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Taxonomic revision of the genus *Archidela* Rivalier, 1963 (Coleoptera, Cicindelidae)

by **Jiří Moravec & David Brzoska**

Abstract. A taxonomic revision of the Australian tiger beetle genus *Archidela* Rivalier, 1963 is presented. As a result of the examination of relevant type specimens, as well as recently collected material, four species of the genus (originally described as *Cicindela*) are recognized by the authors: *Archidela nigrina* (Macleay, 1864), *A. scitula* (Sloane, 1909), *A. rugosicollis* (W. Horn, 1913) comb.nov. (based on *Cicindela nigrina rugosicollis*), and *A. darwini* (Sloane, 1909). The examination has confirmed the separate species status of *A. scitula* and *A. rugosicollis*. Lectotypes of *Cicindela nigrina* and *C. darwini* are designated. A short history of the genus *Archidela*, detailed redescriptions of the four species, as well as their biology and distributions are presented. Illustrations of diagnostic characters and habitus in colour photographs and line drawings are also provided.

Keywords. Coleoptera – Cicindelidae – *Archidela* – new combination – redescription

Introduction

The genus *Archidela* with the type species *Cicindela nigrina* Macleay, 1864 was proposed by RIVALIER (1963) for five Australian species of *Cicindela* Linné, 1758. Besides *Archidela nigrina* (Macleay, 1864), *A. scitula* (Sloane, 1909) and *A. darwini* (Sloane, 1909), RIVALIER (1963) accommodated three other species to his new genus. Two of them, *Cicindela leai* Sloane, 1905 and *C. oblongicollis* Macleay, 1888, were formally transferred to the genus *Micromentignatha* Sumlin, 1981 by WIESNER (1992) who elevated the original subgenus to the separate genus, the other, *C. doddi* Sloane, 1905, was transferred by SCHILDER (1953) to the genus *Antennaria* Doktouroff, 1883 (both genera treated by SUMLIN (1981, 1984) as subgenera of *Cicindela*). FREITAG (1979) did not accept the classification by RIVALIER (1963) and treated *Archidela* as a synonym of *Cicindela* which he subdivided into several groups. Thus he partly followed the subdivision by Sloane (1909). HORN (1915, 1926, 1938) accommodated *A. nigrina* and *A. darwini* into two different groups within *Cicindela*, probably on the basis of a different chaetotaxy of the middle trochanters (as quoted by FREITAG 1979). Nevertheless, this character is irrelevant, because the apical seta on mesotrochanters is present also in some adults of *A. darwini*. SUMLIN (1981) treated *Archidela* as a subgenus of *Cicindela*, followed by MOORE (1987), but more recent authors (CASSOLA 1986, WIESNER 1992) treated it as the separate genus.

RIVALIER (1963) did not mention one other taxon which was described by HORN (1913) as *Cicindela nigrina rugosicollis*, although SCHILDER (1953) listed *A. rugosicollis* and *A. scitula* as two separate species (both as species of *Antennaria*). MANDL (1960) also treated *A. scitula* as a separate species (of *Cicindela*) when he referred to one adult captured in Katherine, Northern Territory. Although FREITAG (1979) did not examine the type specimens of *Cicindela scitula* and *Cicindela nigrina rugosicollis*, he synonymized these two taxa with *C. nigrina*, and some recent authors followed this synonymy

(MOORE 1987, WIESNER 1992, LORENZ 2005a, 2005b). SUMLIN (2003), in his "Compendium of the Cicindelidae of Australia" (not yet formally published, but distributed by the author both in electronic and self-printed version), on the basis of his examination of the holotype of *C. nigrina rugosicollis* and of a sufficient number of recently captured adults, recognized *Cicindela* (*Archidela*) *nigrina* and *C.* (*A.*) *rugosicollis* as two separate species. In the same not yet formally published paper he also treated *Cicindela* (*Archidela*) *scitula* as a separate species, although he did not examine the holotype.

Species of *Archidela* are rarely found in institutional or private collections. Nevertheless, we had an opportunity to examine a great number of adults of all four species of *Archidela* captured in northern Australia recently by the second author and our colleagues. Thus we were able to study a sufficient number of adults in their variability. The first author has also examined the holotypes of *C. scitula* and *Cicindela nigrina rugosicollis* as well as one syntype of *C. darwini* (all deposited in SDEI). It is surprising that Australian entomologists and FREITAG (1979) generally considered the holotype of *C. scitula* Sloane, 1909 to be lost, despite the fact that DÖBLER (1973) listed the holotype as deposited in Horn's collection in DEI, Eberswalde (now SDEI, Müncheberg), with a note that it was donated there by French (the collector) and Sloane in 1909. Our revision, principally based on our examination of the type specimens and mostly on numerous recently captured adults, has confirmed the four species of the genus. Despite a rather great variability of adults, namely of *A. nigrina*, *A. rugosicollis* and *A. scitula*, we have found that these species mutually differ by a complex of characters. The fourth species, *A. darwini*, notably differs from the three in the shape of its pronotum and an extremely dense sculpture on the whole pronotal surface, diverse elytral maculation, and markedly elongate aedeagus.

Consequently, the main reason for this paper is to introduce the four species in their variability, to reassess *A. scitula* as a separate species, and to transfer formally *Cicindela nigrina rugosicollis* to the genus *Archidela* as *Archidela rugosicollis* (W. Horn, 1913) comb.nov.

Material and methods

The length of the body is measured from the elytral apex (including the sutural spines) to the end of the clypeus (without the labrum). The term "aedeagus" used here refers to the median lobe of the organ (without the parameres). All dimensions of the aedeagi are measured (and primarily figured) in their left lateral position where the basal portion (with basal orifice) points to the right while the left lateral outline (with dorsoapical orifice) faces dorsally, provided that the ventral outline of the median portion is settled in its vertical position, and both upper and lower walls of the dorsoapical orifice are in the same line. The treatment and mounting of the aedeagi, in order to observe the structure of the internal sac were made by the usual method modified and explained in MORAVEC (2002). The colour photographs of the body were taken with Nikon digital cameras Coolpix 990 and Coolpix 4500, the body portions including aedeagi with the Coolpix 990 through an MB 10 binocular stereo-microscope, all taken by the first author.

The terms referring to the morphology are partly adopted from Torre-Bueno dictionary (NICHOLS 1989) and LAWRENCE & BRITTON (1994).

Legends under the line drawings are with following abbreviations of type status: HT = holotype; LT = lectotype, PLT = paralectotype.

The list (catalogue) under the name of each taxon (in the descriptive part) is selective. Thus it gives the original name combination, as well as the first publication of all subsequent taxonomic or nomenclatorial acts concerning the taxon, and does not repeat subsequently published identical name combinations; thus it reflects the history of the classification of each taxon.

All labels for each specimen are fully cited. Each label is cited in inverted commas, and separated by a semicolon. Each line within the label is separated by a comma. Each specimen or series of specimens are separated by full stop. The colour of a label, writing style and other author's notes are in square brackets. Words printed in labels in full capital letters are transcribed as normal letters here (capitals are used in abbreviations only).

The depository of type specimens uses the following codens:

ANIC ..... Australian National Insect Collection, CSIRO, Canberra, Australia
ICDB ..... Insect Collection of David W. Brzoska, Naples, Florida, U.S.A.
MNHN ..... Muséum national d'Histoire naturelle, Paris, France
NHMK ..... Natural History Museum, University of Kansas, Lawrence, Kansas U.S.A.
CCJM ..... Collection Cicindelidae Jiří Moravec, Adamov, Czech Republic
CJVB ..... Collection Jan Vybíral, Židlochovice, Czech Republic
MHCK ..... Collection Michio Hori, Kyoto, Japan
NHMW ..... Naturhistorisches Museum Wien, Vienna, Austria
NMPC ..... National Museum (Entomological Department), Prague, Czech Republic
SDEI ..... Senckenberg Deutsches Entomologisches Institut, Müncheberg (formerly DEI, Eberswalde), Germany

Taxonomy

Genus *Archidela* Rivalier, 1963

Archidela Rivalier, 1963: 35.

Type species: *Cicindela nigrina* Macleay, 1864 (by original designation).

Identification. A genus of the subtribe Cicindelina Lacordaire, 1802. Body medium sized, dorsal surface glabrous (except for sparse, whitish, hairlike sensory setae on elytral surface and epipleura); setal vesture of lateral and ventral sterna white, restricted to sparsely setose proepisterna (in two species only on ventral proepisternal area); legs with setose coxae and rows of erect setae on femora and tibiae. Head narrower than body. Labrum 4-setose (anomalously with three, or five setae), in both sexes transverse, with more or less distinctly tridentate anterior margin (median tooth sometimes inconspicuous or nearly effaced), yellow- to ochre-testaceous with black margins and metallic-black setigerous foveae, sometimes black-darkened in middle. Penultimate (longest) palpomeres of labial palpi with subparallel lateral margins (not dilated).

Mandibles comparatively long and narrow, with four teeth and basal molar. Antennae filiform, in males reaching elytral half, in females shorter, antennomeres 1–4 metallic-coloured, 5–11 velvety-black darkened. Pronotum as long as wide or slightly wider, disc subglobose or with subparallel lateral margins, discal surface shiny, nearly smooth or covered with sparse to dense, wavy to extremely dense vermicular rugae. Elytra shiny-metallic coloured, distinctly punctate, punctures partly anastomosing in chains; whitish maculation restricted to lateral areas only; elytral apices in three species distinctly sexually dimorphic: apices in males rounded towards sutural spine, while in females they are deeply and widely emarginate backwards towards sutural spine; female apices of *A. scitula* are only indistinctly emarginate. Aedeagus more or less elongate, dilated in middle, and with dorsally directed, narrowly cylindric sclerotized tip; internal sac containing, apart from other sclerites, a basal ventral spur (a primitive flagellum), arciform piece, and a characteristic, short, oval to reniform medioventral sclerite.

Biology and distribution. Species of *Archidela* have mostly coastal distribution in Western Australia, Northern Territory and Queensland, sometimes occurring on river banks, mostly in estuary areas, saline flats (SUMLIN 1984). One specimen (MNHN) of *A. nigrina* was reported by CASSOLA (1986) from Papua New Guinea. Adults are frequently attracted to lights.

Key to species

1 Elytra in both sexes with elongate whitish humeral lunule; pronotal disc rather flat (never subglobose) with subparallel lateral margins moderately dilated posteriad and then abruptly constricted (more distinctly in male) towards narrower posterior lobe; pronotal surface with very dense vermicular-rugulose sculpture .... ***A. darwini* (Sloane)**

– Elytra lacking elongate whitish humeral lunule, only isolate spot present (mostly in male); pronotal disc differently shaped and with various surface sculpture ..... 2.

2 Elytra with rounded humeri and markedly sexually dimorphic elytral apices: apex in male rounded towards sutural spine, apex in female deeply emarginate backwards towards sutural spine; elytral punctation somewhat shallower on posterior half of elytral disc, forming rather flat and wide undulate interspaces ..... 3.

– Elytra with subquadrate humeri; apex in female rounded and only faintly emarginate towards short sutural spine; punctation on whole elytral length very deep with almost sharp undulate interspaces; whitish elytral maculae small, isolated, apical spot indistinct or absent and always isolated from anteapical macula ..... ***A. scitula* (Sloane)**

3 Pronotal disc almost subglobose, its surface either almost smooth and shiny, or with shallow, sparse, wavy rugae, which may be denser but always separated by wider, flat interspaces; elytra with small sutural spine, both sublateral-median and anteapical whitish macula large;

mandibles with long inner teeth, second tooth notably longer than the third and fourth which are nearly of the same size .... ***A. nigrina*** **(Macleay)**

– Pronotal disc with less convex lateral margins, surface densely vermicular-rugulose, rugae forming short and narrow ridges; elytra with long sutural spine, whitish sublateral-median macula small; mandibles with shorter inner teeth, third tooth in left mandible smaller than the second and fourth ..... ***A. rugosicollis*** **(W. Horn)**

Archidela nigrina (Macleay, 1864) (Figs 1, 2, 7–19, 57)

Cicindela nigrina Macleay, 1864: 107.
Antennaria nigrina: SCHILDER 1053: 546.
Archidela nigrina: RIVALIER 1963: 35.
Cicindela (*Archidela*) *nigrina*: SUMLIN 1981: 278.

Type locality. Australia: Port Denison, Queensland.

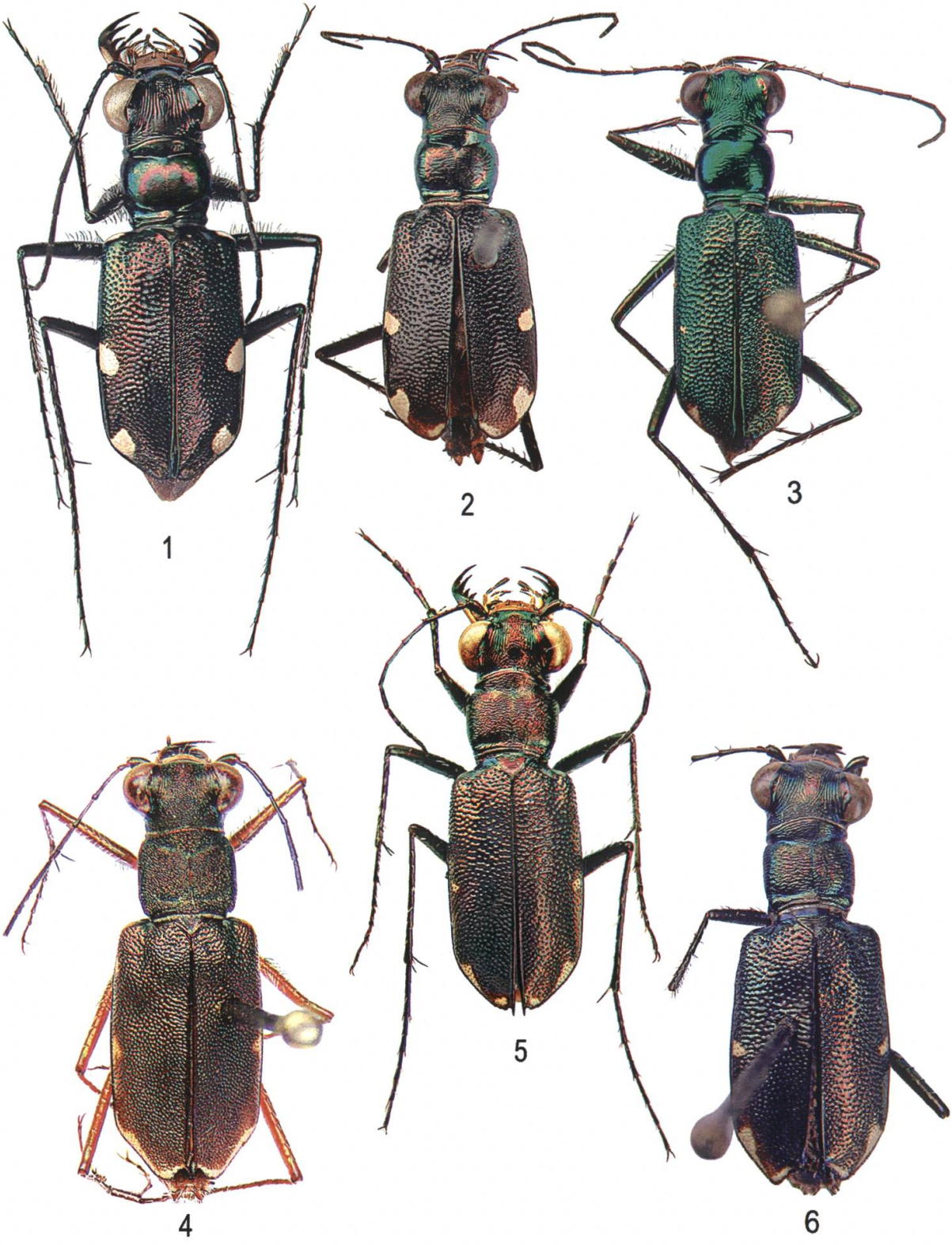
Type material. Lectotype ♀ (designated here) in ANIC labelled: "Pt. Denison" [printed]; "ANIC Database No 25, 054212" [green, printed]; "Cicindela nigrina Macl., Port Denison" [handwritten]; "Syntype" [red, printed]; "On permanent loan from Macleay museum, University of Sydney" [printed]; "Revision Jiří Moravec 2010, SYNTYPE, Cicindela nigrina Macleay, 1864" [red, printed]; "Archidela nigrina (Macleay, 1864) det. Jiří Moravec 2010"; "Lectotype, Cicindela nigrina Macleay, 1864, design. J. Moravec & D. Brzoska 2011" [red, printed]. Paralectotype. 1 ♀ with same labels as lectotype except for the handwritten label and with "Database No 25, 054213" [green, printed]; "Paralectotype, Cicindela nigrina Macleay, 1864, design. J. Moravec & D. Brzoska 2011" [red, printed] (ANIC).

Other material examined. "Papua New Guinea, Oriomo River, 6 m, 19.II.1964, H.C. light trap, Bishop" 1 ♂ (MNHN). "Quendsland, Cairns" 1 ♀ (MNHN). "Quendsland". 1 ♀ (MNHN). "Australia Qld., 10 m, Cairns-airport, 16°52.7′S, 145°45.4′E, 18.I.204, D. Brzoska", 1 ♂, 1 ♀ (ICDB, later in NHMK), 1 ♂, 1 ♀ (CCJM). "Australia, Cairns, Queensland, 12.XII.1986, Coll. Probst", 1 ♂, 1 ♀ (CCJM), 2 ♀♀ (NHMW). "Australia, Karumba, 8.IX.1989, Coll. J. Probst", 1 ♀ (NHMW). "Cairns, Queensland, Esplanade, 22.I.1972, Richard Smith", 1 ♂, (NHMW). "Austr. NT, 70 km SW of Mataranka, 22.XII.08, 15°19′S, 132°50′E, 190 m, Sv. Bílý leg.", 1 ♀ (CCJM). "Australia-N.T. River access Rd, (9 km/N Timber Ck.), 15°37,9′S, 132°28.1′E, D. Brzoska 1-1-2000", 2 ♂, 2 ♀ (CCJM ex ICDB), 1 ♀ (ICDB, later in NHMK). "Australia-N.T., Hy. 1–5 km W Timber Ck., 15°37,3′S, 130°25,7′E, D. Brzoska 1-1-2000", 1 ♀ (ICDB, later in NHMK). "Australia-W.A., Kununurra, 15°46.5′S, 128°45,1′E, D. Brzoska 6-1-2000", 1 ♂, 1 ♀ (ICDB, later in NHMK), 1 ♂, 1 ♀ (CCJM). "QLD, 2km E, 5 km N Hy 1, off AIMS Road (SE Townsville), 19°22.6'S, 147°01.3E, 8.I.2002, D. Brzoska", 3 ♂♂, 6 ♀♀, (ICDB). "QLD, Endeavour River, near Cookstown., N Marton, 15°27.8'S, 145°11.7′E, 1-I-2000, D. Brzoska", 10 ♂♂, 4 ♀♀, (ICDB). "QLD, Fishers Creek boat ramp, off Hy 1, N Ingham, 18°27.5′S, 146°09.0′E, 9-I-2002, D. Brzoska", 4 ♂♂, 5 ♀♀, (ICDB). "QLD, Karumba Point, 17°27.2′S, 140°50.3′E, 24-I-2004, D. Brzoska", 41 ♂♂, 20 ♀♀, (ICDB).

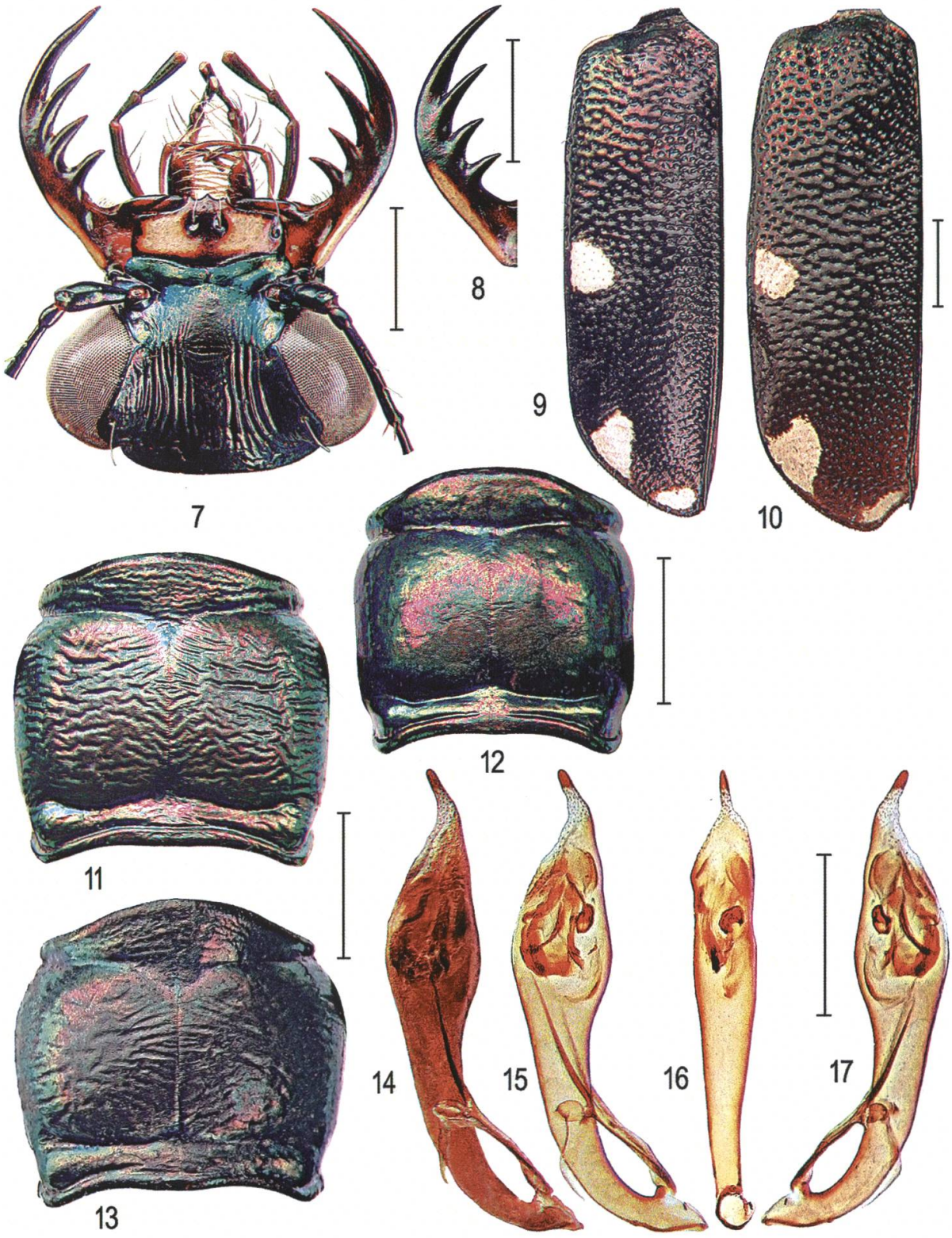
Redescription. Body (Figs 1,2) medium-sized, length 8.90–10.2 (LT 9.30) mm, width 3.20–4.00 (LT 3.50) mm.

Head (Fig. 7) with large eyes, but much narrower than body (more distinctly in female), width 2.50–2.90 mm, surface glabrous.

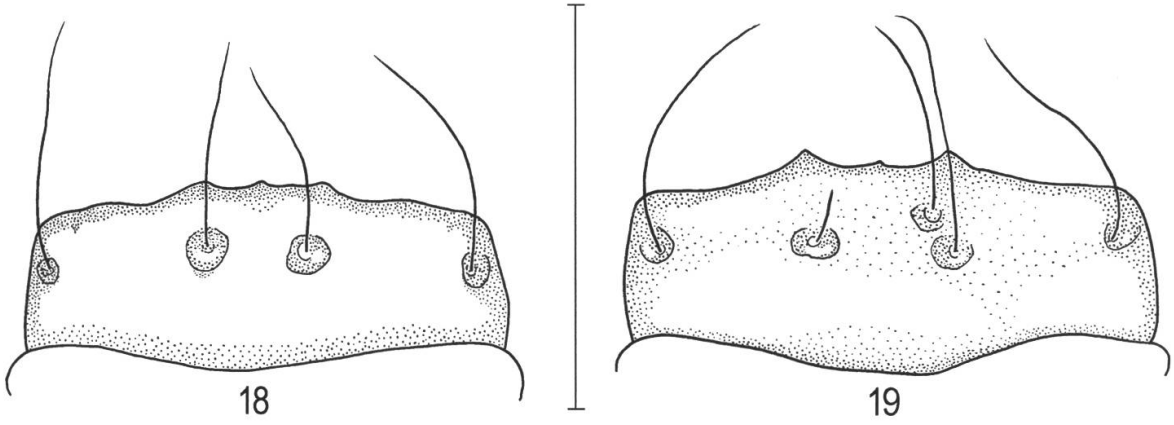
Frons usually with strong green to blue-green lustre on basal and lateral areas, shallowly longitudinally striate on lateral areas, median area more cupreous, with transverse, or arcuate, usually shallow to nearly effaced rugae, sometimes whole basal area smooth; supraantennal plates elongate-triangular, smooth and shiny metallic-green or metallic-cupreous with green lustre.



Figs 1–6. Habitus of four species of *Archidela*. 1, 2: *A. nigrina* (Macleay) (1 – male, 8 mm, Timber, Northern Territory (CCJM ex ICDB); 2 – female, 9.3 mm, Port Denison, Queensland, LT (ANIC); 3 – *A. scitula* Sloane, male, 7.3 mm, Pine Creek, Northern Territory, HT (SDEI); 4 – *A. darwini* (Sloane), female, 8 mm, Port Darwin, Northern Territory, LT (ANIC); 5, 6: *A. rugosicollis* (W. Horn) (5 – male, 7.8 mm, Kimberley, Western Australia (CCJM); 6 – female, 8 mm, Australia, HT (SDEI).



Figs 7–17. *Archidela nigrina* (Macleay): 7 – part of head with buccal appendages, female, Kununurra, Western Australia (CCJM ex ICDB); 8 – left mandible, male, Timber, Northern Territory (CCJM ex ICDB); 9, 10: elytron (9 – male, Timber (ICDB, later in NHMK); 10 – female, Port Denison, Queensland, LT (ANIC); 11–13: pronotum (11 – male, Cairns-airport, Queensland (ICDB, later in NHMK); 12 – male, Timber (CCJM ex ICDB); 13 – female, Port Denison, PLT (ANIC); Figs 14–17: aedeagus (14 – Timber (CCJM ex ICDB); 15 – ditto, cleared, showing internal sac; 16 – ditto, ventral view; 17 – ditto, right lateral view). Bars = 1 mm.



Figs 18–19. *Archidela nigrina* (Macleay), labrum: 18 – male, Timber, Northern Territory (CCJM ex ICDB); 19 – female, Port Denison, Queensland, LT (ANIC). Bar = 1 mm.

Vertex with two (anterior and median) white, juxtaorbital sensory setae (on each side), lateral areas rather coarsely parallel-longitudinally striate, narrow median area with transverse to arcuate-vermicular ornament in middle (passing from frons), which is usually effaced on posteromedian area; juxtaorbital areas parallel-striate except for narrow area adjacent to eye suture; deep rugae on lateral areas passing onto genae; occipital area very shallowly transverse-wavy to vermicular-rugulose.

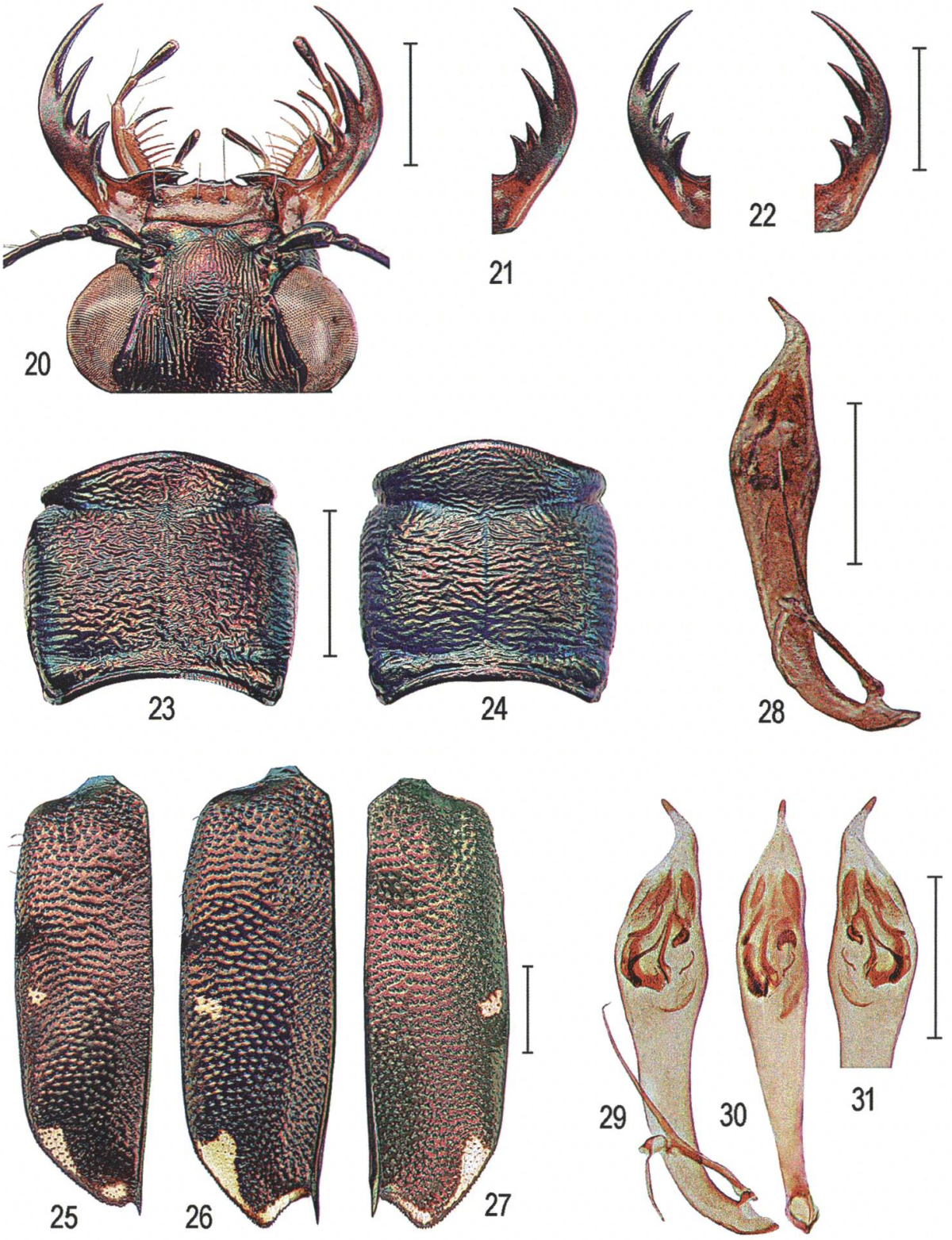
Genae shallowly longitudinally parallel-striate, shiny metallic green-cupreous or with blue or violaceous reflections, glabrous.

Clypeus metallic green or cupreous with green and blue iridescence, smooth and glabrous.

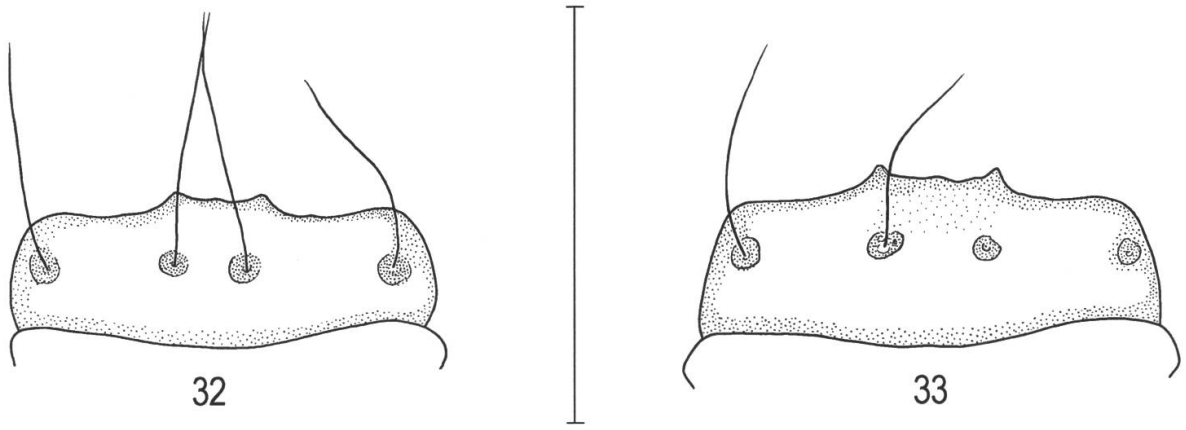
Labrum (Figs 7, 18, 19) 4-setose (anomalously with three, or five setae), in both sexes transverse and of similar shape, with more or less distinctly tridentate anterior margin (median tooth sometimes inconspicuous or nearly effaced), yellow- to ochre-testaceous with black margins and metallic-black setigerous foveae, sometimes black-darkened in middle. male labrum 0.45–0.52 mm long, 1.17–1.30 mm wide; female labrum 0.52–0.65 mm long, 1.30–1.35 mm wide.

Mandibles (Figs 7, 8) comparatively long and narrow, in both sexes black-brown with metallic-green median area, black teeth and testaceous basolateral areas; with four teeth and basal molar, indistinctly asymmetrical, all inner teeth are comparatively long (especially in left mandible), but second tooth is notably longer than the third and fourth which are nearly of the same size.

Palpi. Maxillary palpi in both sexes rather variably coloured, last two palpomeres metallic black or black-brown with green reflections, but the longest palpomere either often ochre-brownish, or with more or less black-darkened areas with metallic-green lustre; labial palpi in both sexes with only terminal palpomeres metallic-black, penultimate (longest) palpomere ochre-testaceous, sometimes, mostly in female with black-brown darkened apex, in both sexes narrow, only moderately enlarged towards apex (width 0.09–0.10 mm, up to 0.22 mm wide).



Figs 20–31. *Archidela rugosicollis* (W. Horn): 20 – part of head with buccal appendages, female, Kimberley, Western Australia (CCJM); 21–22: mandibles (21 – right, ibid. (CCJM); 22 – male Derby, Western Australia (ICDB, later in NHMK); 23–24: pronotum (23 – male, Kimberley (CCJM); 24 – female, HT (SDEI); 25–27: elytron (25 – male, Kimberley (CCJM); 26 – female, ibid. (CCJM); 27 – right elytron, female, HT (SDEI); 28–31: aedeagus (28 – Kimberley (CCJM); 29 – ditto, cleared, showing internal sac; 30 – ditto, ventral view; 31 – ditto, right lateral view). Bars = 1 mm.

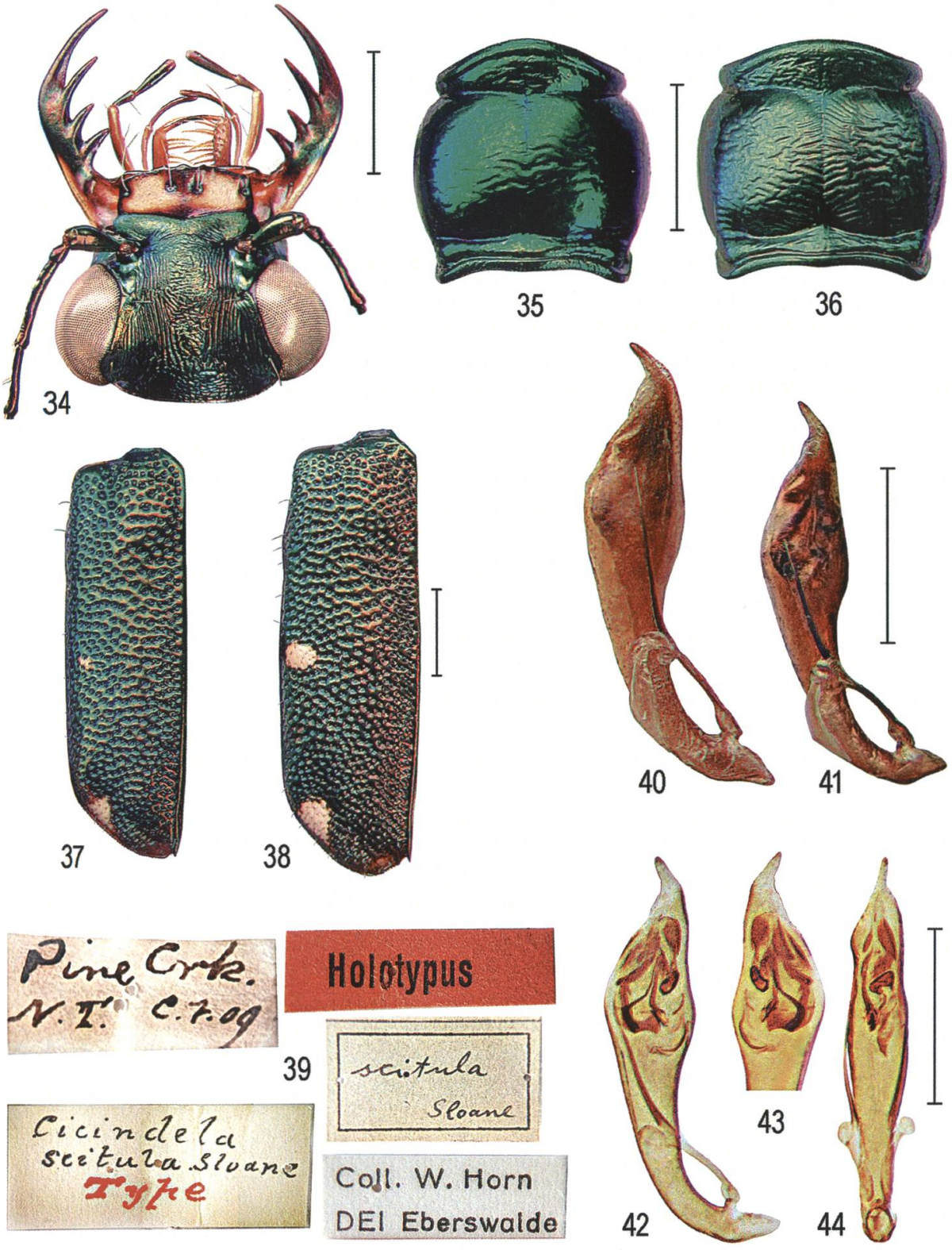


Figs 32–33. *Archidela rugosicollis* (W. Horn), labrum: 32 – male, Derby, Western Australia (CCJM ex ICDB); 33 – female, HT (SDEI). Bar = 1 mm.

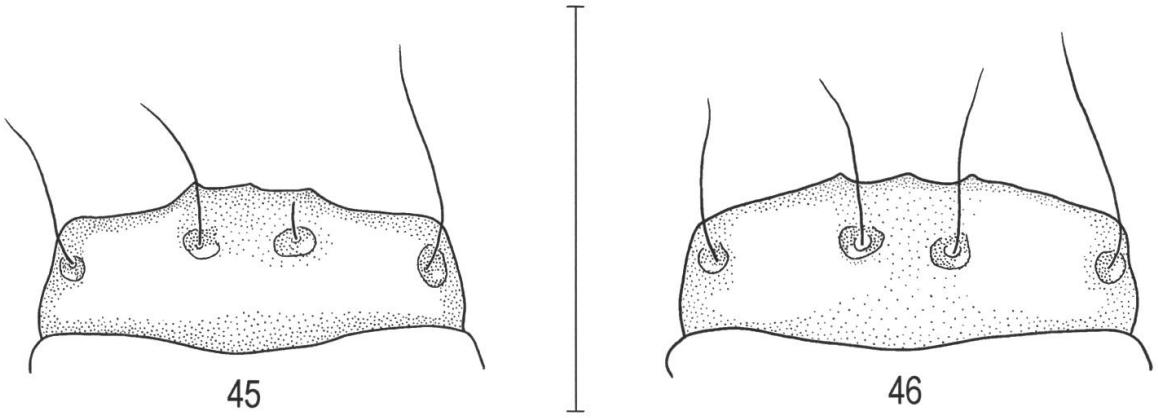
Antennae rather short, in male not surpassing anterior elytral half, those of female even shorter, scape and pedicel metallic-green or green-cupreous, antennomeres 3–4 metallic-mahogany or metallic-purple with metallic-green apices, antennomeres 5–11 smoky-darkened towards terminal one; scape with one white apical seta, antennomeres 3–4 with sparse, erect white setae.

Thorax. Pronotum (Figs 11–13) glabrous, variably coloured, mostly reddish-cupreous in middle and metallic-green on lateral areas, almost as long as wide, or slightly wider, 1.90–2.10 mm long, 1.95–2.35 mm wide, anterior lobe mostly of the same width as the posterior or sometimes very slightly narrower, sulci well pronounced, disc subglobose with more or less convex lateral margins which are sometimes slightly attenuated towards posterior sulcus; surface of anterior lobe and disc very variable, almost smooth and shiny, or with only few shallow transverse-wavy rugae which may be rarely denser, but always separated by wider, flat interspaces; medial line thin; posterior lobe with distinctly bulged dorsolateral areas, almost smooth or with a few irregular wrinkles; prosternum, mesosternum and metasternum metallic black-green, sometimes with bluish reflections, smooth and glabrous; proepisterna large, metallic black to metallic-green, usually with bluish or golden-bronze or copper reflections, smooth, ventral half sparsely punctate-setose, sometimes setae restricted only to narrow ventral area, dorsal (juxta-notopleural) area always glabrous; mesepisterna concolorous with proepisterna, almost smooth, glabrous, mesepisternal female coupling sulci mostly in form of deep rounded central pit, but in some females the pit in left mesepisternum is variably shallower, sometimes in form of elongate furrow; metepisterna of same colour, glabrous, smooth, usually irregularly shallowly wrinkled in middle, deeply impressed on posterior area; metepimeron deeply impressed.

Elytra (Figs 9, 10) oblong, length 5.30–6.20 mm, with well-marked, rounded humeri, lateral margins moderately dilated in middle (more distinctly in female) with arcuate anteapical angles, obliquely-arcuate running towards apices which are sexually dimorphic: apex in male narrow and rounded towards indistinct, short sutural spine,



Figs 34–44. *Archidela scitula* (Sloane): 34 – part of head with buccal appendages, female, Fitzroy, Crossing, Western Australia (CCJM ex ICDB); 35–36: pronotum (35 – male, Pine Creek, Northern Territory, HT (SDEI); 36 – female, Fitzroy Crossing (CCJM ex ICDB); 37–38: elytron (37 – male, HT (SDEI); 38 – female, Fitzroy Crossing (CCJM ex ICDB); 39 – labels, HT (SDEI). 40–44: aedeagi (40 – Fitzroy Crossing (CCJM ex ICDB); 41 – Victoria River, Northern Territory (CCJM ex ICDB); 42 ditto, showing internal sac; 43 – ditto, right lateral view; 44 – ditto, ventral view). Bars = 1 mm.



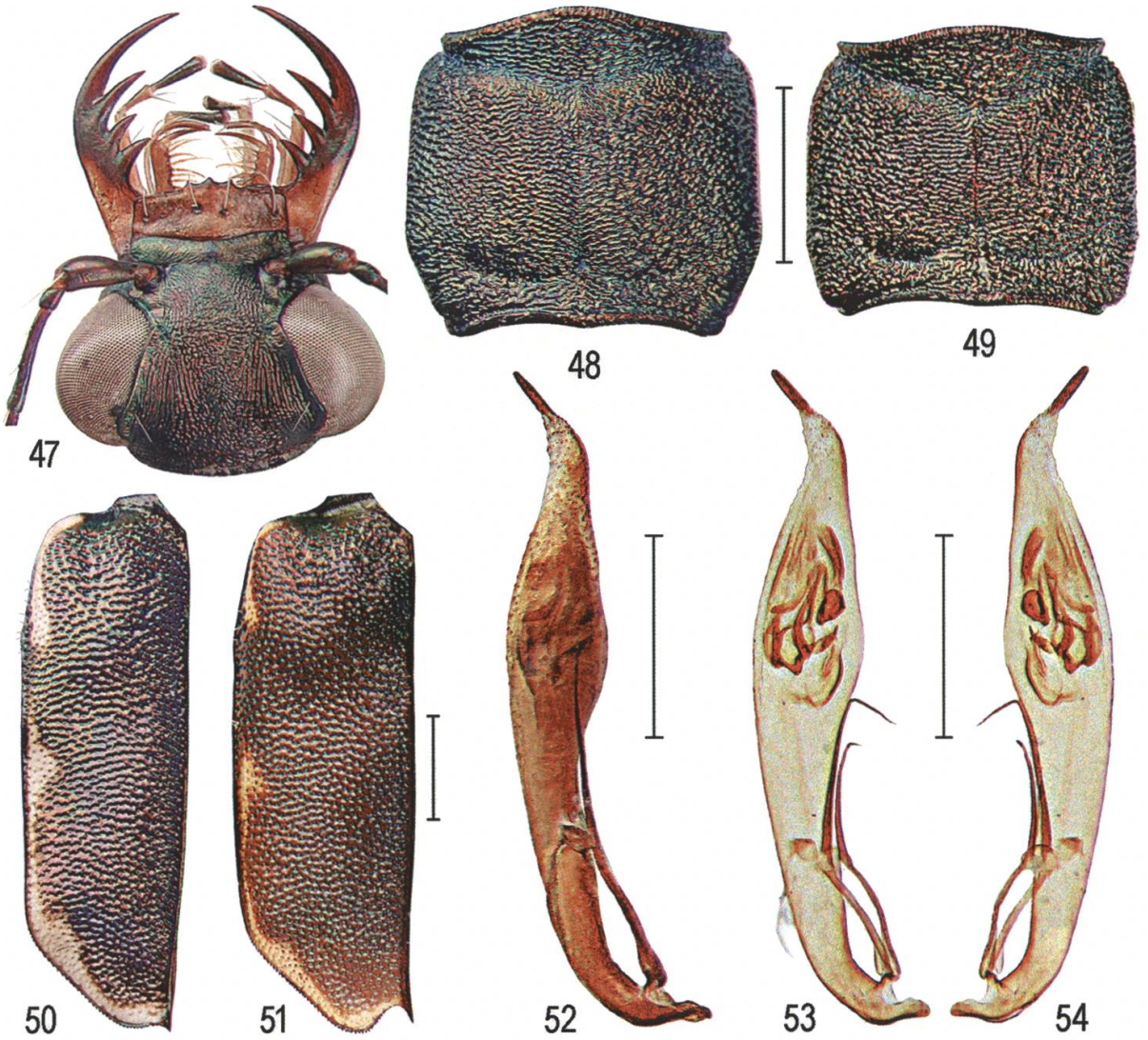
Figs 45–46. *Archidela scitula* (Sloane), labrum: 45 – male, Pine Creek, Northern Territory, HT (SDEI); 46 – female, Fitzroy Crossing (CCJM ex ICDB). Bar = 1 mm.

while in female the apex is deeply and widely emarginate backwards towards more distinct, but short sutural spine; microserrulation very fine; elytral surface rather distinctly convex, discal impression moderate to deep, well delimiting moderate basodiscal convexity, and extended posteriad; humeral impressions shallow, anteapical and apical impressions distinct; elytral coloration metallic black-copper, usually with reddish-cupreous lustre on basodiscal convexity and green lustre on lateral areas; whole elytral surface sculptured by rather deep punctures which are anastomosing in chains on anterior half of elytral disc and towards lateral areas in middle, forming rather flat, undulate interspaces, while punctures on other elytral areas are more isolated, becoming smaller and with flatter interspaces towards apices; setal vesture consists of only several white hair-like setae scattered on the basal area towards elytral disc and on juxtaepipleural area; whitish elytral maculation consisting of humeral macula in male (which is absent in female), in both sexes of large sublateral-median macula, anteapical macula, and isolated, smaller apical one.

Abdomen. Ventrites metallic black-green with bluish lustre, glabrous (except for one sublateral sensory seta on both sides of each ventrite, but the setae are usually abraded).

Legs. Coxae metallic green, pro- and mesocoxae rather densely punctate with whitish setae, metacoxae glabrous except for fringe of dense white setae on anterolateral area; trochanters variably brownish, metallic dark-brown to almost black, pro- and mesotrochanters with one apical seta, metatrochanters glabrous; femora metallic black with metallic-green, blue or violaceous lustre, pro- and mesofemora covered with rows of rather dense white erect setae, metafemora with sparser and usually shorter setae; tibiae concolorous with femora, black, usually with purple or mahogany lustre, with sparsely distributed, stiff, white setae and with dense pad on ventral apical area of pro- and mesotibiae while only sparse, stiff, short setae are present on metatibiae; tibial apices with mahogany-black thorn-like seta; tarsi including claws concolorous with tibiae.

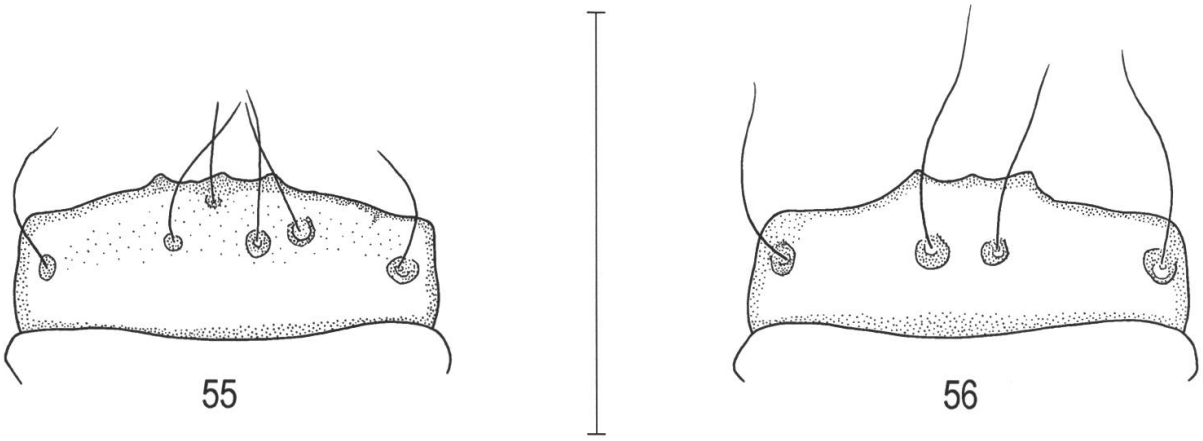
Aedeagus (Figs 14–17) rather short, 2.90–3.05 mm long, 0.55–0.60 mm wide, distinctly dilated in middle and attenuated towards dorsally directed, narrowly cylindric,



Figs 47–54. *Archidela darwini* (Sloane): 47 – part of head with buccal appendages, female, Derby, Western Australia (CCJM ex ICDB); 48–49: pronotum (48 – male, Darwin-Casuarina, Northern Territory (CCJM ex ICDB); 49 – female, Port Darwin, Northern Territory, LT (SDEI); 50–51: elytron (50 – male, Darwin-Casuarina (CCJM ex ICDB); 51 – female, LT (SDEI); 52–54: aedeagus (52 – Darwin-Casuarina (CCJM ex ICDB); 53 – ditto, showing internal sac; 54 – ditto, right lateral view). Bars = 1 mm.

partly sclerotized tip; internal sac containing basodorsal spur (a primitive flagellum, better visible in right aspect) associated with large basodorsal piece, basomedian elongate spur with cranked base, rather thick arciform piece with hooked base, short, oval to reniform medioventral sclerite (characteristic of the genus), small ventral piece which is thin and very short, sclerotized parts of dorsoapical orifice and apical-ventral dacryoid (drop-shaped) piece.

Variability. Apart from the variable body coloration, the most variable is the surface of the pronotal disc as stressed in the description and shown in Figs 11–13.



Figs 55–56. *Archidela darwini* (Sloane), labrum: 55 – male, Derby, Western Australia (CCJM ex ICDB); 56 – female, Port Darwin, Northern Territory, LT (SDEI). Bar = 1 mm.

Differential diagnosis. Body medium sized, metallic black with feeble or more distinct cupreous areas, to predominantly cupreous, usually with green lustre on the head, pronotum and sometimes also on subhumeral elytral area; pronotum with almost subglobose disc, surface variably almost smooth an shiny, or with shallow, sparse, wavy rugae, which may be rarely denser, but always separated by wider, flat interspaces; whitish elytral maculation consisting of comparatively large, isolated maculae: sublateral-median, anteapical and apical, and in male also humeral macula present; elytral apices markedly sexually dimorphic: apex in male rounded towards short, usually indistinct sutural spine, while in female deeply and widely emarginate backwards towards more distinct, but short sutural spine. Legs normally shaped, metallic-black, in male with normally dilated first three protarsomeres. Aedeagus rather short, dilated in middle, and with dorsally directed, narrowly cylindric sclerotized tip.

Biology and distribution (Fig. 57). *Archidela nigrina* is the most common and wide spread member of the genus. It is found in Queensland (the type locality Port Denison), but also in Western Australia and Northern Territory. At Mataranka the only adult was captured in a high bush near farms with watering-places for cattle (BÍLÝ pers. com.). The second author caught adults along the sandy shore of the Endeavour River, Queensland. They were strongly attracted to light and he collected a good series at the light-sign at the entrance to the airport in Cairns. FREITAG (1979) reported this species from Northern Territory (Borrolooa), Queensland (Banks, Cairns, Cooktown, Mowbray River, Rocky River, Steward River) and Western Australia (Kunumurra–Kimberley Research Station and Wyndham), but some of them might have been *A. rugosicollis* or *A. scitula* as Freitag did not recognize them from *A. nigrina*. CASSOLA (1986) reported this species from Papua New Guinea according to a single specimen (MNHN), also examined by the first author.

Remarks. Despite the variability of adults, *A. nigrina* is an immediately recognizable species by experienced entomologists. Nevertheless, the lectotype is designated here for a better stability of the taxon.

Archidela rugosicollis (W. Horn, 1913) comb.nov. (Figs 5, 6, 20–33, 57)

Cicindela nigrina rugosicollis W. Horn, 1913: 32.
Antennaria rugosicollis: SCHILDER 1953: 546.

Type locality. Australia.

Type material. Holotype (by monotypy) ♀ in SDEI, labelled: "Austral." [handwritten]; "Type W. Horn" [printed]; "Holotypus" [red, printed]; "Coll. W. Horn, DEI Eberswalde" [printed]; "f. rugosicollis, mihi" [ochre-greyish with black frame, handwritten]; DEI Müncheberg, Col – 00174 [greenish, printed]; "Revision J. Moravec et D. Brzoska 2011: Holotype (by monotypy), Cicindela nigrina rugosicollis W. Horn, 1913" [red, printed]; "Archidela rugosicollis (W. Horn, 1913) stat. nov. et comb. nov., det. J. Moravec et D. Brzoska 2011" [printed].

Other material examined. "Austr. WA, Kimberley, Home Valley St., 7 m., 15°42′S, 129°33′E, 30.XI–1.XII.2008, Sv. Bílý leg.", 1 ♂, 6 ♀♀ (CCJM). Ibid, 3 ♂♂, 3 ♀♀ (JVCB). "Australia W.A., Derby mud flat, 17°17.8′S; 123°37.0′E, D. Brzoska 9-I-2000", 1 ♂, 1 ♀ (ICDB, later in NHMK).

Redescription. Body (Figs 5, 6) small to medium-sized, 7.80–8.90 (HT 8.00) mm long, 2.60–3.40 (HT 3.00) mm wide, metallic-cupreous, lateral areas usually with greenish lustre.

Head (Fig. 20) with large eyes but narrower than body (more distinctly so in female), 2.50–2.90 mm wide, concolorous with other body portions.

Frons longitudinally striate, striae on lateral areas much denser and partly anastomosing, on median area shallower, rugae of median ornament passing onto vertex and partly also onto clypeus; supraantennal plates elongate-triangular, smooth and shiny metallic-cupreous, sometimes with green lustre.

Vertex as in *A. nigrina*, with similar surface, but striate-rugulose sculpture much deeper and denser.

Genae as in *A. nigrina* but striae deeper.

Clypeus as in *A. nigrina* but mostly cupreous and with finer rugae in median area.

Labrum (Figs 20, 32, 33) as in *A. nigrina* 4-setose and of similar shape and coloration (within similar variability); male labrum 0.36–0.38 mm long, 1.05–1.10 mm wide; female labrum 0.40–0.45 mm long, 1.10–1.15 mm wide.

Mandibles (Figs 20–22) elongate, with four teeth and basal molar as in *A. nigrina*, and with similar size of apical and second tooth, but third tooth in left mandible in both sexes (and in right mandible of female) is much smaller than the fourth; moreover, in female these two teeth are very close to each other in both mandibles, but in right mandible of male they are nearly of the same size.

Palpi. Maxillary palpi in both sexes rather constantly coloured with last two palpomeres metallic black, the longest palpomere paler than in *A. nigrina*, often ochre-testaceous; labial palpi in both sexes as in *A. nigrina*.

Antennae as in *A. nigrina*, but somewhat shorter.

Thorax. Pronotum (Figs 23–24) glabrous, mostly reddish-cupreous with more or less intense metallic-green lustre on lateral areas, slightly wider than long, 1.75–2.00 mm long, 1.80–2.05 mm wide, otherwise similarly shaped as in *A. nigrina*, but disc generally flatter, and whole pronotal surface densely rugulose, rugae forming acute wavy to vermicular ridges, rugae on lateral areas more transverse and passing across notopleural sutures onto proepisterna; medial line thin, sometimes merging with the surface sculpture; prosternum, mesosternum and metasternum as in *A. nigrina*;

proepisterna large, metallic copper, usually with various iridescent reflections, juxtanotopleural area shallowly parallel wrinkled (rugae passing from pronotum), ventral half sparsely punctate-setose; mesepisterna black-copper, surface, shape and female coupling sulci as in *A. nigrina*; metepisterna metallic-cupreous, glabrous, finely rugulose, deeply impressed on posterior area; metepimeron deeply impressed.

Elytra (Figs 25–27) oblong, length 4.80–5.40 mm, with rounded humeri, lateral margins moderately dilated in middle (more distinctly than in *A. nigrina*) with arcuate anteapical angles, margins obliquely running towards apices which are sexually dimorphic as in *A. nigrina*: apex in male narrow and rounded towards distinct, notably long sutural spine which usually surpass the level of the rounded apex, while in female the apex is deeply and widely emarginate backwards towards very long sutural spine; microserrulation fine (but coarser than in *A. nigrina*); elytral surface rather distinctly convex as in *A. nigrina*; elytral coloration metallic reddish-cupreous, or dark copper, usually with more or less intense greenish lustre on lateral areas; whole elytral surface sculptured by punctures partly anastomosing in chains forming thus rather flat, undulate interspaces on anterior half of elytral disc and towards lateral areas in middle, while the punctures are smaller, shallower and with flatter interspaces towards apices (thus similar to *A. nigrina*, but generally somewhat more anastomosing); setal vesture poor as in *A. nigrina*; whitish elytral maculation in both sexes consisting of comparatively small sublateral-median macula (much smaller than in *A. nigrina*), while anteapical macula is elongated towards smaller apical one and sometimes even reaches it; humeral macula in male variably present or entirely absent as in female.

Abdomen. Ventrites metallic-green with bluish and cupreous lustre, glabrous.

Legs as in *A. nigrina.*

Aedeagus (Figs 28–31) 2.80–2.85 mm long, 0.55–0.60 mm wide, shape similar to *A. nigrina*, but internal sac with some of the sclerites somewhat differently shaped: arciform piece thinner, while the oval medioventral sclerite much smaller (the differences are obvious in all positions of the sack), and small ventral piece is thin but much longer; the other sclerites including the basodorsal spur (a primitive flagellum) are similar.

Variability. Males from Kimberley Home Valley have entirely missing humeral macula, while those from Derby (both localities of Western Australia) have the humeral macula well marked. In the latter locality this species is sympatric with *A. darwini*.

Differential diagnosis. Distinguished from *A. nigrina* by generally smaller, more cupreous-coloured body, and both from *A. nigrina* and *A. scitula* principally by its wider pronotum with densely rugulose pronotal surface; mandibles with notably shorter inner teeth and with third tooth in left mandible smaller than the second and fourth; elytra with much longer sutural spine (mostly reaching level of the elytral apex), and smaller whitish sublateral-median macula. It differs from *A. darwini* by a complex of characters, immediately by much more reduced and more isolated elytral maculation with small or absent humeral lunule in male (while *A. darwini* has in both sexes elongate humeral lunule).

Biology and distribution (Fig. 57). *Archidela rugosicollis* is known only from the two localities in Western Australia (the exact locality of the holotype is unknown). The

locality Home Valley near Kimberley is a wide and flat valley with pastures near the estuary of the Pentecost River, overgrown with sparse vegetation, flooded in the rain season but highly arid in the dry season (BÍLÝ, pers. com.). In the area of Derby, Western Australia, it is sympatric with *A. darwini*. It was taken by the second author on a tidal mud flat at lights together with *A. darwini*, *Hypaetha frenchi* (Sloane, 1904), *Euzona tetragramma* (Boisduval, 1835), *Australicapitona australasiae* (Hope, 1841) and *Australicapitona intermedia* (Sloane, 1906).

Remarks. Clearly distinguishable species owing to the complex of characters stressed in the "Differential diagnosis" above, quite improperly synonymized with *A. nigrina* by FREITAG (1987) who never examined the holotype. The species status of this originally subspecific taxon was first mentioned by Schilder (1953) who transferred it to the genus *Antennaria* Doktouroff, 1883 as *Antennaria rugosicollis* – for a more detailed history see the discussion in the "Introduction" of the present paper.

Archidela scitula (Sloane, 1909) (Figs 3, 34–46, 57)

Cicindela scitula Sloane, 1909: 298.
Antennaria scitula: SCHILDER 1953: 546.
Archidela scitula: RIVALIER 1963: 35.

Type locality. Australia: Northern Territory, Pine Creek District.

Type material. Holotype (by monotypy) ♂ in SDEI, labelled: "Pine Crk, N.T. 6.7.09" [handwritten]; "Holotypus" [red, printed]; "Cicindela scitula Sloane, Type" [handwritten, the "Type" by red ink]; "scitula Sloane" [ochre-greyish with black frame, handwritten]; "Coll. W. Horn, DEI Eberswalde" [printed]; "Revision Jiří Moravec 2010: Holotype Cicindela scitula Sloane, 1909" [red, printed]; "Archidela scitula (Sloane, 1909), det. Jiří Moravec, 2010" [printed].

Other material examined. "Australia, N.T., Hy. 1–1.3 km W – Victoria River, 15°36.7′S; 131°07.0′E, D. Brzoska 2-I-2000", 3 ♂♂, 3 ♀♀ (ICDB, later in NHMK). Ibid., 2 ♂♂, 2 ♀♀ (CCJM ex ICDB). "Australia W.A., Pillara Rd – 1.9 km W – Fitzroy Crossing, 18°22.1′S; 125°44.9′E, D. Brzoska 8-I-2000", 2 ♂♂, 2 ♀♀ (ICDB, later in NHMK). Ibid., 2 ♂♂, 2 ♀♀ (CCJM ex ICDB).

Redescription. Body (Fig. 3) generally smallest within the genus, 6.70–8.70 (HT 7.30) mm long, 2.40–3.10 (HT 2.50) mm wide, either nearly entirely bright metallic-green, or reddish-cupreous with green wide lateral areas.

Head with large eyes but narrower than body, 2.00–2.40 mm wide, metallic- green or with cupreous areas, surface as in *A. rugosicollis*, but surface sculpture of frons, vertex and genae somewhat coarser, and predominantly metallic-green coloured.

Labrum (Figs 34, 45, 46) 4-setose and similarly shaped and coloured as in *A. nigrina* and other species of the genus, but generally somewhat longer; male labrum 0.35–0.45 mm long, 0.90–1.05 mm wide; female labrum 0.40–0.50 mm long, 1.05–1.15 mm wide.

Mandibles (Fig. 34) elongate, with four teeth and basal molar as in *A. nigrina,* and with similar size of apical and inner teeth, but the third tooth in both mandibles (more distinctly in the right mandible) always at least slightly smaller than the fourth (but the difference in the length of the inner teeth less distinct than in *A. rugosicollis*).

Palpi as in *A. rugosicollis*.

Antennae as in *A. nigrina*.

Thorax. Pronotum (Figs 35, 36) shaped as in *A. nigrina* mostly shiny metallic-green, rarely with cupreous median area, almost as long as wide or very slightly wider, 1.50–1.90 mm long, 1.62–1.90 mm wide, anterior lobe of the same width as the posterior or very slightly narrower; disc subglobose with more or less convex lateral margins; shiny surface of anterior lobe and disc very variable (as in *A. nigrina*), mostly entirely smooth or sparsely wrinkled, rarely sparsely rugulose but with flat interspaces, medial line thin; prosternum, mesosternum and metasternum shiny metallic-green with more or less strong bluish or violaceous lustre, smooth and glabrous; proepisterna large, metallic-green, usually with bluish or golden-bronze or copper reflections, smooth and shiny, with only few setae at ventral margin; mesepisterna concolorous with proepisterna, finely rugulose in male, glabrous, mesepisternal female coupling sulci in form of very deep central pit; metepisterna of same colour but sometimes cupreous, usually finely wrinkled in middle, deeply impressed on posterior area near metepimeron which is also impressed.

Elytra (Figs 37, 38) elongate, length 4.15–5.30 mm, with obtuse but almost right-angled (subquadrate) humeri, lateral margins subparallel, in both sexes notably convex behind subhumeral area, and in female very slightly also in middle, with arcuate anteapical angles, margins obliquely running towards apices which in both sexes are rounded towards indistinct, usually very short sutural spine which never surpass the level of the rounded apex (female apices lack the deep emargination which is characteristic of the other three species); microserrulation fine; elytral surface rather distinctly convex with similarly pronounced impressions and basodiscal convexity as in *A. nigrina*; elytral coloration mostly metallic-green, or reddish-cupreous with green lustre on wide lateral areas; whole elytral surface (except for smooth and shiny narrow basal and ventral-humeral area) coarsely sculptured by larger and deep punctures rather variably anastomosing in chains, forming thus rather flat undulate interspaces mostly within discal impression and on elytral disc along sutures, becoming isolated (but deep) on posterior area; setal vesture poor as in other species; whitish elytral maculation in both sexes consisting of rather small and always isolate maculae: sublateral-median macula (much smaller than in *A. nigrina*), triangular anteapical macula, and smaller apical spot which is usually reddish-brown darkened or entirely absent; humeral macula in male variably present, or entirely absent as in female.

Abdomen. Ventrites metallic-green with strong bluish and violaceous lustre, glabrous.

Legs as in *A. nigrina* but with more intense greenish or reddish-cupreous lustre.

Aedeagus (Figs 40–44) similar to that of *A. nigrina* but rather shorter and stout, and with thicker and shorter tip, 2.20–2.55 mm long, 0.55–0.60 mm wide; internal sac more similar to that of *A. rugosicollis*, but the oval ventral piece larger.

Variability. Adults from Northern territory are metallic-green including their elytra, while those from Western Australia have their elytra more reddish-cupreous. All other variability is stressed in the redescription and shown in illustrations here.

Differential diagnosis. Resembling *A. nigrina* due to similar shape of its pronotum and pronotal surface varying from entirely smooth, sparsely wrinkled to sparsely rugulose, but immediately distinguished from it and all other species by its much coarser and deeper elytral punctation distributed on the whole elytral length, its elytra have almost

subquadrate humeri and the elytral apex is nearly of the same shape in both sexes, rounded towards short sutural spine (lacking the deep emargination towards sutural spine present in females of the other three species); whitish elytral maculation similar to that of *A. rugosicollis*, but anteapical macula always separated from the apical spot which is usually very indistinct, reddish-brown darkened, or entirely absent; genae constantly smooth and shiny with only few setae at ventral area. Moreover, the pronotum of *A. scitula* is almost always metallic-green and its elytra are often more intensively green-coloured, or reddish cupreous in middle with green lustre on wide lateral areas, and its aedeagus is somewhat shorter, stout and with shorter tip; internal sac similar to that in *A. rugosicollis*, but the oval ventral piece larger.

Biology and distribution (Fig. 57). Besides the type locality Pine Creek (Northern Territory), *Archidela scitula* is known only from two localities cited in "Other material examined", one in Northern Territory and the other in Western Australia. The locality near the Victoria River was a deep muddy "drainage" stream with water at the bottom. The adults were in its vertical steep banks. No larval tunnels were observed. The site at Fitzroy Crossing again represented vertical mud banks of a small stream.

Remarks. Clearly distinguishable species owing to the complex of characters stressed in the "Differential diagnosis" above, quite improperly synonymized with *A. nigrina* by FREITAG (1987) who never examined the holotype (for the history of this taxon see the discussion in the "Introduction" here).

Archidela darwini (Sloane, 1909) (Figs 4, 47–57)

Cicindela darwini Sloane, 1909: 299.
Abroscelis (*Abroscelis*) *darwini*: SCHILDER 1953: 550.
Archidela darwini: RIVALIER 1963: 35.
Cicindela (*Archidela*) *darwini*: SUMLIN 1981: 278.

Type locality. Australia: Northern Territory, Port Darwin.

Type material. Lectotype (designated here) ♀ in SDEI, labelled: "Port Darwin, Dodd." [handwritten]; "Cicindela darwini Sloane, Cotype" [handwritten, the "Cotype" by red ink]; "Syntypus" [red, printed]; "Darwini Sloane" [ochre-greyish with black frame, handwritten]; "Lectotype, Cicindela darwini Sloane, 1909, designated by J. Moravec et D. Brzoska" [red, printed]. Paralectotype (not examined, but its electronic photograph seen). 1 ♂ (ANIC) with same labels as the lectotype.

Other material examined. Historical specimens with same locality label as the lectotype: 7 ♂♂, 3 ♀♀ (SDEI). Recent data: "Karumba, Australia, 20.III.1988, J. Masenpusch leg." 1 ♀ (NHMW). "Australia W.A., Derby mud flat, 17°17.8′S; 123°37.0′E, D. Brzoska 9-I-2000", 2 ♂♂, 2 ♀♀ (ICDB, later in NHMK). Ibid, 1 ♂, 1 ♀ (CCJM ex ICDB). "Australia N.T., Darwin-Casuarina C.R. 12°22.5′S; 130°51.7′E, D. Brzoska 18.XII.2005", 2 ♂♂, 2 ♀♀ (ICDB, later in NHMK). Ibid, 1 ♂, 1 ♀ (CCJM ex ICDB). "Australia"; "Coll. Erben", 3 ♂♂, 3 ♀♀ (NMPC).

Redescription. Body (Fig. 4) small to medium-sized 6.90–8.80 (LT 8.00) mm long, 2.40–3.20 (LT 2.85) mm wide, mostly metallic-cupreous with greenish lustre (mostly on lateral areas), rarely with purple reflections.

Head (Fig. 47) with large eyes but notably narrower than body, 2.00–2.50 mm wide, concolorous with other body portions, or predominantly green.

Frons and vertex as in other species, but frons more steeply declined and surface sculpture of frons and vertex very fine and dense (finest within the genus), rugae less continuous passing to asperate sculpture in middle.

Genae as in other species but striae finer and denser.

Clypeus as in other species, mostly dark green.

Labrum (Figs 47, 55, 56) as in other species 4-setose (anomalously with five or even six setae) and similarly shaped; male labrum 0.35–0.47 mm long, 0.95–1.25 mm wide; female labrum 0.36–0.47 mm long, 1.05–1.25 mm wide.

Mandibles (Fig. 47) as in other species but thicker in their basal half; apical and second teeth of a similar length as in other species; third tooth in left mandible very slightly smaller than the fourth, while in right mandible the third tooth is very slightly larger than the fourth, or these teeth are of the same size, in some specimens the third tooth is smaller than the fourth in both mandibles.

Antennae shaped and with surface as in other species but longer, in male reaching or slightly surpassing elytral half.

Thorax. Pronotum (Figs 48, 49) concolorous with elytra or predominantly green, somewhat uniquely shaped within the genus, anterior lobe as wide as the posterior, disc notably flatter (never subglobose) and with subparallel lateral margins which are moderately dilated posteriad but then abruptly constricted (more distinctly in male) towards narrower posterior lobe; whole pronotal surface very densely covered with short vermicular rugae (densest sculpture within the genus), medial line indistinct; prosternum, mesosternum and metasternum shiny metallic-green with more or less strong bronze, bluish or violaceous lustre, smooth and glabrous; proepisterna large, metallic-green, usually with bluish or golden-bronze or copper reflections, finely wrinkled in juxtanotopleural area, their whole surface sparsely punctate-setose, setae mostly appressed; mesepisterna concolorous with proepisterna, finely rugulose in male, glabrous, mesepisternal female coupling sulci in form of very deep central pit; metepisterna of same colour but sometimes cupreous, finely asperate, lacking impression in juxta-metepimeron area (only metepimeron impressed).

Elytra (Figs 50, 51) oblong, length 4.40–5.40 mm, shaped as in *A. nigrina* but somewhat more convex behind subhumeral area (more distinctly in female), slightly dilated in middle with arcuate anteapical margins obliquely running towards apices which are sexually dimorphic: apex in male rounded towards distinct sutural spine which usually reaches level of the rounded apex: apex in female deeply and rather steeply emarginate backwards towards distinct sutural spine which is long, but usually not reaching the level of the apex; microserrulation fine but distinct; elytral surface with similar impressions as in *A. nigrina*; elytral coloration metallic copper, usually with reddish cupreous or purple lustre on elytral disc and green lustre on lateral areas, sometimes green tinge prevailing; whole elytral surface sculptured by very fine sculpture consisting of fine but rather deep punctures which are mostly anastomosing in chains forming undulate interspaces, more isolate and larger punctures are on basodiscal convexity; setal vesture poor as in other species; whitish elytral maculation in both sexes rather unique within the genus, in both sexes consisting of elongate humeral lunule and continuous band running along anteapical and apical margin (sometimes also connected with lateral-median macula, very rarely also with humeral lunule).

Abdomen. Ventrites metallic-green with strong bluish and violaceous lustre, glabrous, last ventrite sometimes with testaceous yellow posterior area, pleurites in male also testaceous.

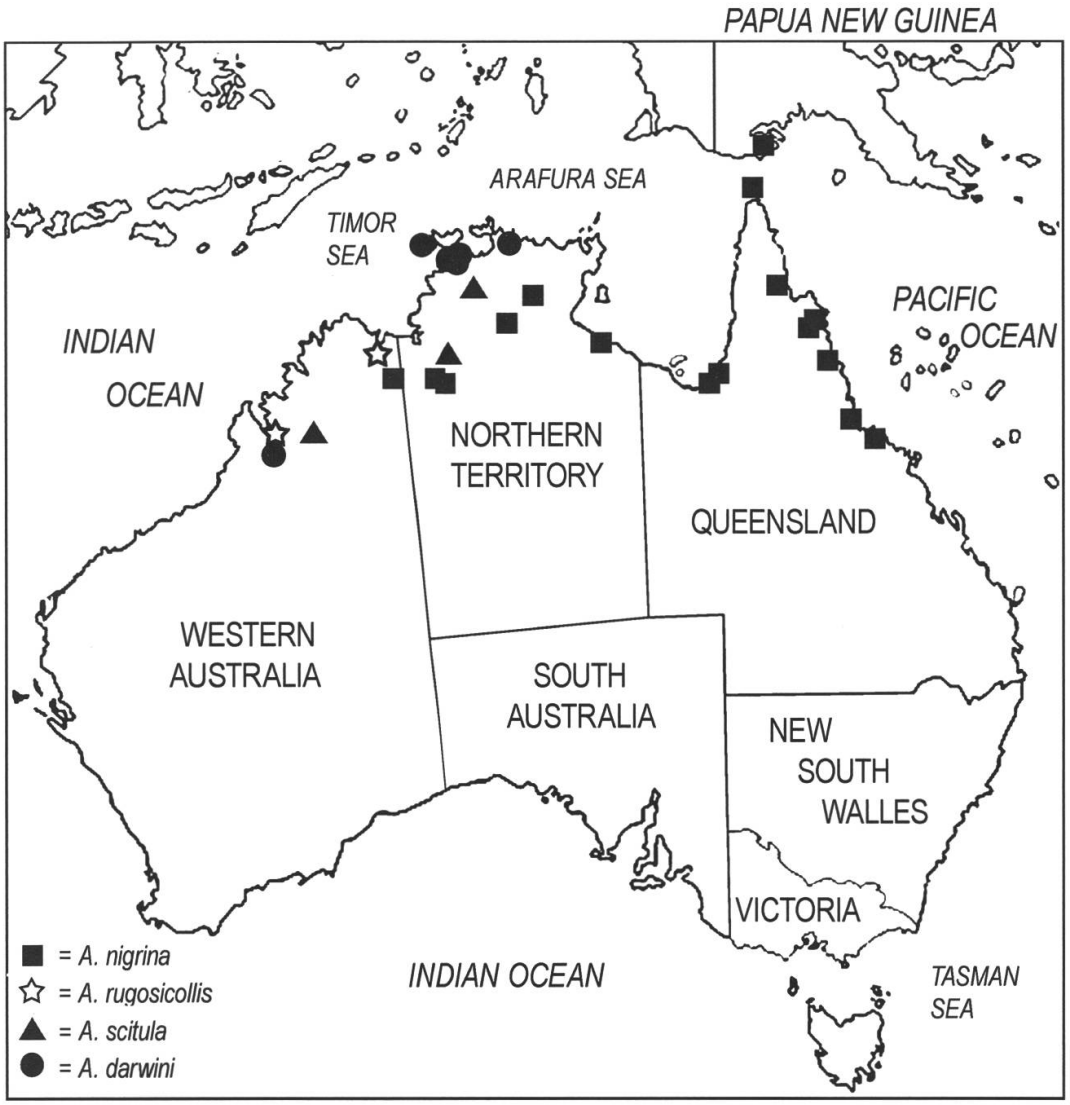


Fig. 57. Map of distribution of *Archidela*.

Legs similar to that in *A. nigrina* but trochanters ochre and femora with generally paler brownish ventral area and more or less distinct testaceous subapical belt.

Aedeagus (Figs 52–54) much more elongate than in other species and with thinner and longer tip, 3.30–3.40 mm long, 0.55–0.60 mm wide; internal sac more similar to that of *A. rugosicollis*, but basodorsal spur (a primitive flagellum) thinner and flexuous, large basodorsal piece much smaller, basomedian elongate spur similar but with more cranked base, arciform piece somewhat smaller, oval to reniform medioventral sclerite larger, tooth-like short ventral piece much wider (widest within the genus), and apical-ventral piece notably elongate.

Variability. Adults from Northern territory are mostly with purple-chatoyant lateral and also discal areas of the elytra. One male from Derby, Western Australia (CCJM ex ICDB) has its labrum anomalously with six setae (Fig. 55).

Differential diagnosis. Immediately recognizable from the other three species of the genus by its very distinct whitish elytral maculation which in both sexes consists of elongate humeral lunule and continuous band covering anteapical and apical margin (sometimes also connected with lateral-median macula), and by the following complex of characters: pronotal disc notably flatter (never subglobose) and with subparallel lateral margins which are moderately dilated posteriad and then abruptly constricted (more distinctly in male) towards narrower posterior lobe; pronotal and elytral surface with much denser sculpture; proepisterna sparsely punctate-setose on their whole surface; aedeagus markedly elongate; elytral apex sexually dimorphic as in *A. nigrina* and *A. rugosicollis*.

Biology and distribution (Fig. 57). Besides the area of the type locality Port Darwin in Northern Territory, *A. darwini* occurs also in Western Australia where in the area of Derby it is sympatric with *A. rugosicollis*. The second author didn't find it directly on the ocean beaches, but rather on the back mudflats and also the sandy shores of river mouths, usually close to mangroves. Adults were also attracted to lights.

Remarks. Immediately distinguishable by the shape of its whitish elytral bands. SCHILDER (1953) treated *A. darwini* as a member of the genus *Abroscelis* Hope, 1838, but this well-founded genus comprises a number of species which fundamentally differ by most of their characters from those of the genus *Archidela*.

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