

New species and new records of the genera *Dicraspeda* Chaudoir and *Eudalia* Castelnau from the Papuan and Australian regions, with a nomenclatorial note on *Deipyrus* Liebke

(Insecta, Coleoptera, Carabidae, Odacanthinae)

Martin Baehr

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As a supplement to the recent revision of the Australian Odacanthinae, four new species and three new subspecies of the odacanthine genus *Dicraspeda* Chaudoir from Australia, New Guinea, New Britain, Solomon Islands, and Halmahera are described: *D. subrufipennis*, spec. nov. related to the *brunnea*-group, from northern Australia; *D. coeruleipennis*, spec. nov., related to *D. obscura* Castelnau, from New Guinea; *D. missai*, spec. nov. and *D. glabripennis*, spec. nov., both of the *dubia*-group, from New Guinea; and *D. quadrispinosa brevipennis*, subspec. nov. from Bougainville, Solomon Islands, *D. quadrispinosa moluccensis*, subspec. nov. from Halmahera, and *D. quadrispinosa novabritannica*, subspec. nov. from New Britain. Of the genus *Eudalia* Castelnau, *E. liebherri*, spec. nov., from south-eastern Queensland is described. New records of the recently described *D. minuta* Baehr and *D. nigripes* Baehr from Papua New Guinea and several new records of the enigmatic *Eudalia anomala* Darlington from New Guinea and Halmahera are dealt with. By comparison with the Philippine *Polydamasium strandi* Liebke it proved that *E. anomala* that in many characters deviates from the genus *Eudalia* Castelnau belongs to the genus *Polydamasium*, but is not conspecific with *P. strandi*.

According to a note by Bousquet the name *Deipyrus* Liebke for an Australian odacanthine genus is preoccupied and has to be replaced in my revision by *Deipyrus* Bousquet.

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Introduction

In parts this paper is considered a supplement to my recent revision of the Australian Odacanthinae (Baehr 2004), and it covers material which I received while the revision was already in print. The paper is mainly based on material that I sorted out from the collections of Australian National Insect Collection, Canberra (ANIC) and South Australian Museum, Adelaide (SAMA) during my recent visits to

both museums, and on additional material from the Canopy mission P.N.G. received recently from Institut Royal des Sciences Naturelles de Belgique, Bruxelles (IRSNB). One new species from Australia was kindly handled over to me recently by J. Liebher, Ithaca (CUIC), and material from the Moluccas and New Britain were kindly brought to my attention by M. Hiermeier (München), W. Lorenz, Tutzing (CLT), and A. Weigel (Pössneck). One holotype is also stored in Queensland Museum, Brisbane (QMB).

The fine series of *E. anomala* Darlington from IRSNB now enabled me to compare this species with the recorded species of the genus *Eudalia* Castelnau as well as with the genus *Polydamasium* Liebke, and to point out the actual position of this species.

Material and Methods

For the taxonomic treatment standard methods were used. The male genitalia were removed from specimens soaked for a night in a jar under wet atmosphere, then cleaned for a short while in hot KOH.

For examination of the generally fine though taxonomically highly important punctuation and microreticulation of the surface a high resolving stereo microscope with up to 64x magnification was used, supported by a lamp of high intensity giving natural light that could be focussed. For exact definition of the microsculpture such light is preferable, because fibre-glass optics substantially change the impression of the surface structures.

The habitus photographs were obtained by a digital camera using SPOT Advanced for Windows 3.5 and subsequently were worked with Corel Photo Paint 10.

Measurements were taken using a stereo microscope with an ocular micrometer. Length has been measured from apex of labrum to apex of elytra. Lengths, therefore, may slightly differ from those of other authors. Length of eye includes a small dark coloured ring of ocellae that in some instances is present behind the light area. Length of orbit is taken from posterior margin of eye to 'neck' suture. Length of head is the distance from apex of labrum to 'neck'. Length of pronotum was measured from the most advanced part of base to the most advanced part of apex; width of pronotum at widest part, including those parts of the proepisternum that are visible from above. Length of elytra was taken from the most advanced part of humerus to the most advanced apex of elytra including apical denticles, but according to the intraspecific differences in length of those spines within *D. quadrispinosa* (Chaudoir), in this species length of elytra was taken only to base of sutural spines. Ratios are somewhat variable in most species, but generally they offer rather good measures of relative shape.

Genus *Dicraspeda* Chaudoir

Dicraspeda Chaudoir, 1862: 300; Sloane 1923: 30; Csiki 1932: 1536; Liebke 1938: 88; Darlington 1968: 210; Moore et al. 1987: 274; Baehr 1996a: 138; 1997b: 30; 1998: 174; 1999: 116; 2000: 11; 2003b: 101; 2003c: 251; 2004: 148; Lorenz 1998: 420.

This genus had a rather changing history. For a time it was confounded with the related genus *Eudalia* Castelnau, and even Sloane (1917, 1923) when repeatedly revising the Australian species, was not sure

to which genera the quite differently shaped Australian species should be referred. The Australian *Dicraspeda obscura* (Castelnau), for example, was referred to *Arame* Andrewes by Sloane (1923). Indeed, those species that are today combined to form the genus *Dicraspeda*, are remarkably different in their external shape and structure. When considering the species that occur in New Guinea, the problem becomes even more difficult, because then, the former genera *Philemonia* Liebke and *Macrocentra* Chaudoir have to be taken into consideration. Today these are included in *Dicraspeda* sensu lato, but certainly they again deviate in shape and structure. Some of these problems are discussed in the various papers of Baehr (see above under the genus) on Australian and New Guinean *Dicraspeda*. For the present, and because it seems not possible to maintain clear-cut subgroups within the genus, since intermediate species between most groups exist, no subgeneric units are acknowledged. At best, species could be combined to 'species-groups' that are of no nomenclatorial value (Baehr 2003c, 2004).

At present four more or less clear-cut species-groups are recognized in the genus *Dicraspeda*: the *brunnea*-group that combines wide, depressed species with wide lateral pronotal sulcus and unarmed elytral apex; the *obscura*-group that includes rather convex, highly glossy species with narrow lateral pronotal sulcus, heavily punctate pronotum, and unarmed elytral apex; the *dubia*-group that equals the former genus or subgenus *Philemonia* Liebke, which includes rather compact species with narrow lateral pronotal sulcus, barely punctate pronotum, and denticulate to spinose elytral apex; and the *quadrispinosa*-group, which is similar to the former genus or subgenus *Macrocentra* Chaudoir, with two large species bearing a narrow lateral pronotal sulcus and quadrispinose elytral apex. This system of species groups could be easily transferred to subgeneric or even generic status, were it not for some species that are intermediate between these groups, as for example *D. minuta* Baehr and *D. longiloba* (Liebke) intermediate between the *brunnea*- and *dubia*-groups, and *D. brunneipennis* (Sloane) of uncertain affinities, but perhaps somewhat intermediate between the *brunnea*- and *obscura*-groups.

New Guinea apparently is the stronghold in particular of the *dubia*-group ("*Philemonia*") that has achieved a very high taxonomic diversity in this island, whereas it is barely represented in Australia.

Diagnosis. This morphologically highly diverse genus is characterized by the distinct sulcus and ridge inside the eye, a distinct sulcus inside the lateral prothoracic margin, impilose elytra (except for fixed setae at 3rd interval), and generally slightly

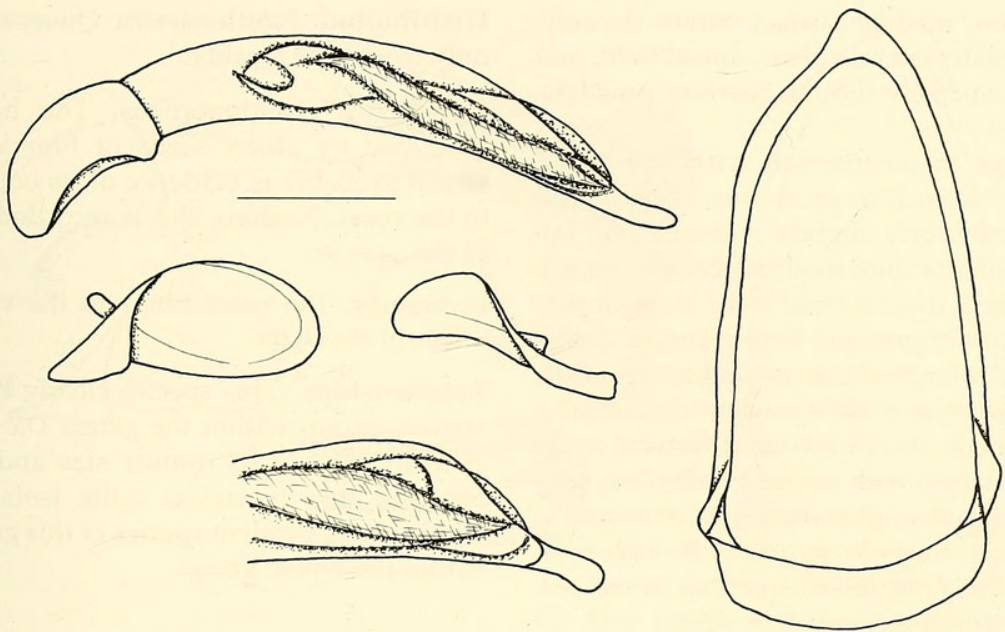


Fig. 1. *Dicraspeda subrufipennis*, spec. nov. Male genitalia: aedeagus, parameres, genital ring. Scales: 0.25 mm.

excised apex of elytra that may or may not be armed by denticles or elongate spines in very different ways.

Dicraspeda subrufipennis, spec. nov.
Figs 1, 12

Types. Holotype: ♂, Trapped by sticky seeds of *Pisonia brunoniana* Cairns dist.: F. P. Dodd (SAMA).

Diagnosis. At the first glance distinguished from all other species of its genus by minute size and the rufous elytra.

Description

Measurements. Length: 5.0 mm, width: 1.85 mm. Ratios. Length eye/orbit: 2.75; length/width of head: 1.0; length/width of pronotum: 1.10; width of head/width of pronotum: 1.10; length/width of elytra: 1.63.

Colour. Head and prothorax dark piceous, anterior part of frons, clypeus, labrum, and mandibles reddish, elytra reddish-brown. Palpi, antennae, and legs yellow. Lower surface of thorax and abdomen reddish-piceous.

Head. Large, triangular, wider than pronotum, upper surface depressed. Eyes very large, almost three times as long as orbits, laterally remarkably projecting, but not interrupting the lateral curve of the head. Orbits very oblique, gently convex, forming a distinct angle with the neck. Distance between eyes > twice as wide as diameter of eye. Clypeus separated by a fine suture that is shortly interrupted in middle, posterior part transversely convex. Labrum large, anteriorly straight, 6-setose. Mandibles

and palpi of average size, mandibles anteriorly regularly incurved. Labium with elongate, triangular tooth. Frons laterally near clypeal suture with a deep, sinuate impression, in middle of frons with shallow v-shaped impression and a shallow circular groove behind. Medially of eye with an elongate sulcus and ridge. Neck separated from vertex by a shallow, transverse furrow. Posterior supraorbital seta situated slightly behind posterior margin of eye. Antennae of average size, surpassing base of pronotum by about one antennomere. Median antennomeres almost twice as long as wide. Surface of head apart from labrum without microreticulation, impunctate and impilose, highly glossy.

Prothorax. Slightly longer than wide, laterally rather convex, surface fairly depressed. Widest slightly in front of middle, margin gently rounded, but at widest diameter even very gently angulate, near basal angles feebly concave. Lateral border prominent, raised throughout, lateral margin with a deep and rather wide sulcus that considerably narrows towards apex and base. Sulcus abruptly bordered medially by a conspicuous ridge. Proepipleura and proepisternum narrowly visible from above. Apex almost straight, not bordered, anterior angles rounded off, barely visible. Base very gently convex, not bordered, posterior angles right though obtuse at apex. Median line deeply impressed, impunctate, not attaining apex nor base. Anterior transverse sulcus shallow, v-shaped, coarsely punctate, basal transverse sulcus barely impressed. Posterior marginal seta absent, anterior marginal pore and seta situated at widest part of pronotum, slightly inside of marginal border, of unknown length, because both setae broken. Surface without

microreticulation, median surface rather densely, but lightly striolate, lateral sulcus, apical field, and base in middle sparsely though coarsely punctate. Disk very glossy.

Elytra. Large in comparison with fore body, more than twice as wide as prothorax, rather quadrate, though posteriorly slightly widened and lateral margin in anterior third moderately compressed. Surface depressed, disk in basal third without perceptible transverse impression. Humeri wide, almost evenly rounded. Marginal sulcus moderately wide. Apex wide, oblique, in middle moderately concave. Lateral apical angle clearly rounded, sutural angle obtuse, apical margin with coarse border line, particularly near lateral angles distinctly denticulate. All striae distinct, coarsely punctate, though even the inner ones barely impressed, intervals depressed. Punctuation becoming weaker in apical half. 3rd interval with four setiferous punctures, all situated in a slight impression. Anterior puncture situated at basal quarter and close to 3rd stria, the median puncture situated in middle of interval, the apical ones adjacent to 2nd stria. The median puncture is situated slightly behind middle of elytra, both apical ones situated close together at apical sixth of elytra. Length of setae unknown, because all broken. Marginal series of setiferous punctures consisting of 6 anterior setae behind humerus, 7 apical setae in front of lateral apical angle, one intercalary seta, and 2 setae near suture at apex. Intervals impunctate but with extremely superficial microreticulation that consists of slightly transverse meshes. Surface highly glossy. Wings fully developed.

Lower surface. Prosternum, proepisternum, proepimeron, and mesepisternum with very coarse punctures, metasternum, metepisternum, and abdomen impunctate. Metepisternum elongate, slightly $>2\times$ as long as wide. Terminal sternum in male bisetose, in middle feebly excised.

Legs. Rather elongate. 5th tarsomeres setose on lower surface, 4th tarsomeres with shallow ($<1/3$ of length) excision. Apex of 1st tarsomere and 2nd and 3rd tarsomeres of male anterior tarsus asymmetrically, sparsely biserially squamose.

Male genitalia (Fig. 1). Genital ring rather narrow and elongate, slightly asymmetric, narrowed to the angulate, slightly asymmetric apex. Aedeagus slender and elongate, laterally very slightly sinuate, lower surface very gently concave. Apex rather elongate, slightly turned to the right, very gently knobbed and upturned. Internal sac rather simply folded, with an elongate, slightly coiled and gently sclerotized piece in apical half. Parameres rather dissimilar, large, fairly elongate, left larger than right.

Female genitalia. Unknown.

Variation. Unknown.

Distribution. North-eastern Queensland. Known only from type locality.

Collecting circumstances. The holotype was "Trapped by sticky seeds of *Pisonia brunoniana*" which probably is evidence of its occurrence close to the coast. Nothing else is recorded about habits of this species.

Etymology. The name refers to the vaguely rufous colour of the elytra.

Relationships. This species clearly belongs to the *brunnea*-group within the genus *Dicraspeda*. However, in view of its minute size and striking colouration this species is quite isolated not only within the Australian species of this group but even within the whole group.

Dicraspeda coeruleipennis, spec. nov.

Figs 2, 13

Types. Holotype: ♂, NEW GUINEA, Port Moresby, (Mt. Lawes), 1300 ft. 5.3.-12.5.1963, W. W. Brandt (ANIC). – Paratype: 1♀, same data (CBM).

Diagnosis. Characterized by the coarsely punctate pronotum as being related only to the Australian *D. obscura* (Castelnau). Distinguished from this species by bluish colour of the elytra, uniformly yellow antennae and legs, shorter and wider pronotum, and less coarsely punctate elytra.

Description

Measurements. Length: 5.2-5.7 mm, width: 1.85-2.0 mm. Ratios. Length eye/orbit: 1.35-1.55; length/width of head: 1.02-1.06; length/width of pronotum: 1.28-1.31; width of head/width of pronotum: 1.06-1.14; length/width of elytra: 1.65.

Colour. Head and pronotum black, elytra with bluish-violaceous lustre. Apical part of clypeus and labrum piceous, mandibles and palpi reddish to dark yellowish, antennae and legs uniformly light yellow. Lower surfaces of fore body black, basal half of abdomen dark reddish, becoming dark piceous towards apex.

Head. Large, triangular, wider than pronotum, upper surface moderately depressed. Eyes very large, about $1.5\times$ as long as orbits, laterally remarkably projecting, though barely interrupting the lateral curve of head. Orbits very oblique, in same line with eyes, gently convex, forming a very distinct angle with neck. Distance between eyes slightly $>$ twice as wide as diameter of eye. Clypeus separated by a fine suture that is shortly interrupted in middle, posterior part transversely convex. Labrum large, anteriorly straight, 6-setose. Mandibles and

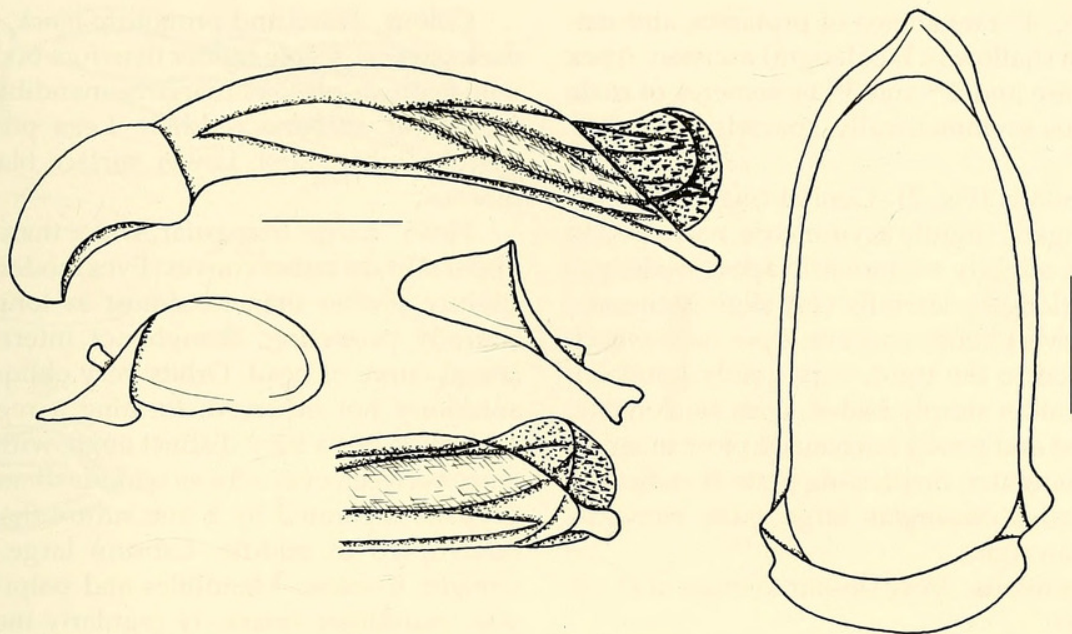


Fig. 2. *Dicraspeda coeruleipennis*, spec. nov. Male genitalia: aedeagus, parameres, genital ring. Scales: 0.25 mm.

palpi of average size, mandibles anteriorly regularly incurved. Labium with elongate, triangular tooth. Frons laterally near clypeal suture with a deep, about circular impression that is prolonged to an oblique sulcus towards eyes. In middle of frons with a shallow, v-shaped impression. Medially of eye with a distinct sulcus and sharp ridge. Neck separated from vertex by a rather deep, transverse furrow. Posterior supraorbital seta situated slightly behind posterior margin of eye. Antennae in both available specimens broken in middle, antennae elongate, probably surpassing base of pronotum by two or even three antennomeres. Median antennomeres about $3\times$ as long as wide. Surface of head apart from labrum without microreticulation, impunctate and impilose, highly glossy.

Prothorax. Considerably longer than wide, laterally rather convex, surface convex. Widest about in middle, margin gently rounded. Lateral border prominent, raised throughout, lateral margin with a shallow, rather indistinct sulcus that narrows towards apex and base. Sulcus not definitely bordered medially by a ridge. Large parts of proepipleura and proepisternum visible from above. Apex almost straight, not bordered, anterior angles rounded off, barely visible. Base gently convex, not bordered, posterior angles right though obtuse at apex. Median line and anterior and posterior transverse sulci absent. Both anterior and posterior marginal setae present, elongate, anterior marginal pore and seta situated slightly in front of middle, inside of marginal border, posterior seta situated right on basal angle. Surface without microreticulation, with fairly dense, extremely coarse punctures, very glossy.

Elytra. Rather large in comparison with fore body, about twice as wide as prothorax, rather quadrate, posteriorly barely widened, lateral margin in anterior third barely compressed. Surface moderately convex, on disk somewhat depressed, disk in basal third without any transverse impression. Humeri wide, almost evenly rounded. Marginal sulcus rather narrow. Apex wide, oblique, laterally moderately concave. Lateral apical angle clearly rounded, sutural angle obtuse, apex with coarse border line, particularly near lateral angles distinctly denticulate. All striae distinct, though only punctate, barely impressed, intervals depressed. Punctuation coarse, becoming remarkably weaker towards apical half. 3rd interval with three setiferous punctures, all situated in a slight impression. Anterior puncture situated at first third and close to 3rd stria, the median and apical ones adjacent to 2nd stria, the median puncture situated at posterior slightly behind middle, the apical one at apical sixth of elytra. Setae rather elongate, almost erect. Marginal series of setiferous punctures consisting of 6 anterior setae behind shoulder, 7 apical setae in front of lateral apical angles, 1 large intercalary seta, and 2 setae near suture at apex. Surface without microreticulation and impunctate, highly glossy. Wings fully developed.

Lower surface. Prosternum, proepisternum, proepimeron, and mesepisternum very coarsely punctate, metasternum, metepisternum, and abdomen impunctate. Metepisternum elongate, slightly $>2\times$ as long as wide. Terminal sternum in male bisetose, in female quadrisetose, in male in middle rather deeply excised.

Legs. Rather elongate. 5th tarsomeres setose on

lower surface, 4th tarsomeres of protarsus and mesotarsus with shallow ($< \frac{1}{3}$ of length) excision. Apex of 1st tarsomere and 2nd and 3rd tarsomeres of male anterior tarsus asymmetrically, sparsely biserially squamose.

Male genitalia (Fig. 2). Genital ring rather narrow and elongate, slightly asymmetric, narrowed to the angulate, slightly asymmetric apex. Aedeagus slender and elongate, laterally very slightly sinuate, lower surface very gently concave. Apex rather short, slightly turned to the right, very gently knobbed. Internal sac rather simply folded, with an elongate, slightly coiled and gently sclerotized piece in apical half and a triangular, denticulate plate at orificium. Parameres rather dissimilar, large, fairly elongate, left larger than right.

Female genitalia. Very similar to those of *D. obscura* (Sloane).

Variation. Slight variation noted in punctuation of elytral striae that varies to some degree in its coarseness.

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

Collecting circumstances. Unknown. The types were collected at rather low altitude.

Etymology. The name refers to the blue colour of the elytra.

Relationships. This species is closely related to the Australian *D. obscura* (Castelnau), but distinguished by the characters as mentioned in diagnosis.

Dicraspeda missai, spec. nov.

Figs 3, 4, 14

Types. Holotype: ♂, Coll. I.R.Sc.N.B., Canopy mission P.N.G., Madang province, Baiteta – FOG AR1, 27.IV.1995, Leg. Olivier Missa (IRSNB). – Paratypes: 2♂♂, 3♀♀, same data (CBM, IRSNB); 1♀, same locality, FOG T9, 8.VI.1993 (IRSNB).

Diagnosis. Species of the *dubia*-group, distinguished from most other species by the combination of two character states: elytra microreticulate apically in both sexes and eyes almost completely included in lateral outline of head. Distinguished from next relative *D. ullrichi* Baehr by laterally more convex pronotum and more protruding eyes.

Description

Measurements. Length: 7.3–8.3 mm, width: 2.65–3.0 mm. Ratios. Length eye/orbit: 0.9–1.0; length/width of head: 1.02–1.09; length/width of pronotum: 1.02–1.09; width of head/width of pronotum: 1.09–1.13; length/width of elytra: 1.62–1.69.

Colour. Head and pronotum black, elytra very dark piceous, feebly lighter than fore body. Labrum with reddish-piceous margins, mandibles piceous, palpi and antenna reddish. Legs piceous with slightly lighter tarsi. Lower surface black to dark piceous.

Head. Large, triangular, wider than pronotum, upper surface rather convex. Eyes moderately large, slightly shorter than to almost as long as orbits, laterally projecting, though not interrupting the lateral curve of head. Orbits very oblique, convex, anteriorly not incurved, forming a regular curve with eyes, but a very distinct angle with neck. Distance between eyes $> 3 \times$ as wide as diameter of eye. Clypeus separated by a fine suture that is shortly interrupted in middle. Labrum large, anteriorly straight, 6-setose. Mandibles and palpi of average size, mandibles anteriorly regularly incurved. Labium with elongate, triangular tooth. Frons laterally near clypeal suture with a deep, sinuate impression that begins with a circular groove, in middle of frons with a shallow though distinct v-shaped impression, and laterally of that with a shallow, circular groove on either side halfway between impression and eye. Medially of eye with a distinct sulcus and ridge. Neck separated from vertex by a shallow, transverse furrow. Posterior supraorbital seta situated far behind posterior margin of eye. Antennae of average size, surpassing base of pronotum by almost two antennomeres. Median antennomeres about $2.5 \times$ as long as wide. Surface of head apart from labrum without microreticulation, impunctate and impilose, highly glossy.

Prothorax. Rather short, but slightly longer than wide, laterally rather rounded, surface convex. Widest slightly in front of middle, margin gently rounded, near basal angles shortly and gently concave. Lateral border prominent, slightly raised, lateral margin with a fairly deep but narrow sulcus that even narrows towards apex and base. Sulcus not bordered medially by a definite ridge. Large parts of proepipleura and proepisternum visible from above. Apex almost straight, not bordered, anterior angles rounded off, barely visible. Base straight, not bordered, posterior angles right though obtuse at apex. Median line deeply impressed, punctate-crenulate, not attaining apex nor base. Anterior transverse sulcus very shallow, v-shaped, barely punctate, basal transverse sulcus barely impressed. Posterior marginal pore present but setae broken in almost all specimens, anterior marginal pore and seta apparently absent. Surface without microreticulation, disk barely striolate, lateral sulcus almost impunctate but opaque, apex barely punctate, only base coarsely and fairly densely punctate. Surface very glossy.

Elytra. Large in comparison with fore body,

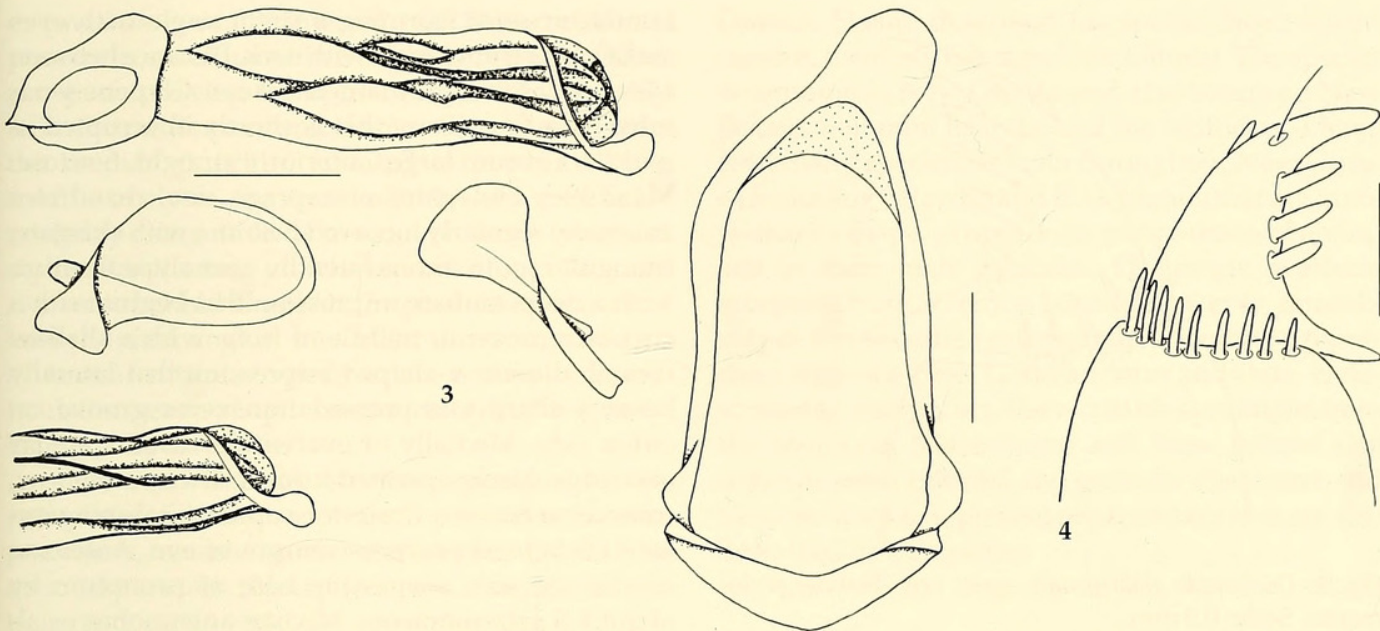


Fig. 3,4. *Dicraspeda missai*, spec. nov. **3.** Male genitalia: aedeagus, parameres, genital ring. Scales: 0.5 mm. **4.** Female stylomeres. Scale: 0.5 mm.

more than twice as wide as prothorax, posteriorly widened and lateral margin in anterior third faintly compressed. Surface convex, disk without any transverse impression. Humeri wide, almost evenly rounded. Marginal sulcus narrow. Apex wide, oblique, sinuate and moderately concave towards lateral angles. Sutural angle with very short spine, lateral apical angle angulate, slightly produced. Apex with coarse border line, particularly in median half finely denticulate. All striae complete, slightly impressed, punctate-crenulate, intervals gently convex. Punctures of striae fairly coarse, becoming barely weaker towards apex. 3rd interval with three setiferous punctures, all situated in a slight impression. Anterior puncture situated at first third and close to 3rd stria, the median and apical ones adjacent to 2nd stria; the median puncture situated at posterior three fourths of elytra, the apical one close to apex. Setae fairly elongate (but almost all broken!). Marginal series of setiferous punctures consisting of 6 anterior setae behind shoulder, 7 apical setae in front of lateral apical angles, one intercalary seta, and two setae near suture at apex. Surface impunctate, in both sexes with highly superficial microreticulation in apical half, that consists of transverse meshes, highly glossy. Wings fully developed.

Lower surface. Pproepisternum, proepimeron, mesepisternum, and immediate base of abdomen with very coarse punctures, prosternum, metasternum, metepisternum, and most of abdomen impunctate. Metepisternum elongate, about twice as long as wide. Terminal sternum in male bisetose, in female quadrisetose, apical margin slightly excised in both sexes.

Legs. Rather elongate. All tarsomeres including 5th with dense and elongate setosity on lower surface, 4th tarsomeres with deep ($> \frac{2}{3}$ of length) excision. Apex of 1st tarsomere and 2nd and 3rd tarsomeres of male anterior tarsus asymmetrically, sparsely biserially squamose.

Male genitalia (Fig. 3). Genital ring rather narrow and elongate, markedly asymmetric, narrowed to the spoon-shaped, asymmetric apex. Aedeagus compact, laterally rather sinuate, lower surface markedly bisinuate and with a sharp edge in apical half. Apex short, slightly turned to the right, markedly knobbed and slightly upturned. Orificium short, internals sac fairly complexly folded, but without any sclerotized pieces. Both parameres large and convex, the right one much smaller than the left, very short.

Female genitalia (Fig. 4). Stylomere 1 with 9-10 fairly elongate ensiform setae along apical margin. Stylomere 2 moderately elongate, evenly curved, with fairly acute apex, with one dorso-median ensiform seta in apical third, three large ventro-lateral ensiform setae along lateral margin, and one elongate nematiform seta in apical third originating from a pit.

Variation. Apart from slight variation in size and relative shape of pronotum and elytra, very little variation noted.

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

Collecting circumstances. According to the labels fogged during a canopy fogging programme, though it is not known whether this fogging actually was

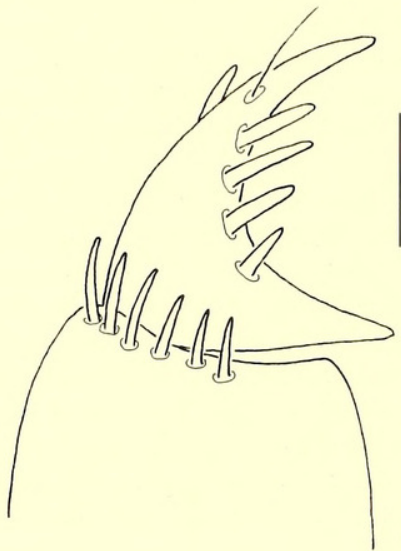


Fig. 5. *Dicraspeda glabripennis*, spec. nov. Female stylomeres. Scale: 0.5 mm.

done in the forest canopy, or on the trunks of standing trees, or on logs. Apparently, this is rather a non-hygrophilous species.

Etymology. The name honours the collector, O. Missa.

Relationships. This species belongs in the main body of the *dubia*-group and probably is closest related to *D. ullrichi* Baehr.

Dicraspeda glabripennis, spec. nov.

Figs 5, 15

Types. Holotype: ♀, INDONESIA, Irian Jaya, Nabire S Unipo, Januar 1997, leg. Frank Wolf (CBM).

Diagnosis. Species of the *dubia*-group, distinguished from most other species by the combination of absolutely glabrous elytra even in females, and laterally well produced eyes.

Description

Measurements. Length: 7.9 mm, width: 2.7 mm. **Ratios.** Length eye/orbit: 0.85; length/width of head: 1.27; length/width of pronotum: 1.04; width of head/width of pronotum: 1.12; length/width of elytra: 1.65.

Colour. Upper and lower surfaces uniformly black, elytra not lighter than fore body. Labrum with reddish-piceous margins, mandibles piceous, palpi and antenna reddish. Legs piceous with lighter knees and tarsi.

Head. Large, triangular, wider than pronotum, upper surface rather convex. Eyes moderately large, slightly shorter than orbits, laterally remarkably projecting, distinctly interrupting the lateral curve of head. Orbits very oblique, convex but anteriorly

faintly incurved, forming a slight angle with eyes and a very distinct angle with neck. Distance between eyes $> 3 \times$ as wide as diameter of eye. Clypeus separated by a fine suture that is shortly interrupted in middle. Labrum large, anteriorly straight, 6-setose. Mandibles and palpi of average size, mandibles anteriorly regularly incurved. Labium with elongate, triangular tooth. Frons laterally near clypeal suture with a deep, sinuate impression that begins with a circular groove, in middle of frons with a shallow though distinct v-shaped impression that laterally bears a sharply impressed transverse groove on either side. Medially of eye with a distinct sulcus and ridge. Neck separated from vertex by a shallow, transverse furrow. Posterior supraorbital seta situated far behind posterior margin of eye. Antennae of average size, surpassing base of pronotum by about 1.5 antennomeres. Median antennomeres almost $2.5 \times$ as long as wide. Surface of head apart from labrum without microreticulation, impunctate and impilose, highly glossy.

Prothorax. Rather short, but slightly longer than wide, laterally rather rounded, surface convex. Widest slightly in front of middle, margin gently rounded, near basal angles shortly and gently concave. Lateral border prominent, slightly raised, lateral margin with a fairly deep but narrow sulcus that even narrows towards apex and base. Sulcus not bordered medially by a definite ridge. Large parts of proepipleura and proepisternum visible from above. Apex almost straight, not bordered, anterior angles rounded off, barely visible. Base almost straight, not bordered, posterior angles right though obtuse at apex. Median line deeply impressed, punctate-crenulate, not attaining apex nor base. Anterior transverse sulcus shallow, v-shaped, coarsely punctate, basal transverse sulcus barely impressed. Posterior marginal pore present but both setae broken in holotype, anterior marginal pore and seta apparently absent. Surface without microreticulation, disk laterally faintly striolate, lateral sulcus apex, base and disk near median line coarsely and fairly densely punctate. Surface very glossy.

Elytra. Large in comparison with fore body, more than twice as wide as prothorax, posteriorly widened and lateral margin in anterior third faintly compressed. Surface convex, disk without any transverse impression. Humeri wide, almost evenly rounded. Marginal sulcus narrow. Apex wide, oblique, sinuate and moderately concave towards lateral angles. Sutural angle with short spine, lateral apical angle angulate, slightly produced. Apex with coarse border line, particularly in median half finely denticulate. All striae complete, well impressed, punctate-crenulate, intervals convex. Punctures of striae fairly coarse, becoming barely weak-

er towards apex. 3rd interval with three setiferous punctures, all situated in a slight impression. Anterior puncture situated at first third and close to 3rd stria, the median and apical ones adjacent to 2nd stria; the median puncture situated at posterior three fourths of elytra, the apical one close to apex. Setae probably elongate (only one not broken!). Marginal series of setiferous punctures consisting of 6 anterior setae behind shoulder, 7 apical setae in front of lateral apical angles, one intercalary seta, and two setae near suture at apex. Surface without microreticulation, even at apex, impunctate, highly glossy. Wings fully developed.

Lower surface. Prosternum, proepisternum, proepimeron, and mesepisternum with very coarse punctures, metasternum, metepisternum, and abdomen impunctate. Metepisternum elongate, about twice as long as wide. Terminal sternum in female quadrisetose.

Legs. Rather elongate. All tarsomeres including 5th with dense and elongate setosity on lower surface, 4th tarsomeres with deep ($> \frac{2}{3}$ of length) excision. Squamosity of male protarsus unknown.

Male genitalia. Unknown.

Female genitalia (Fig. 5). Stylomere 1 with 6 fairly elongate ensiform setae along median two thirds of apical margin. Stylomere 2 rather elongate, evenly curved, with elongate, acute apex, with one dorso-median ensiform seta in apical third, four remarkably elongate ventro-lateral ensiform setae along lateral margin, and one elongate nematiform seta in apical third originating from a pit.

Variation. Unknown.

Distribution. Central Irian Jaya. Known only from type locality.

Collecting circumstances. Unknown. This is probably a ground-living, non-hygrophilous species.

Etymology. The name refers to the absolutely glabrous elytra of this species.

Relationships. This species belongs in the main body of the *dubia*-group and in view of certain external characters probably is closest related to *D. loebli* Baehr and *D. laticollis* Baehr.

Dicraspeda quadrispinosa (Chaudoir)

Macrocentra quadrispinosa Chaudoir, 1869: 206; Csiki 1932: 1541; Liebke 1938: 100; Louwerens 1956: 223; Darlington 1968: 213; Lorenz 1998: 420.

Loxocara quadrispinosa Sloane, 1907: 180.

The nominate form of *Dicraspeda quadrispinosa* (Chaudoir) was described from Dorey, western New

Guinea. Sloane described his species from north-eastern, formerly German New Guinea. The species is common in New Guinea and also occurs on New Britain, Solomon Islands, and the Moluccas. I have seen many specimens from throughout New Guinea including Salawati and Biak Islands that are quite similar in shape, proportions, punctuation of elytra, and in their male genitalia. The single available specimen from Solomon Islands, however, remarkably differs in certain external characters and proportions from the New Guinean form and thus, is described as subspecies. The available specimens from the Moluccas (Halmahera) and New Britain also differ in some external and genitalic characters and likewise seem to represent separate taxa that are also described as subspecies.

Dicraspeda quadrispinosa quadrispinosa (Chaudoir)

Fig. 6

Diagnosis. Distinguished from both, *D. q. brevipennis*, subsp. nov. and *D. novabritannica*, subsp. nov. by far less punctate lower surface; in addition from *D. q. brevipennis* by much longer and narrower elytra but slightly shorter spines, slightly coarser elytral punctuation, longer, narrower, and glossier pronotum without any traces of microreticulation, and larger eyes; from *D. q. moluccensis*, subsp. nov. by slightly less elongate and less parallel elytra, much finer elytral striae, shorter and wider pronotum, shorter head, and slightly stouter aedeagus with shorter and more club-shaped apex; and from *D. q. novabritannica*, subsp. nov. by slightly longer elytra, shorter head, shorter pronotum, and more club-shaped apex of aedeagus.

Partial redescription

Measurements. Length: 11.5-12.1 mm, width: 3.9-4.1 mm. Ratios. Length eye/orbit: 1.50-1.65; length/width of head: 0.94-0.96; length/width of pronotum: 0.92-0.94; width of head/width of pronotum: 1.16-1.18; length/width of elytra: 1.61-1.65.

Male genitalia (Fig. 6). Genital ring narrow and elongate, rather symmetric, evenly narrowed to the angulate, slightly asymmetric apex, base rather triangular. Aedeagus very slender and elongate, very slightly curved to right side, lower surface very gently concave. Apex comparatively short (in species), situated asymmetrically on right side, turned to the right, perceptibly widened to tip, hence somewhat knobbed, when seen exactly laterally from left side, rather upturned. Parameres of very different size and shape, left large, apically evenly rounded off, right narrow and elongate.

Distribution. Throughout New Guinea, including the islands to the north and west.

New records (many specimens). PNG: Madang, Prov. Baiteta, FOG AR67, 18.VII.1996, Leg. O. Missa (IRSNB); same locality and collector, FOG XD, 3.VI.1993 (CBM).

Relationships. In view of the almost impunctate lower surface and the moderately punctate elytral striae more closely related to *D. q. moluccensis*, subspec. nov. than to both other subspecies, but there seems to occur a west to east gradient in distinctness of punctuation of elytral striae within the nominate subspecies.

Dicraspeda quadrispinosa brevipennis,
subspec. nov.

Fig. 16

Types. Holotype: ♀, SOLOMON ISLANDS, Bougainville Island, Konga Village (Buin), 6.2.-21.3.196, W. W. Brandt (ANIC).

Diagnosis. Distinguished from all other subspecies by much shorter and wider elytra with extremely elongate spines, even finer elytral punctuation, shorter, wider, and less glossy pronotum due to rather dense punctuation and traces of microreticulation, and smaller eyes. In addition distinguished from other subspecies except for *D. quadrispinosa novabritannica*, subspec. nov. by the dense punctuation of much of lower surface.

Description

Measurements. Length: 10.9 mm, width: 4.05 mm. Ratios. Length eye/orbit: 1.35; length/width of head: 0.96; length/width of pronotum: 0.87; width of head/width of pronotum: 1.13; length/width of elytra: 1.40.

Colour. As in nominate subspecies.

Head. Largely as in nominate subspecies, but eyes slightly smaller in relation to orbits.

Prothorax. Generally as in nominate subspecies, but shorter and wider, with perceptibly concave apex, denser punctuation near apex and base, and also on disk, and superficial microreticulation on disk, that together make the surface less glossier than in all other subspecies.

Elytra. Considerably shorter and wider than in all other subspecies, and more widened in apical half. Sutural spines extremely elongate, longer than in any other subspecies. Striae not all impressed, even finer punctate than in other subspecies, intervals absolutely depressed, not even convex near apex, therefore the large preapical impressions distinct.

Lower surface. Generally as in nominate subspe-

cies, but prosternum, proepisternum, proepimeron, mesepisternum, lateral parts of metasternum, and both basal abdominal sternites with coarse and rather dense punctuation. Metepisternum slightly less elongate, c. 2 × as long as wide.

Legs. As in nominate subspecies.

Female genitalia. Very similar to those of nominate subspecies.

Variation. Unknown.

Distribution. Bougainville, Solomon Islands. Known only from type locality.

Collecting circumstances. Unknown.

Etymology. The name refers to the remarkably short and wide elytra of this subspecies.

Relationships. In view of the very fine punctuation of the elytral striae, the distinct preapical elytral depression, and the extended punctuation of the lower surface, most similar to *D. quadrispinosa novabritannica*, subspec. nov. However, as long as the male genitalia of *D. q. brevipennis* are not known, the relationships will remain unsettled.

Dicraspeda quadrispinosa novabritannica,
subspec. nov.

Figs 7, 17

Types. Holotype: ♂, PNG: E New Britain Prov. 30 km SW Kokopo, 5 km SW Arabam, 04°35'75"S 152°06'84"E, 200 m, 25.II.2000, leg. A. Weigel KL (CBM).

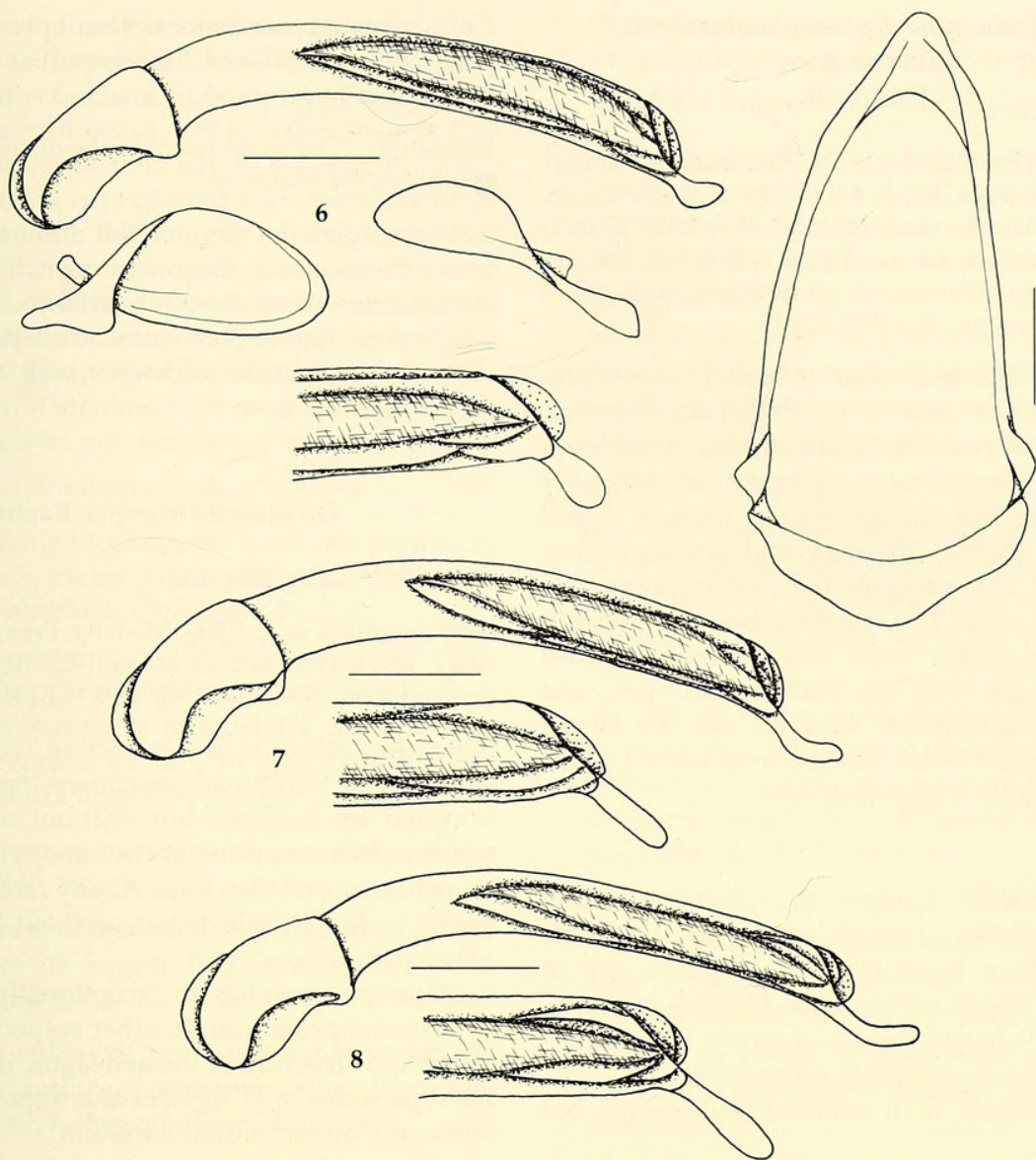
Diagnosis. Distinguished from *D. quadrispinosa brevipennis*, subspec. nov. by much longer and narrower elytra but slightly shorter spines, slightly coarser elytral punctuation, longer, narrower, and glossier pronotum without any traces of microreticulation, and larger eyes; from both other subspecies by denser punctuation of lower surface; from *D. q. quadrispinosa* also by slightly shorter elytra, longer head, longer pronotum, and less club-shaped apex of aedeagus; and from *D. q. moluccensis*, subspec. nov. by less elongate and less parallel elytra, much finer elytral striae, and slightly shorter and stouter aedeagus.

Description

Measurements. Length: 11.6 mm, width: 3.95 mm. Ratios. Length eye/orbit: 1.55; length/width of head: 1.03; length/width of pronotum: 1.01; width of head/width of pronotum: 1.18; length/width of elytra: 1.65.

Colour. As in nominate subspecies.

Head. Largely as in nominate subspecies, but head longer, even longer than wide.



Figs 6-8. *Dicraspeda quadrispinosa* (Chaudoir). Male genitalia: aedeagus, parameres, genital ring. 6. *D. q. quadrispinosa* (Chaudoir). 7. *D. quadrispinosa novabritannica*, subsp. nov. 8. *D. quadrispinosa moluccensis*, subsp. nov. Scales: 0.5 mm.

Prothorax. Generally as in nominate subspecies, but longer, with slightly concave apex.

Elytra. Much as in nominate subspecies, but sutural spines relatively short. Striae barely impressed, punctuation finer, intervals depressed, barely convex even near apex, therefore the large preapical impressions fairly distinct.

Lower surface. Generally as in nominate subspecies, but prosternum, proepimeron, mesepisternum, lateral parts of metasternum, and both basal abdominal sternites with rather coarse and fairly dense punctuation, proepisternum sparsely punctate.

Legs. As in nominate subspecies.

Male genitalia (Fig. 7). Much as in nominate subspecies, but apex of aedeagus longer and not at all knobbed.

Female genitalia. Unknown.

Variation. Unknown.

Distribution. New Britain.

Collecting circumstances. Largely unknown. The mentioned specimen collected in lowland. This is probably a ground-living, non-hygrophilous subspecies.

Etymology. The name refers to the distribution of this species on New Britain.

Relationships. In view of the fine punctuation of the elytral striae, the distinct preapical elytral depression, and the extended punctuation of the lower surface, most similar to *D. quadrispinosa brevipennis*, subsp. nov. However, as long as the male genitalia of *D. q. brevipennis* are not known, the relationships will remain unsettled.

Dicraspeda quadrispinosa moluccensis,
subspec. nov.

Figs 8, 18

Types. Holotype: ♂, 20.5.-2.6.1997, Indonesia, N. Moluccas, NO Halmahera, Umg. Labi Labi ca. 5 km östlich, 0-200 m, leg. M. Hiermeier, N01°27.606', E128°22.045' (CBM). – Paratypes: 1♂, same data (CBM); 1♂, Indonesia: Halmahera, Wangonira (petromax), ca. 01.37 N 127.51 E, W. Lorenz, 28.3.1995 (CLT).

Diagnosis. Distinguished from both, *D. q. brevipennis*, subspec. nov. and *D. novabritannica*, subspec. nov. by far less punctate lower surface; in addition from *D. q. brevipennis* by much longer and narrower elytra but slightly shorter spines, coarser elytral punctuation, longer, narrower, and glossier pronotum without any traces of microreticulation, and larger eyes; from *D. q. quadrispinosa* by slightly longer elytra, longer head, longer pronotum, and longer aedeagus with less club-shaped apex; and from *D. q. novabritannica*, subspec. nov. by longer and more parallel elytra, much coarser elytral striae, and even slightly longer aedeagus.

Description

Measurements. Length: 10.2-11.9 mm, width: 3.5-3.9 mm. Ratios. Length eye/orbit: 1.50-1.55; length/width of head: 0.98-1.0; length/width of pronotum: 0.98-1.0; width of head/width of pronotum: 1.17-1.19; length/width of elytra: 1.70-1.72.

Colour. As in nominate subspecies.

Head. Largely as in nominate subspecies, but head longer.

Prothorax. Generally as in nominate subspecies, but longer, with slightly concave apex.

Elytra. Much as in nominate subspecies, but longer and more parallel. Sutural spines relatively short. Striae more impressed than in any other subspecies, intervals distinctly convex near apex, hence, the preapical impression indistinct. Punctuation coarser, very distinct even near apex.

Lower surface. As in nominate subspecies, impunctate except for mesothorax and lateral parts of propisternum.

Legs. As in nominate subspecies.

Male genitalia (Fig. 8). Much as in nominate subspecies, but aedeagus even longer and narrower, apex much longer and but very slightly widened.

Female genitalia. Unknown.

Variation. Little variation noted, except for length of sutural spines that are exceptionally short in one specimen, not seen elsewhere in the numerous material of this species examined.

Distribution. Halmahera, Moluccas.

Collecting circumstances. One specimen apparently collected at light. This is probably a ground-living, non-hygrophilous. lowland subspecies.

Etymology. The name refers to the distribution of this species on the Moluccas.

Relationships. In view of the almost impunctate lower surface and the coarse punctuation of the elytral striae more closely related to the nominate subspecies, than to both eastern subspecies, but the elongate apex of the aedeagus well differentiates this subspecies from the nominate form.

Dicraspeda nigripes Baehr

Baehr, 2003c: 258; 2004: 192.

New records (2 ex.). PNG: Madang, Prov. Baiteta, FOG AR67, 18.VII.1996, Leg. O. Missa (IRSNB); same locality and collector, FOG XD, 3.VI. 1993 (CBM).

Note. According to the collecting records on the labels, both additional specimens probably were sampled by fogging, but without exact record, whether this was done in the canopy, or on lower branches, or on fallen logs. At any rate, this species seems to live in rain forest, without being decidedly hygrophilous.

One specimen has an exceptionally wide, laterally convex pronotum. In other respects, including shape and structure of the aedeagus, it is similar to the type series of *D. nigripes* and apparently represents only an individual variation.

Dicraspeda minuta Baehr

Baehr, 1998: 176; 2004: 192.

New records (2 ex.). PNG: Madang prov. Baiteta, FOG AR4, 5.V.1995, leg. O. Missa (IRSNB); same locality, FOG AR62, 3.VII.1996 (CBM).

Note. This is a species which is not easily arranged in one of the species groups mentioned above, because in certain aspects it is intermediate between the *brunnea*- and *dubia*-groups.

According to the collecting records on the labels, both additional specimens probably were sampled by fogging, but without exact record, whether this was done in the canopy, or on lower branches, or on fallen logs. At any rate, this species seems to live in rain forest, without being decidedly hygrophilous.

Key to the species of the genus
***Dicraspeda* Chaudoir**

In view of the number of new taxa described in this paper, a completely new key to the species of the genus *Dicraspeda* is presented that combines three rather recent keys: that for the Australian species (Baehr 2004), that for the species of the *brunnea*-group (Baehr 2003c), and that for the extra-Australian species (Baehr 1998). For better comparison, figures from Baehr (1996a) are included as “B96a fig.” in text.

1. Apex of elytra not denticulate or spinose2.
- Apex of elytra denticulate or spinose 18.
2. Body striking bicolourous: head and pronotum deep black, elytra rufous; size minute, length c. 5 mm. Northern Queensland
.....*subrufipennis*, spec. nov.
- Body more or less unicolourous: uniformly black or dark piceous, at most elytra piceous; size major, length >5.5 mm, in species with dark piceous elytra length >7.5 mm..... 3.
3. 4th tarsomere of metatarsus emarginate for less than 1/3 of its length4.
- 4th tarsomere of metatarsus emarginate for more than 2/3 of its length. New Guinea, northern Queensland*longiloba* (Liebke)
4. Marginal sulcus of pronotum wide, markedly explanate; surface of pronotum rather depressed; elytra wide, rather quadrate, depressed5.
- Marginal sulcus of pronotum narrow and not explanate; surface of pronotum rather convex; elytra less wide, convex 15.
5. Legs wholly or in parts piceous to black.....6.
- Legs completely yellow 8.
6. Lateral apical angles of elytra sharply angulate; surface of elytra in basal third without distinct transverse impression, with superficial, though distinct microreticulation7.
- Lateral apical angles of elytra rounded; surface of elytra in basal third with distinct transverse impression, without perceptible microreticulation. Papua New Guinea.....*nigripes* Baehr
7. Elytra in apical half not markedly widened, apex less deeply excised; striae less coarsely punctate. Solomon Islands: Rennell Island
.....*inermis* Louwerens
- Elytra in apical half considerably widened, apex deeply excised; striae more coarsely punctate. Moluccas*angulipennis* Baehr
8. Striae deeply impressed, intervals clearly convex (doubtful species under both couplets)9.
- Striae not impressed, intervals depressed 11.
9. Striae less deeply impressed, intervals near base gently convex, in apical half depressed; surface of elytra with superficial microreticulation; orbits more oblique, less transversal. New Hebrides (Vanatua)*hebridarum* Baehr
- Striae deeply impressed, intervals convex almost towards apex; surface of elytra with distinct microreticulation; orbits less oblique, more transversal. Distribution different 10.
10. Surface of elytra more convex, striae more coarsely punctate; surface of elytra in basal third with perceptible transverse impression, apex of elytra little excised, lateral apical angles obtuse. Indonesia, Philippines, southern Thailand
.....*brunnea* Chaudoir
- Surface of elytra more depressed, striae less coarsely punctate; surface of elytra in basal third without perceptible transverse impression, apex of elytra deeply excised, lateral apical angles angulate. Northern Australia
.....*sublaevis* (Macleay)
11. Surface of elytra in basal third without perceptible transverse impression, with superficial though distinct microreticulation 12.
- Surface of elytra in basal third with distinct transverse impression, without perceptible microreticulation 13.
12. Punctures of elytral striae basally coarser, intervals near base slightly convex; orbits more oblique, less transversal. New Hebrides (Vanatua)*hebridarum* Baehr
- Punctures of elytral striae basally finer, intervals also near base depressed; orbits more transversal, less oblique. Northern Queensland
.....*nitida* (Sloane)
13. Striae with very fine punctuation, punctures becoming obsolete towards apex; lateral apical angle of elytra angulate; orbits longer, more oblique. Irian Jaya: Biak Is.*obsoleta* Baehr
- Striae with coarser punctuation, punctures distinct towards apex; lateral apical angle of elytra obtuse; orbits shorter, more transversal. Distribution different 14.
14. Pronotum generally shorter and wider, ratio l/w 1.05-1.09; elytra shorter on the average, ratio l/w 1.47-1.50; apex of elytra more deeply excised, base with barely perceptible transverse impression. Northern Queensland*glabrata* Baehr

- Pronotum generally longer and narrower, ratio l/w 1.08-1.13; elytra shorter on the average, ratio l/w 1.51-1.53; apex of elytra less deeply excised, base with distinct transverse impression. Papua New Guinea *papuensis* Baehr
- 15. Pronotum completely and very coarsely punctate 16.
- Pronotum only at base and apex punctate, punctuation less coarse 17.
- 16. Elytra black; legs yellow with dark knees; antennae infusate from mid of 4th antennomere; pronotum longer and narrower, ratio l/w > 1.38. Northern Australia *obscura* (Castelnau)
- Elytra with distinct bluish lustre; legs and antennae unicolourous yellow; pronotum shorter and wider, ratio l/w < 1.32. Papua New Guinea *coeruleipennis*, spec. nov.
- 17. Elytra rather wide and depressed, with distinct transverse impression in basal third; striae not impressed, punctuation rather fine; legs reddish-piceous; elytra not lighter than fore body. Papua New Guinea *minuta* Baehr
- Elytra rather narrow and convex, without transverse impression; striae well impressed, punctuation coarse; legs yellow; elytra conspicuously lighter than fore body. Northern Queensland *brunneipennis* (Sloane)
- 18. Apex of elytra denticulate or spinose at sutural angle only 19.
- Apex of elytra bispinose, with elongate spines at sutural and lateral angles 27.
- 19. 4th tarsomere of metatarsus emarginate for < 1/2 of its length only; eyes large, slightly longer than orbits. New Guinea, ? northern Queensland *dubia* (Gestro)
- 4th tarsomere of metatarsus emarginate for 2/3 of its length or more; eyes smaller, shorter than orbits 20.
- 20. Outline of orbit and eye forming a regular curve which is not interrupted behind eye (Fig. 14; **B96a** fig. 10); aedeagus compact, large near apex, apex turned up, angle between lower surface of aedeagus and apex inconspicuous (Fig. 3; **B96a** fig. 6) 21.
- Outline of orbit and eye not forming a regular curve, outline interrupted behind eye (**B96** figs 8, 9); aedeagus different, when compact, then angle between lower surface of aedeagus and apex conspicuous (**B96a** fig. 4) 22.
- 21. Eyes laterally absolutely not protruded, width of head over eyes not much wider than over orbits (**B96a** fig. 10). Papua New Guinea *ullrichi* Baehr
- Eyes laterally protruded, width of head over eyes considerably wider than over orbits (Fig. 14). Papua New Guinea *missai*, spec. nov.
- 22. Elytra piceous, slightly lighter than fore body 23.
- Elytra black, not lighter than fore body 24.
- 23. Sutural spines elongate; microreticulation of elytra in female complete, in male distinct at least in apical half; intervals barely convex; aedeagus wider at apex, lower surface markedly bisinuate, angle between lower surface and apex conspicuous, lateral surface rough. Papua New Guinea *bispinosa* Darlington
- Sutural spines shorter; microreticulation of elytra in female visible only in apical half, in male almost completely absent; intervals distinctly convex; aedeagus narrower at apex, lower surface evenly concave, angle between lower surface and apex barely indicated, lateral surface smooth. Papua New Guinea *loebli* Baehr
- 24. Sutural angle of elytra denticulate **and** lateral angle obtusely angulate. Irian Jaya *denticulata* Baehr
- Sutural angle of elytra spinose or denticulate, but when denticulate, lateral angle sharply angulate 25.
- 25. Pronotum longer and narrower, ratio l/w > 1.07; elytra longer and narrower, barely widened in apical third, ratio l/w > 1.7 (from humerus to base of sutural spines). Vogelkop Peninsula, western Irian Jaya *intermedia* Baehr
- Pronotum shorter and wider, ratio l/w < 1.03; elytra shorter and wider, distinctly widened in apical third, ratio l/w < 1.6 (from humerus to base of sutural spines) 26.
- 26. Pronotum at apex and base more extensively punctate; in female elytra with distinct traces of microreticulation, at least in apical half. Japen Island and New Britain *laticollis* Baehr
- Pronotum at apex and base rather sparsely punctate; in female elytra without any traces of microreticulation, highly glossy. Irian Jaya *glabripennis*, spec. nov.
- 27. Colour green-purple; tarsi not sulcate-carinate above. New Guinea, New Britain *violacea* (Sloane)

- Colour black; tarsi sulcate-carinate above.....
.....*quadrispinosa* (Chaudoir) 28.
- 28. Elytra longer and narrower, ratio $l/w > 1.6$ (from humerus to base of sutural spines), sutural spines shorter (Figs 17, 18); pronotum longer and narrower, ratio $w/l > 0.92$, with barely excised apex; surface of pronotum glossier, without any microreticulation. New Guinea, New Britain, Halmahera29.
- Elytra shorter and wider, ratio l/w 1.4 (from humerus to base of sutural spines), sutural spines very elongate (Fig. 16); pronotum shorter and wider, ratio l/w 0.87, with more deeply excised apex; surface of pronotum less glossy, with traces of microreticulation. Solomon Islands: Bougainville
.....*quadrispinosa brevipennis*, subspec. nov.
- 29. Head and pronotum longer, ratios l/w head and l/w pronotum > 0.98 ; aedeagus with longer, barely knobbed apex (Figs 7, 8)30.
- Head and pronotum shorter, ratios l/w head < 0.96 , l/w pronotum < 0.94 ; aedeagus with shorter, distinctly knobbed apex (Fig. 6). New Guinea including adjacent islands
.....*quadrispinosa quadrispinosa* (Chaudoir)
- 30. Elytra longer, ratio $l/w > 1.70$ (from humerus to base of sutural spines), punctuation of striae rather coarse; aedeagus slenderer (Fig. 8). Halmahera
.....*quadrispinosa moluccensis*, subspec. nov.
- Elytra shorter, ratio $l/w < 1.65$ (from humerus to base of sutural spines), punctuation of striae very fine; aedeagus slightly less slender (Fig. 7). New Britain
.....*quadrispinosa novabritannica*, subspec. nov.

Genus *Eudalia* Castelnau

Eudalia Castelnau, 1867: 16; 1868: 102; Sloane 1917: 415; 1923: 30; Csiki 1932: 1542; Darlington 1968: 214; Moore et al. 1987: 273; Lorenz 1998: 421; Baehr 1999: 116; 2003b: 101; 2004: 151.

Note. *Eudalia* seems to be a genus of convenience which includes quite differently shaped and structured species that are combined more by plesiomorphic than by apomorphic features. Apparently it is confined to Australia, because the single extra-Australian species *E. anomala* Darlington actually belongs to another genus (see below). *Eudalia* is composed of two well separated lineages, namely the *obliquiceps*-lineage that comprises rather elongate, impilose or scarcely pilose species bearing smaller, less pro-

truding eyes, and the *macleayi*-lineage that comprises short, compact, densely pilose species with large, protruding eyes and short, remarkably convex orbits.

Eudalia liebherri, spec. nov.

Figs 9, 19

Types. Holotype: ♂, Australia: Q. Canungra Ck. S Canungra el. 150 m 28°04.40'S 153°06.75'E 20-VIII-2004 J. K. Liebherr under rocks in streambed (QMT123682). - Paratype: 1♂, same data (CUIC).

Diagnosis. Characterized by sharing of uniformly black colour, absence of pilosity on the elytra but presence of fine microreticulation, uniformly piceous legs, and absence of setiferous punctures from 5th interval. Distinguished from most closely related *E. atrata* Baehr by lesser size, slightly smaller eyes, and upturned apex of aedeagus.

Description

Measurements. Length: 8.6-8.8 mm, width: 3.05-3.10 mm. Ratios. Length eye/orbit: 1.15-1.20; length/width of head: 1.12-1.13; length/width of pronotum: 1.26-1.28; width of head/width of pronotum: 1.16-1.18; length/width of elytra: 1.67-1.71.

Colour. Surface black, labrum with piceous margins, palpi reddish, antenna dark, becoming slightly lighter towards apex. Legs dark piceous, only tarsi reddish towards apex.

Head. Fairly wide. Neck moderately narrow, with rather deep transverse impression. Eyes fairly large, laterally moderately protruding, slightly separated from orbits which are slightly shorter than eyes and gently convex. Behind clypeus with fairly deep, elongate, somewhat sinuate groove, and in middle of frons with a shallow v-shaped groove. Medially of eye with a slight sulcus that extends to about middle of eye, but without ridge. Posterior supraorbital seta located well behind posterior margin of eye and moved on vertex. Labrum elongate, 6-setose. Clypeus not separated from frons. Mentum with rather elongate, acute, triangular tooth, with 2 setae behind tooth, submentum with a very elongate and a short seta on either side. Apex of glossa transverse, with 2 elongate median and 2 shorter lateral setae. Paraglossae free, narrow, surpassing glossy. Lacinia elongate, interior margin with a sparse fringe of spines. Antenna elongate, surpassing base of pronotum by about one antennomere, pilose from middle of 4th antennomere. Median antennomeres $> 3 \times$ as long as wide. Surface glossy, without microreticulation, glabrous, with a group of rather coarse punctures medially of eyes.

Prothorax. Moderately elongate, laterally little

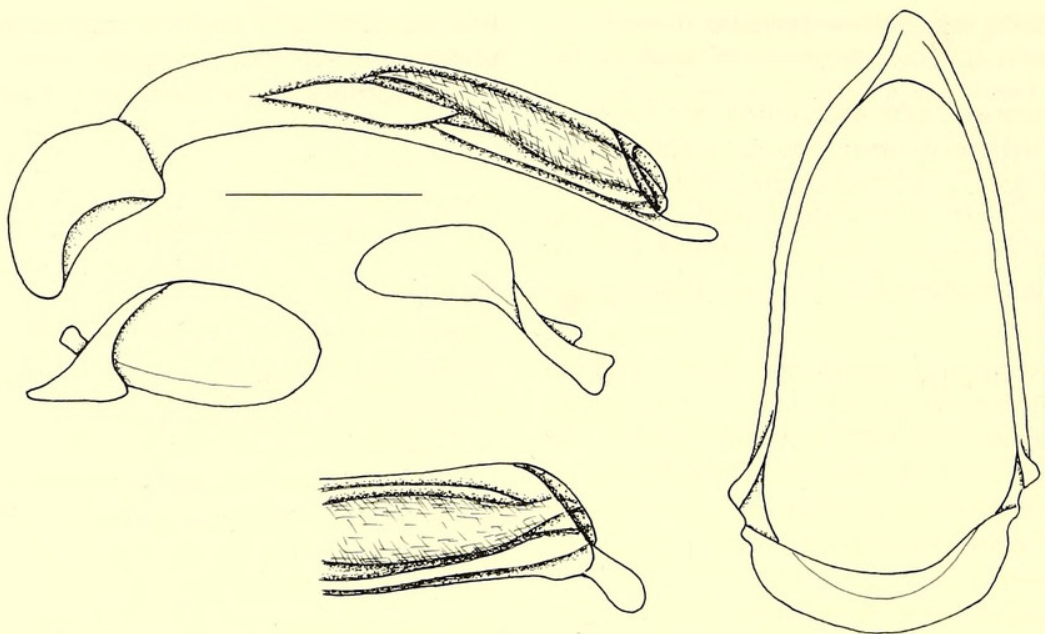


Fig. 9. *Eudalia liebherri*, spec. nov. Male genitalia: aedeagus, parameres, genital ring. Scales: 0.5 mm.

convex, dorsal surface convex. Widest slightly in front of middle, margin gently rounded, near basal angles gently concave. Lateral border prominent, slightly raised, but lateral margin without any sulcus or ridge. Proepipleura narrowly visible from above. Apex straight, not bordered, anterior angles rounded off. Base straight, not bordered, posterior angles right though obtuse at apex. Median line very shallow, not attaining apex nor base. Anterior transverse sulcus shallow, v-shaped, barely punctate, basal transverse sulcus barely impressed. A single marginal seta situated just in front of middle, seta elongate. Disk in basal half densely and coarsely punctate, the punctures tend to form irregular transverse sulci. Apical half impunctate, but with inconspicuous transverse striae. Surface without microreticulation, impilose, glossy.

Elytra. Large in comparison with fore body, more than twice as wide as prothorax, posteriorly widened, lateral margin evenly convex without any excision in anterior third. Surface gently convex, disk without any transverse impression. Humeri wide, almost evenly rounded. Marginal sulcus narrow. Apex wide, oblique and very slightly concave. Suture angle unarmed, lateral apical angles evenly rounded. Apex with coarse border line, not denticulate. Scutellar stria elongate, consisting of about 8 coarse punctures. All striae complete, well impressed, punctate-crenulate, intervals gently convex. Punctures of striae fairly coarse in basal half, becoming remarkably weaker towards apex. 3rd interval with 5 setiferous punctures, all situated in a slight impression. Three anterior punctures situated in middle of 3rd interval, the apical apical ones adjacent to 2nd stria. Setae moderately elongate. Marginal

series of setiferous punctures consisting of 6 anterior setae behind shoulder, 7 apical setae in front of lateral apical angles, one intercalary seta, and two setae near suture at apex. Surface with distinct, almost isodiametric microreticulation, impunctate, moderately glossy. Wings fully developed.

Lower surface. Thorax and basal half of abdomen with very coarse and moderately dense punctation. Apical half of abdomen impunctate. Metepisternum elongate, c. 2.5 × as long as wide at apex. Terminal abdominal sternum in male bisetose.

Legs. Of moderate size. Tarsi not lobed, impilose on upper surface, 5th tarsomere with a dense fringe of elongate setae below. Claws large, smooth. 1st-3rd tarsomeres of male anterior tarsus with sparse squamosity.

Male genitalia (Fig. 9). Terminal abdominal sternite in middle gently incised. Genital ring fairly narrow and elongate, moderately triangular, barely asymmetric, with narrow, triangular apex. Aedeagus slender and elongate, moderately depressed, laterally little sinuate, lower surface near base concave, in apical half almost straight. Orificum short. Apex short, fairly narrow, very slightly upturned, gently knobbed, turned to right, moderately incised at right side. Folding of internal sac simple, with an elongate, slightly coiled, moderately sclerotized piece in apical half. Parameres moderately dissimilar, large, comparatively elongate, left paramere larger than right.

Female genitalia. Unknown.

Variation. Very slight variation noted in punctation of elytral striae that varies to some degree in its coarseness.

Distribution. South-eastern Queensland, Australia. Known only from type locality.

Collecting circumstances. Collected “under rocks in streambed”. According to these information, this is a ripicolous species like other species of the genus *Eudalia*.

Etymology. The name honours the collector of this species, Prof. James Liebherr, Ithaca.

Relationships. According to shape and colouration, this species is most closely related to *E. atrata* Baehr, which however, is larger and apparently is restricted to the Barrington Tops area in central New South Wales.

Recognition

The new species is easily introduced in the recent key to the genus *Eudalia* (Baehr 2004: 165). When using the key, the reader will reach caption 8. which has to be changed as following:

- 8. Legs uniformly dark; elytra wider, posteriorly distinctly widened, ratio l/w <1.70; intervals more depressed, barely convex towards apex; striae more coarsely punctate, microreticulation of intervals distinct.....8a.
- Legs dark but upper surface of femora light reddish, contrasting; elytra narrower, almost parallel, ratio l/w 1.76; intervals convex throughout; striae less coarsely punctate, microreticulation of intervals more superficial. NSW, Orange, west of Blue Mountains.....*femorata* Baehr
- 8a. Size slightly larger, length >9.3 mm; apex of aedeagus straight, moderately directed to right side (B04 fig. 15). NSW, Vicinity of Barrington Tops*atrata* Baehr
- Size slightly smaller, length <8.7 mm; apex of aedeagus slightly upturned, markedly directed to right side (Fig. 9). se. QLD, north of Lamington Plateau..... *liebherri*, spec. nov.

Genus *Polydamasium* Liebke

Polydamasium Liebke, 1938: 86; Donabauer 1996: 1; Lorenz 1998: 418.

Note. This is a little known genus that had not been noted in the literature since its description, because the types of the single Philippine species *Polydamasium strandi* Liebke were destroyed during World War II. Although Jedlicka (1963) examined a large number of Philippine species, he did not mention it,

because apparently reliable material from the type locality or even from the range of this species was not available to him. Apparently the genus and species was also unknown to Darlington (1968). More recently, M. Donabauer collected a large series of specimens on which he redescribed the genus and species and designated a neotypus for *P. strandi* Liebke from this series (Donabauer 1996). Grace to his kindness I was able to examine two specimens and to confirm Donabauer’s decision.

In spite of some external similarities of both presently recorded species with certain species of the genus *Eudalia*, *Polydamasium* certainly is rather remotely related to *Eudalia*, which can be taken as well from the different structure of the male aedeagus, as the female stylomeres.

***Polydamasium anomalum* (Darlington)
(comb. nov.)
Figs 10, 11, 20**

Eudalia anomala Darlington, 1968: 214; Lorenz 1998: 421; Baehr 2004: 192.

Note. This species was only tentatively included in the genus *Eudalia* already by Darlington (1968) when he described it. Indeed, it is quite different from all Australian *Eudalia* and would represent the single extra-Australian species of that genus. During preparation of the present paper, and in the course of my comparison of *E. anomala* with other Indo-australian odacanthine genera, Mr. M. Donabauer in a determination sample kindly sent two specimens of his series of *Polydamasium strandi* Liebke mentioned above which enabled me to compare both species. This comparison now revealed that they certainly belong in the same genus, but are not conspecific. Main differences are noted in the key below.

Diagnosis. With characters of *Polydamasium* as described in Donabauer (1996). Compact species with short and large, laterally markedly rounded head, and large eyes; no ridge mediad of eye; surface glabrous, impunctate; pronotum rather short, laterally margined but without lateral sulcus; surface glabrous, punctate only near base; Elytra rather short and wide, without denticles or spines at apex; striae present, fairly coarsely punctate in basal half, barely punctate towards apex, not impressed; 3rd stria with three setiferous punctures; apex slightly excised, lateral apical angles more or less angulate, but never evenly rounded; upper surface of tarsi glabrous; 4th tarsomeres slightly excised, but not lobate; claws glabrous; aedeagus elongate, depressed,

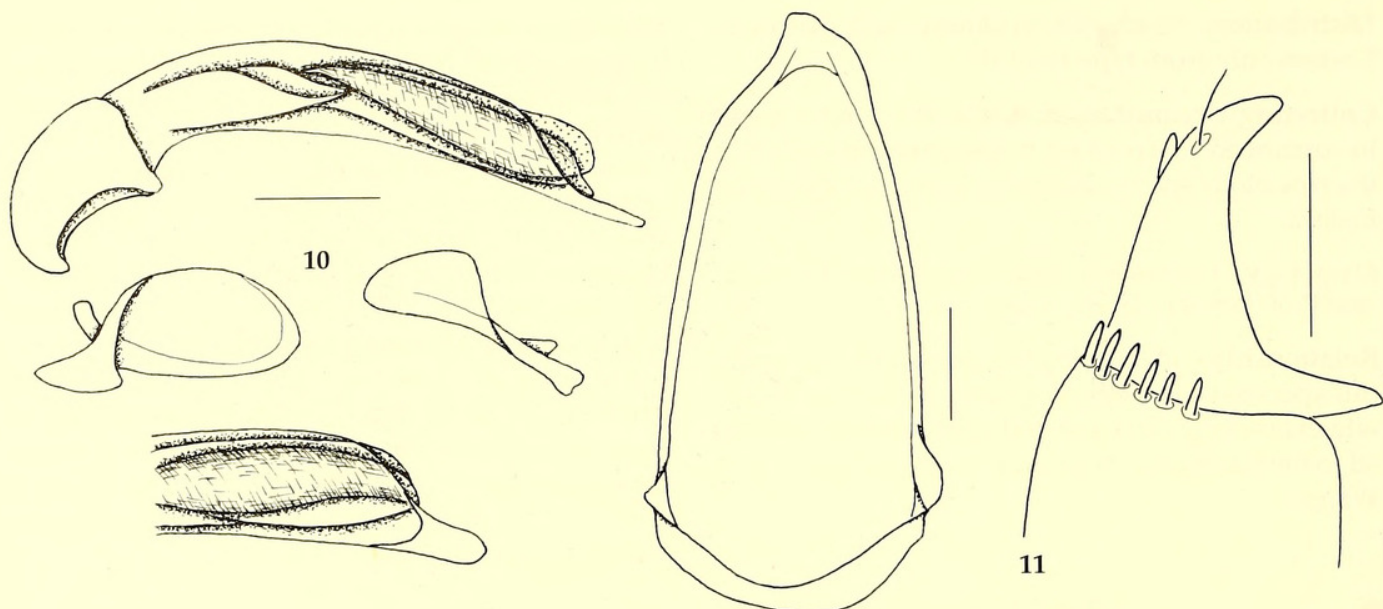


Fig 10-11. *Polydamasium anomalum* (Darlington). **10.** Male genitalia: aedeagus, parameres, genital ring. Scales: 0.25 mm. **11.** Female stylomeres. Scale: 0.1 mm.

curved, slightly asymmetric, orificium short, without any sclerotized pieces within, apex fairly elongate, turned to right side.

Partial redescription

Measurements. Length: 6.3-6.7 mm, width: 2.30-2.35 mm. Ratios. Length eye/orbit: 1.25-1.45; length/width of head: 1.06-1.12; length/width of pronotum: 1.09-1.14; width of head/width of pronotum: 1.12-1.15; length/width of elytra: 1.61-1.64.

Male genitalia (Fig. 10). Genital ring rather narrow and elongate, rather symmetric, slightly narrowed to the angulate, slightly asymmetric apex. Aedeagus slender and elongate, laterally barely sinuate, lower surface very gently concave. Apex rather elongate, straight, depressed, situated on right side, neither knobbed nor upturned. Internal sac rather simply folded, with a large, somewhat coiled and moderately sclerotized piece in apical half. Parameres moderately dissimilar, rather large, moderately elongate, left larger than right.

Female genitalia (Fig. 11). Very small, apical margin of stylomere 1 with c. 6 rather short ensiform setae; stylomere 2 narrow, elongate, little curved towards the short apex; without any ventro-lateral ensiform setae, with a dorso-median ensiform seta situated in apical third, and an elongate nematiform seta near apex arising from a pit.

In contrast to the male, the female terminal abdominal sternite bears a rather dense pilosity at its apical margin.

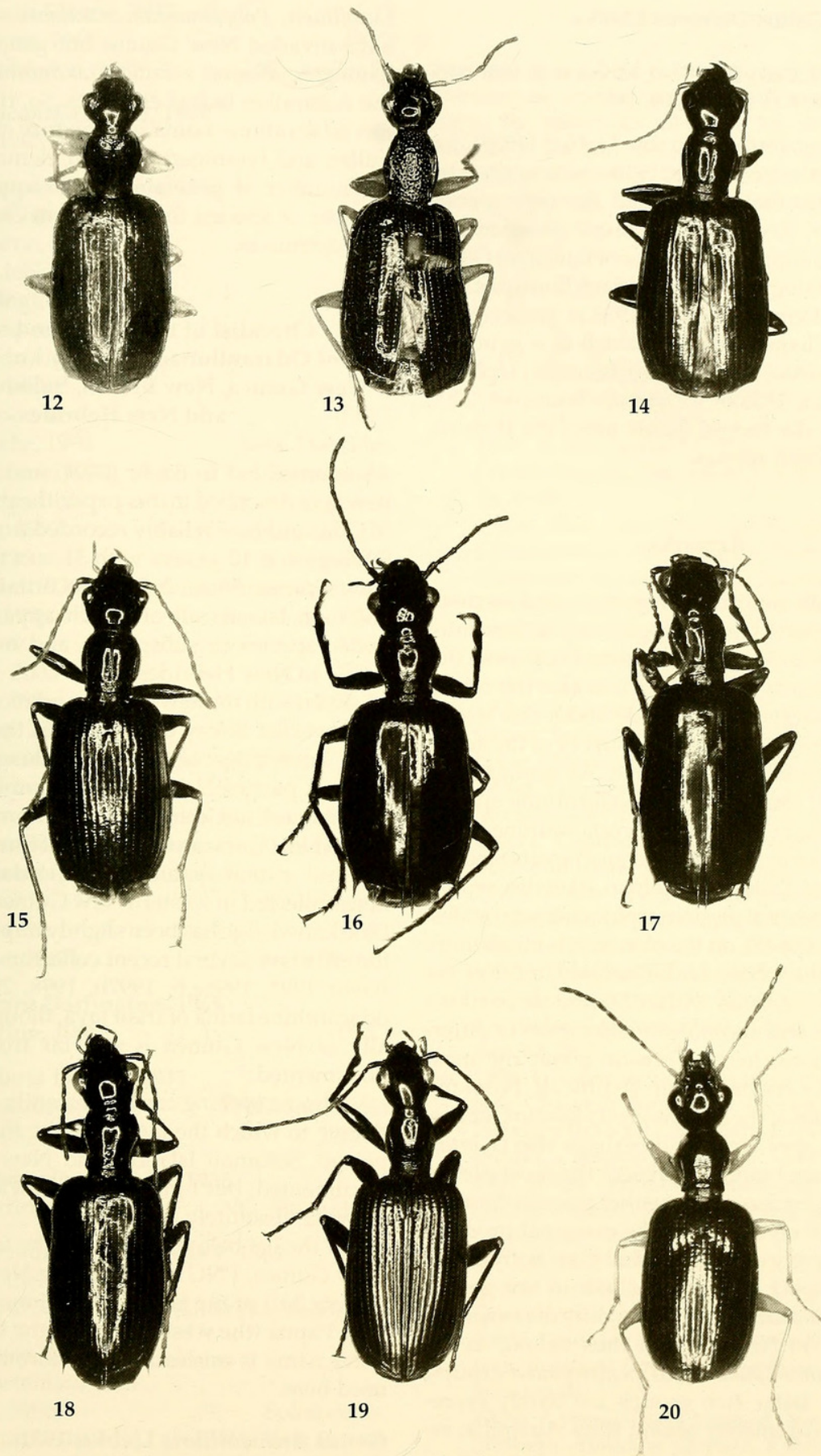
New records (many specimens). **PNG:** Madang Prov. Sisimangum Village, 15.VI.1979, leg. Van Goethem (CBM, IRNSB). – **IJ:** W-Papua, Raja Ampat Prov. Yensavai, Batanta bor., 0°48'05"S 130°40'36"E, 16.I.2004, leg. A. Weigel (CBM); W-Papua, Raja Ampat Prov. Batanta Isl. mer, Wailebet, 0°54'01"S 130°39'37"E, 18.-21.I.2004, leg. A. Skale (CBM). – **Indonesia:** Halmahera, Tobelo (hotel), 01.43N 128.00.30E, 23.3.1995, W. Lorenz (CLT).

Distribution. New Guinea, Halmahera, Moluccas.

Collecting circumstances. All specimens mentioned above were collected at light.

Key to the species of the genus *Polydamasium* Liebk

1. Lateral apical angles of elytra rounded, apex barely excised; punctuation of elytral striae coarser, striae perceptibly punctate even in apical third; apical part of aedeagus more evenly sloping, apex less depressed and shorter (see fig. 7 in Donaubaur 1996). Philippines *strandi* Liebk
- Lateral apical angles of elytra angulate, apex well excised (Fig. 20); punctuation of elytral striae less coarse, striae not punctate in apical third; slope of apical part of aedeagus steep, apex depressed and longer (Fig. 10). New Guinea, Halmahera. *anomalum* (Darlington)



Figs 12-20. Habitus. 12. *Dicraspeda subrufipennis*, spec. nov. 13. *Dicraspeda coeruleipennis*, spec. nov. 14. *Discraspeda missai*, spec. nov. 15. *Discraspeda glabripennis*, spec. nov. 16. *Dicraspeda quadrispinosa brevipennis*, subspec. nov. 17. *Dicraspeda quadrispinosa novabritannica*, subspec. nov. 18. *Dicraspeda quadrispinosa moluccensis*, subspec. nov. 19. *Eudalia liebherri*, spec. nov. 20. *Polydamasium anomalum* (Darlington). Lengths: 5.0 mm; 5.7 mm; 8.0 mm; 7.9 mm; 10.9 mm; 11.6 mm; 11.7 mm; 8.8 mm; 6.5 mm.

Genus *Deipyrus* Liebke

Liebke, 1938: 104; Csiki 1932: 1542; Moore et al. 1987: 276; Lorenz 1998: 420; Baehr 2004: 146.

This name was introduced by Liebke (1938) for *Lachnothorax palustris* Sloane, 1910 and was used by Baehr (2004) for that species and the new species *D. inops* Baehr. Recently, W. Lorenz directed my attention to the supplement paper of Bousquet (2002) to Lorenz's catalogue (1998), in which Bousquet had detected that *Deipyrus* Liebke, 1938 is preoccupied by *Deipyrus* Champion, 1908 which is a genus of Curculionidae. As a consequence, Bousquet replaced *Deipyrus* Liebke, 1938 by *Deipyrodes* Bousquet, 2002 which now is the correct genus name for both recorded Australian species.

Remarks

As explained in my previous papers and as mentioned above, New Guinea apparently is the centre of diversity of the odacanthine genus *Dicraspeda*. But this not necessarily means that it is also the centre of origin of this genus. To decide about this would require a thorough phylogenetic survey of the genus which is at present not available. As explained in the revision of the Australian odacanthine species (Baehr 2004), the most plesiotypic odacanthine genus apparently occur in Australia (genus *Porocara* Sloane), and the genus *Eudalia* Castelnau likewise would have retained several plesiomorphic character states. The genus *Dicraspeda*, on the contrary, is much more apotypic, on the whole. Unfortunately, most of the various species-groups within *Dicraspeda* combine plesiomorphic and apomorphic characters in different combinations, hence decision about the most basic species or species-group is difficult. From my view, the species of the *obscura*-group (*obscura* Sloane, *coeruleipennis*, spec. nov.) and perhaps also *D. brunneipennis* (Sloane) might represent the most plesiomorphic type, because they neither possess denticulate or spinose elytra, nor is the marginal pronotal sulcus extensively developed, and their body shape is rather compact and convex, like in the genera *Porocara* and *Eudalia*. The great majority of the species of *Dicraspeda* in New Guinea thus belong to the apotypic *brunnea*-, *dubia*-, and *quadrispinosa*-groups, of which the latter two groups are barely represented in, or completely absent from Australia, respectively.

Although the greater number of odacanthine species occurring in New Guinea has Australian affinities and probably stem from Australian ancestors, a number of Oriental elements (*Archicolliuris*,

Eucolliuris, *Polydamasium*, *Lachnothorax*, *Ophionea*) have invaded New Guinea but generally without having developed a similar taxonomic diversity as the Australian faunal elements. So, the New Guinean odacanthine fauna is a mixture of (older) Australian and (younger) Oriental elements, in which the number of genera is about equal, but in the number of species the Australian elements decidedly dominate.

Checklist of the genera and species of Odacanthinae presently known from New Guinea, New Britain, Solomon Islands, and New Hebrides

As enumerated in Baehr (2004) and including the new taxa described in this paper, the present number of Odacanthinae reliably recorded from the Papuan Subregion is 10 genera with 31 taxa recorded from New Guinea, 5 taxa from New Britain, 3 taxa from Solomon Islands all of which apparently are endemic species or subspecies, and one species endemic to New Hebrides.

Even with the new species and records included, the checklist below demonstrates the very insufficient knowledge of the odacanthine fauna of the western part of New Guinea (Irian Jaya) that had been almost neglected in the comprehensive work on the New Guinean Carabidae of Darlington (1968), because at that time almost no odacanthines had been collected in western New Guinea. In the meantime knowledge has been slightly improved through the efforts of several recent collectors (see papers of Baehr 1995, 1996a,b, 1997b, 1998, 2003c), but the odacanthine fauna of Irian Jaya, though even generally of New Guinea is still far from being well documented.

Almost nothing can be presently said about the degree to which the faunas of the Bismarck Archipelago, Solomon Islands, and New Hebrides are documented, but I guess that knowledge might be likewise absolutely insufficient.

In the list below NG means the whole island of New Guinea, PNG means Papua New Guinea (the eastern half of the island), and IJ means Irian Jaya, now Papua (the western part of the island). As this latter name is misleading, the former name is still used here.

Genus *Archicolliuris* Liebke, 1931

papua (Darlington, 1968)

PNG

par (Darlington, 1968)

PNG, New Britain

Genus *Basistichus* Sloane, 1917

micans (Macleay, 1864)

PNG, Australia

Genus *Clarencia* Sloane, 1917

papua Darlington, 1968 NG
quadridens Darlington, 1968 NG, Australia

Genus *Crassacantha* Baehr, 1995

bidens Baehr, 1995 IJ

Genus *Dicraspeda* Chaudoir, 1862

Macrocentra Chaudoir, 1869
Loxocara Sloane, 1907
Philemonia Liebke, 1938
bispinosa Darlington, 1968 PNG
coeruleipennis, spec. nov. PNG
denticulata Baehr, 1997 PNG
dubia (Gestro, 1879) IJ
glabripennis, spec. nov. PNG
hebridarum Baehr, 1998 New Hebrides
inermis Louwerens, 1970 Solomon Is.
intermedia Baehr, 1997 IJ
laticollis Baehr, 1997 IJ
loebli Baehr, 1996 PNG
longiloba (Liebke, 1938) PNG, New Britain, Australia
minuta Baehr, 1998 PNG
missai, spec. nov. PNG
nigripes Baehr, 2003 PNG
obsoleta Baehr, 1996 IJ: Biak Is.
papuensis Baehr, 2003 PNG
quadrispinosa quadrispinosa (Chaudoir, 1869) NG
quadrispinosa brevipennis, subspec. nov. Solomon Is.: Bougainville
(*quadrispinosa moluccensis*, subspec. nov. Halmahera)
quadrispinosa novabritannica, subspec. nov. New Britain
ullrichi Baehr, 1996 PNG
violacea (Sloane, 1907) NG, New Britain

Genus *Dobodura* Darlington, 1968

armata Darlington, 1968 PNG

Genus *Eucolliuris* Liebke, 1931

fuscipennis (Chaudoir, 1850) PNG, Indonesia
rossi (Darlington, 1968) PNG

Genus *Polydamasium* Liebke, 1938

anomalum (Darlington, 1968) NG, Halmahera

Genus *Lachnothorax* Motschulsky, 1862

Lasiocolliuris Liebke, 1931
tokkia Gestro, 1875 PNG, Australia, Indonesia

Genus *Ophionea* Klug, 1821

Casnoidea Castelnau, 1834
brandti (Baehr, 1996) Solomon Is.
gestroi Maindron, 1910 PNG, New Britain
puncticollis Sloane, 1923 PNG, Australia
thouzeti Castelnau, 1867 PNG, Australia

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