

RESEARCH PAPER

Revision of the New Zealand genus *Euglyptus* (Coleoptera: Staphylinidae: Pselaphinae) with eight new species

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Abstract. The New Zealand endemic genus *Euglyptus* Broun, 1893 (Staphylinidae: Pselaphinae: Euplectitae) is revised. Eight new species are described: *Euglyptus bifurcatus* sp. nov., *E. boreus* sp. nov., *E. dunedinensis* sp. nov., *E. latefossatus* sp. nov., *E. parvus* sp. nov., *E. punctatosimilis* sp. nov., *E. robertensis* sp. nov., and *E. waimatensis* sp. nov. The following new synonyms are proposed: *Euglyptus elegans* Broun, 1893 = *E. costifer* Broun, 1893, syn. nov.; and *E. punctatus* Broun, 1893 = *E. iracundus* (Broun, 1893), syn. nov. Lectotypes are designated for *E. abnormis* Broun, 1921, *E. punctatus* Broun, 1893, and *E. costifer* Broun, 1893. *Euglyptus* now comprises 15 species; all taxa are (re)described, habitus and diagnostic characters are illustrated, and their distribution maps are provided. We also provide an identification key for the *Euglyptus* species.

Key words. Coleoptera, Staphylinidae, Pselaphinae, Euplectitae, Panaphantina, *Euglyptus*, lectotype designation, new species, new synonymy, taxonomy, New Zealand

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Introduction

The New Zealand endemic genus *Euglyptus* was described by BROUN (1893a) for a single species, *E. elegans* Broun, 1893. The species name was based on a male specimen collected at Maketu in the Hunua Ranges near Auckland, North Island. Initially, *Euglyptus* was placed in the tribe Euplectini (RAFFRAY 1904, 1908; KLIMASZEWSKI et al. 1996; NEWTON & CHANDLER 1989), but it was later transferred to the subtribe Panaphantina of the tribe Trichonychini by CHANDLER (2001) who stated that any genus not assigned to a subtribe should be provisionally placed in the Panaphantina. This placement was followed by NOMURA & LESCHEN (2006).

Six additional species were described and placed into *Euglyptus* by BROUN (1893b, 1912a, 1921). *Euplectus iracundus* (Broun, 1893a) was transferred to *Euglyptus* by NOMURA & LESCHEN (2006) based on the following characters: body narrowed anteriorly, legs long and

slender; antennae long and slender, each with club composed of three antennomeres; pronotum with broad and deep longitudinal sulci and antebasal depressions.

This study is based on 290 specimens collected over the past 40 years and the number of *Euglyptus* species was increased by eight, although two previously described *Euglyptus* species are placed in the synonymy. Thus, *Euglyptus* now comprises 15 species. A recent revisionary study was conducted on the genus *Adalmus* Reitter, 1882 within the subtribe Panaphantina of the tribe Trichonychini in New Zealand (BYEON et al. 2024), and this study represents the second revisionary work on a genus within the same subtribe.

The monotypic genus *Microtyrus* Broun, 1893a, was proposed in the same paper with *Euglyptus*, its type species being *M. punctatus* (Broun, 1893a). RAFFRAY (1904) synonymized this genus with *Euglyptus* without providing any comments. Since *Microtyrus* has been maintained as a junior synonym of *Euglyptus*, with the exceptions when



Microtyrus was treated as a valid genus (HUTTON 1904, HUDSON 1923, KUSCHEL 1990). This generic synonymy as well as the placement of *Euglyptus* within the Panaphantina of Trichonychini is confirmed in this paper.

Material and methods

Specimens were provided by the following institutions or individuals:

BMNH	The Natural History Museum, London, United Kingdom (Roger Booth, Keita Matsumoto, Maxwell V. L. Barclay, Dmitry Telnov);
DSC	Personal collection of Donald S. Chandler, Durham, United States (to be later deposited in the University of New Hampshire Insect Collection);
FMNH	Field Museum of Natural History, Chicago, United States (Maureen Turcatel);
JTN	Personal collection of John T. Nunn, Dunedin, New Zealand (to be later deposited in the NZAC);
NZAC	New Zealand Arthropod Collection, Auckland, New Zealand (Richard A. B. Leschen).

In this study, we requested images of type specimens for six species of *Euglyptus* (*E. abnormis*, *E. costifer*, *E. elegans*, *E. longiceps*, *E. sublaevis*, and *Microtyrus punctatus*) at the Natural History Museum in London and used them for species identification. Sometimes, and more commonly depending on the economic situation, museum policies, or the simple fact that posting types can result in their loss, images are routinely used to verify named species exemplified by work on Australasian beetles (SKELLEY et al. 2021, GIMMEL & LESCHEN 2023). Consequently, a total of 290 specimens were examined (284 physically examined and 6 images examined). Data labels of all specimens were transcribed verbatim. NZAC barcodes are included for Holotypes. The second author (Donald S. Chandler) examined the types in BMNH and placed a “Specimen compared with type” label on one specimen that matched a type when possible. Also, the accession numbers of those are listed in ANONYMOUS (2024) are added to the type data material examined. Two back slashes (//) indicate label breaks.

Slide mounted specimens were fully dissected for detailed observation of characters after removing the internal tissues using Proteinase K from a DNeasy Blood & Tissue kit. These specimens will be sequenced in a subsequent study. Dissections were made according to HANLEY & ASHE (2003). Permanent microscopic slide mounts were produced using Euparal. The terminology and nomenclature were based on CHANDLER (2001) and LAWRENCE et al. (2011). Abdominal tergites and ventrites are numbered following CHANDLER (2001) with Roman numerals indicating morphological position (abdominal tergites IV–VII = visible tergites 1–4). Paired appendages (mouth parts, antennae, and legs) are treated in the key and descriptions as singular, paired structures of the body (head, thorax, abdomen, and elytra) are treated as plural. The body length in the description was measured from the anterior margin of the head to the posterior margin of the abdomen, while the forebody length was measured from the anterior margin of the head to the posterior margin of the elytra. For convenience, when the terms ‘right’ and ‘left’ are used to

describe the male genitalia in the identification key and results, they refer to their position in a ventral view with the aedeagal apex oriented dorsally, as may be seen in the figure plates, and do not indicate morphological position.

Characters of species were observed using a Leica S8APO stereo microscope and DM1000 LED optical microscope. Images were generated using a Sony ILCE-7RM3 camera with a 10X/20X Mitutoyo Plan Apo Objective and stacked using Helicon Focus 8. The plate with figures was produced and modified using Adobe Photoshop 2024 and Adobe Illustrator 2024. The area codes used for distributions were Crosby Area Codes (CROSBY et al. 1976, 1998). The map of New Zealand was produced by SimpleMappr (SHORTHOUSE 2010), which was modified to add locality symbols.

Taxonomy

Euglyptus Broun, 1893

(Figs 1, 16)

Euglyptus Broun, 1893a: 1411. Type species: *Euglyptus elegans* Broun, 1893a: 1412 (by monotypy).

Euglyptus: RAFFRAY (1904: 519, 550), RAFFRAY (1908: 36, 51), RAFFRAY (1911: 14); HUTTON (1904: 176); HUDSON (1923: 364); NEWTON & CHANDLER (1989: 21); KLIMASZEWSKI et al. (1996: 147); NOMURA & LESCHEN (2006: 247, Figs 26, 27).

Microtyrus Broun, 1893a: 1413. Type species: *Microtyrus punctatus* Broun, 1893a: 1413 (by monotypy).

Microtyrus: RAFFRAY (1904: 550, new synonymy); HUTTON (1904: 176); HUDSON (1923: 364); KUSCHEL (1990: 28).

Diagnosis. Body color and antenna blackish-brown or reddish-brown, usually three distal antennomeres lighter than preceding antennomeres, leg reddish-brown or yellowish-brown, maxillary palpus and tarsus yellowish-brown, body moderately pubescent (Figs 1A–D). Head widest across eyes, with distinct antennal tubercles and deep impression between antennal tubercles, ridge of antennal tubercles extends to eyes, deep impression present between ridges, deep impression narrowing from middle to anterior margin, with dorsal tentorial pits in circular impressions, size of dorsal tentorial pits variable, area between dorsal tentorial pits convex, in lateral view head appearing flattened and concave in middle, with ventral tentorial pits, with ocular-mandibular carinae, with gular carina extending to mouthparts; rostrum narrower than head (Figs 1A–B, E). Antennal scape large, 1.5 times as long as pedicel, antennal club formed by apical three antennomeres, antennomere X broadest near apex or globular in shape, antennomere XI longer than wide, cone shaped (Fig. 1E). Pronotum subhexagonal, broadest in middle or in anterior 1/3; transverse antebasal sulcus narrowly to broadly connected lateral antebasal foveae and median antebasal fovea, with shallow to deep median longitudinal sulcus, area around median antebasal fovea deeply impressed, area around lateral antebasal foveae deeply impressed, foveae setose or asetose (Fig. 1A). Prosternum with distinct median prosternal carina and lateral procoxal foveae (Figs 1B, F). Mesoventrite gradually widening to posterior margin, with median mesoventral fovea, with lateral mesoventral foveae, with lateral mesocoxal

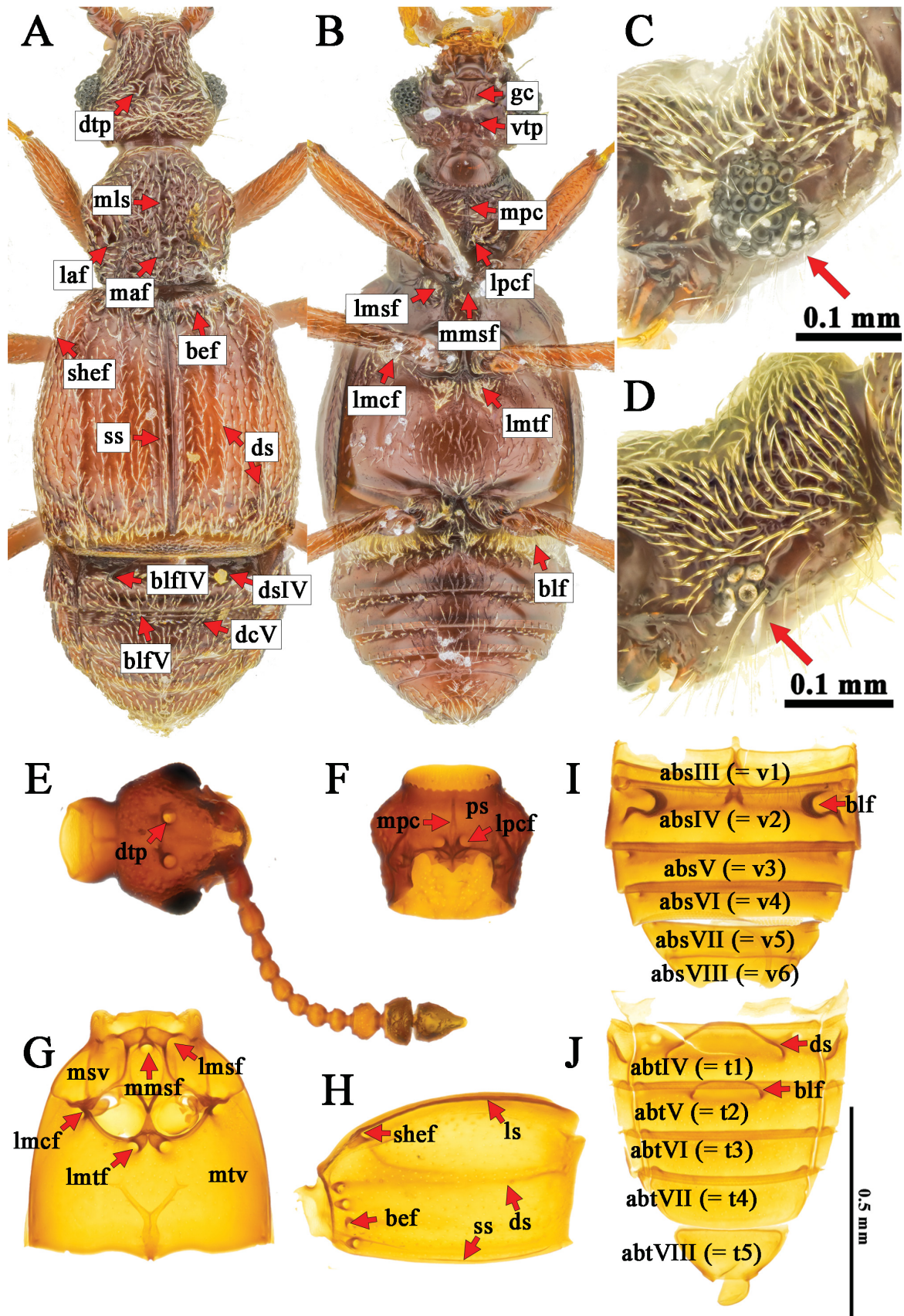


Fig. 1. Characters of *Euglyptus* Broun, 1893 (based on *E. elegans* Broun, 1893). A – male habitus dorsal view; B – male habitus ventral view; C – male head lateral view; D – female head lateral view; E – head; F – prosternum; G – meso- and metaventrите; H – elytra; I – abdominal sternites; J – abdominal tergites. Abbreviations: abs – abdominal sternite, abt – abdominal tergite, bef – basal elytral fovea, blf – basolateral fovea, ds – discal stria, dtp – dorsal tentorial pit, gc – gular carina, laf – lateral antebasal fovea, lmcf – lateral mesocoxal fovea, lmsf – lateral mesoventral fovea, lmtf – lateral metaventral fovea, lpcf – lateral procoxal fovea, ls – lateral stria, maf – median antebasal fovea, mls – median longitudinal sulcus, mmsf – median mesoventral fovea, mpc – median prosternal carina, msv – mesoventrite, mtv – metaventrите, ps – prosternum, shef – subhumeral elytral fovea, ss – sutural stria, t – tergite, v – ventrite, vtp – ventral tentorial pit.

foveae (Figs 1B, G). Metaventricle gradually widening to posterior margin, with lateral mesocoxal foveae, with lateral metaventral foveae (Figs 1B, G). Elytra wider than pronotum, longer than wide (Fig. 1A); each elytron with four basal elytral foveae, rounded transverse ridge often present in front of foveae, discal stria short, reaching half of elytral length, with subhumeral fovea, lateral stria entire, extending from subhumeral fovea and reaching posterior margin of elytra, with distinct cleft in lateroposterior (Figs

1A, H). Abdomen gradually narrowing toward base (Figs 1A–B, I–J); abdominal tergite IV–VII subequal in length, IV slightly longer, with basolateral foveae and short discal striae, median impression between striae variable in width (Figs 1A, J); abdominal sternite IV longest, with basolateral foveae, with strong median transverse impression between basolateral foveae, sternites V–VIII subequal in length, lacking species-specific characters (Figs 1B, I). Median lobe and parameres asymmetric; phallobase with diaphragm

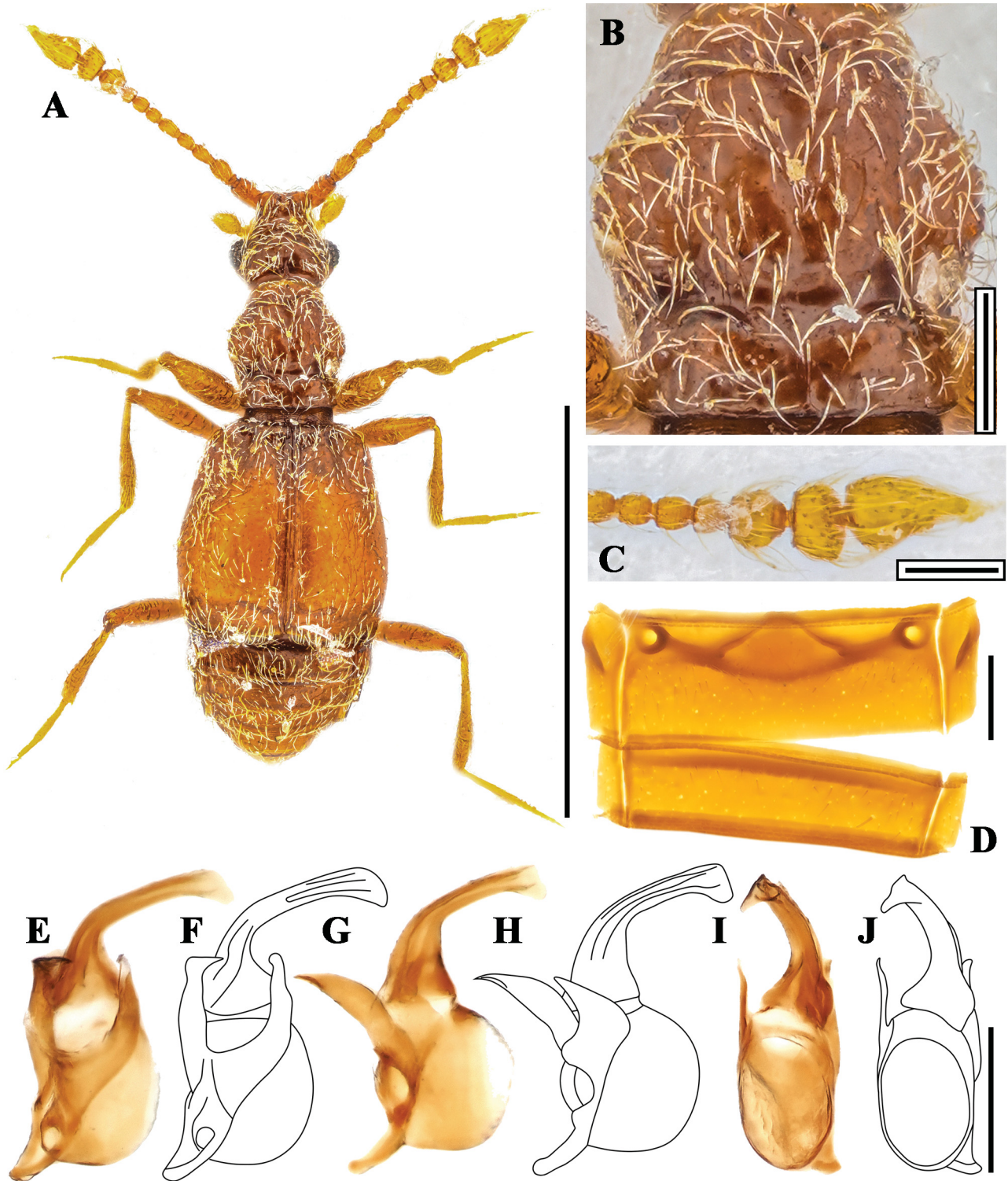


Fig. 2. *Euglyptus abnormis* Broun, 1921. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

and basal stem; median lobe with movable structure.

Sexual dimorphism. Males with a penial plate (ventrite 7 / abdominal sternite IX), females lack a penial plate; male with compound eyes large, with approximately 30–40 facets, female compound eyes smaller, with approximately 8–10 facets (Figs 1C–D; red arrows); male wings well developed, female wings lacking.

Distribution. New Zealand (Fig. 16).

Key to species of the genus *Euglyptus*

- 1 Visible tergite 2 (V) with median impression and discal striae (Figs 1J, 5D, 10D, 13D, 14D). **2**
 – Visible tergite 2 (V) lacking median impression and discal striae (Figs 2D, 3D, 4D, 7D, 8D, 9D, 11D, 12D, 15D). **7**
 2(1) Elytra with discal stria extending from outer (fourth) fovea to elytral posterior margin (Figs 1H, 14A). **3**
 – Elytra lacking discal stria extending from outer (fourth) fovea (Figs 5A, 10A, 13A). **5**
 3(2) Eye with approximately 9–10 facets in dorsal view. ***E. longiceps* Broun, 1921**
 – Eye with more than 15 facets in dorsal view. **4**
 4(3) Pronotum with distinct punctures, narrower than head (Figs 6A–B); paramere short, with small basal apophysis, strongly curved laterally (Figs 6C–H). ***E. elegans* Broun, 1893**
 – Pronotum almost lacking punctures, wider than head (Figs 14A–B); paramere short, with small apophysis located in basal fourth, straight in ventral and lateral view (Figs 14E–J). ***E. sublaevis* Broun, 1921**
 5(2) Width of median impression of visible tergite 2 approximately 1/16 of its width (excluding paratergites) (Fig. 13D); median lobe of aedeagus undivided (Figs 13E–J). ***E. robertensis* sp. nov.**
 – Width of median impression of visible tergite 2 approximately 1/6–1/7 of its width (excluding paratergites) (Figs 5D, 10D); median lobe of aedeagus forked or split (Figs 5E–J, 10E–J). **6**
 6(5) Body length more than 1.4 mm, forebody length more than 1.0 mm (Fig. 5A); antennomere 5 approximately 1.3 times longer than wide, joint between antennomeres 4–7 relatively long (Fig. 5C); median lobe with complex structure, small branch extends from posterior 1/3, apex of small branch with sharply bifurcate apophysis, median lobe with several sharp and long apophyses (Figs 5E–J). ***E. dunedinensis* sp. nov.**
 – Body length less than 1.3 mm, forebody length less than 0.9 mm (Fig. 10A); antennomere 5 approximately 1.7 times longer than wide, joint between antennomeres 4–7 relatively short (Fig. 10C); median lobe trifurcate in distal part, left apophysis apex bifurcate, middle and right apophyses simple with sharp apex, right apophysis longest in ventral view (Figs 10E–J). ***E. parvus* sp. nov.**
 7(1) Antennomere X inverted trapezoidal shape, widest in or near apex, usually wider than XI (Figs 2C, 3C, 4C, 7C, 8C, 11C, 15C). **8**
 – Antennomere X globular shape, widest in or near middle, usually narrower than XI (Figs 9C, 12C). **14**

- 8(7) Antennomere V as long as wide (Fig. 11A). ***E. punctatosimilis* sp. nov.**
 – Antennomere V distinctly longer than wide (Figs 2A, 3A, 4A, 7A, 8A, 15A). **9**
 9(8) Body length less than 1.3 mm, forebody length less than 1.0 mm; pronotum slightly wider than long (Figs 3A–B, 4A–B). **10**
 – Body length more than 1.4 mm, forebody length more than 1.0 mm; pronotum slightly longer than wide (Figs 2A–B, 7A–B, 8A–B, 15A–B). **11**
 10(9) Left paramere apex slightly convex, right paramere relatively narrow basally, apex somewhat sinuate; median lobe small branch extends from apical fifth, apex of branch bifurcate (Figs 4E–J). ***E. boreus* sp. nov.**
 – Left paramere apex bluntly rounded, right paramere broad basally, apex pointed; median lobe long branch from apical third, apex of branch not bifurcate (Figs 3E–J). ***E. bifurcatus* sp. nov.**
 11(9) Pronotum with narrow transverse antebasal sulcus (Fig. 7A); median lobe of aedeagus with long and slender apophysis extending from base, this apophysis with two small apical teeth (Figs 7E–J). ***E. foveicollis* Broun, 1912**
 – Pronotum with broad transverse antebasal sulcus (Figs 2B, 8B, 15B); median lobe of aedeagus relatively simple (Figs 2E–J, 8E–J, 15E–J). **12**
 12(11) Median lobe with distinct apophysis extending from the base (Figs 8E–J). ***E. latefossatus* sp. nov.**
 – Median lobe unmodified, lacking any apophysis (Figs 2E–J, 15E–J). **13**
 13(12) Apex of median lobe with thin membranous structure; right paramere curved laterally in dorsal view (Figs 2E–J). ***E. abnormis* Broun, 1921**
 – Apex of median lobe with flat apical lobe directed laterally; right paramere not curved in dorsal view (Figs 15E–J). ***E. waimatensis* sp. nov.**
 14(7) Antennomere V as long as wide; temples of head posterolaterally angulate; median lobe with apical margin thin and fan-shaped (Figs 12E–J). ***E. punctatus* (Broun, 1893)**
 – Antennomere V distinctly longer than wide; temples of head posterolaterally oblique; median lobe apex abruptly bent dorsally (Figs 9E–J). ***E. longicornis* Broun, 1912**

Euglyptus abnormis Broun, 1921

(Figs 2, 16)

Euglyptus abnormis Broun, 1921: 604 (#4169). Type localities: Rotoiti & Mt. Slips, Nelson [BR].

Euglyptus abnormis: NOMURA & LESCHEN (2006: 247).

Type material. LECTOTYPE: ♂, by present designation: “4169.♂ / nr Slips 24-12-1915. / New Zealand [with red underline] Broun Coll. Brit. Mus. 1922-482. / *Euglyptus abnormis*. ♂ / [yellow label] LECTOTYPE *Euglyptus abnormis* Broun sel. D.S. Chandler '24” (BMNH, NHMUK015009958).

Additional material examined. NEW ZEALAND: SOUTH ISLAND: BR [Buller]: Paparoa Ra 6km Buckland Peaks TK 25 Nov 1984 B.A. Holloway // & C.F. Butcher Moss & lichen 84/77 (1 ♂; NZAC). Fletchers CK 488m, 6km SW Rotokohu P.B 15 26 Jan 1972 [hand written] // J.C. Watt Litter 72/89 (1 ♂ genitalia dissected; NZAC). Hochstetter SF

6km S of Ahaura // Litter 71/148 // Beech Forest Utilization Project // 11 Nov 1971 J. C. Watt (1 ♂; NZAC). **NN [Nelson]:** Coll. T.Hall. 5.5.1916. [handwritten] // Lake Rotoiti Nelson, South Is. [handwritten] // 4169. [handwritten] // *Euglyptus abnormis* Broun. [handwritten] // T.Broun Collection // A.E.Brookes Collection // Probable Broun SYNTYPE *Euglyptus abnormis* D S Chandler 2010 (1 ♂; DSC). **OL [Otago Lakes]:** Mt. Aspiring N.P., 5.5km nne Makarora, 330m 11-17.i.1985; *Nothofagus menziesii* for. A.Newton/M.Thayer 741 // berl, leaf & log litter, forest floor (2 ♂♂ genitalia dissected; FMNH). Haast Pass road summit 8-Feb-09

// Sifted moss sample (1 ♂ genitalia dissected; JTN). Makarora Bush Makarora 7-9 Nov 1997 (1 ♂ slide mounted; JTN). **WD [Westland]:** 1.8km n Punakaiki, 80 m 19.xii.1984-20.i.1985 hdwd. for. with nikau A.Newton/M.Thayer 718 // flight intercept (window) trap (1 ♂ genitalia dissected, 1 ♂; FMNH / 1 ♂ genitalia dissected; NZAC / 1 ♂; DSC). 1.5km n Punakaiki, 50m 19.xii.1984-20.i.1985 2° hdwd.-nikau forest A.Newton/M.Thayer 720 // flight intercept (window) trap (1 ♂ genitalia dissected; FMNH). Okuku Scenic Reserve, 9.2km sse Kumara, 120m, 8-19.i.1985 podocarp-hdwd. forest A.Newton/M.Thayer 731 // berl, leaf

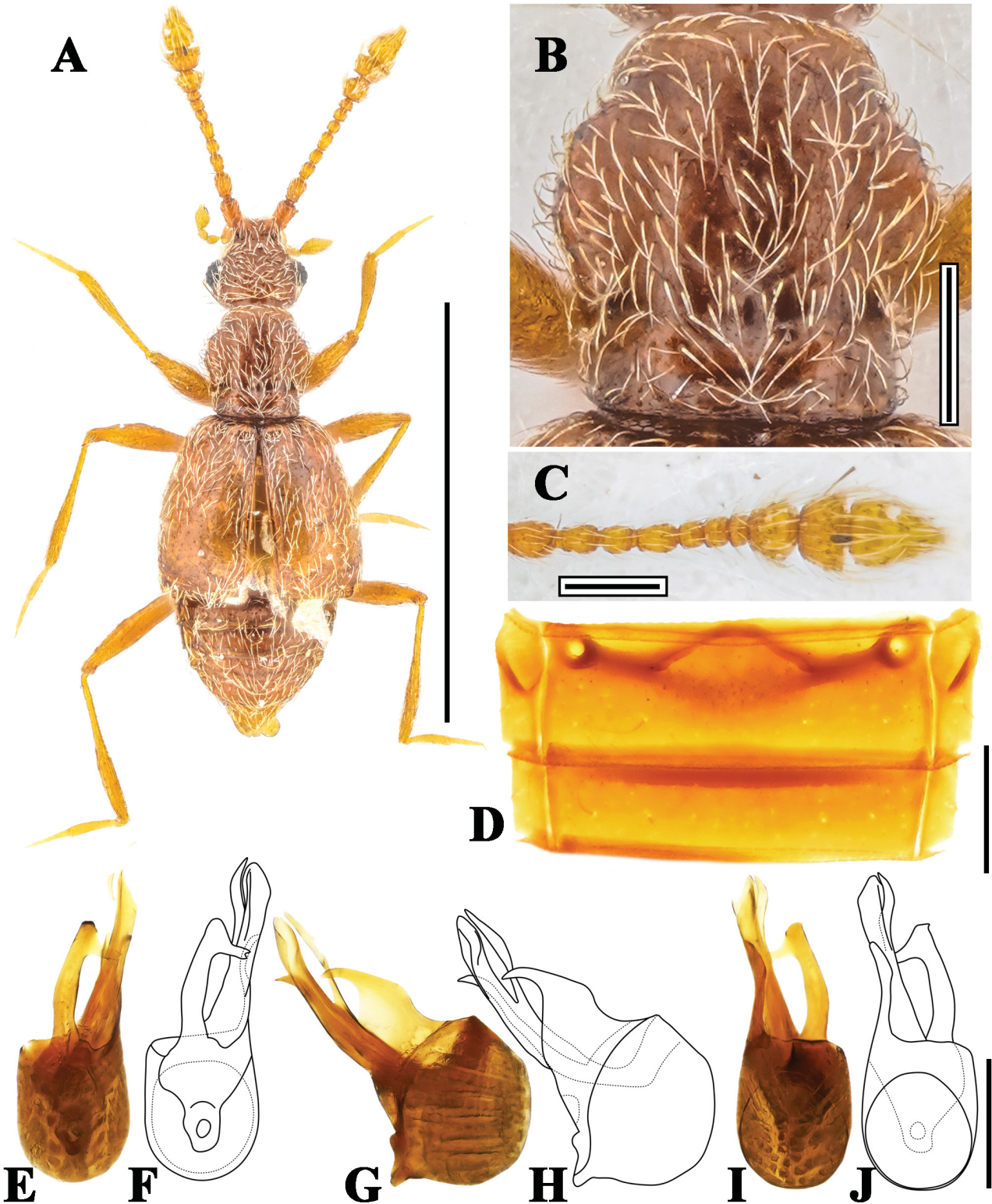


Fig. 3. *Euglyptus bifurcatus* sp. nov. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

& log litter, forest floor (1 ♂ genitalia dissected, 1 ♂; NZAC). Hercules Scen. Res., 12.6km wsw Harihari, 75m, 9-19.i.1985 hdwd.-podocarp forest A.Newton/M.Thayer 734 // berl, leaf & log litter, forest floor (1 ♂ genitalia dissected; FMNH / 1 ♂; DSC). Westland N.P., saddle 10.2km ne Fox Glacier 405m, 9-18.i.1985 hdwd.0podocarp forest A.Newton/M.Thayer 735 // berl, leaf & log litter, forest floor (1 ♂ genitalia dissected; FMNH). 2.7km se Lake Moeraki 30m, 10-18.i.1985 hdwd.-podocarp forest A.Newton/M.Thayer 736 // flight intercept (window) trap (1 ♂; FMNH). Same locality data // Compared with Type of *Euglyptus abnormis* by DSChandler [green label] (1 ♂ genitalia dissected; DSC). Mt. Aspiring N.P., Douglas Creek at Hwy. 6, 65m 11-18.i.85; Noth. menz.-hdwd.-podocarp for. A.Newton/M.Thayer 738 // flight intercept (window) trap (1 ♂; DSC). Hokitika Gorge 29 Jan 1978 S.B.Peck Litter // S. & J. Peck Collection (1 ♂ slide mounted; NZAC). Haast Pass W of summit, 550m 24 Jan 1978 G.Kuschel // sifted litter and rotten wood 78/52 (1 ♂ slide mounted; NZAC). Haast Pass road summit 6-Feb-09 // Sifted ground moss (1 ♀; JTN).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.51–1.61 mm (forebody 1.13–1.18 mm) (Fig. 2A); antennomere IX slightly wider than long, subhexagonal, X wider than XI (8 : 7), widening to apex (Fig. 2C); pronotum gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior 1/3, parallel from posterior 1/3 to posterior margin, with shallow median longitudinal sulcus and broad transverse antebasal sulcus (Fig. 2B); both parameres much shorter than elongate median lobe, dissimilar but both short and slightly curved to apical point; median lobe curved dorsally to right, apex slightly lobed and less sclerotized, apex slightly angled anteriorly as distinct blunt point that is most distinct in dorsal view (Figs 2E–J).

Redescription. Body 1.51–1.61 mm (forebody 1.13–1.18 mm); head and thorax impunctate; head, thorax, abdomen, elytra, leg, and antenna reddish-brown; tarsus and maxillary palpus yellowish-brown (Fig. 2A).

Head slightly wider than long, with small dorsal tentorial pits, impression weakly defined around dorsal tentorial pits; temples gradually narrowing toward posterior margin of head capsule, with several setae; impression between antennal tubercles as wide as antennal tubercle width. Pedicel wider than antennomeres III–VIII, antennomeres III–V longer than wide, subrectangular, VI–VII as long as wide, subquadrate, VIII smallest, IX slightly wider than long, subhexagonal, X wider than XI (8 : 7), widening to apex (Figs 2A, C).

Pronotum wider than head, as long as wide, narrowest at anterior margin, gradually widening from anterior margin to middle, widest in middle, slightly narrowing from middle to posterior 1/3, parallel from posterior 1/3 to posterior margin, with shallow median longitudinal sulcus and broad transverse antebasal sulcus (Fig. 2B).

Elytra and abdominal tergites lacking any distinguishing characters (Figs 2A, D).

Male genitalia. Both parameres much shorter than elongate median lobe, dissimilar but both short and slightly curved to apical point; median lobe curved dorsally to right, apex slightly lobed and less sclerotized, apex slightly angled anteriorly as distinct blunt point that is most distinct in dorsal view (Figs 2E–J).

Distribution. New Zealand (South Island: BR, NN, OL, WD; Fig. 16A).

Euglyptus bifurcatus Byeon & Chandler, sp. nov.

(Figs 3, 16)

Type material. HOLOTYPE: ♂ (genitalia dissected), “NEW ZEALAND, WN, Kaitoke Regional Park, Pakuratahi Forks, 15 Apr 2005, R. Leschen, C. McGuinness, // leaf litter, RL975, 41.03°S, 175.11°E” (NZAC, NZAC04261178). PARATYPES: **NEW ZEALAND: NORTH ISLAND: WN [Wellington]:** Tararua FP, Holdsworth, 16 Apr 2005, R. Leschen, leaf litter, RL976, 40.53S, 175.28E (1 ♂ genitalia dissected; NZAC). Orongorongo V, W.N. 15 Nov 1993 // Hard beech forest litter Tullgren #27 (1 ♂ genitalia dissected; NZAC). **South Island: BR [Buller]:** Maruia Springs 25-Apr-77 (1 ♂ genitalia dissected; JTN). **NN [Nelson]:** Slaters Road, 0.7km s Whangamoia Saddle, 410m 13.xii.1984-4.i.1985 *Nothofagus* spp forest A.Newton/M.Thayer 703 // flight intercept (window) trap (1 ♂ genitalia dissected; FMNH / 1 ♂ genitalia dissected; NZAC). 0.6km e Gowanbridge, 330m, 18.xii.84-7.i.85 *Nothofagus* spp. forest A.Newton/M.Thayer 717 // flight intercept (window) trap (2 ♂♂ genitalia dissected; FMNH). **SD [Marlborough Sounds]:** Tennyson Inlet, east side Duncan Bay, 30m 15.xii.1984-5.i.1985 *podo.-Nothofagus* for. A.Newton/M.Thayer 709 // flight intercept (window) trap (1 ♂ slide mounted, 4 ♂♂ genitalia dissected, 2 ♂♂; FMNH / 1 ♂ genitalia dissected; NZAC / 1 ♂ genitalia dissected; DSC). Tennyson Inlet, west side Te Mako Bay, 125m 15.xii.1984-5.i.1985 *Nothofagus-podo-hdwd.* A.Newton/M.Thayer 710 // flight intercept (window) trap (1 ♂ slide mounted, 5 ♂♂ genitalia dissected, 2 ♂♂; FMNH).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.14–1.16 mm (forebody 0.84–0.86 mm) (Fig. 3A); antennomere X wider than long, widest at apex, as wide as XI (Figs 3A, C); pronotum gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with broad and shallow median longitudinal sulcus, with broad transverse antebasal sulcus (Fig. 3B); ventral view of left paramere thick, slightly curved to middle, apex bluntly rounded, with prominent preapical truncate apophysis directed to right, right paramere thin, sinuate, obscured by left paramere, broad basally, narrowing and curving ventrally to acute apex; median lobe deeply split apically, with small preapical apophysis best seen in lateral view (Figs 3E–J).

Description. Body 1.14–1.16 mm (forebody 0.84–0.86 mm); head and thorax impunctate; head, thorax, and abdomen reddish-brown; elytra, leg, antennal scape, and pedicel lighter than reddish-brown; antennomeres III–VIII, tarsus, maxillary palpus, and antennomeres IX–XI yellowish-brown (Fig. 3A).

Head as wide as long, with small dorsal tentorial pits, impression weakly defined around dorsal tentorial pits; temples gradually narrowing toward posterior margin of head capsule, with several setae; impression between antennal tubercles narrow, width of impression area approximately 0.8 times as wide as antennal tubercle diameter. Pedicel wider than antennomeres III–VIII, antennomeres III–V subrectangular, V longer than wide, VI as long as wide, VII slightly larger than VI, VIII smallest, IX as long as wide, subhexagonal, X wider than long, widest at apex, as wide as XI (Figs 3A, C).

Pronotum as wide as head, as long as wide, narrowest at anterior margin, gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with broad, shallow median longitudinal sulcus and broad transverse antebasal sulcus (Fig. 3B).

Elytra and abdominal tergites without any distinguishing characters (Figs 3A, D).

Male genitalia. Ventral view of left paramere thick, slightly curved to middle, apex bluntly rounded, with prominent preapical truncate apophysis directed to right, right paramere thin, sinuate, obscured by left paramere, broad basally, narrowing and curving ventrally to acute apex; median lobe deeply split apically, with small preapical apophysis best seen in lateral view (Figs 3E–J).

Etymology. The specific epithet is a Latin adjective referring to the bifurcate apex of the median lobe.

Distribution. New Zealand (North Island: WN, South Island: BR, NN, SD; Fig. 16D).

Euglyptus boreus Byeon & Chandler, sp. nov.

(Figs 4, 16)

Type material. HOLOTYPE: ♂ (genitalia dissected), “NEW ZEALAND ND Waipoua SF Te Matua Ngahere 31 Oct 1985 R.C.Craw // Sifted litter 85/51” (NZAC, NZAC04261385). PARATYPES. **NEW ZEALAND: NORTH ISLAND: AK [Auckland]:** Waitakere Range, 260m, Nohoanga Scenic Reserve, 23.xi-8.xii.1984 hdwd.-podocarp forest A.Newton/M. Thayer 679 // flight intercept (window) trap (1 ♂ genitalia dissected, 1 ♂; FMNH). Waitakere Ra., Cascade-Kauri Park, Anderson Tr., 85m, 23.xi-8.xii.1984, hdwd.-podocarp A.Newton/M. Thayer 681 // Window trap (1 ♂ genitalia dissected; FMNH). Waitakere Ranges Reg. Pk., Upper Huia Reser. Track, II-28-2010. // 4.3 km SW Waiatarua 277 m, D.S. Chandler sift leaf litter at base of Cyathea (1 ♂; DSC). Same locality data, except sift forest litter (1 ♂ slide mounted; DSC). **BP [Bay of Plenty]:** Papatea 24 Sep 19 Oct 1992 // J.S. Dugdale Malaise trap (1 ♂ genitalia dissected; NZAC). Mt. Te Aroha, 2.5 km SE Te Aroha, 390 m Tui Road at Tui Creek Mt. Domain Track, II-15-2010, D.S. Chandler sift forest leaf litter (1 ♂ genitalia dissected; DSC). Lake Okataina 9 Oct 1995 M-C Larivière & A Larochelle // Litter 92/12 (1 ♂ genitalia dissected; NZAC). Kaimai Ra 427m Leyland Tramline 22 Sep 1981 B.M.May // Litter 81/92 (1 ♀; NZAC). P149 [to left of specimen]. 51 moss, Waira, orua, N.I. // 23.vii.51 moss, Te Wairau, Rotorua, N.I., N.Z [handwritten] (1 ♂ genitalia dissected; NZAC). **CL [Coromandel]:** Coromandel 350m 23 Mar 1977 G.Kuschel [handwritten] // moss & lichens all ridge track (1 ♂; NZAC). **ND [Northland]:** Mangamuka Gorge S.R., 6.6km nw Mangamuka, 70m, 25.xi-5.xii.1984 hdwd.-podocarp forest A.Newton/M. Thayer 682 // flight intercept (window) trap (1 ♂; FMNH). Mangamuka Summit, 12.9km nw Mangamuka, 400m, 25.xi-5.xii.1984 hdwd.-podocarp forest A.Newton/M. Thayer 683 // flight intercept (window) trap (1 ♂ genitalia dissected; FMNH / 1 ♂; NZAC). Omahuta Forest, Oma-huta Kauri Sanctuary, 340m, 29.xi.1984 kauri-podocarp-hdwd. A.Newton/M. Thayer 693 // berl. Leaf & log litter forest floor (1 ♂ genitalia dissected; DSC). Waipoua State Forest, Kauri Ricker Track, 120m, 26.xi-4.xii.1984 kauri-podocarp-hdwd. A.Newton/M. Thayer 684 // flight intercept (window) trap (3 ♂♂ genitalia dissected; FMNH / 1 ♂ genitalia dissected; DSC). Waipoua State Forest, Toronui Track, 120m 26.xi-4.xii.1984 kauri-podocarp-hdwd. A.Newton/M. Thayer 685 // flight intercept (window) trap (1 ♂; FMNH). Waipoua State Forest, 0.9km e Forest Hqtrs. 120 m, 26.xi-4.xii.1984 hdwd.-podocarp forest A.Newton/M. Thayer 686 // (flight intercept (window) trap (1 ♂; DSC). Waipoua State Forest, Wairau Summit, 400m 27.xi-6.xii.1984 hdwd.-podocarp forest A.Newton/M. Thayer 687 // flight intercept (window) trap (1 ♂ slide mounted, 1 ♂ genitalia dissected, 5 ♂♂; FMNH). Waipoua State Forest, vic. Wairau Summit, 460m, 27.xi-4.xii.1984 hdwd.-podocarp forest A.Newton/M. Thayer 688 // flight intercept (window) trap (1 ♂ slide mounted, 1 ♂ genitalia dissected, 3 ♂♂; FMNH). Waipoua State Forest, 0.8km nw Wairau Summit 350m, 27.xi-6.xii.1984 hdwd.-podocarp forest A.Newton/M. Thayer 689 // flight intercept (window) trap (4 ♂♂; FMNH). Waipoua State Forest, Waikohatu Stream bridge 300m, 28.xi-6.xii.1984 kauri-hdwd.-podocarp A.Newton/M. Thayer 690 // flight intercept (window) trap (4 ♂♂; FMNH / 1 ♂; NZAC). Wai-poua St. For., 1.7km nw Waikohatu Stream bridge 380m, 28.xi-6.xii.1984 hdwd.-podocarp forest A.Newton/M. Thayer 691 // flight intercept (window) trap (2 ♂♂; FMNH). Oma-huta For., Picnic

Area near Kauri Sanctuary, 330m, 29.xi-5.xii.1984 2° hdwd.-podocarp for A.Newton/M. Thayer 694 // flight intercept (window) trap (2 ♂♂; FMNH). Trounson Kauri Park, 250m, 3-7.xii.1984 kauri-podocarp-hdwd. A.Newton/M. Thayer 698 // berl, leaf & log litter, forest floor (2 ♂♂; FMNH). Waipoua SF, Kauri Ricker Tr. 100m 11-15.iv.80 kauri-podocarp-broadleaf A.Newton/M. Thayer // berl, leaf & log litter, forest floor (1 ♂ slide mounted, 1 ♂ genitalia dissected, 1 ♀; FMNH). Waipoua SF, Yakas Tree Tr. 350m 11-14.iv.1980 broadlf.-podocarp A.Newton/M. Thayer // berl, litter at bases of *Metrosideros robusta* trunks (2 ♂♂ genitalia dissected, 1 ♀; FMNH). Waipoua SF Toronui Track 30 Oct 1980 G.Kuschel // Sifted decayed wood 80/96 (3 ♂♂ genitalia dissected, 1 ♂; NZAC). Waipoua SF, 290m Waikohatu Bridge 14 Apr 1980 J.C.Watt // Litter 80/53 (1 ♂, 1 ♀; NZAC). Waipoua SF, Waikohatu Br. 290m 11-14.iv.80. *Agathis*-podocarp-broadlf. A.Newton/M. Thayer (1 ♂ genitalia dissected; FMNH). Waipoua SF Toatua Grove 25 Nov 1980 G.Kuschel // Plants and litter 80/117 (1 ♂; NZAC). Waipoua SF, 100m Kauri Ricker TK 13 Apr 1980 J.C.Watt // Sifted litter 80/49 (1 ♀; NZAC). Waipoua SF Tanemahuta 29 Oct 1985 R.C.Craw & // C.Lyal Sifted litter 85/48 (1 ♂; NZAC). **TO [Taupo]:** Ohakune 26 Jan 1982 C.F.Butcher // Sifted litter 81/14 (1 ♂ genitalia dissected; NZAC). **WA [Wairarapa]:** makau n.sp. [handwritten, illegible] (1 ♂ genitalia dissected; NZAC). **WO [Waikato]:** Maungatauri Main-land Reserve, XI-15-2007, S.A.Forgie litter (1 ♂ genitalia dissected; NZAC). Piri-piri Caves Reserve 25 May 1986 C.L. Lyal // Leaf litter CL 480 (1 ♂ genitalia dissected; NZAC).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.21–1.29 mm (forebody 0.92–0.96 mm) (Fig. 4A); antennomere X wider than long, widest at apex, as wide as XI (Fig. 4C); pronotum gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with median longitudinal sulcus and broad transverse antebasal sulcus (Fig. 4B); both parameres slightly to strongly curved ventrally, left paramere slightly convex at apex in lateral view, right paramere nearly as broad as median lobe in ventral view, strongly curved ventrally in lateral view; median lobe curved dorsally, small branch extends from apical fifth, small branch with sharply bifurcate apophysis at apex arising near base of median lobe, apices of branch acutely pointed (Figs 4E–J).

Description. Body 1.21–1.29 mm (forebody 0.92–0.96 mm); head and thorax impunctate; head, thorax, abdomen, and antennal scape reddish-brown; elytra, leg, pedicel, and antennomeres III–VIII lighter; tarsus, maxillary palpus, and antennomeres IX–XI yellowish-brown (Fig. 4A).

Head as wide as long, with small dorsal tentorial pits, impression weakly defined around dorsal tentorial pits; temples gradually narrowing toward posterior margin of head capsule, with several setae; width of impression between antennal tubercles narrow, approximately 0.7 times as wide as antennal tubercle diameter. Pedicel wider than antennomeres III–VIII, antennomeres III slightly longer than wide, subrectangular, IV as long as wide, V longer than wide, rectangular, VI–VIII as long as wide, subquadrate, IX as long as wide, subhexagonal, X wider than long, widest at apex, as wide as XI (Figs 4A, C).

Pronotum slightly wider than head, as wide as long, narrowest at apex, gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with median longitudinal sulcus and broad transverse antebasal sulcus (Fig. 4B).

Elytra and abdominal tergites without any distinguishing characters (Figs 4A, D).

Male genitalia. Both parameres slightly to strongly curved ventrally, left paramere slightly convex at apex in lateral view, right paramere nearly as broad as median lobe in ventral view, strongly curved ventrally in lateral view; median lobe curved dorsally, small branch extends from apical fifth, small branch with sharply bifurcate apophysis

at apex arising near base of median lobe, apices of branch acutely pointed (Figs 4E–J).

Etymology. The specific epithet is a Latin adjective meaning ‘northern’, referring to the distribution of this species being limited to the North Island.

Distribution. New Zealand (North Island: AK, BP, CL, ND, TO, WA, WO; Fig. 16D).

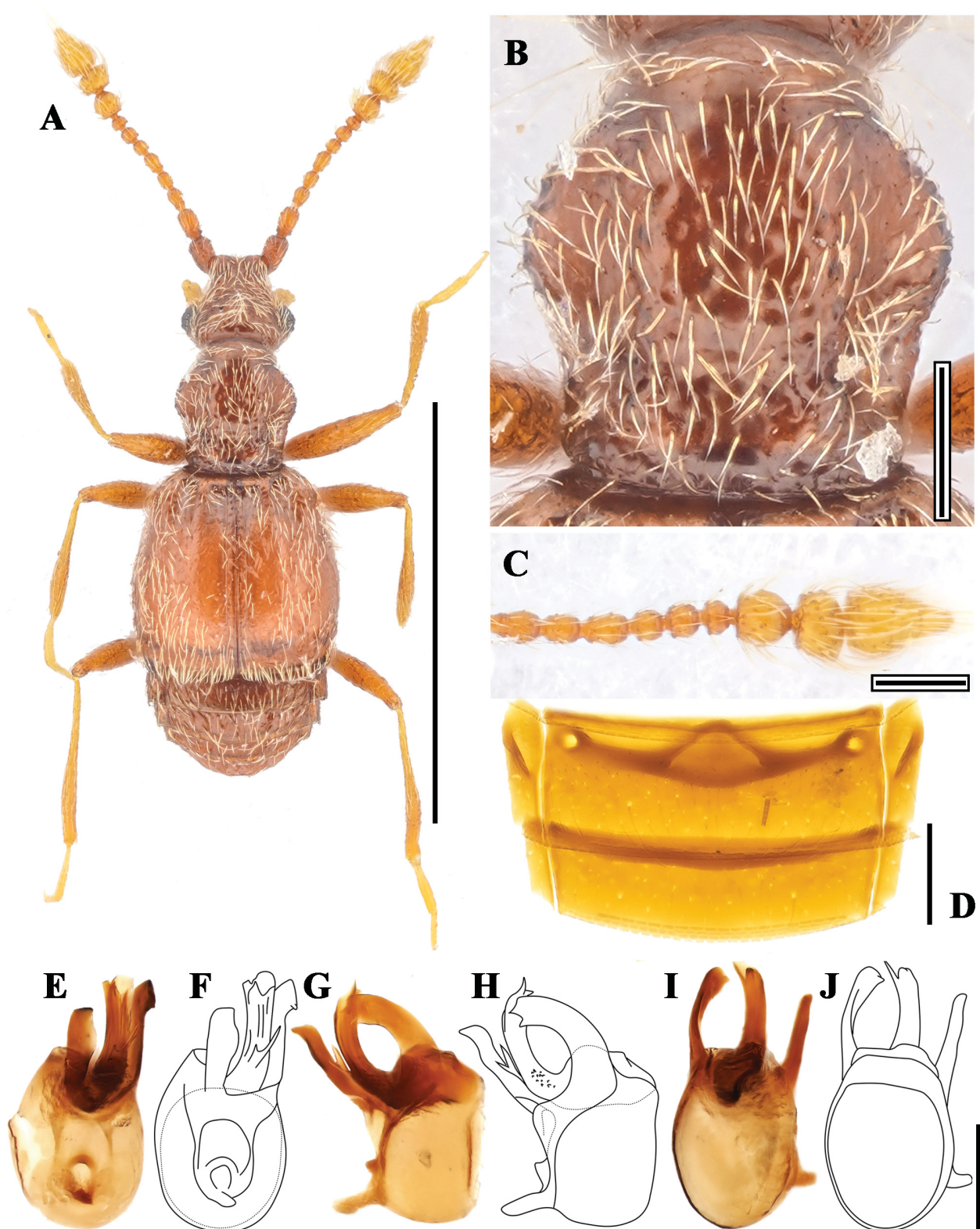


Fig. 4. *Euglyptus boreus* sp. nov. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

***Euglyptus dunedinensis* Byeon & Chandler, sp. nov.**

(Figs 5, 16)

Type material. HOLOTYPE: ♂ (genitalia dissected), "NEW ZEALAND DN Moodside Glen crest of spur 200m 20 Oct 1981 // J.C.Watt Sifted litter 81/108" (NZAC, NZAC04261172). PARATYPES: **NEW ZEALAND: SOUTH ISLAND: DN [Dunedin]:** Wangaloa Open Cast Mine Rd 17 Jun 2010 // Washed soil sample. kamahi forest (1 ♂ abdomen lost; JTN).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.44–1.54 mm (forebody 1.09–1.11 mm) (Fig. 5A); antennomeres X wider than long, widest at apex, as

wide as XI (Fig. 5C); pronotum gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with broad transverse antebasal sulcus (Fig. 5B); abdominal tergite V with short, shallow discal striae, distance between discal striae of V narrow (Fig. 5D); parameres nearly as long as median lobe, left paramere slightly and broadly convex in middle, apex acute and slightly curved ventrally, with rounded apical margin in ventral view, right paramere with apex abruptly broadened to form dorsal, apical, ventral points in lateral view; median lobe with complex structure,

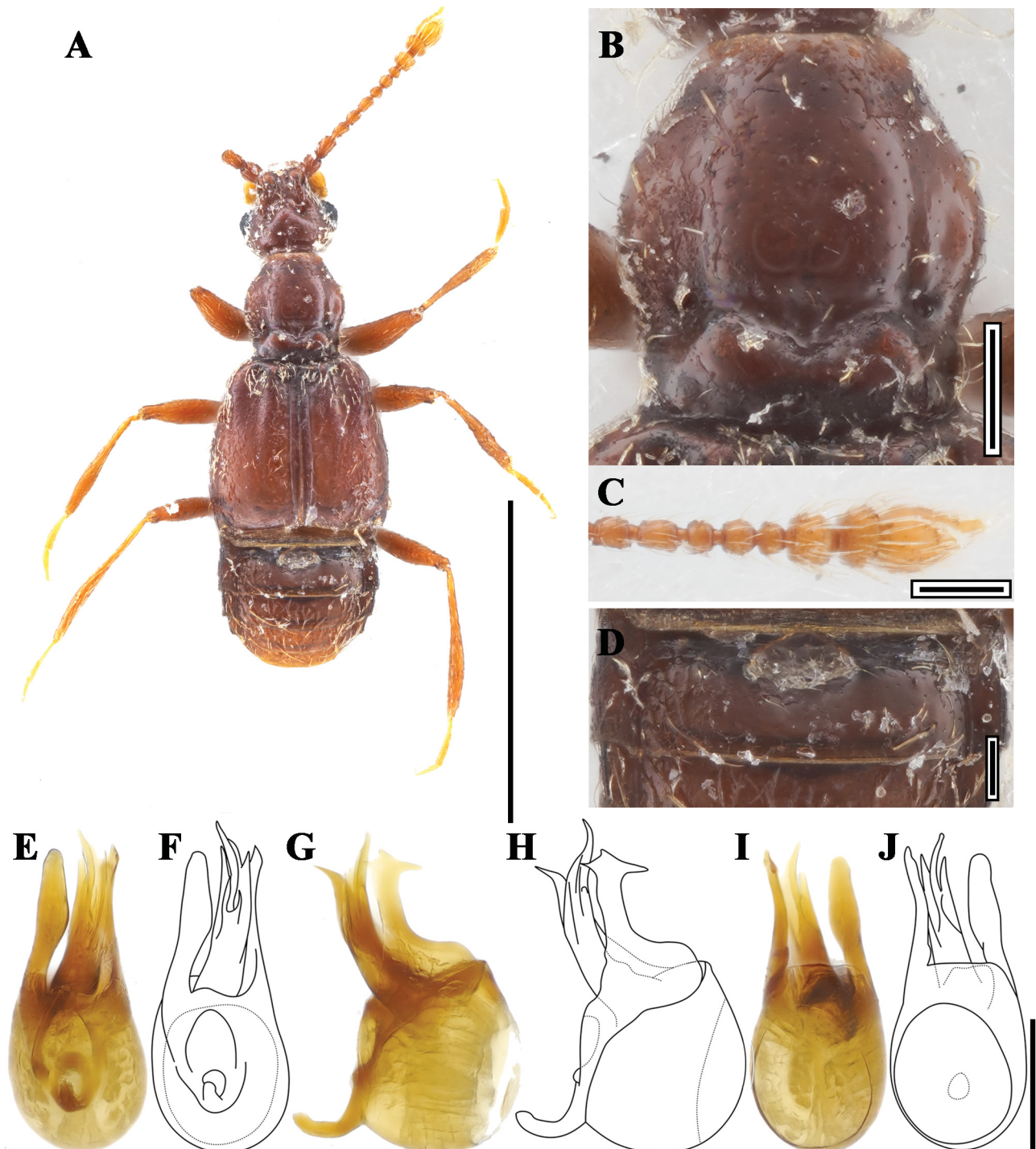


Fig. 5. *Euglyptus dunedinensis* sp. nov. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

small branch extends from point of apical 1/3, apex of small branch with sharply bifurcate apophysis, median lobe with two acutely pointed lateral apophyses in addition to median longer apophysis (Figs 5E–J).

Description. Body 1.44–1.54 mm (forebody 1.09–1.11 mm); head and thorax coarsely punctate; head, thorax, abdomen, elytra, leg, and antennal scape reddish-brown; pedicel and antennomeres III–VIII lighter than reddish-brown; tarsus, maxillary palpus, and antennomeres IX–XI

yellowish-brown (Fig. 5A).

Head wider than long, with small dorsal tentorial pits, weak impression around dorsal tentorial pits; temples gradually narrowing toward posterior margin of head capsule, with several setae; impression between antennal tubercles narrow, width of impression approximately 0.6 times as wide as antennal tubercle diameter. Pedicel wider than antennomeres III–VIII, antennomeres III–V subrectangular, VI as long as wide, VII larger than VI, VIII smallest, IX

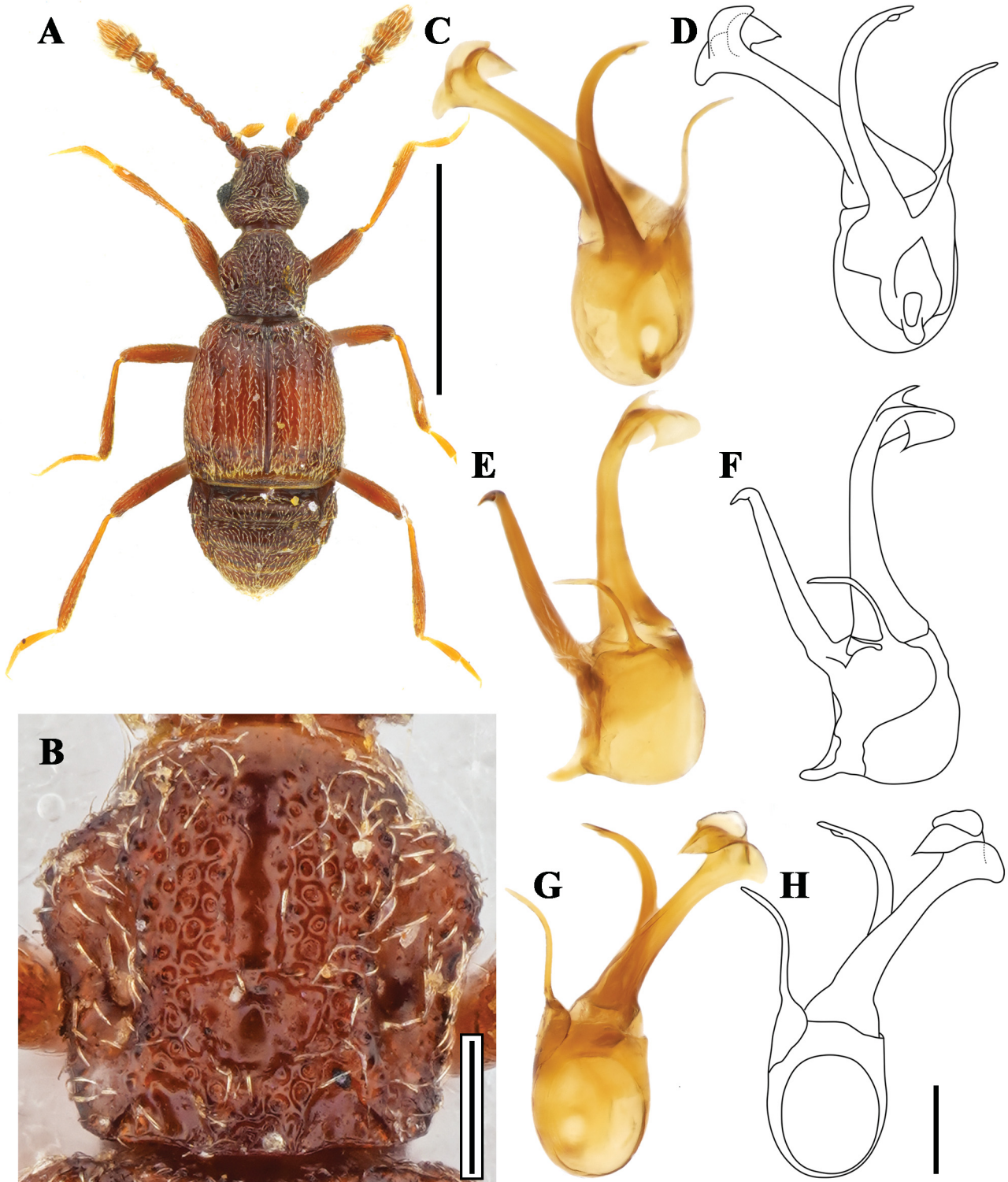


Fig. 6. *Euglyptus elegans* Broun, 1893. A – habitus dorsal view; B – pronotum, C, D – aedeagus ventral view; E, F – aedeagus lateral view; G, H – aedeagus dorsal view. Scale bars: A = 1 mm; B–H = 0.1 mm.

as long as wide, subhexagonal, X wider than long, widest at apex, as wide as XI (Figs 5A, C).

Pronotum as wide as head, longer than wide, narrowest at apex, gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with median longitudinal sulcus and broad transverse antebasal sulcus (Fig. 5B).

Elytra without any distinguishing characters (Fig. 5A).

Abdominal tergite V with short, shallow discal striae, distance between discal striae of tergite V narrow (Fig. 5D).

Male genitalia. Parameres nearly as long as median lobe, left paramere slightly and broadly convex in middle, apex acute and slightly curved ventrally, with rounded apical margin in ventral view, right paramere with apex abruptly broadened to form dorsal, apical, ventral points in lateral view; median lobe with complex structure, small branch extends from point of apical 1/3, apex of small branch with sharply bifurcate apophysis, median lobe with two acutely pointed lateral apophyses in addition to median longer apophysis (Figs 5E–J).

Etymology. The specific epithet is a Latinised adjective based on the Crosby code for the region of the type locality, Dunedin.

Distribution. New Zealand (South Island: DN; Fig. 16A)

Euglyptus elegans Broun, 1893

(Figs 6, 16)

Euglyptus elegans Broun, 1893a: 1412 (#2460). Type locality: Maketu, Hunua Range [AK].

Euglyptus elegans: RAFFRAY (1904: 550), RAFFRAY (1908: 52), RAFFRAY (1911: 14); HUTTON (1904: 176); HUDSON (1923: 364); NEWTON & CHANDLER (1989: 21); NOMURA & LESCHEN (2006: 247).

Euglyptus costifer Broun, 1893b: 166 (#2725). Type locality: Mount Pirongia [WO]; **syn. nov.**

Euglyptus costifer: RAFFRAY (1904: 550), RAFFRAY (1908: 52), RAFFRAY (1911: 14); HUTTON (1904: 176); HUDSON (1923: 364); NOMURA & LESCHEN (2006: 247).

Type material. *Euglyptus elegans*. HOLOTYPE: ♂, “[red-bordered disc] Type / 2460. / Hunua / New Zealand [with red underline] Broun Coll. Brit. Mus. 1922-482. / *Euglyptus elegans*” (BMNH, NHMUK015534121).

Euglyptus costifer. LECTOTYPE (by present designation): “[red-bordered disc] Type / 2725. / Pirongia / New Zealand [with red underline] Broun Coll. Brit. Mus. 1922-482. / *Euglyptus costifer* - / [yellow label] LECTOTYPE *Euglyptus costifer* Broun sel. D.S. Chandler ‘24” (BMNH, NHMUK015534120).

Additional material examined. **NEW ZEALAND: NORTH ISLAND:** **AK [Auckland]:** Kapa Bush Reserve, II-9-2010 20 m, D.S. Chandler, sift leaf litter along stream // Compared with type of Broun *Euglyptus costifer* 15 by Chandler [green label] (1 ♀; DSC). Waharau Regional Pk. nr. Waihihi Stream, 1.5 km W park entrance 56 m, IIII-13-2010, D.S. Chandler, sift leaf litter along stream // Compared with type of Broun *Euglyptus elegans* 15 by Chandler [green label] (1 ♂ genitalia dissected; DSC). Waitakere Ra Cascades 24 Jul 1979 // J.C. Watt and C. Gnanasunderam litter 79/85 (1 ♀; NZAC). Hunua Ranges Reg. Park, 7 km W Kaiua Workman Track, 116m, III-27-2010 D.S. Chandler, sift leaf litter near stream (1 ♀; DSC). Goldie Bush Scenic Res., Mokoroa Falls Track, 6 km W Waitakere, III-28-2010, 106m D.S. Chandler, rotten wood & branch debris (1 ♀ slide mounted; DSC). Murphys Bush, 39 m, 5 km NE Manukau, III-19-2010, D.S. Chandler & K.P. Puliafico (1 ♂; DSC). **BP [Bay of Plenty]:** Collector 14-3-1920 A. E. Brookes // Okauia Kaimai R. Matamata // A.E. Brookes Collection (1 ♂ genitalia dissected; NZAC). Orete Forest Te Puia Hut 13 Apr 1992 G. Hall // Litter 92/43 (2 ♂♂ 1 ♀; NZAC). Lottin Pt Rd Waenga Bush 16 Sep 1992 R.C. Henderson // Sifted litter 92/51 // Duplicate specimens in alcohol (1 ♀; NZAC).

Raukumara Ra Matu Rd, 600m 27 Feb 1979 B.M. May // Litter 79/35 (1 ♀; NZAC). Mt. Te Aroha, 2.5 km SE Te Aroha, 390 m Tui Road at Tui Creek Mt. Domain Track, II-15-2021, D.S. Chandler sift forest leaf litter (1 ♂; DSC). Mamaku Bush 11-1-31 // A.E. Brookes Collection (2 ♂♂, two cards mounted on one pin; NZAC). **CL [Coromandel]:** Gt Barrier I Mt Hobson Upper Kauri Dam 11 Apr 1982 // Moss and Litter 82/51 (1 ♂ genitalia dissected; NZAC). Tapu/Coroglen Rd smt, 21.11.95 // In forest litter (1 ♂; JTN). S. Coromandel Ra Headwaters of Grace Darling Stm 1 Dec 1988 // G.W. Ramsay Litter 88/1 // Duplicate specimens in alcohol (1 ♂ slide mounted; NZAC). **GB [Gisborne]:** East Cape Taikawakawa Bush 15 Apr 1992 G.Hall // Litter 92/45 (1 ♀; NZAC). **HB [Hawkes Bay]:** Balls Clearing 24 Jan 1985 J.G. Charles Litter (1 ♂ genitalia dissected, 1 ♂, 1 ♀; NZAC). **ND [Northland]:** Wairua Falls 8-5-21 // A.E. Brookes Collection (1 ♂; NZAC). Mataroa, main Trunk Line, N. IS. // Coll. J.Ford. 24-8-1917. // 2460 // *Euglyptus elegans* Broun. // A.E. Brookes Collection (1 ♂; NZAC). **RI [Rangitikei]:** Ruahine Ra Triplex 10 Feb 1980 C.F. Butcher // Litter 80/16 (1 ♂ genitalia dissected; NZAC). Ruahine Range Shuteye 9 Feb 1980 C. Butcher // Litter and moss 80/10 (1 ♀; NZAC). **TK [Taranaki]:** 1534 // Dawsons Falls 400m Egmont 2 Jan 90 (1 ♂ genitalia dissected; JTN). **TO [Taupo]:** Kaimanawa SF 26 Mar 1978 S.B. & J. Peck Litter // S. & J. Peck Collection (1 ♂ genitalia dissected; NZAC). Waikato-Waipakihi Junction, 32km S of Turangi, 915m 19 Feb 1979 // J.S. Dugdale mosses liverworts and litter 79/23 (1 ♂ genitalia dissected, 1 ♀; NZAC). Waikato-Waipakihi Junction 3km S of Turangi 915m // 19 Feb 1979 L.A. Nound Litter 79/22 (1 ♀; NZAC). **WN [Wellington]:** Tunnel Gully The Plateau 28-Oct-96 // In forest litter near stream (1 ♂; JTN). Days Bay 26.6.88 (1 ♂; JTN). Pakuratahi Forks 1 Jun 1992 (1 ♂ genitalia dissected; JTN). Johnson’s Hill Karori 21.7.88 (1 ♂ genitalia dissected; JTN). 1152 1/1 1950 R. Hornabrook (1 ♂ genitalia dissected, 4 ♀♀; NZAC). 1027 14/4 1949 R. Hornabrook (1 ♂ genitalia dissected; NZAC). Orongorongo Res. Stn 700’ 21.v.69 J.S. Dugdale // Litter (1 ♂; NZAC). Pakuratahi Forks Kaitoke 27-Apr-97 // In forest leaf litter (1 ♂ slide mounted; JTN). Akatarua Saddle 11 XI 2015 // Forest floor litter, broadleaf forest. J. Nunn (1 ♂ slide mounted; JTN). **WO [Waikato]:** mt. Pirongia King country. North Is. // Ex. Broun collection. // *Euglyptus costifer* Broun. // 2725 // T. Broun Colleion // A.E. Brookes Collection // Possible Broun SYNTYPE *Euglyptus Costifer* D.S. Chandler 2010 [green label] (2 ♀♀; NZAC). Mt. Pirongia Wharaurua, 854m 9 Jun 1977 B.M. May // Swept on grossy knob (1 ♂; NZAC). Wairangi, Waikato, Nichal, May - 31 [handwritten] (1 ♀; NZAC). **South Island:** **BR [Buller]:** Nelson Lks. NP, St. Arnaud Tr., L. Rotioiti 610-650m 24-26. iii.80 *Nothofagus* spp. A. Newton, M. Thayer // flight intercept (window) trap (1 ♂ genitalia dissected; FMNH). **NN [Nelson]:** 26-3-24 E.S. Gourlay. // E. S. Gourlay Aco. 1970 Ent. Div. (1 ♂ genitalia dissected; NZAC). Upper Maitai 3.5.50. E.S. Gourlay. (1 ♂ genitalia dissected 1 ♀, three individuals on one pointing and middle species not *Euglyptus*; NZAC). Upper Maitai. 13.2.57 E.S. Gourlay (1 ♀; NZAC). Upper Maitai. 11.3.49 E.S. Gourlay. // E. S. Gourlay Aco. 1970 Ent. Div. (1 ♀; NZAC). Dun Track 701m NN 3 Feb 62 E.S. Gourlay (1 ♂ genitalia dissected; NZAC). **SD [Marlborough Sounds]:** Tennyson Inlet, east side Duncan Bay, 30m 15.xii.1984-5.i.1985 podo.-*Nothofagus* for. A. Newton/M. Thayer 709 // flight intercept (window) trap (1 ♂; FMNH). Totaranui Saddle 27.9.51. E.S. Gourlay. [handwritten, illegible] (1 ♂ genitalia dissected; NZAC). **SI [Stewart Island]:** Codfish I 25 Nov 1981 B.A. Holloway // Under bark dead fallen *Dacrydium cupressinum* (1 ♂ genitalia dissected; NZAC).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.80–1.90 mm (forebody 1.30–1.40 mm), head and thorax densely punctate (distance between punctures approximately two punctures in diameter) (Fig. 6A); antennomere X wider than XI, widening to apex (Fig. 1E); pronotum gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with distinct median longitudinal sulcus and narrow transverse antebasal sulcus (Figs 1A, 6A–B); each elytron with discal stria remote from second inner fovea reaching posterior margin (Figs 1H, 6A); abdominal tergite V with distinct discal striae,

distance between discal striae narrow than discal striae of tergite IV (Fig. 1J); parameres dissimilar in length, left paramere curved toward middle in ventral view, in lateral view straight with apex abruptly directed ventrally, distinctly longer than right paramere; right paramere slender and sharply pointed, with short apophysis visible at base in lateral view; median lobe with apex fan-shaped, curved dorsally (Figs 6C–H).

Redescription. Body 1.80–1.90 mm (forebody 1.30–1.40

mm); head and thorax densely punctate (punctures separated as wide as diameter); head, thorax, and abdomen darkish-brown; elytra, leg, and antenna reddish-brown; tarsus and maxillary palpus yellowish-brown (Figs 1A–B, 6A).

Head wider than long, with large and distinct dorsal tentorial pits, strong impression around dorsal tentorial pits (Fig. 1E); temples gradually narrowing toward posterior margin of head capsule, with several setae; distance between antennal tubercles narrower than antennal tubercle

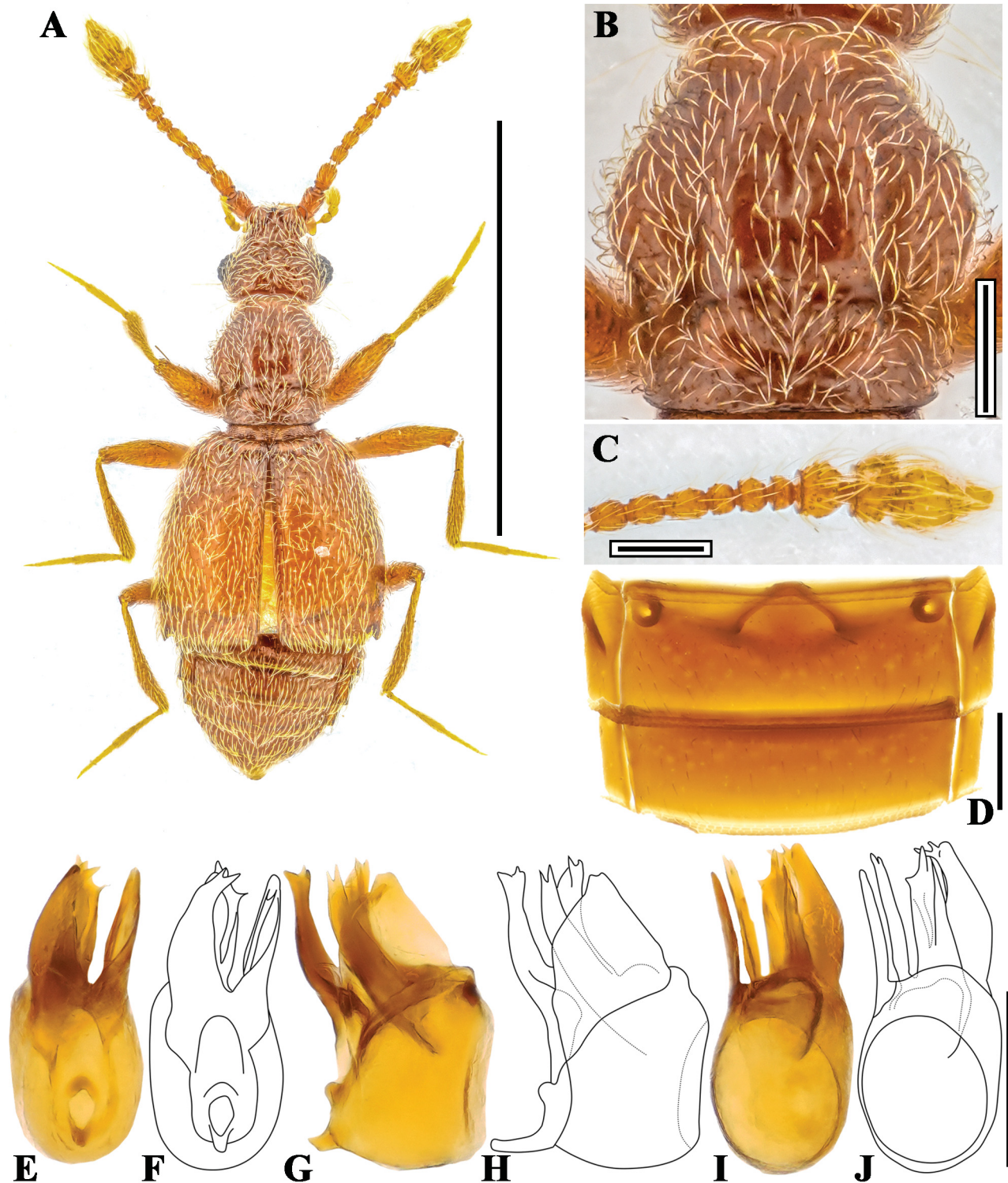


Fig. 7. *Euglyptus foveicollis* Broun, 1912. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

diameter (Fig. 1E). Pedicel longer and wider than antennomeres III–VIII, antennomeres III–VIII as long as wide, subrectangular or subquadrate, IX slightly wider than long, subhexagonal, X wider than XI (11 : 8), widening to apex (Fig. 1E).

Pronotum as long as head, slightly wider than long, narrowest at anterior margin, gradually widening from anterior margin to middle, widest in middle, slightly

narrowing from middle to posterior margin, with distinct median longitudinal sulcus and narrow transverse antebasal sulcus (Figs 1A, 6B).

Elytron with discal stria remote from second inner fovea reaching posterior margin (Figs 1A, H, 6A).

Abdominal tergite V with distinct discal striae (Fig. 1J).

Male genitalia. Parameres dissimilar in length, left paramere broadly curved to middle, apex sharply angled

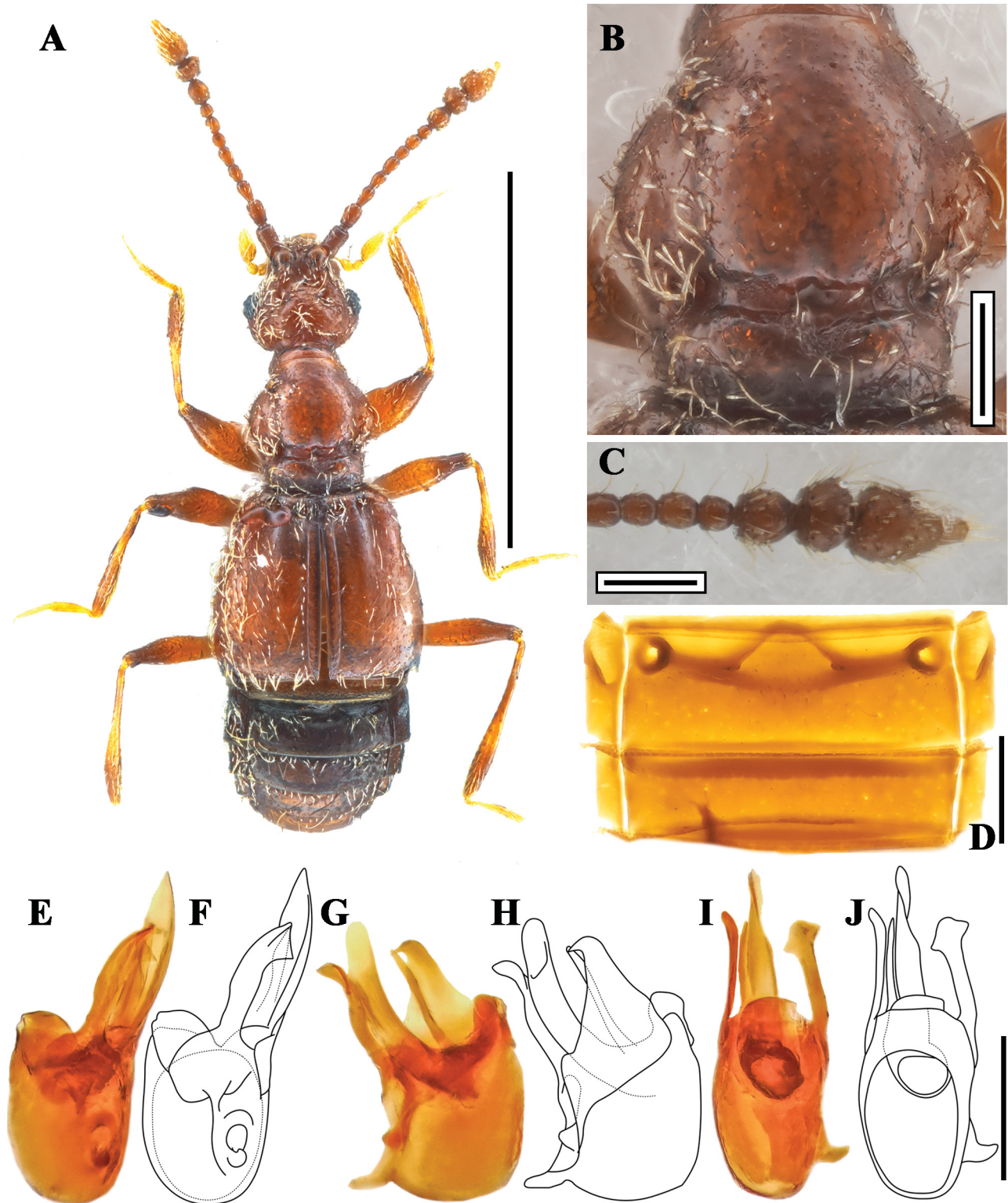


Fig. 8. *Euglyptus latefossatus* sp. nov. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

ventrally in lateral view; right paramere in ventral view slender and sinuate, apex sharp, directed laterally, with short apophysis at base visible in lateral view; median lobe abruptly expanded and recurved at apex, complex and curved dorsally (Figs 6C–H).

Distribution. New Zealand (North Island: AK, BP, CL, GB, HB, ND, RI, TK, TO, WN, WO, South Island: NN, SD, SI; Fig. 16B).

Comments to classification. *Euglyptus costifer* Broun, 1893b, syn. nov., is here placed as the junior synonym of

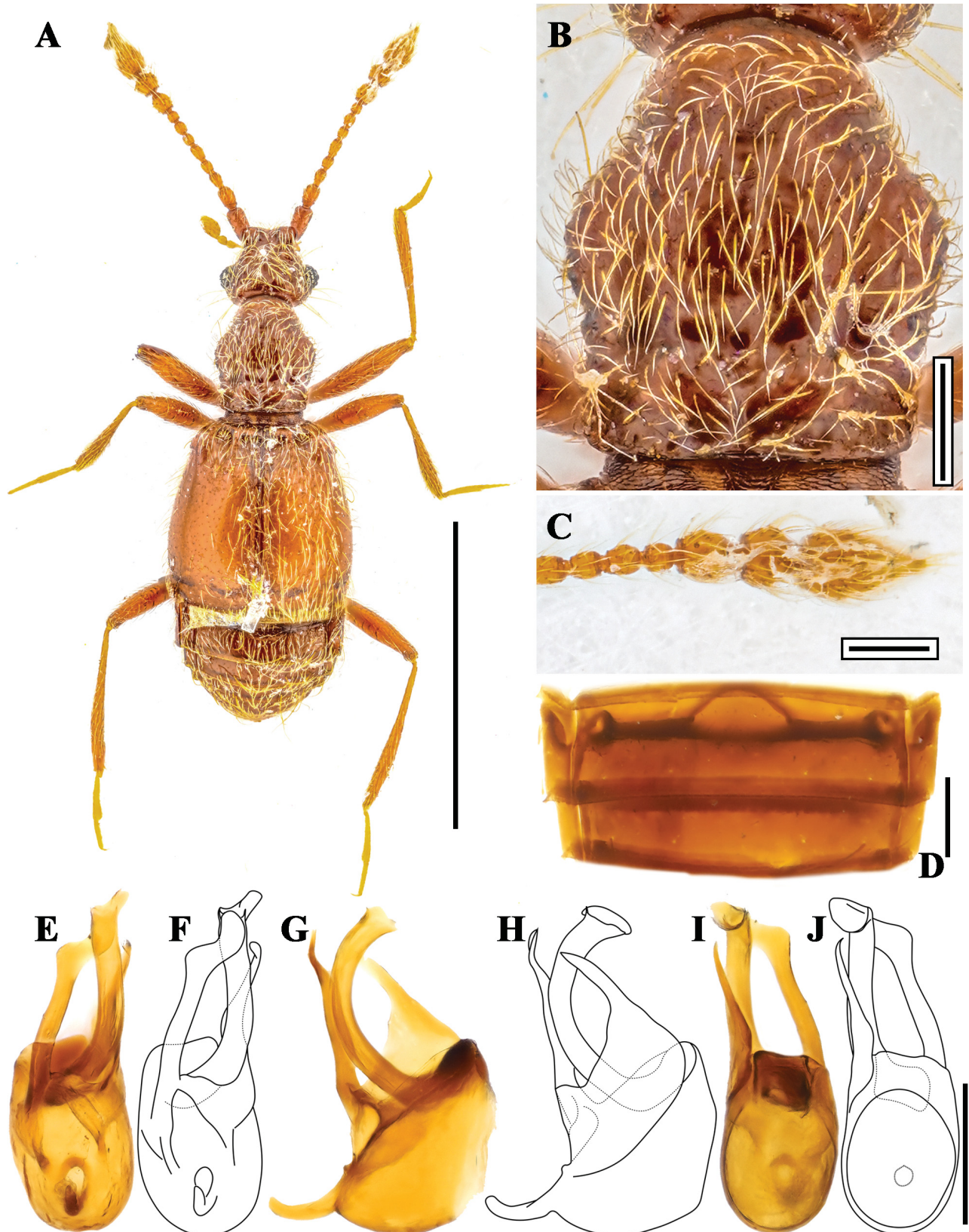


Fig. 9. *Euglyptus longicornis* Broun, 1912. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

E. elegans Broun, 1893a, based on examination of the types by D. S. Chandler. Additionally, as a result of comparing the original descriptions of both species, the separation of the two species was primarily based on sexual dimorphism due to the small eyes of the female for this genus.

***Euglyptus foveicollis* Broun, 1912**

(Figs 7, 16)

Euglyptus foveicollis Broun, 1912: 403 (#3196). Type locality: Retaruke, near Erua [TO].

Euglyptus foveicollis: HUDSON (1923: 364); NOMURA & LESCHEN (2006: 247).

Type material. HOLOTYPE: ♂, “[red-bordered disc] Type / 3196 / Retaruke / March 1910 / New Zealand [with red underline] Broun Coll. Brit. Mus. 1922-482. / *Microtyrus foveicollis*” (BMNH).

Additional material examined. NEW ZEALAND: NORTH ISLAND: GB [Gisborne]: L. Waikaremoana, Whareama Peninsula Dec 2004 FIT, Station 5 38.46°S, 177.02°E (1 ♂ slide mounted, 4 ♂♂ genitalia dissected, 3 ♂♂; NZAC). Te Urewera NP L. Waikaremoana December 2004 Station 3 FIT 38.44S, 177.02E (1 ♂ genitalia dissected, 1 ♂; NZAC). HB [Hawkes Bay]: Kaweka Ra Makahu Hut, 975m 13 Mar 1980 C.F. Butcher (1 ♂ genitalia dissected; NZAC). Puketitiri Little Bush 20 Feb 1986 T.H. Davies // Malaise trap (1 ♂ genitalia dissected; NZAC). Balls Clearing Scenic Reserve 21 Oct 1984 C.F. Butcher // Sifted litter and rotten wood 84/72 // Duplicate specimens in alcohol (1 ♂ slide mounted; NZAC). TO [Taupo]: Coll. T. Broun May. 1911 [handwritten] // Retaruke nr. Erua, N. Is. [handwritten] main Trunk. R. [handwritten] // 3190 [handwritten] // Thorax grooved [handwritten, unintelligible] // *Euglyptus foveicollis* Broun. Var. [handwritten] // A.B. Brookes Collection (1 ♂ genitalia dissected, 1 ♂; NZAC). Coll. H.S. Whitehorn May. 1911. [handwritten] // Retaruke nr. Erua N. Is. Main Trunk ♀ [handwritten] // 3196 var. [handwritten] // *Euglyptus foveicollis* Broun. [handwritten] // A.B. Brookes Collection (1 ♀; NZAC). Ohakune Waitonga Falls Track 4 Nov 2004 A C Eyles // Moss on ground & fallen branch Moss lichen bark live trees including Mountain beech (1 ♂ genitalia dissected; NZAC). Kaimanawa North Forest Park, 850m 11 Mar 1978 J.S. Dugdale // mosses 78/118 (1 ♂ genitalia dissected; NZAC). WO [Waikato]: Mt Karioi nr Smt 11 Oct 1981 C.F. Butcher Litter 81/94 (1 ♂ genitalia dissected; NZAC).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.41–1.51 mm (forebody 1.07–1.11 mm) (Fig. 7A); antennomere X as wide as XI, widening to apex (Fig. 7C); pronotum gradually widening from anterior margin to middle, widest in middle, slightly narrowing from middle to posterior margin, with shallow median longitudinal sulcus and transverse antebasal sulcus (Fig. 7B); both parameres similar in length, left paramere gradually narrowing to apex, with two small apical teeth in ventral view, right paramere formed as broad subtriangular plate in lateral view; median lobe with complex structure, elongated branch extends from point of apical 1/3, apex of branch with sharply bifurcate apophysis, median lobe forming cylindrical structure, apical margin somewhat pointed (Figs 7E–J).

Redescription. Body 1.41–1.51 mm (forebody 1.07–1.11 mm); head and thorax impunctate; head, thorax, abdomen, elytra, leg, and antenna reddish-brown, tarsus and maxillary palpus yellowish-brown (Fig. 7A).

Head wider than long, with small dorsal tentorial pits, impression around dorsal tentorial pits weakly defined; temples gradually narrowing toward posterior margin of head capsule, with several setae; impression between antennal tubercles narrower than diameter of antennal

tubercle. Pedicel wider than antennomeres III–VIII, antennomeres III–V longer than wide, subrectangular, VI–VII as long as wide, subquadrate, VIII smallest, IX slightly wider than long, subhexagonal, X as wide as XI (8 : 8), widening to apex (Figs 7A, C).

Pronotum wider than head, slightly longer than wide, narrowest at apex, gradually widening from anterior margin to middle, widest in middle, slightly narrowing from middle to posterior margin, with shallow median longitudinal sulcus and transverse antebasal sulcus (Fig. 7B).

Elytra and abdominal tergites without any distinguishing characters (Figs 7A, D).

Male genitalia. Both parameres similar in length, left paramere gradually narrowing to apex, with two small apical teeth in ventral view, right paramere formed as broad subtriangular plate in lateral view; median lobe with complex structure, elongated branch extends from point of apical 1/3, apex of branch with sharply bifurcate apophysis, median lobe forming cylindrical structure, apex margin somewhat pointed (Figs 7E–J).

Distribution. New Zealand (North Island: GB, HB, TO, WO; Fig. 16B).

***Euglyptus latefossatus* Byeon & Chandler, sp. nov.**

(Figs 8, 16)

Type material. HOLOTYPE: ♂ (genitalia dissected), “Lake Hauroko 1369 13/4 1952 R. Hornabrook [1369 13/4 1952 handwritten]” (NZAC, NZAC04261379). PARATYPES: NEW ZEALAND: SOUTH ISLAND: DN [Dunedin]: Mt Cargill, 400m 21 Oct 1981 J.C. Watt. Sifted litter 81/109 (1 ♂ slide mounted; NZAC). SD [Marlborough Sounds]: Tennyson Inlet, west side Te Mako Bay, 125m 15.xii.1984-5.i.1985 *Nothofagus-podo-hdwd*. A. Newton/M. Thayer 710 // flight intercept (window) trap (1 ♂ slide mounted, 1 ♂ genitalia dissected, aedeagus lost; FMNH). SL [Southland]: Princhester Base Hut, Takitimu Forest 4/6/07 // Washed soil sample beech forest 425 m (1 ♂ genitalia dissected, 2 ♀♀; JTN).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.43–1.47 mm (forebody 1.07–1.09 mm) (Fig. 8A); antennomere X wider than long, widest at apex, as wide as XI (Fig. 8C); pronotum gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with shallow median longitudinal sulcus, broad transverse antebasal sulcus connecting median antebasal fovea to lateral antebasal foveae (Fig. 8B); both parameres similar in length, both slightly curved to apex, left paramere moderately wide, curving to right apically to form broadly truncate apex, in dorsal view with apex expanded to form large lateral and median tubercles, in lateral view with apex abruptly curved to acute point, right paramere in ventral view with thin acutely pointed apophysis evenly narrowing to apex, apex slightly curved ventrally in lateral view; median lobe longer than parameres, with elongate and acutely pointed apophysis extending from base, median lobe with major portion of even width in lateral view, forming laterally flattened lobe with apical part slightly twisted (Figs 8E–J).

Description. Body 1.43–1.47 mm (forebody 1.07–1.09 mm); head and thorax impunctate; head, thorax, elytra, abdomen, antennae, and leg reddish-brown; tibia, tarsus, and maxillary palpus lighter (Fig. 8A).

Head as wide as long, with small dorsal tentorial pits, impression weakly defined around dorsal tentorial pits; temples gradually narrowing toward posterior margin of head capsule, with several setae; impression between antennal tubercles narrow, width of impression approximately 0.7 times as wide as antennal tubercle diameter. Pedicel wider than antennomeres III–VIII, antennomeres III longer than wide, IV as long as wide, V longer than wide, VI as long as wide, VII slightly larger than VI, VIII smallest, IX as long as wide, subhexagonal, X wider than long, widest

at apex, as wide as XI (Figs 8A, C).

Pronotum wider than head, longer than wide, narrowest at apex, gradually widened from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with shallow median longitudinal sulcus and transverse antebasal sulcus (Fig. 8B).

Elytra and abdominal tergites without any distinguishing characters (Figs 8A, D).

Male genitalia. Both parameres similar in length, both slightly and broadly curved to apex, left paramere in vent-

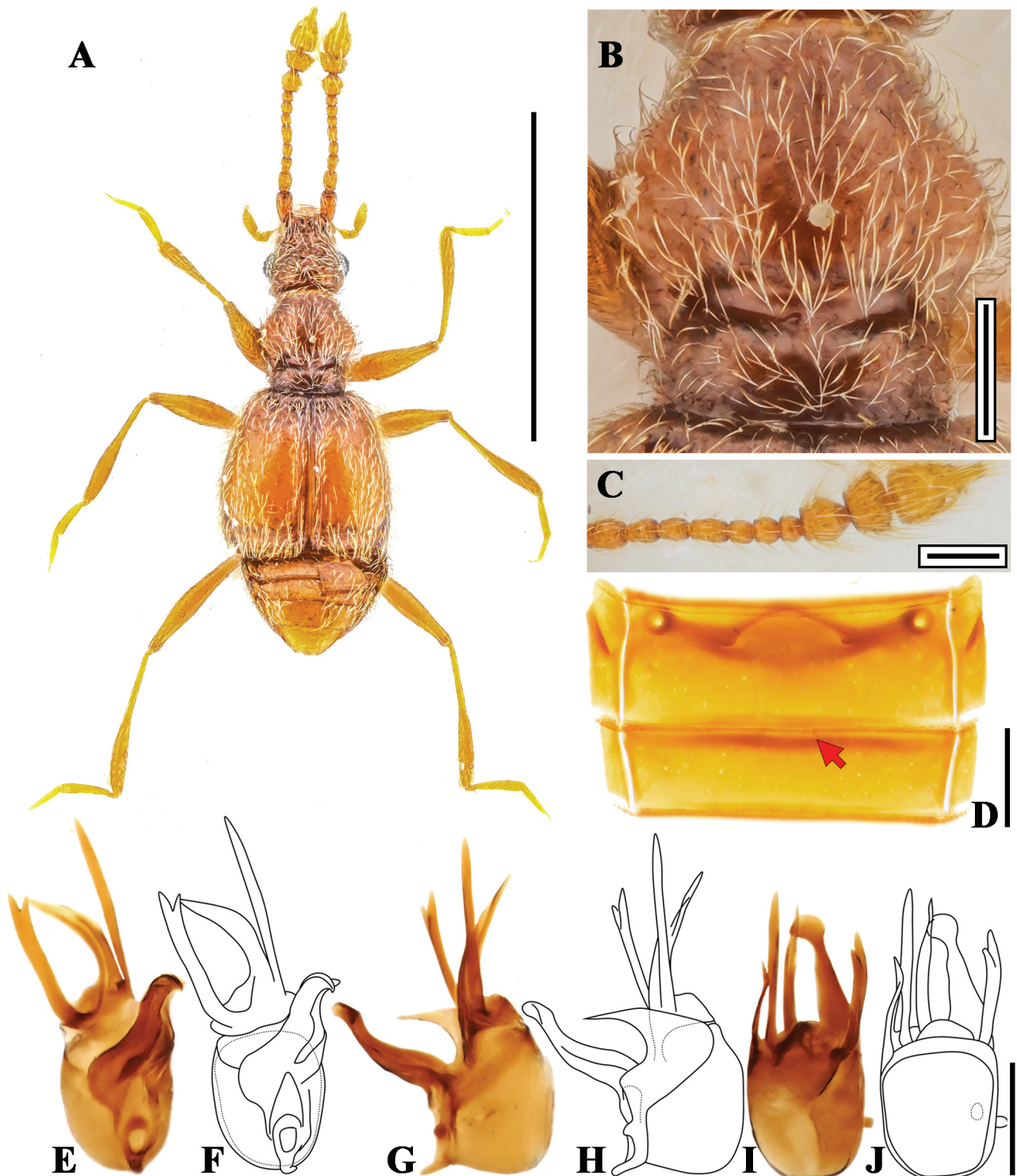


Fig. 10. *Euglyptus parvus* sp. nov. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

ral view slightly curved to right, forming elongate neck with broadly truncate apex, in lateral view subtriangular, apically narrowing abruptly deflexed and acute point, right paramere thin and elongate with acutely pointed apex, apex slightly curved ventrally in lateral view; main portion of median lobe longer than parameres, with elongate and acutely pointed dorsal apophysis extending from base, larger portion laterally flattened, moderately wide and of evenly decreasing width to broadly rounded apex, apex slightly twisted in dorsal view (Figs 8E–J).

Etymology. The specific epithet is an adjective combining the Latin words *latus*, *-a*, *-um* (“broad”) and *fossa*, *ae*, *f* (“ditch”) referring to the broad transverse antebasal sulcus of the pronotum.

Distribution. New Zealand (South Island: DN, FD, SD, SL; Fig. 16B).

Euglyptus longiceps Broun, 1921

(Fig. 16)

Euglyptus longiceps Broun, 1921: 604. Type locality: Waimarino, Main Trunk Railway.

Euglyptus longiceps: NOMURA & LESCHEN (2006: 247).

Type material. HOLOTYPE: ♀, “4168. ♀ / Waimarino Jany. 1909 / New Zealand [with red underline] Broun Coll. Brit. Mus. 1922-482. / *Euglyptus longiceps*. ♀ / [white label] HOLOTYPE *Euglyptus longiceps* Broun '17 det. DSChandler” (BMNH, NHMUK015534119).

Comments to classification. This species was identified using photographs of the type specimen deposited in the National History Museum in London. According to the original description, *E. longiceps* is similar to *E. sublaevis* but differs in the color of the elytra, elytral carinae, and the shapes of the head and thorax, and it has smaller eyes. When compared to *E. costifer* it has larger eyes and body size, with noted differences in the joints of the antenna and leg. Photographic comparisons show that *E. longiceps* has larger eyes than *E. costifer*, along with slight morphological differences. The punctures on the prothorax appear slightly larger in *E. costifer*, and while the temples narrowing toward the posterior margin, in *E. longiceps* is somewhat straight, whereas in *E. costifer* is slightly rounded. The small eye size is a characteristic of females in the genus *Euglyptus*, which corresponds with this species being described as a female. This evidence suggests that *E. longiceps* is a different species from *E. elegans* (= *E. costifer*) and *E. sublaevis*. As the type specimen of *E. longiceps* was not physically favorably compared with the material at hand, its taxonomic status remains unchanged. To accurately place this species, additional collections from the type locality together with morphological comparisons and anatomical study of the types are needed to be certain of placement.

Distribution. New Zealand (North Island: TO; Fig. 16C).

Euglyptus longicornis Broun, 1912

(Figs 9, 15)

Euglyptus longicornis Broun, 1912: 404. Type locality: Raurimu [TO].

Euglyptus longicornis: HUDSON (1923: 364); NOMURA & LESCHEN (2006: 247).

Type material. HOLOTYPE: ♂, “[red-bordered disc] Type / 3197 / Raurimu

/ Jany 1910 / New Zealand [with red underline] Broun Coll. Brit. Mus. 1922-482. / *Microtyrus longicornis*” (BMNH).

Additional material examined. NEW ZEALAND: NORTH ISLAND: WN [Wellington]: Tararua Forest Park Waiotauru Rd 1 Jun 1999 E. Spurr (1 ♂ genitalia dissected; NZAC). Tararua Forest Park Waiotauru Rd 18 May 1999 E. Spurr (1 ♂ abdomen lost; NZAC). Tararua Forest Park off Waiotauru Rd 11 Aug 1998 E. Spurr (1 ♂ slide mounted; NZAC). SOUTH ISLAND: NN [Nelson]: Upper Maitai 7-3-49 E.S.Gourlay. [7-3-49 handwritten] (1 ♂ genitalia dissected; NZAC). Slaters Road, 0.7km s Whangamoa Saddle, 410m 13.xii.1984-4.i.1985 *Nothofagus* spp forest A.Newton/M.Thayer 703 // flight intercept (window) trap (3 ♂♂ genitalia dissected; FMNH). SD [Marlborough Sounds]: Tennyson Inlet, east side Duncan Bay, 30m 15.xii.1984-5.i.1985 podo.-*Nothofagus* for. A.Newton/M.Thayer 709 // flight intercept (window) trap (1 ♂ slide mounted; DSC).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.31–1.41 mm (forebody 0.99–1.03 mm) (Fig. 9A); antennomere XI slightly wider than X, subhexagonal (Fig. 9C); pronotum gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with broad median longitudinal sulcus and transverse antebasal sulcus, with short median antebasal carina from transverse antebasal sulcus to base (Fig. 9B); both parameres similar in length, elongate, left paramere slightly curved medially to broadly rounded apex, with smooth margin in ventral view, right paramere broad at base, abruptly narrowing toward to near apex to form elongate acute point, slightly angled ventrally in lateral view; median lobe longer than parameres, broadly and evenly curved dorsally to truncate apex in lateral view, apex deflexed anteriorly in dorsal view (Figs 9E–J).

Redescription. Body 1.31–1.41 mm (forebody 0.99–1.03 mm); head and thorax impunctate; head, thorax, abdomen, and antennal scape darkish-brown, elytra, leg, pedicel, and antennomeres III–XI reddish-brown, tarsus and maxillary palpus yellowish-brown (Fig. 9A).

Head slightly wider than long, with small dorsal tentorial pits, impression around dorsal tentorial pits weakly defined; temples gradually narrowing toward posterior margin of head capsule, with several setae; impression between antennal tubercles as wide as antennal tubercle diameter. Pedicel wider and longer than antennomeres III–VIII, V longer than III–IV, VI–VIII subretangular, VI–VII slightly longer than wide, VIII as long as wide, IX–X as long as wide, subhexagonal, XI slightly wider than X (Figs 9A, C).

Pronotum as wide as head, slightly longer than wide, narrowest at apex, gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with broad median longitudinal sulcus and transverse antebasal sulcus, with short median antebasal carina extending from transverse antebasal sulcus to posterior margin (Fig. 9B).

Elytra and abdominal tergites without any distinguishing characters (Figs 9A, D).

Male genitalia. Both parameres similar in length, elongate, left paramere slightly curved medially to broadly rounded apex, with smooth margin in ventral view, right paramere broad at base, abruptly narrowing toward to near

apex to form elongate acute point, slightly angled ventrally in lateral view; median lobe longer than parameres, broadly and evenly curved dorsally to truncate apex in lateral view, apex deflexed anteriorly in dorsal view (Figs 9E–J).

Distribution. New Zealand (North Island: WN, South Island: NN, SD; Fig. 16A).

***Euglyptus parvus* Byeon & Chandler, sp. nov.**

(Figs 10, 16)

Type material. HOLOTYPE: ♂ (genitalia dissected), “NEW ZEALAND NN Mt Arthur area Flora Saddle 23-III-2011 // sifted moss sample” (JTN). PARATYPES. **NEW ZEALAND: SOUTH ISLAND: BR [Buller]:** 0.8kmN Bullock Ck nr. Punakaiki 50m 23.iii.80 broadlf-nikau palm-podocp. A.Newton/M.Thayer // berl., leaf & log litter, forest floor (1 ♂ slide mounted; FMNH). **MC [Mid Canterbury]:** Arthurs Pass 21-Jan-99 // In moss (1 ♂ genitalia dissected; JTN). **WD [Westland]:** 1.8km n Punakaiki, 80m 19.xii.1984-20.i.1985 hwd. for. With nikau A.Newton/M.Thayer 718 // flight intercept (window) trap (1 ♂ slide mounted, 2 ♂♂ genitalia dissected; FMNH). 1.5km n Punakaiki, 50m 19.xii.1984-20.i.1985 2° hwd.-nikau forest A.Newton/M.Thayer 720 // flight intercept (window) trap (1 ♂ genitalia dissected; FMNH).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.02–1.14 mm (forebody 0.86–0.89 mm) (Fig. 10A); antennomere X wider than long, widest at apex, as wide as XI (8 : 8) (Fig. 10C); pronotum gradually widening from anterior margin to anterior 1/3 of pronotum length, here widest, gradually narrowing from anterior 1/3 to posterior margin, with shallow median longitudinal sulcus and broad transverse antebasal sulcus (Fig. 10B); abdominal tergite V with short, shallow discal striae, width between discal striae relatively wide (Fig. 10D); parameres strongly curved ventrally, dissimilar in length, left paramere sinuate with apex curved to right in ventral view, right paramere directed ventrally, abruptly narrowing to acutely pointed apex in lateral view; median lobe longer than parameres, trifurcate at base, apex of left apophysis briefly bifurcate, middle and right apophysis simple with sharp apex, right apophysis longest in ventral view (Figs 10E–J distorted, rotated anterodorsally).

Description. Body 1.02–1.14 mm (forebody 0.86–0.89 mm); head, thorax impunctate; head, thorax, elytra, abdomen, antennal scape, pedicel, antennomeres III–VIII, leg yellowish-brown, tarsus, maxillary palpus, antennomeres IX–XI lighter than yellowish-brown (Fig. 10A).

Head slightly longer than wide, with small dorsal tentorial pits, weak impression around dorsal tentorial pits; temples gradually narrowing toward posterior margin of head capsule, with several setae; impression between antennal tubercles narrow, width of impression approximately 0.8 times as wide as antennal tubercle diameter. Pedicel wider than antennomeres III–VIII, antennomeres III–V longer than wide, subrectangular, VI–VIII as long as wide, subquadrate, IX as long as wide, subhexagonal, X wider than long, widest at apex, as wide as XI (Figs 10A, C).

Pronotum slightly wider than head, slightly longer than wide, narrowest at apex, gradually widening from anterior margin to 1/3 anterior, widest at 1/3 anterior, gradually narrowing from 1/3 anterior to posterior margin, with shallow median longitudinal sulcus and broad transverse

antebasal sulcus (Fig. 10B).

Elytra without any distinguishing characters (Fig. 10A).

Abdominal tergite V with short, shallow discal striae (Fig. 10D; arrow).

Male genitalia. Both parameres directed ventrally, dissimilar in length, left paramere sinuate with apex curved to right in ventral view, with apex medially lobed in dorsal view, right paramere directed ventrally, abruptly narrowing to acutely pointed apex in lateral view; median lobe longer than parameres, trifurcate at base, left apophysis apex briefly bifurcate, middle and right apophyses simple with sharp apex, right apophysis longest in ventral view (Figs 10E–J distorted, rotated anterodorsally).

Etymology. The specific epithet is the Latin adjective *parvus* (‘small’) and refers to the small body size of this species.

Distribution. New Zealand (South Island: BR, MC, NN, WD; Fig. 16A).

***Euglyptus punctatosimilis* Byeon & Chandler, sp. nov.**

(Figs 11, 16)

Type material. HOLOTYPE: ♂ (genitalia dissected), “Rarangi Marl. 2.ix.69 G. Kuschel // 69/149” (NZAC, NZAC04261157). PARATYPES: **NEW ZEALAND: NORTH ISLAND: WN [Wellington]:** Keith George Res Silverstream 18-IV-1982 (2 ♂♂ genitalia dissected; JTN). Elsdon camp Porirua 29.5.87 T.Nunn [handwritten] // leaf litter [handwritten] (1 ♂ genitalia dissected; JTN). 614 // Tinakori Hill Wellington 27.5.87 T.Nunn // Ant: Mesoponera // Associated ant (1 ♂ ant card mounted on second card, genitalia dissected; JTN). 614 // Karori Reservoir 16-Oct-94 // In forest leaf litter (1 ♂ genitalia dissected; JTN). Karori Reservoir 13-Apr-97 // Under embedded rock (1 ♂ genitalia dissected; JTN). Johnson’s Hill Karori 17.7.88 [handwritten] (1 ♂ slide mounted; JTN). **SOUTH ISLAND: KA [Kaikoura]:** Okarahia Stm Hundalees 25-Sep-97 (1 ♂ genitalia dissected; JTN). Mt Fyffe, Hinau Tk, 5 Apr 2004, R. Leschen, RL846, 42.01°S, 173.35°E” (1 ♀; NZAC). **NN [Nelson]:** Slaters Road, 0.7km s Whangamoia Saddle, 410m 13.xii.1984-4.i.1985 *Nothofagus* spp forest A.Newton/M.Thayer 703 // flight intercept (window) trap (1 ♂ genitalia dissected, 1 ♂; FMNH). **SD [Marlborough Sounds]:** same locality as holotype // Litter (1 ♂ genitalia dissected, 1 ♂ slide mounted; NZAC).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.37–1.41 mm (forebody 1.07–1.09 mm) (Fig. 11A); antennomere X wider than long, subpentagonal, slightly narrower than XI (Fig. 11C); pronotum gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with median longitudinal sulcus and transverse antebasal sulcus, with short median antebasal carina from median antebasal impression to posterior margin (Fig. 11B); both parameres similar in length, left paramere apex expanded and curved to right in ventral view, right paramere gradually narrowing toward apex, slightly curved ventrally in lateral view to pointed apex; median lobe longer than parameres, curved dorsally, with serrate structure near apex, apex slightly curved laterally (Figs 11E–J).

Description. Body 1.37–1.41 mm (forebody 1.07–1.09 mm); head and thorax impunctate; head, thorax, abdomen, and antennal scape reddish-brown; elytra, leg, pedicel, and antennomeres III–XI lighter; tarsus and maxillary palpus yellowish-brown (Fig. 11A).

Head as wide as long, with small dorsal tentorial pits,

impression weakly defined around dorsal tentorial pits; temples gradually narrowing toward posterior margin of head capsule, with several setae; impression between antennal tubercles broad, width of impression approximately as wide as diameter of one antennal tubercle. Pedicel wider than antennomeres III–VIII, antennomeres III–V subrectangular, V longer than wide, VI as long as wide, VII slightly larger than VI, VIII smallest, IX as long as wide, subhexagonal, X wider than long, subpentagonal, slightly narrower than XI (Figs 11A, C).

Pronotum as wide as head, as long as wide, narrowest at apex, gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle

to posterior margin, with median longitudinal sulcus and transverse antebasal sulcus, with short median antebasal carina extending from median antebasal impression to base (Fig. 11B).

Elytra and abdominal tergites without any distinguishing characters (Figs 11A, D).

Male genitalia. Both parameres similar in length, apex of left paramere expanded and curved to right in ventral view, right paramere gradually narrowing toward apex, apex curved ventrally in lateral view; median lobe longer than parameres, curved dorsally, with serrate structure near apex, apex slightly curved laterally (Figs 11E–J).

Etymology. The specific epithet refers to similarly punctate

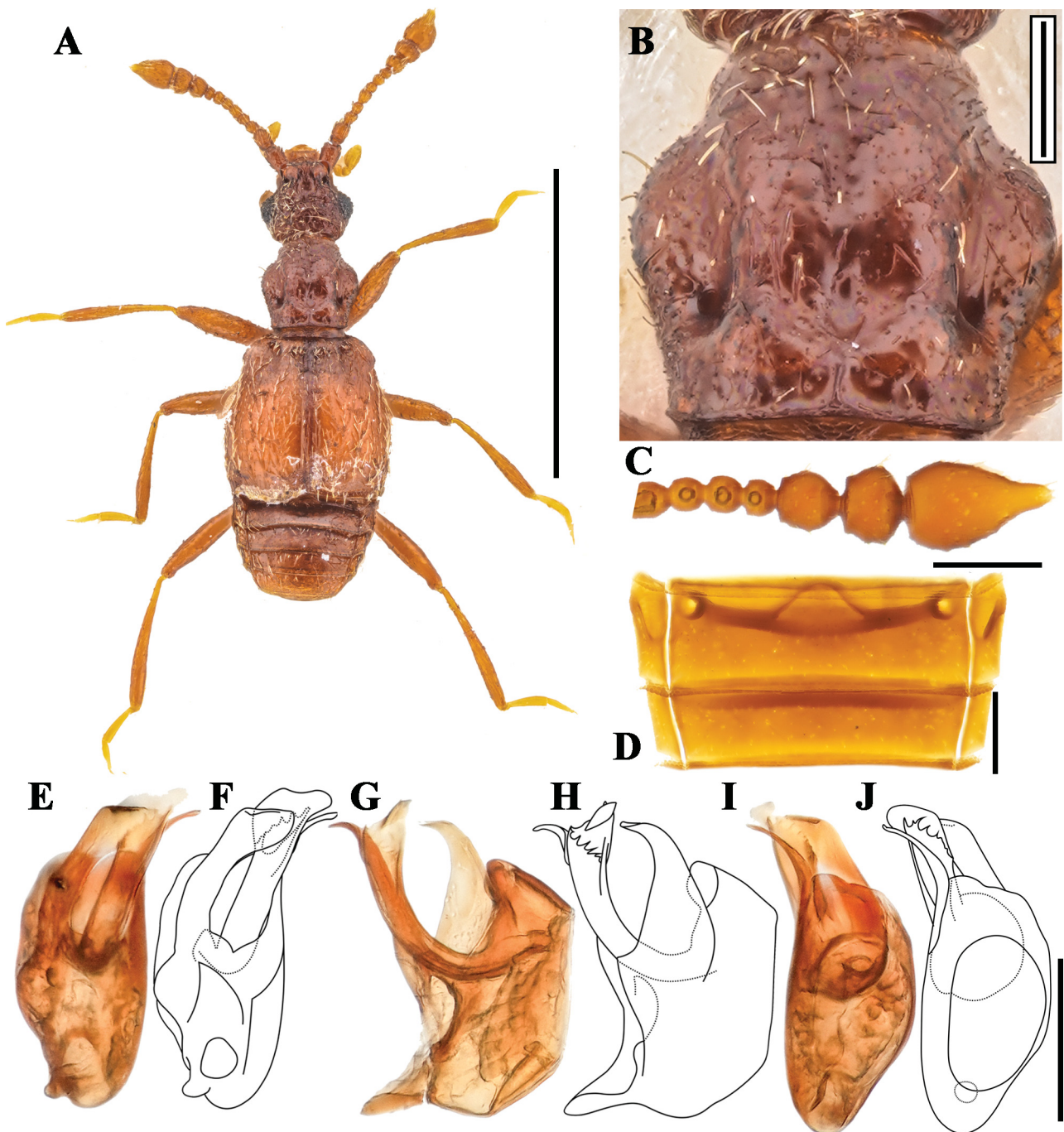


Fig. 11. *Euglyptus punctatosimilis* sp. nov. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

species, *Euglyptus punctatus*, being composed of Latin words *punctatus* (-a, -um) and *similis* (-is, -e); an adjective. **Distribution.** New Zealand (North Island: WN, South Island: KA, NN, SD; Fig. 16C).

Euglyptus punctatus (Broun, 1893)

(Figs 12, 16)

Microtyrus punctatus Broun, 1893a: 1413 (#2461). Type locality: Maketu, Hunua Range [AK].

Microtyrus punctatus: HUTTON (1904: 176); HUDSON (1923: 364); KUSCHEL (1990: 28); NEWTON & CHANDLER (1989: 21).

Euglyptus punctatus: RAFFRAY (1904: 550), RAFFRAY (1908: 52), RAFFRAY (1911: 14); NOMURA & LESCHEN (2006: 247).

Euplectus iracundus Broun, 1893a: 1429 (#2481). Type locality: Maketu, Hunua Range [AK]; **syn. nov.**

Euplectus iracundus: RAFFRAY (1908: 88), RAFFRAY (1911: 35); HUTTON (1904: 180); HUDSON (1923: 366).

Microtyrus iracundus: KUSCHEL (1990: 28).

Euglyptus iracundus: NOMURA & LESCHEN (2006: 247).

Type material. *Microtyrus punctatus*. LECTOTYPE (by present designation): “[red-bordered disc] Type / 1977 / Hunua (Maketu) / New Zealand [with red underline] Broun Coll. Brit. Mus. 1922-482. / *Microtyrus punctatus*.” (BMNH, NHMUK015009957).

Euplectus iracundus. HOLOTYPE: ♀, “[red-bordered disc] Type / Hunua Maketu / New Zealand [with red underline] Broun Coll. Brit. Mus. 1922-482. / *Microtyrus iracundus* [sic]” (BMNH).

Additional material examined. **NEW ZEALAND: NORTH ISLAND: AK [Auckland]:** Mt. William Scenic Reserve, Kauri Ridge Track, 3.2 km N Pokeno 94m, III-29-2010 D.S. Chandler, sift kauri podocarp, & etc. forest litter // Compared with type of Broun *Euplectus iracundus* ♀ by DSChandler [green label] (7 ♂♂ 4 ♀♀; DSC). Waitakere Ranges Reg. Pk., Upper Huia Reser. Track, II-28-2010, 4.3 km SW Waiatarua 277 m, D.S. Chandler, sift forest litter (5 ♂♂ 1 ♀; DSC / 1 ♂; NZAC). Ex. Broun Collection. [handwritten] // Hunua Rg., Maketu. Auckland. // 2481. // *Euglyptus iracundus* Broun. [handwritten] // T. Broun Collection // A.E. Brookes Collection (2 ♀♀; NZAC). 2461 [handwritten] // T. Broun Collection // A.E. Brookes Collection // Possible Broun SYNTYPE *Microtyrus punctatus* D S Chandler 2010 [green label] (2 ♂♂; NZAC). **BP [Bay of Plenty]:** Papatea 18 Oct 1992 J.S. Dugdale // Sifted litter 92/66 (2 ♀♀; NZAC). Papatea 19 Oct 1992 J.S. Dugdale // Sifted litter 92/66 (1 ♂ slide mounted, 2 ♂♂ genitalia dissected; NZAC). Papatea 15 Sep 1992 G. Hall & R.C. Henderson // Sifted litter 92/48 (1 ♂ genitalia dissected, 1 ♀; NZAC). Papatea 5 Nov 1993 R.C. Henderson Litter 93/116 (1 ♂; NZAC). Papatea 19-22 Sep 1992 J.S. Dugdale Malaise trap (1 ♂; NZAC). Mt. Te Aroha, 3 km E Te Aroha, Dog Kennel Flat Track, 850 m, II-15-2010, D.S. Chandler (4 ♂♂ 1 ♀; DSC). Lottin Pt Rd Waenga Bush 16 Sep 1992 G.M. Barker (1 ♂; NZAC). **CL [Coromandel]:** Mt Moehau 7 Nov 1978 B.M. May moss 78/276 (1 ♂ slide mounted; NZAC). **RI [Rangitikei]:** Pohangina Valley Totara Reserve 24 Dec 1980 J.C. Watt // Litter 80/164 (1 ♀; NZAC). **TK [Taranaki]:** Mt Messenger 610' Taranaki 24.xi.68. J.S. Dugdale (1 ♀; NZAC). **WA [Wairarapa]:** Castlehill / Haunu area, SE Puketoi Ra March 2010 (1 ♂ genitalia dissected; JTN). **WN [Wellington]:** Orongorongo Res. Stn Well. // 21 May 69 J.S. Dugdale (1 ♂ genitalia dissected; NZAC). Pakuratahi Forks Kaitoke 27-Apr-97 // In forest leaf litter (1 ♂; JTN). Pakuratahi Forks Kaitoke, 1.8.93 // In decayed wood (1 ♂ genitalia dissected; JTN). Greens Road Tiritea 2-Jun-04 // In rewarewa litter on stream terrace (1 ♂; JTN). Rimutuka Summit Tk, 15 Apr 2005, R. Leschen, C. McGuinness, // leaf litter, *Nothofagus*, Mahoe, RL974, 41.06S, 175.13E (1 ♂; NZAC). Tinakori Hill Wellington, 5.9.94 // In bole of dead fivefinger // 614 (1 ♂ genitalia dissected; NZAC). nikau Res Paraparumu 23.4.88 (1 ♂ genitalia dissected; JTN). Wilton Bush 25.5.92 (1 ♂ genitalia dissected; JTN). Kaitoke 17.7.88 (1 ♂; JTN). Wilton Bush Wellington 3.7.88 (1 ♂ genitalia dissected; JTN). **WO [Waikato]:** Te Kauri Scenic Res. Nr Kawhia 20 Sep 1981 C.F. Butcher // litter 81/89 (1 ♀; NZAC). Herangi Ra, 500m, above Mangatua Saddle 9 Dec 1982 // J.S. Dugdale Litter 82/136 (1 ♂ genitalia dissected; NZAC). **SOUTH ISLAND: NN [Nelson]:** Upper Maitai 13.2.57 E.S. Gourlay (1 ♂ genitalia

dissected, 1 ♂; NZAC). Upper Maitai, 3.V.1950 E.S. Gourlay leg. (1 ♂ genitalia dissected; NZAC). Slaters Road, 0.7km s Whangamoia Saddle, 410m 13.xii.1984-4.i.1985 *Nothofagus* spp forest A. Newton/M. Thayer 703 // flight intercept (window) trap (1 ♂ genitalia dissected; FMNH). **SD [Marlborough Sounds]:** Tennyson Inlet, east side Duncan Bay, 30m 15.xii.1984-5.i.1985 podo-*Nothofagus* for. A. Newton/M. Thayer 709 // flight intercept (window) trap (3 ♂♂ genitalia dissected; FMNH). Tennyson Inlet, west side Te Mako Bay, 125m 15.xii.1984-5.i.1985 *Nothofagus*-podo-hdwd. A. Newton/M. Thayer 710 // flight intercept (window) trap (1 ♂; DSC / 1 ♂ genitalia dissected; FMNH). D'Urville I Kapowai Apr 1971 F. Alack // Litter 71/101 (1 ♂; NZAC). **Unknown:** 31.viii.51. moa woodholm ni-. N.I. P182 [handwritten, illegible] (1 ♂; NZAC).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.16–1.26 mm (forebody 0.94–0.98 mm) (Fig. 12A); head punctate (Fig. 12A); antennomere X as long as wide, subhexagonal, XI wider than X (Fig. 12C); pronotum gradually narrowing from middle to posterior 1/3, slightly narrowing from posterior 1/3 to posterior margin, with broad, shallow median longitudinal sulcus and broad transverse antebasal sulcus, with median antebasal carina extending from median antebasal impression to posterior margin (Fig. 12B); both parameres similar in length, angled ventrally, left paramere elongate and narrow, apex angled to right in ventral view, right paramere gradually narrowing to pointed apex, curved ventrally in lateral view; median lobe distinct, slightly sinuate, longer than parameres, evenly curving dorsally in lateral view, apical margin thin and fan-shaped (Figs 12E–J).

Redescription. Body 1.16–1.26 mm (forebody 0.94–0.98 mm); head, thorax, abdomen, and antennal scape reddish-brown; elytra, leg, pedicel, and antennomeres III–VIII lighter; tarsus, maxillary palpus, and antennomeres IX–XI yellowish-brown (Fig. 12A).

Head wider than long, with small dorsal tentorial pits, impression weakly defined around dorsal tentorial pits; temples gradually narrowing toward posterior margin of head capsule, posterolaterally prominently angulate, with several setae; impression between antennal tubercles as wide as antennal tubercle diameter. Pedicel wider and longer than antennomeres III–VIII, antennomeres III–VIII as long as wide, subquadrate, VI and VIII smaller than others, IX–X as long as wide, subhexagonal (Figs 12A, C).

Pronotum as wide as head, slightly wider than long, narrow at apex, gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior 1/3, slightly narrowing from posterior 1/3 to posterior margin, with broad, shallow median longitudinal sulcus and broad transverse antebasal sulcus, with median antebasal carina extending from median antebasal impression to posterior margin (Fig. 12B).

Elytra and abdominal tergites without any distinguishing characters (Figs 12A, D).

Male genitalia. Both parameres similar in length, angled ventrally, left paramere elongate and narrow, apex angled to right in ventral view, right paramere gradually narrowing to pointed apex, curved ventrally in lateral view; median lobe distinct, slightly sinuate, longer than parameres, evenly curving dorsally in lateral view, apical margin thin and fan-shaped (Figs 12E–J).

Comments to classification. *Euglyptus iracundus* (Broun, 1893a) syn. nov. is placed as the junior synonym of *E. punctatus* (Broun, 1893a) based on the examination of types by D. S. Chandler. As both species were proposed in the same paper by BROUN (1893a), the synonymy is proposed as first revisers act.

Distribution. New Zealand (North Island: AK, BP, RI, TK, WA, WN, WO, South Island: NN, SD; Fig. 16A).

***Euglyptus robertensis* Byeon & Chandler, sp. nov.**

(Figs 13, 16)

Type material. HOLOTYPE: ♂ (genitalia dissected), “NEW ZEALAND: BR, Nelson Lks.N.P., n slope Mt. Robert, Pinchgut Track 1290m, 18-26.xii.1984 *Noth. sol.* elfin for. A.Newton/M.Thayer 716 // flight intercept (window) trap” (NZAC, NZAC04261274). PARATYPES: **NEW ZEALAND: SOUTH ISLAND: BR [Buller]:** Nelson Lks.N.P., n slope Mt. Robert, Pinchgut Track 950m, 14.xii.84-6.i.85 *Nothofagus* spp. forest A.Newton/M.Thayer 707 // flight intercept (window) trap (1 ♂ slide mounted, 1 ♂ genitalia dissected; FMNH). Nelson Lks.N.P., n slope Mt. Robert, Pinchgut Track 1290m, 18-26.xii.1984 *Noth. sol.* elfin for. A.Newton/M.Thayer 716 // flight intercept (window) trap (1 ♂ genitalia dissected, 1 ♂; FMNH). Same locality // carrion trap (squid) (1 ♂ slide mounted; FMNH). Nelson Lakes NP, N slope Mt. Robert 860m 23-26.iii.80 *Nothofagus* spp. A.Newton/M.Thayer // berl, leaf & log litter, forest floor (1 ♂ genitalia dissected, 2 ♂♂; FMNH). **NN [Nelson]:** Slaters Road, 0.7km s Whangamoia Saddle, 410m 13.xii.1984-4.i.1985 *Nothofagus* spp forest A.Newton/M.Thayer 703 // flight intercept (window) trap (1 ♂ genitalia dissected; DSC)

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.30–1.34 mm (forebody 0.96–0.98 mm) (Fig. 13A); antennomere X wider than long, widest at apex, wider than XI (Fig. 13C); pronotum gradually widening from anterior margin to middle, widest in middle, gradually narrowing from middle to posterior margin, with shallow median longitudinal sulcus and broad transverse antebasal sulcus (Fig. 13B); abdominal tergite V with short discal striae (Fig. 13D); both parameres similar in length, elongate, left paramere slightly curved medially in ventral view, right paramere apex bifurcate in ventral view, left paramere simple, curved ventrally at apex in lateral view; median lobe longer than parameres, evenly curved dorsally, simple (Figs 13E–J).

Description. Body 1.30–1.34 mm (forebody 0.96–0.98 mm); head and thorax impunctate; head, thorax, elytra, abdomen, and antennal scape reddish-brown; leg, antennal pedicel, and antennomeres III–IX lighter; tarsus, maxillary palpus, and antennomeres IX–XI yellowish-brown (Fig. 13A).

Head as wide as long, with small dorsal tentorial pits, impression weakly defined around dorsal tentorial pits; temples gradually narrowing toward posterior margin of head capsule, with several setae; impression between antennal tubercles narrow, width of impression approximately 0.6 times as wide as antennal tubercle diameter. Pedicel wider than antennomeres III–VIII, antennomeres III longer than wide, IV as long as wide, V longer than wide, VI–VIII as long as wide, IX as long as wide, subhexagonal, X wider than long, widest at apex, wider than XI (Figs 13A, C).

Pronotum as wide as head, slightly longer than wide, narrowest at apex, gradually widening from anterior margin

to middle, widest in middle, gradually narrowing from middle to posterior margin, with shallow median longitudinal sulcus and broad transverse antebasal sulcus (Fig. 13B).

Elytra without any distinguishing characters (Fig. 13A).

Abdominal tergite V with short, shallow discal striae (Fig. 13D; arrow).

Male genitalia. Both parameres similar in length, elongate, left paramere slightly curved medially in ventral view, with small hook at apex in lateral view; right paramere apex bifurcate in ventral view; median lobe longer than parameres, broadly and evenly curved dorsally to narrowly rounded apex (Figs 13E–J).

Etymology. The specific epithet is a Latinised adjective based on the type locality, Mt. Robert.

Distribution. New Zealand (South Island: BR, NN; Fig. 16C).

***Euglyptus sublaevis* Broun, 1921**

(Figs 14, 16)

Euglyptus sublaevis Broun, 1921: 603. Type locality: Lake Rotoiti, Nelson.

Euglyptus sublaevis: NOMURA & LESCHEN (2006: 247).

Type material. HOLOTYPE: ♂, “4167. / Rotoiti. 5.5.1916 / New Zealand [with red underline] Broun Coll. Brit. Mus. 1922-482. / *Euglyptus sublaevis*. / [white label] HOLOTYPE *Euglyptus sublaevis* Broun det. D.S.Chandler” (BMNH, NHMUK015534122).

Additional material examined. **New Zealand, South Island: NN [Nelson]:** Lks. NP, St.Arnaud Tr., L.Rotoiti 610-650m 24-26.iii.80 *Nothofagus* spp. A.Newton,M.Thayer // flight intercept (window) trap (1 ♂; FMNH).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: body 1.86 mm (forebody 1.29 mm), head punctate, thorax impunctate (Fig. 14A); antennomere X wider than XI, widening to apex (Fig. 14C); pronotum slightly wider than head, gradually widening from anterior margin to middle, widest before middle, gradually narrowing from middle to posterior margin, with distinct median longitudinal sulcus and narrow transverse antebasal sulcus (Fig. 14B); each elytron with discal stria remote from second inner fovea extending to posterior margin of elytron (Fig. 14A); abdominal tergite V with distinct discal striae, distance between discal striae narrower than discal striae of tergite IV (Fig. 14D); both parameres dissimilar in length, left paramere evenly and slightly curved medially for apical half, distinctly longer than right paramere, right paramere slender and acutely pointed apex, with long apophysis originating near base, best seen in lateral view; median lobe expanded apically, fan-shaped and curved dorsally (Figs 14E–J).

Redescription. Body 1.86 mm (forebody 1.29 mm); head punctate, thorax impunctate; head, thorax, and abdomen darkish brown; elytra, leg, and antenna reddish-brown; tarsus and maxillary palpus yellowish-brown (Fig. 14A).

Head wider than long, with large and distinct dorsal tentorial pits, strong impression centered on dorsal tentorial pits; temples gradually narrowing toward posterior margin of head capsule, with several setae; distance between antennal tubercles narrower than antennal tubercle diameter. Pedicel longer and wider than antennomeres III–VIII, antennomeres III–VIII as long as wide, subrectangular or

subquadrate, IX slightly wider than long, subhexagonal, X wider than XI (11 : 9), widening to apex (Figs 14A, C).

Pronotum slightly wider than head, slightly longer than wide, narrowest at apex, gradually widening from anterior margin to middle, widest at before middle, slightly narrowing from middle to posterior margin, with distinct

median longitudinal sulcus and narrow transverse antebasal sulcus (Fig. 14B).

Elytron with discal stria remote from second inner fovea extending to posterior margin (Fig. 14A).

Abdominal tergite V with distinct discal striae (Fig. 14D).

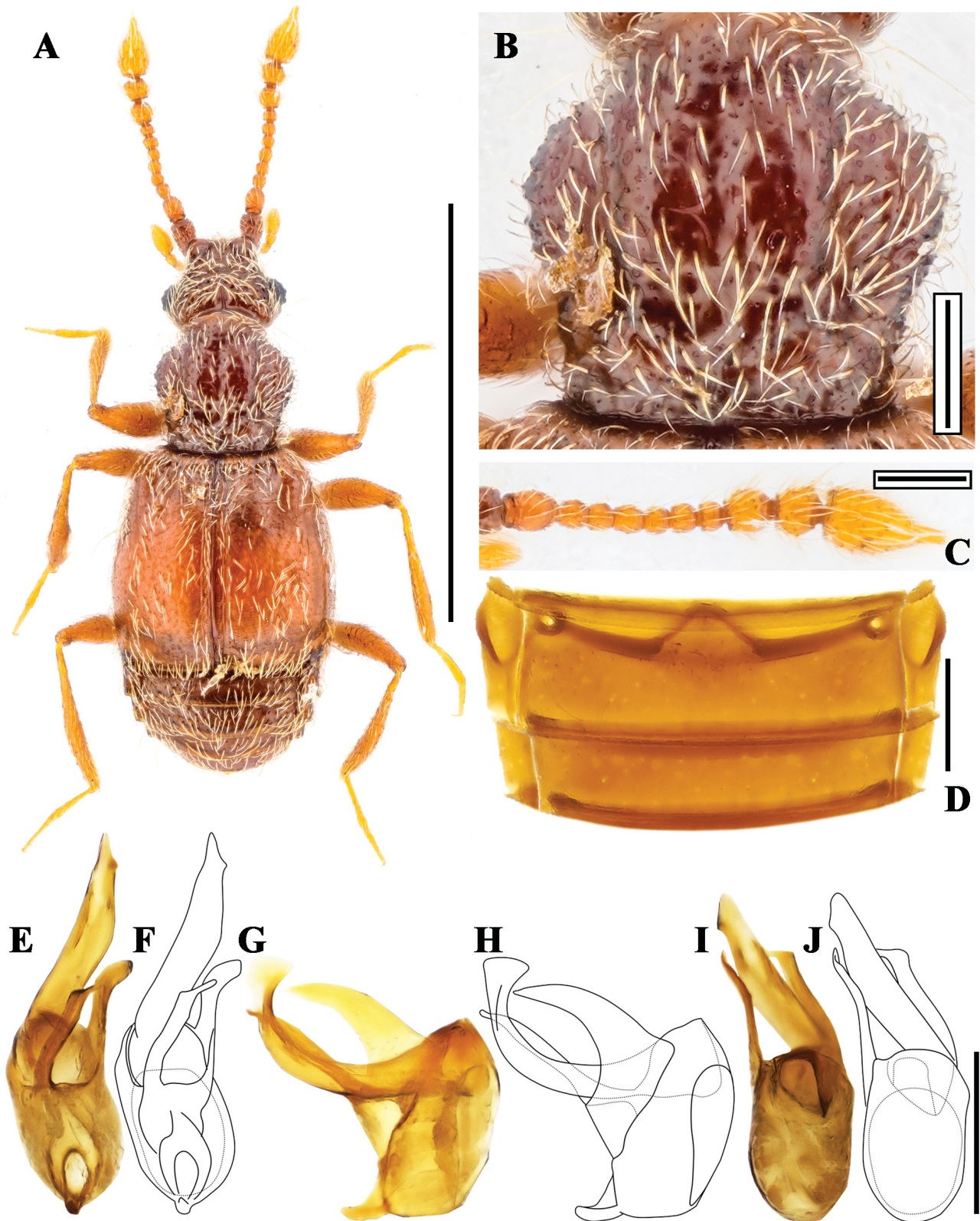


Fig. 12. *Euglyptus punctatus* (Broun, 1983). A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

Male genitalia. Both parameres dissimilar in length, left paramere slightly curved medially in apical half, apex abruptly angulate ventrally at apex in lateral view, distinctly longer than right paramere in ventral view, right paramere slender and with apex acutely pointed, with thin

elongate apophysis at basal 1/4, best seen in lateral view; median lobe apically fan-shaped, recurved anteriorly at apex (Figs 14E–J).

Distribution. New Zealand (South Island: NN; Fig. 16C).

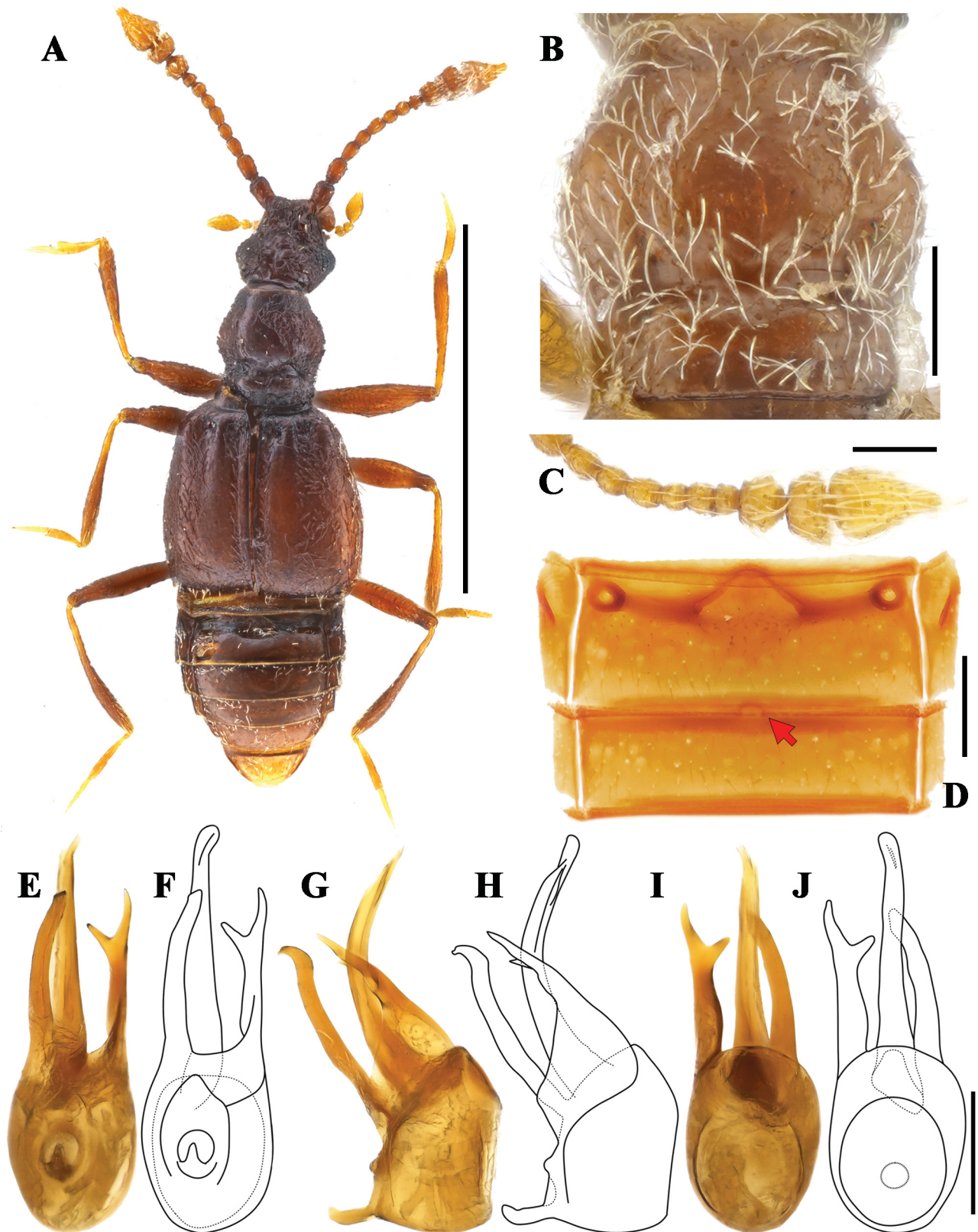


Fig. 13. *Euglyptus robertensis* sp. nov. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.



Fig. 14. *Euglyptus sublaevis* Broun, 1921. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

***Euglyptus waimatensis* Byeon & Chandler, sp. nov.**

(Figs 15, 16)

Type material. HOLOTYPE: ♂ (genitalia dissected), “New Zealand SC Gunns Bush Waimate 23-Dec-06 // Washed soil sample broadleaf forest” (JTN).

Diagnosis. Males of this species can be distinguished from other *Euglyptus* species by the following combination of characters: forebody 1.15 mm; antennomere V distinctly longer than IV, X wider than long, widening to apex, slightly narrower than XI (Figs 15A, C); pronotum gradually widening from anterior margin to middle, widest before middle, gradually narrowing from widest point

to posterior margin, with median longitudinal sulcus and transverse antebasal sulcus, with median antebasal carina extending from median antebasal impression to posterior margin (Fig. 15B); both parameres similar in length, left paramere with apical portion expanded as flat lobe, in lateral view curved ventrally to blunt point, right paramere narrow and sinuate, slightly curved ventrally; median lobe slightly twisted at base, strongly angled to left in ventral view, elongate and narrow, curved evenly dorsally in lateral view to narrow apex, apex with flat apical lobe directed medially in dorsal or ventral views (Figs 15E–J).

Description. Body 1.42 mm (not including abdominal tergites VII–VIII, removed due to dissection; forebody 1.15

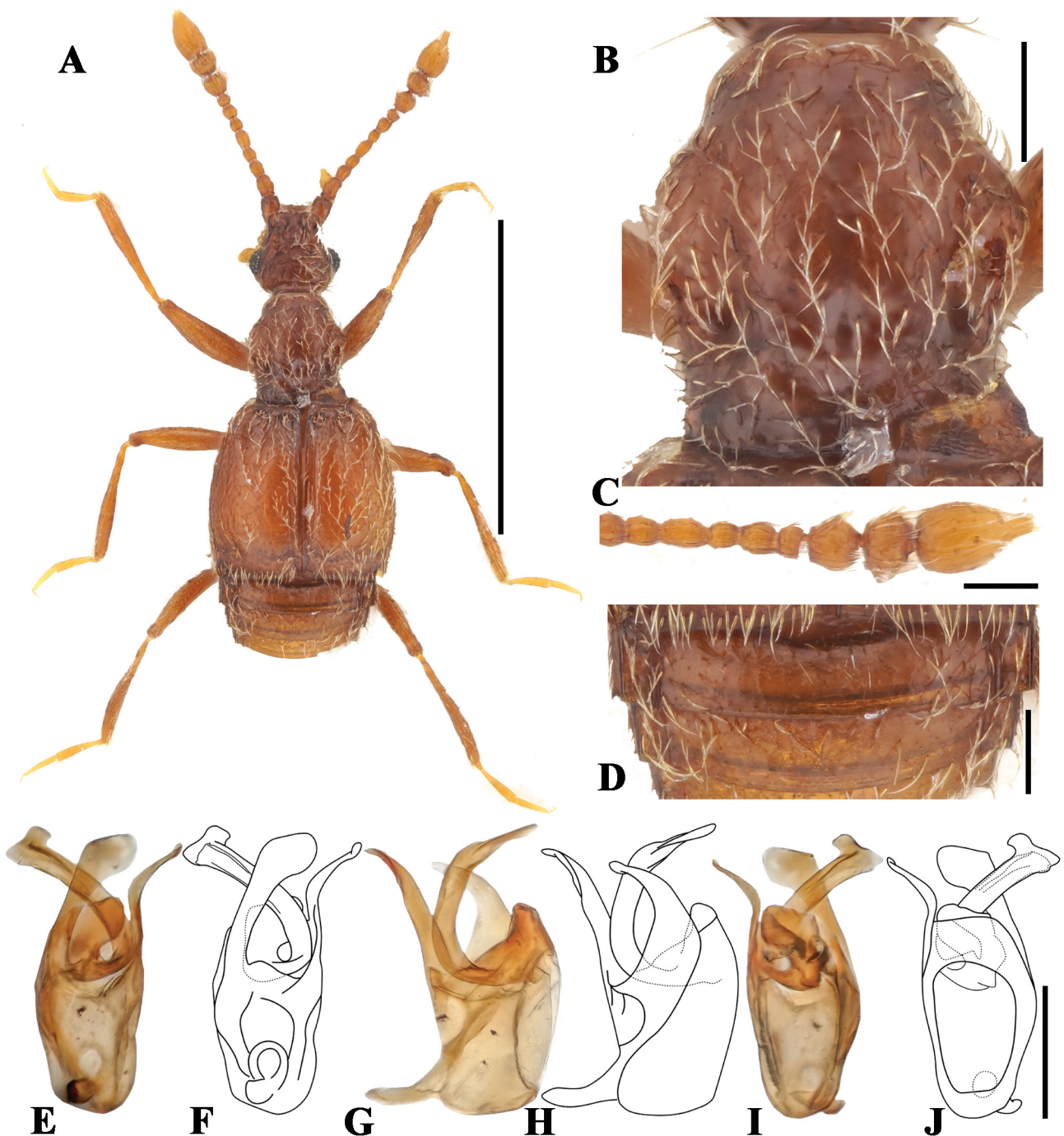


Fig. 15. *Euglyptus waimatensis* sp. nov. A – habitus dorsal view; B – pronotum; C – apical antennomeres; D – abdominal tergites IV–V; E, F – aedeagus ventral view; G, H – aedeagus lateral view; I, J – aedeagus dorsal view. Scale bars: A = 1 mm; B–J = 0.1 mm.

mm); head and thorax impunctate; head, thorax, abdomen, and antennal scape reddish-brown; elytra, leg, pedicel, and antennomeres III–VIII lighter; tarsus, maxillary palpus, and antennomeres IX–XI yellowish-brown (Fig. 15A).

Head wider than long, with small dorsal tentorial pits, impression weakly defined around dorsal tentorial pits; temples gradually narrowing toward posterior margin of head capsule, with several setae; impression between antennal tubercles narrow, width between antennal tubercles

approximately 0.6 times as wide as antennal tubercle diameter. Pedicel wider than antennomeres III–VIII, antennomeres III slightly longer than wide, subrectangular, IV as long as wide, V longer than wide, rectangular, VI–VII as long as wide, subquadrate, VIII smallest, IX as long as wide, subhexagonal, X wider than long, widening to apex, slightly narrower than XI (Figs 15A, C).

Pronotum slightly wider than head, longer than wide, narrowest at anterior margin, gradually widening from an-

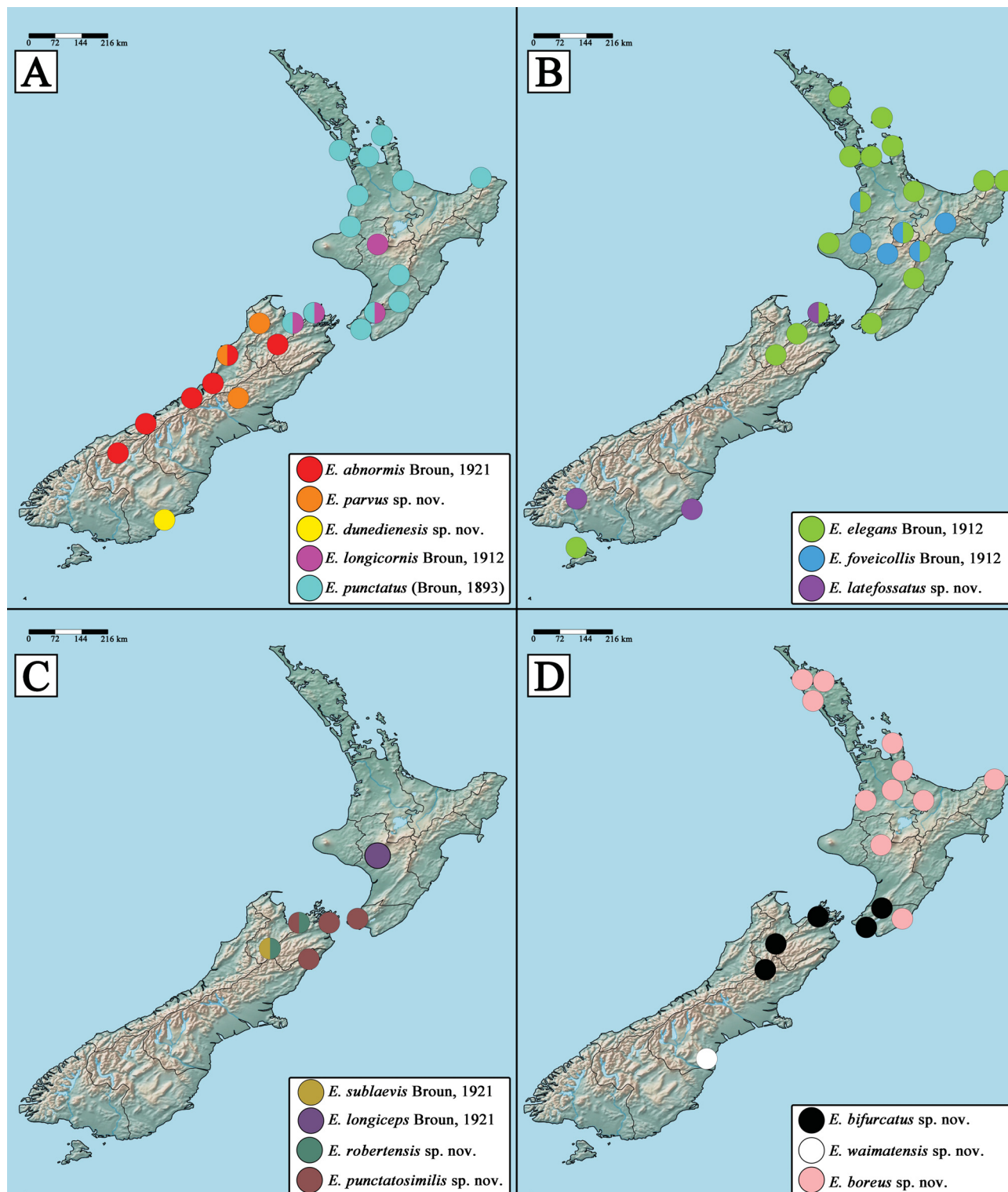


Fig. 16. Collection localities of New Zealand for *Euglyptus* species.

terior margin to middle, widest before to middle, gradually narrowing from widest region to posterior margin, with median longitudinal sulcus and transverse antebasal, with median antebasal carina extending from median antebasal impression to posterior margin (Fig. 15B).

Elytra and abdominal tergites without any distinguishing characters (Figs 15A, D).

Male genitalia. Both parameres similar in length, left paramere with apical portion expanded as flat lobe, in lateral view curved ventrally to blunt point, right paramere narrow and sinuate, slightly curved ventrally, median lobe slightly twisted at base, strongly angled to left in ventral view, elongate and narrow, curved evenly dorsally in lateral view to narrow apex, apex with flat apical lobe directed medially in dorsal or ventral views (Figs 15E–J).

Etymology. The specific epithet is a Latinised adjective based on the type locality, Waimate.

Distribution. New Zealand (South Island: SC; Fig. 16D).

Discussion

The geographic distribution of *Euglyptus* spans both the North and South Islands of New Zealand. Some species (*E. longicornis*, *E. punctatus*, *E. punctatosimilis*, and *E. bifurcatus*) are found on both islands, and up to six species (*E. punctatus*, *E. elegans*, *E. latefossatus*, *E. punctatosimilis*, *E. longicornis*, and *E. bifurcatus*) are found in the Marlborough Sounds. *Euglyptus elegans* exhibits the widest distribution, and is found as far south as Stewart Island, which presents an unusual collection gap between the opposite ends of the South Island. Conversely, *E. foveicollis*, *E. longiceps*, and *E. boreus* are found only on the North Island, while *E. sublaevis*, *E. robertensis*, *E. waimatensis*, *E. abnormis*, *E. parvus*, and *E. dunedinensis* are exclusively found on the South Island. Among these, *E. dunedinensis*, *E. longiceps*, *E. sublaevis*, *E. robertensis*, and *E. waimatensis* have very localized distributions. The geographic distribution of the genus suggests that the current areas are under-sampled or that there may be additional specimens in the unexamined ethanol collections at FMNH and NZAC. Additional collection and research must be conducted to draw conclusions about the biogeographic distribution of these species.

Species of the genus *Euglyptus* have been collected from various forest ecosystems. Most were collected using flight intercept traps, fewer by sifting litter and soil, while there were 16 records from moss. Some species (*E. dunedinensis*, *E. latefossatus*, and *E. waimatensis*) were also collected by soil washing (e.g., ANDÚJAR & GREBENNIKOV 2021), but also from leaf litter. Interestingly, *E. punctatosimilis* is associated with ants. However, since this species has also been collected from flight intercept traps and leaf litter, there is insufficient evidence to conclude that it is a species that exclusively lives in symbiosis with ants as are several other species of Pselaphinae (NOMURA & LESCHEN 2015).

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