

## REVISION OF THE AUSTRALIAN GENUS *IDAETHINA* REITTER (COLEOPTERA: NITIDULIDAE)

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### Abstract

The Australian genus *Idaethina* Reitter is redescribed and 2 new species, *I. froggatti* and *I. ursula*, are described. The position of the genus within the Nitidulinae is discussed and comparisons are made with related genera and with those Australian genera with which *Idaethina* may be confused. A key is given to species, and biological notes are included for the 2 new species. The following new combination and synonymies are proposed: *I. pilistriata* (Macleay), comb.n. (= *I. deyrollei* Reitter, syn.n.; = *I. cincta* Blackburn, syn.n.).

### Introduction

*Idaethina* was described by Reitter (1875) for the single species, *I. deyrollei* Reitter. Blackburn (1891) described *I. cincta*, which he said differed from *I. deyrollei* in minor ways. Our studies showed that *Pocadius pilistriatus* Macleay (1871) is based on the same variable and widely distributed taxon as both *I. cincta* and *I. deyrollei* and that Froggatt's (1905) notes on the biology of *I. pilistriatus* were in fact based on an undescribed species, described below as *I. froggatti*. *I. ursula* is also described and *Idaethina* redefined.

The terminology used in general follows that of previous papers by the senior author, but 2 terms have been added for convenience. The term *coxal lines* has been used for the cadual marginal lines of the meso- and metacoxal cavities, which are sometimes referred to as femoral lines. Thus coxal lines on the metasternum are those behind the mid coxae and the coxal lines on ventrite 1 are those behind the hind coxae. The term *axillary space* was coined by Fall (1910) and used by Parsons (1943, 1972) to refer to the area enclosed by the coxal lines of the metasternum deviating from the margins of the mid coxal cavities and extending on each side to the metasterno-metepisternal suture (Fig. 22); Murray (1864) called this the axillary piece and Blackburn (1891) the intermediate plate, but both these terms imply that a separate sclerite is involved.

Abbreviations: AM, Australian Museum, Sydney; ANIC, Australian National Insect Collection, Canberra; AWH, Allan Walford-Huggins Collection; BCRI, Biological and Chemical Research Institute, Rydalmere; BM, British Museum (Natural History), London; QDPI, Queensland Department of Primary Industries, Indooroopilly; QDPIM, Queensland Department of Primary Industries, Mareeba; MV, Museum of Victoria, Melbourne; QM, Queensland Museum, Brisbane; SAM, South Australian Museum, Adelaide; ZINL, Zoological Institute, Academy of Sciences, Leningrad; ZMMU, Zoological Museum, Manchester University.

### *Idaethina* Reitter

*Idaethina* Reitter, 1875: 107. Type species, by monotypy, *I. deyrollei* Reitter (= *Pocadius pilistriatus* Macleay, 1871: 162).

### Redescription

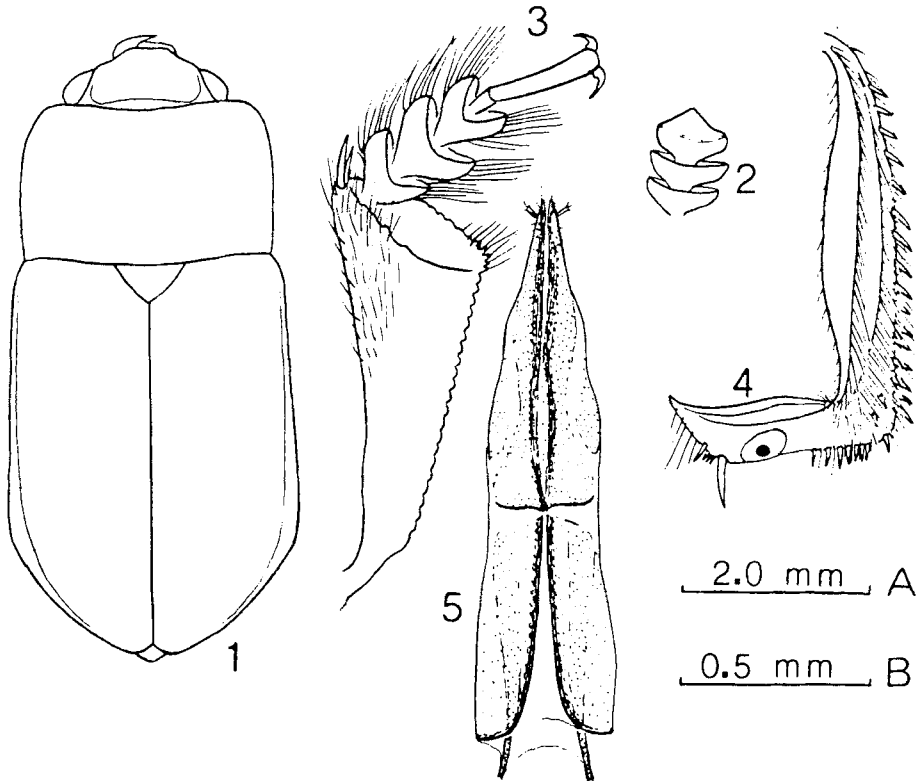
**Body** (Figs 1, 8, 14)—Oblong, *ca* twice as long as wide, somewhat depressed and parallel-sided; dorsum clothed with long and short, suberect to subdecumbent hairs, subseriate on elytra (Fig. 21); sides of pronotum and elytra ciliate.

**Head**—Distinct furrow just in front of transverse occipital ridge; labrum slightly and very broadly emarginate; antennal grooves slightly converging posteriorly; then abruptly diverging and extending laterally to meet occipital furrow; antennal club (Figs 2, 9, 15) *ca* 0.33 times the length of the antenna, segments 9 and 10 subequal in length.

**Dorsal surfaces**—Pronotum wider behind middle; sides narrowly margined, not explanate; base very slightly undulate, finely margined; anterior edge very slightly emarginate, finely margined, with very broadly rounded angles; posterior angles *ca* 90°, somewhat blunted and not produced posteriorly, Scutellum rounded to subtriangular. Elytra slightly convex, very weakly sloping posteriorly, each elytron obliquely truncate and individually rounded at inner apical angle, exposing apex of pygidium; elytral punctuation dual, consisting of smaller, setiferous punctures and larger, nude ones. Setiferous punctures densely spaced to form regular rows and alternating with nude punctures in interstices to form single or double rows; vestiture of suberect to decumbent hairs (Fig. 21); epipleura incomplete.

**Ventral surfaces**—Prosternum slightly tumid; prosternal process extending behind coxae, very slightly elevated and extending over anterior edge of mesosternum, strongly expanded laterally and truncate at apex. Mesosternum simple, not carinate, relatively flat anteriorly, obliquely depressed posteriorly, so that meso-metasternal junction is on lower plane than anterior portion of mesosternum; mid coxae moderately widely separated. Metasternum with coxal lines diverging from margins of mid coxae, so that each meets edge

of metepisternum at a point beyond middle of metasternum, forming a large axillary space, punctuation of which is similar to that of adjacent portions of the metasternum (Fig. 22); posterior edge of metasternum between hind coxae broadly emarginate. Legs stout: fore tibia expanded apically, widest at apical 0.25 or 0.20 and finely crenulate along outer edge (Figs 4, 10, 16); mid and hind tibiae expanded apically, widest near apex and provided with several stout spines intermixed with erect hairs along outer edge; tibial spurs of moderate size, not greatly elongated; mid tibia in male often sharply bent at apex; tarsi with segments 1-3 expanded on all legs, and more or less lobed and densely pilose beneath (Fig. 3); claws simple. Abdomen with coxal lines on ventrite 1 strongly diverging from edges of hind coxae and extending posteriorly beyond middle of ventrite; apex of ventrite 5 slightly biemarginate in male, evenly rounded in female; pygidium with basal carina (Fig. 17) undercut by a pair of broad impressions on either side of a short median carina.



FIGS 1-5—*Idaethina ursula*: (1) body, dorsal; (2) antennal club; (3) male fore tibia and tarsus; (4) male mid tibia; (5) ovipositor, ventral. Scale A for Fig. 1; scale B for Figs 2-5.

#### Distribution

Eastern Australia, from eastern coastal South Australia through the forested areas of Victoria, New South Wales and Queensland to the Atherton Tableland.

#### Biology

Although there are no feeding records for *I. pilistriatus*, its congeners are known to feed on the seeds of Proteaceae (*I. ursula*) and Sterculiaceae (*I. froggatti*). Australian species of the related genus *Aethina* Reitter are pollen feeders, occurring on Malvaceae, Cycadaceae, Myristicaceae, Proteaceae and Myrtaceae.

#### Notes

This genus appears to belong to the *Pocadius* lineage of the Nitidulinae, and it is most closely related to *Aethina* (including the subgenera *Circopes* Reitter and *Ollifura* (Jelinek and Kirejtshuk (= *Macroua* Reitter)) and allied genera (e.g. *Ithyra* Reitter and *Aethinopsis* Grouvelle) (Audisio and Kirejtshuk 1983; Kirejtshuk 1986, 1987). *Idaethina* species share with members of the *Aethina* complex: 1) general body form (except in *Aethina* (*Circopes*)) and convexity (moderately flattened); 2) similar pubescence, which is often seriate on the elytra; 3) slightly and very broadly emarginate

labrum; 4) pronotum with margined base and apex; 5) relatively flat prosternal process; 6) stout legs; 7) fore tibia widest before apex (not produced to form a subacute outer apical angle) and finely crenulate anteriorly; 8) expanded and pilose tarsi; 9) axillary space with similar punctation to that on adjacent portions of metasternum; 10) coxal lines on ventrite 1 strongly deviating from margins of hind coxal cavities; 11) exposed pygidial apex; 12) base of pygidium with 2 or more impressions; and 13) similar genital structures differing little from the generalised type for the family.

*Idaethina* differs from genera allied to *Aethina* in: 1) the presence of well-defined antennal grooves, which extend behind the eyes and meet the deep occipital furrow; 2) the distinctly seriate elytral punctation; 3) the flatter prosternal process which is more strongly expanded laterally at apex; 4) the non-carinate mesosternum; 5) the sexually dimorphic mid tibiae; 6) and the pygidium has 2 very broad basal impressions separated by a median carina (Fig. 17) (rather than 8 small, pocket-like impressions). *Idaethina* may be distinguished from *Ithyra* also by the simple tarsal claws (not cleft) and from *Aethinopsis* by the 3-segmented antennal club.

Australian taxa which are most similar superficially to *Idaethina* and thus likely to be confused with it in collections are the genera *Pocadius* Erichson and *Thalycrodes* Blackburn, and the species '*Lasiodactylus*' *obscurus* Blackburn (the generic placement of which is currently being studied by A. G. Kirejtshuk). In all 3 taxa, the body is oblong and subparallel, the pygidium is not or only slightly exposed, the pronotum is not laterally explanate, and the elytral vestiture is composed of suberect to subdecumbent hairs which tend to be seriate on the elytra. All of these taxa differ from *Idaethina* as follows: 1) body more strongly convex; 2) apex of labrum deeply notched; 3) apex of prosternal process abruptly elevated; 4) axillary space impunctate, in contrast to adjacent portions of metasternum; 5) fore tibia widest at apex with subacute outer apical angle or one armed with stout teeth; 6) base of pygidium simple (with transverse carina only). *Thalycrodes* species are further distinguished by the modified antennal club (with segment 9 much larger than 10), carinate mesosternum and simple (neither expanded or pilose) tarsi; *Pocadius* species differ in having a slightly carinate mesosternum, very small axillary space, simple tarsi and coxal lines on ventrite 1 not diverging from margins of hind coxal cavities; and *L. obscurus* differs in having the pygidium completely concealed from above by the elytra and the coxal lines on ventrite 1 only slightly deviating from hind coxal margin.

**Key to species of *Idaethina* Reitter**

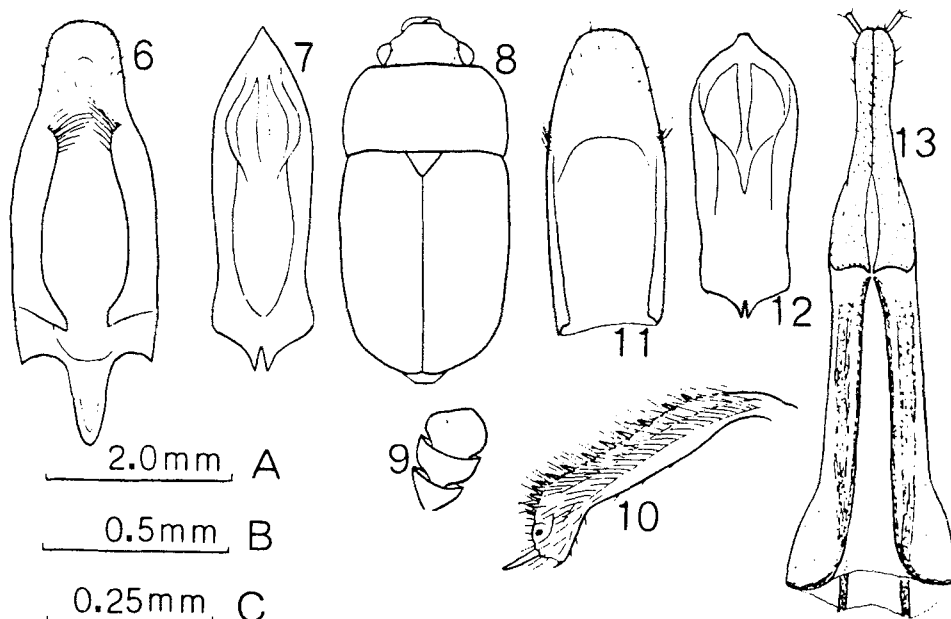
1. Interstices between regular rows of setiferous punctures with an irregular double row of punctures bearing shorter, nearly recumbent hairs; pronotum widest at or before middle (Fig. 1); pronotal punctures smaller and denser; colour light yellowish- to reddish-brown; size larger, length 5.4-6.7 mm. Male: elytra with sides strongly explanate near apex (Fig. 1); fore tarsus as wide as or wider than antennal club and at least 0.75 times apical width of fore tibia (Figs 2, 3); mid tibia strongly curved at apex (Fig. 4); mid tarsus about as wide as corresponding tibia . . . . . ***I. ursula* sp.n.**
- Interstices between regular rows of setiferous punctures with regular, single row of punctures bearing shorter semi-erect hairs (except in first interstice) (Fig. 21); pronotum widest near base (Figs 8, 14); pronotal punctation sparser and coarser; colour dark brown (rarely almost reddish); size smaller, length 3.2-5.3 mm. Male: elytra with sides subparallel or slightly narrowed posteriorly (as in female); fore tarsus much narrower than antennal club; mid tibia not or only moderately curved at apex; mid tarsus narrower than corresponding tibia . . . . . 2
2. Eyes with indistinct, fine and short interfacial setae (Fig. 24); pronotum nearly parallel-sided in basal half; elytral apices broadly rounded; antennal grooves weakly convergent posteriorly; colour reddish-brown with darker dorsal surface and subsutural dash of red on elytra (elytra often unicolorous and sometimes reddish); smaller

and more slender, length 3.2-4.8 mm, width 1.6-2.1 mm

**I. pilistriata** (Macleay)

Eyes with distinct, stout and long interfacetal setae (Fig. 23); pronotum more narrowed towards hind angles; elytral apices subtruncate; antennal grooves moderately convergent posteriorly; colour uniformly dark reddish-brown, sometimes with elytra or pronotal disc slightly darker; larger and more robust, length 3.7-5.3 mm, width 1.8-2.6 mm

**I. froggatti** sp.n.



FIGS 6-13—*Idaethina* spp.: (6-7) *I. ursula* (6) tegmen, ventral; (7) penis, dorsal; (8-13) *I. pilistriata*; (8) body, dorsal; (9) antennal club; (10) male mid tibia (*I. deyrollei* form); (11) tegmen, ventral; (12) penis, dorsal; (13) ovipositor, ventral. Scale A for Fig. 8; scale B for Figs 6, 7, 9, 10; scale C for Figs 11-13.

***Idaethina froggatti* sp.n.** (Figs 14-20, 22, 23)

*Pocadius pilistriatus* Macleay; Froggatt, 1905: 229 (misidentification).

*Types*—AUSTRALIAN CAPITAL TERRITORY: *holotype* ♂, Forrest, 26.i.1983, pods of *Brachychiton populneum*, A. A. Calder (ANIC); *Paratypes*—8 same data as holotype (ANIC, ZINL); 1, Black Mtn. 10.i.1966, light trap, I. F. B. Common (ANIC); 1, Canberra, 24.ii.1978, E. C. Zimmerman (ANIC); NEW SOUTH WALES: 1, Blue Mts, H. W. Cox (ANIC); 3, near Gunnedah, 12.ix.1902, ex kurrajong pods, W. W. Froggatt (BCRI); 1, Tooroweena, 11.x.1973, kurrajong pods, G. W. Flannery (BCRI); 7, Wagga Wagga, 1904, from kurrajong seed pods, W. W. Froggatt (BCRI, SAM, ZINL); 4, same locality, 11.xii.1900, W. W. Froggatt (BCRI); 1, Wamoor, 6.iii.1969, apple on ground, M. I. Nitikin (BCRI); 1, Wellington, 27.iii.1973, kurrajong pods, C. E. Chadwick (BCRI); 1, Wyangala Dam, 25.iii.1973, kurrajong pods, C. E. Chadwick (BCRI); QUEENSLAND: 2, 24 mi. (38 km) SW by W of Kingaroy, 21.xi.1968, at light, E. Britton, S. Misko (ANIC, ZINL).

**Male (holotype)**

*Measurements*—length 4.2 mm; width 2.0 mm; depth, 1.1 mm.

*Colour*—Head and pronotum dark reddish brown; elytra dark brown, reddish brown anteriorly; dorsal surfaces moderately shiny, clothed with suberect to decumbent, golden pubescence, which is seriate on elytra; venter with less conspicuous, recumbent pubescence; sides of pronotum and elytra with relatively long, erect cilia.

*Head*—Weak, transverse, curved impression between antennal bases; nude punctures between eyes nearly as large as eye facets (those on clypeus smaller), interspaces *ca* half a puncture diameter; eyes with moderately long and stout interfacetal setae (Fig. 23), easily visible under lower magnification.

*Dorsal surfaces*—Pronotum widest near base (Fig. 14), more strongly arched than in *I. ursula*, with sides not or barely explanate; nude punctures slightly smaller than those between eyes: interspaces between half and 1 puncture diameter in width and smooth or very finely reticulate. Scutellum densely and evenly punctuate. Elytra with sides very narrowly and evenly explanate; setiferous punctures bearing suberect hairs forming 10 densely packed, regular rows; interstices with slightly less regular rows of setiferous punctures bearing decumbent hairs and alternating with elongate nude punctures, which are almost twice as long as wide and separated by less than their greatest diameter: interspaces somewhat shiny with indistinct reticulation.

*Ventral surfaces*—Prosternum coarsely punctate with indistinct reticulation; prosternal process truncate at apex. Distance between mid coxae 1.5 times and that between hind coxae 2.5 times the distance between fore coxae. Emargination at posterior edge of metasternum rounded. Metasternal reticulation similar to that on pronotum, punctation somewhat denser laterally, finer and sparser mesally. Legs with fore femur 1.5 times, mid femur 1.0 times, and hind femur 0.67 times corresponding tibiae; tibiae nearly triangular, fore tibiae wider than antennal club, mid and hind tibiae ca as wide as antennal club; claws swollen at base. Abdominal ventrites with punctation somewhat denser than on pronotum. Last abdominal ventrite slightly bisinuate at apex. Pygidium truncate at apex, with large, oval and rather dense punctures and indistinct reticulation. Aedeagus as Figs 18, 19.

### *Female*

Differs from male by having apices of last ventrite and pygidium evenly rounded (Fig. 17), and fore tarsi and antennal scape narrower. Ovipositor as in Fig. 20.

### *Variation*

Length 3.7-5.3 mm, width 2.8-2.6 mm. There is some variation in colouration from almost red to dark brown, with the pronotal and elytral discs somewhat darker. Punctation also varies, and elytral punctures may be as large as those on head and pronotum.

### *Biology*

Adults and larvae are associated with the seed pods of the kurrajong, *Brachychiton populneum* (Family Sterculiaceae). According to Froggatt (1905), larvae feed among the seeds but mainly on the soft inner skin of the pod. Larvae have been seen from kurrajong pods collected in late March at Wyangala Dam and in early April 3 mi. S Murrumburrah, N.S.W.; those from the latter sample continued to feed on the kurrajong seed in the laboratory and were harvested in late June.

These larvae differ superficially from those of many nitidulids in having well-developed, sclerotised, simply urogomphi and pregomphi, but lacking spiracular tubes and setiferous processes or paramedian tubercles on the dorsum (which is very lightly sclerotised). The antennae are moderately long; there are 4 stemmata on each side; and the mala is very lightly sclerotised and bears a pedunculate seta, similar to that found in Cleroidea and Coccinellidae. *Aethina* larvae are similar in having few or no setiferous processes, well-developed urogomphi and pregomphi, and reduced spiracular tubes; however there are only 2 or 3 stemmata, the antennae are shorter and the mouthparts are different. *Aethina* (*Circopes*) larvae have short, trifurcate, paramedian processes and bifurcate pregomphi (with a tubercle at the base). *Thalycrodes* larvae also lack setiferous processes and have short spiracular tubes, but they also lack pregomphi. Larvae of *Lasiodactylus* have well-developed spiracular tubes and paramedian processes.

### *Notes*

The identity of *P. pilistriatus sensu* Froggatt has been confirmed by an examination of his specimens (BCRI) collected at Wagga Wagga in 1904. Froggatt (1905) noted that his specimens had the eyes covered with short bristles which were not "noticed in Macleay's description".

### ***Idaethina pilistriata* (Macleay), comb.n. (Figs 8-13, 21, 24)**

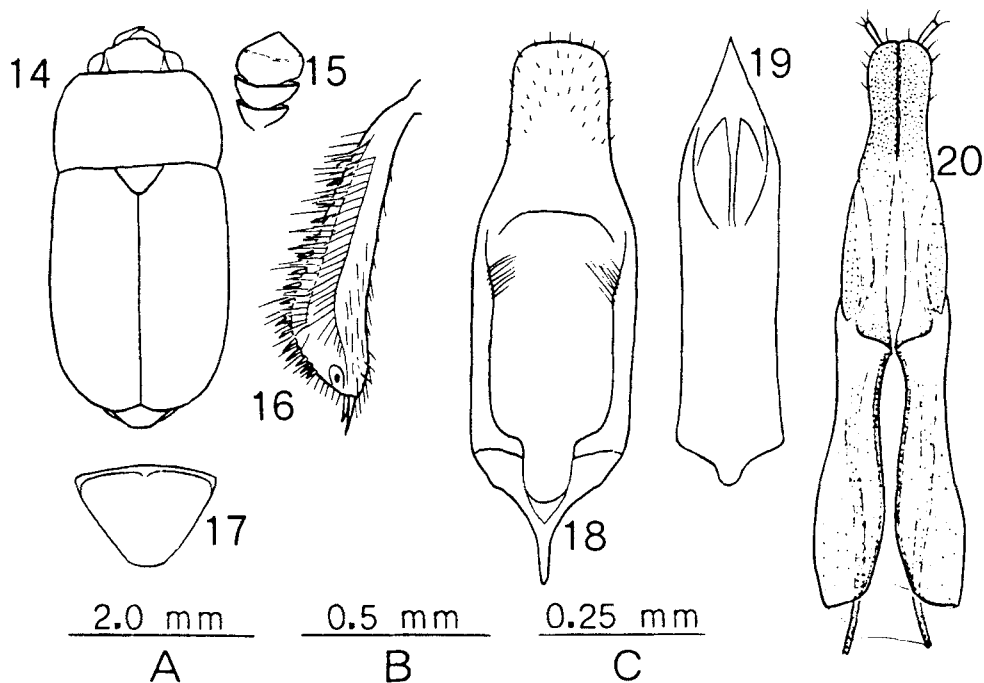
*Pocadius pilistriatus* Macleay, 1871: 162. Type locality: Gayndah, Qld. Lectotype and paralectotype, ♀♀, K26852, (AM), here designated.

*Circopes pilistriatus* (Macleay): Britton, 1970: Fig. 30.67A.

*Idaethina deyrollei* Reitter, 1875: 108, syn.n. Type locality: Australia. Type in Muséum National d'Histoire Naturelle, Paris, not examined.

*Idaethina cincta* Blackburn, 1891: 107, syn.n. Type locality: Victor Harbor, S. A. Holotype, ♀, in BM, examined.

*Specimens examined*—SOUTH AUSTRALIA: 1, Victor Harbor, 3640, Blackburn coll. 1910-236 (BM); AUSTRALIAN CAPITAL TERRITORY: 1, Black Mtn, Canberra, 22.ii.1965, I. F. B. Common (ANIC); 5, same locality, 20.22.xii.1965, 20.ii.1968, 13.iii.1968, light trap, M. S. Upton (ANIC, ZINL); 1, same locality, (National Botanic Gardens), 9.iii.1972, under bark, E. Britton (ANIC); 2, Deakin, 15.ix.1980, E. B. Britton (ANIC, ZINL); 1, Hackett, 10.x.1972, on *Eucalyptus* galls, S. Misko (ANIC); 2, Monash, 27.vii.1987, under bark, T. Dressler (ANIC); 1, same locality, 16.vii.1987, under bark, W. & T. Dressler (ANIC); NEW SOUTH WALES: 1, no specific locality, "4257", "*Idaethina deyrollei* Reitt. compar. w. ty.", "*Idaethina deyrollei* NS Wales", Blackburn Collection (SAM); 2, 23 km NNE of Coonabarabran (149.24 E, 30.05 S), 448m, 2.xii.1974, I. F. B. Common, E. D. Edwards (ANIC); 1, Forrest Reefs, A. M. Lea (SAM); 1, Galston, Dumbrell (SAM); Grove Vale, 18.xi.1969, C. E. Chadwick (BCRI); 1, 3 km N of Laurieton, 2.x.1983, G. Williams (ANIC); 1, Muswellbrook, E. W. Ferguson (ANIC); 2 Sydney (SAM); 1, Wahroonga, xii. 1936, H. J. Carter (ZINL); 1, Wauchope (31.27 S, 152.44 E), 72 km W on Oxley Highway, 4.i.1970, wet Sclerophyll, at light, E. Britton, S. Misko (ANIC); 1, Yalwal, 3.iii.1970, C. E. Chadwick (BCRI); QUEENSLAND: 1, Barron Falls, 12.xii.1964, J. G. Brooks (ANIC); 1, Brisbane, vi.1920, H. Pottinger (QDPI); 2, Cardwell Range, 30.ix.1967, J. G. Brooks (ANIC); 1, Cumberland, B. G. Rye (ZMMU); 3, Eidsvold, 6.x.1929, T. K. Bancroft (ANIC, ZINL); 1, Ewan Road, Paluma, 9.i.1968, J. G. Brooks (ZINL); 1, Gayndah (AM); Greenbank Road, 19.xii.1931, J. G. Brooks (ANIC); 1, Horn I. (10.37 S, 142.17 E), 2-5.xii.1986, at light, K. Houston, K. Sadler (QDPI); 1, Isla Gorge Nat. Pk. (21.10 S, 149.59 E), 9.x.1984, I. Naumann, J. Cardale (ANIC); 2, Kuranda, ix.1947, J. G. Brooks (ANIC); 1, Paluma, 10.i.1968, J. G. Brooks (ZINL); 1, Pine Creek, ca 23 km S of Bundaberg, 16.xii.1976, "landing on yellow hat", H. Frauca (ZINL); 1, same locality, 16.x.1976, H. Frauca (ANIC); 8, 3 km NE of Mt. Webb (15.03 S, 145.09 E), 1-3.x.1980, T. A. Weir (ANIC, ZINL); 1, same locality and dates, "ex ethanol", J. C. Cardale (ANIC); 1, 1 km N of Rounded Hill (15.17 S, 145.13 E), 5-6.x.1980, T. A. Weir (ANIC); 7, Stradbroke I., 17.ix.1915, H. Hacker (SAM); 1, ca 20 km up Whitfield Road (Track N3), 14.xii.1970, J. G. Brooks (ANIC); 1, Wyreema, O. W. Tiegs (QDPI); 2, "N. Queensland, Blackb's coll." (SAM).



Figs 14-20—*Idaethina froggatti*: (14) body, dorsal; (15) antennal club; (16) male mid tibia; (17) female pygidium; (18) tegmen, ventral; (19) penis, dorsal; (20) ovipositor, ventral. Scale A for Figs 14, 17; scale B for Figs 15, 16; scale C for Figs 18-20.

### Diagnosis

The species is easily distinguished from its congeners by the characters given in the key, as well as by genital structures of both sexes (Figs 11-13). The species tends to be smaller and more robust than *I. froggatti* and is usually less uniformly pigmented. The head is more or less concave between the eyes. The antennal scape in the male is slightly wider and the pygical apex more truncate than in the female. The nude punctures in the elytral interstices are less elongate than in *I. froggatti* and are separated by about 1.5 times their longest diameter. The distance between the mid coxae is 1.5 times and that between the hind coxae 2.5 times as great as that between the fore coxae. The hind edge of the metasternum is arcuately emarginate; the coxal lines on

the metasternum extend to the distal third of the metepisternum; the tibiae are nearly as wide at their widest point as the antennal club; and the tarsi are moderately narrow.

### Biology

Nothing is known of the feeding habits. Specimens have been taken under *Eucalyptus* bark and on *Eucalyptus* "galls".

### Notes

Blackburn (1892: 29; 1902: 307) compared the type of *I. cincta* with a specimen compared with the type of *I. deyrollei* by Grouvelle; he concluded that his species differed from that of Reitter in having the elytral striation (seriation of puncture rows and rows of setae) more evenly distributed (not confined to the lateral portions) and the mesal portion of the metasternum more densely punctate. Both of these features are known to fall within the range of variability of a single species. Specimens compared with the types of *I. concta* and *P. pilistriatus* were also found to be conspecific; however, the latter was found to lack a feature present in males in *I. deyrollei*, namely the modification of the mid tibiae. The degree of to which the mid tibia is curved at the apex varies, so that in "typical" *P. pilistriatus* the tibial apex is similar to that of the female. Intraspecific variation in secondary sexual characters is not uncommon in Nitidulidae, and there are no other features (including genitalia) by which the 2 forms may be distinguished. Thus, we consider that all 3 names to apply to a single widespread species.

The placement of *P. pilistriatus* in the genus *Circopes* Reitter, based on a misidentification by Reitter (1874), was followed by Masters (1896) and Grouvelle (1913) and has led to a number of erroneous determinations in collections. *Circopes* is now considered to be a subgenus of *Aethina* (Kirejtshuk 1986, 1987).

The two syntypes of *P. pilistriatus*, both females, in the Australian Museum, were mounted on the same card. These were remounted and one of them selected as lectotype.

### *Idaethina ursula* sp.n. (Figs 1-7)

*Types*—QUEENSLAND: *holotype* ♂, Cardstone, 13.ii.1966, at light, K. Hyde (ANIC); *paratypes*—5, same data as holotype (ANIC, SAM, ZINL); 1, same locality, 3-4.xii.1966, J. G. Brooks (ANIC); 3, Atherton, 15.i.1930, "feeding? on seeds of *Emb. Wickhami*", R. H. Doggrell (QDPI, ANIC); 7, same locality, ii.1955. "Eating seeds *Darlingia spectatissima*", R. H. Doggrell (ANIC, QDPI); 1, Barron Falls, 2.i.1965, J. G. Brooks (ZINL); 1, 4.5 mi (7.0 km) NE of Innisfail, 50' (15 m), 4.xi.1966, rainforest, at light, E. B. Britton (ANIC); 1, 25.xi.1972, A. & M. Walford-Huggins (AWH); 1, Mt Lewis, 1000 m, via Mt Molloy, 7.i.1978, A. Hiller 1000 ft. (350 m), Tully-Cairns powerline, 6.xi.1966, rainforest, at light (ANIC); 1, Paluma, 12.i.1970, at light, E. B. Britton, S. Misko (ZINL); 2, Paluma, Mt Spec, 6.i.1969, J. G. Brooks (ANIC); 5, Paluma Ra., Mt Spec 10.i.1969, J. G. Brooks (ANIC); 1, Mt Spec, i.1970, J. G. Brooks (ZINL); 1, same locality, xii.1973, J. G. Brooks (ZINL); 1, 15 km WNW of South Johnstone, 10.xii.1985, light trap, Fay, Halfpapp (QDPIM).

### *Male* (holotype)

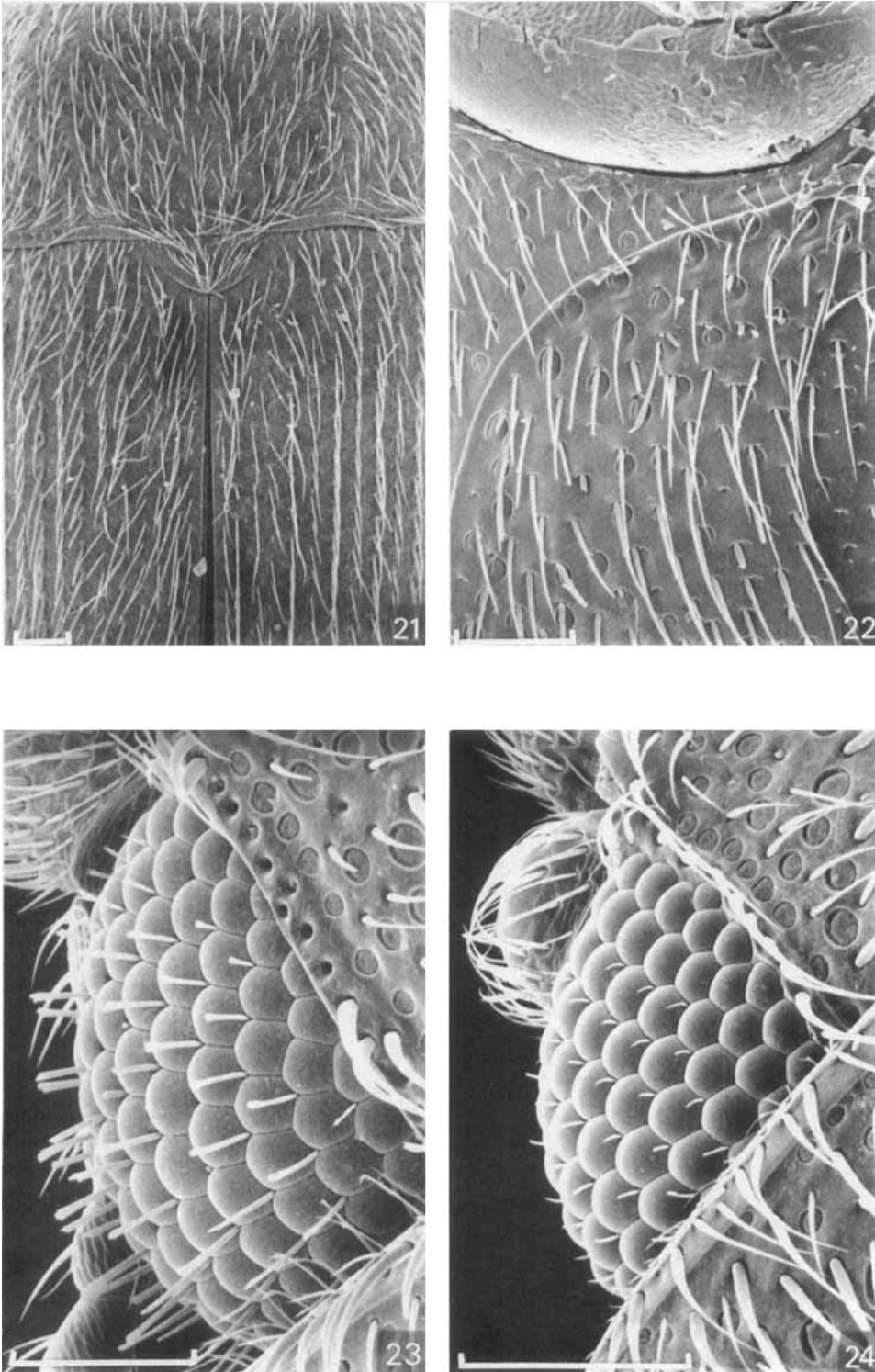
*Measurements*—Length 6.2 mm; width 3.1 mm; depth 1.6mm.

*Colour*—Head and pronotum light reddish brown, elytra yellowish brown; dorsal surfaces matt or with faint lustre, densely clothed with decumbent to recumbent, golden pubescence, which is seriate on elytra; venter with less conspicuous, shorter and finer pubescence; sides of pronotum and elytra with relatively short, decumbent cilia

*Head*—Frontoclypeal region relatively flat; punctures between eyes nearly as large as eye facets, those on clypeus smaller; eyes with interfacetal hairs very fine and inconspicuous.

*Dorsal surfaces*—Pronotum widest just before middle (Fig. 1), slightly sinuate on each side near base, very weakly arched with lateral margins slightly explanate; punctures as large as those between eyes, with interspaces *ca* half as wide as a puncture diameter and with very fine reticulation. Scutellum densely punctate, except for median glabrous area extending from middle to anterior edge. Elytra with sides distinctly explanate, strongly so at posterior third; punctation of 2 types: small punctures bearing decumbent hairs and forming *ca* 10 regular rows on each elytron, and very small ones bearing recumbent hairs and forming irregular, double rows in interstices.

*Ventral surfaces*—Prosternum coarsely and irregularly punctate with indistinct reticulation; prosternal process broadly rounded at apex. Distance between mid coxae 1.5 times and that between hind coxae almost 2 times the distance between fore coxae. Hind edge of metasternum between coxae nearly angulate. Punctuation and reticulation of metasternum similar to that on pronotum, but mesal area with interspaces almost smooth. Legs with femora stout, fore and hind ones 1.5 times and mid ones twice as wide as



FIGS 21-24—*Idaethina* spp.: (21) (*Idaethina pilistriata*, base of pronotum, scutellum, and anteromesal portions of elytra, dorsal; (22-23) *I. forggatti*: (22) right mid coxa and portion of metasternum, showing coxal line extending posterolaterally from margin of coxal activity to lateral edge of metepisternum (not shown); (23) left eye, dorsal, showing stout, interfacetal bristles; (24) *I. pilistriata*, left eye, dorsal, showing fine, interfacetal hairs. Scale bar 0.1 mm.



corresponding tibiae. Fore and hind tibiae triangular, fore tibiae somewhat larger and mid tibiae narrow and strongly and abruptly curved inwardly (Fig. 4); fore tarsi 0.75 times as wide as fore tibiae, mid ones as wide as tibiae, and hind ones half as wide as hind tibiae; claws feebly dentate. Abdominal ventrites with punctation similar to that on pronotum. Last abdominal ventrite slightly bisinuate at apex. Pygidium narrowly rounded, with dense, comparatively small, elongate punctures, the narrow interspaces distinctly reticulate. Aedeagus as in Figs 6, 7

### Female

Differs from male in having stout mid tibiae, about as wide as hind ones, more elongate pygidial apex, evenly explanate sides of elytra, ventrite 5 with truncate apex, and antennal scape somewhat narrower than in male. Ovipositor as in Fig. 5.

### Variation

Length 5.4-6.7 mm, width 2.5-3.0 mm. Punctation and reticulation are quite variable: in some paratypes the punctures are almost contiguous, while in others the interspaces may be almost smooth.

### Biology

Adults of this north Queensland species have been found feeding on the seeds of *Oreocallis wicklamii* and *Darlingia spectassima*, both Proteaceae.

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