

SPIXIANA	32	2	201–229	München, November 2009	ISSN 0341–8391
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New genera and species and new records of odacanthine carabid beetles from the Australian, Papuan, and Oriental Regions

(Coleoptera, Carabidae, Odacanthini)

Martin Baehr

Baehr, M. (2009): New genera and species and new records of odacanthine carabid beetles from the Australian, Papuan, and Oriental Regions (Coleoptera, Carabidae, Odacanthini). – Spixiana **32/2**: 201-229

A new genus and nine new species of Odacanthini are described from Australia, New Guinea, and Laos and Cambodia: *Tricharnhemia*, gen. nov., with the species *T. browni*, spec. nov., and *Andrewesia australica*, spec. nov., both from far Northern Territory, Australia; *Eudalia tamborineae*, spec. nov. from south-eastern Queensland, Australia; *Dicraspeda bellorum*, spec. nov., *D. cheesmanae*, spec. nov., *D. kokodae*, spec. nov., and *D. vandeveldeae*, spec. nov. from Papua New Guinea; *Dicraspeda ophthalmica*, spec. nov. from Waigeo Island, West Papua, New Guinea; and *Essora drumonti*, spec. nov. from Laos and Cambodia.

The genus *Andrewesia* Liebke, 1938 is for the first time recorded from Australia. The newly described or recorded genera and species are inserted into the most recent keys to the Australian and New Guinean Odacanthini.

New records of some rare or doubtfully recorded species, from northern and eastern Australia and from New Guinea, are communicated. Two specimens of *Archicolliuris par* (Darlington) from northern Queensland corroborate the occurrence of that species in Australia which so far was doubtful.

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Introduction

During recent visits at the collections of Museum and Art Gallery of the Northern Territory, Darwin, Western Australian Department of Agriculture, Kununurra, and Queensland Department of Primary Industries, Brisbane, I sorted out and identified large numbers of odacanthine carabid specimens from Australia, including a few species which do not match any of the species known to occur in Australia. By comparison with all Australian and New Guinean genera one new species from Arnhem Land, far Northern Territory, turned out to belong to a new genus. Another species, likewise from far Northern Territory, belongs as a new species to the genus *Andrewesia* Liebke, 1938, a genus which ranges

from mainland South-east Asia to the Moluccas, but was not yet recorded neither from New Guinea, nor from Australia. The third species belongs to the Australian genus *Eudalia* Castelnau, 1867, but is different from all described species. During recent examination of some odacanthine species in The Natural History Museum, London, I detected three new species of the Genus *Dicraspeda* Chaudoir, 1862 identified as *D. dubia* (Gestro, 1879) by P. J. Darlington. Material of another new species of the genus *Dicraspeda* was found in Institut Royal des Sciences Naturelles de Belgique, Brussels, and material of a new species of the genus *Essora* Liebke was found in Natural History Museum and in Institut Royal des Sciences Naturelles de Belgique. Examination of large numbers of carabid beetles from Australia and

New Guinea sent from Carnegie Museum of Natural History, Pittsburgh, for identification, revealed another new species of the genus *Dicraspeda* from New Guinea and the first reliable Australian specimens of *Archicolliuris par* (Darlington, 1968). Examination of material from these collections, of specimens recently sampled by A. Dostal (Vienna) during his travels in northern Australia, by A. Riedel (Karlsruhe) in New Guinea, by R. Grimm (Tübingen) in Borneo, and by me during my recent collecting trips in northern and north-western Australia, revealed a couple of additional rare or recently described Australian and New Guinean odacanthine species which are communicated herein.

The recent revision of the Australian Odacanthini (Baehr 2005), and the recently provided key to the species of the genus *Dicraspeda* (Baehr 2006) permit easy introduction of the new genera and species in the respective keys.

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 fine, though taxonomically important, punctation and microreticulation of the surface a high resolution stereomicroscope 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-optics lights substantially change perception of the surface structures.

The habitus photographs were taken with a digital camera using SPOT Advanced for Windows 3.5 and subsequently were worked with Corel Photo Paint 11.

Measurements were taken using a stereomicroscope with an ocular micrometer. Length has been measured from apex of labrum to apex of elytra. Lengths, therefore, may slightly differ from those measured by 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 the 'neck' suture. Length of head is the distance from apex of clypeus to the 'neck' impression. 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 apex of elytra including any spines or denticles.

Dedication

This paper is written in memory of the late Ross Storey who unfortunately died in June 2008. In spite of his severe disablement Ross tirelessly worked on a better knowledge of the northern Australian insect fauna. In earlier years he still did very successful collecting, later when no longer able to collect he did important work in sorting and recording the fauna. Ross collected some exciting species of which additional material is mentioned in the present paper.

Abbreviations

ANIC	Australian National Insect Collection, Canberra
CBM	Working Collection M. Baehr in Zoologische Staatssammlung, München
CDW	Collection A. Dostal, Wien
CMP	Carnegie Museum of Natural History, Pittsburgh
CMP-WHC	Walford-Huggins Collection in Carnegie Museum of Natural History, Pittsburgh
IRSNB	Institut Royal des Sciences Naturelles de Belgique, Bruxelles
NHM	The Natural History Museum, London
NMPC	National Museum of Natural History, Praha
NTD	Museum and Art Gallery of the Northern Territory, Darwin
QDPIB	Queensland Department of Primary Industries, Brisbane
QMT	Queensland Museum, Brisbane
SMNK	Staatliches Museum für Naturkunde, Karlsruhe
WADAK	Western Australian Department of Agriculture, Kununurra
WAM	Western Australian Museum, Perth
NG	New Guinea
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
PNG	Papua New Guinea
WP	West Papua (former Irian Jaya)
WA	Western Australia
NP	National Park

New records of rare species

Archicolliuris par (Darlington)

Colliuris par Darlington, 1968: 206. – Moore et al. 1987: 277.

Archicolliuris par, Baehr 2005: 137.

New records (2 ex.). **QLD**: Iron Range, 24.5.1974, M. Walford-Huggins (CMP-WHC); Upper Jardine R., Cape York Pen. 11°14'S, 142°37'E, 16.10.1979, M. S. & B. J. Moulds (CBM).

Remarks. This species was described from New Guinea and was said to occur in northern Queensland, Australia, by Darlington (1968) and Moore et al. (1987). For the general revision of the Australian Odacanthini (Baehr 2005), however, I had not seen any material of this species from Australia, but of a closely related species, *Archicolliuris splendissimus* Baehr, 2005 (see below), which was described in that paper. Hence, I expressed doubt about the occurrence of *A. par* in Australia. The records mentioned above now corroborate the occurrence of this species in North Queensland. They have been compared with photographs of the holotype in Museum of Comparative Zoology, Cambridge/Mass., including enlarged ones of certain body parts, and were found to be identical.

Archicolliuris splendissimus Baehr

Baehr, 2005: 137.

New record (1 ex.). **QLD:** Green Hills nr. Gordonvale, 19.12.1967, J. G. Brooks (CMP-WHC).

Remarks. This species is closely related to *A. par* (Darlington), but differs in body proportions and also in the shape of the light elytral spots. It was described from Iron Range and from the extreme tip of Cape York Peninsula in North Queensland. The additional record extends the known range of this species considerably to the south to the eastern margin of Atherton Tableland.

Aulacoliis triordinatus Sloane

Sloane, 1923: 32. – Moore et al. 1987: 276; Baehr 2005: 140.

New record (5 ex.). **NT:** Bing Bong, Mule Creek Rd. 15°37'50.6"S 136°23'06.6"E, 23 m, 16.5.2006, Berger-Dostal (CBM, CDW).

Remarks. A rarely collected species, so far recorded from northern parts of Northern Territory to Lower Cape York Peninsula in North Queensland. The small series was collected at light near the coast in north-eastern Northern Territory not far from the Queensland border.

Clarencia angusticollis (Macleay)

Casnonia angusticollis Macleay, 1888: 446.

Clarencia angusticollis, Moore et al. 1987: 277; Baehr 2005: 143.

New records (2 ex.). **NT:** c. 40 km v. Camooweal, 20°01'15.8"S, 137°44'021.6"E, 17.5.2006, Berger-Dostal

(CDW). – **WA:** Australia07, WA50, Parrys Lagoon Nat. Res., c. 25 km se. Wyndham, Marigu Billabong, 15.32.98S, 128.15.59E, 77 m, 15.-16.11.2007, M. Baehr (CBM).

Remarks. The rare species is distributed through northern Australia from northern Queensland to the Kimberleys in Western Australia. Both recorded specimens were collected at light, the one from near Camooweal at the southern margin of its recorded range. The second specimen from Parrys Lagoon apparently is the first recent record from the Kimberley Division.

Clarencia quadridens Darlington

Darlington, 1968: 209. – Moore et al. 1987: 277; Baehr 2005: 145.

New record (1 ex.). **QLD:** Compass Ck. S. of C. Tribulation, 13.8.1971, A. & M. Walford-Huggins (CMP-WHC).

Remarks. This species was described from New Guinea and was for the first time reliably recorded from North Queensland in Baehr (2005), although it was already noted from Cairns by Darlington (1968). In the meantime the recorded range of this species in tropical north-eastern Australia extends from Innisfail in the south to Iron Range in mid Cape York Peninsula.

Deipyrodes palustris (Sloane)

Lachnothorax palustris Sloane, 1910: 396.

Deipyrus palustris, Moore et al. 1987: 276; Baehr 2005: 146.

Deipyrodes palustris Bousquet, 2002: 17. – Baehr 2006: 70.

New record (1 ex.). **NT:** Bing Bong, Mule Creek Rd. 15°37'50.6"S 136°23'06.6"E, 23 m, 16.5.2006, Berger-Dostal (CDW).

Remarks. The species ranges from North Queensland to the northern parts of Northern Territory, but from the latter state so far only old records were available. A single specimen was recently sampled at light near the coast in north-eastern Northern Territory not far from the Queensland border.

Dicraspeda bispinosa Darlington

Darlington, 1968: 212. – Baehr 1996: 141; 2006: 64.

New record (1 ex.). **PNG:** Madang Province, Baiteta Light AR7, 04-VI-1996, Leg. Olivier Missa (IRSNB).

Remarks. The single female specimen was sampled at light during the Canopy Mission carried out in

1993-96 by O Missa. It was collected together with specimens of *D. missai* Baehr. When Darlington revised the New Guinean species of the genus *Dicraspeda*, within the unispinose species only the small *D. dubia* (Gestro) and *D. bispinosa* Darlington were recorded and all smaller specimens of this group in collections simply were identified as *D. dubia*, all larger ones as *D. bispinosa*. In the meantime a couple of additional species were described that differ in various states of size, body shape, length of elytral spines, microreticulation of the surface, and structure of the male aedeagus.

Dicraspeda minuta Baehr

Baehr, 1998: 176.

New records (2 ex.). PNG: Madang Province, Baiteta Light K.0, 29-IV-1996, Leg. Olivier Missa (IRSNB).

Remarks. This rare species was so far known only from the holotype, described from Dobodura, PNG.

Dicraspeda missai Baehr

Baehr, 2006: 56.

New records (3 ex.). PNG: Madang Province, Baiteta Light T2, 24-III-1993, AR10, 20-V-1996, 23-V-1966, 4-VII-1996, Leg. Olivier Missa (CBM, IRSNB).

Remarks. This species so far was only recorded from the samples carried out during the Canopy Mission by O Missa in the vicinity of Baiteta in the Madang Province in 1993-96.

Dicraspeda nigripes Baehr

Baehr, 2003a: 258.

New record (2 ex.). NG: W-Papua, Manokwari, Gn. Meja, 220 m, leg. A. Riedel/6.XII.2007, S00°51.400' E134°04.918' (CBM, SMNK).

Remarks. This species was known so far only from the eastern half of New Guinea.

Dicraspeda obsoleta Baehr

Baehr, 1996: 140. – Baehr 2003a: 254.

New record (3 ex.). NG: W-Papua, Biak Isl., S. Korim, Nemu, 165 m, leg. A. Riedel/15.XII.2007, S00°55.784' E130°01.530' (CBM, SMNK).

Remarks. A rare, endemic species of Biak Island that was known so far only from the holotype and one additional specimen.

Dicraspeda quadrispinosa quadrispinosa (Chaudoir)

Macrocentra quadrispinosa Chaudoir, 1869: 206.

Dicraspeda quadrispinosa, Darlington 1968: 213.

Dicraspeda quadrispinosa quadrispinosa, Baehr 2006: 59; 2009.

New records (26 ex.). PNG: Madang Province, Baiteta 1996, many sampling localities, leg. Olivier Missa (CBM, IRSNB). – WP: Japen, Serui, 28.12.06-9.1.07, 01.52.11S, 136.14.18E, S. Bilý leg (NMPC); Biak, Mniber, 16-22.12.06, 00.43.28S, 135.46.01E, S. Bilý leg (NMPC).

Remarks. A common species in New Guinea. The species ranges from the Moluccas through New Guinea, the Bismarck Archipelago, to Solomon Islands, but does not occur in Australia. Throughout its range it has split into a number of quite differently shaped subspecies. New Guinea is home of the nominate subspecies which also occurs on nearby Japen and Biak islands.

Dicraspeda ullrichi Baehr

Baehr, 1996: 143.

New record (1 ex.). PNG: Madang Province, Baiteta Light K.0, 29-IV-1996, Leg. Olivier Missa (IRSNB).

Remarks. Another rare species, hitherto known only from the type series and from two localities in PNG.

Eudalia atrata Baehr

Baehr, 2005: 157.

New records (4 ex.). NSW: Chichester SF, Allyn River Pk., 410 m, 11.12.1990, D. Pollock (CMP, CBM); Upper Hunter Riv. 20.11.67 (CMP-WHC).

Remarks. The species was described from Barrington Tops and surroundings. The additional records are from the same region and corroborate the occurrence of this species at the rivers and creeks which flow from that tableland, but they slightly enlarge the recorded range of this species.

Eudalia obliquiceps punctifrons Baehr

Baehr, 2005: 153.

New records (4 ex.). **NT:** Australia07, NT37, Gregory NP, Old Victoria River Crossing, c. 5 km w. Victoria River Roadh. Victoria Hwy. 15.34.87 S, 131.06.24 E, 35 m; 11.-12.11.2007, M. Baehr (CBM). – **WA:** Australia07, WA94, Ord River Cr. nr. Ivanhoe, 10 km n. Kununurra, 15.41.40 S, 128.41.31 E, 35 m, 28.-29.11.2007, M. Baehr (CBM).

Remarks. This western subspecies of a widely distributed eastern species is known to occur from north-western Queensland through northern parts of Northern Territory to extreme northern Western Australia. At both mentioned localities specimens were collected at light close to the bed of sandy rivers.

Eudalia punctipennis Baehr

Baehr, 2005: 164.

New records (12 ex.). **NT:** Australia07, NT43, East Baines River Cr. Victoria Hwy. 15.46.04 S, 130.01.59 E, 20 m; 13.11.2007, M. Baehr (CBM). – **WA:** Australia07, WA56, Little Panton River Cr. 56 km n. Halls Creek, Great Northern Hwy. 17.52.53 S, 127.49.91 E, 339 m, 17.-18.11.2007, M. Baehr (CBM).

Remarks. The species occurs in northernmost Western Australia and immediately adjacent Northern Territory. At Little Panton River specimens were sampled at light, at East Baines River they were collected by hand under large plates of shale that were deeply imbedded in wet sand. This species, like some others of the genus *Eudalia*, is known for its very fast locomotion on the ground.

Gestroania amplipennis (Gestro)

Casnonia amplipennis Gestro, 1875: 853.

Gestroania amplipennis, Moore et al. 1987: 275; Baehr 2005: 166.

New records (18 ex.). **WA:** WA06/132, Karijini NP, 8 km s. Visitors Centre, 22.55353S, 118.42290E, 714 m, 21.2.2006, M. Baehr (CBM); WA06/138, 2 km e. Karratha, 20.75367S, 116.81489E, 38 m, 19.2.2006, M. Baehr (CBM); WA06/142, 45 km nw. Wittenoom, 22.08222S, 118.10962E, 315 m, 21.2.2006, M. Baehr (ANIC, CBM, WAM); W Australia (NHM).

Remarks. A very rare species, of which so far only two specimens were known, both collected in 19th Century. Most of the newly recorded specimens were sampled by hand collecting under wet leaves

and debris on black, muddy soil at the margin of a drying pool in open woodland, some in pitfall traps at the margin of a pool with similarly wet, black soil, and a few also at night at black light.

Gestroania storeyi Baehr

Baehr, 2005: 169.

New records (3 ex.). **WA:** Wyndham, 4.1.1986, M. S. Moulds (CMP-WHC); Kununurra, 22.12.91-6.1.92, R. I. Storey (WADAK); Kununurra, Crossing Falls, 26.3.2003a, J. Moulden (WADAK).

Remarks. This rare species so far was only recorded from Kununurra in extreme north-eastern Western Australia and from Katherine in the northern part of Northern Territory. New records are from Wyndham rather close to the type locality, and the one from Kununurra collected by R. Storey belongs to the series of which the species was described, but was distributed to the collection in Kununurra prior to the description.

Giachinoana carinipennis Baehr

Baehr, 2003b: 100. – Baehr 2005: 171.

New record (1 ex.). **WA:** Kununurra, 22.12.91-6.1.92, R. I. Storey (WADAK).

Remarks. A rare species recorded from northern parts of Northern Territory and extreme north-eastern Western Australia. This is another specimen from a series collected by R. Storey mentioned in Baehr (2005).

Myrmecodemus formicoides (Sloane)

Lachnothorax formicoides Sloane, 1910: 397.

Myrmecodemus formicoides, Moore et al. 1987: 275; Baehr 2005: 172.

New record (1 ex.). **NT:** South Alligator Riv. Arnhem Hwy, 11.12.1982, A. Walford-Huggins (CMP-WHC).

Remarks. A rare species which so far is reliably recorded only from northernmost Northern Territory. Previously in collections it was intermixed with *M. lucai* Baehr (see below) which was described in the revision.

***Myrmecodemus lucai* Baehr**

Baehr, 2005: 173.

New record (1 ex.). NT: Gregory N.P. Timber Creek 30-31.12.96, leg. L. Toledano, R. Olivieri (CMP).

Remarks. This species is very similar to *M. formicoides* with which it shares parts of its range, but *M. lucai* apparently has a much wider range which extends from Cape York Peninsula in North Queensland to north-western Northern Territory (Gregory National Park). The single specimen belongs to the main series of specimens from which the species was described, but was not available for the description, because the specimens of the new species were distributed to Carnegie Museum as putative *M. formicoides* prior to their description.

***Neoeudalia nigra* (Sloane)**

Eudalia nigra Sloane, 1900: 581. – Moore et al. 1987: 274. *Neoeudalia nigra* Baehr, 2005: 177.

New record (1 ex.). NT: c. 40 km v. Camooweal, 20°01' 15.8"S, 137°44'021.6"E, 17.5.2006, Berger-Dostal (CBM).

Remarks. A fairly rare, but very widely distributed species in inland areas of eastern and northern Australia. The single specimen was captured at light.

***Ophionea australica* (Baehr)**

Casnoidea australica Baehr, 1996b: 1068. *Ophionea australica*, Baehr 2005: 180.

New record (1 ex.). WA: Australia07, WA50, Parrys Lagoon Nat. Res., c. 25 km se. Wyndham, Marlgu Billabong, 15.32.98 S, 128.15.59 E, 77 m, 15.-16.11.2007, M. Baehr (CBM).

Remarks. The species ranges through tropical northern Australia, from north Queensland to the Kimberley Division in northernmost Western Australia. The single specimen was sampled at light near a Billabong.

***Porocara glabrata* Baehr**

Baehr, 1986: 724. – Baehr 2005: 180.

New record (6 ex.). WA: Australia07, WA78, Fitzroy Crossing at old Cr. 18.10.65 S, 125.35.71 E, 92 m, 24.-25. 11.2007, M. Baehr (CBM).

Remarks. So far known only from Fitzroy and Mary rivers at the south-eastern margin of the Kimberley Division. The new specimens were partly sampled at light, partly in pitfall traps exposed in the sandy bed of Fitzroy River close to the water edge.

***Porocara punctata kimberleyana* Baehr**

Baehr, 1986: 721. – Baehr 2005: 180.

New record (4 ex.). NT: Australia07, NT37, Gregory NP, Old Victoria River Crossing, c. 5 km w. Victoria River Roadh. Victoria Hwy. 15.34.87 S, 131.06.24 E, 35 m; 11.-12.11.2007, M. Baehr (CBM). – WA: Australia07, WA56, Little Panton River Cr. 56 km n. Halls Creek, Great Northern Hwy. 17.52.53 S, 127.49.91 E, 339 m, 17.-18.11.2007, M. Baehr (CBM).

Remarks. This western subspecies of an eastern species ranges from north-western Northern Territory to the Kimberleys in northernmost Western Australia. All specimens were collected at light near the sandy beds of rivers intermixed with pebbles.

***Porocara occidentalis* Baehr**

Baehr, 1986: 723. – Baehr 2005: 180.

New record (5 ex.). WA: WA06/103, Gascoyne Junction, 25.04722 S, 115.20700 E, 147 m, 4.2.2006, M. Baehr (CBM).

Remarks. The species is presently known from the lower reaches of Ashburton and Gascoyne Rivers in mid-western Western Australia. The additional specimens enlarge the recorded range slightly inland. They were sampled in pitfall traps at the margins of pools in the sandy bed of Gascoyne River.

***Porocara ulrichi* Baehr**

Baehr, 1996c: 259. – Baehr 2005: 180.

New record (1 ex.). NT: Australia07, NT37, Gregory NP, Old Victoria River Crossing, c. 5 km w. Victoria River Roadh. Victoria Hwy. 15.34.87 S, 131.06.24 E, 35 m; 11.-12.11.2007, M. Baehr (CBM).

Remarks. The species ranges from north-western Northern Territory to the Kimberleys in northernmost Western Australia. The single specimen is from the type locality and was collected at light near the sandy and pebbly bed of Victoria River, together with specimens of *Porocara punctata kimberleyana* Baehr.

Renneria kamouni Baehr

Baehr, 1999: 116. – Baehr 2005: 181

New records (2 ex.). **WA:** WA06/122, Karratha, 20.75388S, 116.81295E, 41 m, 11.2.2006, M. Baehr (CBM); WA06/138, 2 km e. Karratha, 20.75367S, 116.81489E, 38 m, 19.2.2006, M. Baehr (CBM).

Remarks. This rare species was so far known from northern and interior Northern Territory and extreme north-eastern Western Australia. The new records extend the range to north Western Australia south of Great Sandy Desert. The newly recorded specimens were collected at light.

New genera and species

Genus *Tricharnhemia*, gen. nov.

Diagnosis. Characterized by presence of dense, elongate, erect pilosity all over the dorsal surface; presence of a distinct sulcus and ridge medially of the eye; presence of a shallow marginal sulcus on prothorax; and barely excised 4th tarsomeres. This new genus differs from the most closely related genus *Neoeudalia* Baehr by far less protruded eyes, wider, more globose prothorax, absence of a transverse impression near the apex of the elytra, normal shaped 7th interval in apical third, and impilose 3rd antennomere.

Type species. *Tricharnhemia browni*, spec. nov. by monotypy.

Etymology. The name is a combination of Greek “*trichós*”, “hair” and the range “Arnhem Land”.

Relationships. Probably nearest related to the genus *Neoeudalia* Baehr with which it shares the combination of a number of characteristic features of external morphology.

Description. For detailed description see the description of the single species, *T. browni*, spec. nov., below.

Tricharnhemia browni, spec. nov.

Figs 1, 10, 24

Types. Holotype: ♀, NT Arnhemland Gunbiyarrmi nr Oenpelli 30-31.viii.1993 Brown & Webber (NTM)

Etymology. The name honours one of the collectors of this species, Dr. Graham Brown, Darwin.

Diagnosis. As for genus.

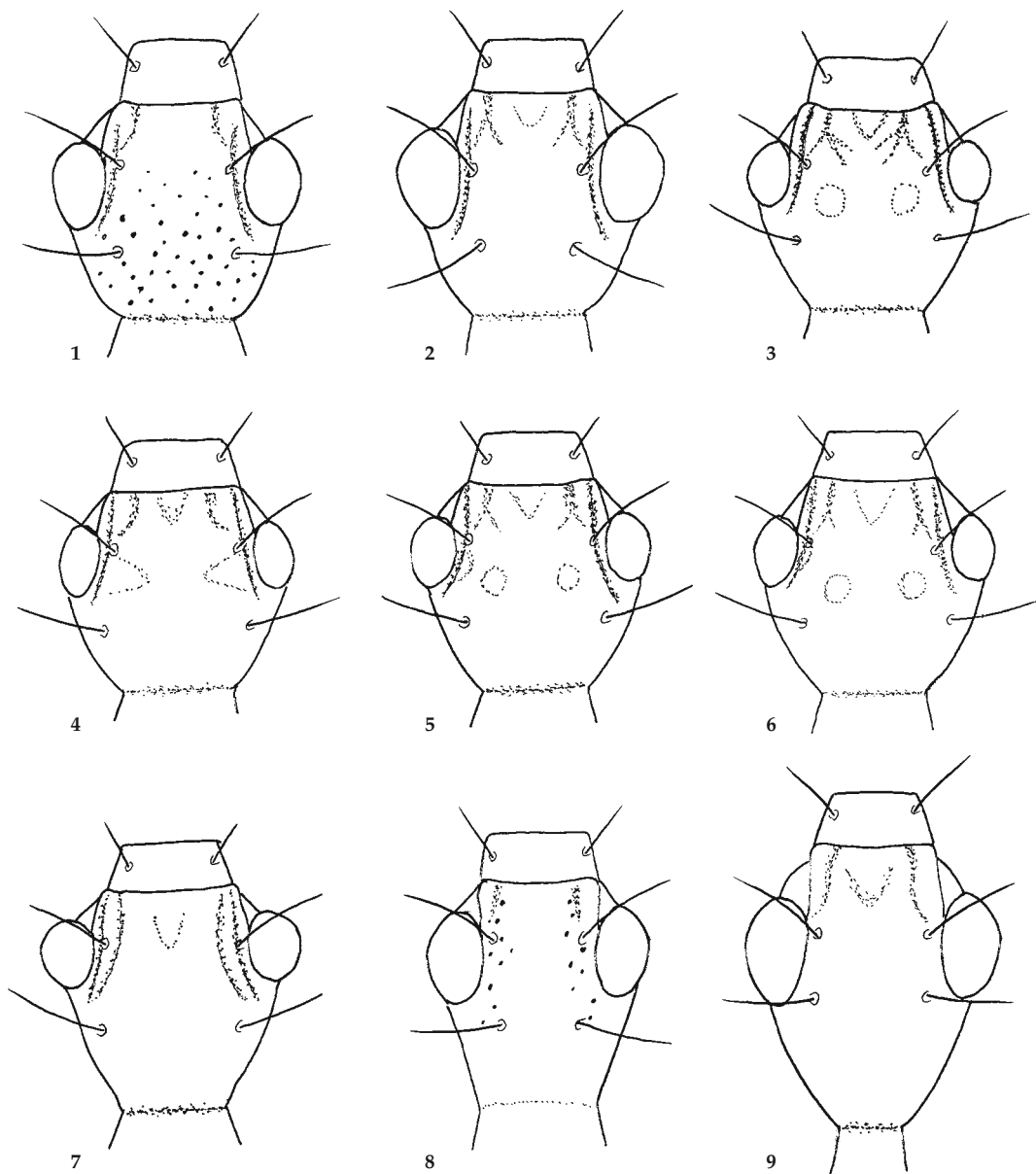
Description

Measurements. Length: 8.4 mm, width: 3.15 mm. Ratios. Length eye/orbit: 1.1; length/width of head: 0.9; length/width of pronotum: 1.06; width of head/width of pronotum: 1.0; length/width of elytra: 1.48.

Colour (Fig. 24). Surface black, labrum, mandibles, and palpi reddish, four basal antennomeres dark with lighter apex, from 5th antennomere light reddish. Femora, most of protibia, base and apex of mesotibia and metatibia black, inner surface of protibia and most of mesa- and metatibiae yellow, all tarsi light reddish. Lower surface of head and thorax black, of abdomen reddish-piceous.

Head (Fig. 1). Rather wide. Neck fairly narrow, with rather deep transverse impression. Eyes rather large, longer than orbits, laterally well protruded, but only slightly separated from orbits which are gently convex. Behind clypeus with a deep, irregularly shaped groove. Immediately near median border of eye with a very narrow, straight sulcus that extends to posterior margin of eye, and with a narrow ridge that extends to middle of eye. Posterior supraorbital seta located far behind posterior margin of eye and moved on vertex. Labrum anteriorly straight, 6-setose. Clypeus in middle weakly separated from frons. Mentum with an elongate, triangular, acute tooth, with 2 very elongate setae behind tooth, submentum with three setae on either side of which the median seta is very elongate. Apex of glossa transverse, with 2 elongate median and 2 shorter lateral setae. Paraglossae free, narrow, shortly surpassing glossy. Lacinia elongate, interior margin with a sparse fringe of spines. Palpi elongate, not widened towards apex, impilose. Antenna very elongate, surpassing base of pronotum by at least four antennomeres, pilose from near base of 4th antennomere. Median antennomeres > 4 × as long as wide. Frons sparsely punctate, occiput more densely so, punctures very coarse, pilosity sparse, erect, very elongate, surface without microreticulation, very glossy.

Prothorax. Moderately short, lateral margin in anterior half gently convex, in posterior half straight, dorsal surface very convex. Widest diameter about in middle. Lateral border prominent, slightly raised, with a fairly wide sulcus, but without any median ridge. Proepipleura widely visible from above, very convex. Apex and base both almost straight, not bordered, apical angles rounded off, basal angles right though very obtuse. Median line little impressed, not attaining apex nor base. Both transverse sulci shallow, the anterior one little v-shaped. No definite marginal setae present, but lateral margin with many elongate, erect setae. Disk with rather dense and very coarse punctures, also lateral channel coarsely

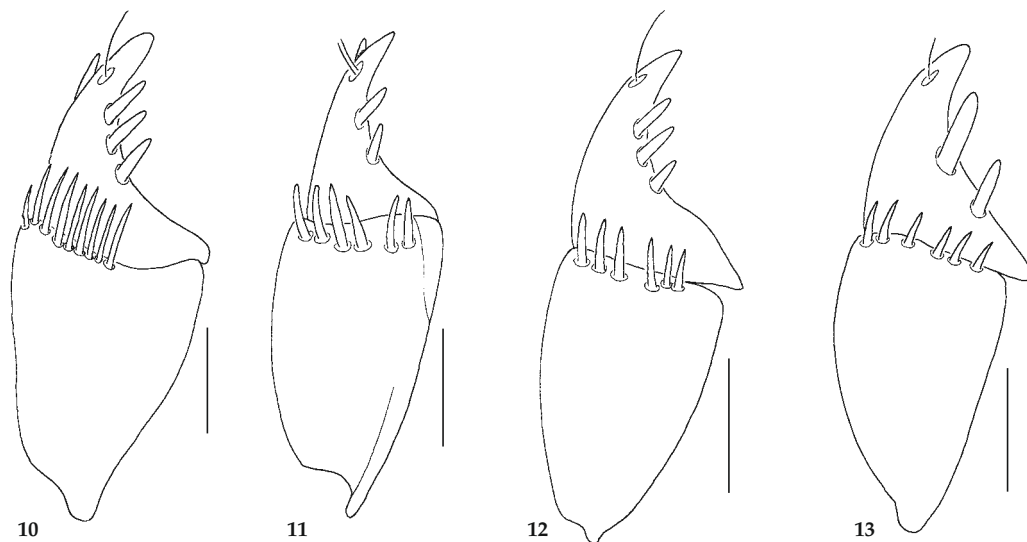


Figs 1-9. Outline of head. 1. *Tricharnhemia browni*, spec. nov. 2. *Andrewesia australica*, spec. nov. 3. *Dicraspeda bellorum*, spec. nov. 4. *Dicraspeda cheesmanae*, spec. nov. 5. *D. kokodae*, spec. nov. 6. *D. vandeveldeae*, spec. nov. 7. *D. ophthalmica*, spec. nov. 8. *Eudalia tamborineae*, spec. nov. 9. *Essora drumonti*, spec. nov.

punctate. Disk without microreticulation, apparently impilose, glossy.

Elytra (Fig. 24). Large in comparison with fore body, about twice as wide as prothorax, comparatively short; posteriad widened, lateral margin with a very slight excision in anterior third. Surface gently convex, disk without any transverse impression. Hu-

meri wide, almost evenly rounded. Marginal sulcus narrow. Apex wide, evenly rounded, very slightly concave near suture. Sutural angle unarmed. Apex with coarse border line, not denticulate. Scutellary stria very elongate, consisting of c. 12 coarse punctures. All striae complete, well impressed, coarsely punctate-crenulate, but punctures becoming finer



Figs 10-13. Female gonocoxites 1 and 2. **10.** *Tricharnhemia browni*, spec. nov. **11.** *Andrewesia australica*, spec. nov. **12.** *Dicraspeda cheesmanae*, spec. nov. **13.** *Essora drumonti*, spec. nov. Scales: 0.1 mm.

towards apex, intervals convex. 3rd interval without detectible setiferous punctures, because the whole surface is covered with dense, elongate, erect hairs. Intervals with finer punctures than striae, 2nd, 4th, and 6th intervals, however, barely punctate. Marginal series of setiferous punctures consisting of apparently 6-7 anterior setae behind shoulder, but the number of apical setae not determinable when setae are broken. Unbroken marginal setae, however, definitely longer than the hirsute pilosity. Intervals very glossy, without microreticulation. Flying wings fully developed.

Lower surface. Head and thorax with very coarse and moderately dense punctation, but impilose. Abdomen finely punctate, with dense and short, posteriad inclined pilosity which becomes even dense towards apex. Metepisternum elongate, >2× as long as wide at apex. Female terminal abdominal sternum quadrisetose.

Legs. Of moderate size. 4th tarsomeres of protarsus and mesotarsus short and very slightly lobed, that of metatarsus not lobed; tarsi impilose on upper surface, 5th tarsomeres with two pairs of setae below. Claws large, smooth. Squamosity of male anterior tarsus unknown.

Male genitalia. Unknown.

Female genitalia (Fig. 10). Gonocoxite 1 with c. 10 thin and very elongate ensiform setae along apical margin. Gonocoxite 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 longitudinal pit. Lateral plate with many strong ensiform setae at and below margin on ventral surface.

Variation. Unknown.

Distribution. Western margin of Arnhem Land, Northern Territory, Australia. Known only from type locality.

Collecting circumstances. Not recorded.

Genus *Andrewesia* Liebke

Liebke, 1938: 84. – Jedlicka 1963: 502; Darlington 1968: 214; Lorenz 1998: 417; Baehr 2005: 191.

Diagnosis. Characterized by combination of complete elytral striation, absence of pilosity on upper surface, absence of a paraorbital ridge, barely indicated lateral margins of the pronotum and absence of a lateral sulcus, wide and posteriorly convex head with very distinct “neck”, deeply excised 4th tarsomeres, presence of a narrow, yellow apical margin on the elytra, and presence of 2 dorsal nematiform setae on female gonocoxite 2.

Note. Two species were so far described, *A. obesa* (Andrewes) and *A. apicalis* (Chaudoir), though Liebke (1938) suggested that only one species is involved. *A. obesa* is known from south-eastern mainland Asia through Indonesia to the Moluccas, whereas *A. apicalis* was said to occur in Thailand and

the Malayan Peninsula. Contrary to the suggestions of Andrewes (1923) and Jedlicka (1963), *A. obesa* apparently does not occur on New Guinea, as already Darlington (1968) stated. I have seen specimens of *A. obesa* from Sarawak and Brunei in Borneo.

***Andrewesia australica*, spec. nov.**

Figs 2, 11, 17, 25

Types. Holotype: ♂, Pt. Farewell N.T. 11-VI-1981 W. Houston / K7202 on mud in a Saltmarsh (QM T156033). – Paratypes: 2♀♀, same data (QDPIB, CBM).

Etymology. The name refers to the occurrence of this species in Australia.

Diagnosis. Distinguished from the closely related *A. obesa* (Andrewes) by longer pronotum, much coarser punctuation of striae and distinctly convex intervals at least in basal half of the elytra.

Description

Measurements. Length: 6.3–6.8 mm, width: 2.1–2.3 mm. Ratios. Length eye/orbit: 1.45–1.5; length/width of head: 0.96–0.97; length/width of pronotum: 1.11–1.15; width of head/width of pronotum: 1.04–1.07; length/width of elytra: 1.64–1.67.

Colour (Fig. 25). Dorsal surface black, elytra with narrow reddish apex. Head with very slight bluish luster. Labrum more or less piceous, palpi and antennae light reddish. Legs yellow. Lower surface black.

Head (Fig. 2). Wide, markedly narrowed to neck, with rather deep transverse neck impression. Eyes large, laterally moderately protruded, slightly separated from orbits which are reasonably shorter than eyes and gently convex. Clypeal suture weak in middle, behind clypeus with a shallow, out-turned groove, and in middle of frons with a shallow circular groove. Medially of eye with a deep sulcus that extends to posterior margin of eye, but without ridge. Posterior supraorbital seta located slightly behind posterior margin of eye and moved on vertex. Labrum straight at apex, 6-setose. Mentum with triangular, at apex slightly obtuse tooth, with 2 setae behind tooth, submentum with a very elongate seta on either side. Apex of glossa transverse, with 2 elongate median and 2 shorter lateral setae. Paraglossae free, narrow, barely surpassing glossy. Lacinia elongate, interior margin with a sparse fringe of spines. Palpi elongate, not widened towards apex, impilose. Antenna elongate, surpassing base of pronotum by about 1½ antennomeres, pilose from middle of 4th antennomere. Median antennomeres >3× as long as wide. Surface very glossy, without microreticulation, impunctate and glabrous.

Prothorax. Rather short and wide, laterally and dorsally rather convex. Widest about at middle, margin gently rounded, near basal angles gently concave. Lateral border inconspicuous, barely raised, lateral margin without any sulcus or ridge. Proepipleura very widely visible from above. Apex slightly concave, not bordered, apical angles obtuse. Base straight or very slightly convex, not bordered, basal angles right though obtuse at apex. Median line shallow, not attaining apex nor base. Anterior transverse sulcus barely indicated, basal transverse sulcus shallow. A single marginal seta situated just in front of middle, seta elongate. Disk in basal half densely and very coarsely punctate. Apical two thirds impunctate, with a few very inconspicuous transverse striae. Surface without microreticulation, impilose, very glossy.

Elytra (Fig. 25). Large in comparison with fore body, about twice as wide as prothorax, posteriad not widened, lateral margin almost straight and parallel with very slight excision in anterior third. Surface gently convex, disk without any transverse impression. Humeri wide, evenly rounded. Marginal sulcus narrow. Apex wide, oblique, very slightly convex. Only immediately at lateral apical angles very slightly incised. Sutural angle unarmed, lateral apical angles obtusely angulate. Apex narrowly margined. Scutellary stria elongate, consisting of about 8 coarse punctures. All striae complete, in basal two thirds well impressed and very coarsely punctate, in apical third shallow and barely punctate. Intervals in basal two thirds gently convex. 3rd interval with 4 setiferous punctures, all situated in a slight impression. The anterior puncture located near 3rd stria, the three posterior punctures situated in middle of 3rd interval or near 2nd stria. Setae short. Marginal series of setiferous punctures consisting of 6 anterior setae behind shoulder, 6 apical setae in front of lateral apical angles, one intercalary seta, and two setae near suture at apex. Surface with distinct but slightly superficial, isodiametric microreticulation, impunctate, rather glossy. Flying wings fully developed.

Lower surface. Only proepimeron and mesothorax with few very coarse punctures, rest of thorax and abdomen impunctate. Metepisternum elongate, >2× as long as wide at apex. Terminal abdominal sternum in male bisetose, in female quadrisetose. Legs. Of moderate size. 4th tarsomeres of all tarsi lobed, but lobes less than half as long as tarsomere. Tarsi impilose on upper surface, lower surface of 5th tarsomere with 3–4 elongate setae. Claws large, smooth. 1st–3rd tarsomeres of male anterior tarsus with sparse squamosity.

Male genitalia (Fig. 17). Terminal abdominal sternite in middle gently incised. Genital ring rather

wide, slightly triangular, barely asymmetric, with fairly wide, triangular apex. Aedeagus slender and elongate, depressed, laterally little sinuate, lower surface almost straight. Orificum moderately short. Apex comparatively elongate, depressed, parallel, at tip rounded, not upturned or knobbed in any way, fairly narrow, slightly turned to right side. Folding of internal sac simple, without any sclerotized pieces. Parameres comparatively little dissimilar, large, comparatively elongate, with rounded apex, left paramere larger than right.

Female genitalia (Fig. 11). Gonocoxite 1 with 5-6 large ensiform setae at apical rim. Gonocoxite 2 elongate, curved, with acute apex, with two ventro-lateral ensiform setae, one dorso-median ensiform seta near apex, and two almost attached nematiform setae arising from a longitudinal pit near apex. Lateral plate large, with many strong ensiform setae at margin and on apical half of ventral surface.

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

Distribution. Extreme northern Northern Territory, Australia. Known only from type locality.

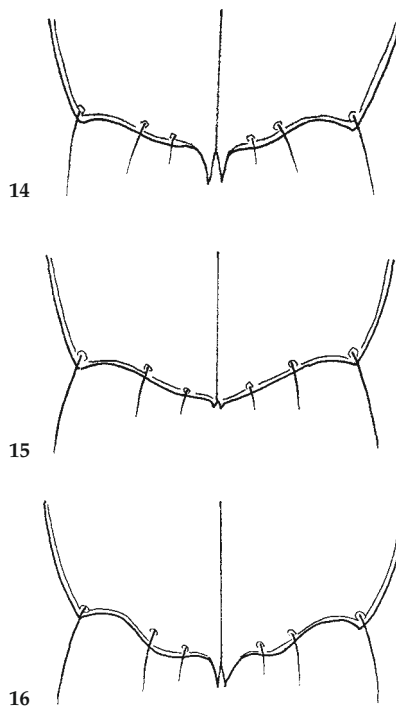
Collecting circumstances. Collected "on mud in a saltmarsh".

Relationships. Closely related to *A. obesa* (Andrewes) but distinguished by those character states as mentioned above.

Genus *Dicraspeda* Chaudoir

Chaudoir, 1862: 300. For further citations and for diagnosis of the genus see Baehr (2005: 148).

The genus *Dicraspeda* splits into three quite different units which in earlier times were described as three different genera (*Dicraspeda* Chaudoir, 1862, *Philemonia* Liebke, 1938, *Macrocentra* Chaudoir, 1869), but at present cannot be divided unambiguously into subgenera, because in certain important character states some species are intermediate between groups. All species described below belong to a group of medium-sized species which are characterized by rather convex body shape, lack of distinct sulci near the lateral border of pronotum, and unidentate elytra which bear a short spine or a denticle at sutural angle. Provisionally this group is called the *dubia-bispinosa*-group (former genus *Philemonia* Liebke). This group is almost exclusively recorded from New Guinea and New Britain.



Figs 14-16. Apical part of elytra. 14. *Dicraspeda bellorum*, spec. nov. 15. *D. cheesmanae*, spec. nov. 16. *D. vandeveldeae*, spec. nov.

Dicraspeda bellorum, spec. nov.

Figs 3, 14, 18, 26

Types. Holotype: ♂, PAPUA NEW GUINEA Wau-Apr. 13, 1982 Collr. R. T. Bell light trap / 1230 m. / *Dicraspeda bispinosa* det. R. T. Bell (CMP). – Paratypes: 1♂, same data (CBM); 1♂, TERR. PAPUA & NEW GUINEA, Wau Ecolo Institute, Wau. 72 j 18 B. S. Cheary Collr. / *Dicraspeda bispinosa* Darlington (CMP).

Etymology. The name is a patronym in honour of the collectors of the holotype, well known authorities of rhyssodids, Joyce and Ross Bell.

Diagnosis. Species characterized by moderate size (in group), little projected eyes, unispinose elytral apex, rather elongate apical spine, reddish-piceous elytra, lack of any microreticulation on the elytra (in the male), and elongate, depressed aedeagus which is straight or only gently concave at lower surface and does not bear a distinct apical club. Distinguished from most similar species *D. ulrichi* Baehr, *D. missai* Baehr, and *D. cheesmanae*, spec. nov. by longer elytral spines and absolutely not bisinuate lower surface of the aedeagus, and of *D. vandeveldeae*, spec. nov. by lesser size, lighter colour of elytra, and remarkably convex intervals.

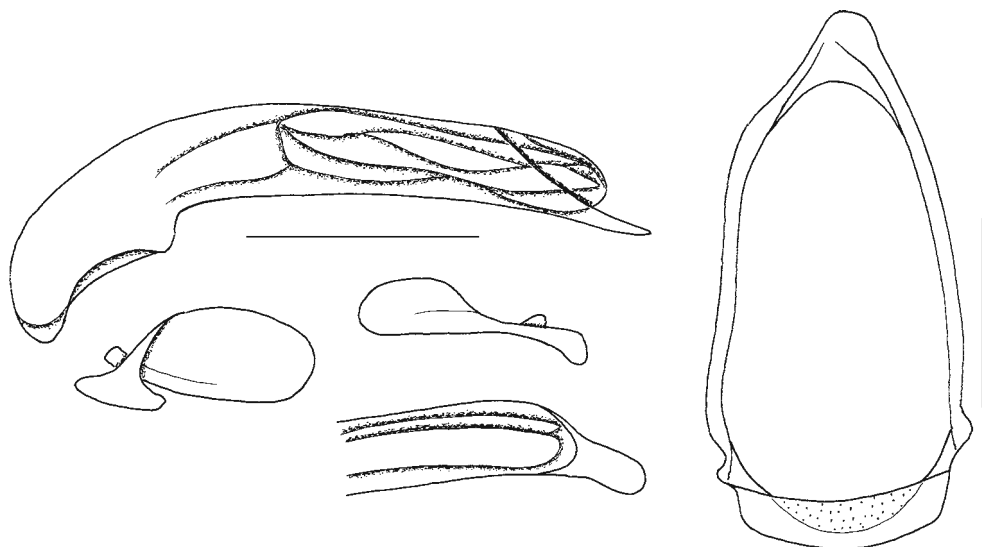


Fig. 17. *Andrewesia australica*, spec. nov. Male genitalia: aedeagus, left side and from below, right and left paramere, genital ring. Scales: 0.5 mm.

Description

Measurements. Length: 7.5–8.0 mm, width: 2.75–2.8 mm. Ratios. Length eye/orbit: 0.9–0.95; length/width of head: 0.93–0.96; length/width of pronotum: 1.01–1.02; width of head/width of pronotum: 1.07–1.09; length/width of elytra: 1.65–1.72.

Colour (Fig. 26). Head and prothorax black, elytra reddish-piceous, considerably lighter than fore body. Anterior margin of clypeus, labrum, and mandibles reddish. Antenna yellow to light reddish. Legs reddish-piceous to piceous, tibiae becoming gradually lighter towards apex, tarsi dark yellow. Under surface of fore body almost black, of abdomen piceous to reddish-piceous.

Head (Fig. 3). Moderately wide. Neck fairly narrow, with rather deep transverse impression. Eyes fairly small, shorter than orbits, laterally little protruded, only slightly separated from orbits which are gently convex. Clypeus and anterior part of frons with a shallow, irregularly sinuate groove, frons mediad of eyes on either side with a deep, circular pit, and in middle of frons with a shallow v-shaped groove. Immediately near median border of eye with a deep, straight sulcus that extends to posterior margin of eye, and with a narrow ridge that extends to middle of eye. Posterior supraorbital seta located far behind posterior margin of eye and moved on vertex. Labrum anteriorly concave, 6-setose. Clypeus in middle not distinctly separated from frons. Mentum with a very elongate, narrow, 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, shortly surpassing glossy. Lacinia elongate, interior margin with a sparse fringe of spines. Palpi elongate, not widened towards apex, impilose. Antenna elongate, surpassing base of pronotum by about two antennomeres, pilose from middle of 4th antennomere. Median antennomeres $> 3 \times$ as long as wide. Surface very glossy, without microreticulation, glabrous, almost impunctate.

Prothorax. Comparatively short, lateral margin in anterior half gently convex, in posterior half straight, dorsal surface convex. Widest diameter slightly in front of middle. Lateral border prominent, slightly raised, with a narrow sulcus, but without any median ridge. Proepipleura widely visible from above. Apex and base both gently concave, not bordered, apical angles rounded off, basal angles right though obtuse. Median line deeply impressed, punctate, not attaining apex nor base. Anterior transverse sulcus deeply impressed, v-shaped, punctate, basal transverse sulcus barely impressed. In all available specimens no marginal setae present. Disk in basal third and apex in front of anterior transverse sulcus densely and very coarsely punctate, also lateral channel and disk along median line coarsely punctate. Disk in middle with very fine, inconspicuous transverse striae. Surface without microreticulation, impilose, glossy.

Elytra (Figs 14, 26). Large in comparison with fore body, about twice as wide as prothorax, but

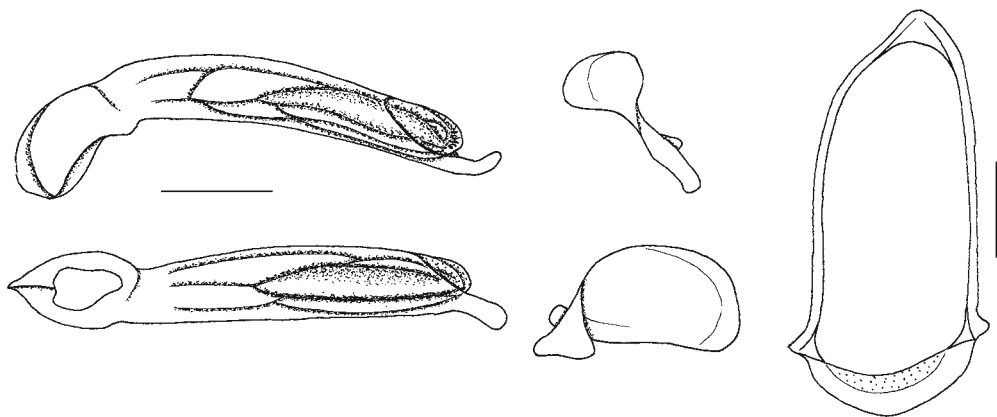


Fig. 18. *Dicraspeda bellorum*, spec. nov. Male genitalia: aedeagus, left side and from below, right and left paramere, genital ring. Scales: 0.5 mm.

comparatively elongate; posteriad widened, lateral margin with a slight excision in anterior third. Surface gently convex, disk without any transverse impression. Humeri wide, almost evenly rounded. Marginal sulcus narrow. Apex wide, oblique, in middle straight or gently convex, laterally concave to the angulate, produced lateral apical angles. Sutural angle with comparatively elongate spine. Apex with coarse border line, very finely denticulate. Scutellary stria more or less elongate, consisting of 5-10 coarse punctures. All striae complete, well impressed, punctate-crenulate, intervals convex. Punctures of striae barely weaker towards apex. 3rd interval with three setiferous punctures, all situated in a slight impression. The anterior puncture situated at basal third of 3rd interval, the apical apical ones situated in basal fourth and adjacent to 2nd stria. Setae moderately elongate. Marginal series of setiferous punctures consisting of 5-6 anterior setae behind shoulder, 8-9 apical setae in front of lateral apical angles, one intercalary seta, and two setae near suture at apex. Intervals very glossy, without microreticulation and punctation. Flying wings fully developed.

Lower surface. Prothorax and mesothorax with very coarse and moderately dense punctation. Metathorax and abdomen almost impunctate, but abdomen laterally with longitudinal striae and with superficial microreticulation. Metepisternum elongate, almost 2.5× as long as wide at apex. Male terminal abdominal sternum in middle incised at apical margin, bisetose.

Legs. Of moderate size. 4th tarsomeres of pro-tarsus and mesotarsus very deeply lobed, that of metatarsus lobed in posterior half; tarsi 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. 18). Terminal abdominal sternite in middle gently incised. Genital ring narrow and elongate, almost parallel-sided, barely asymmetric, with irregularly triangular apex. Aedeagus slender and elongate, moderately depressed, laterally little sinuate, lower surface near base concave, in apical half almost straight. Orificum short. Apex comparatively elongate, fairly narrow, considerably upturned, but very slightly knobbed, turned to the right side, moderately or not incised at right side. Folding of internal sac simple, with an elongate, slightly coiled, moderately sclerotized piece in apical half, at the very apex with a small, minutely denticulate piece. Parameres dissimilar, large, comparatively short, left paramere much larger than right.

Female genitalia. Unknown.

Variation. Very little variation noted in body shape and punctuation of surface, but some variation noted in shape of aedeagus which may be even slenderer than in the holotype, and also may bear a slightly longer, or shorter, and slightly more upturned and knobbed apex.

Distribution. Vicinity of Wau, Morobe Province, Papua New Guinea.

Collecting circumstances. Two specimens were collected "in light trap".

Relationships. According to shape of head this species is most closely related to *D. ulrichi* Baehr, *D. missai* Baehr, and *D. cheesmanae*, spec. nov. which all differ in having much shorter elytral spines.

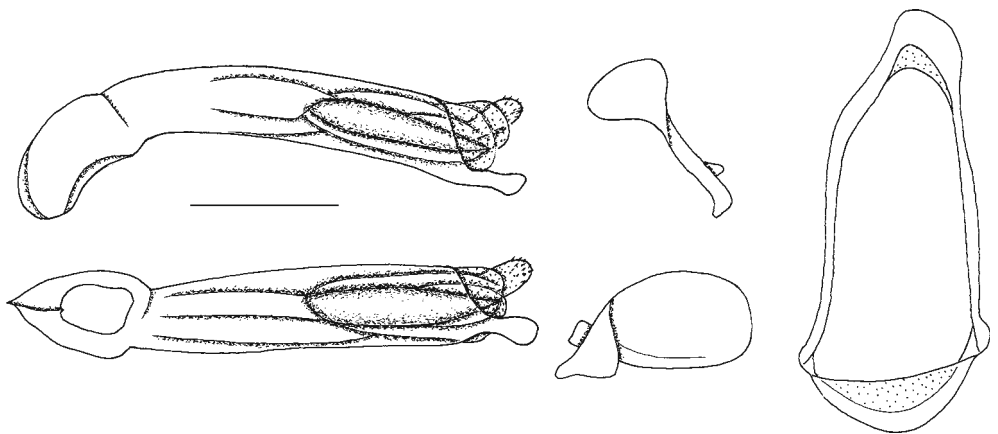


Fig. 19. *Dicraspeda cheesmanae*, spec. nov. Male genitalia: aedeagus, left side and from below, right and left paramere, genital ring. Scales: 0.5 mm.

***Dicraspeda cheesmanae*, spec. nov.**

Figs 4, 12, 15, 19, 27

Types. Holotype: ♂, PAPUA: Kokoda. 1,300 ft. ix.1933. L. E. Cheesman. B.M.1933-577. / *Dicraspeda dubia* (Gestro) det. Darl. '67 (NHM). – Paratype: 1♀, PAPUA: Kokoda. 1,200 ft. viii.1933. L. E. Cheesman. B.M.1933-577. / *Dicraspeda dubia* (Gestro) det. Darl. '67 (CBM).

Etymology. The name is a patronym in honour of the well known collector of this and the following two species, as well as of a multitude of other species in the Papuan Region, Mrs L. E. Cheesman.

Diagnosis. Species characterized by little projected eyes, unispinose elytral apex, short apical spine, presence of microreticulation on the elytra even in the male, and elongate, depressed aedeagus which is straight at the lower surface. Distinguished from most similar species *D. kokodae*, spec. nov. by less projected eyes, slightly narrower pronotum, and longer and less upturned apex of the aedeagus; from *D. ulrichi* Baehr, and *D. missai* Baehr by lesser size and absolutely not bisinuate lower surface of the aedeagus.

Description

Measurements. Length: 6.6–6.7 mm, width: 2.4–2.5 mm. Ratios. Length eye/orbit: 0.8; length/width of head: 0.96–0.99; length/width of pronotum: 1.07–1.09; width of head/width of pronotum: 1.04–1.06; length/width of elytra: 1.58–1.62.

Colour (Fig. 27). Head and prothorax black, elytra dark piceous, but little lighter than fore body. anterior margin of clypeus, labrum, and mandibles dark reddish. Palpi and antenna yellow to light reddish. Legs piceous, but tibiae becoming gradu-

ally lighter towards apex, tarsi dark yellow. Under surface of fore body almost black, of abdomen more or less dark piceous.

Head (Fig. 4). Moderately wide. Neck fairly narrow, with rather deep transverse impression. Eyes fairly small, considerably shorter than orbits, laterally barely protruded, not separated from orbits which are gently convex; diameter over eyes barely larger than over orbits. Anterior part of frons behind clypeus with a rather deep, irregularly sinuate groove, frons mediad of eyes on either side with a deep, slightly triangular pit, and in middle of frons with a shallow v-shaped groove. Immediately near median border of eye with a deep, straight sulcus that extends to posterior margin of eye, and with a narrow ridge that extends to middle of eye. Posterior supraorbital seta located far behind posterior margin of eye and moved on vertex. Labrum anteriorly concave, 6-setose. Clypeus in middle not distinctly separated from frons. Mentum with an elongate, narrow, 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, shortly surpassing glossy. Lacinia elongate, interior margin with a sparse fringe of spines. Palpi elongate, not widened towards apex, impilose. Antenna elongate, surpassing base of pronotum by about two antennomeres, pilose from middle of 4th antennomere. Median antennomeres >3× as long as wide. Surface very glossy, without microreticulation, glabrous, almost impunctate.

Prothorax. Comparatively narrow and elongate, lateral margin very little convex, in posterior half straight, dorsal surface convex. Widest diameter slightly in front of middle. Lateral border prominent,

slightly raised, with a narrow sulcus, but without any median ridge. Proepipleura rather narrowly visible from above. Apex and base both almost straight, not bordered, apical angles rounded off, basal angles right though obtuse. Median line deeply impressed, almost impunctate, not attaining apex nor base. Anterior transverse sulcus moderately impressed, v-shaped, impunctate, basal transverse sulcus barely impressed. In both available specimens no marginal setae present. Disk in basal third and apex in front of anterior transverse sulcus densely and very coarsely punctate, also lateral channel coarsely but sparsely punctate. Disk almost impunctate, in basal half with very fine, more or less easily visible transverse striae. Surface without microreticulation, impilose, glossy.

Elytra (Figs 15, 27). Large in comparison with fore body, more than twice as wide as prothorax, comparatively short; posteriad widened, lateral margin with a slight excision at anterior third. Surface gently convex, disk without any transverse impression. Humeri wide, almost evenly rounded. Marginal sulcus narrow. Apex wide, oblique, in middle very gently convex, laterally very slightly incised in front of the obtusely angulate, little produced lateral apical angles. Sutural angle with short, inconspicuous denticle. Apex with coarse border line, very finely denticulate. Scutellary stria fairly elongate, consisting of 7-8 coarse punctures. All striae complete, well impressed, punctate-crenulate, intervals slightly convex, even towards apex. Punctures of striae coarse, barely weaker towards apex. 3rd interval with three setiferous punctures, all situated in a slight impression. The anterior puncture situated at basal fourth near 3rd stria, the apical apical ones situated in apical fourth and adjacent to 2nd stria. Setae moderately elongate. Marginal series of setiferous punctures consisting of 6 anterior setae behind shoulder, 6-7 apical setae in front of lateral apical angles, one intercalary seta, and two setae near suture at apex. Intervals glossy, without punctuation, male in apical half with extremely superficial, barely recognizable microreticulation which consist of very transverse meshes. Flying wings fully developed.

Lower surface. Prothorax and mesothorax with very coarse and moderately dense punctuation. Also metepisternum punctate, but rest of metathorax and abdomen almost impunctate. Abdomen laterally with longitudinal striae and with superficial microreticulation. Metepisternum elongate, almost 2.5 × as long as wide at apex. Male terminal abdominal sternum in middle incised at apical margin, bisetose, female terminal sternum quadrisetose.

Legs. Of moderate size. 4th tarsomeres of protarsus and mesotarsus very deeply lobed, that of metatarsus lobed in posterior half; tarsi impilose

on upper surface, 5th tarsomere with a fringe of 3-5 elongate setae below. Claws large, smooth. 1st-3rd tarsomeres of male anterior tarsus with sparse squamosity.

Male genitalia (Fig. 19). Genital ring narrow and elongate, almost parallel-sided, barely asymmetric, with wide, convex apex. Aedeagus slender and elongate, moderately depressed, laterally straight, lower surface straight, only near apex very faintly bisinuate. Orificum short. Apex moderately elongate, fairly narrow, not upturned, but very slightly knobbed, turned to the right side, well incised at right side. Folding of internal sac simple, with an elongate, slightly coiled, very slightly sclerotized piece in apical half, at the very apex with a small, minutely denticulate piece. Parameres dissimilar, large, comparatively short, left paramere much larger than right.

Female genitalia. Gonocoxite 1 with 6-7 fairly elongate ensiform setae along apical margin. Gonocoxite 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 very elongate nematiform seta in apical third originating from a longitudinal pit. Lateral plate with many strong ensiform setae at and below margin on ventral surface.

Variation. Very little variation noted.

Distribution. Vicinity of Kokoda, Morobe Province, Papua New Guinea. Known only from type locality.

Collecting circumstances. Largely unrecorded. Both specimens sampled slightly below and above 400 m.

Relationships. According to shape of head and to structure of the aedeagus, this species is most closely related to *D. kokodae*, spec. nov., *D. ulrichi* Baehr, and *D. missai* Baehr.

Dicraspeda kokodae, spec. nov.

Figs 5, 15, 20

Types. Holotype: ♂, PAPUA: Kokoda, 1,200 ft. x.1933. L. E. Cheesman. B.M.1934-427. / *Dicraspeda dubia* (Gestro) det. Darl. '67 (NHM).

Etymology. The name refers to the type locality of the species, the town Kokoda.

Diagnosis. Species characterized by little projected eyes, unispinose elytral apex, short apical spine, presence of microreticulation on the elytra even in the male, and elongate, depressed aedeagus which is straight at the lower surface. Distinguished from

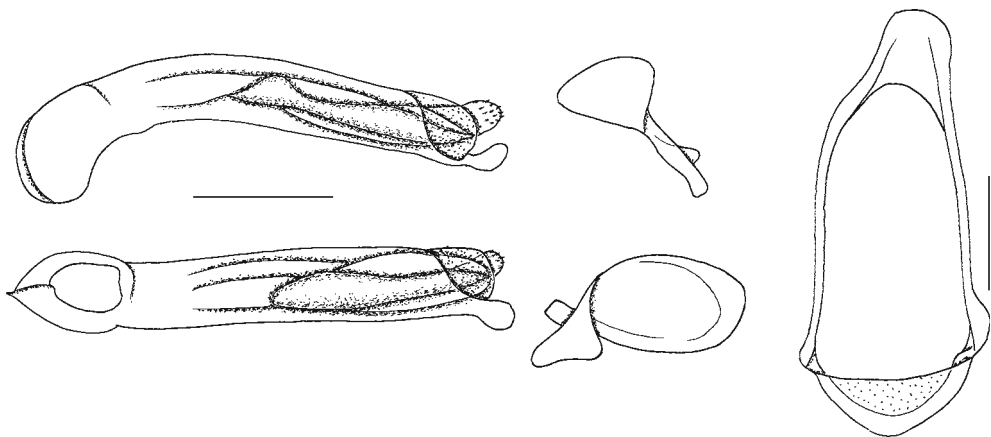


Fig. 20. *Dicraspeda kokodae*, spec. nov. Male genitalia: aedeagus, left side and from below, right and left paramere, genital ring. Scales: 0.5 mm.

most similar species *D. cheesmanae*, spec. nov. by slightly more projected eyes, slightly wider pronotum, and shorter and more upturned apex of the aedeagus; from *D. ulrichi* Baehr, and *D. missai* Baehr by lesser size and absolutely not bisinuate lower surface of the aedeagus.

Description

Measurements. Length: 6.8 mm, width: 2.5 mm. **Ratios.** Length eye/orbit: 0.85; length/width of head: 0.94; length/width of pronotum: 1.04; width of head/width of pronotum: 1.06; length/width of elytra: 1.64.

Colour. Head and prothorax black, elytra dark piceous, but little lighter than fore body. Anterior margin of clypeus, labrum, and mandibles dark reddish. Palpi and antenna yellow to light reddish. Legs piceous, but tibiae becoming gradually lighter towards apex, tarsi dark yellow. Under surface of fore body almost black, of abdomen dark piceous. Head (Fig. 5). Moderately wide. Neck fairly narrow, with rather deep transverse impression. Eyes fairly small, considerably shorter than orbits, laterally slightly protruded, slightly separated from orbits which are gently convex; diameter over eyes distinctly larger than over orbits. Anterior part of frons behind clypeus with a rather deep, irregularly sinuate groove, frons mediad of eyes on either side with a deep, about circular pit, and in middle of frons with a shallow v-shaped groove. Immediately near median border of eye with a deep, straight sulcus that extends to posterior margin of eye, and with a narrow ridge that extends to middle of eye. Posterior supraorbital seta located far behind posterior margin of eye and moved on vertex. Labrum

anteriorly concave, 6-setose. Clypeus in middle not distinctly separated from frons. Mentum with an elongate, narrow, 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, shortly surpassing glossy. Lacinia elongate, interior margin with a sparse fringe of spines. Palpi elongate, not widened towards apex, impilose. Antenna elongate, surpassing base of pronotum by about two antennomeres, pilose from middle of 4th antennomere. Median antennomeres c. 3× as long as wide. Surface very glossy, without microreticulation, glabrous, impunctate.

Prothorax. Moderately narrow and elongate, lateral margin slightly convex, in posterior third straight, dorsal surface convex. Widest diameter slightly in front of middle. Lateral border prominent, slightly raised, with a narrow sulcus, but without any median ridge. Proepipleura rather narrowly visible from above. Apex and base both almost straight, not bordered, apical angles rounded off, basal angles right though obtuse. Median line deeply impressed, almost impunctate, not attaining apex nor base. Anterior transverse sulcus moderately impressed, v-shaped, impunctate, basal transverse sulcus barely impressed. In the Holotype no marginal setae present. Disk in basal third and apex in front of anterior transverse sulcus sparsely and but moderately coarsely punctate, base in middle even less punctate than laterally; also lateral channel coarsely but sparsely punctate. Disk almost impunctate, in basal half with very fine, more or less easily visible transverse striae. Surface without microreticulation, impilose, glossy.

Elytra (Fig. 15). Large in comparison with fore

body, more than twice as wide as prothorax, moderately elongate; posteriad widened, lateral margin with a slight excision at anterior third. Surface gently convex, disk without any transverse impression. Humeri wide, almost evenly rounded. Marginal sulcus narrow. Apex wide, oblique, in middle very gently convex, laterally very slightly incised in front of the obtusely angulate, little produced lateral apical angles. Sutural angle with short, inconspicuous denticle as in *D. cheesmanae*, spec. nov. Apex with coarse border line, very finely denticulate. Scutellary stria fairly elongate, consisting of c. 8 coarse punctures. All striae complete, well impressed, punctate-crenulate, intervals depressed. Punctures of striae coarse, slightly weaker towards apex. 3rd interval with three setiferous punctures, all situated in a slight impression. The anterior puncture situated at basal fourth near 3rd stria, the apical apical ones situated in apical third and adjacent to 2nd stria. Setae moderately elongate. Marginal series of setiferous punctures consisting of 6 anterior setae behind shoulder, 6-7 apical setae in front of lateral apical angles, one intercalary seta, and two setae near suture at apex. Intervals glossy, without punctation, male with superficial, but in apical half distinct microreticulation which consist of very transverse meshes. Flying wings fully developed.

Lower surface. Prothorax and mesothorax with very coarse and moderately dense punctation. Metathorax and abdomen almost impunctate, also metepisternum apparently impunctate. Abdomen laterally with longitudinal striae and with superficial microreticulation. Metepisternum elongate, almost 2.5× as long as wide at apex. Male terminal abdominal sternum in middle incised at apical margin, bisetose.

Legs. Of moderate size. 4th tarsomeres of protarsus and mesotarsus very deeply lobed, that of metatarsus lobed in posterior half; tarsi impilose on upper surface, 5th tarsomere with a fringe of 3-5 elongate setae below. Claws large, smooth. 1st-3rd tarsomeres of male anterior tarsus with sparse squamosity.

Male genitalia (Fig. 20). Genital ring narrow and elongate, almost parallel-sided, barely asymmetric, with wide apex. Aedeagus slender and elongate, depressed, remarkably straight, lower surface near base concave, in apical two thirds absolutely straight. Orificum short. Apex comparatively short, fairly wide, slightly upturned, knobbed, turned to the right side, distinctly incised at right side. Folding of internal sac simple, with an elongate, slightly coiled, barely sclerotized piece in apical half, at the very apex with a small, minutely denticulate piece. Parameres dissimilar, large, comparatively short, left paramere much larger than right, right one triangular.

Female genitalia. Unknown.

Variation. Unknown.

Distribution. Vicinity of Kokoda, Morobe Province, Papua New Guinea. Known only from type locality.

Collecting circumstances. Largely unrecorded. Holotype sampled at about 400 m.

Relationships. According to shape of head and to structure of the aedeagus, this species is most closely related to *D. cheesmanae*, spec. nov., *D. ulrichi* Baehr, and *D. missai* Baehr.

Dicraspeda vandeveldeae, spec. nov.

Figs 6, 16

Types. Holotype: ♀, Coll. I.R.Sc.N.B. PAPUA NEW GUINEA Canopy Mission Madang Province Baiteta Light AR 16 04-VI-1996 Leg. Olivier Missa (IRSNB).

Etymology. The name is a patronym in honour of Mrs. Vandevelde who very diligently mounted the multitude of carabidae and other material from the samples collected by O. Missa.

Diagnosis. Species characterized by large size, little projected eyes, unispinose elytral apex, and fairly elongate apical spine. Distinguished from most similar species *D. ulrichi* Baehr and *D. cheesmanae*, spec. nov. by slightly more projected eyes and longer apical spine; and from *D. missai* Baehr by larger size, barely lighter coloured elytra, and almost depressed elytral intervals.

Description

Measurements. Length: 8.8 mm, width: 3.4 mm. Ratios. Length eye/orbit: 0.9; length/width of head: 0.97; length/width of pronotum: 0.98; width of head/width of pronotum: 1.09; length/width of elytra: 1.73.

Colour. Head and prothorax black, elytra very dark piceous and only very little lighter than fore body. Labrum, and mandibles dark reddish. Palpi and antenna reddish. Legs dark piceous to almost black. Under surface of fore body almost black, of abdomen very dark piceous.

Head (Fig. 6). Moderately wide and rather elongate. Neck fairly narrow, with rather deep transverse impression. Eyes moderately large, but shorter than orbits, convex, laterally little protruded, almost not separated from from orbits which are gently convex; diameter over eyes slightly larger than over orbits. Anterior part of frons behind clypeus with a rather deep, oblique groove which becomes shallower towards eye; frons in middle with a shallow v-shaped

groove. Laterally of the median groove with a deep circular pit on either side. Immediately near median border of eye with a deep, straight sulcus that extends to posterior margin of eye, and with a narrow ridge that extends to half of eye. Posterior supraorbital seta located far behind posterior margin of eye and moved on vertex. Labrum anteriorly slightly concave, 6-setose. Clypeus in middle not distinctly separated from frons. Mentum with an elongate, narrow, 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, shortly surpassing glossy. Lacinia elongate, interior margin with a sparse fringe of spines. Palpi elongate, not widened towards apex, impilose. Antenna elongate, surpassing base of pronotum by about two antennomeres, pilose from middle of 4th antennomere. Median antennomeres slightly less than 3× as long as wide. Surface very glossy, without microreticulation, glabrous, with a few scattered, fine punctures around the circular pits.

Prothorax. Comparatively short and wide, lateral margin almost straight, in posterior third slightly sinuate, dorsal surface convex. Widest diameter at apical third. Lateral border prominent, slightly raised, with a narrow sulcus, but without any median ridge. Proepipleura rather narrowly visible from above. Apex and base both almost straight, not bordered, apical angles rounded off, basal angles right though obtuse. Median line deeply impressed, very finely crenulate, not attaining apex nor base. Anterior transverse sulcus shallow, transverse, situated close to apex, basal transverse sulcus barely impressed. In the holotype no marginal setae present. Disk in basal third and apex in front of anterior transverse sulcus densely and coarsely punctate; also lateral channel punctate. Disk impunctate, in basal half with very fine, superficial transverse striae. Surface without microreticulation, impilose, very glossy.

Elytra (Fig. 16). Large in comparison with fore body, but comparatively elongate, about twice as wide as prothorax; posteriad widened, lateral margin with a slight excision at anterior third. Surface gently convex, disk without any transverse impression. Humeri wide, almost evenly rounded. Marginal sulcus narrow. Apex wide, oblique, in middle remarkably convex, laterally fairly deeply incised in front of the angulate, little produced lateral apical angles. Sutural angle with fairly elongatespine. Apex with coarse border line, barely denticulate. Scutellary stria elongate, consisting of c. 1 fairly coarse punctures.

All striae complete but little impressed, punctate, intervals depressed. Punctures of striae fairly coarse, slightly weaker towards apex. 3rd interval with three setiferous punctures, all situated in a slight impression. The anterior puncture situated at basal fourth near 3rd stria, the apical apical ones situated behind middle and near apex, and adjacent to 2nd stria. Setae moderately elongate. Marginal series of setiferous punctures consisting of 6 anterior setae behind humerus, 7-8 apical setae in front of lateral apical angles, one intercalary seta, and two setae near suture at apex. Intervals (in female) glossy, without punctation, with rather superficial transverse microreticulation in apical half. Flying wings fully developed.

Lower surface. Prothorax and mesothorax with very coarse and moderately dense punctation. Metathorax and abdomen almost impunctate, also metepisternum impunctate. Abdomen laterally with longitudinal striae and with superficial microreticulation. Metepisternum elongate, almost 2.5× as long as wide at apex. Female terminal abdominal sternum in middle not incised at apical margin, quadrisetose.

Legs. Of moderate size. 4th tarsomeres of pro-tarsus and mesotarsus very deeply lobed, that of metatarsus lobed in almost ⅔ of apical part; tarsi impilose on upper surface, 5th tarsomere with a fringe of 4-5 elongate setae below. Claws large, smooth. Squamosity of male anterior tarsus unknown.

Male genitalia. Unknown.

Female genitalia. Very similar to those of *D. cheesmanae*, spec. nov. Gonocoxite 1 with 5-6 fairly elongate ensiform setae along apical margin. Gonocoxite 2 with one dorso-median ensiform seta in apical third, three or four large ventro-lateral ensiform setae along lateral margin, and one elongate nematiform seta in apical third originating from a longitudinal pit. Lateral plate with many strong ensiform setae at and below margin on ventral surface.

Variation. Unknown.

Distribution. Baiteta, Madang Province, Papua New Guinea. Known only from type locality.

Collecting circumstances. Probably collected at light.

Relationships. According to the structure of head and the apex of the elytra probably nearest related to *D. missai* Baehr, but males are required to settle its systematic position.

Dicraspeda ophthalmica, spec. nov.

Figs 7, 15, 21

Types. Holotype: ♂, N. DUTCH NEW GUINEA: Waigau. Camp 1. Mt. Nok. 2,500 ft. v.1938. L. E. Cheesman. B.M.1938-593. / *Dicraspeda dubia* (Gestro) det. Darl. '67 (NHM).

Etymology. The name refers to the suddenly projecting eyes.

Diagnosis. Species characterized by rather small size (in group), and immediately recognized by the small though remarkably projected eyes which are unique in the whole genus.

Description

Measurements. Length: 6.8 mm, width: 2.35 mm. Ratios. Length eye/orbit: 0.9; length/width of head: 0.90; length/width of pronotum: 1.04; width of head/width of pronotum: 1.04; length/width of elytra: 1.73.

Colour. Head and prothorax black, elytra dark piceous, but little lighter than fore body. Labrum, and mandibles dark reddish. Palpi and antenna light reddish. Legs piceous, but tibiae becoming gradually lighter towards apex, tarsi dark yellow. Under surface of fore body almost black, of abdomen dark piceous.

Head (Fig. 7). Moderately wide and rather elongate. Neck fairly narrow, with rather deep transverse impression. Eyes small, considerably shorter than orbits, very convex, laterally remarkably and suddenly protruded, well separated from orbits which are gently convex; diameter over eyes much larger than over orbits. Anterior part of frons behind clypeus with a rather deep, elongate, oblique groove which becomes shallower towards eye; frons in middle with a shallow v-shaped groove. Immediately near median border of eye with a deep, straight sulcus that extends to posterior third margin of eye, and with a narrow ridge that extends to posterior third of eye. Posterior supraorbital seta located far behind posterior margin of eye and moved on vertex. Labrum anteriorly slightly concave, 6-setose. Clypeus in middle not distinctly separated from frons. Mentum with an elongate, narrow, 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, shortly surpassing glossy. Lacinia elongate, interior margin with a sparse fringe of spines. Palpi elongate, not widened towards apex, impilose. Antenna probably elongate but broken after 2nd and 5th antennomeres, respectively, probably surpassing base of pronotum by about two antennomeres, pilose from middle of

4th antennomere. Median antennomeres probably c. 3× as long as wide. Surface very glossy, without microreticulation, glabrous, impunctate.

Prothorax. Moderately narrow and elongate, lateral margin slightly convex, in posterior third straight, dorsal surface convex. Widest diameter at apical third. Lateral border prominent, slightly raised, with a narrow sulcus, but without any median ridge. Proepipleura rather narrowly visible from above. Apex and base both almost straight, not bordered, apical angles rounded off, basal angles right though obtuse. Median line deeply impressed, finely punctate, not attaining apex nor base. Anterior transverse sulcus shallow, transverse, situated close to apex, impunctate, basal transverse sulcus barely impressed. In the holotype no marginal setae present. Disk in basal third and apex in front of anterior transverse sulcus sparsely but fairly coarsely punctate; lateral channel barely punctate. Disk almost impunctate, in basal half with very fine, superficial transverse striae. Surface without microreticulation, impilose, glossy.

Elytra (Fig. 15). Large in comparison with fore body, but comparatively elongate, about twice as wide as prothorax; posteriad widened, lateral margin with a slight excision at anterior third. Surface gently convex, disk without any transverse impression. Humeri wide, almost evenly rounded. Marginal sulcus narrow. Apex wide, oblique, in middle very gently convex, laterally very slightly incised in front of the obtusely angulate, little produced lateral apical angles. Sutural angle with short, inconspicuous denticle as in *D. cheesmanae*, spec. nov. Apex with coarse border line, barely denticulate. Scutellary stria fairly elongate, consisting of c. 6 fairly coarse punctures. All striae complete, well impressed, punctate-crenulate, intervals slightly convex. Punctures of striae fairly coarse, slightly weaker towards apex. 3rd interval with three setiferous punctures, all situated in a slight impression. The anterior puncture situated at basal fourth near 3rd stria, the apical apical ones situated in apical third and 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. Intervals glossy, without punctation, male with superficial, but in apical half distinct microreticulation which consist of very transverse meshes. Flying wings fully developed.

Lower surface. Prothorax and mesothorax with very coarse and moderately dense punctation. Metathorax and abdomen almost impunctate, also metepisternum apparently impunctate. Abdomen laterally with longitudinal striae and with superficial microreticulation. Metepisternum elongate,

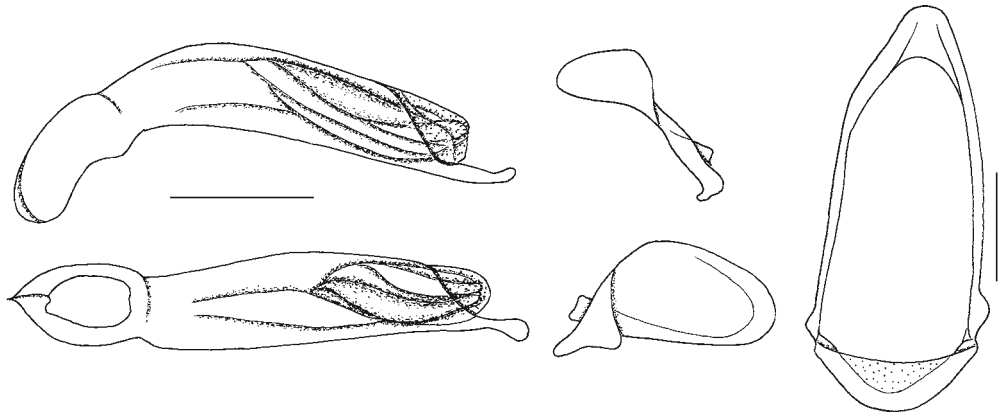


Fig. 21. *Dicraspeda ophthalmica*, spec. nov. Male genitalia: aedeagus, left side and from below, right and left paramere, genital ring. Scales: 0.5 mm.

almost $2.5\times$ as long as wide at apex. Male terminal abdominal sternum in middle incised at apical margin, bisetose.

Legs. Of moderate size. 4th tarsomeres of protarsus and mesotarsus very deeply lobed, that of metatarsus lobed in posterior half; tarsi impilose on upper surface, 5th tarsomere with a fringe of 4-5 elongate setae below. Claws large, smooth. 1st-3rd tarsomeres of male anterior tarsus with sparse squamosity.

Male genitalia (Fig. 21). Genital ring narrow and elongate, almost parallel-sided, barely asymmetric, with rounded apex. Aedeagus slender and elongate, moderately depressed, laterally slightly sinuate, lower surface near base concave, in apical half almost straight. Orificum short. Apex elongate, fairly narrow, slightly upturned, slightly knobbed, turned to the right side, moderately incised at right side. Folding of internal sac simple, with an elongate, slightly coiled, barely sclerotized piece in apical half, at the very apex with a small, minutely denticulate piece. Parameres dissimilar, large, comparatively elongate, left paramere much larger than right.

Female genitalia. Unknown.

Variation. Unknown.

Distribution. Waigeo Island off the west coast of New Guinea, West Papua, Indonesia. Known only from type locality.

Collecting circumstances. Largely unrecorded. Holotype sampled at about 400 m.

Relationships. A quite distinctive species, according to structure of the aedeagus probably related to *D. cheesmanae*, spec. nov. and *D. kokodae*, spec. nov.

Genus *Eudalia* Castelnau

Castelnau, 1867: 16. – For further citations and for diagnosis of the genus see Baehr (2005: 151).

Eudalia tamborineae, spec. nov.

Figs 8, 22, 28

Types. Holotype: ♂, Tamborine 10-1-33 / 2380 / *Eudalia* (QMT156034).

Etymology. The name refers to the type locality of this species, Mt. Tamborine in southern Queensland.

Diagnosis. Characterized by sharing of: uniformly piceous 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, longer elytra, and slightly downcurved apex of aedeagus.

Description

Measurements. Length: 9.0 mm, width: 3.1 mm. Ratios. Length eye/orbit: 1.1; length/width of head: 1.01; length/width of pronotum: 1.27; width of head/width of pronotum: 1.13; length/width of elytra: 1.74.

Colour (Fig. 28). Surface including mouth parts and antennae dark reddish-piceous, only palpi slightly lighter. Legs reddish-piceous, but upper surface of femora contrastingly red, and tibiae slightly darker than femora. Lower surface piceous, at fore body slightly paler.

Head (Fig. 8). Rather narrow. Neck moderately

narrow, with shallow transverse impression. Eyes of moderate size, little longer than orbits, laterally moderately protruded, but barely separated from orbits which are oblique and almost straight; diameter over eyes much larger than over orbits. Anterior part of frons behind clypeus with a rather deep, irregularly sinuate groove. Immediately near median border of eye with a shallow sulcus but without any ridge mediad. Posterior supraorbital seta located far behind posterior margin of eye and moved on vertex. Labrum anteriorly concave, 6-setose. Clypeus in middle not distinctly separated from frons. Mandibles elongate, but not porrect. Mentum with an elongate, narrow, acute, triangular tooth, with 2 setae behind tooth, submentum with an elongate seta on either side. Apex of glossa transverse, with 2 elongate median and 2 shorter lateral setae. Paraglossae free, narrow, shortly surpassing glossa. Lacinia elongate, interior margin with a sparse fringe of spines. Palpi elongate, slightly widened towards apex, impilose. Antenna very elongate, probably surpassing base of pronotum by two or three antennomeres but apical antennomeres broken, pilose from middle of 4th antennomere. Median antennomeres c. 3.5 × as long as wide. Surface very glossy, without microreticulation, glabrous, with sparse but very coarse punctures in the frontal groove, near eyes, and in lateral part of frons.

Prothorax. Narrow and elongate, lateral margin very little convex, in posterior half straight, dorsal surface convex. Widest diameter slightly in front of middle. Lateral border prominent, slightly raised, with a very narrow sulcus, but without any median ridge. Proepipleura narrowly visible from above. Apex and base both almost straight, not bordered, apical angles rounded off, basal angles right though obtuse. Median line moderately impressed, impunctate, not attaining apex nor base. Anterior transverse sulcus shallow, slightly v-shaped, impunctate, basal transverse sulcus barely impressed. In the holotype no marginal setae present, but anterior seta probably inserted shortly behind apical third. Disk in basal third irregularly, very coarsely punctate. Disk impunctate, only laterally with a few punctures; with very fine, superficial, transverse striae. Surface without microreticulation, impilose, glossy.

Elytra (Fig. 28). Large in comparison with fore body, about twice as wide as prothorax, elongate; posteriad very little widened, lateral margin with a very slight excision at anterior third. Surface convex but in middle depressed, disk without any transverse impression. Humeri wide, almost evenly rounded. Marginal sulcus very narrow. Apex wide, oblique, in middle very slightly sinuate, lateral apical angles evenly rounded. Sutural angle shortly rounded.

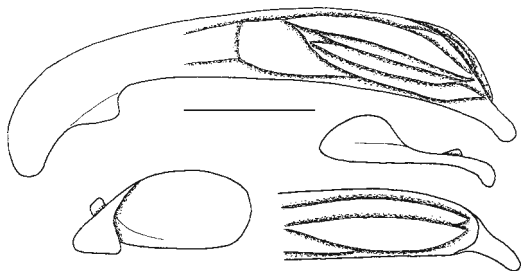


Fig. 22. *Eudalia tamborineae*, spec. nov. Male genitalia: aedeagus, left side and apical part from below, right and left paramere. Scale: 0.5 mm.

Apex with coarse border line, smooth. Scutellary stria fairly elongate, consisting of 8 coarse punctures. All striae complete, well impressed, punctate-crenulate, intervals very slightly convex, even towards apex. Punctures of striae coarse, but becoming weaker towards apex, three median striae in apical half barely punctate. 3rd interval with five setiferous punctures, the anterior three ones situated in middle of interval, the posterior ones near 2nd stria. 5th interval with a single seta near base. All setae 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. Intervals moderately glossy, without punctation, male with fine though distinct, isodiametric microreticulation. Flying wings fully developed.

Lower surface. Whole lower surface, including metepisternum, rather sparsely but coarsely punctate. Metepisternum elongate, almost 2.5 × as long as wide at apex. Male terminal abdominal sternum in middle not incised, bisetose.

Legs. Of moderate size. 4th tarsomeres of all tarsi moderately lobed; tarsi impilose on upper surface, 5th tarsomeres with a dense fringe of elongate setae below. Claws large, smooth. 1st-3rd tarsomeres of male anterior tarsus with sparse squamosity.

Male genitalia (Fig. 22). Genital ring destroyed. Aedeagus slender and elongate, moderately depressed but more compact in apical half, laterally little sinuate, lower surface very slightly concave. Orificum short. Apex moderately elongate, fairly narrow, very slightly curved down, barely knobbed, slightly turned to right, faintly incised at right side. Folding of internal sac simple, without any sclerotized pieces. Parameres moderately dissimilar, large, comparatively elongate, left paramere larger than right, the latter at apex triangularly convex.

Female genitalia. Unknown.

Variation. Unknown.

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

Collecting circumstances. Not recorded.

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.

Genus *Essora* Liebke

Liebke, 1933: 205. – Liebke 1938: 82.

Diagnosis. Characterized by rhomboidal head with elongate, oblique orbits and narrow “neck”, absence of a paraorbital ridge, barely indicated lateral margins of the pronotum and absence of a lateral sulcus, four-spotted elytra with incomplete striation, presence of a deep, triangular impression at basal third of elytra, not excised 4th tarsomeres, narrow, elongate aedeagus without distinctly sclerotized pieces, and apparent absence of the dorso-median ensiform seta on female gonocoxite 2.

So far the genus includes a single species, *Essora andrewesi* Liebke, described from Laos and recorded from “Annam, Tonkin” (Liebke 1938).

Essora drumonti, spec. nov.

Figs 9, 13, 23, 29

Types. Holotype: ♂, Coll. I.R.Sc.N.B. CAMBODIA Battambang Province Prek Toal, 09-VII-2005 Malaise trap Leg Ton Nay (IRSNB). – Paratypes: 1♂, 1♀, same data (CBM, IRSNB); 1♀, Coll. I.R.Sc.N.B. CAMBODIA (Battambang Prov.) Prek Toal (tonle sap lake) Light Trap 07-VII-2005 Leg I. Var (CBM); 1♀, Coll. I.R.Sc.N.B. CAMBODIA, Prek Toal, light trap 27.VII.2004 (24044) Leg. P. Grootaert (IRSNB); 1♂, 2♀♀, Coll. I.R.Sc.N.B. CAMBODIA, Battambang Prov. Prek Toal, Night Trapping 11/III/2006 Leg. Oui Yothin (CBM, IRSNB); 1♀, LAOS Vientiane Le 11 15 1915 R. Vitalis de Salvaza / *Essora* spec. nov. det. M. Liebke. Hamburg. (NMH).

Etymology. The name is a patronym and honours Mr. Alain Drumont from Brussels Museum who kindly sent me lots of carabids from field surveys in New Guinea and south Asia and thus made available very important material.

Diagnosis. Distinguished from the single other recorded species *Essora andrewesi* Liebke by slightly shorter but laterally more convex pronotum, much longer elytral striae which extend over basal two thirds of the elytra, presence of only four setae on 3rd interval, and longer, barely knobbed and not or barely upturned apex of aedeagus.

Description

Measurements. Length: 7.2-7.8 mm, width: 2.0-2.2 mm. Ratios. Length eye/orbit: 0.98-1.02; length/width of head: 1.23-1.28; length/width of pronotum: 1.86-1.92; width of head/width of pronotum: 1.28-1.33; length/width of elytra: 1.68-1.73.

Colour (Fig. 29). Surface black, only anterior margin of labrum reddish, mandibles reddish-piceous, palpi dark piceous, antenna almost black, but basal antennomere piceous on upper side and light reddish on lower surface. Elytra wit two yellow spots, the anterior one less brightly coloured, triangular, extending from 3rd or 4th to 8th intervals. The posterior spot pale yellow, circular, on 4th-6th intervals. Legs dark piceous to black, basal fourth of femora contrastingly yellow, tibiae in middle slightly paler. Lower surface black to dark piceous.

Head (Fig. 9). Fairly wide, rhomboidal. Neck very narrow, with deep transverse impression. Eyes fairly large, about as long as orbits, laterally well protruded, slightly separated from orbits which are very oblique and gently convex. Behind clypeus with deep, elongate, somewhat sinuate groove which becomes shallower towards the eyes, and in middle of frons with a shallow v-shaped groove. Medially of eye with a narrow and shallow sulcus that extends to about middle of eye, but without ridge. Posterior supraorbital seta located slightly in front of posterior margin of eye but moved on vertex. Labrum at apex transverse, 6-setose. Mandible elongate but not porrect. Clypeus transversely convex at basal margin, though in middle not distinctly 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, slightly surpassing glossy. Lacinia elongate, interior margin with a sparse fringe of spines. Antenna very elongate, surpassing base of pronotum by about one antennomere, pilose from middle of 4th antennomere. Median antennomeres c. 4 x as long as wide. Surface very glossy, without microreticulation, impunctate and impilose.

Prothorax. Moderately elongate, laterally very convex, dorsal surface convex. Widest about at posterior two fifth, near apex and near base incised. Lateral margin convex, near basal angles concave. Lateral border barely inconspicuous and barely recognizable. Proepipleura in posterior half widely visible from above. Apex narrow, straight, not bordered, apical angles obtuse. Base gently concave, not bordered, basal angles right though obtuse at apex. Median line inconspicuous, very shallow, not attaining apex nor base. A single marginal seta situ-

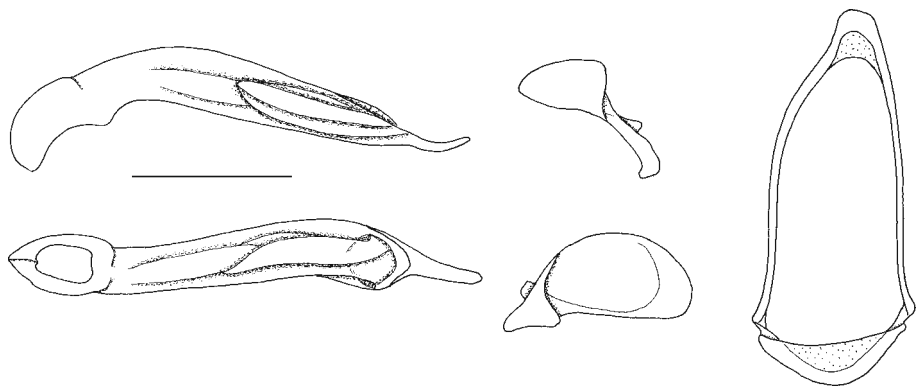


Fig. 23. *Essora drumonti*, spec. nov. Male genitalia: aedeagus, left side and apical part from below, right and left paramere, genital ring. Scales: 0.5 mm.

ated slightly in front of middle, seta elongate. Disk behind anterior sulcus and in basal third with very coarse, transverse sulci and ridges. Disk with sparse and extremely fine punctures and very short, erect pilosity, and with very inconspicuous transverse striae, without microreticulation, very glossy.

Elytra (Fig. 29). Large in comparison with fore body, about twice as wide as prothorax, posteriad slightly widened, lateral margin convex with slightly excision in anterior third. Surface gently convex, disk in anterior third with deep, irregularly triangular impression. Humeri wide, obliquely rounded. Marginal sulcus fairly wide. Apex wide, oblique and very slightly concave. Sutural angle angulate but not denticulate, lateral apical angles very obtusely angulate. Apex with coarse border line, not denticulate, surface near apex with some irregular, oblique grooves and bosses. Scutellary stria very elongate, consisting of c. 12 rather fine punctures. All striae indicated, but abbreviated at base and becoming very weak in apical third; striae not or barely impressed, consisting of moderately coarse punctures that become very weak towards apex. Intervals almost completely depressed. 3rd interval with 4 setiferous punctures. The anterior puncture located near 3rd stria, the posterior ones adjacent to 2nd stria. Setae 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 without microreticulation, but with extremely fine, almost invisible punctation and with dense, very short, erect pilosity that in posterior half is mainly arranged in longitudinal rows along the striae; surface very glossy. Wings fully developed.

Lower surface. Inside the almost invisible border of prosternum with a row of very coarse punctures, also apex and base of prosternum, and mesosternum

coarsely punctate. Rest of thorax and abdomen impunctate. Thorax without microreticulation, but abdomen with dense microreticulation and indistinct longitudinal striae near lateral margin. Metepisternum very elongate, c. 3 × as long as wide at apex. Terminal abdominal sternum in male slightly incised at apex, bisetose, in female quadrisetose, near margin shortly pilose.

Legs. Elongate and slender. 4th tarsomeres not lobed, tarsi impilose on upper surface, 5th tarsomere with a fringe of 3-4 elongate setae below. Claws large, smooth. 1st-3rd tarsomeres of male anterior tarsus with biseriate squamosity.

Male genitalia (Fig. 23). Genital ring narrow and elongate, almost parallel, barely asymmetric, with moderately narrow, incurved apex. Aedeagus very slender and elongate, depressed, laterally sinuate, at right side near suddenly convex in front of apex, lower surface near base concave, in apical half very slightly convex, slightly sinuate at base of apex. Orificum very short, situated completely on upper surface. Apex very elongate, fairly narrow, very slightly upturned, not knobbed, almost straight. Folding of internal sac very simple, with two elongate, slightly coiled, slightly sclerotized pieces in apical half. Parameres moderately dissimilar, large, elongate, left paramere larger than right.

Female genitalia (Fig. 13). Gonocoxite 1 with 5-6 rather short and stout ensiform setae along apical margin. Gonocoxite 2 comparatively short, evenly curved, with fairly acute apex, apparently without dorso-median ensiform seta, with two large ventro-lateral ensiform setae at lateral margin, the upper one is very large, and one nematiform seta in apical third originating from a longitudinal pit. Lateral plate with many strong ensiform setae at and below margin on ventral surface.

Variation. Very slight variation noted in relative

width of head and in distinctness of punctuation of elytral striae in apical third.

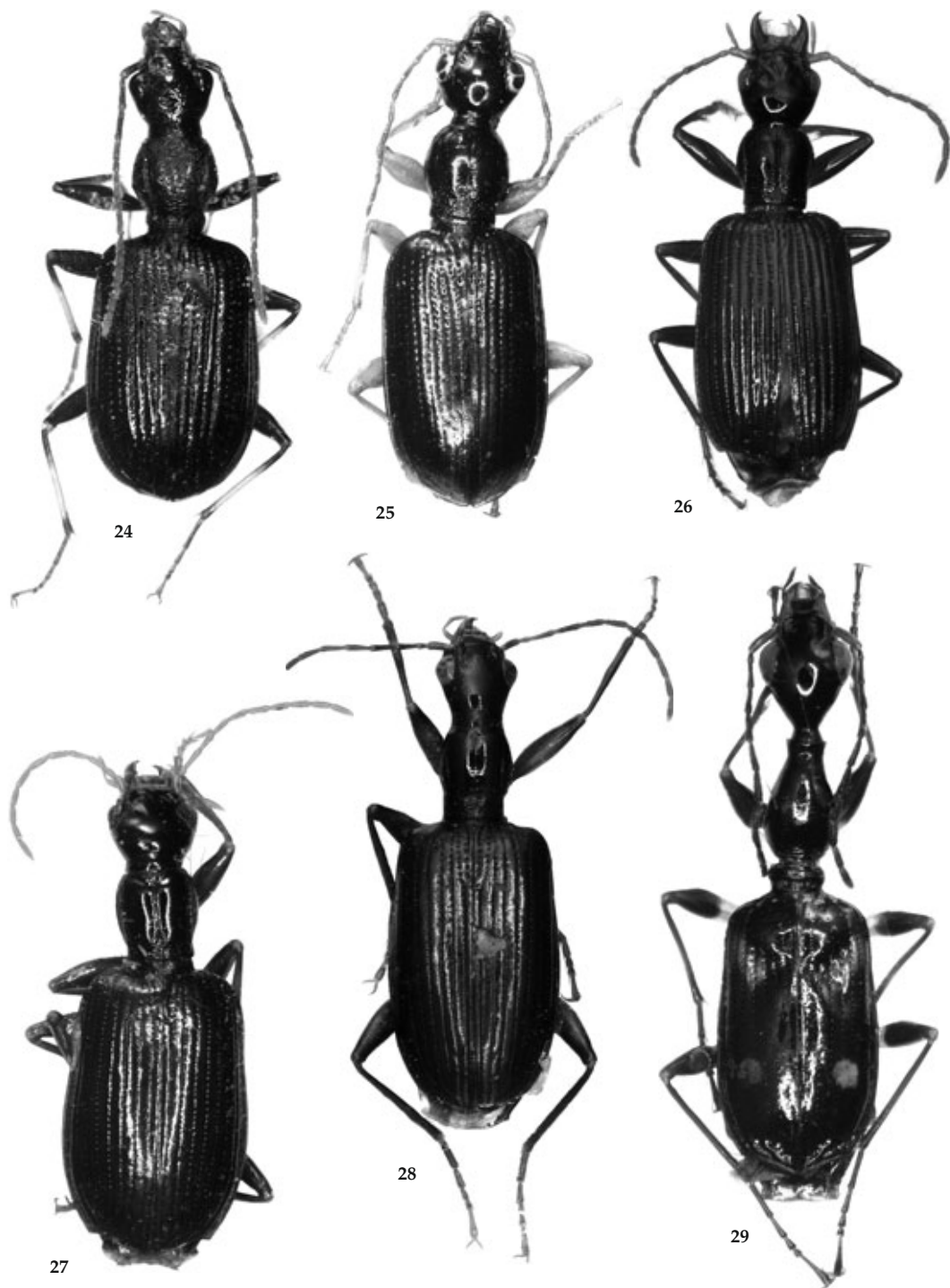
Distribution. Cambodia and Laos.

Collecting circumstances. Most specimens collected at light or in Malaise trap near Lake.

Identification of the genera of Australian Odacanthini

To insert the two genera new to Australia, the key to the Australian odacanthine genera has been altered as follows (figures of the revision included as **B05** fig.):

1. 4th tarsomeres deeply excised in middle and markedly bilobate.....2.
- 4th tarsomeres not deeply excised in middle and not markedly bilobate.....3.
2. Head elongate, more or less distinctly triangular; prothorax tubular, without distinct lateral sulcus; elytra narrow, upper surface depressed, red with black or blue pattern and white spots (in Australian species) (**B05** fig. 38D)..... *Ophionea* Klug
- Head not elongate, convex; prothorax not tubular, with distinct lateral sulcus; elytra rather short and wide, upper surface not markedly depressed, uniformly black or dark piceous, elytra sometimes with narrow yellow apical margin (in Australian species) (Fig. 23; **B05** figs 34D,E)2a.
- 2a. Head with a distinct ridge mediad of eyes; pronotum with distinct lateral sulcus; elytra without yellow apical margin (**B05** figs 34D,E) *Dicraspeda* Chaudoir (part)
- Head without a ridge mediad of eyes; pronotum without lateral sulcus; elytra with narrow yellow apical margin (Fig. 23)..... *Andrewesia* Liebke
3. Head not distinctly narrowed behind eyes; colour of surface brick-red, elytra with serrate, cruciate dark pattern (**B05** fig. 38E)..... *Porocara* Sloane
- Head distinctly narrowed behind eyes; colour of surface different, elytra with different pattern, or unicolourous.....4.
4. 3rd antennomere very elongate, as long as 4th and 5th together (**B05** figs 33F. 34A) *Clarencia* Sloane
- 3rd and 4th antennomeres of about equal length5.
5. Elytra elongate, parallel, upper surface remarkably depressed, apex almost transverse, without any excision (**B05** fig. 33A) *Anasis* Castelnau
- Elytra usually shorter and less parallel; when elongate, then upper surface not markedly depressed and apex oblique, usually more or less distinctly excised6.
6. Head with distinct longitudinal sulcus and ridge inside of eye7.
- Head without or with indistinct sulcus and ridge inside of eye11.
7. Odd elytral intervals cariniform, external apices of elytra spiniform (**B05** fig. 37B)..... *Giachinoana* Baehr
- Odd elytral intervals not cariniform, external apices of elytra not spiniform, at most gently angulate (in Australian species).....8.
8. Pronotum with indistinct lateral margin, or margin not medially bordered by a deep sulcus; elytra glossy black with 2 or 4 small white spots (in Australian species) (**B05** figs 33B,C)..... *Archicolluris* Liebke
- Pronotum with conspicuous ridge-like margin, margin medially bordered by a deep sulcus; elytra piceous or black, without white spots.9.
9. Elytra deeply punctate-striate in basal third, barely striate in apical two thirds; with deep transverse sulcus in basal third; elytra rather narrow and elongate; lateral margins of pronotum conspicuously sinuate (**B05** fig. 33E) *Basistichus* Sloane
- Elytra fully striate, or striation becoming gradually weaker towards apex; without or with only shallow transverse sulcus in basal third, in latter case elytra more depressed and rather wide; lateral margins of pronotum barely sinuate.....10.
10. Surface with dense, elongate, erect pilosity; tibiae dark with conspicuous yellow ring (Fig. 9; **B05** fig. 38C)10a.
- Surface without pilosity; tibiae uniformly yellow or dark, without yellow ring (**B05** figs 34D,E) .
..... *Dicraspeda* Chaudoir
- 10a. Elytra with shallow transverse depression near apex, 7th interval tumid in apical third; 3rd antennomere sparsely setose (**B05** fig. 38C) *Neoeudalia* Baehr
- Elytra without any transverse depression near apex, 7th interval not tumid; 3rd antennomere glabrous except for apical setae (Fig. 24) *Tricharnhemia*, gen. nov.



Figs 24-29. Habitus. Body lengths in brackets. 24. *Tricharnhemia browni*, spec. nov. (8.4 mm). 25. *Andrewesia australica*, spec. nov. (6.7 mm). 26. *Dicraspeda bellorum*, spec. nov. (8.0 mm). 27. *D. cheesmanae*, spec. nov. (6.6 mm). 28. *Eudalia tamborineae*, spec. nov. (9.0 mm). 29. *Essora drumonti*, spec. nov. (7.7 mm).

11. 3rd antennomere impilose..... 12.
 - 3rd, and usually also 1st and 2nd antennomeres, pilose 15.
12. Elytral striae impunctate, rather sulcate; head markedly triangular towards base (**B05** fig. 33D) *Aulacoli* Sloane
 - Elytral striae punctate, not sulcate; head convex behind eyes..... 13.
13. Lateral margin of pronotum medially bordered by a deep sulcus; **all** odd intervals with a row of many (>10) erect setae (**B05** fig. 38F).....
..... *Renneria* Baehr
 - Lateral margin of pronotum medially not bordered by a deep sulcus; at most 3rd, 5th, and 7th intervals with a row of fewer (<5) erect setae..
..... 14.
14. Elytra ampliate, apically considerably widened and externally angulate or spinose; antenna very elongate, 4th antennomere impilose (**B05** figs 36D-F, 37A)..... *Gestroania* Liebke
 - Elytra not ampliate, apically not or little widened and externally not angulate; antenna shorter, 4th antennomere pilose (**B05** figs 34F, 35A-F, 36A-C) *Eudalia* Castelnau
15. Elytral striae almost complete; prothorax densely punctate and pilose on disk 16.
 - Elytral striae incomplete, either only basal third striate, or but 2 inner striae complete; prothorax in middle impunctate, either glabrous or coarsely, transversely rugose, impilose on disk (**B05** figs 37D-F, 38A,B) *Myrmecodemus* Sloane
16. Lateral margin of pronotum medially bordered by a deep sulcus; elytral striae punctate-striate (**B05** figs 34B,C) *Deipyrodes* Bousquet
 - Lateral margin of pronotum medially not bordered by a deep sulcus; elytral striae only coarsely punctate (**B05** fig. 37C).....
..... *Lachnothorax* Motschulsky

Identification of species

Revised partial key to the species of the genus *Dicraspeda* Chaudoir

For insertion of the new species of *Dicraspeda* in the most recent keys to the species of the genus *Dicraspeda* (Baehr 2006, 2009) only that part of the 2006 key is completely revised that includes all species with unispinose or unidentate sutural apex; those species with unarmed elytra (captions 1-17 in the 2006 key)

and the quadrispinose species (captions 27-30 in the 2006 key) are omitted. For the unarmed species the 2006 key still works, whereas for the quadrispinose species both keys (Baehr 2006, 2009) should be used. For better comparison, figures from Baehr (1996a), Baehr (1997), and Baehr (2006) are mentioned as “**B96a** fig.”, “**B97** fig.”, and “**B06** fig.”.

18. Apex of elytra denticulate or spinose at sutural angle only 19.
 - Apex of elytra bispinose, with elongate spines at sutural and lateral angles
..... 32. (= 27. in Baehr 2006).
19. 4th tarsomere of metatarsus emarginate for <½ of its length only; eyes large, slightly longer than orbits. New Guinea, ? northern Queensland
..... *dubia* (Gestro)
 - 4th tarsomere of metatarsus emarginate for ¾ of its length or more; eyes smaller, shorter than orbits..... 20.
20. Eyes small but remarkably and suddenly protruded (Fig. 7); sutural spines very short (Fig. 15); aedeagus elongate, lower surface almost straight, apex elongate and slightly knobbed (Fig. 21). Waigeo Isl., West Papua.....
..... *ophthalmica*, spec. nov.
 - Eyes usually larger but laterally far less protruded protruded (Figs 3-6); sutural spines varied, but when eyes rather protruded, spines elongate; aedeagus variously shaped 21.
21. Outline of orbit and eye forming an almost regular curve which is not interrupted behind eye (Figs 4-6; **B06** fig. 14; **B96a** fig. 10) 22.
 - Outline of orbit and eye not forming a regular curve, outline distinctly interrupted behind eye (Fig. 3; **B96a** figs 8, 9) 26.
22. Eyes laterally absolutely not protruded, width of head across eyes not much wider than across orbits (Fig. 4; **B96a** fig. 10)..... 23.
 - Eyes laterally perceptibly protruded, width of head across eyes considerably wider than across orbits (Fig. 5; **B06** fig. 14)..... 24.
23. Body length >8 mm; aedeagus with short, club-shaped apex (**B96a** fig. 6). Papua New Guinea .
..... *ullrichi* Baehr
 - Body length <7 mm; aedeagus with elongate, little widened apex (Fig. 19). Papua New Guinea *cheesmanae*, spec. nov.
24. Sutural spine very short; elytra in males in apical half with at least superficial microreticulation composed of transverse meshes; lower surface

- of aedeagus distinctly bisinuate, apex very short and markedly club-shaped (**B06** fig. 3). Papua New Guinea *missai* Baehr
- Sutural spine longer (Figs 14, 16)..... 25.
25. Smaller species, body length <8 mm; elytra distinctly lighter than fore body; intervals markedly convex; apex of elytra moderately sinuate (Fig. 14); elytra in males in apical half without any traces of microreticulation; lower surface of aedeagus straight or slightly concave, apex fairly elongate and less club-shaped (Fig. 18). Papua New Guinea *bellorum*, spec. nov.
- Larger species, body length 8.8 mm; elytra not distinctly lighter than fore body; intervals almost completely depressed; apex of elytra markedly sinuate (Fig. 16); elytra in female in apical half with distinct transverse microreticulation; aedeagus unknown. Papua New Guinea *vandeveldae*, spec. nov.
26. Elytra piceous, distinctly lighter than fore body..... 27.
- Elytra black, not or very little lighter than fore body..... 29.
27. Smaller species, body length <7 mm; elytra very shortly denticulate (Fig. 15); lower surface of aedeagus absolutely straight **and** apex short and club-shaped (Fig. 20). Papua New Guinea *kokodae*, spec. nov.
- Larger species, body length >8 mm; elytra spinose (**B96a** figs 11, 12); either lower surface of aedeagus markedly bisinuate (**B96a** fig. 4) **or** apex elongate and not distinctly club-shaped (**B96a** fig. 5)..... 28.
28. 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 (**B96a** fig. 4). 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 (**B96a** fig. 5). Papua New Guinea *loebli* Baehr
29. Sutural angle of elytra denticulate **and** lateral angle obtusely angulate (**B97** fig. 4). West Papua *denticulata* Baehr
- Sutural angle of elytra spinose or denticulate, but when denticulate, lateral angle sharply angulate 30.
30. 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, westernmost West Papua *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) 31.
31. 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. West Papua .. *glabripennis* Baehr
32. = 27. in Baehr (2006).

Identification of *Eudalia tamborinae*

For insertion of *Eudalia tamborinae*, spec. nov. in the most recent key to the species of the genus *Eudalia* (Baehr 2005) caption 6 is easily reached which must be altered as follows. For better comparison, figures from Baehr (2005) and Baehr (2006) are mentioned as “**B05** fig.” and “**B06** fig.”

- 6. Pronotum laterally very convex, little longer than wide, margin anteriorly with several short setae; 5th stria with >5 setiferous punctures; elytra with dense, rugose, distinct microreticulation. se. NSW, e. VIC *castelnaui* Sloane
- Pronotum laterally little convex, considerably longer than wide, margin anteriorly without additional setae; 5th stria without or with at most 1-3 setiferous punctures; elytra with much more superficial microreticulation. Distribution different..... 7.
- 7. 5th stria with 1-3 setiferous punctures, towards apex striae still perceptibly punctate. QLD...7a.
- 5th stria without setiferous punctures, towards apex striae barely punctate though distinctly impressed. ce. NSW, se. QLD..... 8.
- 7a. Microreticulation of elytra in basal half indistinct, less developed than in apical half; 5th interval with 2-3 punctures; eyes larger and more protruded, ratio length of eye/length of orbit c. 1.45,

- orbit distinctly convex; legs uniformly dark; apex of slightly upturned and with deep excision on right side (B05 fig. 14) n. QLD *reticulata* Baehr
- Microreticulation of elytra in basal half about as distinct as in apical half; 5th interval with 1 puncture; eyes smaller and far less protruded, ratio length of eye/length of orbit c. 1.1; orbit almost straight; femora dorsally contrastingly red; apex of slightly downcurved and with shallow excision on right side (Fig. 22). se. QLD..... *tamborineae*, spec. nov.
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 (B05 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 (B06 fig. 9). se. QLD, north of Lamington Plateau *liebherri* Baehr

Key to the species of the genus *Essora* Liebke

1. Elytra with 10-15 setiferous punctures on 3rd and 5th intervals; striae of elytra present only in basal third; posterior yellow spot transverse or reniform *andrewesi* Liebke
- Elytra with 4 setiferous punctures only on 3rd interval; striae of elytra present at least in anterior two thirds; posterior yellow spot circular (Fig. 29)..... *drumonti*, spec. nov.

Remarks

The present paper combines the descriptions of a couple of quite different species which in some ways influence our views of composition and diversity of certain odacanthine faunas.

The new genera and species described or recorded from Australia once more demonstrate the richness and, at the same time, the diversity, in

view of morphology and phylogenetic status, of the Australian odacanthine fauna as already mentioned by Baehr (2005). Indeed, the Australian Odacanthini include extremely plesiotypic (e.g. the genera *Porocara* Sloane, 1917 and *Eudalia* Castelnau, 1867) as well as extremely apotypic genera and species (e.g. the genera *Ophionea* Klug, 1821 and *Clarencia* Sloane, 1917). The discovery of the Oriental genus *Andrewesia* in northern Australia also demonstrates a certain degree of relationship of the Australian fauna with the Oriental one, although most odacanthine genera in Australia are endemic to this continent.

The new species of the genus *Dicraspeda* and, in particular, of those species that bear unidentate or spinose elytra (*dubia-bispinosa*-group, former genus *Philemonia* in the sense of Liebke 1938) demonstrate the richness of this genus in New Guinea. In the vicinity of Baiteta, for example, so far 4 species of this group were recorded (*D. bispinosa*, *D. missai*, *D. ullrichi*, *D. vandeveldeae*), and additionally two species of *Dicraspeda* that belong to other groups within this genus (*D. minuta*, *D. quadrispinosa*). Although the most plesiotypic species of the genus *Dicraspeda* occur in eastern Australia (Baehr 2005), New Guinea seems to possess the highest species diversity within the genus. The development of this surprisingly high diversity may be due to two reasons, the one based on the eco-ethology of the species, the other on geographical conditions.

Apparently, as Darlington (1968) already stated, at least the species of the *dubia-bispinosa*-group of the genus *Dicraspeda* which includes all newly described species as well as 8 additional species in New Guinea, seem to live rather on the forest floor in rain forest than near the banks of rivers, which most probably is the habits of the species of the *brunnea*-group (those species with unarmed elytra) and of some plesiotypic Australian species of the genus [*brunneipennis* (Sloane), *longiloba* Liebke, *obscura* (Castelnau)]. The rugged montane surface of New Guinea, on the other hand, very much favours the development of endemism in many insect groups, in particular in those which live on the forest floor in montane rain forests. Thus, both conditions in combination may have been responsible for the apparent short range endemism and the surprisingly high degree of species diversity within this group.

Acknowledgements

For the kind loan or gift of specimens I am indebted to Svata Bilý, Praha, Gavin Dally, Darwin, Robert Davidson, Pittsburgh, Alexander Dostal, Vienna, Alain Drumont, Bruxelles, Conrad Gillett, London, Roland Grimm, Tübingen, John Moulden, Kununurra, Alexander Riedel,

Karlsruhe, and Shawn Winterton, Brisbane, The visits at the collections in Darwin and Kununurra were part of a collecting trips through northern parts of Northern Territory and Western Australia which were supported by Deutsche Forschungsgemeinschaft (DFG) by the grants No. Ba 856/9-1 and Ba 856/10-1; the recent visit at The Natural History Museum, London received support from the SYNTHESYS Project <http://www.synthesys.info/> which is financed by European Community Research Infrastructure Action under the FP6 "Structuring the European Research Area" Programme.

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Buchbesprechungen

13. Pape, Thomas, Bickel, Daniel & Meier, Rudolf (eds.): *Diptera Diversity: Status, Challenges and Tools*. 459 pp.; Koninklijke Brill, Leiden. 2009. ISBN 978-90-04-14897-0.

The order Diptera constitutes a hyperdiverse taxon of worldwide distribution with more than 150,000 species, i.e. 10 % of all described animal species. Although rather inconspicuous compared to some of the flashier insects such as butterflies or beetles, flies have a tremendous impact on mankind regarding health and economic issues. They have therefore always received much scientific interest and still do so today. In the foreword Quentin Wheeler introduces dipterists as a productive scientific community always at the vanguard of taxonomic progress. At the same time he complains that "the depth of our ignorance of the world's species is at once awesome and inexcusable". Both statements are ever so true and this book serves well to elucidate both the state of progress as well as still existing shortcomings and impediments of dipterological biodiversity research today.

To compose this impressive overview, the editors Thomas Pape, Daniel Bickel and Rudolf Meier have cooperated with 19 more of today's world elite dipterists. The first part comprises nine chapters on dipteran diversity and dipterological research in the major biogeographic regions, with separate chapters for Hawaii, the Galapagos and the Southwest Pacific. Each chapter is authored by one or more renowned experts for the respective region.

Part two contains chapters on three exemplary issues of biodiversity research in Diptera. Daniel Bickel provides an insight into the problems with "open ended", i.e. extremely species rich, taxa which might never be fully described. One such taxon, the phorid genus *Megaselia*, is one of the largest genera of living organisms with some 1500 described species. Bickel comes to the conclusion that "proposals to taxonomically describe all life on Earth fail to understand the diversity of highly speciose taxa". But he philosophically points out that the present immense diversity is in itself wonderful, even if we will never be able to name all species individually. Marc Pollet discusses the use of Dolichopodidae as ecological indicators. Finally, a team of authors led by Torsten Dikow evaluates the prospects of biodiversity research based on metadata from published taxonomic revisions, e.g. for estimating species richness for certain areas or to establish conservation priorities. This evaluation is carried out on the example of Asilidae.

The third part comprises three chapters on DNA barcoding and biodiversity informatics. The chapter on DNA barcoding and DNA taxonomy by Rudolf Meier and Guanyang Zhang constitutes a real highlight. Instead

of chiming in to the omnipresent "hype" on these topics, the authors undertake a fresh evaluation of more than 4000 dipteran COI sequences derived from GenBank. Their unprejudiced statistical approach comes up with rather sobering results. An identification success of 89 %, with 7 % ambiguous and 4 % misidentifications can be expected if the tested species is already represented in the data set. If the species is not yet represented, the risk of misidentification is much higher. Such rates are not sufficient for far reaching scientific decisions, let alone legal ones. The authors identify a number of underlying problems such as misidentification of the deposited sequences and the large overlap of inter- and intraspecific barcoding gaps. Furthermore they point out that the price of sequencing all Diptera species will be astronomic but still nothing compared to the price and effort to get hold of the necessary sequenceable specimens. Therefore it is extremely unlikely that all species, and especially rare ones, will be covered any time soon. Overall, in spite of ample practical applications for DNA barcoding as a layman's tool, the prospects for COI as a diagnostic tool for science are limited. The authors come to the conclusion that "DNA provides an important new source of data but is only component of a scientifically defensible modern taxonomy and no replacement for thoughtful, informed scholarship about morphology and other complex characters". Although the chapter is not designed as a review on DNA barcoding and taxonomy, it is followed by impressive eleven pages of references.

The following chapter by Shaun Winterton deals with the Brave New World of digital biodiversity informatics which has evolved over the last decades. This world contains taxonomic, genetic, phylogenetic, image, specimen-level and other databases as well as sophisticated software tools such as geographic mapping tools and interactive identification keys. A three page table lists useful bioinformatics sites on Diptera from the Internet or published on CD. Such sites provide a wealth of metadata to be studied in turn. Whereas "the study of insects has relied traditionally upon a simple experimental process" now the "tedious analysis of primary data is no longer the dictum". The author rightly points out that more resources are needed for digitizing specimen label data so that this information can be made available for the metadata analyses. Apparently somebody still has to do the tedious work of compiling the primary data.

The last chapter deals with a specific software for tracking specimens, nomenclature and literature data called MANDALA. It is followed by an appendix listing the species numbers in each dipteran family in total and for the separate geographical regions. A fifteen page index concludes the volume.

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