65; length/width of elytra: 1.72–1.74; with elytra/pronotum: 1.29.

Wing-and-seta formula: –w; ++; –+; +++.

Colour (Fig. 5). Head and pronotum reddish-brown, elytra slightly paler. Lateral margin of elytra yellow, lateral margin of pronotum narrowly and very inconspicuously pale translucent. Labrum, palpi, and antenna dirty yellow. Legs dirty yellow to pale reddish. Lower surface reddish-brown, elytral epipleura dirty yellow.

Head. Rather narrow, much narrower than prothorax. Neck fairly wide, neck constriction dorsally very shallow. Eye large, but laterally only little projected, orbit rather short, c. $\frac{1}{3}$ of length of eye, oblique and posteriorly separated from neck. Clypeal suture shallow. Behind clypeal suture on either side with a very shallow, barely impressed, fairly elongate, irregularly sinuate impression. Labrum transverse, rectangular, apex almost straight. Mandible comparatively short. Antenna moderately elongate, surpassing base of pronotum by at least one antennomere, median antennomeres c. $2\times$ as long as wide. Both palpi moderately slender and elongate, impilose. Mentum with a rather elongate, triangular tooth. Gular setae very elongate. Both supraocular setae present and very elongate, the anterior seta located mediad of eye, the posterior seta located about at posterior margin of eye but slightly removed mediad. Surface with sparse, extremely fine punctures and with extremely superficial microreticulation which is composed of almost isodiametric meshes, but punctures as well as microreticulation only visible at very high magnification; surface very glossy.

Prothorax. Rather narrow, not cordiform, widest slightly in front of middle, laterally evenly convex, without any prebasal sinuosity. Disk rather depressed, lateral margins and lateral sulcus anteriorly narrow, basad widened and explanate. Apex fairly

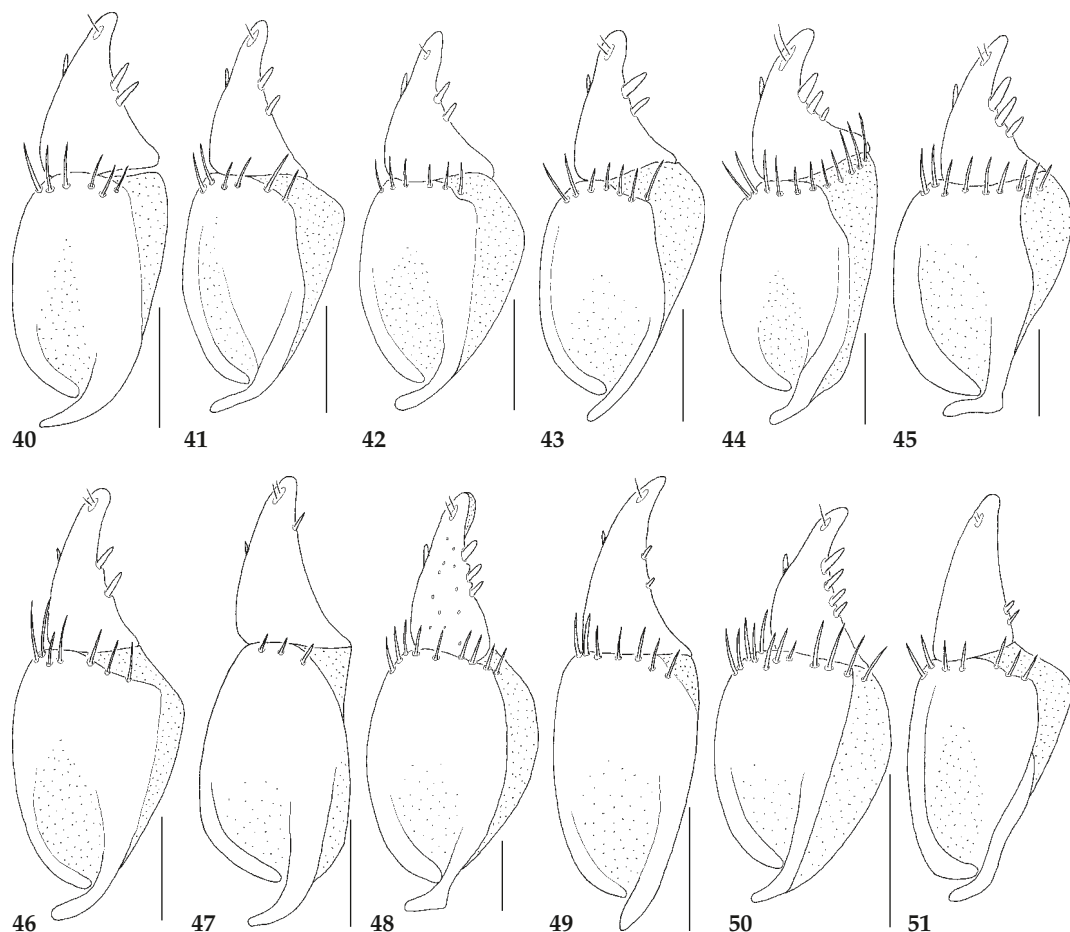
concave, anterior angle projected, narrowly rounded at tip. Base straight in middle, laterally oblique-convex, basal angle evenly rounded. Both, anterior and posterior transverse sulci extremely shallow, basal groove very shallow. Median line neither reaching base nor apex, very fine and barely impressed. Apex completely and finely bordered, base only laterally bordered. Only the posterior marginal seta present, very elongate, far removed anteriorly and slightly mediad from basal angle, located at about the basal sixth. Disk with more or less distinct traces of extremely fine and superficial microreticulation which is composed of very transverse lines; surface glossy.

Elytra. Narrow and elongate, elongately ovi-form. Dorsal surface moderately convex but depressed on disk, lateral margins gently convex but almost straight in middle, with extremely shallow preapical sinuosity. Widest diameter about at middle. Humerus angulate, apex rounded and slightly incurved towards suture, but with a tiny denticle right at sutural angle. Striae complete and lightly impressed, impunctate, intervals very slightly convex. 3rd interval tripunctate, the anterior puncture and seta situated at basal fourth and adjacent to the 3rd stria, the posterior setae located about at middle and at apical fourth, adjacent to the 2nd stria. 15–17 marginal setae and 2 preapical seta at 7th and 3rd striae present, humeral group of marginal series composed of 6 setae but the 6th rather removed from the basal ones, series somewhat spaced in middle. Intervals impunctate, microreticulation fine and very superficial, composed of slightly transverse meshes; surface glossy. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum short, little longer than wide at anterior margin, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation, laterally rather rugose. Terminal sternum in male bisetose.

Legs. Very slender and elongate. All tibiae laterally sulcate, with remarkably elongate spines; all tarsi markedly elongate; three basal tarsomeres of mesotarsus and metatarsus externally sulcate; 4th tarsomeres of protarsus and mesotarsus very deeply bilobed, of metatarsus excised. 5th tarsomeres asetose beneath. Three basal tarsomeres of male protarsus widened and biserially squamose.

Male genitalia (Fig. 27). Genital ring very wide, slightly asymmetric, with very wide, rounded apex. Aedeagus wide in middle, straight but asymmetric, lower surface concave in basal third, then slightly convex, near apex suddenly bent down. Apex elongate, asymmetrically curved to the right side, narrow. at tip obtuse. Orificium elongate, slightly



Figs 40–51. Female gonocoxites 1 and 2. 40. *Cinctagonum convexipenne*, spec. nov. 41. *C. angulicolle*, spec. nov. 42. *C. cordicolle*, spec. nov. 43. *Laevagonum alticola*, spec. nov. 44. *L. parafrustum*, spec. nov. 45. *L. huon*, spec. nov. 46. *Gastragonum esulcatum*, spec. nov. 47. *Nebriagonum persetosum*, spec. nov. 48. *N. bipunctatum*, spec. nov. 49. *Idiagonum capellae*, spec. nov. 50. *Fortagonum longispinum*, spec. nov. 51. *Colpodes excisus*, spec. nov. Scale bars: Figs 40–48: 0.1 mm; Figs 49–51: 0.25 mm.

asymmetric. Internal sac folded but without sclerotized structures, though one fold densely denticulate. Both parameres large and rather elongate, sinuate on lower surface near apex, with widely rounded apex.

Female gonocoxites. Unknown.

Variation. Little variation noted except for body size.

Distribution. Mt. Kaindi near Wau, Eastern Highlands of Papua New Guinea. Known only from type locality.

Collecting circumstances. Not recorded.

Genus *Laevagonum* Darlington

Darlington, 1952: 243. – Darlington 1971: 315; Lorenz 1998: 398.

Type species. *Laevagonum cistelum* Darlington, 1952, by original designation.

Diagnosis. This genus of rather small, usually quite glossy species is characterized by absence of the metathoracic wings, absence of all elytral discal seta, variable number of pronotal setae, not cordiform pronotum, and usually wide, rather depressed elytra.

At present the genus includes 7 described species which all occur in central Papua New Guinea,

most of them on Mt. Wilhelm or at least in the surrounding Bismarck Range. Two of the three new species likewise occur on Mt. Wilhelm, the third enlarges the range to Huon Peninsula in northern Papua New Guinea. All so far recorded species were collected from median to high altitudes, between c. 2000–3200 m, probably in montane rain forest and in grassland. They seem to live on the ground.

Laevagonum alticola, spec. nov.

Figs 6, 28, 43

Types. Holotype: ♂, “NEW GUINEA /NE/ Mt. Wilhelm 3900 m 13–24.IX.1968. / /No. NG-M-B.127./ leg. Dr. J. Balogh” (MNHB). – Paratypes: 1 ♂, same data (CBM); 1 ♂, 1 ♀, “NEW GUINEA /NE/ Mt. Wilhelm 4000 m 15.IX.1968. / /No. NG-M.R. 24./ leg. Dr. I. Loksa” (CBM, MNHB); 1 ♀, “New Guinea /NE/ Mt. Wilhelm / leg. Dr. I. Loksa 14. IX.1968.” (MNHB).

Etymology. The name refers to the occurrence of this species at high altitude.

Diagnosis. Distinguished from all other species, except *L. subciturum* Darlington, by the presence of the anterior marginal pronotal seta. From the latter species distinguished by lesser size, shorter and wider elytra, and rounded humerus.

Description

Measurements. Length: 4.5–5.0 mm; width: 1.9–2.0 mm. Ratios. Width/length of pronotum: 1.17–1.20; width of widest diameter/base of pronotum: 1.31–1.36; width base/apex of pronotum: 1.0–1.08; width pronotum/head: 1.34–1.48; length/width of elytra: 1.40–1.46; with elytra/pronotum: 1.40–1.48.

Wing-and-seta formula: –w ; ++ ; +– ; ––.

Colour (Fig. 6). Upper and lower surfaces black to dark piceous, in one slightly immature specimen suture of elytra inconspicuously reddish. Palpi except the apices, and antenna black to piceous. Femora more or less dark piceous, tibiae and tarsi always darker than the femora, even black. Elytral epipleura slightly paler than the abdomen.

Head. Rather large and compact, though narrower than prothorax. Neck wide, neck constriction even dorsally distinct. Eye rather small, laterally little projected, orbit fairly elongate, $c\frac{3}{4} \times$ as long as the eye, oblique and convex, posteriad well separated from neck. Clypeal suture shallow, in middle barely recognizable. Behind clypeal suture on either side with a deep, irregularly circular impression. Labrum transverse, rectangular, apex straight. Mandible moderately elongate. Antenna short, barely surpass-

ing base of pronotum, median antennomeres little longer than wide. Both palpi moderately slender and elongate, impilose. Mentum with a rather elongate, triangular tooth. Gular setae very elongate. Both supraocular setae present and elongate, the anterior seta located mediad of eye, the posterior seta far removed medio-posteriad from posterior margin of eye. Microreticulation very superficial to almost not perceptible; when present, fine and composed of almost isodiametric meshes; punctures absent; surface fairly to very glossy.

Prothorax. Moderately wide, with fairly wide base, widest slightly in front of middle, laterally evenly but gently convex or oblique and almost straight in basal half. Disk moderately convex, lateral margins and lateral sulcus narrow throughout, even basad not or barely widened, not explanate. Apex very slightly concave, anterior angle slightly projected, widely rounded. Base almost straight, laterally slightly oblique-convex, basal angle obtusely angulate to narrowly rounded. Both, anterior and posterior transverse sulci very shallow, basal groove shallow, elongate. Median line almost complete, rather well impressed. Apex coarsely bordered, base only laterally narrowly bordered. Only the anterior marginal seta present, elongate, situated slightly in front of middle, in the narrow marginal channel. Disk with scattered and extremely fine punctures, with more or less superficial microreticulation that is composed of extremely fine, very transverse meshes and lines which in some specimens are visible only at very high magnification; surface rather glossy.

Elytra. Rather short and wide, more or less ovoid-form. Dorsal surface convex, lateral margins evenly convex, without preapical sinuosity. Widest diameter about at middle or slightly behind. Humerus almost rounded, apex rounded but not or very slightly incurved towards suture. Striae complete, well impressed, slightly crenulate or irregularly interrupted, intervals slightly convex. 3rd interval without any discal punctures and setae. 11–12 marginal setae and 2 preapical seta at 7th stria present, humeral group of marginal series composed of 6 setae, series widely interrupted in middle. Intervals with sparse and extremely fine punctures which are only visible at very high magnification. Microreticulation fine and more or less superficial, composed of fine, slightly transverse meshes; surface moderately glossy. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum short, about quadrate, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation, laterally rather rugose. Terminal sternum in

male bisetose, in female quadrisetose.

Legs. Rather robust. Meso- and metatibiae laterally very inconspicuously sulcate, 1st tarsomere of metatarsus externally not perceptibly sulcate, all tarsi, including metatarsus, short; 4th tarsomeres of protarsus and mesotarsus shortly bilobed, of metatarsus but slightly excised. 5th tarsomeres asetose beneath. Three basal tarsomeres of male protarsus widened and biserially squamose.

Male genitalia (Fig. 28). Genital ring moderately wide, asymmetric, with elongate, apicad narrowed, apex. Aedeagus moderately wide, straight, almost symmetric, lower surface little concave, in middle slightly convex, towards apex straight. Apex moderately elongate, triangular, tip acute. Orificium elongate, slightly asymmetric. Internal sac folded but without sclerotized structures, some folds finely denticulate. Both parameres large and elongate, comparatively narrow, with angulate apex.

Female gonocoxites (Fig. 43). Apical margin of ventral surface of gonocoxite 1 with 6–7 elongate ensiform setae. Gonocoxite 2 moderately elongate, rather curved, with obtuse apex, with a small dorso-median ensiform seta situated slightly above middle, two moderately large, slightly spaced ventro-lateral ensiform setae located above and below middle, and two short ventro-median nematiform setae originating from an oval-shaped pit near apex.

Variation. Some variation noted in shape of the basal angle of the pronotum and in degree of the microreticulation which seems to be more distinct in the females.

Distribution. Mt. Wilhelm, Eastern Highlands of Papua New Guinea. Known only from this mountain.

Collecting circumstances. All specimens collected at very high altitude, near the summit of Mt. Wilhelm, probably on the ground.

Laevagonum parafrustum, spec. nov.

Figs 7, 29, 44

Types. Holotype: ♂, "NEW GUINEA /NE/ Mt. Wilhelm Field Station 16.IX.1968. / /No. NG-M.R.25./ leg. Dr. I. Loksa" (MNHB). – Paratype: 1 ♀, same data (CBM).

Etymology. The name refers to the quite similar body shape of this species and of *L. frustum* Darlington.

Diagnosis. Distinguished from all other species by the presence of the posterior marginal pronotal seta.

Description

Measurements. Length: 5.1–5.15 mm; width: 2.15–2.2 mm. Ratios. Width/length of pronotum: 1.03–1.06; width of widest diameter/base of pronotum: 1.10; width base/apex of pronotum: 1.18–1.20; width pronotum/head: 1.22; length/width of elytra: 1.38–1.40; with elytra/pronotum: 1.64–1.67.

Wing-and-seta formula: –w ; ++ ; –+ ; – – –.

Colour (Fig. 7). Head and pronotum black, elytra reddish-piceous. Palpi yellow, but apical palpomeres in basal two thirds piceous, antenna yellow. Femora pale yellow, tibiae in middle reddish to reddish-piceous, at base and apex yellow, tarsi reddish-piceous. Lower surface of head and pronotum black, of abdomen reddish-piceous, laterally paler, elytral epipleura more or less dark reddish.

Head. Rather large and compact, though narrower than prothorax. Neck wide, neck constriction even dorsally distinct. Eye large, laterally moderately projected, orbit very short, c. 1/8 of length of eye, oblique and posteriorly rather angulately separated from neck. Clypeal suture laterally deep, slightly oblique, in middle much shallower. Behind clypeal suture on either side with a very deep, fairly elongate, irregularly sinuate impression. Also frons with two circular to slightly oblique, shallow impressions on either side. Labrum transverse, rectangular, apex almost straight. Mandible comparatively short. Antenna moderately elongate, surpassing base of pronotum by at least one antennomere, median antennomeres c. 1.75 × as long as wide. Both palpi moderately slender and elongate, impilose. Mentum with a rather elongate, triangular tooth. Gular setae very elongate. Both supraocular setae present and elongate, the anterior seta located medially of eye, the posterior seta located about at posterior margin of eye but slightly removed mediad. Surface with sparse, extremely fine punctures and here and there with extremely superficial traces of microreticulation which is composed of transverse meshes, but punctures as well as microreticulation only visible at very high magnification; surface very glossy.

Prothorax. Narrow, barely wider than long, rather quadrate, widest about at apical third or slightly behind of it, laterally very slightly convex, in front of base faintly sinuate. Disk very convex, lateral margins and lateral sulcus narrow throughout, just shortly in front of base slightly widened and explanate. Apex very slightly concave, anterior angle slightly projected, widely rounded at tip. Base faintly convex, basal angle almost rectangular but shortly rounded at tip. Both, anterior and posterior transverse sulci distinct though fairly shallow, basal groove shallow. Median line almost reaching base, but not the apex, fairly well impressed. Apex coarsely

bordered, base more finely bordered. Only the posterior marginal seta present, very elongate, situated near basal angle but slightly removed antero-medial from it. Basal groove rugose, disk with some irregular, transverse striae, with sparse, extremely fine punctures, virtually without microreticulation; surface remarkably glossy.

Elytra. Rather short and wide, reversely oviform and markedly widened towards apical third. Dorsal surface rather convex, lateral margins evenly convex, but with shallow preapical sinuosity. Widest diameter about at apical third. Humerus obtusely angulate, apex very widely rounded and markedly incurved towards suture. Striae barely or not perceptible, if visible consisting of rows of very fine punctures and short, interrupted lines, intervals absolutely depressed. 3rd interval without any discal punctures and setae. 13–14 marginal setae and 2 preapical seta at 7th and 3rd striae present but very difficult to detect, humeral group of marginal series composed of 6 setae, series rather interrupted in middle. Intervals with an irregular row of fine punctures which are only visible at very high magnification, microreticulation virtually absent; surface very glossy and somewhat iridescent. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum short, about quadrate, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation, laterally rather rugose. Terminal sternum in male bisetose, in female quadrisetose.

Legs. Rather robust. Meso- and metatibiae laterally sulcate, 1st tarsomere of metatarsus externally not perceptibly sulcate, the four anterior tarsi short, metatarsus moderately elongate; 4th tarsomeres of protarsus and mesotarsus rather deeply bilobed, of metatarsus but also bilobed but less deeply. 5th tarsomeres asetose beneath. Three basal tarsomeres of male protarsus widened and biserially squamose.

Male genitalia (Fig. 29). Genital ring wide, asymmetric, with moderately elongate, irregularly narrowed, at tip rounded apex that is curved left. Aedeagus very wide, straight, almost symmetric, lower surface gently concave throughout. Apex moderately elongate, regularly triangular, tip slightly obtuse. Orificium elongate, slightly asymmetric. Internal sac folded but without sclerotized structures, some folds finely denticulate. Both parameres large and wide, with widely rounded apex.

Female gonocoxites (Fig. 44). Apical margin of ventral surface of gonocoxite 1 with 10–12 elongate ensiform setae. Gonocoxite 2 moderately elongate, markedly curved, with obtuse apex, with a small dorso-median ensiform seta situated slightly above middle, three slightly spaced ventro-lateral ensiform

setae of decreasing size located about in middle, and two comparatively elongate ventro-median nematiform setae originating from an oval-shaped pit near apex.

Variation. Little variation noted; in the paratype elytral striae barely perceptible.

Distribution. Mt. Wilhelm, Eastern Highlands of Papua New Guinea. Known only from this mountain.

Collecting circumstances. Not recorded.

Laevagonum huon, spec. nov.

Figs 8, 45

Types. Holotype: ♀, "Papua NG, Morobe-Pr. Saruwaged Rge. Boana 1000–1500 m, 21.–22. 10.1992, leg. A. Riedel" (CBM). – Paratype: 1 ♀, same data (CBM).

Etymology. The name is a noun and refers to the occurrence of the species on Huon Peninsula.

Diagnosis. Characterized by absence of both pronotal setae and all elytral setae, lobed 4th tarsomere of metatarsus, and almost rectangular basal pronotal angle. Distinguished from most similar *L. frustum* Darlington by longer elytra with obtusely angulate humerus.

Description

Measurements. Length: 4.9–5.0 mm; width: 1.95–2.05 mm. Ratios. Width/length of pronotum: 1.18; width of widest diameter/base of pronotum: 1.28–1.32; width base/apex of pronotum: 1.12–1.17; width pronotum/head: 1.28–1.29; length/width of elytra: 1.43–1.46; with elytra/pronotum: 1.59–1.64.

Wing-and-seta formula: –w; ++; ––; ––.

Colour (Fig. 8). Head and pronotum reddish-piceous, elytra slightly lighter, reddish-brown, but slightly paler on disk than laterally and at apex. Lateral margins of elytra narrowly yellow, also suture narrowly but inconspicuously paler. Palpi and antenna yellow. Femora pale yellow, tibiae and tarsi pale reddish, slightly darker than the femora, but base and apex of tibiae paler. Lower surface of head and prothorax piceous to dark reddish, abdomen in middle dark reddish, laterally paler. Elytral epipleura dirty yellow.

Head. Moderately large, narrower than prothorax. Neck fairly wide, neck constriction even dorsally distinct. Eye large, laterally moderately projected, orbit short, c. 1/6 of length of eye, oblique and convex, posteriorly rather angulately separated from neck. Clypeal suture laterally distinct, in middle shallow. Behind clypeal suture on either side with a deep,

elongate, irregularly sinuate impression. Also frons with two circular to slightly oblique, shallow impressions on either side. Labrum transverse, rectangular, apex almost straight. Mandible comparatively short. Antenna moderately elongate, surpassing base of pronotum by at least one antennomere, median antennomeres c. 1.75× as long as wide. Both palpi moderately slender and elongate, impilose. Mentum with a rather elongate, triangular tooth. Gular setae very elongate. Both supraocular setae present and elongate, the anterior seta located medially of eye, the posterior seta located about at posterior margin of eye but slightly removed mediad. Frons with rather to very superficial microreticulation which is composed of moderately transverse meshes that on neck change into more distinct, isodiametric meshes; surface glossy.

Prothorax. Moderately wide, very slightly trapezoidal, widest slightly behind apical third, laterally evenly but gently convex, but oblique and almost straight in basal half, without any prebasal sinuosity. Disk moderately convex, lateral margins and lateral sulcus narrow throughout, even basad little widened and only slightly explanate. Apex slightly concave, anterior angle slightly projected, widely rounded. Base almost straight, laterally slightly oblique-convex, basal angle obtusely rounded. Both, anterior and posterior transverse sulci very shallow, basal groove shallow, elongate. Median line neither reaching apex nor base, rather well impressed. Apex fairly coarsely bordered, base only laterally narrowly bordered. Both marginal setae absent. Disk with very fine, superficial microreticulation, composed of extremely fine, very transverse meshes and lines; surface rather glossy.

Elytra. Rather short and wide, reversely oviform. Dorsal surface rather convex, lateral margins evenly convex, but with shallow preapical sinuosity. Widest diameter slightly behind middle. Humerus very obtusely angulate, apex very widely rounded and markedly incurved towards suture. Striae complete but very faint, not impressed, impunctate, visible only at high magnification, intervals absolutely depressed. 3rd interval without any discal punctures and setae. 12 marginal setae and 2 preapical seta at 7th and 3rd striae present but rather difficult to detect, humeral group of marginal series composed of 6 setae, series rather interrupted in middle. Intervals impunctate, microreticulation extremely superficial and fine, composed of very transverse meshes and lines; surface very glossy. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, aetose. Proepisternum and mesepisternum impunctate. Metepisternum short, about quadrate, impunctate. Abdomen im-

punctate, though with fine isodiametric microreticulation, laterally rather rugose. Terminal sternum in female quadrisetose.

Legs. Rather elongate. Meso- and metatibiae laterally sulcate, 1st tarsomere of metatarsus externally not perceptibly sulcate, all tarsi relatively elongate; 4th tarsomeres of protarsus and mesotarsus rather deeply bilobed, of metatarsus also bilobed but less deeply so. 5th tarsomeres aetose beneath. Squamosity of male protarsus unknown.

Male genitalia. Unknown.

Female gonocoxites (Fig. 45). Apical margin of ventral surface of gonocoxite 1 with 9–10 moderately elongate ensiform setae. Gonocoxite 2 moderately elongate, curved, with obtuse apex, with a small dorso-median ensiform seta situated slightly above middle, three rather large, slightly spaced ventrolateral ensiform setae of decreasing size located about in middle, and two short ventro-median nematiform setae originating from an oval-shaped pit near apex.

Variation. Very little variation noted.

Distribution. Saruwaged Range on Huon Peninsula, northern Papua New Guinea. Known only from type locality.

Collecting circumstances. Little recorded, collected at median altitude, probably by sieving litter in montane rain forest.

Genus *Gastragonum* Darlington

Darlington, 1952: 222. – Darlington 1971: 306; Lorenz 1998: 396.

Type species. *Gastragonum terrestre* Darlington, 1952, by original designation.

Diagnosis. This genus of rather small, black species is characterized by dimorphic metathoracic wings in some species, complete set of setae on head, pronotum, and elytra, rather small head with the posterior supraocular seta far removed from eye, a deep sulcus running medially of the eye, and dorsally convex elytra.

At present the genus includes 6 described species which occur from central Papua Indonesia in the west to central eastern Papua New Guinea in the east. The three new species fill some gaps in the eastern part of the range. All so far recorded species were collected from median to very high altitudes, between c. 1500–3600 m, probably in montane rain forest and in grassland, but have been also recorded from native gardens. They seem to live on the ground.

Gastragonum wau, spec. nov.

Figs 9, 30

Types. Holotype: ♂, "PNG: Morobe Prov. Wau, Mt. Kaindi, 2200m 07°22'S 146°40'E KL 17.II.2000 leg. A. Weigel" (CBM).

Etymology. The name is a noun and refers to the type locality, Wau.

Diagnosis. A small, black species with deep frontal impressions, distinguished from the most similar *G. terricola* Darlington by the transverse impression in basal half of the elytra and more concave lower surface of the aedeagus; and from *G. giluwe*, spec. nov. by slightly deeper elytral impression, longer elytra, absolutely rounded humerus, and less concave aedeagus with less obtuse apex.

Description

Measurements. Length: 6.5 mm; width: 2.5 mm. Ratios. Width/length of pronotum: 1.20; width of widest diameter/base of pronotum: 1.28; width base/apex of pronotum: 1.26; width pronotum/head: 1.40; length/width of elytra: 1.58; with elytra/pronotum: 1.42.

Wing-and-seta formula: -w ; ++ ; ++ ; +++.

Colour (Fig. 9). Upper and lower surfaces, including elytral epipleura, black. Lateral margins of pronotum inconspicuously reddish translucent. Labrum dark reddish, palpi and antenna pale reddish. Legs dark reddish.

Head. Rather narrow, much narrower than prothorax. Neck fairly wide, neck constriction dorsally very slight. Eye rather small, laterally moderately projected, orbit fairly short, slightly less than half of length of eye, oblique-convex, posteriorly rather separated from neck. Clypeal suture very weak, in middle barely perceptible. Behind clypeal suture on either side with a deep, elongate, irregularly sinuate impression. Medially of the eye with a deep sulcus. Labrum transverse, rectangular, apex almost straight. Mandible comparatively elongate. Antenna elongate, surpassing base of pronotum by at most one antennomere, median antennomeres slightly $> 2.5 \times$ as long as wide. Both palpi slender and elongate, impilose, the basal palpomere of the maxillary palpus slightly widened. Mentum with a rather elongate, triangular tooth. Gular setae elongate. Both supraocular setae present and very elongate, the anterior seta located medially of the eye, the posterior seta far removed posterior-medial from posterior margin of eye. Frons with sparse, extremely fine punctures and fine, very superficial microreticulation which is composed of moderately transverse meshes that on neck change into more distinct, isodiametric meshes; surface glossy.

Prothorax. Rather narrow, somewhat cordiform, widest about at middle, laterally evenly convex but distinctly sinuate just in front of basal angle. Disk moderately convex, lateral margins and lateral sulcus moderately wide, basad slightly widened, marginal sulcus rather deep, even deepened towards the elongate basal grooves. Apex slightly concave, anterior angle slightly projected, narrowly rounded. Base slightly convex throughout, basal angle almost rectangular and laterally slightly produced. Both, anterior and posterior transverse sulci very shallow. Median line neither reaching apex nor base, rather well impressed. Apex coarsely bordered, base completely bordered, but less coarsely so. Both marginal setae present, the anterior seta located at the widest diameter, just in front of middle, the posterior seta right at basal angle. Base and basal grooves with moderately coarse punctures which are very rugose in the basal grooves. Disk with sparse, extremely fine punctures and fine, very superficial microreticulation which is composed of very transverse meshes and lines; surface glossy.

Elytra. Fairly elongate. Dorsal surface convex, with a shallow transverse impression in basal half. Lateral margins almost straight in basal half, slightly widened after middle, then convex, with extremely shallow preapical sinuosity. Widest diameter slightly behind middle. Humerus evenly rounded, apex rounded and slightly incurved towards suture. Striae complete and deeply impressed, impunctate, intervals convex. 3rd interval tripunctate, the anterior puncture and seta situated at basal fifth and adjacent to the 3rd stria, the posterior setae located in middle and at apical fourth, adjacent to the 2nd stria. 16–17 marginal setae and 2 preapical setae at 7th and 3rd striae present, humeral group of marginal series composed of 5 or 6 setae, series slightly spaced in middle. Intervals impunctate, microreticulation extremely superficial and fine, composed of very transverse lines; surface very glossy and slightly iridescent. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum moderately elongate, c. $1.7 \times$ as long as wide at apex, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation. Terminal sternum in male bisetose.

Legs. Moderately elongate. All tibiae laterally sulcate, 1st tarsomere of mesotarsus and metatarsus externally sulcate, all tarsi relatively elongate; 4th tarsomeres of protarsus and mesotarsus deeply bilobed, of metatarsus also bilobed but less deeply so. 5th tarsomeres asetose beneath. Three basal tarsomeres of male protarsus widened and biserially squamose.

Male genitalia (Fig. 30). Genital ring narrow and elongate, slightly asymmetric, with elongate, slightly unciform apex. Aedeagus moderately wide, almost straight, slightly asymmetric, lower surface markedly concave, though apex slightly upturned. Apex moderately elongate, regularly triangular, tip very slightly obtuse. Orificium elongate, slightly asymmetric. Internal sac folded but without sclerotized structures, one very large fold densely denticulate. Both parameres large and wide, with widely rounded apex; left paramere with hyaline area at lower part of apex.

Female genitalia. Unknown.

Variation. Unknown.

Distribution. Mt. Kaindi near Wau, Eastern Highlands of Papua New Guinea. Known only from type locality.

Collecting circumstances. Little recorded. The holotype was collected at median altitude, probably by sieving litter in montane rain forest.

Gastragonum giluwe, spec. nov.

Figs 10, 31

Types. Holotype: ♂, "Papua Neuguinea, W. Highl., 10 km se. Tambul N slope of Mt. Giluwe 14.3.1973, M. Baehr" (CBM).

Etymology. The name is a noun and refers to the type locality, Mt. Giluwe.

Diagnosis. A small, black species with deep frontal impressions, distinguished from the most similar *G. terricola* Darlington by the impression in basal half of the elytra and more concave lower surface of the aedeagus; and from *G. wau*, spec. nov. by shallower elytral impression, shorter elytra, obtusely angulate humerus, and more concave aedeagus with more obtuse apex.

Description

Measurements. Length: 6.25 mm; width: 2.45 mm. Ratios. Width/length of pronotum: 1.22; width of widest diameter/base of pronotum: 1.29; width base/apex of pronotum: 1.24; width pronotum/head: 1.48; length/width of elytra: 1.52; with elytra/pronotum: 1.41.

Wing-and-seta formula: -w ; + + ; + + ; + + +.

Colour (Fig. 10). Upper and lower surfaces, including elytral epipleura, black. Lateral margins of pronotum inconspicuously reddish translucent. Labrum dark reddish, palpi and antenna pale reddish. Legs dark reddish.

Head. Rather narrow, much narrower than pro-

thorax. Neck fairly wide, neck constriction dorsally very slight. Eye rather small, laterally moderately projected, orbit rather short, slightly less than half of length of eye, oblique-convex, posteriorly rather separated from neck. Clypeal suture very weak, in middle barely perceptible. Behind clypeal suture on either side with a deep, elongate, irregularly sinuate impression. Medially of the eye with a deep sulcus. Labrum transverse, rectangular, apex almost straight. Mandible comparatively elongate. Antenna elongate, surpassing base of pronotum by at most one antennomere, median antennomeres c. $2\frac{1}{4} \times$ as long as wide. Both palpi slender and elongate, impilose, the basal palpomere of the maxillary palpus slightly widened. Mentum with a rather elongate, triangular tooth. Gular setae elongate. Both supraocular setae present and very elongate, the anterior seta located medially of the eye, the posterior seta far removed postero-medial from posterior margin of eye. Frons with sparse, extremely fine punctures and finest traces only of extremely superficial microreticulation which is composed of moderately transverse meshes that on neck change into more distinct, isodiametric meshes; surface very glossy.

Prothorax. Rather narrow, somewhat cordiform, widest about at middle, lateral margin in apical half oblique-convex, then evenly convex but distinctly sinuate just in front of basal angle. Disk moderately convex, lateral margins and lateral sulcus anteriorly rather narrow, then moderately wide, basal slightly widened, marginal sulcus rather deep, even deepened towards the elongate basal grooves. Apex slightly concave, anterior angle slightly projected, narrowly rounded. Base slightly convex throughout, basal angle almost rectangular and laterally perceptibly produced. Anterior transverse sulcus barely recognizable, posterior sulcus shallow. Median line neither reaching apex nor base, rather well impressed. Apex coarsely bordered, base completely bordered, but less coarsely so. Both marginal setae present, the anterior seta located at the widest diameter, just in front of middle, the posterior seta right at basal angle. Base and basal grooves with moderately coarse punctures which are very rugose in the basal grooves. Disk with sparse, extremely fine punctures and fine, very superficial microreticulation which is composed of very transverse meshes and lines; surface glossy.

Elytra. Moderately elongate. Dorsal surface convex, with an extremely shallow, barely perceptible, transverse impression in basal half. Lateral margins almost straight in basal half, slightly widened after middle, then convex, with extremely shallow preapical sinuosity. Widest diameter slightly behind middle. Humerus obtusely angulate, apex rounded and slightly incurved towards suture. Striae complete

and deeply impressed, impunctate, intervals convex. 3rd interval tripunctate, the anterior puncture and seta situated at basal fifth and adjacent to the 3rd stria, the posterior setae located about in middle and at apical fourth, adjacent to the 2nd stria. 14–15 marginal setae and 2 preapical seta at 7th and 3rd striae present, humeral group of marginal series composed of 6 setae, series slightly spaced in middle. Intervals impunctate, microreticulation extremely superficial and fine, composed of very transverse lines; surface very glossy and slightly iridescent. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum moderately elongate, c. 1.5 × as long as wide at apex, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation. Terminal sternum in male bisetose.

Legs. Moderately elongate. All tibiae laterally sulcate, 1st tarsomere of mesotarsus and metatarsus externally sulcate, all tarsi relatively elongate; 4th tarsomeres of protarsus and mesotarsus deeply bilobed, of metatarsus also bilobed but less deeply so. 5th tarsomeres asetose beneath. Three basal tarsomeres of male protarsus widened and biserially squamose.

Male genitalia (Fig. 31). Genital ring rather narrow and elongate, slightly asymmetric, with elongate, slightly unciform apex. Aedeagus moderately wide, almost straight, slightly asymmetric, lower surface markedly concave, though apex slightly upturned. Apex moderately elongate, regularly triangular, tip very obtusely rounded. Orificium elongate, slightly asymmetric. Internal sac folded but without sclerotized structures, one very large fold densely denticulate. Both parameres large and wide, with narrowly rounded apex; left paramere with hyaline area at lower part of apex.

Female genitalia. Unknown.

Variation. Unknown.

Distribution. Mt. Giluwe, Southern Highlands of Papua New Guinea. Known only from type locality.

Collecting circumstances. Little recorded. Probably collected on the ground in native garden.

Relationships. According to body shape and shape of the aedeagus very closely related to *Gastragonum wau*, spec. nov.

Gastragonum esulcatum, spec. nov.

Figs 11, 46

Types. Holotype: ♀, "IRIAN JAYA 24.9.1993 Tanime Gebiet Tanime – Eipomek / ca. 140°06'E 04°27'S 2100–2300 m leg. M. Balke (20)" (CBM).

Etymology. The name refers to the not impressed frontal furrows.

Diagnosis. A small, black species with very shallow frontal impressions, distinguished from *G. trechoides* Darlington by less ovoid elytra and rectangular basal pronotal angle.

Description

Measurements. Length: 6.0 mm; width: 2.3 mm. Ratios. Width/length of pronotum: 1.20; width of widest diameter/base of pronotum: 1.25; width base/apex of pronotum: 1.28; width pronotum/head: 1.50; length/width of elytra: 1.52; with elytra/pronotum: 1.38.

Wing-and-seta formula: –w ; ++ ; ++ ; ++.

Colour (Fig. 11). Upper and lower surfaces, including elytral epipleura, black. Lateral margins of pronotum inconspicuously reddish translucent. Labrum dark reddish, palpi and antenna pale reddish. Legs dark reddish.

Head. Rather narrow, much narrower than prothorax. Neck fairly wide, neck constriction dorsally barely recognizable. Eye rather small, laterally moderately projected, orbit short, c. 1/3 of length of eye, oblique-convex, posteriorly rather separated from neck. Clypeal suture very weak, in middle barely perceptible. Behind clypeal suture on either side with a very shallow, barely perceptible, elongate, irregularly sinuate impression. Medially of the eye with a deep sulcus. Labrum transverse, rectangular, apex almost straight. Mandible comparatively elongate. Antenna elongate, surpassing base of pronotum by at most one antennomere, median antennomeres c. 2 1/4 × as long as wide. Both palpi slender and elongate, impilose, the basal palpomere of the maxillary palpus slightly widened. Mentum with a rather elongate, triangular tooth. Gular setae elongate. Both supraocular setae present and very elongate, the anterior seta located mediad of the eye, the posterior seta far removed postero-mediad from posterior margin of eye. Frons impunctate, with fine, very superficial microreticulation which is composed of almost isodiametric meshes; surface glossy.

Prothorax. Rather narrow, somewhat cordiform, widest slightly in front of middle, laterally evenly convex but shortly sinuate just in front of basal angle. Disk moderately convex, lateral margins and lateral sulcus comparatively narrow, basad slightly widened, marginal sulcus rather deep, even

deepened towards the elongate basal grooves. Apex slightly concave, anterior angle slightly projected, narrowly rounded. Base slightly convex throughout, basal angle almost rectangular and laterally slightly produced. Both, anterior and posterior transverse sulci very shallow. Median neither reaching apex nor base, rather well impressed. Apex coarsely bordered, base completely bordered, but less coarsely so. Both marginal setae present, the anterior seta located at the widest diameter, just in front of middle, the posterior seta at basal angle. Base and basal grooves impunctate. Disk impunctate, with very fine, extremely superficial microreticulation which is composed of very transverse meshes and lines; surface glossy.

Elytra. Fairly elongate, slightly oviform. Dorsal surface markedly convex, without transverse impression in basal half. Lateral margins evenly convex, with extremely shallow preapical sinuosity. Widest diameter well behind middle. Humerus obtusely angulate, apex rounded and slightly incurved towards suture. Striae complete and deeply impressed, impunctate, intervals convex. 3rd interval tripunctate, the anterior puncture and seta situated at basal fifth and adjacent to the 3rd stria, the posterior setae located about in middle and at apical fourth, adjacent to the 2nd stria. 15–16 marginal setae and 2 preapical seta at 7th and 3rd striae present, humeral group of marginal series composed of 6 setae, series slightly spaced in middle. Intervals impunctate, microreticulation extremely superficial and fine, composed of very transverse lines; surface very glossy and slightly iridescent. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum moderately elongate, slightly $< 1.5 \times$ as long as wide at apex, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation. Terminal sternum in female quadrisetose.

Legs. Moderately elongate. All tibiae laterally sulcate, 1st tarsomere of mesotarsus and metatarsus externally sulcate, all tarsi relatively elongate; 4th tarsomeres of protarsus and mesotarsus deeply bilobed, of metatarsus also bilobed but less deeply so. 5th tarsomeres asetose beneath. Squamosity of male protarsus unknown.

Male genitalia. Unknown.

Female gonocoxites (Fig. 46). Apical margin of ventral surface of gonocoxite 1 with 6–7 elongate ensiform setae. Gonocoxite 2 elongate, little curved, with obtuse apex, with a very small dorso-median ensiform seta situated slightly above middle, two rather small, widely spaced ventro-lateral ensiform setae of decreasing size located about in middle, and two short ventro-median nematiform setae originating

from an oval-shaped pit near apex.

Variation. Unknown.

Distribution. Eastern central Papua Indonesia. Known only from type locality.

Collecting circumstances. Little recorded. The holotype was collected at median altitude, probably by sieving litter in montane rain forest.

Genus *Montagonum* Darlington

Darlington, 1952: 233. – Darlington 1971: 308; Lorenz 1998: 401; Baehr 2008: 67

Type species. *Montagonum toxopeianum* Darlington, 1952, by original designation.

Diagnosis. The genus in the restricted sense as used here is characterized by absence of metathoracic wings, rather large head, and a distinct sulcus medially of the eye. However, the genus includes species with rather different wing-and-setae formulas and quite different shapes of prothorax and elytra. So it may represent rather a genus of convenience that could be further subdivided in future, when more information about species diversity and about the structure of the male genitalia is available. Baehr (2002) already separated a few very large species from the genus and erected for these the genus *Herculagonum* Baehr.

At present the genus in the restricted sense includes 7 species of which only two are recorded from central Papua Indonesia, whereas all others are only known from central and central eastern Papua New Guinea. The new species enlarge the range to Huon Peninsula in northern Papua New Guinea. All so far recorded species were collected at rather high altitude, between c. 2000–3400 m, probably in montane rain forest and in montane grassland. They seem to live on the ground.

Montagonum major, spec. nov.

Figs 12, 32

Types. Holotype: ♂, “Papua NG, Morobe-Pr. Saruwaged Rge. Boana 1000–1500 m, 21.–22. 10.1992, leg. A. Riedel” (CBM).

Etymology. The name refers to the larger size as compared with the sympatric *M. minor*, spec. nov.

Diagnosis. Medium sized species characterized by markedly projected eye, asetose lower surface of 5th tarsomeres, and presence of only the posterior pronotal seta which is situated almost at basal angle. Distinguished from most similar *M. minor*, spec. nov.

by larger size, wider, more cordiform pronotum with narrower base, longer and less convex elytra, and wider, more concave aedeagus.

Description

Measurements. Length: 10.9 mm; width: 4.1 mm. Ratios. Width/length of pronotum: 1.29; width of widest diameter/base of pronotum: 1.30; width base/apex of pronotum: 1.30; width pronotum/head: 1.45; length/width of elytra: 1.58; with elytra/pronotum: 1.33.

Wing-and-seta formula: $-w; + + +; - +; + + +$.

Colour (Fig. 12). Head and pronotum black, elytra reddish-brown. Lateral margins of pronotum with narrow though distinct, pale reddish border. Labrum and mandible reddish-piceous, palpi and antenna pale reddish, legs red, but tarsi slightly lighter. Lower surface black, abdomen laterally rufescent.

Head. Of average size, considerably narrower than prothorax. Eye rather small, though laterally markedly projected, evenly curved into orbit; orbit elongate, almost as long as eye, regularly oblique. Frons laterally with some oblique furrows, above and behind eye with a deep sulcus that separates eye and orbit from frons. Palpi narrow and elongate, impilose. Antenna rather elongate, surpassing base of pronotum by about one antennomere, 6th antennomere c. $2.5\times$ as long as wide. Posterior supraorbital seta far removed from eye postero-mediad. Surface with very fine, rather superficial, isodiametric microreticulation, and with scattered fine punctures, rather glossy.

Pronotum. Moderately wide, barely cordiform, widest slightly in front of middle, dorsal surface moderately depressed. Apex shallowly excised, apical angle slightly projected but rounded. Lateral border in anterior two thirds evenly convex, in basal third oblique and almost straight, even in front of the basal angle barely excised. Base rather narrow in comparison to widest diameter, in middle straight, lateral parts slightly oblique-convex. Basal angle laterally barely projected, obtusely angulate, c. 120° . Lateral margin rather narrow, little widened posteriad. Both apex and base margined. Median line shallow, almost attaining apex and base. Both transverse impressions very shallow. Basal groove large, shallow. Anterior lateral seta absent, posterior lateral seta inserted very slightly in front of the basal angle. Surface here and there with irregularly transverse striae, base and basal grooves more distinctly striolate. Disk with extremely fine and dense, superficial, transverse micromeshes which are only visible at high magnification; surface fairly glossy.

Elytra. Moderately elongate, gently oviform, dorsal surface convex. Basal margin at humerus very obtusely angulate. Apical angle shortly separately rounded. Striae complete, moderately impressed, but slightly less so towards apex, impunctate; intervals very slightly raised but depressed. 3rd interval trisetose, the anterior puncture located at 3rd stria, both posterior punctures at 2nd stria. Marginal series composed of 20 setiferous punctures, not interrupted in middle, and one puncture each present at 7th stria and at 1st stria immediately at apex. Intervals very sparsely and finely punctate, punctures barely recognizable. Microreticulation extremely fine, superficial, recognizable only at high magnification, composed of very transverse meshes and lines; surface fairly glossy. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum moderately elongate, c. $1.5\times$ as long as wide at anterior margin, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation. Terminal abdominal sternum in male bisetose.

Legs. Moderately slender. Tibiae, in particular metatibiae, but little spinose, setae of average size. Metatibiae not perceptibly sulcate at median and lateral surfaces. 4th tarsomeres of both anterior legs slightly lobate, of metatarsus barely excised. 5th tarsomeres asetose on lower surface. Three basal tarsomeres of male protarsus widened and biserially squamose.

Male genitalia (Fig. 32). Genital ring narrow and elongate, asymmetric, with elongate, wide apex which is markedly curved left. Aedeagus narrow, straight, almost symmetric, lower surface markedly concave. Apex rather short, regularly triangular, tip very slightly obtuse. Orificium elongate, slightly asymmetric. Internal sac folded but without sclerotized structures, one fold in part densely denticulate. Both parameres large and wide, with shortly rounded apex.

Female genitalia. Unknown.

Variation. Unknown.

Distribution. Saruwaged Range, Huon Peninsula, northern Papua New Guinea. Known only from type locality.

Collecting circumstances. Little recorded. The holotype was collected at median altitude, probably by sieving litter in montane rain forest.

Montagonum minor, spec. nov.

Figs 13, 33

Types. Holotype: ♂, "Papua NG, Morobe-Pr. Saruwaged Rge. Boana 1000–1500 m, 21.–22. 10.1992, leg. A. Riedel" (CBM).

Etymology. The name refers to the smaller size as compared with the sympatric *M. major*, spec. nov.

Diagnosis. Medium sized species characterized by markedly projected eye, asetose lower surface of 5th tarsomeres, and presence of only the posterior pronotal seta which is situated almost at basal angle. Distinguished from most similar *M. major*, spec. nov. by lesser size, narrower, less cordiform pronotum with wider base, shorter and more convex elytra, and narrower, less concave aedeagus.

Description

Measurements. Length: 9.2 mm; width: 3.9 mm. Ratios. Width/length of pronotum: 1.22; width of widest diameter/base of pronotum: 1.15; width base/apex of pronotum: 1.40; width pronotum/head: 1.41; length/width of elytra: 1.50; with elytra/pronotum: 1.44.

Wing-and-seta formula: –w ; ++ ; –+ ; +++.

Colour (Fig. 13). Head and pronotum black, elytra dark reddish-brown. Lateral margins of pronotum with narrow though distinct pale reddish border, lateral margins and suture of elytra inconspicuously reddish. Labrum and mandible reddish-piceous, palpi and antenna pale reddish, legs red, but tarsi slightly lighter. Lower surface black, abdomen laterally rufescent.

Head. Of average size, considerably narrower than prothorax. Eye rather small, though laterally markedly projected, evenly curved into orbit; orbit elongate, slightly shorter than the eye, regularly oblique. Frons laterally with some oblique furrows, in middle with a circular impression on either side, above and behind eye with a deep sulcus that separates eye and orbit from frons. Palpi narrow and elongate, impilose. Antenna rather elongate, probably surpassing base of pronotum by about one antennomere but apical antennomeres broken on both sides, 6th antennomere c. 2.5× as long as wide. Posterior supraorbital seta far removed from eye postero-mediad. Surface with very fine, rather superficial, isodiametric microreticulation, and with scattered fine punctures, rather glossy.

Pronotum. Moderately wide, not cordiform, widest about at middle, dorsal surface moderately depressed. Apex shallowly excised, apical angle slightly projected but rounded. Lateral border evenly but only moderately convex, in front of the basal

angle not excised. Base rather wide in comparison to widest diameter, in middle straight, lateral parts slightly oblique-convex. Basal angle very obtuse, almost evenly rounded. Lateral margin rather narrow, little widened posteriad. Both apex and base margined. Median line shallow, almost attaining apex and base. Both transverse impressions very shallow. Basal grooves large, shallow. Anterior lateral seta absent, posterior lateral seta inserted very slightly in front of the basal angle. Surface almost devoid of transverse striae, even at base and in the basal grooves. Disk with extremely fine and dense, superficial, slightly transverse micromeshes which are only visible at high magnification; surface fairly glossy.

Elytra. Moderately elongate, markedly oviform, dorsal surface very convex. Basal margin at humerus very obtusely angulate. Apical angle shortly separately rounded. Striae complete, moderately impressed, but slightly less so towards apex, impunctate; intervals slightly raised but depressed. 3rd interval trisetose, the anterior puncture located at 3rd stria, both posterior punctures at 2nd stria. Marginal series composed of 20 setiferous punctures, not interrupted in middle, also one puncture each present at 7th stria and at 1st stria immediately at apex. Intervals impunctate. Microreticulation extremely fine, superficial, recognizable only at high magnification, composed of very transverse meshes and lines; surface fairly glossy. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum moderately elongate, c. 1.5× as long as wide at anterior margin, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation. Terminal abdominal sternum in male bisetose.

Legs. Moderately slender. Tibiae, in particular metatibiae, but little spinose, setae of average size. Metatibiae not perceptibly sulcate at median and lateral surfaces. 4th tarsomeres of both anterior legs slightly lobate, of metatarsus barely excised. 5th tarsomeres asetose on lower surface. Three basal tarsomeres of male protarsus widened and biserially squamose.

Male genitalia (Fig. 33). Genital ring rather narrow and elongate, asymmetric, with elongate, wide apex which is slightly asymmetric. Aedeagus very narrow, straight, almost symmetric, lower surface moderately concave. Apex rather short, regularly triangular, tip very slightly obtuse. Orificium elongate, slightly asymmetric. Internal sac folded but without sclerotized structures, one fold rather densely denticulate. Both parameres large and wide, with rounded apex.

Female genitalia. Unknown.

Variation. Unknown.

Distribution. Saruwaged Range, Huon Peninsula, northern Papua New Guinea. Known only from type locality.

Collecting circumstances. Little recorded. The holotype was collected at median altitude, probably by sieving litter in montane rain forest.

Genus *Nebriagonum* Darlington

Darlington, 1952: 235. – Darlington 1971: 313; Lorenz 1998: 401; Baehr 2008: 71.

Type species. *Nebriagonum cephalum* Darlington, 1952, by original designation

Diagnosis. This genus is characterized by absence of metathoracic wings, usually a very large head which in some species is almost as wide as the pronotum, usually lobate 4th tarsomere of metatarsus, and quite different patterns of the tactile setae on head, pronotum, and elytra. It combines rather differently shaped species and may represent rather a genus of convenience that could be subdivided in future, when more information about species diversity and about the structure of the male genitalia is available.

At present the genus includes 8 species of which only one is recorded from central Papua Indonesia, whereas all others are only known from Mt. Wilhelm in the Bismarck Range in central eastern Papua New Guinea. The new species enlarge the known range to different parts of central Papua New Guinea and the border area between Papua New Guinea and Papua Indonesia. All so far recorded species were collected at high altitude, between c. 2400–3300 m, probably in montane rain forest and in montane grassland. They seem to live on the ground.

Nebriagonum persetosum, spec. nov.

Figs 14, 47

Types. Holotype: ♀, “W. N. Guinea. Dogfuma 10,000' S side Star Mts. Fern grass plateau bordered by moss forest April 1965. TA Hallyllar.” (SAMA No. 25-024900).

Etymology. The name refers to the presence of all setiferous punctures on head, pronotum, and elytra.

Diagnosis. Medium sized species, distinguished from almost all other species of the genus by presence of all tactile setae on head, pronotum, and elytra, in combination with a comparatively small head, and the lack of setae on the lower surface of the 5th tarsomeres.

Description

Measurements. Length: 8.9 mm; width: 3.1 mm. Ratios. Length of orbit/length of eye: 0.45; width/length of pronotum: 1.30; width of widest diameter/base of pronotum: 1.31; width base/apex of pronotum: 1.07; width pronotum/head: 1.22; length/width of elytra: 1.61; with elytra/pronotum: 1.42.

Wing-and-seta formula. –w ; ++ ; ++ ; +++.

Colour (Fig. 14). Black, lateral margins of pronotum and elytra narrowly dark reddish translucent, also suture of elytra narrowly reddish. Palpi, antenna, and legs dark reddish. Lower surface of head and prothorax black, abdomen and elytral epipleura reddish piceous.

Head. Large and convex, but decidedly narrower than prothorax. Neck wide, rather imbedded in prothorax. Neck constriction not perceptible on dorsal surface. Eye moderately large, laterally moderately projected, orbit elongate, less than half as long as the eye, oblique and convex, markedly separated from neck constriction. Medially of the eye with an elongate, deep sulcus. Behind clypeal suture on either side with a shallow irregularly sinuate impression. Also with a shallow, longitudinal sulcus running antieriad from anterior supraorbital seta. Clypeal suture laterally distinct, in middle faint. Clypeus in middle slightly transversely depressed. Labrum transverse, rectangular, apex almost straight. Mandible moderately elongate. Antenna slender and fairly elongate, surpassing base of pronotum by one antennomere, median antennomeres slightly $> 2 \times$ as long as wide. Both palpi slender and elongate, basal palpomere of maxillary palpus slightly thickened. Mentum with a moderately projected, obtuse tooth. Submental and gular setae very elongate. Both supraocular setae present and remarkably elongate, the anterior seta located medially of the eye, the posterior seta about at posterior margin of eye. Microreticulation superficial and very fine, composed of isodiametric meshes, punctures absent; surface glossy.

Prothorax. Moderately wide, considerably narrowed to base but not cordiform, widest about at apical third, laterally evenly convex in apical half, obliquely narrowed to apex, and very slightly concave immediately near base. Disk gently convex, lateral margins and lateral sulcus narrow throughout, even near base barely explanate. Anterior angle well projected but rounded at tip, apex almost straight. Basal angle very obtuse, base straight but laterad oblique. Both, anterior and posterior transverse sulci extremely shallow, base near basal margin with a small, rather shallow, elongate groove on either side. Median line almost complete, shallow. Apex and base rather coarsely bordered, lateral margin narrowly bordered. Both marginal setae present, the anterior

one situated at apical third, the posterior seta very slightly removed anteriad from basal angle. Disk very smooth, impunctate, microreticulation very superficial, composed of extremely fine, transverse lines which are only perceptible at very high magnification; surface glossy.

Elytra. Moderately elongate, of elongate oviform shape. Dorsal surface rather convex, but slightly depressed on disk, lateral borders in middle very slightly convex. Preapical sinuosity extremely feeble. Widest diameter slightly behind middle. Humerus wide, obtusely angulate, almost rounded; apex rounded and slightly incurved towards suture, neither dentate nor spinose at sutural angle. Striae complete, well impressed, impunctate, intervals very slightly convex. 3rd interval with three discal punctures and setae, the basal one located at basal sixth near the 3rd stria, both posterior ones located near the 2nd stria, in middle, and close to the apex. 16 marginal setae and 2 preapical setae at 7th stria present, humeral group of marginal series consisting of 6 setae, series slightly interrupted in middle. Intervals impunctate. Microreticulation moderately distinct, composed of fine, very transverse meshes, more distinct than on pronotum; surface quite glossy, though not iridescent. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, impilose. Proepisternum and mesepisternum impunctate. Metepisternum short, little longer than wide at anterior border, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation. Terminal sternum in female quadrisetose.

Legs. Slender and elongate. All tibiae laterally shallowly sulcate. Basal tarsomere of mesotarsus and metatarsus sulcate at lateral side. 4th tarsomeres of all tarsi deeply bilobed. 5th tarsomeres asetose beneath. Setosity of lower surface rather elongate. Shape and squamosity of male protarsus unknown.

Male genitalia. Unknown.

Female gonocoxites (Fig. 47). Apical margin of ventral surface of gonocoxite 1 with 3 very small, inconspicuous ensiform setae. Gonocoxite 2 moderately elongate, triangular, little curved, with obtuse apex, with a small dorso-median ensiform seta located slightly above middle, a single very small ventro-lateral ensiform seta located at apical third, and two very short ventro-median nematiform setae originating from an oval-shaped pit near apex.

Variation. Unknown.

Distribution. Star Range at the border of Papua New Guinea and Papua Indonesia. Known only from type locality.

Habits. Sampled at high altitude (at almost 3000 m) on “fern grass plateau bordered by moss forest”, probably on the ground.

Relationships. The new species differs from all other species in the combination of constitutive characters and thus is rather unique within the genus.

Nebriagonum bipunctatum, spec. nov.

Figs 15, 35, 48

Types. Holotype: ♂, “Papua New Guinea 30 km SW Goroka 1500–1800 m 8.1960, Schimpf” (CBM). – Paratype: 1 ♀, same data (CBM).

Etymology. The name refers to the presence of two setiferous punctures on the elytra.

Diagnosis. Medium sized species with accessory setae on the lower surface of the metatarsus; distinguished from related species by body size and bipunctate elytra; further distinguished from the most similar *N. transitum* Darlington by more convex elytra, larger eyes, and wider aedeagus with more obtuse apex.

Description

Measurements. Length: 7.6–8.0 mm; width: 2.8–2.9 mm. Ratios. Width/length of pronotum: 1.09–1.11; width of widest diameter/base of pronotum: 1.43–1.45; width base/apex of pronotum: 0.98–0.99; width pronotum/head: 1.16–1.19; length/width of elytra: 1.54–1.59; with elytra/pronotum: 1.44–1.45.

Wing-and-seta formula: –w ; ++ ; – – ; + – +.

Colour (Fig. 15). Head and pronotum black, elytra dark reddish-piceous. Lateral margins of pronotum and elytra narrowly dark reddish translucent, also suture of elytra narrowly reddish. Labrum and mandible dark reddish, palpi and antenna pale reddish, legs dark reddish. Lower surface of head and prothorax black, abdomen reddish piceous, elytral epipleura pale reddish.

Head. Large and convex, but decidedly narrower than prothorax. Neck wide with neck constriction shallow though distinct on dorsal surface. Eye comparatively small, but laterally markedly projected, orbit elongate, longer than the eye, oblique and slightly convex, markedly separated from neck constriction. Medially of eye with an elongate, deep sulcus. Behind clypeal suture on either side with a shallow irregularly sinuate impression. On either side of frons also with two shallow, about circular to slightly elongate, oblique impressions. Clypeal suture only laterally perceptible, in middle widely interrupted. Clypeus in middle slightly transversely depressed. Labrum transverse, rectangular, apex

almost straight. Mandible moderately elongate. Antenna slender and elongate, surpassing base of pronotum by c. two antennomeres, median antennomeres almost $3 \times$ as long as wide. Both palpi slender and elongate, impilose. Mentum with a moderately projected, obtuse tooth. Submental and gular setae very elongate. Both supraocular setae present and elongate, the anterior seta located medially the of eye, the posterior seta well behind posterior margin of eye and removed mediad. Microreticulation superficial and very fine, consisting of isodiametric meshes, punctures absent; surface glossy.

Prothorax. Comparatively narrow, considerably narrowed to base but not cordiform, widest slightly behind apical third, laterally evenly convex in apical half, obliquely narrowed to apex, virtually not concave near base. Disk rather convex, lateral margins and lateral sulcus narrow throughout, even near base barely explanate. Anterior angle well projected but rounded at tip, apex almost straight. Basal angle very obtuse, base straight but laterad slightly oblique. Both, anterior and posterior transverse sulci extremely shallow, base near basal margin with a small, rather shallow, elongate groove on either side. Median line almost complete, but very shallow. Apex and base rather coarsely bordered, lateral margin narrowly bordered. Both marginal setae absent. Disk very smooth, impunctate, microreticulation very superficial, composed of extremely fine, very transverse meshes and lines which are only perceptible at very high magnification; surface glossy.

Elytra. Moderately elongate, of elongate oviform shape. Dorsal surface very convex, lateral borders evenly convex. No preapical sinuosity present. Widest diameter about at middle. Humerus wide, almost rounded, apex rounded and slightly incurved towards suture, neither dentate nor spinose at sutural angle. Striae complete, well impressed, impunctate, intervals very slightly convex. 3rd interval with two discal punctures and setae, the basal one located close to base near the 3rd stria, the posterior one located near the 2nd stria close to the apex. 16–17 marginal setae and 2 preapical setae at 7th stria present, series not interrupted in middle. Intervals impunctate. Microreticulation very fine and superficial, composed of fine, very transverse meshes, though slightly more distinct than on pronotum.; surface glossy, though not iridescent. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum short, little longer than wide at anterior border, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation. Terminal sternum in male bisetose, in female quadrisetose.

Legs. Slender and elongate. All tibiae laterally

shallowly sulcate. Basal tarsomere of mesotarsus and metatarsus sulcate at lateral side. 4th tarsomeres of four anterior tarsi deeply bilobed, of metatarsus only excised. 5th tarsomeres with two short setae beneath on either side. Setosity of lower surface rather elongate. Three basal tarsomeres of male protarsus slightly widened and biserially squamose beneath.

Male genitalia (Fig. 35). Genital ring moderately wide, asymmetric, with elongate, rather wide apex which is slightly curved to right. Aedeagus rather wide, straight, slightly asymmetric, lower surface in basal third markedly concave, in apical two thirds less concave. Apex short, wide, convexly triangular, tip obtuse. Orificium elongate, slightly asymmetric. Internal sac folded but without sclerotized structures, one fold finely denticulate. Both parameres large and wide, with shortly rounded apex; left paramere with hyaline area at lower part of apex.

Female gonocoxites (Fig. 48). Apical margin of ventral surface of gonocoxite 1 with 10 moderately elongate ensiform setae. Gonocoxite 2 rather elongate, little curved, with obtuse apex and a hyaline margin, with a small dorso-median ensiform seta situated slightly above middle, three rather short, slightly spaced ventro-lateral ensiform setae of decreasing size located about in middle, and two short ventro-median nematiform setae originating from an oval-shaped pit near apex.

Variation. Very little variation noted.

Distribution. Eastern Highlands near Goroka, central Papua New Guinea. Known only from type locality.

Collecting circumstances. Little recorded. Collected at median altitude, probably in montane rain forest.

Nebriagonum basipunctum, spec. nov.

Figs 16, 36

Types. Holotype: ♂, "Papua New Guinea 30 km SW Goroka 1500–1800m 8.1960, Schimpf" (CBM).

Etymology. The name refers to the presence of only the basal setiferous puncture on the elytra.

Diagnosis. Medium sized species with accessory setae on the lower surface of the metatarsus; distinguished from related species by body size and the unipunctate elytra.

Description

Measurements. Length: 8.3 mm; width: 2.9 mm. Ratios. Width/length of pronotum: 1.05; width of

widest diameter/base of pronotum: 1.41; width base/apex of pronotum: 0.99; width pronotum/head: 1.17; length/width of elytra: 1.62; with elytra/pronotum: 1.39.

Wing-and-seta formula: -w ; ++ ; -- ; +--.

Colour (Fig. 16). Head and pronotum black, elytra dark reddish-piceous. Lateral margins of pronotum and elytra of same colour as the disks. Labrum and mandible dark reddish, palpi and antenna pale reddish, legs red. Lower surface of head and prothorax black, abdomen reddish piceous, elytral epipleura pale reddish.

Head. Large and convex, but decidedly narrower than prothorax. Neck wide with neck constriction shallow though distinct on dorsal surface. Eye comparatively small, but laterally markedly projected, orbit elongate, decidedly longer than the eye, oblique and slightly convex, markedly separated from neck constriction. Medially of the eye with an elongate, deep sulcus. Behind clypeal suture on either side with a very shallow irregularly sinuate impression. On either side of frons also with a two shallow, about circular to slightly elongate, oblique impressions. Clypeal suture only laterally perceptible, in middle widely interrupted. Clypeus in middle slightly transversely depressed. Labrum transverse, rectangular, apex almost straight. Mandible moderately elongate. Antenna slender and elongate, surpassing base of pronotum by c. two antennomeres, median antennomeres almost 3 × as long as wide. Both palpi slender and elongate, impilose. Mentum with a moderately projected, obtuse tooth. Submental and gular setae very elongate. Both supraocular setae present and elongate, the anterior seta located medially of the eye, the posterior seta well behind posterior margin of eye and far removed mediad. Microreticulation superficial and very fine, composed of isodiametric meshes, punctures absent; surface glossy.

Prothorax. Comparatively narrow, considerably narrowed to base but not cordiform, widest slightly behind apical third, laterally evenly convex in apical half, obliquely narrowed to apex, not perceptibly concave near base. Disk rather convex, lateral margins and lateral sulcus narrow throughout, even near base barely explanate. Anterior angle well projected but rounded at tip, apex almost straight. Basal angle very obtuse, base straight but laterad slightly oblique. Both, anterior and posterior transverse sulci extremely shallow, base near basal margin with a small, rather shallow, elongate groove on either side. Median line almost complete, but very shallow. Apex and base rather coarsely bordered, lateral margin narrowly bordered. Both marginal setae absent. Disk very smooth, impunctate, microreticulation very superficial, composed of extremely fine, very transverse meshes and lines which are only percep-

tible at very high magnification; surface glossy.

Elytra. Moderately elongate, of elongate oviform shape. Dorsal surface very convex, lateral borders evenly convex. No preapical sinuosity present. Widest diameter about at middle. Humerus wide, almost rounded, apex rounded and slightly incurved towards suture, neither dentate nor spinose at sutural angle. Striae complete, well impressed, impunctate, intervals slightly convex. 3rd interval with a single discal puncture and seta which is located close to base near the 3rd stria. 20 marginal setae and 2 preapical setae at 7th stria present, series not interrupted in middle. Intervals impunctate. Microreticulation very fine and superficial, composed of fine, very transverse meshes, though slightly more distinct than on pronotum; surface glossy, though not iridescent. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, ompilose. Proepisternum and mesepisternum impunctate. Metepisternum short, little longer than wide at anterior border, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation. Terminal sternum in male bisetose.

Legs. Slender and elongate. All tibiae laterally shallowly sulcate. Basal tarsomere of mesotarsus and metatarsus sulcate at lateral side. 4th tarsomeres of four anterior tarsi deeply bilobed, of metatarsus only excised. 5th tarsomeres with two short setae beneath on either side. Setosity of lower surface rather elongate. Three basal tarsomeres of male protarsus slightly widened and biserially squamose beneath.

Male genitalia (Fig. 36). Genital ring moderately wide, asymmetric, with elongate, rather wide apex which is slightly curved to right. Aedeagus rather narrow, straight, slightly asymmetric, lower surface in basal third markedly concave, in apical two thirds less concave. Apex rather short, fairly wide, triangular, tip slightly obtuse. Orificium elongate, slightly asymmetric. Internal sac folded but without sclerotized structures, one fold finely denticulate. Both parameres large and rather elongate, with rounded apex; left paramere with hyaline area at lower part of apex.

Female gonocoxites. Unknown.

Variation. Unknown.

Distribution. Eastern Highlands near Goroka, central Papua New Guinea. Known only from type locality.

Collecting circumstances. Little recorded. Collected at median altitude, probably in montane rain forest.

Genus *Idiagonum* Darlington

Darlington, 1952: 229. – Darlington 1971: 307; Baehr 2000: 57.

Type species: *Idiagonum asperum* Darlington, 1952, by original designation.

Diagnosis. This genus of large, robust, black species is characterized by general absence of the metathoracic wings, compact built, small, but commonly remarkably protruded eyes, setose prosternal process, and absence of discal setae and punctures on the elytra.

At present the genus includes 15 species which occur through the central mountain ranges of mainland New Guinea, from the vicinity of Wau in eastern central Papua New Guinea to Gn. Trikora (Mt. Wilhelm) in the Baliem area in central Papua Indonesia. Within this range, however, species of the genus were recorded from rather few localities. Hence in the vast areas between the few sampling localities additional species may occur and probably will be found due to more systematic collecting efforts. Many species occur at rather high altitudes (up to more than 3500 m), and no one is known to descend below 1900 m. They live on the ground, in montane rain forest as well as in high altitude grassland.

Idiagonum capellae, spec. nov.

Figs 17, 22, 37, 49

Types. Holotype: ♂, “W. N. Guinea. Alpine Grasslands. Capella Group of Mts. 10–12,000’ 16 Apr. 1965 TA Hayllar.” (SAMA No. 25-024899). – Paratypes: 3 ♀♀, same data (1 CBM, 2 SAMA, No. 25-024901-3).

Etymology. The name refers to the type locality of this species, Mt. Capella.

Diagnosis. Species belonging to a group that is characterized by rather glossy surface of head and pronotum, but dull elytra due to distinct isodiametric microreticulation. From the three recorded species of that group the new species is best distinguished by the very obtuse basal angle of the barely cordiform pronotum, the elongate, somewhat depressed elytra, and the elongate and acute apex of the aedeagus.

Description

Measurements. Length: 11.9–14.8 mm; width: 4.1–4.7 mm. Ratios. Length of orbit/length of eye: 1.40–1.44; width/length of pronotum: 1.15–1.22; width of widest diameter/base of pronotum: 1.25–1.34; width base/apex of pronotum: 1.07–1.19; width pronotum/head: 1.29–1.42; length/width of elytra: 1.66–1.70;

with elytra/pronotum: 1.28–1.38.

Wing-and-seta formula. –w ; ++ ; ++ ; – – –.

Colour (Fig. 17). Black, lateral margins of pronotum dark reddish translucent, in some specimens also lateral margin and suture of elytra indistinctly paler. Palpi dark reddish-brown, antenna dark piceous to black, legs almost black, but tibiae slightly paler, in some specimens even dark reddish-brown. Lower surface anteriorly black, abdomen and elytral epipleura reddish piceous.

Head (Fig. 22). Large and convex, but considerably narrower than prothorax. Neck wide, neck constriction shallow though distinct. Eye small, though laterally markedly projected, orbit elongate, $> 1.4 \times$ as long as eye, oblique and convex, posteriad well separated from neck constriction. Medial of eye with a narrow but deep sulcus. In some specimens frons between eyes on either side with a shallow, circular impression. Behind clypeal suture on either side with a shallow, irregular impression. Clypeal suture laterally distinct, in middle faint or even absent. Clypeus in middle slightly transversely depressed. Labrum transverse, rectangular, apex very slightly bisinuate. Mandible moderately elongate. Antenna slender and fairly elongate, surpassing base of pronotum by one antennomere, median antennomeres c. $2.5 \times$ as long as wide. Both palpi slender and elongate, basal palpomere of maxillary palpus slightly thickened. Mentum with a short, obtuse tooth. Median gular setae very elongate. Both supraocular setae present and remarkably elongate, the anterior seta located medially of the eye, the posterior seta far removed medio-posteriad from posterior margin of eye. Microreticulation very fine, composed of isodiametric meshes, punctures absent, surface fairly glossy.

Prothorax (Fig. 22). Rather wide, considerably narrowed to base but not or little cordiform, widest about at anterior third, laterally evenly convex in apical half, obliquely narrowed to apex, and not or but slightly concave towards base. Disk rather convex, lateral margins and lateral sulcus moderately wide but sulcus deep, even near base barely explanate. Anterior angle slightly projected, rounded at tip, apex almost straight. Basal angle very obtuse, even rounded off, base in middle straight or slightly concave, laterad markedly oblique. Both, anterior and posterior transverse sulci extremely shallow, base near basal margin with a small, rather shallow, elongate groove on either side. Median line almost complete, shallow. Apex bordered throughout, base inconspicuously bordered only laterad. Both marginal setae present and remarkably elongate, the anterior one located at widest diameter at or slightly behind the apical third, the posterior seta situated right at the basal angle. Disk very smooth, impunctate, microreticulation superficial, composed

of extremely fine, transverse meshes which are visible only at high magnification; surface rather glossy.

Elytra. Elongate, slightly oviform. Dorsal surface rather convex, but slightly depressed on disk, lateral borders in middle very slightly convex. Preapical sinuosity extremely feeble. Widest diameter about at apical third or slightly behind. Humerus wide, very slightly angulate, almost rounded, apex rounded and slightly incurved towards suture, neither dentate nor spinose at sutural angle. Striae complete, sharply impressed, impunctate, intervals slightly convex. 3rd interval without any discal punctures and setae. 16–17 marginal setae and 2 preapical setae at 7th stria present, humeral group of marginal series consisting of 6 setae, series barely interrupted in middle. Intervals impunctate. Microreticulation fine though distinct, composed of fine, isodiametric meshes; surface rather dull. Metathoracic wings absent.

Lower surface. Prosternal process short, posteriorly convex, not bordered, with c. 6–8 fairly elongate setae. Propisternum and mesepisternum impunctate. Metepisternum short, c. 1.3 × longer than wide at anterior border, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation. Terminal sternum in male bisetose, in female quadrisetose.

Legs. Slender and elongate. All tibiae laterally sulcate. Basal tarsomere of metatarsus laterally not sulcate. 4th tarsomeres of protarsus and mesotarsus deeply bilobed, of metatarsus but slightly excised. 5th tarsomeres asetose beneath. Setosity of lower surface rather elongate. Tarsomeres of male protarsus wider than those of females, three basal tarsomeres of male protarsus biserially squamose.

Male genitalia (Fig. 37). Genital ring moderately wide, oval-shaped, slightly asymmetric, with wide, rounded apex. Aedeagus compact, almost straight, slightly asymmetric, lower surface concave but straight in middle; lower and lateral surfaces transversely striolate, lower surface in middle obtusely raised. Apex elongate, very acute, apical third of aedeagus regularly triangular. Orificium elongate, slightly asymmetric. Internal sac without any sclerotized folds. Both parameres large, with widely rounded apex, the left one with hyaline upper margin.

Female gonocoxites (Fig. 49). Apical margin of ventral surface of gonocoxite 1 with 7–8 elongate ensiform setae. Gonocoxite 2 narrow and elongate, rather curved, with fairly acute apex, with a very small dorso-median ensiform seta situated slightly above middle, two small, widely spaced ventrolateral ensiform setae above and below middle, and a single fairly elongate ventro-median nematiform setae originating from an oval-shaped pit near apex.

Variation. Considerable variation is noted in relative width of pronotum. One female, labelled “W. N. Guinea. Dogfuma 10,000' S side Star Mts. Fern grass plateau bordered by moss forest April 1965. TA Hallylar.” in some characters differs from the type series: it is decidedly smaller, the eyes are slightly larger; the marginal sulcus of the pronotum is less deep and the apex is considerably wider as compared with the base; and the elytra are slightly shorter and dorsally more regularly convex. In view of these differences, and because it is a female, it is not included in the type series but only tentatively alluded to the new species. However, it differs in its rather obtuse basal pronotal angle from the three described and related species *I. inasperum* Darlington, *I. eliti* Baehr, and *I. latior* Baehr. Additional sampling in future perhaps will explain its taxonomical status.

Distribution. Vicinity of Mt. Capella, at the border of Papua New Guinea and Papua Indonesia. So far recorded only from the type locality, and, if the additional female will prove to be conspecific, the range will be but little enlarged.

Collecting circumstances. The type series was collected at high altitude (c. 3000–3500 m) in “alpine grassland”, probably on the ground. The single non-type female was collected at similar altitude on “Fern grass plateau bordered by moss forest”.

Relationships. The new species belongs to a group of species which are characterized by fairly glossy head, not dull or transversely striolate pronotum, but distinctly microreticulate, rather dull, not iridescent elytra. These species probably constitute a group that in several respects is plesiomorphic within the genus.

Genus *Fortagonum* Darlington

Darlington, 1952: 247. – Darlington 1971: 316; Baehr 1992: 74, 1995: 17, 1998: 11, 2001: 53, 2008: 57, 2010c: 80; Lorenz 1998: 396.

Type species: *Fortagonum fortellum* Darlington 1952, by original designation.

A diagnosis of the genus in the restricted sense and the differentiation of the genus *Collagonum* Baehr are in Baehr (1995). The most recent key to all species is found in Baehr (2001).

Species of the genus *Fortagonum* always lack some of the tactile setae on head, or pronotum, or elytra. They are of different body shape, but the pronotum usually is somewhat fusiform and narrowed apicad, commonly it bears conspicuously projected apical

angle. In several species the elytra are denticulate or even spinose at apex, and the hind wings can be fully developed or more or less atrophied. At present the genus includes 27 species which range through the whole of mainland New Guinea with one species recorded from Japan Island, but the majority of the species was recorded from western New Guinea (Papua Indonesia) (Baehr 2009b). Almost all species, however, are recorded from a single locality or a very restricted area.

Fortagonum longispinum, spec. nov.

Figs 18, 38, 50

Types. Holotype: ♂, "D. Neu-Guinea. Wahnes. Franklin Müller" (DEI). – Paratype: 1 ♀, same data (CBM).

Etymology. The name refers to the elongate apical spines of the elytra.

Diagnosis. Moderately large, fully winged, and spinose species lacking the anterior supraorbital seta, both pronotal setae, and the anterior elytral seta. Distinguished from the most similar *F. spinipenne* Baehr by much lighter colour and longer apical elytral spines.

Description

Measurements. Length: 10.7–10.8 mm; width: 4.0–4.1 mm. Ratios. Width/length of pronotum: 1.42–1.49; width of widest diameter/base of pronotum: 1.05–1.07; width base/apex of pronotum: 1.52–1.58; width pronotum/head: 1.81–1.87; length/width of elytra: 1.70–1.72; with elytra/pronotum: 1.35–1.39.

Wing-and-seta formula: +w ; –+ ; –– ; –++.

Colour (Fig. 18). Iridescent piceous with some reddish-violaceous lustre. Lateral margins of pronotum inconspicuously paper. Labrum, mandible, palpi, and the 1st or 1st and 2nd antennomeres reddish to reddish-piceous, other antennomeres somewhat contrastingly dirty yellow. Legs more or less dark piceous. Lower surface piceous.

Head. Of average size, much smaller than the prothorax. Eye fairly large, though laterally little projected, orbit about half as long as the eye, oblique and slightly convex. Clypeal suture only laterally perceptible, in middle widely interrupted. Behind clypeal suture on either side with a very shallow, irregularly sinuate impression. Also with two shallow, slightly oblique impressions on either side of frons near the frontal furrows. Labrum transverse, rectangular, apex almost straight. Mandible elongate but not decussate. Antenna very slender and elongate, surpassing base of pronotum by c. 4 antennomeres, median antennomeres c. 5 × as long as wide. Both

palpi slender and elongate, impilose. Mentum with a narrow, elongate, acute tooth. Submental and gular setae very elongate. Only the posterior supraocular seta present, located at posterior margin of eye but slightly far removed mediad. Microreticulation very superficial and fine, composed of isodiametric meshes, punctures absent; surface very glossy.

Pronotum. Moderately wide, somewhat trapezoid, widest about at basal third, dorsal surface rather depressed. Apex deeply excised, apical angle well projected but rounded at tip. Lateral border evenly convex, very slightly incurved in basal third. Base wide in comparison to widest diameter, much wider than apex, in middle straight, laterally very slightly sinuate. Basal angle obtusely rounded. Lateral margin rather wide throughout, even widened and explanate posteriad. Apex very finely margined, base not margined. Median line moderately shallow, neither attaining apex nor base. Both transverse impressions very shallow. Both marginal seta absent. Surface very glossy, impunctate, but the basal grooves rather rugose. Disk here and there with finest and extremely superficial traces of transverse microreticulation which is only visible at very high magnification; surface very glossy and slightly iridescent.

Elytra. Moderately elongate, of elongate, reversely oviform shape. Dorsal surface moderately convex, lateral borders evenly convex throughout, but slightly sinuate at the basis of the apical spine. Widest diameter about at middle. Humerus angulate but without a humeral tooth, apex on either side at end of 3rd interval with a comparatively elongate spine. Sutural angle with a tine denticle. Striae complete, shallowly impressed, punctate, intervals absolutely depressed. 3rd interval with two discal punctures and setae which are located in middle and close to base, both adjacent to the 2nd stria. 16 marginal punctures and setae, one preapical seta at 7th stria, and one seta immediately at apex and near suture present, the marginal series slightly interrupted behind the anterior group of 6 punctures. Intervals impunctate and without any distinct microreticulation. Surface very glossy, with some iridescent lustre. Metathoracic wings fully developed.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Proepisternum and mesepisternum impunctate. Metepisternum elongate, c. 2 × as long wide at anterior border, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation, laterally rather rugose. Terminal sternum in male bisetose, in female quadrisetose.

Legs. Slender and elongate. All tibiae distinctly sulcate on upper and lateral surfaces. 4th tarsomeres of four anterior tarsi deeply bilobed, of metatarsus

slightly less bilobed. 5th tarsomeres impilose beneath. Setosity of lower surface rather elongate. Three basal tarsomeres of male protarsus slightly widened and biserially squamose beneath.

Male genitalia (Fig. 38). Genital ring rather narrow and parallel-sided, asymmetric, with elongate, rather wide apex which is slightly curved to right. Aedeagus rather wide, slightly curved, slightly asymmetric, lower surface in basal third concave, in apical two thirds very slightly convex, immediately near apex straight. Apex rather short, regularly triangular, acute. Orificium elongate, slightly asymmetric. Internal sac folded, some folds finely denticulate, in apical part with an unidentate sclerite basally on the left side, and a multidentate sclerite near the roof on the right side. Both parameres short and wide, with shortly rounded apex.

Female gonocoxites (Fig. 50). Apical margin of ventral surface of gonocoxite 1 with c. 12 elongate ensiform setae. Gonocoxite 2 moderately elongate, somewhat triangular, little curved, on apical part of median surface slightly sinuate, with obtuse apex, with a rather small dorso-median ensiform seta located about at middle, four ventro-lateral ensiform setae of decreasing size located in middle, and a single, moderately elongate ventro-median nematiform seta originating from an oval-shaped pit near apex.

Variation. Very little variation noted.

Distribution. Former "Deutsch Neuguinea", present Papua New Guinea, but without definite locality.

Collecting circumstances. Not recorded.

Fortagonum sulcipenne, spec. nov.

Fig. 19

Types. Holotype: ♀, "N. Guinea Exped. W. C. van Heurn 1410 m. Okt. 20 Dormanpadbivak" (DEI).

Etymology. The name refers to the deeply impressed, rather sulcate elytral striae.

Diagnosis. Moderately large, fully winged, and spinose species lacking the anterior supraorbital seta, the anterior pronotal seta, and both anterior elytral setae. Distinguished from most similar *F. denticulatum* Baehr by short-spinose rather than denticulate elytral spines and longer and laterally less convex elytra.

Description

Measurements. Length: 11.3 mm; width: 4.25 mm. Ratios. Width/length of pronotum: 1.34; width of widest diameter/base of pronotum: 1.07; width

base/apex of pronotum: 1.30; width pronotum/head: 1.75; length/width of elytra: 1.71; with elytra/pronotum: 1.32.

Wing-and-seta formula: +w ; -+ ; -+ ; -+.

Colour (Fig. 19). Dark piceous with very slight violaceous lustre. Lateral margins of pronotum inconspicuously paler. Labrum, mandible, palpi, and the preserved antennomeres reddish-piceous. Legs fairly dark piceous. Lower surface piceous.

Head. Of average size, much smaller than the prothorax. Eye fairly large, though laterally little projected, orbit c. one third as long as the eye, oblique and slightly convex. Clypeal suture shallow but complete. Behind clypeal suture on either side with a very shallow, irregularly sinuate impression. Also with two shallow, slightly oblique impressions on either side of frons near the frontal furrows. Labrum transverse, rectangular, apex almost straight. Mandible elongate but not decussate. Antenna very slender and elongate, but only 5 antennomeres on left side preserved, median antennomeres probably 4–5 × as long as wide. Both palpi slender and elongate, impilose. Mentum with a narrow, elongate, acute tooth. Submental and gular seta elongate (when preserved). Only the posterior supraocular seta present, located slightly in front of posterior margin of eye but slightly far removed mediad. Microreticulation distinct, though fine and slightly superficial, composed of isodiametric meshes, punctures absent; surface moderately glossy.

Pronotum. Moderately wide, somewhat trap-ezoid, widest slightly behind middle, dorsal surface moderately convex. Apex deeply excised, apical angle well projected but rounded at tip. Lateral border evenly convex, distinctly incurved in basal third. Base moderately wide in comparison to widest diameter, much wider than apex, in middle straight, laterally very slightly sinuate. Basal angle obtusely rounded. Lateral margin wide throughout, even widened and explanate posteriad. Apex rather coarsely margined, base not margined. Median line moderately shallow, neither attaining apex nor base. Both transverse impressions shallow. The anterior marginal seta absent, the posterior seta, respectively the puncture, present, slightly removed from angle. Disk impunctate, with some fine, irregularly transverse wrinkles, with very fine and moderately superficial microreticulation which is composed of transverse meshes; surface moderately glossy, not iridescent.

Elytra. Rather elongate, not perceptibly oviform. Dorsal surface moderately convex, lateral borders in middle almost straight, slightly sinuate at the basis of the apical spine. Widest diameter about at middle. Humerus angulate but without a humeral tooth, apex on either side at end of 3rd interval with a comparatively short spine. Sutural angle without

a perceptible denticle. Striae complete, deeply impressed, impunctate, intervals almost depressed. 3rd interval with a single discal puncture and seta in middle adjacent to the 2nd stria. 17–19 marginal punctures and setae, one preapical seta at 7th stria, and one seta immediately at apex and near suture present, the marginal series slightly interrupted behind the anterior group of 6 punctures. Intervals impunctate and without any distinct microreticulation; surface very glossy, with a very slight iridescent lustre. Metathoracic wings fully developed.

Lower surface. Prosternal process short, posteriorly convex, not bordered, aetose. Proepisternum and mesepisternum impunctate. Metepisternum elongate, c. 2× as long wide at anterior border, impunctate. Abdomen impunctate, though with fine isodiametric microreticulation, laterally rather rugose. Terminal sternum in female quadrisetose.

Legs. Slender and elongate. All tibiae distinctly sulcate on upper and lateral surfaces. 4th tarsomeres of four anterior tarsi deeply bilobed, of metatarsus slightly less bilobed. 5th tarsomeres impilose beneath. Setosity of lower surface rather elongate. Shape and squamosity of male protarsus unknown.

Male genitalia. Unknown.

Female gonocoxites. Unknown, destroyed.

Variation. Unknown.

Distribution. Probably central Papua Indonesia. Known only from type locality.

Collecting circumstances. Little recorded. The holotype was collected at median altitude.

Genus *Lithagonum* Darlington

Darlington 1952: 176. – 1971: 288; Lorenz 1998: 399.

Type species. *Colpodes annulicornis* Maindron, 1908, by monotypy.

Diagnosis. The single, quite variable species is characterized by presence of metathoracic wings, markedly cordate prothorax, extensively punctate upper and lower surfaces, slender and elongate legs, and absence of the posterior marginal pronotal seta. The species occurs throughout mainland New Guinea, but has been divided into a number of subspecies which are quite differently shaped and usually are more or less restricted to prescribed areas.

Lithagonum annulicornis (Maindron)

Colpodes annulicornis Maindron, 1908: 297. – Csiki 1931: 747.

Lithagonum annulicornis, Darlington 1952: 176, 1971: 288; Lorenz 1998: 399.

Diagnosis. As for genus.

Lithagonum annulicornis reticulatum, subsp. nov.

Figs 20, 39

Types. Holotype: ♂, “Irian Jaya, Nabire– Dist. Cemara Riv. 150 m, 8. 1996 leg. M. Balke” (CBM). – Paratype: 1 ♀, “Gilgit R. Madang” (CBM).

Etymology. The name refers to the presence of reticulate microreticulation on the whole surface of the elytra.

Diagnosis. Distinguished from all other subspecies by pale yellow legs, completely microreticulate, narrow and elongate elytra, narrow and but sparsely punctate pronotum, and rather sparsely punctate head.

Description

Measurements. Length: 7.9–8.0 mm; width: 2.95 mm. Ratios. Width/length of pronotum: 1.18–1.19; width of widest diameter/base of pronotum: 1.34–1.40; width base/apex of pronotum: 0.98–1.04; width pronotum/head: 1.09–1.14; length/width of elytra: 1.70–1.73; with elytra/pronotum: 1.65–1.71.

Wing-and-seta formula: +w ; ++ ; ++ ; +++.

Colour (Fig. 20). Black. Palpi, three basal antennomeres and the basal fourth of 4th antennomere, and legs yellow to pale reddish, rest of the antenna piceous. Lower surface black.

Head. As in the nominate subspecies but surface much less punctate, almost the whole frons virtually impunctate.

Pronotum. As in the nominate subspecies but narrower and far less densely punctate.

Elytra. As in the nominate subspecies but distinctly longer and narrower, not oviform. Lateral margins in middle definitively straight. Dorsal surface moderately convex, but depressed on disk. Apical spine at end of 3rd interval comparatively elongate, rather spiniform than dentiform. Striae well impressed, finely to almost not crenulate. Intervals impunctate, but with fairly distinct, fine and but slightly superficial microreticulation which is composed of slightly transverse meshes; surface moderately glossy. Metathoracic wings fully developed.

Lower surface. As in the nominate subspecies.

Legs. As in the nominate subspecies: tibiae sul-

cate on lateral surface, basal tarsomeres of meso- and metatarsus sulcate on lateral surface, 4th tarsomeres of all tarsi rather deeply lobate, 5th tarsomeres impilose beneath.

Male genitalia (Fig. 39). Genital ring rather narrow, asymmetric, laterally convex, with very elongate, rather wide apex which is slightly curved to left. Aedeagus narrow, but suddenly widened about in middle, straight, slightly asymmetric, lower surface in basal third remarkably concave. Apex short and very wide, widely rounded at tip. Orificium moderately elongate, slightly asymmetric. Internal sac folded but without sclerotized structures. Both parameres large and markedly elongate, the left paramere with transverse apex, the right one with obtuse apex.

Variation. Some variation noted in body shape, density of punctures on the pronotum, and distinctness of the crenulation of the elytra striae. Additional material, in particular males, would be needed to further examine the value of the differences between the western and eastern specimen.

Distribution. As far as presently known, western Papua Indonesia as well as central eastern Papua New Guinea.

Collecting circumstances. Little recorded. The holotype was collected at low altitude, probably at a river bank.

Relationships. In spite of the mentioned differences between both known specimens of the new subspecies the presence of distinct microreticulation on the whole surface of the elytra is unique within this species. It is only questionable whether both specimens belong to a single subspecies, whether an additional taxon is involved.

Genus *Colpodes* Macleay

Macleay, 1825: 17. – Csiki 1931: 745; Darlington 1952: 158, 1971: 284; Lorenz 1998: 392.

Type species. *Rembus brunneus* Macleay, 1825, by monotypy.

Diagnosis. The name *Colpodes* Macleay presently denotes a genus of convenience that Liebherr (1998) had restricted to a couple of large Javanese species. However, because the systematics within the “genus” *Colpodes* s.l. are completely unsettled (see Lorenz 1998, 2005), and because Darlington (1952, 1971) united all large, winged, metallic and/or spined New Guinean platynines that possess lobate 4th tarsomeres in the “genus” *Colpodes*, the present species likewise is provisionally included in that “genus”,

which certainly is paraphyletic and urgently needs a thorough revision.

Colpodes excisus, spec. nov.

Figs 21, 23, 51

Types. Holotype: ♀, “Irian Jaya, Jayawijaya-Pr. Samboka 200 m, 10.–14.X. 1996, leg. A. Riedel” (CBM).

Etymology. The name refers to the deeply excised apex of the elytra.

Diagnosis. Easily distinguished from all New Guinean “*Colpodes*” by the very wide, not cordiform prothorax and the shape of the apex of the elytra.

Description

Measurements. Length: 12.0 mm; width: 4.55 mm. Ratios. Width/length of pronotum: 1.54; width of widest diameter/base of pronotum: 1.24; width base/apex of pronotum: c.1.40; width pronotum/head: 1.32; length/width of elytra: 1.76; with elytra/pronotum: 1.46.

Wing-and-seta formula: +w ; ++ ; ++ ; +++.

Colour (Fig. 21). Reddish to pale brown, head slightly darker than pronotum and elytra. Lateral margins of pronotum and elytra inconspicuously yellow translucent. Labrum and mandible reddish, palpi, antenna, and legs pale reddish. Lower surface reddish.

Head (Fig. 23). Rather large, though considerably smaller than the prothorax. Eye very large, laterally remarkably projected, almost semicircular, orbit barely perceptible. Clypeal suture shallow but complete. Behind clypeal suture on either side with a shallow, sinuate impression. Labrum transverse, rectangular, apex straight. Mandible fairly elongate but not decussate. Antenna very slender and elongate, surpassing base of pronotum by c. 4 antennomeres, median antennomeres slightly > 4 × as long as wide. Maxillary palpus slender and elongate, apical palpomere of labial palpus widened, with rather wide, transverse apex, both palpi impilose. Mentum with a triangular, elongate tooth. Submental and gular setae very elongate. Both supraocular setae present, elongate, the posterior seta located well in front of posterior margin of eye. Surface impunctate and without microreticulation, very glossy.

Pronotum (Fig. 23). Very wide, not cordiform, widest about at middle, dorsal surface rather depressed. Apex almost straight, apical angle barely projected and very widely rounded. Lateral border in apical half evenly convex, in basal half straight and oblique, without any prebasal sinuosity. Base much wider than apex, in middle gently convex, laterally shortly sinuate, than again slightly convex.

Basal angle obtusely angulate, shortly rounded. Lateral margin very wide throughout, even widened basad. Lateral sulcus remarkably deep, therefore lateral margins somewhat upturned. Both, apex and base rather coarsely margined. Median line distinct though fairly shallow, neither attaining apex nor base. Both transverse impressions moderately shallow. Basal groove deep. Both marginal seta present and elongate (if preserved), the anterior seta located at apical two fifth and slightly removed from margin, the posterior seta situated immediately at basal angle. Surface with a few irregularly transverse wrinkles, in the basal grooves slightly rugose, impunctate, with very fine and superficial microreticulation which is composed of very transverse meshes and which is visible only at high magnification. In the basal area the microreticulation is almost isodiametric. Surface very glossy.

Elytra. Narrow and elongate, almost parallel-sided. Dorsal surface rather depressed, but without a perceptible transverse impression in basal half. Lateral margin in middle almost straight, towards apex gently convex. Widest diameter about at middle. Humerus widely rounded. Apex on either side at end of 3rd interval with a comparatively short spine. Sutural angle without a perceptible denticle. Lateral angle of apex with a sharp tooth, hence the apical margin deeply excised. Striae complete, moderately impressed, impunctate, intervals very slightly convex. 3 discal punctures and setae present, the anterior one located at basal sixth adjacent to the 3rd stria, both posterior ones located near the 2nd stria, in middle and at apical sixth. 18–20 marginal punctures and setae, one preapical seta at 7th stria, and one seta immediately at base of the apical spine present, the marginal series barely interrupted. Intervals with an irregularly spaced row of extremely fine and inconspicuous punctures which are visible only at very high magnification, and with fine and rather superficial microreticulation which is composed of slightly transverse meshes; surface moderately glossy. Metathoracic wings fully developed.

Lower surface. Prosternal process short, posteriorly convex, not bordered, asetose. Metepisternum and mesepisternum impunctate. Metepisternum very elongate, almost 3× as long wide at anterior border, impunctate. Abdomen impunctate, though with very fine transverse microreticulation. Terminal sternum in female quadrisetose.

Legs. Slender and elongate. All tibiae distinctly sulcate on upper and lateral surfaces. Basal tarsomeres of all tarsi laterally markedly sulcate; 4th tarsomeres of the four anterior tarsi deeply bilobed, of metatarsus only excised. 5th tarsomeres impilose beneath. Setosity of lower surface rather elongate. Shape and squamosity of male protarsus unknown.

Male genitalia. Unknown.

Female gonocoxites (Fig. 51). Gonocoxite 1 elongate, apical margin of ventral surface with 7 moderately elongate ensiform setae. Gonocoxite 2 rather elongate, narrow, barely curved, with obtuse apex, without a dorso-median ensiform seta, but with two very small ventro-lateral ensiform setae located close to base, and two very short ventro-median nematiform setae originating from an oval-shaped pit near apex.

Variation. Unknown.

Distribution. Central Papua Indonesia. Known only from type locality.

Collecting circumstances. Little recorded. The holotype was collected at low altitude, probably in rain forest.

Identification

For identification of the mentioned species complete keys are provided for the genera *Cinctagonum*, *Laevagonum*, *Gastragonum*, *Montagonum*, and *Nebriagonum*, and for the subspecies of *Lithagonum annulicorne*, and partial keys for the genera *Idiagonum* and *Fortagonum*.

Key to the species of the genus

Cinctagonum, gen. nov.

1. Pronotum and elytra glossy, without microreticulation (Fig. 4); aedeagus slightly sinuate, suddenly widened in middle (Fig. 26). Eastern Papua New Guinea *politum*, spec. nov.
- Pronotum and elytra with fine though distinct microreticulation (Figs 1–3); aedeagus straight, less suddenly widened in middle (Figs 24, 25) 2.
2. Pronotum with almost rectangular basal angle (Fig. 3), narrower and with relatively wider base, ratio widest diameter/base < 1.15; elytra longer and narrower, laterally less convex, ratio length/width > 1.45; aedeagus less compact, not suddenly narrowed at apical third, with wider, less acute apex (Fig. 25). Eastern central Papua Indonesia *cordicolle*, spec. nov.
- Pronotum with rounded or obtuse basal angle (Figs 1, 2), wider and with relatively narrower base, ratio widest diameter/base > 1.20; elytra shorter and wider, laterally more convex, ratio length/width < 1.35; aedeagus more compact, suddenly narrowed at apical third, with narrower, acute apex (Fig. 24), or aedeagus unknown. Eastern Papua New Guinea 3.

3. Basal angle of pronotum evenly rounded; excision of apex shallower; eye larger, ratio length of eye/length of orbit >2.1 , eye evenly curved into orbit (Fig. 1); aedeagus see Fig. 24. Vicinity of Wau *convexipenne*, spec. nov.
- Basal angle of pronotum slightly obtuse; excision of apex deeper; eye smaller, ratio length of eye/length of orbit <1.8 , eye not evenly curved into orbit (Fig. 2); aedeagus unknown. Vicinity of Garaina *angulicollae*, spec. nov.
6. Elytra short and wide, c. $1.3\times$ as long as wide; humeral angle almost rounded; colour piceous. Daulo Pass, Bismarck Range, Eastern Highlands of Papua New Guinea *frustum* Darlington, 1971
- Elytra longer, $>1.4\times$ as long as wide; humeral angle distinctly obtusely angulate; colour reddish-brown (Fig. 8). Saruwaged Range, Huon Peninsula, northern Papua New Guinea *huon*, spec. nov.

Revised key to the species of the genus

Laevagonum Darlington

1. Anterior marginal seta of pronotum present; elytral margin rounded or very obtusely angulate at humerus 2.
- Either anterior marginal seta of pronotum absent but posterior marginal seta present, or both pronotal setae absent; elytral margin almost rectangular at humerus 3.
2. Body size larger, >6 mm; elytra longer, ratio width/length >1.6 ; elytral margin obtusely angulate at humerus. Mt. Wilhelm, Eastern Highlands of Papua New Guinea *subciturum* Darlington, 1952
- Body size smaller, <5 mm; elytra shorter, ratio width/length <1.46 ; elytral margin almost evenly rounded at humerus (Fig. 5); aedeagus see Fig. 28. Mt. Wilhelm, Eastern Highlands of Papua New Guinea *alticola*, spec. nov.
3. Posterior lateral pronotal seta present; pronotum and elytra without microreticulation, very glossy (Fig. 7); aedeagus short and very wide (Fig. 29). Mt. Wilhelm, Eastern Highlands of Papua New Guinea *parafrustum*, spec. nov.
- Both lateral pronotal setae absent; pronotum and elytra with microreticulation; aedeagus when known, longer and narrower (as in Fig. 28) .. 4.
4. Posterior discal puncture on elytra present; body very slender; 4th tarsomere of metatarsus lobed. Daulo Pass, Bismarck Range, Eastern Highlands of Papua New Guinea *pertenue* Darlington, 1971
- Elytra without discal punctures; body usually wider; 4th tarsomere of metatarsus usually not lobed, when lobed then elytra short and wide and basal angle of pronotum almost rectangular 5.
5. 4th tarsomere of metatarsus lobed; basal angle of pronotum almost rectangular 6.
- 4th tarsomere of metatarsus not lobed; basal angle of pronotum rounded 7.
7. Sutural angle of elytra denticulate; body slender; prothorax longer, ratio width/length <1.0 . Mt. Wilhelm, Eastern Highlands of Papua New Guinea *citum* Darlington, 1952
- Sutural angle of elytra not denticulate; prothorax shorter, ratio width/length >1.15 8.
8. Body size >7.0 mm; colour more brown; elytra relatively longer and less rounded 9.
- Body size >6.4 mm; colour almost black; elytra relatively shorter and more rounded. Mt. Wilhelm, Eastern Highlands of Papua New Guinea *subcistelum* Darlington, 1952
9. Head narrower, ratio width of head/width of prothorax <0.55 . Mt. Wilhelm, Eastern Highlands of Papua New Guinea *cistelum* Darlington, 1952
- Head wider, ratio width of head/width of prothorax 0.69 . Mt. Giluwe, Southern Highlands of Papua New Guinea *giluwe* Darlington, 1971

Revised key to the species of the genus

Gastragonum Darlington

1. Whole dorsal surface glossy, without microreticulation; elytral striae coarsely punctate. Snow Mts, central Papua Indonesia *laevisculptum* Darlington, 1952
- Microreticulation present; elytral striae impunctate 2.
2. Prothorax more broadly rounded, with sides relatively widely margined and not sinuate near base. Chimbu Valley, Bismarck Range, Eastern Highlands of Papua New Guinea *subrotundum* Darlington, 1952
- Prothorax less broadly rounded, with sides more narrowly margined and more or less sinuate near base 3.
3. Frontal impressions rather deep, shortly linear; sides of prothorax always strongly sinuate near base 4.

- Either sides of prothorax weakly sinuate near base or frontal impressions deep but punctiform or frontal impressions barely indicated 7.
- 4. Elytra not transversely impressed in basal half; form slightly broader, sides of prothorax more abruptly sinuate near base. Chimbu Valley, Bismarck Range, Eastern Highlands of Papua New Guinea *terrestre* Darlington, 1952
- Elytra transversely impressed in basal half; form slightly narrower, sides of prothorax more broadly sinuate near base 5.
- 5. Body size larger, >7 mm; disk of elytra more deeply impressed. Snow Mts, central Papua Indonesia *terrestroides* Darlington, 1952
- Body size smaller, <6.5 mm; disk of elytra with shallow impression. Central and eastern Papua New Guinea 6.
- 6. Pronotum slightly narrower, laterally less convex and with slightly shallower prebasal excision; elytra longer and narrower, ratio length/width 1.58, more distinctly depressed in basal half, evenly rounded at humerus (Fig. 9); lower surface of aedeagus slightly less concave, apex narrower and more acute (Fig. 30). Mt. Kaindi, Eastern Highlands of Papua New Guinea *wau*, spec. nov.
- Pronotum slightly wider, laterally more convex and with slightly deeper prebasal excision; elytra shorter and wider, ratio length/width 1.52, less distinctly depressed in basal half, obtusely angulate at humerus (Fig. 10); lower surface of aedeagus slightly more concave, apex wider and less acute (Fig. 32). Mt. Giluwe, Southern Highlands of Papua New Guinea *giluwe*, spec. nov.
- 7. Frontal impressions very small, deep, punctiform; elytra subquadrate. Mt. Tafa, Eastern Highlands of Papua New Guinea *frontepunctum* Darlington, 1952
- Frontal impressions shallow, poorly defined; elytra perceptibly oval-shaped. Papua Indonesia 8.
- 8. Elytra rather ovoid; basal angle of pronotum obtuse, sides little excised in front of angle. Snow Mts, central Papua Indonesia *trechoides* Darlington, 1952
- Elytra but slightly ovoid; basal angle of pronotum rectangular, sides deeply excised in front of angle (Fig. 11); aedeagus unknown. Tanime area, eastern Papua Indonesia *esulcatum*, spec. nov.

Revised key to the species of the genus *Montagonum* Darlington

1. Body size larger, length 13–17 mm. Papua New Guinea 2.
- Body size smaller, length <11 mm. Whole New Guinea 4.
2. Third elytral interval unipunctate. Eastern Papua New Guinea *nepos* Darlington, 1971
- Third elytral interval 3-punctate 3.
3. Sides of prothorax not sinuate near base, both marginal pronotal setae present. Eastern Papua New Guinea *sororcula* Darlington, 1971
- Sides of prothorax sinuate near base, only the posterior marginal seta present. Eastern Papua New Guinea *pandum* Darlington, 1971
4. Both lateral pronotal setae present; apex and base of prothorax distinctly margined 5.
- Only the posterior lateral pronotal seta present; apex of prothorax distinctly margined, base at least in middle not or indistinctly margined 6.
5. Prothorax barely sinuate near base; posterior lateral pronotal seta located virtually at basal angle. Eastern Papua New Guinea *filiolum* Darlington, 1971
- Prothorax distinctly sinuate near base; posterior lateral pronotal seta slightly removed from basal angle. Central eastern Papua Indonesia *riedeli* Baehr, 2008
6. Tarsomeres 5 with accessory setae on lower surface; body shape very slender. Vicinity of Wau, eastern Papua New Guinea *fugitum* Darlington, 1971
- Tarsomeres 5 without accessory setae on lower surface; body shape wider (Figs 12, 13) 7.
7. Sides of pronotum posteriorly widely explanate, basal angle rounded; posterior marginal seta removed from basal angle, situated about 1/6 in front of angle. Snow Mts, Central Papua Indonesia *toxopeianum* Darlington, 1952
- Sides of pronotum posteriorly far less widely explanate, basal angle obtuse or obtusely angulate (Figs 12, 13); posterior marginal seta situated almost at basal angle. Saruwaged Range, northern Papua New Guinea 8.
8. Body size larger, 10.9 mm; pronotum wider and more cordiform, ratio widest diameter/base 1.30; elytra longer and less oviform (Fig. 12), ratio length/width 1.58; aedeagus slightly wider, lower surface more concave (Fig. 32) *major*, spec. nov.

- Body size smaller, 9.2 mm; pronotum narrower and less cordiform, ratio widest diameter/base 1.15; elytra shorter and more oviform (Fig. 13), ratio length/width 1.50; aedeagus slightly narrower, lower surface less concave (Fig. 33) *minor*, spec. nov.
- 6. Anterior pair of supraorbital setae and all elytral setae absent; body size >9 mm (usually larger). Mt. Wilhelm, Eastern Highlands of Papua New Guinea *percephalum* Darlington, 1952
- Both pairs of supraorbital setae and the anterior elytral seta present; body size <9 mm (usually smaller). Kensugl, Eastern Highlands of Papua New Guinea *unipunctum* Baehr, 2008

Revised key to the species of the genus

Nebriagonum Darlington

1. 4th tarsomere of metatarsus only emarginate, not lobed. Central Papua Indonesia *subcephalum* Darlington, 1952
- 4th tarsomere of metatarsus lobed, lateral lobe longer than the median lobe. Papua New Guinea and border area of Papua New Guinea and Papua Indonesia 2.
2. 5th tarsomere of metatarsus with accessory setae on lower surface; pronotum always without marginal setae; head always narrower, less than 90 % of width of prothorax 7.
- 5th tarsomere of metatarsus without accessory setae on lower surface; setosity of pronotum various; head commonly as wide or but little narrower than prothorax (except *N. persetosum*, spec. nov.) 3.
3. Head considerably narrower than prothorax, c. 80 % of width of prothorax; all setae on head, prothorax, and elytra present (Fig. 14). Mountains at the border of Papua New Guinea and Papua Indonesia *persetosum*, spec. nov.
- Head as wide as prothorax or almost so; setosity various. Mountains in eastern Papua New Guinea 4.
4. Both pairs of supraorbital setae (rarely only the anterior pair), both pairs of lateral pronotal setae, and 2–4 punctures on elytra present. Mt. Wilhelm, Eastern Highlands of Papua New Guinea *cephalum* Darlington, 1952
- At least both pairs of lateral pronotal setae absent, sometimes also supraorbital setae and at least the two posterior elytral setae absent 5.
5. Elytral apex usually angulate or denticulate; both pairs of supraorbital setae present, but all pronotal and elytral setae apparently absent. Eastern Highlands of Papua New Guinea *foedum* Darlington, 1971
- Elytral apex rounded; either both pairs of supraorbital setae and the anterior elytral seta present; or the anterior pair of supraorbital setae and all elytral setae absent 6.
7. Lateral margins of pronotum narrow; body size 7.6–10.3 mm 8.
- Lateral margins of pronotum wider; body size larger, > 11 mm 10.
8. Elytra unipunctate (only the basal puncture present); pronotum in apical part more regularly convex (Fig. 16); aedeagus narrower, with more acute apex (Fig. 36). Vicinity of Goroka, Eastern Highlands of Papua New Guinea *basipunctum*, spec. nov.
- Elytra bipunctate (basal and apical punctures present); pronotum in apical part less convex (Fig. 15); aedeagus wider, with more obtuse apex (Figs 34, 35). Vicinity of Goroka and Mt. Wilhelm, Eastern Highlands of Papua New Guinea 9.
9. Elytra dorsally and laterally more convex, ratio width of elytra/width of prothorax > 1.44; eye slightly larger, laterally well projected (Fig. 15); aedeagus very wide, with more obtuse apex (Fig. 35). Vicinity of Goroka, Eastern Highlands of Papua New Guinea *bipunctatum*, spec. nov.
- Elytra dorsally and laterally less convex, ratio width of elytra/width of prothorax < 1.40; eye slightly smaller, laterally less projected; aedeagus less wide, with less obtuse apex (Fig. 34). Mt. Wilhelm, Eastern Highlands of Papua New Guinea *transitum* Darlington, 1952
10. Apex of elytra unarmed; body size 11.3–11.9 mm. Mt. Wilhelm, Eastern Highlands of Papua New Guinea *transitor* Darlington, 1952
- Apex of elytra spined; body size 12.9–14.3 mm. Mt. Wilhelm, Eastern Highlands of Papua New Guinea *arboreum* Darlington, 1952

Revised partial key to the species of the genus

Idiagonum Darlington

Idiagonum capellae, spec. nov. is easily introduced in the most recent key to the genus *Idiagonum* (Baehr 2000), because it belongs to the group of species with rather glossy head and pronotum which are arranged in the couplets 1–4 of the key.

1. Surface of head rather glossy; surface of pronotum neither dull not distinctly transversely

- wrinkled; elytra with distinct, about isodiametric microreticulation, rather dull, not iridescent. Apex of aedeagus, when known, comparatively short (Fig. 37) 2.
- Surface of head remarkably dull; surface of pronotum dull and/or distinctly transversely wrinkled; elytra without, or with very superficial, transverse microreticulation, surface glossy, somewhat iridescent; apex of aedeagus narrow and very elongate (see figs 3–13 in Baehr 2000) 4.
2. Basal angle of pronotum obtuse, lateral margin barely or but slightly sinuate near base; orbit much longer than eye, ratio length of orbit/length of eye > 1.4 (Fig. 22); elytra narrow and elongate, slightly depressed on disk, ratio length/width > 1.70 (Fig. 17); aedeagus with narrower and longer apex (Fig. 37). Border area of Papua New Guinea and Papua Indonesia *capellae*, spec. nov.
- Basal angle of pronotum angulate, lateral margin distinctly sinuate near base; elytra shorter and wider, rather convex, ratio length/width > 1.67 ; orbit shorter, ratio length of orbit/length of eye > 1.35 , commonly less; aedeagus with shorter and wider apex (Figs 1, 2 in Baehr 2000). Mountains of central Papua Indonesia 2a.
- 2a. Head narrower, orbit almost regularly oblique; prothorax narrower, ratio width/length < 1.20 . Mountains east of Gn. Elit *eliti* Baehr, 2000
- Head wider, orbit convex; prothorax wider, ratio width/length > 1.23 3.
3. Eye smaller though more suddenly produced; prothorax wider, with wider base, ratio base/apex > 1.12 ; humeral angle of elytra distinctly angulate. Mountains west of Baliem Valley *inasperum* Darlington, 1952
- Eye larger though more depressed; prothorax narrower, with narrower base, ratio base/apex c. 1; humeral angle of elytra rounded. Mountains east of Gn. Elit *lterior* Baehr, 2000
4. = as in Baehr (2000).
1. Metathoracic wings present 2.
- Metathoracic wings absent 16.
2. Both pairs of supraocular setae absent 3.
- At least the posterior supraocular seta present 4.
3. Elytra bisetose, elongate, $> 1.6 \times$ as long as wide, $< 1.33 \times$ as wide as pronotum, striae slightly crenulate, intervals depressed; aedeagus with two dentate sclerites in the internal sac. Vogelkop Peninsula, extreme western Papua Indonesia *depressum* Baehr, 1995
- Elytra unisetose, shorter, c. $1.33 \times$ as long as wide, c. $1.5 \times$ as wide as pronotum, striae not crenulate, intervals slightly convex; aedeagus with a single dentate sclerite in the internal sac. Western part of central Papua Indonesia *sinak* Baehr, 1998
4. Both supraorbital setae present 5.
- Anterior supraorbital seta absent 6.
5. Base of pronotum much wider compared with apex, ratio width of base/apex c. 1.78. Eastern Papua Indonesia *bisetosiceps* Baehr, 1995
- Base of pronotum narrower compared with apex, ratio width of base/apex c. 1.60. Japen Island, western Papua Indonesia *insulare* Baehr, 2001
6. Elytra trisetose; apex of elytra not denticulate or spinose; prothorax little wider than long, ratio width/length c. 1.16. Central Papua Indonesia *angusticollae* Baehr, 2010
- Elytra unisetose or bisetose; apex of elytra variously shaped; prothorax considerably wider than long, ratio width/length > 1.30 7.
7. Elytra unisetose (only the median seta present); prothorax rather narrow, ratio width/length < 1.35 (Fig. 19); apex of elytra denticulate or short-spined 8.
- Elytra bisetose (median and posterior setae present); prothorax wider, ratio width/length > 1.40 , commonly more; apex of elytra spined 9.
8. Apex of elytra denticulate (see fig. 11 in Baehr 1995); base of pronotum relatively wider, ratio width of base/apex > 1.50 ; elytra shorter and laterally more convex, ratio length/width c. 1.54; aedeagus with two sclerotized plates in the basal area of the internal sac (see fig. 12 in Baehr 1995). Central eastern Papua Indonesia *denticulatum* Baehr, 1995

Revised partial key to the species of the genus *Fortagonum* Darlington

The first part of the key to all species of *Fortagonum* in Baehr (2001, couplets 1–12) that includes the species with fully developed metathoracic wings is completely revised, and it includes, besides both new species, another species that was recently described (Baehr 2010c).

- Apex of elytra short-spined (Fig. 19); base of pronotum relatively narrower, ratio width of base/apex c. 1.30; elytra longer and laterally less convex, ratio length/width >1.70; aedeagus unknown. Central Papua Indonesia *sulcipenne*, spec. nov.
- 9. Striae extremely fine, elytra almost laevigate, with greenish lustre. Westernmost Papua New Guinea *laevissimum* Baehr, 2001
- Striae distinct, elytra not laevigate, with bluish or violaceous lustre 10.
- 10. Elytra wider and shorter, with short sutural spines (see figs 47, 48 in Darlington 1971) ... 11.
- Elytra narrow and elongate, with elongate sutural spines (Fig. 18) 12.
- 11. Pronotum wider, sides more straight, anterior angle more protruding. Extreme western Papua Indonesia *subconicollae* (Darlington, 1971)
- Pronotum narrower, sides more convex, anterior angle less protruding. Central Papua New Guinea *bigemum* (Darlington, 1971)
- 12. Sutural spines less widely separated (see fig. 8 in Baehr 2001); elytra with distinct violaceous lustre. Eastern central Papua New Guinea *hornabrookianum* Baehr, 2001
- Sutural spines widely separated (Fig. 18); elytra with bluish, or blackish, or indistinct violaceous lustre 13.
- 13. Striae weak, barely punctulate; elytra with faint bluish lustre; antenna piceous, only median and apical antennomeres reddish; aedeagus with a large, multidentate plate near apex of internal sac and with three small dentate sclerites in basal part (see fig. 1 in Baehr 2001). Eastern central Papua New Guinea *substriatum* Baehr, 2001
- Striae distinctly punctulate; elytra without bluish lustre; antenna largely light reddish; aedeagus either with a large, multidentate plate and with only one small, unidentate plate, both situated near apex of internal sac (Fig. 38) and species from Papua New Guinea; or aedeagus unknown and species from western central Papua Indonesia 14.
- 14. Antenna including basal antennomere pale reddish; tibiae and tarsi pale reddish; base of pronotum wider, ratio base/apex >1.6; aedeagus unknown. Japan Island, western Papua Indonesia *insulare* Baehr, 2001
- At least the basal antennomere piceous; tibiae and tarsi piceous or black; base of pronotum narrower, ratio base/apex <1.6; aedeagus either with two dentate plates in the internal sac (Fig. 38), or unknown 15.
- 15. Colour deep black, legs largely black; apical elytral spines shorter than diameter of 2nd interval in middle (see fig. 1 in Baehr 1998); aedeagus unknown. Panai Province, western mainland of Papua Indonesia *spinipenne* Baehr, 1998
- Colour reddish-violaceous, legs reddish-piceous; apical elytral spines longer than diameter of 2nd interval in middle (Fig. 18); aedeagus with two dentate plates near apex of internal sac (Fig. 38). Papua New Guinea *longispinum*, spec. nov.
- 16. = 13. in Baehr (2001)

Revised key to the subspecies of *Lithagonum annulicorne* (Maindron)

- 1. Legs pale yellow; elytra completely microreticulate, narrow and elongate, ratio length/width >1.70 (Fig. 20); head and pronotum sparsely punctate; aedeagus remarkably curved (Fig. 39). Whole New Guinea *reticulatum*, subspec. nov.
- Legs at most reddish-brown, commonly darker; elytra glossy, except sometimes 8th and 9th intervals microreticulate; elytra shorter and wider, ratio length/width <1.65, commonly less; head and pronotum usually more densely punctate; aedeagus when known far less curved (see fig. 43 in Darlington 1952) 2.
- 2. Legs reddish-brown; 8th and 9th intervals microreticulate. Papua New Guinea *dilutior* Darlington, 1952
- Legs dark piceous to black 3.
- 3. 8th and 9th intervals without distinct microreticulation. Papua New Guinea 4.
- 8th and 9th intervals with distinct microreticulation. Papua Indonesia 5.
- 4. Elytra short and wide; apex of elytra with longer denticles. Markham Valley *politor* Darlington, 1952
- Elytra longer and narrower; apex of elytra with short denticles. Bismarck Range *bismarckense* Darlington, 1952
- 5. Elytra short and wide, dorsally rather convex; apex of elytra with longer denticles; elytral striae coarsely punctate. Cyclops Mts *annulicorne* (Maindron, 1908)

- Elytra longer and narrower, dorsally more depressed; apex of elytra with shorter denticles; elytral striae finely punctate. Snow Mts
..... *baliem* Darlington, 1952

Remarks

Some of the new species were collected in areas from where almost no carabid specimens have been ever recorded. Thus they demonstrate once more, how fragmentary our knowledge about the species inventory of the New Guinean carabid beetles is, and, at the same time, that any suggestions about phylogenetic relationships and biogeographic history of the New Guinean fauna are provisional and very hypothetical, because sampling in hitherto uncollected areas likely will bring to light species which do not fit into our present ideas.

It must be stressed in this connection that the taxonomy of the New Guinean Platynini is likewise not settled, at least as far as the status and extent of the described genera is concerned. A thorough generic revision of the Oriental-Papuan platynine fauna certainly will reveal many changes in the genus concepts. Subdivision of genera probably is as likely as inclusion of New Guinean genera into genera which so far have been only recorded from the Oriental region. And even pure synonymy of genus names in both regions is possible. But unfortunately the Oriental platynine fauna is at least as badly in need of a generic revision as the New Guinean fauna. Hence, for the present, it is better to use the presently used generic concepts and to wait for a future total view of the platynine fauna of both regions.

Certainly description of species on the basis of single or very few specimens is problematic. But a view into the literature about the New Guinean platynines (see references) will demonstrate that a large amount of the present knowledge still is based on single or very few specimens. The puzzling fact is that additional sampling activities in yet uncollected areas, but even in areas which have been collected to some extent, will rather reveal additional new species, than material of already described species. And even the scrutinized examination of the material of described species preserved in collections commonly demonstrates that these actually are a mixture of different species. This likewise demonstrates the extremely inadequate knowledge of the species inventory, but it also suggests that many species apparently inhabit very restricted ranges and thus, only sampling at the exact locality will reveal additional material.

Some of the new findings are of particular importance, because they fill up distribution gaps or enlarge the hitherto known ranges of some species: In this connection the species found on Huon Peninsula are particularly important, because from this area very little was so far recorded, although the mountain ranges on Huon Peninsula are well separated from the main mountain range running through the central part of New Guinea, and thus, they likely are home of endemic species. The same applies for the species now recorded from the hitherto almost uncollected Star Range at the border area of both political parts of New Guinea.

The new species of the genus *Idiagonum* belongs to a group of species which probably are plesiomorphic in many respects within the genus, and which were known so far only from central Papua Indonesia.

The new species *Nebriagonum persetosum* is very interesting, because it fills a distributional gap between the eastern species which are mainly known from the Mt. Wilhelm area in eastern central Papua New Guinea and the single species that occurs in Papua Indonesia. Although the combination of character states in *N. persetosum* is unique, certainly it is closer related to the eastern group of species than to the western *N. subcephalum*. The concentration of many closely related species on Mt. Wilhelm anyway is surprising or even enigmatic, the more because it applies not only for the genus *Nebriagonum*, but also for the genus *Laevagonum* Darlington. This concentration seems to illustrate that this commonly visited and probably rather well collected peak only represents an example for the multitude of species which can occur on a single mountain, but that probably occur on other mountains as well, where they only need to be collected.

The new genus *Cinctagonum* which occurs in both political parts of New Guinea probably is related to what at present is combined to the genus *Montagonum*. Because the species of *Cinctagonum* are flightless and small, it is to be expected that additional species will be found as sampling is intensified.

The relationships of the new genus *Cistelagonum* are more difficult to establish. Although in general body shape rather reminding *M. hornabrookianum* Darlington from central Papua Indonesia, in certain aspects of the external morphology, as well as in shape and structure of the aedeagus it is very different, and thus, its relationships presently are obscure. Perhaps the structure of the female gonocoxite will assist to a better arrangement of the genus, when these can be examined.

Acknowledgements

I am indebted to M. Balke (München), A. Riedel (Karlsruhe), and A. Weigel (Pössneck) for the gift, and to G. Cuccodoro (Génève), D. Hirst (Adelaide), O. Merkl (Budapest), and L. Zerche (Müncheberg) for the loan of specimens.

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Buchbesprechungen

3. Wang, Min & Kishida, Yasunori (eds) 2011. Moths of Guangdong Nanling National Nature Reserve. – Goecke & Evers, Keltern, 373 Seiten + 71 Farbtafeln, Hardcover, in englischer Sprache. ISBN 978-3-937783-51-2.

Die Editoren und 25 Autoren dieses Werkes sind hochrangige, erfahrene Taxonomen und Kenner ihrer Spezialgruppen, und es mag durchaus als politisches Signal verstanden werden, wie es hier gelungen ist, eine ausgewogene Kooperation zwischen japanischen und chinesischen Wissenschaftlern auf die Beine zu stellen. Das Buch stellt die Fauna des Guangdong Nanling Nationalparks vor, aus dem schon 121 Schmetterlingsarten als neu für die Wissenschaft beschrieben wurden! Die Artenliste gibt das genaue Urbeschreibungszitat wieder, sowie eine Kurzinformation zu Flugzeit, Gesamtverbreitung und Häufigkeit im Gebiet. Der Text ist 2-sprachig chinesisch/englisch in zwei parallelen Spalten. Insgesamt werden auf diese Weise mehr als 1.200 Arten vorgestellt, wobei der Schwerpunkt klar auf den 'Groß-Nachtfaltern' (Macroheterocera) liegt. So werden beispielsweise insgesamt 49 Pyralidenarten (Zünsler) aufgelistet, was nur einen Bruchteil der realen Artenzahl widerspiegelt. Es ist jedoch lobenswert, dass die Kleinschmetterlinge nicht völlig vernachlässigt wurden, wie dies bei vielen ähnlichen Veröffentlichungen der Fall ist. Die 71 Farbtafeln (63 mit Groß-, 8 mit Zygaenidae und anderen Kleinschmetterlingen) sind von hervorragender Qualität. Abgesehen davon, dass es sich hier um eine entomologische Meisterleistung handelt, birgt das Buch durch seine Konzeption großes Potential, die Vernetzung der wissenschaftlichen Communities in Japan, China und der gesamten englischsprachigen Welt zu fördern.

Axel Hausmann

4. Pfau, Hans Klaus 2012. Functional morphology and evolution of the male secondary copulatory apparatus of the Anisoptera (Insecta: Odonata). – Zoologica Vol. 156, Schweizerbart Science Publishers, Stuttgart, 103 Seiten, 65 Abbildungen, Großformat, in englischer Sprache. ISBN 978-3-510-55043-2.

Libellen haben eine ganz eigenartige Kopulationsweise mit Bildung des bekannten Paarungsrades. Die Männchen befestigen die Zangen ihres Abdomenendes am Kopf und/oder am Prothorax der Weibchen. Die Weibchen biegen ihren Hinterleib zum akzessorischen Kopulationsorgan am zweiten und dritten Abdominalsegment der Männchen und verankern ihn dort. Das Kopulationsorgan muss bereits vorher mit Sperma gefüllt werden, denn der männliche Genitalporus liegt terminal, am neunten Segment. Sodann kann das Sperma aus dem

Spermabehälter des akzessorischen Kopulationsorgans in die Vagina der Weibchen übertragen werden.

Das akzessorische Kopulationsorgan beinhaltet also sowohl Koppelungsmechanismen, als auch einen temporären Spermabehälter und Penisstrukturen zum Transfer des Spermas in die Vagina, ist also sehr komplex. In einer früheren Arbeit hat Pfau schon vor Jahren ("Struktur und Funktion des sekundären Kopulationsapparates der Odonaten", 1971, Zeitschrift für Morphologie der Tiere 70: 281–371) die Morphologie dieser Strukturen detailliert dargestellt. Die nun publizierte Untersuchung baut auf diesen morphologischen Darstellungen auf und ergänzt sie wesentlich.

ersten Teil der Arbeit stellt der Autor dar, wie die einzelnen beweglichen Teile dieses Kopulationsorgans sich zueinander bewegen (können). Der Autor hat dazu die Gelenke bei frisch getöteten Tieren mit feinen Pinzetten bewegt – unter Beachtung der angreifenden Muskeln. Nach genauer Beobachtung der feinen Strukturen konnte er mechanische Modelle entwickeln, die er durch feine Manipulationen (z. B. durchtrennen einzelner Muskeln) überprüfen konnte. So gelang es dem Autor die einzelnen Schritte der verschiedenen Bewegungsfolgen zu beleuchten. Die komplexen Bewegungsfolgen und Wirkungen der Muskeln sind in entsprechenden halb-schematischen Zeichnungen und Makroaufnahmen dargestellt.

In einem zweiten Teil untersucht der Autor den hydraulischen Apparat der Vesica seminalis. Diese ist bei den Anisopteren gegliedert und hat eine komplizierte Innenstruktur mit einem sekundären "Penis-Schwellkörper" ("glans"). Die Entfaltung der "glans" konnte an frischem Material durch Zusammendrücken des ersten Segmentes der Vesica seminalis induziert und nach Fixierung detailliert beschrieben werden.

Bemerkenswert ist, dass hier wertvolle funktionsmorphologische und phylogenetisch bedeutsame Ergebnisse mit ausgesprochen "einfachen" experimentellen Methoden, insbesondere mit feiner Präparation und vor allem mit geduldiger und genauer Beobachtung erzielt werden konnten. Eine der Schwierigkeiten war dabei das zur Verfügung stehende, geeignete Material, d. h. frische Tiere. Die Arbeit führt zu interessanten phylogenetischen Schlussfolgerungen, die in einem Kladogramm zusammengestellt sind. Zum Verständnis dieser Arbeit ist es notwendig auch die oben schon zitierte Publikation von 1971, auf der sie aufbaut, zur Hand zu nehmen.

Die vorliegende Publikation ist ein wertvoller und interessanter Beitrag zum Verständnis der hoch komplexen Kopulationsorgane der Odonata und zu ihrer Phylogenie – aber leider keine leichte Kost.

Klaus Schönitzer