

## A REVISION OF THE GENUS *MAORAXIA* WITH A NEW SYNONYM IN *ACMAEODERA* (COLEOPTERA: BUPRESTIDAE)

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*Abstract.* The genus *Maoraxia*, containing 5 species, is revised for the first time since 1936. *Maoraxia* is transferred to the subfamily Buprestinae from Mastogeninae. One previously proposed name is considered valid and 2 are considered synonyms. *Maoraxia eremita* becomes the genotype with the synonymy of *M. novae-zeelandiae* and *M. strandi*. Four new species are described: *M. tongae* from Tonga, *M. viridis* from Fiji, and *M. littoralis* and *M. storeyi* from Australia. All 5 species are described in detail and keys to the species and related genera are included. A lectotype for *M. eremita* is designated. *Acmaeodera flavinigripunctata* is synonymized with *A. princeps*.

The genus known as *Maoraxia* Obenberger (1937) has been a source of controversy ever since its description as *Maoriella* by Obenberger (1924). *Maoriella*, found to be preoccupied, was changed to *Maoraxia*. A series of descriptions, critiques, and rebuttals were published by Obenberger (1924, 1926, 1928, 1936), Théry (1925), and Carter (1926), discussing the actual generic and subfamilial placement. The bitter feud between Obenberger and Théry is well documented in the literature and has left the taxonomy of the Buprestidae in a chaotic state for many faunal areas of the world (Holm 1978). Obenberger's opinion on *Maoraxia* has prevailed until now, as his last publication on the genus (1937) ignores the ideas of his contemporaries. We do not agree with the conclusions of Obenberger and believe, because of the material studied during the course of this project and the work of more recent authors, that several changes are warranted.

Complete label data are given for lectotype designations. A slash mark (/) separates data on individual labels, and the authors' notations are in parentheses with the abbreviations (h) = handwritten and (p) = printed. Lending institutions or depositories are abbreviated, with several having been designated by Watt (1979), as follows: AHQA, A. & M. Walford-Huggins collection, Molloy, Qld.; AMSA, The Australian Museum, Sydney; ANIC, Australian National Insect Collection, Canberra; BLC, Brian Levey collection, London; BMNH, British Museum (Natural History), London; BPBM, Bernice P. Bishop Museum, Honolulu; CLBC, C.L. Bellamy collection; DSIR, Department of Scientific and Industrial Research, Auckland; FCCS, Forestry Commission of N.S.W. collection, Sydney; GWNA, G. & T. Williams collection; MNHN, Museum National d'Histoire Naturelle, Paris; NMNZ, National Museum of New Zealand, Wellington; NMP, Narodni Museum, Prague; NMV, National Museum of

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## DISCUSSION

*Maoraxia eremita* (White) was originally described in the genus *Buprestis* Linnaeus in 1846 for specimens collected on an early scientific voyage to New Zealand. Saunders (1871) transferred *eremita* to the Australian genus *Neocuris* Fairmaire and it was considered as such by Kerremans (1892), Carter (1926), and Dumbleton (1932, 1939) until its inclusion into *Maoriella* by Obenberger (1936). Théry (1925) argued, however, that *eremita* was not a *Neocuris* but apparently had a relationship with the Australian *Melanophila* Eschscholtz. *Melanophila*, as it is currently defined, is not known from the Australian Region. However, a number of early descriptions within *Melanophila* and *Anthaxia* Eschscholtz exist for species from Australasia and are now more correctly placed within several closely related genera unique to that region. Carter & Théry (1929) classified these genera under the subtribe Anthaxiae of Buprestini. Even though current higher level classification of the family is in a state of flux (Levey 1978a) and still being developed, readjustments have been necessary. Many of the “tribes” of the older system proposed by Lacordaire (1857) and used by Kerremans (1893, 1902, 1903) and Obenberger (1937) are now considered subfamilies, with the more restricted tribes still being defined (Cobos 1973, Nelson 1981). Buprestini of Carter & Théry (1929) is divided into the subtribes Buprestes and Anthaxiae. Members of the Anthaxiae have the metepimeron at least partially covered by a broad anterolateral projection of the abdomen, while those of the Buprestes have the metepimeron uncovered. Buprestes would today approximate the buprestine tribes Bubastini, Dicercini, and Buprestini, while the genera belonging to Anthaxiae would be placed in Melanophilini and Anthaxini. As no recent work has been done to fit the Australian genera into the current tribal concepts, the term Anthaxiae will be used in this work.<sup>3</sup>

Obenberger (1924) considered *Maoriella* to be “more archaic than the whole tribe, similar to *Neocuris* or some other anthaxites and incontestably it belonged to the Mastogenini.” Théry (1925) wrote that it was obvious that Obenberger had redescribed *B. eremita* as *M. novaezeelandiae* and that there was no connection with Mastogenini. Obenberger (1926) responded to this criticism, writing that as Théry had not seen the type, it was sufficient to study the diagnoses of the 2 species to see the differences, even if the description of *eremita* was incomplete. Carter (1926) wrote that *eremita* shared some characters with *Neocuris* and others with *Pseudanilara* Théry; and Dumbleton (1939) stated that “for this reason Obenberger’s generic name may stand.” Obenberger (1928) replied that Carter had apparently not taken the trouble to study the diagnoses closely enough.

3. A paper by R. Holynski (1984, *Polski Pismo Entomol.*) 54: 105–14) was received after this paper was in press. Holynski proposed a new tribe for *Maoraxia*, the Maoraxiini. We will discuss the status of this tribe later.

Obenberger (1926, 1928) referred to *eremita* as rare or "unique" and not related to *M. novaezeelandiae*, but in 1936 he revised *Maoriella*, adding *eremita* and describing a third species, *M. strandi*. In Obenberger (1937), the name *Maoriella* was changed to *Maoraxia* and placed first under the Mastogenini, accenting his belief that the genus was "more archaic than the rest of the tribe."

The characters Obenberger used to justify *Maoraxia*'s placement in Mastogeninae were never mentioned in comparison or contrast with other subfamilial characteristics. He repeatedly wrote that there was a similarity between *Maoraxia* and *Neocuris*, but that no other anthaxite genus showed the same form or sculpture of the pronotum or elytra as *Maoraxia*. Obenberger also placed importance in the notched or appendiculate tarsal claws as a separating point from the Anthaxiae and a way of also relating *Maoraxia* to Agrilinae, a subfamily that was closely linked to the Mastogeninae until recently (Cobos 1980).

Cobos' (1980) definition of buprestid subfamilies does not allow the inclusion of *Maoraxia* within Mastogeninae; it also removes Mastogeninae from a close affinity with Agrilinae. Cobos (1957) described a new mastogenine genus, *Helperella*, from New Guinea; he did not include *Maoraxia* in his key to the genera of the subfamily. Members of Mastogeninae differ from those of *Maoraxia* in many important respects, including punctation, vestiture, sternal cavity formation, wing venation, and the dual, lateral pronotal margins. Cobos (1957) also states that the larvae of Mastogeninae are unknown. The larvae of *M. eremita* are known, described, and figured by Dumbleton (1932) and are typical of the known buprestine larvae.

Clearly, the most straightforward affinities are with Australian Anthaxiae of Buprestinae. Anthaxiae is composed of the genera *Melobasis* Laporte & Gory, *Torresita* Gemminger & Harold, *Anilara* Thomson, *Notographus* Thomson, *Theryxia* Carter, *Pseudanilara* Théry, and *Neocuris* Fairmaire. *Maoraxia* does appear to be most closely related to *Neocuris* and *Pseudanilara*, but also shares the internally dilated metacoxae with only *Theryxia*. The geographical distribution of the species of *Maoraxia* and other genera of the Anthaxiae seems to indicate an Australian origin with an outward radiation of species to the east. This distribution seems to have taken place more recently than the breakup of the Australian plate in the late Cretaceous used by Levey (1978b) to explain a similar zoogeography for the polycestine genus *Prospheres* Thomson. The other anthaxite genera with species found outside Australia, *Melobasis* and *Anilara*, are larger genera with only a few species found in New Guinea and New Caledonia. Future determinations of insular hosts and their distribution and relationships should help better to explain the means and age of these emigrations.

KEY TO THE GENERA OF THE AUSTRALIAN ANTHAXIAE  
(MODIFIED FROM CARTER & THÉRY 1929)

- |        |  |                  |
|--------|--|------------------|
| 1.     | Last abdominal sternite excised apically between 2 strong spines . . . . . | <b>Melobasis</b> |
|        | Last abdominal sternite rounded or feebly excised apically . . . . .       | 2                |
| 2 (1). | Base of pronotum truncate . . . . .  | 3                |
|        | Base of pronotum clearly bisinuate . . . . .                               | 4                |

- 3 (2). Size larger ( $\geq 7.5$  mm); form wide, enlarged behind; margins of elytra raised, channeled within the explanate behind ..... **Torresita**  
 Size small ( $< 7$  mm); form parallel, not enlarged behind; elytral margin normal .  
 ..... **Anilara**, part
- 4 (2). Pronotum furrowed, widest at middle, constricted at the base and clearly cordiform ..... **Notographus**  
 Pronotum not furrowed, width greatest from middle to base ..... 5
- 5 (4). Head, including eyes, wider than apex of pronotum ..... 6  
 Head, including eyes, as wide as or narrower than apex of pronotum ..... 7
- 6 (5). Last segment of tarsi very short, not extending beyond 4th ..... **Theryaxia**  
 Last segment of tarsi clearly extending beyond 4th ..... **Pseudanilara**
- 7 (5). Last visible abdominal sternite with either a distinct impression or carina .....  
 ..... **Anilara**, part  
 Last visible abdominal sternite without a distinct impression or carina ..... 8
- 8 (7). Pronotal lateral margin widest at base; upper surface often glabrous; posterior coxal plates transverse and not dilated internally; femora slender ..... **Neocuris**  
 Pronotal lateral margin widest at middle, sinuate behind; upper surface pubescent; posterior coxal plates diagonal and strongly dilated internally; femora robust  
 ..... **Maoraxia**

#### Genus **Maoraxia** Obenberger

- Buprestis* (part) White, 1846: 6.—Broun, 1880: 276.—Théry, 1925: 226.—Carter, 1926: 57.  
*Neocuris* (part) Saunders, 1871: 57.—Kerremans, 1892: 131; 1903: 180.—Carter, 1924: 531; 1926: 57.—  
 Dumbleton, 1932: 44; 1939: 256.  
*Nascio* (part) Hutton, 1904: 153.  
*Maoriella* Obenberger, 1924: 19 (name preoccupied) (type by monotypy, *M. novae-zeelandiae* Obenb., 1924:  
 19).—Théry, 1925: 225.—Obenb., 1926: 98.—Carter, 1926: 57.—Obenb., 1928: 78; 1936: 142.—  
 Dumbleton, 1939: 256.  
*Maoraxia* Obenberger, 1937: 1449 [type by synonymy, *M. eremita* (White), 1846: 6].

Size small, flattened above, elongate oval; surface shallowly punctate and covered with semi-erect setae.

*Head* transverse, with clypeus short and broadly emarginate, separated from front by carina extending between antennal cavities; labrum short, transverse, truncate and coriaceous; mandibles regularly curved, tips acute; maxillary palpi slender; mentum wider than long, subtriangular; gena with 2 short carinae extending ventrally from antennal cavities, forming groove for reception of basal antennal segments; antennal cavities small, circular, and widely separated; antennae with segment 1 slender, wider apically, approximately equal; distal segments serrate with lengths decreasing distally, segment 11 ovoid with length greater than distal serrate segments, sensory pores on terminal angles of serrate segments; eyes ovoid, inner margins parallel. *Pronotum* convex, almost  $2 \times$  as wide as long, flattened at basal angles; scutellum small, wider than long. *Elytra* with basal area between margin and humeri somewhat depressed; a well-developed carina separates disk from epipleura basally (Fig. 13b); apices entire, finely serrate. *Prosternum* with anterior margin straight, process acuminate; sternal cavity formed entirely by mesosternum; not reaching to metasternum; metathoracic epimera not exposed; metacoxal plates (Fig. 13a) with posterior margin concave, anterior and posterior margins converging laterally. *Legs* with femora robust; tibiae slender, longer than tarsi; tarsal segments (Fig. 14) 1-3 cylindrical with 3 slightly expanded and bilobed apically, 4 strongly bilobed dorsally, with expanded and bilobed pulvillus; tarsal claws broadly appendiculate. *Abdomen* with sutures straight and distinct except for 1, which is less distinct and vague medially; last visible

sternite broadly rounded apically. *Metathoracic wing* (Fig. 10) membranous, with subcosta fused with radius at about basal  $\frac{1}{3}$  of distance to radial sector; radiomedial crossvein incomplete as it approaches medial vein; radial cell elongate and open distally; cubitoanal vein incomplete; "wedge cell" (2d-2dA) absent; 2nd branch of both 1st and 3rd anal veins (2dA and 2dA3) thickened, especially at crossvein with 3rd branch of 1st anal vein (3dA); 4th anal vein absent [parenthetical venation abbreviations following style of Good (1925)].

*Maoraxia* may be separated from the other genera of the Anthaxiidae as indicated in the key. From those genera it most closely resembles, *Maoraxia* can be separated as follows: *Pseudanilara* has head wider than apex of pronotum and pronotum widest at base; *Neocuris* has pronotum widest at base; and *Theryaxia* differs by its head being wider than the apex of the pronotum and by the last tarsal segment which does not extend past the 4th. With *Theryaxia* only, *Maoraxia* shares posterior coxae that are strongly dilated internally. The absence of tarsal pads on all but the 4th segment in *Maoraxia* (except for remnant tarsal pads on some segments of *M. eremita*) is a character unique to this genus.

#### KEY TO THE SPECIES OF *MAORAXIA*

1. Distal serrate antennal segments with length less than  $2 \times$  width (Fig. 12) . . . . . 2
- Distal serrate antennal segments  $2 \times$  or more longer than wide (Fig. 11) . . . . . 4
- 2 (1). Size generally larger, subcylindric; punctation and vestiture dense; basal angle of pronotum acute . . . (New Zealand) . . . . . **eremita**
- Size generally smaller, more flattened; punctation and vestiture moderate; basal angle of pronotum obtuse . . . (Australia) . . . . . 3
- 3 (2). Body color blue-black ( $\delta$ ), metallic blue or blue-green ( $\text{♀}$ ); antennae serrate from 4th segment . . . . . **littoralis, n. sp.**
- Body color subnitid black; antennae serrate from 5th segment . . . . . **storeyi, n. sp.**
- 4 (1). Dorsum uniformly shining metallic green; punctation larger and more dense; basal angle of pronotum slightly obtuse . . . (Fiji) . . . . . **viridis, n. sp.**
- Dorsum shining black, metallic green laterally on pronotum, basally on elytra; punctation smaller and less dense; basal angle of pronotum acute . . . (Tonga) . . . . . **tongae, n. sp.**

#### *Maoraxia eremita* (White)

Fig. 1, 7, 15

*Buprestis eremita* White, 1846: 6.—Broun, 1880: 276.—Théry, 1925: 226.—Carter, 1926: 57.

*Neocuris eremita*: Saunders, 1871: 57.—Kerremans, 1892: 131; 1893: 180.—Carter, 1926: 57.—Dumbleton, 1932: 48; 1939: 256.

*Nascio eremita*: Hutton, 1904: 153.

*Maoriella novae-zeelandiae* Obenberger, 1924: 19.—Théry, 1925: 225.—Obenb., 1926: 98.—Carter, 1926: 57.—Obenb., 1936: 143.—Dumbleton, 1939: 256. **New synonymy.**

*Maoriella eremita*: Obenb., 1936: 143.

*Maoriella strandi* Obenb., 1936: 143. **New synonymy.**

*Maoraxia eremita*: Obenb., 1937: 1449.

*Maoraxia novae-zeelandiae*: Obenb., 1937: 1449.

*Maoraxia strandi*: Obenb., 1937: 1449.

$\delta$ . Size small, elongate-oval, subcylindric, slightly flattened above; black, submetallic, green on front of head and posterior angles of pronotum and bluish tints on protibiae and distal

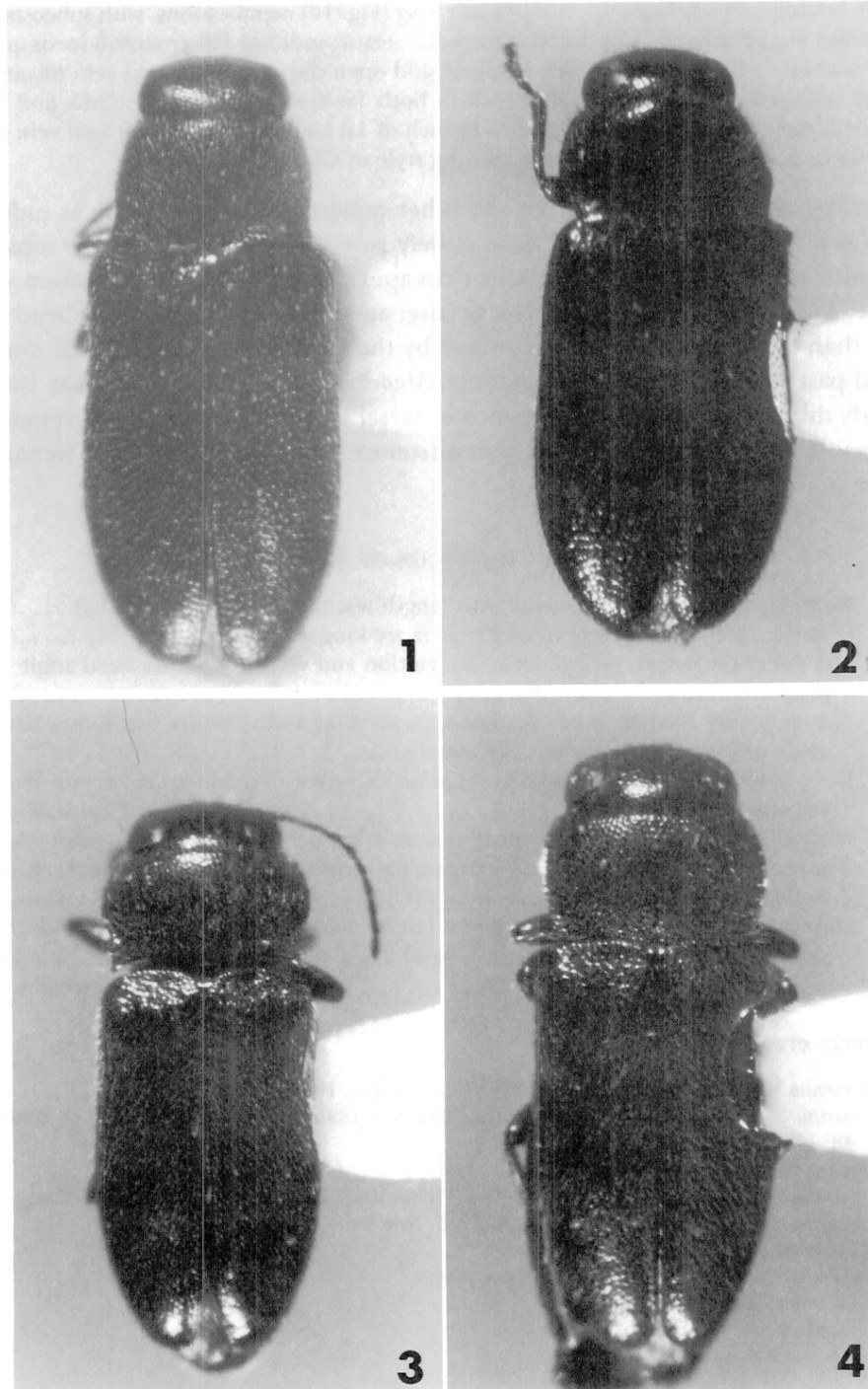


FIG. 1-4. 1, *Maoraxia eremita*, ♂; 2, *Maoraxia littoralis*, holotype; 3, *Maoraxia tongae*, holotype; 4, *Maoraxia viridis*, holotype.



parts of femora; surface coarsely densely punctate, with moderately dense semierect white setae.

*Head* transverse, narrower than pronotum; eyes ovoid, internal margins gradually converging above; front slightly convex, slightly narrower at top, faint median line on vertex; a carinae extends arcuately across front at upper part of antennal cavities, which are a small distance from margin of eye; pair of short, slightly diagonal transverse carinae meet at center of frontal carina forming 2 small cavities above arcuately emarginate clypeus; gena grooved for reception of basal antennal segments; antennae slender, brunneous, clothed with semierect setae; segments 4–10 serrate, longer than wide; distal serrate segments with width of widest portion less than length; segment 11 ovoid, longer than 10. *Pronotum* 1.6× wide as long, narrowest in front, sides arcuately rounded anteriorly, concavely constricted before base; basal angles slightly acute; anterior and basal margins feebly bisinuate, median lobes moderately well developed; disk convex, feebly flattened at middle and at basal angles; lateral carina extending from anterior margin posteriorly to basal angle; scutellum subtriangular, wider anteriorly, impunctate. *Elytra* wider than pronotum at base, slightly wider behind middle than at base, sides between base and middle subparallel; feebly depressed basally; humeri moderately indicated, sparsely punctate; a moderately elevated carina separates elytral disk and epipleura; epipleura broad basally, narrowed apically; apices separately rounded, finely serrate on lateral and apical margins and exposing the broadly rounded pygidium. *Prosternum* moderately punctate, anterior margin weakly concave; metacoxal plates strongly dilated internally; suture between first 2 abdominal sternites only vaguely indicated; last visible sternite broadly rounded apically; punctation and vestiture on entire ventral surface slightly less dense than on dorsum, especially medially. *Legs* with femora fusiform, unarmed, sparsely shallowly punctate, with scattered recumbent setae; tibiae slender, unarmed, densely punctate, with dense recumbent setae; 1st segment of protarsi no longer than following 2 together; 1st segment of meso- and metatarsi as long as following 3 together; 4th segment of tarsi with expanded, deeply bilobed pulvilli; tarsal claws broadly appendiculate. *Genitalia* (Fig. 7) with sides of parameres subparallel on basal ½, arcuately expanded on distal ½, glabrous; penis subtruncate.

Length, 3.0–4.5 mm; width, 1.5–2.0 mm.

♀. Size generally larger; front of head aeneo-black; serrate antennal segments more compact.

Length, 4.0–6.0 mm; width, 2.0–2.8 mm.

*Lectotype* ♂ (BMNH), by present designation, left specimen (the smaller) of 2 mounted on a card, further indicated by an arrow placed beneath it; with label data as follows: p, syntype (circular with blue border)/h, Port Nicholson, N. Zealand, Capt. Radt. (?last line not clear)/h, Buprestis (Trachyides) eremita White Zool. Erebus & Terror (parentheses around Trachyides h)/p, Saunders, 74.18. Both specimens mounted on the card are incomplete, missing antennae and legs.

*Distribution.* New Zealand, North Island and northern portion of South Island.

*Hosts.* Dumbleton (1939) records *M. eremita* from dead branches of European elm in Nelson, and boring in dead branches of *Suttonia salicina* at Butterfly Reserve, Wellington. New records: emerged from *Knightsia excelsa* at Unuwahao, Spirits Bay, from *Coprosma robusta* at Pelorus Bridge, Marlborough, and from *Weinmannia sylvicola* at Tangihua Ra nr Whangarei, Mt Horokata, Northland. Also worth recording are 2 specimens labeled: Hawthorn flowers, Nelson. All specimens are in DSIR.

*Remarks.* The type specimens of Obenberger's *M. novaezeelandiae* (syntypes 26572 and 26574, NMP) and *M. strandi* (holotype 26573, NMP) were examined and com-

pared with the large series of specimens borrowed from BMNH, BPBM, DSIR, MNHN, and NMNZ. There were no morphological differences observed which would justify the retention of these names. Obenberger's key to the species of *Maoriella* (1936) does nothing to separate his 2 species from *M. eremita* from a morphological point of view. He only points out differences in the reflected colors of the pronotal angles and margins and the ground color of the legs. In viewing the large series of specimens, there is a noticeable range of metallic blue or green reflection from the pronotum and dorsal side of the leg segments. There is also a range of ground color of the legs in general, from a nonmetallic brunneous to the same as the ground color of the body.

*Maoraxia eremita* appears to be most closely related to the Australian species *M. littoralis*, n. sp., and *M. storeyi*, n. sp., differing by being slightly larger generally, having the lateral margins of the pronotum not so evident dorsally, and having the basal angles acutely rectangular. Also, the antennae and male genitalia are most similar among these 3 species.

**Maoraxia littoralis** Bellamy & Williams, **new species** Fig. 2, 6, 10, 13–14, 16

*Holotype* ♂. Size small, elongate oval, somewhat flattened above, shining black, with deep blue reflection and blue on front of head; surface moderately punctate with a moderate covering of semierect gray-black setae.

*Head* transverse, narrower than pronotum; eyes ovoid, interior margin gradually converging above; front slightly convex, a moderately elevated transverse carina extends between antennal cavities; pair of short, slightly diagonal transverse carinae meet at center of frontal carina forming 2 small cavities above broad, shallowly emarginate clypeus; gena grooved for reception of basal antennal segments; antennae slender, brunneous, segments 4–10 serrate, longer than wide, with distal serrate segments less elongate; segment 11 ovoid, longer than 10; segments moderately clothed with setae. *Pronotum* 1.8× wide as long, widest behind middle; lateral margins arcuately rounded anterior to slight constriction at base; posterior angles rectangular; anterior and basal margins feebly sinuate; lateral margin distinct and entire from base to apical margin; disk somewhat flattened basally with slightly indicated, small impression anterior to scutellum; scutellum subtriangular, widest anteriorly, inpunctate. *Elytra* wider than pronotum at base, slightly wider behind middle than at base, sides between base and middle subparallel; slight basal depression between humeri and suture; humeri slightly indicated, sparsely punctate; a moderately elevated carina divides elytral disk and epipleura; epipleura broader basally, narrowing to join lateral margin at apical 4th; apices separately rounded; finely serrate along margin and exposing broadly truncately rounded pygidium. *Prosternum* moderately punctate, anterior margin straight; metacoxal plates strongly dilated internally; abdomen moderately punctate, suture between 1st and 2nd sternites vaguely indicated; last visible sternite broadly rounded. *Legs* with femora fusiform, unarmed, sparsely shallowly punctate, with scattered, recumbent setae; tibiae slender, unarmed, densely punctate with dense recumbent setae; 1st segment of protarsi but slightly longer than 2nd; 1st segment of meso- and metatarsi as long as following 3 together; 4th segment of tarsi with expanded, deeply bilobed pulvilli; tarsal claws broadly appendiculate. *Genitalia* (Fig. 6) with sides basally subparallel, parameres arcuately rounded on distal ½ to sharply acuminate apices; penis broadly acuminate.

Length, 3.0 mm; width, 1.2 mm.



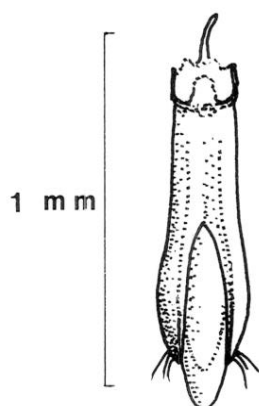


FIG. 5. *Maoraxia storeyi*, ♂ genitalia.

*Allotype* ♀. Size larger, 4.5 × 2.0 mm; blue reflections more evident marginally on pronotum, discally on elytra, and generally on venter; serrate antennal segments more compact.

*Paratypes*. Size varies as follows. ♂: Length, 3.0–3.5 mm; width, 1.2–1.5 mm; ♀: length, 4.5–4.9 mm; width, 2.0–2.4 mm, ♀'s vary in color from blue to a blue-green.

*Holotype* ♂, AUSTRALIA: New South Wales: Manning Point (approx. 12 km E of Taree), 27.X.1980, in low littoral rain forest (AMSA). Allotype ♀, same data as holotype (ANIC). Paratypes: 4♂, same data as holotype; 2♂, same data as holotype except 21.X.1980; 6♂, 1♀, same data except 3.XI.1980; 1♂, 1♀, same data except 6.XI.1980, beaten from *Podocarpus elatus*; 2♂, same data except 9.XI.1982, on foliage of *P. elatus*; 2♂, 2♀, same data, on foliage of *Elaeodendron australe*; 1♂, same data except on dying wood of *Acronychia* sp.; 1♂, same data as holotype except 20.XI.1982, emerged from dead, dry wood of *E. australe*; 1♀, 1 km S of Hallidays Point, 3.XI.1980; 1♀, Redhead (approx. 20 km SE of Taree), 15.XI.1982; 1♂, same data except 17.XI.1982; 1♂, same data as holotype except 20.XI.1982; 1♀, same data except 4.XII.1982; 1♂, same data except 6–9.XII.1982; 2♂, same data except 23–26.XII.1982; 1♂, Harrington, 24.XII.1982; 3♂, 2♀, 3 km N of Harrington, 29.XII.1982; 1♂, Harrington, 8.II.1983; 1♂, same data except 27.II.1983; 1♂, 1♀, Redhead, 24.XI.1983. All material collected by G. & T. Williams. Paratypes are deposited in the following collections: AMSA, ANIC, BLC, BMNH, BPBM, CLBC, FCCS, GWNA, MNHN, NMV, QMBA, and SAMA.

*Distribution*. Australia: in littoral rain forests of coastal southeastern Queensland to northeastern New South Wales.

*Hosts*. Specimens have been collected from 3 unrelated plant genera: *Podocarpus elatus* R. Br. (Podocarpaceae), *Elaeodendron australe* Vent. (Celastraceae), and *Acronychia* sp. (Rutaceae). The emergence of only 1 specimen from *E. australe* confirms it as a true host.

*Remarks*. *Maoraxia littoralis* and *M. storeyi*, n. sp., are apparently intermediate between *M. eremita* and the 2 insular relatives, *M. tongae*, n. sp., and *M. viridis*, n. sp. This, of course, would be further evidence of an Australian origin. A damaged specimen labeled as the type of *Neocuris auroimpressa* Carter, bearing the type number

K32268 in the AMSA, created a certain amount of confusion for the authors. This specimen shows no evidence of the gold reflections mentioned in Carter's (1924) description but is clearly conspecific with *M. littoralis*. Furthermore, Carter's description of *N. auroimpressa* makes no reference to the setaceous dorsal surface, one of the characters used to separate these 2 genera. S. Barker of the University of Adelaide (pers. commun.) believes the type of *Neocuris auroimpressa* to have been lost or stolen. The specimen is labeled "Queensland: Wide Bay," which also coincides with the type data for Carter's species. Because of the dubious nature of the labeling and also because it is damaged, this specimen is not designated as a paratype.

**Maoraxia tongae** Bellamy, new species

Fig. 3, 8, 11, 17

*Holotype* ♂. Size small, length 3.2 mm, width 1.2 mm; slightly flattened above, elongate, surface densely punctate, clothed with semierect, short brunneous setae dorsally, semirecumbent white setae ventrally; front of head, margins of pronotum, base of elytra, basal antennal segment, femora, pro- and mesotibiae bright green, otherwise shining black with greenish reflection, except distal antennal segments and tarsi that are brunneous.

*Head* transverse, narrower than pronotum, eyes ovoid, inner margins subparallel; front slightly convex; an elevated, sharply rounded carina extends from above antennal cavities down and bisinuate across frontal surface; clypeus broadly emarginate with short carinae laterally and medially joining frontal carina, forming 2 angulately ovate cavities; gena grooved for reception of basal antennal segments; antennal segments 4-10 serrate, much longer than wide, becoming shorter distally; segment 11 ovoid, longer than 10; antennae densely clothed with setae. *Pronotum* 1.75 × wide as long, widest at middle; lateral margin arcuately rounded to slight constriction at base; posterior angles acute, explanate; anterior margin slightly, basal margin moderately bisinuate; lateral margin well developed, entire from base to apices; disk weakly convex, but flattened posterolaterally; scutellum subtriangular, wider anteriorly, impunctate. *Elytra* slightly wider than pronotum at base, widest before apical 1/3, sides subparallel, in apical 1/3 roundly converging to separately rounded, finely serrate apices; disk slightly depressed basally between humeri and suture; humeri moderately indicated; a moderately elevated carina separates disk and epipleura; epipleura broad basally, narrowing to join lateral margin at apical 1/3; apices exposing broadly rounded pygidium. *Prosternum* densely punctate, anterior margin straight; metacoxal plates strongly dilated internally; abdomen with suture between 1st and 2nd sternites vaguely indicated; last sternite broadly truncately rounded, disk shallowly excavated. *Legs* with femora fusiform, unarmed, sparsely shallowly punctate; tibiae slender, unarmed, densely deeply punctate with dense, short, recumbent setae; 1st segment of protarsi shorter than next 2 together; 1st segment of meso- and metatarsi as long as following 3 together; 4th segment with expanded deeply bilobed pulvilli; tarsal claws broadly appendiculate.

♀. Unknown.

*Paratypes*. Size varies as follows. Length: 3.2-4.0 mm; width: 1.2-1.5 mm. Male genitalia (Fig. 8) robust, narrowest at base; parameres widening to widest at distal 1/4, narrowing sharply to acuminate apices; penis broadly rounded apically.

*Holotype* ♂ (BPBM 13,276) and 10♂ paratypes, TONGA IS: Eua I: Ohonua, II.1956 (N.L.H. Krauss). Additional paratypes: TONGA IS: 7♂, Tongatabu I: Naukualofa, II.1956 (Krauss); 1♂, Vavau I, 1.II.1974 (J.A. Litsinger) (DSIR). Paratypes deposited in BMNH, BPBM, CLBC, DSIR, and GWNA.

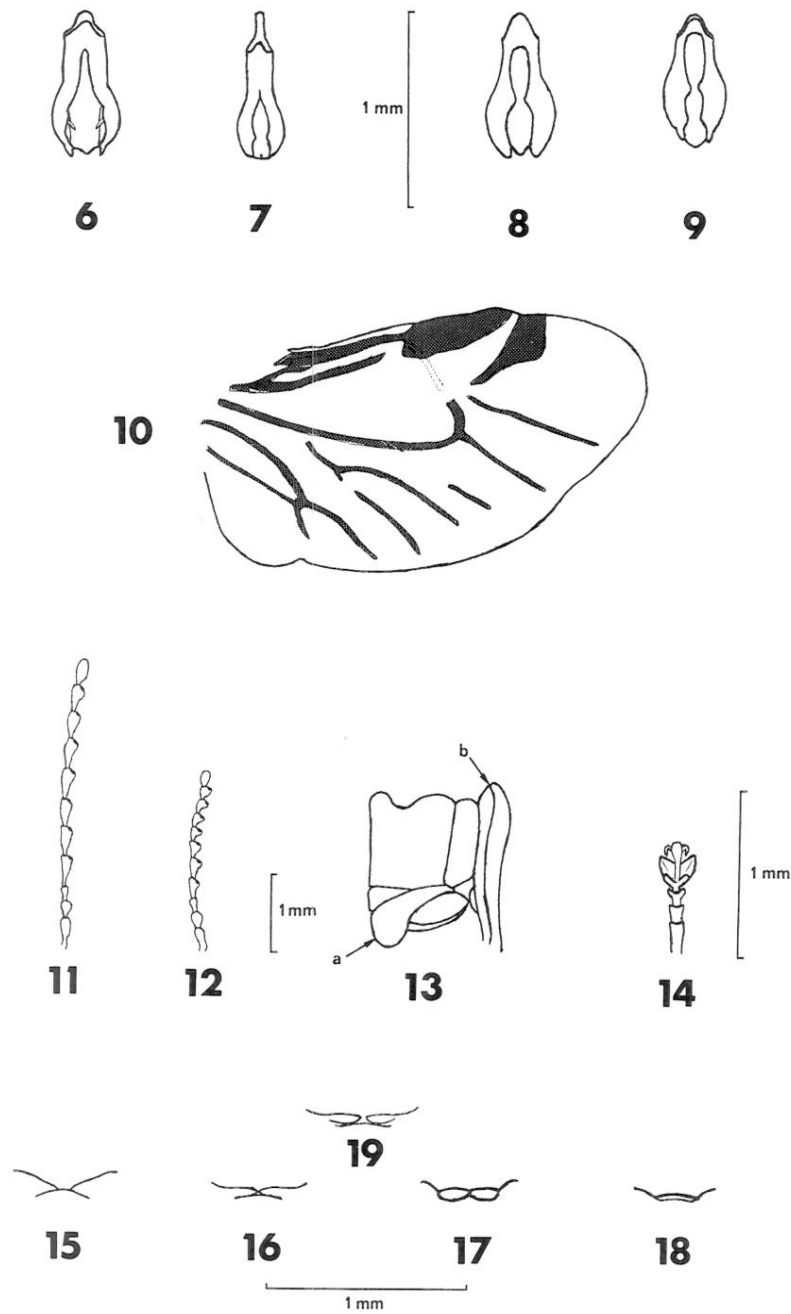


FIG. 6-19. 6-9, *Maoraxia* ♂ genitalia, dorsal view: 6, *M. littoralis*; 7, *M. eremita*; 8, *M. tongae*; 9, *M. viridis*. 10, metathoracic wing of *M. littoralis*. 11, antenna of *M. tongae*. 12, antenna of *M. littoralis*. 13, metasternal area of *M. littoralis*: a, metacoxal plate and b, epipleural carina. 14, protarsus of *M. littoralis*. 15-19, frontal carinal configurations of *Maoraxia*: 15, *M. eremita*; 16, *M. littoralis*; 17, *M. tongae*; 18, *M. viridis*; 19, *M. storeyi*.

*Distribution.* Tonga Islands: Eua, Tongatabu, and Vavau.

*Hosts.* Unknown.

*Remarks.* *Maoraxia tongae* is most closely related to *M. viridis*, n. sp., and can be separated by the shape of the frontal carina and the male genitalia, which are similar but distinct. *Maoraxia tongae* is metallic green only laterally on the pronotum and basally on the elytra, whereas *M. viridis*, n. sp., has the green coloration over a larger portion of the dorsum.

### **Maoraxia viridis** Bellamy, new species

Fig. 4, 9, 18

*Holotype* ♂. Size small, length 3.5 mm, width 1.5 mm; slightly flattened above, elongate, surface densely punctate generally; surface clothed with dense semierect, short white setae with brunneous tinge; frontal area of head and dorsal surface of pronotum and elytra shining metallic green with darker tints on pronotum and along elytral margins; ventrally black with greenish reflections along lateral margins, basal segments of antennae, and on legs.

*Head* transverse, narrower than pronotum; eyes ovoid, inner margins subparallel; front slightly convex; a sharply elevated carina extends from above antennal cavities down and shallowly arcuately across frontal surface; clypeus very short and shallowly arcuate; gena grooved for reception of basal antennal segments; antennae slender, one completely missing, other missing distal segments 7-11; segments 4-6 serrate, 2× as long as wide. *Pronotum* 1.8× wide as long, widest at middle; lateral margins arcuately rounded to slight constriction at base; posterior angles slightly acutely rectangular; anterior margin slightly sinuate; base moderately bisinuate; lateral margin well developed, strongly elevated and explanate dorsally, entire from base to apical margin; disk convex, slightly impressed posterolaterally, a slightly indicated median line entire from base to apices and small elongate fovea anterior to scutellum; scutellum cordate, disk slightly depressed, impunctate. *Elytra* slightly wider than pronotum at base, widest at humeri, sides subparallel to apical 1/3, then converging to separately rounded, finely serrate apices; disk weakly convex, slightly depressed at base between humeri and suture; humeri moderately developed, less densely punctate; a moderately elevated carina separates disk and epipleura; epipleura broad basally, narrowing apically and joining lateral margin at apical 1/4; elytral apices leave broadly rounded pygidium exposed. *Prosternum* densely punctate, anterior margin straight; metacoxal plates strongly dilated internally; abdomen with suture between 1st and 2nd sternites vaguely indicated; last visible sternite broadly rounded. *Legs* with femora fusiform, unarmed, sparsely shallowly punctate; tibiae slender, unarmed, densely deeply punctate with dense, short recumbent setae; 1st segment of protarsi subequal to 2nd; 1st segment of meso- and metatarsi as long as following 3 together; 4th segment with expanded deeply bilobed pulvilli; tarsal claws broadly appendiculate. *Genitalia* (Fig. 9) robust, narrowest at base; parameres widening to widest at distal 1/4, narrowing sharply to rounded apices; penis slightly acuminate apically.

♀. Unknown.

*Holotype* ♂, FIJI: [Ringold Isles] Thikombia, 26.IX.1924 (E.H. Bryan, Jr) (BPBM 13,277).

*Distribution.* Fiji.

*Hosts.* Unknown.

*Remarks.* As mentioned earlier, *M. viridis* is most closely related to *M. tongae* and can be separated as indicated under *Remarks* for that species. Unfortunately, the unique type of *M. viridis* is damaged with the antennae as noted in the description and the following structures missing: 1 mesotibia, both mesotarsi, and 1 metatarsus.

Also, the genitalia, the pygidium, and the last visible abdominal sternite are mounted on a card below the specimen.

***Maoraxia storeyi* Williams & Bellamy, new species**

Fig. 5, 19–20

*Holotype* ♀. Size small, elongate oval, somewhat flattened above, dorsal and ventral surfaces subnitid smokey black; lateral margins of pronotum and abdominal sternites with greenish coppery reflection; pygidium blue-black; dorsal surface uniformly covered with moderately long, recurved silver setae; ventral surface moderately and uniformly covered with fine silver setae, these adpressed and shorter than those on dorsum; entire surface distinctly and uniformly punctate, granulate between punctures.

*Head* transverse, narrower than pronotum; eyes ovoid, prominent, slightly converging above; vague longitudinal depression on vertex; front slightly convex, though medially flattened; a moderately elevated, rounded transverse carina extends between antennal cavities; pair of short, slightly diagonal transverse carinae meet at center of frontal carina forming 2 small cavities above broad, shallowly emarginate clypeus; gena grooved for reception of basal antennal segments; antennae slender, dark brunneous, segments 5–10 serrate, longer than wide, distal segments with width subequal to length, 11 expanded, acutely rounded distally; segments 1–2 sparsely, segments 3–11 moderately clothed with setae. *Pronotum* 2× as wide as long, widest before middle; anterior margin convex, slightly produced in middle; basal margin vaguely bisinuate, wider than anterior margin; lateral margins slightly sinuate; vague medial, longitudinal depression, slightly effaced on disk; 2 shallow depressions placed either side of disk; scutellum triangular, discally concave, granulate. *Elytra* with base wider at humeral angles than pronotum; sides subparallel at base, widening slightly at apical 1/3; slight depression on either side of suture extending halfway to humerus; humeri slightly calloused; lateral margins serrate along apical 2/3; moderately elevated carina dividing elytral disk and epipleura; epipleura broader basally, narrowing to join lateral margin at apical 1/4; apices separately, widely rounded and exposing broadly rounded, rugose pygidium. *Prosternum* with anterior margin straight; metacoxal plates strongly dilated internally; suture between 1st and 2nd sternites vaguely indicated; last visible sternite broadly rounded. *Legs* with femora fusiform, unarmed, sparsely shallowly punctate, with scattered, recumbent setae; tibiae slender, protibia with lateral spur, meso- and metatibiae unarmed, densely punctate with dense recumbent setae; tarsi slender, 1st segment of protarsi as long as 2 and 3, 1st segment of mesotarsi as 2, 3, and 4 together, 1st segment of metatarsi longer than 2, 3, and 4 together; 4th segment of tarsi with expanded, deeply bilobed pulvilli; tarsal claws broadly appendiculate.

Length, 5.4 mm; width, 1.7 mm.

♂ *paratype*. Dorsal and ventral surfaces subnitid smokey black, lacking metallic reflections of ♀; dorsal surface setaceous, ventral surface less uniformly and more sparsely clothed; punctation of basal 1/3 of elytra heavily and more coarsely punctured, becoming progressively finer towards apex. *Genitalia* (Fig. 5) with parameres having sides subparallel in basal 1/2, arcuate in apical 1/2; penis narrowing apically to broadly rounded apex.

Length, 3.8 mm; width, 1.6 mm.

*Holotype* ♀, AUSTRALIA: Queensland: Cape Tribulation, 24–28.XII.1981 (N. Gough, R.I. Storey) (QMBA). 1♂ *paratype*, North Queensland, Kuranda, 8.II.1969 (A. & M. Walford-Huggins) (AHQA.).

*Distribution*. Northern Queensland, Australia.

*Host*. Unknown.

*Remarks*. As mentioned previously, *M. storeyi* and *M. littoralis* would appear to be

most closely related and together are intermediate between the other 3 species. The holotype of *M. storeyi* is damaged; 1 foreleg and 1 middle leg are completely missing. The holotype was collected along the coast in littoral rain forest, while the paratype was collected in montane rain forest.

### **Acmaeodera princeps** Kerremans

*Acmaeodera princeps* Kerremans, 1908: 591.

*Acmaeodera flavinigrapunctata* Knull, 1928: 314. **New synonymy.**

During the course of examining borrowed material for this study, this interesting synonymy was discovered. Unfortunately, this attractive species from Texas that has been known under the name *A. flavinigrapunctata* must be synonymized. Examination of the type specimen of *A. princeps* from MNHN reveals the need for this name change. Kerremans described *A. princeps* from a unique specimen labeled “Nouv Zelande.” *Acmaeodera* is a large genus, well distributed in all major faunal areas except the Australian Region. The record of a species from New Zealand indicates either a labeling error or possibly a one-time introduction. The type of *A. princeps* fits well within the range of variation observed in a large series of *A. flavinigrapunctata* collected by one of us (C.L.B.).

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