Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Mecodema trailli* "Big South Cape"

Common Names: -

Synonyms: *Mecodema philpotti* (synonym of *M. trailli*) (Britton 1949).

M&D Category: I

Conservancy Office: SL

Area Office: Southern Islands, Murihiku

Description: A flightless ground beetle with a dull black surface. The body is 25 - 30 mm long (Britton 1949). Specimens from different altitudes can appear quite different (P. Johns pers. comm. 1999).

Type Locality: Otago: Stewart Island (Britton 1949).

Specimen Holdings: NHML, CMNZ.

Distribution: Stewart Island and Bluff Hill (Britton 1949); Ulva Island (1953) (R. Hornabrook pers. comm. 2000). The "Big South Cape" tag refers to a single population, not the species as a whole (J.I. Townsend pers. comm. 1999).

Habitat: Unknown.

Threats: Prone to attack by rats, and the rat invasion of Big South Cape Island in 1962/63 would have had an impact. However, the species is still present (J.I. Townsend pers. comm. 1999).

Body length: 30 mm

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) The taxonomy of this population/species needs clarification because it may be a subspecies of *Mecodema alternans* (J.I. Townsend; P. Johns; R. Emberson; pers. comms. 1999), or a subspecies of *M. trailli* (J.I. Townsend pers. comm. 1999).

Management Needs: -

Contacts: Rowan Emberson, Peter Johns, Andre Larochelle, Ian Townsend.

Permission: SIR Publishing. Britton 1949, Plate 74, Fig. 109.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus* "Omarama"

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: CA

Area Office: Twizel

Description: A black, flightless ground beetle, about 15 - 18 mm long (P. Johns pers. comm. 1999).

Type Locality: Not described.

Specimen Holdings: Specimen in NZAC (P. Johns pers. comm. 1999).

Distribution: One 5 ha patch in southern Mackenzie Country, at Quailburn Station, near OmaramA. Known from a few specimens only (P. Johns pers. comm. 1999).

Habitat: Probably scrubland (P. Johns pers. comm. 1999).

Body length: 18 mm

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Confirm known distribution.

2) Survey areas in vicinity of the original site at Quailburn Station.

3) Clarify taxonomic status (E. Kennedy pers. comm. 2000).

Management Needs: -

Contacts: Peter Johns.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus antarcticus* subsp. 1

Common Names: Metallic green ground beetle (species common name) (Foord 1990; Scott & Emberson 1999)

Synonyms: -

M&D Category: X

Conservancy Office: CA

Area Office: Raukapuka

Description: A large, metallic green, flightless ground beetle, 40 mm long (P. Johns pers. comm. 1999). Very similar in appearance to *Megadromus crassalis*, and difficult to differentiate.

Body length: 40 mm

Type Locality: Not described.

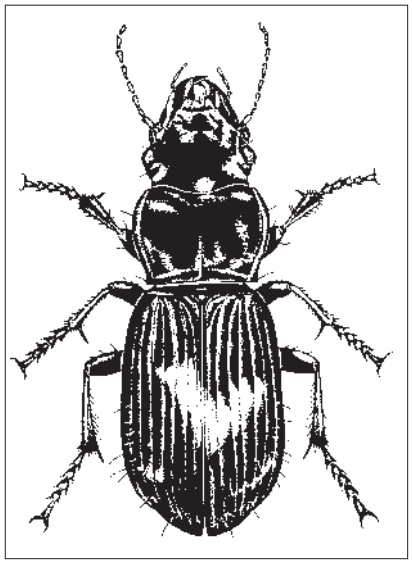
Specimen Holdings: -

Distribution: Albury limestone country (this may be *M. crassalis*) Tui Hills Station, Geraldine (P. Johns pers. comm. 1999).

Habitat: Found in scrubland and forest in limestone country (P. Johns pers. comm. 1999). (*Megadromus antarcticus* is found in Arthurs Pass National Park, confined to relatively dry, deep, loess derived or silty soils on terraces. It burrows under logs to a depth of 0.5 m and is usually stationed in a short tunnel leading to the burrow or to the outside under the log (Johns 1980).

Threats: Not known.

Work Undertaken to Date: Not seen for many years until a photo was taken of one in 1993 (P. Johns pers. comm. 1999).



Megadromus antarcticus
Permission: Lincoln University. Scott 1984, p 296.

Priority Research, Survey, and Monitoring: 1) Survey suitable sites in the Geraldine area in an attempt to locate this species.

2) If found, the taxonomic status of the population should be clarified to determine if it is a true subspecies of *M. antarcticus*, or whether it is the same as either *M. antarcticus* or *M. crassalis*

Management Needs: -

Contacts: Rowan Emberson, Peter Johns, Andre Larochelle, Ian Townsend.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus* "bucolicus"

Common Names: -

Synonyms: The species originally listed in Molloy & Davis (1994) is *Megadromus bucolicus* (Broun, 1903). This has been synonymised with *Megadromus capito* (White) (Britton 1940 cited in Townsend 1998). It is believed to be incorrectly synonymised (Townsend 1998), and information contained in this profile relates to individuals originally attributed to *Megadromus bucolicus*

M&D Category: I

Conservancy Office: NM

Area Office: Sounds

Description: A metallic green, flightless ground beetle, 23 - 24 mm long (Townsend 1998). This beetle is easily confused with *M. capito*, and you need to look at the male genitalia in order to discriminate between the two (J.I.Townsend pers. comm. 1999).

Type Locality: *Megadromus bucolicus*: Stephens Island (Townsend 1997b).

Body length: 24 mm

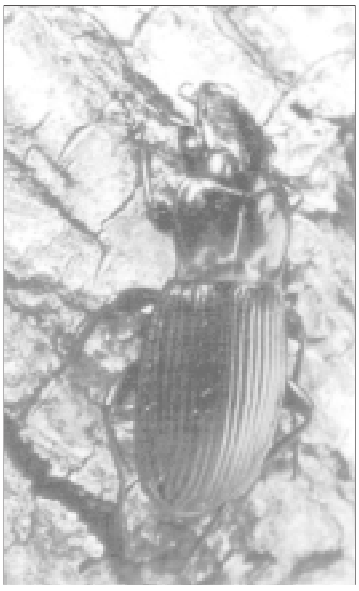
Specimen Holdings: -

Distribution: Known only from islands in the western Marlborough Sounds (Tennyson 1998). Found on Stephens Island (Gibbs & Allen 1990;Townsend 1997b) at Keepers Bush and Frogbank Bush (Gibbs & Allen 1990); Middle Trio Island; Outer Chetwode Island (Te Kakaho); D'Urville Island; Maud Island (Townsend 1998).

Habitat: Found in dry coastal scrubland (P. Johns pers. comm. 1999).

Threats: Not known. Not believed to be under any immediate threat.

Work Undertaken to Date: -



Townsend, J. I. 1998, Fig 18.

Priority Research, Survey, and Monitoring: 1) Clarify the taxonomy of the individuals believed to be *Megadromus bucolicus*. They may be a subspecies of North Island *Megadromus capito* (Townsend 1997b).

Management Needs: -

Contacts: Rowan Emberson, Peter Johns, Andre Larochelle, Ian Townsend.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus compressus* (Sharp, 1886)

Common Names: -

Synonyms: *Trichosternus compressus* (Britton 1940)

M&D Category: I

Conservancy Office: NM

Area Office: Sounds, South Marlborough

Description: A bronze metallic green, flightless ground beetle, 18 - 22 mm long (Britton 1940).

Type Locality: Picton (Townsend 1997b).

Specimen Holdings: NZAC.

Body length: 22 mm

Distribution: Has been found in the Nelson/Marlborough region at Motungarara Island; Chalk Range; Leatham River; Picton (Townsend 1997b) (no longer found there (P. Johns pers. comm. 1999)); Dashwood Pass; Awatere River; Branch River (P. Johns pers. comm. 1999); Mt Altimarloch, Blackbirch Range 1200 - 1600 m; Avon Valley; Upcot, Awatere Valley c. 762 m (NZAC). Recently it has been collected from Southland (A. Larochelle pers. comm. 1999).

Habitat: Occurs in montane, alpine, and subalpine scrubland, tussock grasslands and pastures (A. Larochelle pers. comm. 1999). Has been found in dry manuka (*Leptospermum scoparium*) scrub areas on loess, in the hills south west of Blenheim (P. Johns pers. comm. 1999) as well as under stones (NZAC).

Threats: Not known. Likely to be no longer present at Picton owing to habitat modification through urbanisation.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey to obtain an estimate of distribution and abundance, and determine whether this species is of conservation concern.

Management Needs: -

Contacts: Rowan Emberson, Peter Johns, Andre Larochelle, Ian Townsend.

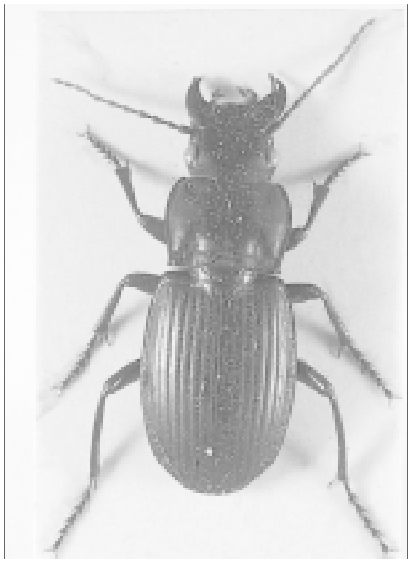


Photo: Andrew Townsend.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus fultoni* (Broun, 1882)

Common Names: -

Synonyms: *Pterostichus erraticus, P.amplicollis, P.flectipes, Trichosternus curvipes, T. polychaetus*, (Britton 1940), *T. amplicollis*, and *T. erraticus* (J. Nunn pers. comm. 1999).

M&D Category: I

Conservancy Office: OT

Area Office: Coastal Otago

Description: A slightly bronze- black, flightless ground beetle, often metallic green or coppery around the margins of the body. The body is 18 - 22 mm long (Britton 1940).

Body length: 22 mm

Type Locality: Taieri (Britton 1940).

Specimen Holdings: NZAC.

Distribution: Found in the north Taieri Hills, immediately inland from Dunedin (P. Johns pers. comm. 1999); at Taieri River mouth (J.I. Townsend pers. comm. 1999), the lower slopes of Mt Maungatua (J. Nunn pers. comm. 1999); and at various localities from Taieri through to Sutton (R. Hornabrook pers. comm. 2000).

Habitat: Appears to be restricted to the rock soils of the north Taieri Hills (P. Johns pers. comm. 1999).

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Taxonomy needs clarification because it is easily confused with other species (P. Johns pers. comm. 1999). It is particularly hard to distinguish from *M. meritus*. This is important to resolve because if it is the same species as *M. meritus* then it does not warrant immediate conservation action (B. Barratt pers. comm. 1999).

Management Needs: -

Contacts: Barbara Barratt, Rowan Emberson, Peter Johns, Andre Larochelle, Ian Townsend.

Photo: Andrew Townsend.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus haplopus* (Broun, 1893)

Common Names: -

Synonyms: *Trichosternus haplopus* (Broun 1893)

M&D Category: I

Conservancy Office: OT

Area Office: Coastal Otago

Description: A brownish-black, flightless ground beetle, 23 - 28 mm long (information from; Britton 1940; P. Johns pers. comm. 1999).

Type Locality: Hampden, Otago (Britton 1940).

Specimen Holdings: NHML, CMNZ, MONZ.

Body length: 28 mm

Distribution: Has been found at Trotters Gorge, Moeraki; Mt Dasher, South Canterbury, 915 m (CMNZ). This species is sympatric (occurring in the same place) with *M. virens* (P. Johns pers. comm. 1999). The specimen in MONZ labelled Stephens Island is almost certainly incorrectly labelled (P. Johns pers. comm. 1999).

Habitat: Found in lowland and montane broadleaf forest (A. Larochelle pers. comm. 1999), and has been collected from broadleaf kanuka (*Kunzea ericoides*) river terrace (CMNZ).

Threats: Not known. Possibly loss of habitat. The Oamaru habitat is virtually gone (P. Johns pers. comm. 1999).

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey Trotters Gorge, Mt Dasher and other suitable surrounding areas to obtain an estimate of the distribution and abundance of this species.

Management Needs: -

Contacts: Rowan Emberson, Peter Johns, Andre Larochelle, Ian Townsend.

Photo: Andrew Townsend.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus* sp.

Common Names: Picton/Port Underwood ground beetle

Synonyms: *Megadromus* "Port Underwood"

M&D Category: B

Conservancy Office: NM

Area Office: Sounds

Description: A black, flightless ground beetle.

Type Locality: Not described.

Specimen Holdings: -

Distribution: Arapawa Island; Picton-Port Underwood Saddle (Towensend 1997b), along the ridgeline adjacent to the saddle (I. Millar pers. comm. 2000), and on ridges around Port Underwood (P. Johns pers. comm. 1999).

Habitat: Under stones in forest (J.I. Townsend pers. comm. 1999), and occasionally logs (I. Millar pers. comm. 2000).

Threats: On Arapawa Island, extensive and intensive pig rooting at some sites, means that beetle populations are now confined to 'islands' of rocky ground separated by heavily rooted areas with no useable habitat or shelter, and which the beetles are unlikely to be able to cross. This has effectively fractioned the population into isolated sub-populations (I. Millar pers. comm. 2000).

Work Undertaken to Date: Surveyed three separate areas on Arapawa Island and found moderate numbers at one site, but low numbers at the other two. Mainland numbers appear to be very low, but has not been extensively surveyed (I. Millar pers. comm. 2000).

Priority Research, Survey, and Monitoring: 1) Taxonomy needs to be clarified to determine whether the populations at Arapawa Island and Port Underwood are the same species (I. Millar pers. comm. 1999). The Port Underwood specimens are larger but likely to be the same species (J.I. Townsend pers. comm. 1999). This needs to be resolved because it affects the conservation status of the species.

Management Needs: 1) Reduce and control pig and goat numbers within the fenced reserve area on Arapawa Island.

Contacts: Rowan Emberson, Peter Johns, Andre Larochelle, Ian Townsend.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus* sp. 1 (species aff. *sandageri*)

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: SL

Area Office: Murihiku

Description: A black, flightless ground beetle, 24 - 26 mm long. Indistinguishable from *Megadromus sandageri* in the field (P. Johns pers. comm. 1999).

Type Locality: Not described.

Specimen Holdings: -

Body length: 26 mm

Distribution: Southland, east of the Waiau River in the vicinity of Longwood Range (P. Johns pers. comm. 1999).

Habitat: Forest dweller.

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Clarify taxonomic status.

Management Needs: -

Contacts: Peter Johns.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus* sp. 2

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: SL

Area Office: Murihiku, Te Anau

Description: A black, flightless ground beetle, about 24 - 28 mm long. Indistinguishable from *M. sandageri* in the field (P. Johns pers. comm. 1999).

Type Locality: Not described.

Specimen Holdings: -

Body length: 28 mm

Distribution: Takitimu Range eastwards to Hokonui Hills and southwards to Bluff. Probably fairly widespread (P. Johns pers. comm. 1999).

Habitat: Not known.

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Clarify taxonomic status.

Management Needs: -

Contacts: Rowan Emberson, Peter Johns, Andre Larochelle, Ian Townsend.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus* sp. 8

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: OT

Area Office: Central Otago

Body length: 22 mm

Description: A black, flightless ground beetle, about 20 - 22 mm long (P. Johns pers. comm. 1999).

Type Locality: Not described.

Specimen Holdings: -

Distribution: Upper Bannockburn alpine areas, Omeo huts (P. Johns pers. comm. 1999).

Habitat: Dry stony scrubland (P. Johns pers. comm. 1999).

Threats: Check to see if affected by the fire in March 1999 (P. Johns pers. comm. 1999).

Work Undertaken to Date: Not seen at Omeo huts in a search by Peter Johns in December 1999 (P. Johns pers. comm. 2000).

Priority Research, Survey, and Monitoring: 1) Survey upper Bannockburn alpine areas to determine if still present.

Management Needs: -

Contacts: Peter Johns.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus* sp. 9

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: OT

Area Office: Central Otago

Body length: 20 mm

Description: A black, flightless ground beetle, about 18 - 20 mm long (P. Johns pers. comm. 1999).

Type Locality: Not described.

Specimen Holdings: -

Distribution: Back of Miller's Flat near Roxborough (P. Johns pers. comm. 1999).

Habitat: Possibly rocky ground (P. Johns pers. comm. 1999).

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Clarify taxonomic status.

Management Needs: -

Contacts: Peter Johns.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus* sp. 11

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: CA

Area Office: Twizel

Body length: 19 mm

Description: A black, flightless ground beetle, about 16 - 19 mm long (P. Johns pers. comm. 1999).

Type Locality: Not described.

Specimen Holdings: -

Distribution: Benmore Peak alpine zone (5 specimens), 1520 m on Omarama face; Totara Peak, Omarama (P. Johns pers. comm. 1999).

Habitat: Lake Benmore, rocky and very dry, sub-alpine areas (P. Johns pers. comm. 1999).

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Clarify taxonomic status (E. Kennedy pers. comm. 2000).

Management Needs: -

Contacts: Rowan Emberson, Peter Johns, Andre Larochelle, Ian Townsend.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Megadromus virens* (Broun, 1886)

Common Names: -

Synonyms: *Trichosternus hampdenensis* (Britton 1940)

M&D Category: I

Conservancy Office: OT

Area Office: Coastal Otago

Description: A slightly bronze-greenish-black, flightless ground beetle, with margins of the body bright metallic green. The body is 19 - 22 mm long (Britton 1940).

Type Locality: Oamaru, Hampden, Otago (Britton 1940).

Body length: 22 mm

Specimen Holdings: CMNZ.

Distribution: Has been found at Dansey Pass, 914 m; Trotters Creek, Moeraki; Duntroon; Oamaru (CMNZ); and Waianakarua (R. Hornabrook pers. comm. 2000). The Oamaru habitat is virtually gone (P. Johns pers. comm. 1999). This species is sympatric (occurring in the same area) with *M. haplopus*.

Habitat: Inhabits lowland plain forest (P. Johns pers. comm. 1999), and tussock grasslands (A. Larochelle pers. comm. 1999). Has been collected from gardens under stones (CMNZ).

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey to obtain an estimate of distribution and abundance, and determine whether this species is of conservation concern.

Management Needs: -

Contacts: Rowan Emberson, Peter Johns, Andre Larochelle, Ian Townsend.

Photo: Andrew Townsend.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Oregus inaequalis* Castelnau, 1867

Common Names: -

Synonyms: *Mecodema inaequalis* (Broun 1880); *M. inaequale* (Jamieson 1999c)

M&D Category: B

Conservancy Office: OT (previously recorded in SL but not relocated post 1984)

Area Office: Coastal Otago

Description: A black, slightly shiny, flightless ground beetle. The body is 17-19 mm long (Britton 1949).

Type Locality: ?Dunedin (Britton 1949).

Specimen Holdings: GMI, NZAC.

Body length: 19 mm

Distribution: Has been found in Dunedin[1,2]; Harewood (this may mean Harwood on the Otago peninsula or be a private residence)[2]; Waitati[1] and Waitati Hills[2]; Port Chalmers[1]; Leith Valley; Ross Creek Reservoir 1981; Swampy Summit (all records since 1983 are from Swampy Summit, and this is the site of the only known population); Mt Cargill[2]; Flagstaff Hill, Dunedin (NZAC). Suspect records from Lake Pukaki and Fox's Peak, Canterbury (J. I. Townsend pers. comm. cited in Jamieson 1999c); Invercargill[1,2]. Invercargill may be an incorrect listing, made in error when interpreting the locality of a site record, because Southland and Otago were historically considered a single region (Edwards 1999). Dunedin, Port Chalmers, and Waitati, may all relate to the Swampy Summit area (B. Barratt pers. comm. 1999). The lower slopes of Swampy Summit were usually called "Waitati" (B. Patrick pers. comm. cited in Jamieson 1999c).

[1]Britton 1949; [2]Jamieson 1999c.

Habitat: Lowland to montane, tussock grassland and shrubland, under stones. They spend their day in deep burrows, and are very secretive (A. Larochelle pers. comm. 1999). Found with *Oregus aereus*, and at about the same abundances, but whereas *O. aereus* is widespread, *O. inaequalis* is restricted to Swampy Summit (B. Barratt pers. comm. 1999).

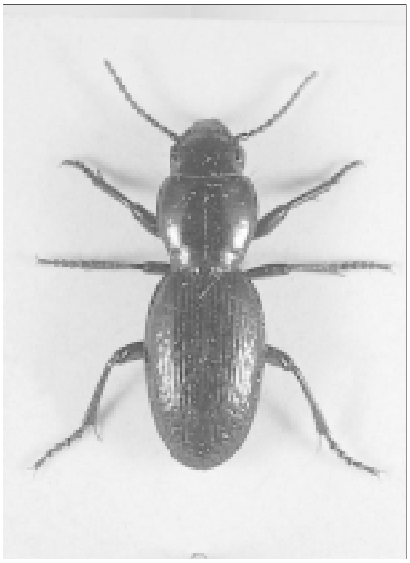


Photo: Andrew Townsend.

Threats: Swampy Summit is a water catchment and will not be developed (B. Barratt pers. comm. 1999) because it is a protected area. The population on Swampy Summit is stable (Jamieson 1999c) and will be okay as long as the habitat remains (B. Barratt pers. comm. 1999).

Work Undertaken to Date: Existing records in Coastal Otago collated (Jamieson 1999c). Some survey work has been undertaken (B. Patrick pers. comm. 2000).

Priority Research, Survey, and Monitoring: 1) Survey to determine whether Swampy Summit is the limit of distributional range, and determine what the population status is (B. Barratt pers. comm. 1999).

2) Urgent taxonomic work in the Dunedin metropolitan area is required (Jamieson 1999c) to determine if there is an intermediate species between *O. inaequalis* and *O. aereus*.

Management Needs: -

Contacts: Barbara Barratt, Colleen Jamieson.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: Undescribed genus

Common Names: Kamo carabid

Synonyms: -

M&D Category: I

Conservancy Office: NL

Area Office: Whangarei

Description: A large black, flightless ground beetle.

Type Locality: Not described.

Specimen Holdings: CMNZ (P. Johns pers. comm. 1999).

Distribution: Kamo Mountain north of Whangarei. Kamo Mt is a local name and this site is most likely Parakiore, but may also be Hurupaki Pa (P. Johns pers. comm. 1999). This may be the same as the carabid from Dome Valley (S. Thorpe pers. comm. 1999; J.I. Townsend pers. comm. 1999) which is found at Dome Range, Warkworth; Waipoua Forest area; Fantail Creek, Coromandel; Dome valley (A. Larochelle pers. comm. 1999); Mangamuka and Herekino (S. Thorpe pers. comm. 2000).

Habitat: The Dome Valley carabid inhabits wet, shaded forest, along streams (A. Larochelle pers. comm. 1999; J.I. Townsend pers. comm. 1999).

Threats: Not known.

Work Undertaken to Date: Pitfall traps set at Hurupaki Pa site in 1999, but this beetle was not collected (A. Booth pers. comm. 2000).

Priority Research, Survey, and Monitoring: 1) Determine the taxonomy of this specimen, to find out if it is the same as the Dome Valley specimens.

2) Survey forest sites in the vicinity of Kamo (Brook 1999c).

Management Needs: -

Contacts: Peter Johns, Andre Larochelle, Ian Townsend.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Zecillenus tillyardi* (Brookes, 1927)

Common Names: Back beach beetle

Synonyms: *Cillenum tillyardi*

M&D Category: B

Conservancy Office: NM

Area Office: Motueka

Description: A very small, flightless ground beetle, the body is about 4 mm long and 1.3 mm wide (Brookes 1927).

Body length: 4 mm

Type Locality: Tahuna, Nelson, among sandhills (Brookes 1927).

Specimen Holdings: NZAC.

Distribution: Tahunanui Beach, Nelson (Townsend 1997b).

Habitat: Occur in the sand, just at the high tide mark, on a sandy high shore embayment. Found in association with sandy sediments and sand-mud sediments. Where the sediments are extensively muddy, you don't find the beetle (I. Millar pers. comm. 2000).

Sign of Presence: They makes small, 1-2 mm diameter holes in the sand. These look very similar to sandhopper holes.

Threats: They have a restricted distribution, and the sand spit on which they occur is eroding (I. Millar pers. comm. 1999). Damage to habitat caused by recreational use, eg off road vehicles (J.I.Townsend pers. comm. 1999), is also a problem because the area is sometimes illegally used for this purpose (I. Millar pers. comm. 1999).

Work Undertaken to Date: Survey work completed including population estimates (I. Millar pers. comm. 1999).

Priority Research, Survey, and Monitoring: 1) Survey surrounding sites to see if it occurs outside of its known distribution (J.I.Townsend pers. comm. 1999).

Management Needs: 1) Maintain habitat at selected sites.

Contacts: Andrea Goodman, Ian Millar, Ian Townsend.

Photo: Andrew Townsend.

Order: Coleoptera

Family: Carabidae

Taxonomic Name: *Zeopoecilus* (5 species)

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: NM, WC

Area Office: Sounds, Golden Bay, Buller.

Body length: 23 mm

Description: A flightless ground beetle with a coppery sheen. The body is 23 mm long (Gibbs & Allen 1990).

Type Locality: Not described.

Specimen Holdings: -

Distribution: The five species are all from the Nelson/Marlborough/West Coast area. Sp. 1 from Pu Pu Springs and also lower Aorere Valley, Upper Kaituna; sp. 2 from Takaka Hill and south to Mt Arthur; sp 3 from Heaphy and north to Paturau area (Townsend 1997b); sp. 4 from Stephens Island (Gibbs & Allen 1990; Townsend 1997b); sp. 5 from D'Urville Island and also Squally Cove (Townsend 1997b).

Habitat: Possibly the forest.

Threats: Not known.

Work Undertaken to Date: Log substitutes being placed on Stephens Island for *Mecodema costellum costellum* may benefit the Stephens Island species (I. Millar pers. comm. 2000).

Priority Research, Survey, and Monitoring: 1) Taxonomy of this genus needs to be clarified (R. Emberson pers. comm. 1999) in order to prioritise conservation action. Are all five proposed species, actually distinct species?

Management Needs: -

Contacts: Rowan Emberson, Peter Johns, Andre Larochelle, Ian Townsend.

Family: Cerambycidae

Common name: **Longhorn beetles, longicorn beetles**

Order: Coleoptera

Family: Cerambycidae

Taxonomic Name: *Blosyropus spinosus* Redtenbacher, 1868

Common Names: Spiny longhorn (Scott & Emberson 1999), spined blosyropus, spiny silver-pine borer (Foord 1990)

Synonyms: -

M&D Category: I

Conservancy Office: NL, AU, WK, BP, EC/HB, TT, WG, WL, NM, WC, OT, SL

Area Office: Kerikeri, Auckland, Hauraki, Tauranga, Gisborne, Ruapehu, New Plymouth, Stratford, Palmerston North, Wairarapa, Kapiti, Golden Bay, Sounds, St. Arnaud, Buller, Greymouth, South Westland, Central Otago, Te Anau, Southern Islands

Description: A large, flightless, longhorn beetle, around 46 mm long (S.Thorpe pers. comm. 2000). The body is a deep chocolate-brown, with fine yellowish hairs (Hudson 1934). There are four spines present on the thorax (Broun 1880), including an extremely sharp, recurved spine situated on each side of the prothorax (Hudson 1934). There are two spines on the head (Broun 1880), one above each eye, and this is the key diagnostic feature (S.Thorpe pers. comm. 2000).

Type Locality: -

Specimen Holdings: AMNZ, CMNZ, MONZ, NZAC, RHNZ.

Body length: 46 mm

Distribution: Has been collected from scattered localities over most of New Zealand. Collection records include Deep Cove, Fiordland; Waitakere Ranges (C. Green pers. comm. 1999); Maud Island (Notman 1984); D'Urville Island (I. Millar pers. comm. 1999); summit of Mt Te Aroha (Owen 1991); Kaitoke; Te Horo; Bannockburn; Dusky Sound (Hudson 1934); Egmont National Park (Fox 1982); Coromandel Ranges; Corbyvale, Westland (AMNZ); Orongorongo Valley; Golden Bay; Gladstone ?Siding; Inglewood, New Plymouth; Ohau, Levin; Canaan; George Sound; Butterfly Creek (MONZ); Chateau Ruapehu 914 m & 1158 m; Ohakune; Tokomaru Gorge; Pokaka; Market Cross, Karamea; Lake Paringa, South Westland (remnants); near Okuri Bay, French Pass 305 m (NZAC); Lee Bay and Halfmoon Bay, Stewart Island; Gut Hut, Secretary Island; Mt Maung (as stated on specimen label); Reefton; Mamaku; Murchison; Purangi; Opouri; Fuchsia Creek, lower Buller Gorge; Glenhope; Westport; Otorohanga; Mt Arowhana 1231 m, Gisborne; Mt Te Aroha TV translator; Blythe Track, Ohakune 792 m; Okauia (records from specimens belonging to various institutions, currently held at Massey University for systematic research); Moerangi, Tokaanu-Taumaranui Rd (J. Dugdale pers. comm. 2000); Waitunga Saddle; Mt Holdsworth, Tararua Range; Mt Egmont (Taranaki); Mt Ruapehu; Whangamona Saddle (R. Hornabrook pers. comm. 2000). Possible specimen from Palmerston North (CMNZ).

Photo: Andrew Townsend.

Habitat: Found in dead, decaying logs of *Dracophyllum*, beech, and tawa (*Beilschmiedia tawa*) (information from Morgan 1960; J.Dugdale pers.comm. 2000; C. Green pers. comm. 1999). It has been collected from beech and mixed podocarp forest (R.Hornabrook pers.comm. 2000), and in the Waitakere Ranges from broadleaf podocarp forest (C.Green pers. comm. 1999). Larvae

have been found in the wood of thoroughly sodden logs, or in partly exposed roots (Milligan 1975). The adults are nocturnal and attracted to lights (Q.Wang pers. comm. 1999). Eggs have been found laid in the tops of dead 'grass trees' (*Dracophyllum traversii*). A large pupal chamber is constructed at the base of the stem sightly below ground level, with the entrance blocked by a loose plug of coarsely chewed wood. Appear to hibernate overwinter in the pupal chamber, after completing metamorphosis. Emergence begins in late August, though emergence from red beech (*Nothofagus fusca*) has been observed as late as February (Morgan 1960). Specimens have been collected from September through to June, most in summer and autumn (when people tend to collect), at altitudes between 305-1500 m.

Threats: None known at present. This species may be seldom encountered rather than threatened. Predation by rodents and stoats is a possible threat (C. Green pers. comm. 1999).

Work Undertaken to Date: None.

Priority Research, Survey, and Monitoring: -

Management Needs: 1) Probably secure and no action required unless threats are substantiated (C. Green pers. comm. 1999).

Contacts: John Dugdale, Qiao Wang.

See Plate 2, No. 19.

Order: Coleoptera

Family: Cerambycidae

Taxonomic Name: *Nesoptychias simpliceps* (Broun, 1880)

Common Names: -

Synonyms: *Blosyropus simpliceps* (Broun 1880), *Ptychopterus rugosus* (S.Thorpe pers. comm. 2000).

M&D Category: I

Conservancy Office: NL, AU, WK, BP, EC/HB

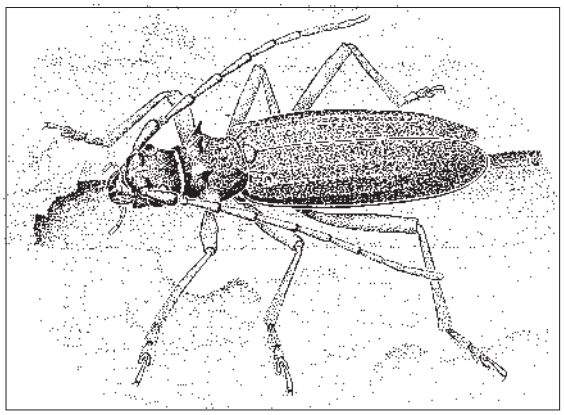
Area Office: Whangarei, Warkworth, Auckland, Waikato, Tauranga, Gisborne

Description: A large, flightless longhorn beetle, about 25 mm long. Similar in appearance to *Blosyropus spinosus* but not as heavy bodied and lacking the spines on the head. The body is dark chestnut-brown, with the antennae and tibiae ('feet') pale-red chestnut-brown (Broun 1880).

Type Locality: Wairoa, Auckland (Broun 1880).

Body length: 25 mm

Specimen Holdings: -



Drawing: Des Helmore.
Permission: Landcare Research (NZ) Ltd.

Distribution: Wairoa, Auckland (Broun 1880); East Cape (S. Thorpe pers. comm. 2000). Mt Te Aroha; Whangarei; Matakana; Upper Kaimai, Matamata; Titirangi. Specimens have been found recently at Mt Te Aroha (1983) and Matakana (1992) (records from specimens belonging to various institutions, currently held at Massey University for systematic research). Need to confirm whether Matakana refers to Matakana near Warkworth, or Matakana Island in the Bay of Plenty.

Habitat: Associated with stout dead branches or trunks on the forest floor (J. Dugdale pers. comm. 2000). It has been found in *radiata* pine logs north of Whangarei (Milligan 1975). It has been collected from under bark and in a house basement, and from altitudes between 609 m and 975 m on Mt Te ArohA. They have been collected between August and April (records from specimens belonging to various institutions, currently held at Massey University for systematic research). Adults usually emerge in spring and are nocturnal (J. Dugdale pers. comm. 2000).

Photo: Andrew Townsend.

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey to obtain an estimate of distribution and abundance, and determine whether this species is of conservation concern.

Management Needs: -

Contacts: -

See Plate 2, No. 18.

Order: Coleoptera

Family: Cerambycidae

Taxonomic Name: *Xylotoles costatus* Pascoe, 1875

Common Names: Pitt Island longhorn (Scott & Emberson 1999)

Synonyms: -

M&D Category: A

Conservancy Office: WL

Area Office: Chatham Islands

Description: A flightless, blackish longhorn beetle. They have a variable green-bronze sheen, and ridges on their wing-cases. The body is 15 - 20 mm long (Emberson & Marris 1993c, Emberson 1998a). They are very similar to, though generally smaller than, *Xylotoles traversi* which is found throughout the Chathams (J. Marris pers. comm. 2000). The antennae are long and able to fold back against the body.

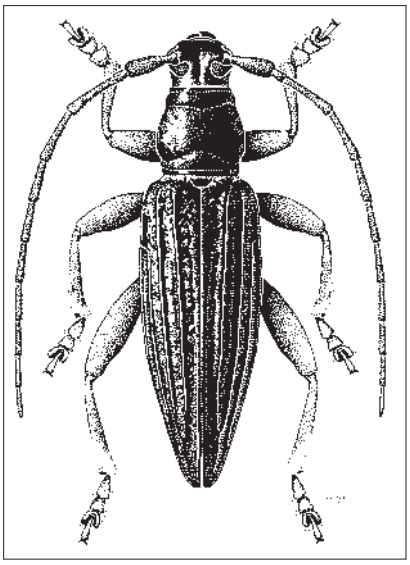
Body length: 20 mm

Type Locality: Pitt Island, Chatham Islands (Pascoe 1875).

Specimen Holdings: NHML, NZAC, CMNZ, LUNZ (Emberson et al. 1996; Emberson 1998b).

Distribution: Has been collected from Pitt Island and South East (Rangatira) Island, in the Chatham Islands group (Early et al. 1991; Emberson et al. 1996; Emberson 1998b). All recent collections have been on South East Island, it has not been seen on Pitt Island since 1907 (R. Emberson pers. comm. 1999).

Habitat: Most species of *Xylotoles* are thought to be non-host specific, feeding as larvae on dead twigs (Emberson et al. 1996). They are usually found on Chatham Islands coprosma (*Coprosma chathamica*) at night, either on the tree trunks or dead branches (Emberson & Marris 1993c; Emberson 1998b; Emberson pers. comm. 1999). A specimen has also been found by beating a dead branch of ngaio (*Myoporum laetum*) caught up in a tangle of *Muehlenbeckia* (Emberson & Marris 1993c; Emberson et al. 1996).



Drawing: Des Helmore
Permission: Landcare Research (NZ) Ltd.

Photo: John Marris, Lincoln University.

Threats: Vulnerable to mouse predation on Pitt Island (Emberson & Marris 1993c).

Work Undertaken to Date: Not found on Pitt Island during a survey in 1990 (Early et al. 1991) or during several subsequent searches on the island (R. Emberson pers. comm.). Not seen on Pitt Island since 1907. South East Island has been searched four times since 1992. A specimen has been reared out of a *C. chathamica* branch (R. Emberson pers. comm. 1999).

Priority Research, Survey, and Monitoring: 1) Search Pitt Island to determine if still present, also search Mangere Island (Early et al. 1991).

2) Mark a variety of trees on South East Island, and search them for the beetle to determine whether the apparent relationship between *Xylotoles* and *C. chathamica* is true. Most searches have focussed on *C. chathamica* because this is where they have been known to be found. However, this may not necessarily be the main host. Set branch traps across South East Island and check in 6 weeks time for presence of the beetle. This will provide some idea of distribution and abundance. Wood borers are hard to sample, and the low numbers sampled make it difficult to obtain accurate population estimates (R. Emberson pers. comm. 1999).

3) Further taxonomic work is required to enable *X. costatus* to be clearly separated from *X. traversi* (J. Marris pers. comm. 2000).

Management Needs: 1) Maintain rodent quarantine procedures on South East Island.

Contacts: Rowan Emberson, John Marris.

See Plate 2, No. 20.

Family: Curculionidae

Common name: **Weevils, snout beetles**

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Anagotus fairburni* (Brookes, 1932)

Common Names: Flax weevil (Foord 1990; Scott & Emberson 1999)

Synonyms: *Phaeophanus fairburni* (Gourlay 1931)

M&D Category: C

Conservancy Office: NL, AU, WK, WL, NM, SL

Area Office: Whangarei, Warkworth, Hauraki, Kapiti, Wairarapa, Sounds, Motueka, Te Anau

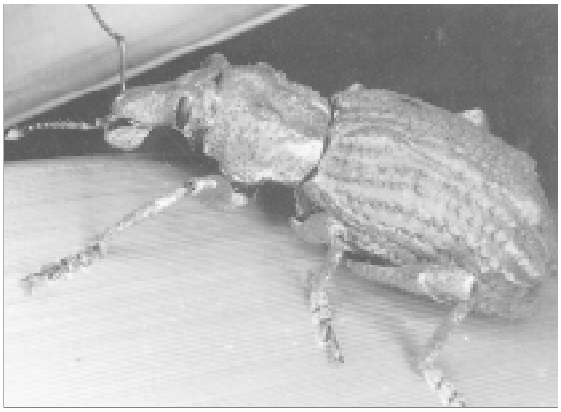
Description: A large, flightless, brown weevil.

Type Locality: Northern end of D'Urville Island (Gourlay 1931).

Specimen Holdings: -

Distribution: This weevil has a wide distribution, occurring on a number of offshore islands, from the Poor Knights in the far north to Big South Cape Island south-west of Stewart Island (Kuschel 1982), as well as in subalpine areas of Marlborough Sounds (G. Kuschel pers. comm. 1999), and the Tararua Ranges. Specimens have been collected from: Poor Knights Islands; Little Barrier Island; Ruamahuanui Island, The Aldermen Islands group; Stephens Island, on steep south-east facing slopes at the landing block and above Queen's Beach; Maud Island; Outer Chetwode Island; D'Urville Island; alpine areas of the Tararua Ranges; Dun Mt area, Nelson (Information from Gibbs & Allen 1990; Meads & Notman 1992a; Townsend 1998; Watt 1982b; Rufaut & Clearwater 1997); Mt Stokes, Marlborough Sounds; Mt Riley, Marlborough Sounds (R.Craw pers. comm. 2000); South West Island and Great Island, Three Kings Islands group; Trio Islands; Big South Cape Island (NZAC specimen records); Wairaki Island, Breaksea Sound (Thomas 1996; Thomas et al. 1992). It was relatively common in 1984 in the subalpine northern Tararua Ranges around Dundas Hut (R. Craw pers. comm. 2000). Probably no longer extant on D'Urville Island, and may not be present in the Dun Mt area (I. Millar pers. comm. 2000).

Habitat: This species is restricted to its host plant, flax (*Phormium* spp.) It has been found feeding on *Phormium tenax* at the Poor Knights (Kuschel 1982), and mountain flax (*Phormium cookianum*) on Wairaki Island (Thomas 1996). Adults retreat deep into the base of the flax bushes during the day (Thomas et al. 1992), hiding amongst the closely piled dead leaves and debris that accumulate there. Eggs are deposited at the base of flax plants, between the free edges of leaves at the base of fans (Gourlay 1931).



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Sign of Presence: Flax leaves with smooth notched edges may be a sign of weevil feeding. Giant weta make similar notches, but their edges are rough (Gibbs & Allen 1990). Two caterpillars also make similar notches in flax leaves, the cutworm *Tmetolophota steropastis*, and the flax looper *Orthoclydon praefactata* (Thomas et al. 1992).

Threats: This species occurs mainly on islands and appears to be under no immediate threat. Populations on the mainland

would be vulnerable to rat predation, if rats are present in the subalpine areas occupied by this weevil.

Work Undertaken to Date: Twenty individuals were transferred from Wairaki Island to Breaksea Island in March 1991 (Thomas 1996; Thomas et al. 1992).

Priority Research, Survey, and Monitoring: 1) This species is probably fairly secure at present. However, if work is being done on the west Fiordland islands or at coastal sites in Fiordland, then surveys for this species should be considered as an add-on (Edwards 1999).

Management Needs: 1) Maintain island security.

Contacts: Robin Craw, Guillermo (Willy) Kuschel; Bruce Thomas; Ian Townsend.

See Plate 3, No. 1.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Anagotus stephenensis* Kuschel, 1982

Common Names: Stephens Island weevil (Scott & Emberson 1999), ngaio weevil (Kuschel & Worthy 1996)

Synonyms: *Phaeophanus oconnori* Broun, 1921

M&D Category: B

Conservancy Office: NM

Area Office: Sounds

Description: A large, flightless weevil, about 15 - 23 mm long (Kuschel & Worthy 1996).

Type Locality: Stephens Island.

Specimen Holdings: NZAC (Kuschel & Worthy 1996).

Body length: 23 mm

Distribution: Keepers Bush and Ruston Bush on Stephens Island (Gibbs & Allen 1990), but apparently fairly rare there now (R. Emberson pers. comm. 1999). Historically present in North and South Canterbury (Worthy & Holdaway 1996; Kuschel & Worthy 1996).

Habitat: Adults are usually found on ngaio (*Myoporum laetum*) (Gibbs & Allen 1990) or karaka (*Corynocarpus laevigatus*), and their larvae may feed on these trees (Kuschel & Worthy 1996. Larvae of related species feed on recently dead ngaio (Gibbs & Allen 1990). Adults have also been found in close proximity to ngaio, on grass and fenceposts (I. Millar pers. comm. 1999).

Sign of Presence: Feeding notches on ngaio leaves (Gibbs & Allen 1990).

Threats: The quantity of recently dead ngaio could be limiting if their larvae utilise this as a food source. Some predation from tuatara is also possible (Gibbs & Allen 1990).

Work Undertaken to Date: Three weevils seen over three nights along a limited section of the ridge track by Ruston Bush in 1995. One of the weevils was seen on two different evenings. Another weevil was seen in daylight on the lower edge of Ruston Bush prior to starting evening searches (I. Millar pers. comm. 2000).

Permission: Manaaki Whenua Press. Meads 1990a, p. 45.

Priority Research, Survey, and Monitoring: 1) Establish a survey technique, and survey Stephens Island to get an estimate of population size (R. Emberson pers. comm. 1999; I. Millar pers. comm. 1999).

Management Needs: 1) Investigate options for establishing a new population on a rodent free island in the Marlborough Sounds. The lack of basic knowledge of the weevil's biology and ecology may pose a problem to translocation (Marris 1996b), and it will depend on results of the survey because there may be insufficient numbers to translocate (I. Millar pers. comm. 1999).

Contacts: Derek Brown, Robin Craw, Guillermo (Willy) Kuschel, Ian Millar.

See Plate 3, No. 2.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Anagotus turbotti* (Spiller, 1942)

Common Names: Turbott's weevil (Foord 1990; Scott & Emberson 1999)

Synonyms: *Phaeophanus turbotti* (Spiller 1942)

M&D Category: B

Conservancy Office: NL

Area Office: Kaitaia, Whangarei

Body length: 24 mm

Description: A large, flightless weevil, up to 24 mm long, brown or reddish-brown with whitish spots on its back. Its underneath is whitish. There are large, cone-shaped protuberances on its back near the end of its body (Klimaszewski & Watt 1997).

Type Locality: Aorangi Island, Poor Knights Islands group (Spiller 1942).

Specimen Holdings: AMNZ, MONZ (Kuschel 1982), NZAC.

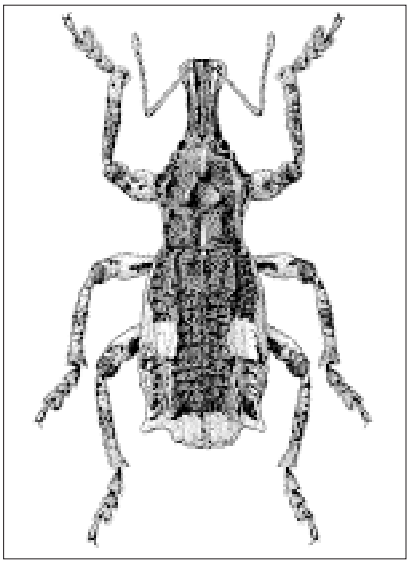
Distribution: Great Island, Three Kings Islands; Aorangi and Tawhiti Rahi Island, Poor Knights Islands; and Muriwhenua Island, Hen and Chickens Islands (information from Kuschel 1982; Watt 1982b; Meads 1990a; Brook 1999b).

Habitat: Adults are generally found on the branches of native trees, especially karaka (*Corynocarpus laevigatus*), ngaio (*Myoporum laetum*), and *Hebe bollonsii*, which their larvae bore into (May 1987a; Meads 1990a; Klimaszewski & Watt 1997; Watt 1986 cited in Brook 1999b).

Threats: None known at present (Brook 1999b).

Work Undertaken to Date: Larvae have been captive reared on karaka and ngaio (May 1987a). Pigs were eradicated from Aorangi in 1936 (Powell 1938 cited in Penniket 1981).

Priority Research, Survey, and Monitoring: 1) Survey distribution and abundance of *A.turbotti* in the Three Kings, Poor Knights, and Chicken Islands (Brook 1999b) to obtain an estimate of the size and number of populations present.



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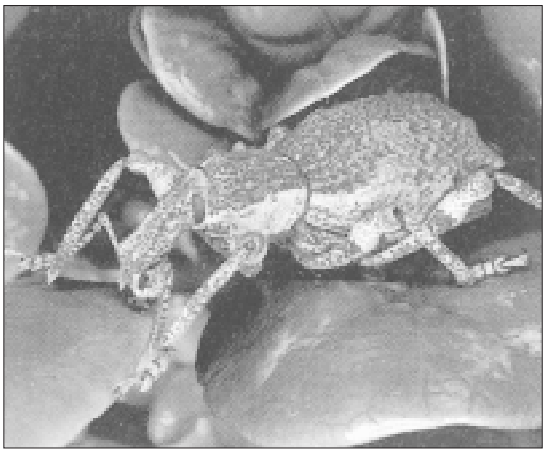
Klimaszewski & Watt 1997, p. 165, Fig. 251



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Meads 1990a, p. 45.

Management Needs: 1) Maintain island security (Brook 1999b).

Contacts: Robin Craw, Guillermo (Willy) Kuschel.

See Plate 3, No. 3.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Hadramphus spinipennis* Broun, 1911

Common Names: Coxella weevil (Scott & Emberson 1999)

Synonyms: -

M&D Category: B

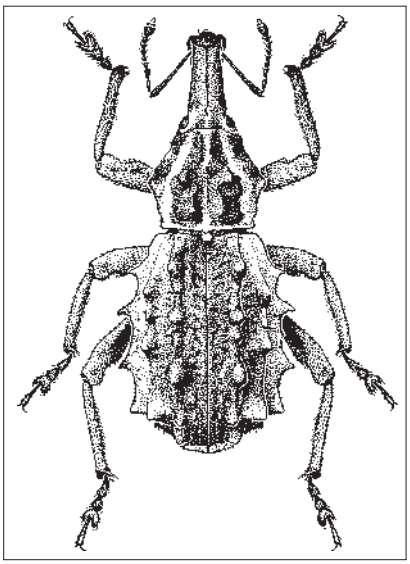
Conservancy Office: WL

Area Office: Chatham Islands

Description: A large, flightless, reddish-brown weevil, with a knobbly back. It has pale yellowish to dark brown hairs and scales, lying flat against the body. The body is 20.2 - 23 mm long, and 9.6 - 11.5 mm wide (information from Emberson & Marris 1993b; Craw 1999).

Type Locality: Chatham Islands, Pitt Island (Broun 1911).

Body length: 23 mm



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Specimen Holdings: NHML, MONZ, LUNZ.

Distribution: Restricted to the Chatham Islands group. There is a sizeable population, in the thousands, present on Mangere Island (113 ha), a small population present in highly fragmented habitat on South East (Rangatira) Island (218 ha) (Schops 1998; R. Emberson pers. comm. 1999), and a population on Little Mangere Island (Emberson 1998b). Historically present on Pitt Island, but may now be extinct there (Emberson et al. 1996).

Habitat: These weevils inhabit a fragmented habitat of coastal cliffs, bluffs, and rocky shores on South East Island, and have a patchy distribution over the whole of Mangere Island (Given 1996 cited in Schops 1998). Adults are nocturnal and feed on Dieffenbach's speargrass (*Aciphylla dieffenbachii*) (Apiaceae) (Early et al. 1991; Schops 1998; Craw 1999), particularly on flowers at night (Emberson 1998b). *Pseudopanax chathamica* may be an alternative host for adults (Emberson et al. 1993), the adults can feed on these plants but show a strong preference for *A. dieffenbachii* (Schops 1999). Adult weevils are usually found in low vegetation, grass, and litter around the plant bases during daytime (information from Kuschel 1971; Emberson et al. 1996). Eggs are laid in soil near the host plant. Larvae burrow into the roots of the host plant and start feeding on the root parenchymA. Often a tunnel was eaten into the root crown, but most larvae feed at the cortical region of large tap roots. Pupation takes place close to the host plant in earthen chambers up to 600 mm below the soil surface (Schops 2000). Adults show a preference for flowering host plants, particularly the petioles and flowers of male plants (Schops 1998, 2000).

Photo: John Marris, Lincoln University.

Sign of Presence: Feeds on Dieffenbach's speargrass, the adult feeding on leaf tips, blades and petioles. Sign varies from mild grazing resulting in white gum production, to large areas eaten out of petioles. Male flowers are favoured, with the male flower stalks sometimes almost eaten right through, causing the tips to bend and die. Female flowers and green seeds are also eaten,

but usually only partially (Emberson et al. 1996). Feeding damage of the petioles and leaves attributed to *H. spinipennis* larvae in Emberson et.al. (1996) was actually caused by larvae of *Stephanorhynchus purus* (Schops 1998).

Threats: Dieffenbach's speargrass is very susceptible to grazing (Emberson et al. 1994), and sheep grazing, combined with rodent predation, and large scale clearing of fields, has probably resulted in the disappearance of *H.spinipennis* from Pitt Island (Kuschel & Worthy 1996). The increasing area of forest and shrubs on Mangere Island is also increasing the potential for *A.dieffenbachii* habitat to disappear (Schops 1998). Mice as well as rats prey upon the adult weevils (R. Emberson pers. comm. 1999). It is also possible that local extinctions may be caused by the feeding damage of *H.spinipennis* on *A.dieffenbachii*. The weevils do not appear to be regulated by density dependence, and reach densities beyond the carrying capacity of the plant, which results in considerable and sometimes catastrophic impact on the plant population. Regeneration of plants from seed banks or root fragments may take several years. Weevils can generally find a host plant over a distance of 100 m, possibly further, so if plants are nearby they can migrate to them (Schops et al. 1998).

Work Undertaken to Date: Mangere Island forest is being restored through intensive planting, and this may displace *A.dieffenbachii* (Schops 1998).

Priority Research, Survey, and Monitoring: 1) Survey outer islands in the Chatham Islands group, including the Murumurus, which have populations of *A. dieffenbachii* or *A. traversii*.

2) Monitor populations on Mangere and Rangatira Islands every 2 to 3 years.

3) The impact of mice, cats and weka on adult and larval *Hadramphus* are unknown and may need investigation. Whilst mice are known to prey upon this weevil, the extent of their impact is not known (information from Early et al. 1991; Emberson et al. 1996; Schops 1998; Craw 1999).

Management Needs: 1) Maintain rodent quarantine procedures on South East and Mangere Island.

2) If no additional populations found through survey, then investigate the possibility of transferring *H. spinipennis* to a rodent free island in the Chatham Islands group.

3) Establishment of *H. spinipennis* should be investigated as part of the Pitt Island restoration project. A prerequisite for this would be the establishment of a substantial *Aciphylla* population, which cannot take place without total control of sheep, pigs and cattle. Mice should also be controlled.

4) Keep some of Mangere Island clear of forest to provide habitat for *A.dieffenbachii*, or ideally, provide natural self-sustaining habitat (information from Emberson et al. 1996; Schops 1998).

Contacts: Robin Craw, Rowan Emberson, Guillermo (Willy) Kuschel.

See Plate 3, No. 5.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Hadramphus stilbocarpae* Kuschel, 1971

Common Names: Knobbled weevil (Scott & Emberson 1999), also called the stilbocarpa weevil

Synonyms: -

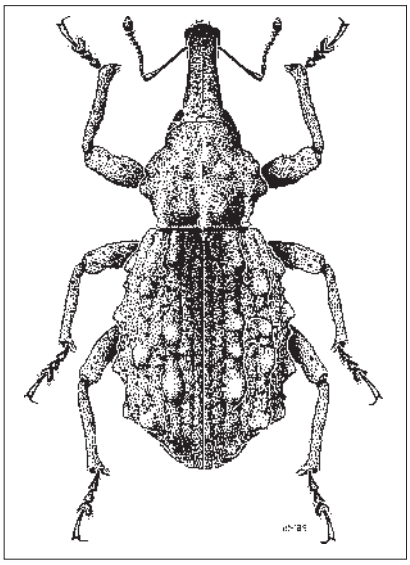
M&D Category: C

Conservancy Office: SL

Area Office: Te Anau

Description: A large, knobbly-backed, flightless weevil, 15.5 - 21.7 mm long and 7.8 - 9.5 mm wide. Its body is dark brown, with greyish-brown to dark brown scales present. The scales on top of the tubercules (knobbly bits on the back) are paler in colour (Craw 1999). The larvae reach a maximum size of 17.5 mm long by 6.5 mm wide. They have a dark black-brown head, and dark greenish-brown maxillae. The pupa reaches a maximum length of 17.0 mm (May 1981).

Body length: 21.7 mm



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Type Locality: Murderers Cove, Big South Cape Island (Kuschel 1971).

Specimen Holdings: AMNZ, NHML, CMNZ, MONZ, NZAC, OMNZ (Craw 1999), BMH (Kuschel 1971).

Distribution: Resolution Island (exposed outer coast and Five Fingers Peninsula)[7] Puysegur Point[4,7]; Bird Island, Foveaux Strait[1,3,4,7]; Big South Cape Island[4,5,7] at Murderers Cove, Puwai Bay, North Peak, and North East End[1]; North East Island at Station Point [1,2], Signpost Hill, Ho Ho Bay, Sinkhole Drain, Sinkhole Flat[2], and Broughton Island[7] in The Snares Islands group[3,4,5]; Wairaki Island, 'OG3' a small islet 500 m east of Hawea Island, and Breaksea Island in Breaksea Sound; islands in Dusky Sound[6]; Hawea Island; a small islet on the south side of Breaksea Island; Shelter Islands, Doubtful Sounds (B. Thomas pers. comm. 1999). Specimens have also been collected from North Bay, Big Solander Island (1996); base of Northwest Point, Big Solander Island 1996 (MONZ). There is a possible population at Puysegur Point, although this may represent a new species[7].

[1]Kuschel 1971; [2]May 1981; [3]Meads 1990a; [4]Sherley 1990a; [5]Thomas et al. 1992; [6]Emberson et al. 1996; [7]Craw 1999.

Bottom: Permission: Manaaki Whenua Press. Meads 1990a, p 49.

Habitat: The Foveaux Strait to Snares populations are found on the fleshy herb stilbocarpa, (*Stilbocarpa lyallii, S. robusta*) (Kuschel 1971; Craw 1999), whilst the south-west Fiordland populations are restricted to the shoreline carrot (*Anisotome lyallii*) (Meads 1990a; Thomas et al. 1992; Craw 1999). The adults are nocturnal, sheltering at the base of plants during the day, and emerging to feed after dusk (Thomas et al. 1992), congregating in large numbers on a single plant (Meads 1990a, Craw 1999). Habitat appears to remain stable for a long time, then the plants quickly decline. Regrowth of *Anisotome* is occurring on the islet to the south of Breaksea Island, and it may be that the plants and weevils go through a boom and bust cycle (B. Thomas pers. comm. 1999). Adults have been

collected on one occasion each from under *Phormium, Poa foliosa*, and in *Olearia* forest. The larvae have been found feeding on the living rhizomes of *S. robusta* (May 1981), and also feed on the roots of *A. lyallii* (Kuschel 1971).

Sign of Presence: The adults feed by chewing a hole through the leaf and then enlarging it. The hole is often close to the leaf margin and can give the illusion of a notch in the leaf edge (Craw 1999).

Threats: Very prone to attack by rats (Meads 1990a) and the ship rat (*Rattus rattus*) exterminated the population on Big South Cape Island during the rat invasion of 1962-63 (Kuschel 1971; Watt 1977; Meads 1990a). A possible threat may be the increase in seal population numbers because they lie on the weevil's host plants when they come ashore. Habitat reduction is occurring on OG3 due to the weevils feeding on a host plant until it dies (B. Thomas pers. comm. 1999). In 1991 there were 136 Anisotome plants on OG3 Islet, yet by April 1996 only six remained. In contrast, the population on Wairaki Island has remained relatively stable over this period (Thomas 1996).

Work Undertaken to Date: Forty individuals from OG3 Islet were transferred to Breaksea Island in March 1991 (Thomas et al. 1992), this was successful and they have colonised well (B. Thomas pers. comm. 1999). The OG3 population has been monitored since the early 1990s.

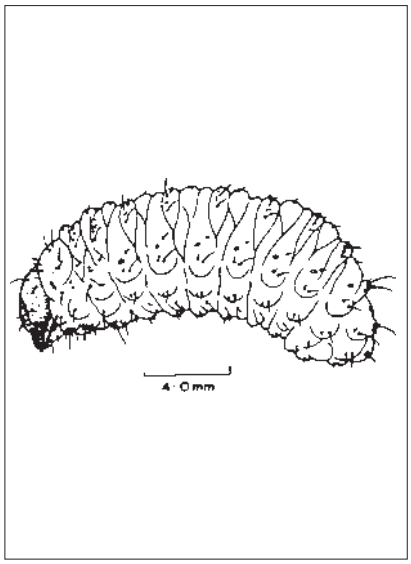
Priority Research, Survey, and Monitoring: 1) Survey Puysegur Point as a population may still exist there (Sherley 1990a). This population may be an undescribed species of *Hadramphus* (Craw 1999).

2) Survey Hawea Island to see if there is a general population present across the island. Hawea Island has been monitored by Landcare since the rat eradication in 1986, and if weevils are only present at the control plot, then they may have been accidentally introduced to the island during monitoring (B. Thomas pers. comm. 1999).

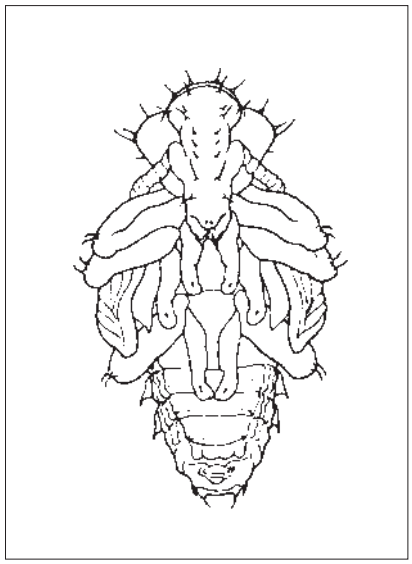
Management Needs: 1) Maintain island security.

Contacts: Robin Craw, Guillermo (Willy) Kuschel, Bruce Thomas.

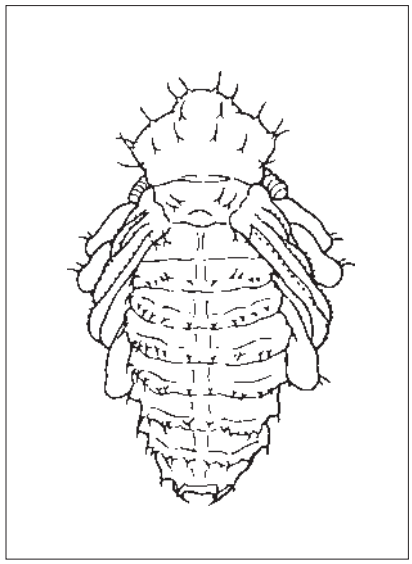
See Plate 3, No. 7.



Larva, lateral view.



Pupa, ventral view.



Pupa, dorsal view.

Permission: SIR Publishing. May 1981, p 268, Figs 34, 39 and 40.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Hadramphus tuberculatus* (Pascoe, 1877)

Common Names: Canterbury knobbled weevil (Scott & Emberson 1999), Banks Peninsula speargrass weevil (Foord 1990), spaniard weevil (Kuschel & Worthy 1996)

Synonyms: *Lyperobius tuberculatus* (Pascoe 1877)

M&D Category: X

Conservancy Office: CA

Area Office: North Canterbury

Description: A large, knobbly-backed, flightless weevil, 11.7 - 16.3 mm long and 6.5 - 8.3 mm wide. Its body is dark brown, with greyish-brown scales present. The scales on top of the tubercules (knobbly bits on the back), head and elytral (wing case) intervals being paler in colour (Craw 1999).

Body length: 16.3 mm

Type Locality: Christchurch (lectotype).

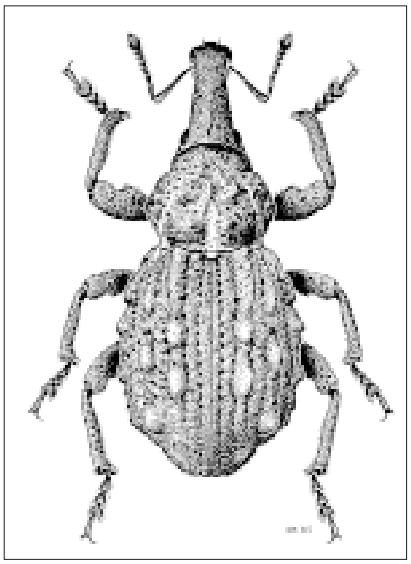
Specimen Holdings: NHML, CMNZ, NZAC (Craw 1999).

Distribution: Was once present on the Canterbury plains[3, 4], foothills and fringing ranges, at Christchurch, Blackford and Mt Oakden (Rakaia R.), Temuka[4], Oxford[2,4] and Waimate[1,2,4]. There have been references to this species having occurred at Banks Peninsula[2], but there are no known specimens collected from there[4].

[1]Johns 1986; [2]Sherley 1990a; [3]Kuschel & Worthy 1996; [4]Craw 1999.

Habitat: Adults are nocturnal, their host plants are probably *Aciphylla subflabellata* and *A. glaucescens* (Apiaceae) (Craw 1999).

Threats: This species is possibly extinct, the last specimen collected being from Waimate in 1922 (Craw 1999). Removal of *Aciphylla* through habitat modification on the Canterbury Plains has probably contributed to the likely extinction of this species (Kuschel & Worthy 1996), with the depredations of rats and mice which prey on adults and larvae, being another factor (Johns 1986).



Permission: Manaaki Whenua Press. Craw 1999, p. 39, Fig. 4.

Photo: Andrew Townsend.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) A thorough search is required for this species to determine the likelihood of it being extinct. Search historic sites plus surrounding areas and other likely habitat.

Management Needs: -

Contacts: Robin Craw, Peter Johns, Guillermo (Willy) Kuschel.

See Plate 3, No. 6.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Heterexis seticostatus* (Brookes, 1951)

Common Names: Campbell Island ribbed weevil (Scott & Emberson 1999), ribbed weevil

Synonyms: *Campbellorhinus seticostatus* (Brookes 1951)

M&D Category: B

Conservancy Office: SL

Area Office: Southern Islands

Description: A medium sized flightless weevil, 8.8 - 11.7 mm long, and 3.5 - 5.3 mm wide (Kuschel 1964). The body is pitchy-black or dark brown, almost black (Kuschel 1964) and the elytra (wing cases) clothed with fine yellowish scales and short hairs (Brookes 1951).

Body length: 11.7 mm

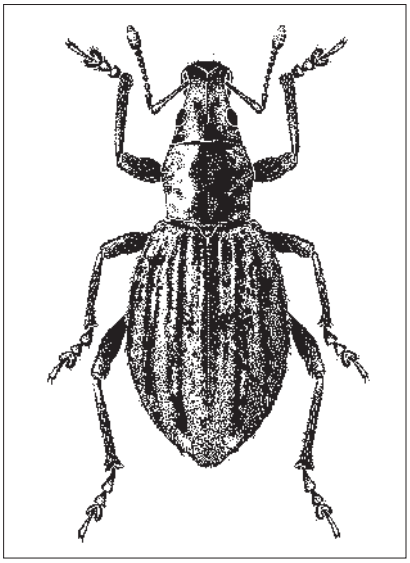
Type Locality: Windlass Bay, Campbell Island (Kuschel 1964).

Specimen Holdings: CMNZ, MONZ.

Distribution: Restricted to Campbell Island (Kuschel 1964, 1971; Sherley 1990a). Has been found at Windlass Bay; on the west coast behind St Col Peak; St Col Peak ridge; Yvon Villarceau Peak region; and Perseverance Harbour at Tucker Cove, between Tucker Cove and Camp Cove, Lookout Bay (Brookes 1951), and Garden Cove (CMNZ).

Habitat: Early specimens were found under either *Chrysobactron rossi* (bog lily) (now a synonym of *Bulbinella rossii*), tussock or amongst turf (Brookes 1951). Adults inhabit the bases of the lily and the larvae feed on the roots (Meads 1990a).

Threats: Rodent predation is likely to be the main threat, in particular Norway rats *(Rattus norvegicus)* (Meads 1990a: Sherley 1990a). However, there is a feeling that this species is secure at present (G. Kuschel pers. comm. 1999).



Drawing: Des Helmore
Permission: Landcare Research (NZ) Ltd.

Work Undertaken to Date: First stage of rodent eradication from Campbell Island completed, with bait acceptance trials conducted in August 1999 (I. McFadden pers. comm. 1999).

Priority Research, Survey, and Monitoring: -

Management Needs: 1) Eradicate rodents from Campbell Island. First stage completed, with bait acceptance trials conducted in August 1999 (I. McFadden pers. comm. 1999).

Contacts: -

See Plate 3, No. 11.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Lyperobius carinatus* Broun, 1881

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: NM, CA

Area Office: South Marlborough, Waimakariri, Raukapuka, Aoraki

Description: A large, reddish-brown to black, flightless weevil, with white or yellowish white scales. The body is 20.4 - 24.8 mm long, and 8.6 - 10.8 mm wide (Craw 1999).

Type Locality: No locality, came from J.D.Enys, Esq. (CMNZ). Has been labelled "holotype female, *Lyperobius carinatus* Broun, 1881, R.C.Craw det. 1997" (Craw 1999).

Body length: 24.8 mm

Specimen Holdings: CMNZ, MONZ.

Distribution: Kahutara Saddle, Seaward Kaikoura Ranges; Craigieburn Range; Broken River Basin; Mt Temple; Jollie Peak; Mt Hutt; Mt Somers; Carney's Creek; McCoys Creek, upper Rangitata River; Mt Cook National Park; Mt Dalgety (Craw 1999).

Habitat: Alpine. Adults are diurnal (Craw 1999).

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey to determine distributional limits and population status because this poorly known species occurs in the drier, environmentally degraded mid-eastern South Island ranges and may be endangered.

2) Assess taxonomic status of north-eastern South Island *Lyperobius* populations because there may be undescribed taxa in this area (Craw 1999). Include verification that the Kahutara Saddle population is indeed *L. carinatus* (I. Millar pers. comm. 2000).

Photo: Andrew Townsend.

Management Needs: -

Contacts: Robin Craw.

See Plate 3, No. 10.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Lyperobius huttoni* Pascoe, 1876

Common Names: Hutton's speargrass weevil (Scott & Emberson 1999), speargrass weevil

Synonyms: -

M&D Category: B

Conservancy Office: WL, NM, CA

Area Office: Poneke, South Marlborough, Waimakariri

Description: A large, flightless, reddish-brown to black weevil, 18 - 26.2 mm long and 9.2 - 11.8 mm wide (Craw 1999).

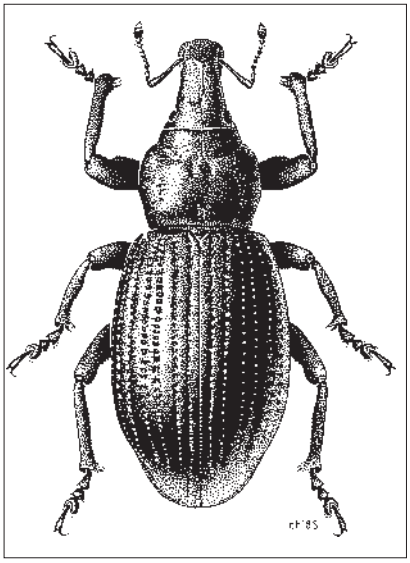
Body length: 26.2 mm

Type Locality: Tarndale, near the head of the Wairau River, in the Nelson Province.

Specimen Holdings: AMNZ, BHPC, CMNZ, LUNZ, MONZ, NZAC, OMNZ (Craw 1999).

Distribution: In the South Island from Tarndale, upper Wairau Valley; Black Birch Range; Seaward Kaikoura Range (Haycock Range, Mt Fyffe, Kahutara Saddle); Jacks Pass, Hanmer Range; Hanmer Plain; Mt Binser; Craigieburn Range; Horwell Downs Station, north of Burkes Pass, Two Thumb Range; Albury Range; Grampian Mts; Hunters Hills (Craw 1999); Mt Cockayne[3]. There is also a specimen from Peel Ridge, Nelson in the MONZ collection, although it is unlikely that this is *L. huttoni* as it is outside of its known range, or it may be mislabelled (R. Craw pers. comm. 2000). North Island: on the Wellington south coast, between Owhiro Bay and Tongue Point[2]; Owhiro Bay 152 m; Happy Valley; Island Bay; Red Rocks[1,3]; Karori Stream; Sinclair Head; Long Gully. Present distribution unknown, but a search of areas in the Craigieburn Mts and near Hanmer did not find any sign of weevils. On the Wellington coast, they are only present in Long Gully, with a minimum population estimate of 135 individuals[3].

[1]Bull 1967; [2]Beauchamp 1988; [3]Hunt 1996.



Permission: Manaaki Whenua Press. Craw 1999, p. 40, Fig. 7.

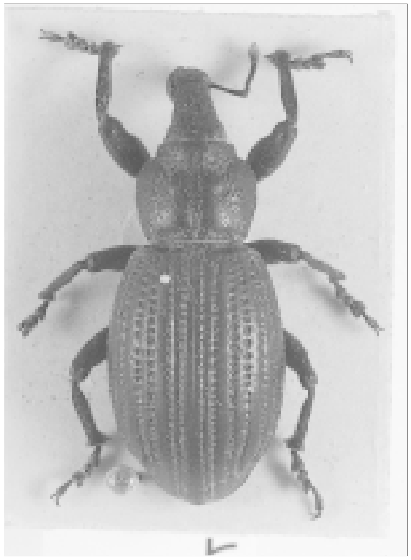


Photo: Andrew Townsend.

Habitat: Inhabits tussock grassland (Meads 1990a) and herbfields (Hunt 1996) in sub-alpine regions ranging from 609-1219 m in the South Island, but found at low altitudes on the Wellington coast. Covers a range of climates, from dry montane in the South Island to humid maritime in the North Island (Bull 1967). Usually found on moist south-east facing slopes on the Wellington south coast, which is where the speargrass grows (Beauchamp 1989). The adults are diurnal (Meads 1990a, Craw 1999), and have a host association with the speargrasses *Aciphylla aurea, A. colensoi, A. squarrosa* (Craw 1999), and *A. glaucescens* (Hunt 1996). On

the Wellington south coast they are dependent on *A. squarrosa* (Beauchamp 1989). They are more likely to be found on large plants, and on plants which are in flower or have more than one crown. Adults feed on foliage and hide in the leaf litter under the plant. Commonly associated with unstable environments (areas with bare rock or scree), and occur where the host plant is not overgrown by other plants. Eggs are laid in leaf sheaths near the base of the *Aciphylla* plant (Hunt 1996). The larvae are subterranean, feeding on roots (Bull 1967, Hunt 1996, Schops 1998). Larvae construct a bare pupal chamber in the soil adjacent to the roots of the host (Craw 1999).There is a population overlap with *L. carinatus* at Kahutara Saddle, Kaikoura (I. Millar pers. comm. 1999).

Sign of Presence: There are two main types of feeding sign; leaf nicking on the outer leaflets of the host, and a deep ovoid notching of the leaf petioles (Craw 1999). This can be confused with the feeding damage made by the larva of the noctuid moth *Graphania nulliferA. L. huttoni* notches the leaf margin, but only feeds to the midrib. The base of the notch is at a consistent depth along the entire length of the notch, forming a straight line. The other main feeding sign is deep (about 5 mm), ovoid, and round-bottomed holes made in the thick basal stems. Less common is feeding at the thicker part of the leaf at the point of division of the pinnate leaves. In the South Island at Kahutara, holes in the centre of the leaf similar to those formed on the petiole occur. Feeding damage on *A. aurea* results in the exudation of gummy sap which dries to a white crystalline substance (Hunt 1996).

Threats: It is possible that rodents are a threat (Bull 1967), through either competition for food as they feed on the roots of *Aciphylla* (Craw 1999), or predation. There has been positive evidence of predation by mice (Bull 1967, Craw 1999). Habitat destruction is also a major concern. Quarrying (Henderson 1980, Craw 1999) at Owhiro Bay removed the entire habitat of one population (Bull 1967), and a landslide threatened one population (Beauchamp & Sherley 1988). Destruction of host plants through grazing (Bull 1967), especially by goats (Beauchamp 1988) and cattle (Beauchamp 1990b) puts further pressure on the populations. Another possible threat is competition for food with the caterpillar *Graphania nullifera* (Bull 1967; Beauchamp 1990b). Succession by gorse (*Ulex europaeus*) (Bull 1967), tutu (Coriaria sp.), flax (*Phormium* spp.), and tawhinu (*Ozothamnus leptophylla*) is a potential problem (Henderson 1980; Beauchamp 1990b). The early practice of tussock burning would have contributed to the decline of this species (Bull 1967; Henderson 1980; Beauchamp 1990b). The Wellington population which appears to be a Pliocene relict (Craw 1988) is threatened. Extinction of this population seems inevitable because it is dependent upon a host which is part of a seral plant community, and present in high density only for a short time after disturbance (Hunt 1996). Recent studies provide genetic support that the North and South Island populations are conspecific. North Island specimens are smaller, but this fits in with a general tendency for alpine individuals to be larger than coastal ones due to physiological demands (Hunt 1996).

Work Undertaken to Date: Wellington south coast area:

1965 - 67: Bull identifies 6 weevil sites. Failed to find at other localities in the Cook Strait area including areas adjacent to the mouth of the Wainuiomata Stream and Orongorongo River, the area south of Owhiro Bay and the coast north and south of Titahi Bay (Bull 1967).

1979: Search of Bull's 6 sites, suggested that only 2 of the sites still had weevils.

1980: Added to the protected fauna list of the Wildlife Act (1953).

1983: 4.65 ha purchased with the purpose of creating a reserve for wildlife preservation.

1985: Over 400 pot-grown speargrass (*Aciphylla squarrosa*) plants planted in and around the reserved area, an electric fence erected to exclude goats.

1986: Beauchamp surveys 2 sites that were believed still to have weevils, only a low level of sign observed.

1987 - 90: Beauchamp reports show a declining distribution of the weevil.

1989: Beauchamp locates new inland populations towards Hawkins Hill. Estimates total population to be between 141 and 210 individuals, at 25 sites.

1990: Beauchamp reports decline in number of sites from 25 to 17.

1991: Search of Beauchamps search areas conducted, feeding sign observed.

1993: Search of Bulls and Beauchamps sites.

1994 - 1996: Study finds weevils only in Long Gully, and *Aciphylla* distribution generally heavily reduced on that reported by Beauchamp.

1995: Electrophoretic comparison of Kaikoura and Long Gully populations by Morgan-Richards in progress (Hunt 1996).

1999: Resurvey of Wellington south coast by M. Hunt and R. Stone. Locations mapped for browsing sign and presence of weevils. In situ management including trials with fencing, *Aciphylla* planting, and weeding, is being undertaken in the Wellington south coast region.

South Island:

Captive breeding programme underway at Lincoln University using six pairs of weevils taken from Kahutara (R. Stone pers. comm. 2000). Distribution surveys undertaken at Kahutara Saddle, My Fyffe, Black Birch, and Blairich. No weevils found at Blairich (I. Millar pers. comm. 2000).

Priority Research, Survey, and Monitoring: 1) Conduct a population viability analysis of the Wellington population, once sufficient information on productivity, recruitment and survival has been obtained.

2) Survey the status and health of speargrass populations.

3) Survey to check the status of the southern populations from Hunters Hills and Mckenzie Country because all records from these areas are 30-40 years old (R. Craw pers. comm. 2000).

Management Needs: 1) Ongoing management in situ could lead to an increase in numbers and density, and a translocation project in the future (Hunt 1996).

Contacts: Robin Craw, Maree Hunt, Guillermo (Willy) Kuschel, Jan Clayton-Greene, Faith Barber.

See Plate 3, No. 9.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Megacolabus bifurcatus* May, 1973

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: NL

Area Office: Kerikeri

Description: A dull black, flightless weevil, with red-brown antennae and tarsi ('feet'). There are patches of white and red-brown scales, and sparse, pallid hairs lying flat along the body. The body is 3.5 - 5.5 mm long and 1.8 - 2.5 mm wide (May 1973).

Body length: 5.5 mm

Type Locality: Road verges between Tutamoe and Waimatenui, Northland (May 1973).

Specimen Holdings: NZAC (May 1973).

Distribution: Between Tutamoe and Waimatenui, Northland (May 1973).

Habitat: Feed at night on sori on the underside of *Blechnum capense* fern fronds. In general *Megacolabus* species rarely occur below 500 m (May 1973).

Threats: It is believed that these weevils are not endangered, just seldom collected (G. Kuschel pers. comm. 2000; R. Craw pers. comm. 2000).

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey suitable habitat in the area between Tutamoe and Waimatenui, as well as adjacent areas, to determine distributional limits and population estimates.

Management Needs: 1) Dependent on the results of the survey. Likely that this species will be removed from the list of conservation priorities.

Contacts: Robin Craw, Guillermo (Willy) Kuschel.

Photo: Andrew Townsend.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Megacolabus obesus* May, 1963

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: NL

Area Office: Kerikeri

Description: A dull black, flightless weevil, with red-brown antennae and tarsi ('feet'), and a clothing of scattered, yellowish scales, mostly flat against the body,. The body is 4.5 mm long, and 2.6 mm wide (May 1963).

Body length: 4.5 mm

Type Locality: Mataraua, Kaikohe.

Specimen Holdings: NZAC (May 1963).

Permission: SIR Publishing.
May 1963, Plate 1, Fig. c.

Distribution: Mataraua, Kaikohe, North Auckland Peninsula (May 1963).

Habitat: Found on the underside of fern leaves at night (May 1963).

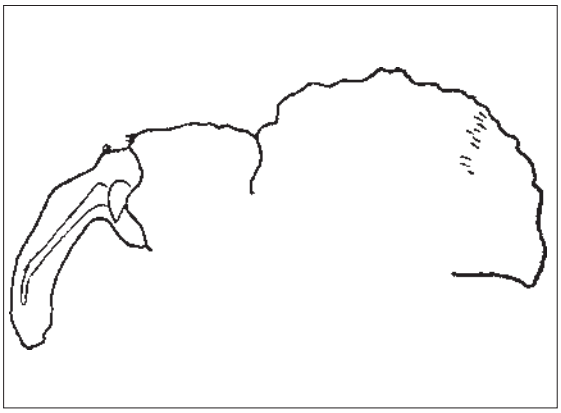
Threats: It is believed that these weevils are not endangered, just seldom collected (G. Kuschel pers. comm. 2000; R. Craw pers. comm. 2000).

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey suitable habitat at Mataraua and adjacent areas to determine distributional limits and population estimates.

Management Needs:1) Dependent on the results of the survey. Likely that this species will be removed from the list of conservation priorities.

Contacts: Robin Craw, Guillermo (Willy) Kuschel.



Lateral view. Permission: SIR Publishing.
May 1963, p. 161, Fig. 7d.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Megacolabus sculpturatus* Broun, 1893

Common Names: Akaroa weevil

Synonyms: -

M&D Category: X

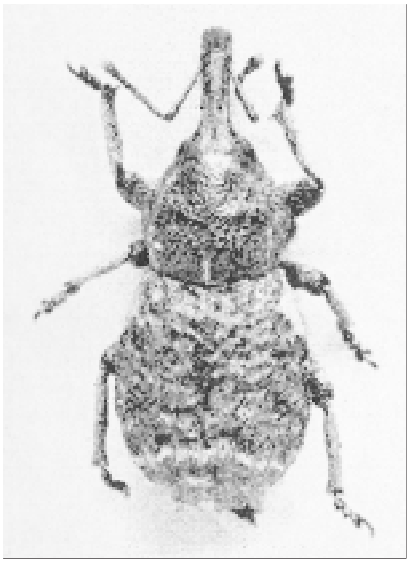
Conservancy Office: CA

Area Office: North Canterbury

Description: A slightly shining, pitchy black, weevil, with yellowish and greyish scales lying flat against the body. The broad, rather shiny pronotum, dense elytral (wing case) clothing and short, stout legs are the distinguishing features. The body is 7.5 mm long, and 3.8 mm wide (May 1963).

Body length: 7.5 mm

Type Locality: Akaroa.



Permission: SIR Publishing. May 1963, Plate 1, Fig.f.

Specimen Holdings: Broun Collection NHML (May 1963).

Distribution: Akaroa, Banks Peninsula, Canterbury (May 1963).

Habitat: May be a nocturnal fern feeder as are other members of the genus (Sherley 1990a), which feed on the underside of ferns at the edge of native forest. During the day they hide on the ground in leaf litter (Meads 1990a). This species was originally collected on spaniards (*Aciphylla* sp.) (Johns 1986), but the host plant is more likely to be *Polystichum* (shield fern) (R. Craw pers. comm. 2000).

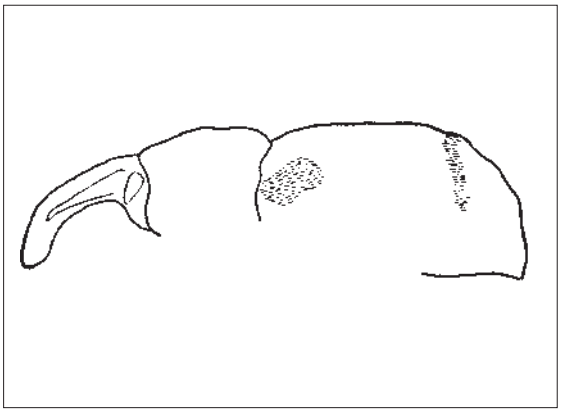
Threats: Reduction of habitat or host plant (Johns 1986). The availability of the host plant is most likely the limiting factor.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey suitable habitat at Banks Peninsula to try and determine if this weevil still exists.

Management Needs: -

Contacts: Peter Johns.



Lateral view. Permission: SIR Publishing. May 1963, Fig. 1d.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Nothaldonus peacei* (Broun, 1880)

Common Names: Peace's weevil (Scott & Emberson 1999)

Synonyms: *Aldonus peacei* (Lyal 1993)

M&D Category: I

Conservancy Office: NL

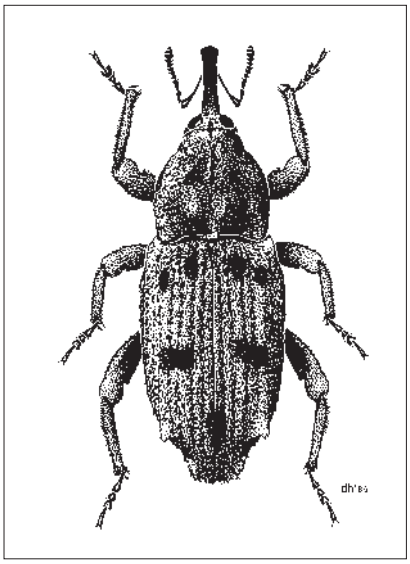
Area Office: Whangarei

Description: A shiny black, flightless weevil. The body is 11-12 mm long (Lyal 1993), and covered with depressed yellowish scales. There are black spots on the thorax and elytra (wing cases) (Broun 1880).

Body length: 12 mm

Type Locality: Parua (Lyal 1993).

Specimen Holdings: NHML, NZAC



Permission: Manaaki Whenua Press. Lyal 1993, p. 167, Fig. 1.

Distribution: Northland (Lyal 1993) at Waipoua River, Parua Bay, and Maungataupere Bush (NZAC; Maddison 1991).

Habitat: Larva almost certainly burrows in wood (Lyal 1993). Based on close relatives, it probably occurs in both primary and regenerating forest and tall scrub communities (R. Craw pers. comm. 2000).

Threats: Not believed to be endangered (G. Kuschel pers. comm. 2000; R. Craw pers. comm. 2000). Seldom seen rather than endangered.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey forest remnants in the vicinity of Waipoua River, Parua Bay, and Maungataupere Bush to try and determine distributional limits and population estimates.

Management Needs: -

Contacts: Robin Craw, Guillermo (Willy) Kuschel.

See Plate 3, No. 13.

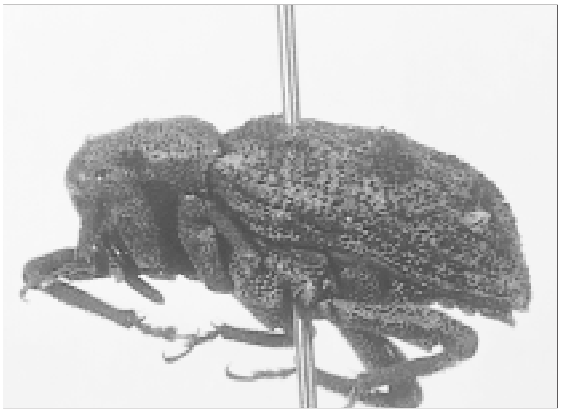
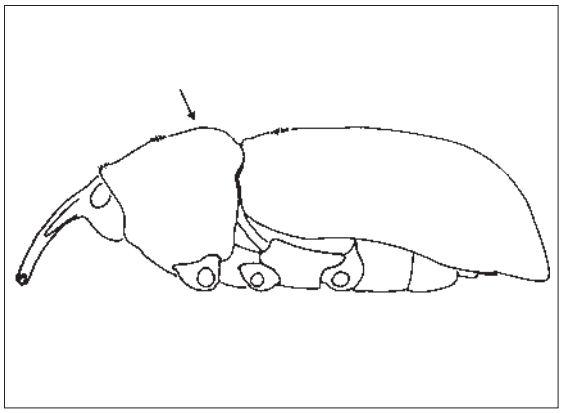


Photo: Andrew Townsend.



Permission: Manaaki Whenua Press. Lyal 1993, p. 179, Fig. 50.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Oclandius cinereus* (Blanchard, 1853)

Common Names: Campbell Island weevil (Foord 1990)

Synonyms: *Catodryobius cinereus* (Brookes 1951) *C. benhami, C. erubescens, C. tetricus, Aucklandius cinereus* (Gourlay 1950), *A. tetricus, A. erubescens, A. cupreosus, A. sorenseni, A. aterrimus aterrimus, A. aterrimus aucklandicus, Catadryobius erubescens* (in error), *C. benhami* (in error), *C. tetricus* (in error), *Inocatoptes incertus* (Kuschel 1964).

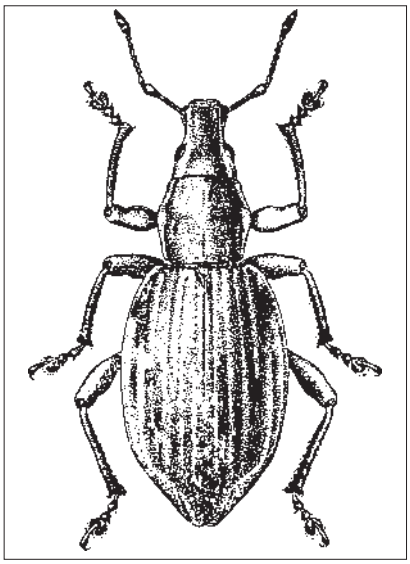
M&D Category: I

Conservancy Office: SL

Area Office: Southern Islands

Description: A large, flightless pitchy-black or black weevil. The body is 12.0 - 18.8 mm long and 4.8 - 8.7 mm wide. The large number of synonyms could suggest a high degree of variation in this species, but the range of variation is normal for a large species inhabiting a cold climate (Kuschel 1964).

Body length: 18.8 mm

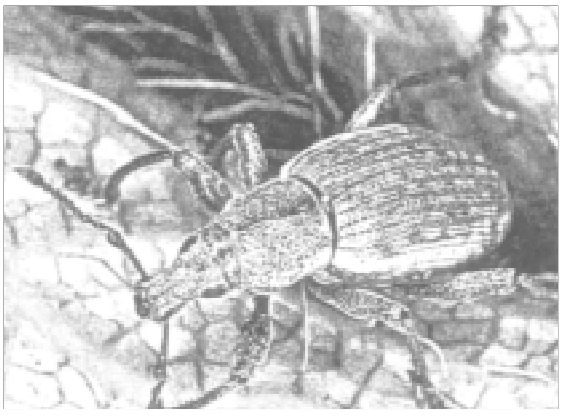


Reprinted by permission of Bishop Museum Press. Kuschel 1964, p 491, Fig. 275g.

Type Locality: Auckland Island.

Specimen Holdings: Specimen originally in Paris Museum (Brookes 1951), Laoboratoire d'Entomologie, Paris, not located (Kuschel 1971), NHML, CMNZ, NZAC, MONZ.

Distribution: Found in the Auckland Islands group at Ewing Island (1989); Port Ross, Ocean Island (NZAC); Rose Island; Enderby Island; Auckland Island at Musgrave Peninsula, Carnley Harbour (Kuschel 1971), Ranui Cove, Erebus Cove (1989) (MONZ); Adams Island at Magnetic Station Cove, Fairchild's Garden, NE ridge of Mt Dick, Lake Turbott (Kuschel 1971), Dome 640 m (Kuschel 1964); also found on Campbell Island (Kuschel 1971) at Head of Tucker Cove, west coast, Mt Azimuth, Mt Honey, Windlass Bay Cliffs, Mt Puiseux (MONZ), Shoal Point, Venus Cove, Beeman Camp, Lyall Ridge near Trig 15, saddle between Mts Filhol and Honey, west coast behind St Col Peak, St Col Azimuth ridge, Tucker Cove Valley, Mowbray Hill, behind north-west beach, between Tucker and Campbell Coves, and north-west slopes (NZAC), head of Tucker Cove 20 m, Perseverance Harbour (Kuschel 1964). Kuschel (1964) notes that it is a very common species occurring from supralittoral zone to the highlands throughout the Auckland and Campbell Islands.



Permission: Manaaki Whenua Press. Meads 1990a, p 10.

Habitat: Has commonly been found associated with Maori onion (*Bulbinella* sp), feeding upon the leaves at night and hiding at the base in daytime (Kuschel 1964). Has also been collected on southern rata (*Metrosideros umbellata*), *Pleurophyllum criniferum*, under stones in maritime vegetation, and under stones in alpine swards and fellfields (Kuschel 1971).

Threats: Not known. Rodent predation is likely to be a factor.

Work Undertaken to Date: First stage of rodent eradication from Campbell Island completed, with bait acceptance trials conducted in August 1999 (I. McFadden pers. comm. 1999).

Priority Research, Survey, and Monitoring: 1) Survey Auckland Islands to determine distributional limits and population estimates.

Management Needs: -

Contacts: Guillermo (Willy) Kuschel.

See Plate 3, No. 14.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Oclandius laeviusculus* (Broun, 1902)

Common Names: -

Synonyms: *Lyperobius laeviusculus* (Broun 1902), *Heterexis laeviusculus* (Brookes 1951), *Catodryobius grandis, Catadryobius grandis* (in error), *Aucklandius grandis* (Kuschel 1964). The specimen from CMNZ labelled *Oclandius grandis* is therefore also likely to be the same because the genus *Aucklandius* was emended to *Oclandius*.

M&D Category: C

Conservancy Office: SL

Area Office: Southern Islands

Description: A large flightless pitchy-black weevil, sometimes pale red-pitchy-black (Broun 1902). The body is 17 - 23.4 mm long and 6.8 - 10.8 mm wide (Kuschel 1964).

Type Locality: Auckland Islands group, Adams Island - Dome and neighbouring ridge, under stones on summit, alt 640 m (*Heterexis laeviusculus*) (Brookes 1951).

Body length: 23.4 mm

Specimen Holdings: CMNZ, MONZ, NZAC, NHML.

Distribution: Auckland Islands group on Adams Island[1,2,3,4,8] at Dome[1,8] and neighbouring ridge under stones on summit 640 m[1], Magnetic Station Cove & Fairchild's Garden, north-east ridge of Mt Dick 350 - 550 m, Lake Turbott[3], Magnetic Bay[8]; Auckland Island[4,7,8]; Ewing Island[2,6,7,8]; Ocean Island[6] (1989); French Island[2,7]; Disappointment Island[2,9]; Dent Island[5].

[1]Brookes 1951; [2]Kuschel 1964; [3]Kuschel 1971; [4]Meads 1990a; [5]Sherley 1990a; [6]MONZ; [7]CMNZ; [8]NZAC; [9]Edwards 1999.

Habitat: A ground species found from the supralittoral zone to the highlands, under logs and stones, but more commonly under *Pleurophyllum* (Compositae), *Stilbocarpa* (Araliaceae) and *Anisotome* (Umbelliferae). Feeds mainly on the large leaved daisy *Pleurophyllum criniferum* (Kuschel 1971; Meads 1990a) in the daytime. Has also been collected from *Anisotome latifolia*, southern rata (*Metrosideros umbellata*), tussock, under stones in maritime vegetation and alpine swards and fellfields (Kuschel 1971), *Ligusticum antipodum* (now *Anisotome antipodium*) (Brookes 1951), *Stilbocarpa, Urtica* (nettle) in sand; *Stilbocarpa* and *Pleurophyllum* under roots and feeding on their leaves, plus possible specimens collected from under a dead trunk of inanga (*Dracophyllum longifolium*) on peat, on foliage of *Stilbocarpa polaris*, and in peat among *S. polaris* roots and stems (NZAC).

Permission: Manaaki Whenua Press. Meads 1990a, p 30

Threats: Pigs uproot and eat the host food plants (Meads 1990a). Rodent predation may be a concern.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey Auckland Islands to determine distributional limits and population estimates.

Managment Needs: -

Contacts: Guillermo (Willy) Kuschel.

See Plate 3, No. 15.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Stephanorhynchus insolitus* Broun, 1893

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: WL

Area Office: Poneke

Description: A pale brownish-grey weevil, lacking any definite markings, about 7 - 8 mm long (Hudson 1934).

Body length: 8 mm

Type Locality: Wellington.

Specimen Holdings: NZAC, RHNZ.

Distribution: Wellington (Hudson 1934) at Red Rocks (1941, 1960); Sinclair Head; and the cliffs near Sinclair Head (NZAC); Houghton Bay; Cape Palliser; Wainuiomata (R. Hornabrook pers. comm. 2000), Island Bay (1884); Happy Valley (1887); Breakers Bay (sic) (Wellington) (1919); Sinclair Head (1934) (information from Hudson, Hudson's Log Book p.31 #177, National Museum); possibly also Petone (NZAC).

Habitat: Beaten from speargrass blossoms on the coast-hills around Wellington (Hudson 1934). Most specimens have been collected in late winter to early spring (R. Hornabrook pers. comm. 2000).

Threats: Not known. If speargrass is the host plant, then the loss of this plant is a major threat. Rodents could then be a threat either through direct predation or competition for food, as they feed on the roots of *Aciphylla* (Craw 1999). The caterpillar *Graphania nullifera* is another possible threat via competition for food (Bull 1967, Beauchamp 1990b). Habitat modification through grazing or succession is another possible threat if *Aciphylla* is the host plant.

Photo: Andrew Townsend.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey south coast of Wellington to determine distributional limits and population estimates.

Management Needs: -

Contacts: Robin Craw, Guillermo (Willy) Kuschel.

See Plate 3, No. 12.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Thotmus halli* Broun, 1911

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: WL

Area Office: Chatham Islands

Description: A reddish-chestnut weevil, with the legs thickly clothed in grey hairs. The body is 13 mm long and 6.5 mm wide (Broun 1911).

Type Locality: Pitt Island (Broun 1911).

Body length: 13 mm

Specimen Holdings: Broun Chatham Is collection, NHML.

Distribution: Pitt Island in the Chatham Islands. Only known from the type specimen (Emberson 1998b).

Habitat: Broun (1911) had no doubt that it was an inhabitant of the seashore. Presumed to be associated with sand dunes (Emberson 1998b).

Sign of Presence: -

Threats: Not known.

Work Undertaken to Date: Known from one specimen only. A variety of sand-dune habitats on Pitt Island and Chatham Island had daytime searches conducted without success in 1992, 1997, and 1998. A search of the dunes at night at Waitangi and Te One in late December 1998 and early January 1999 was also unsuccessful (R. Emberson pers. comm. 1999). Pitt and Chatham Islands searched without success by G. Kuschel (G. Kuschel pers. comm. 1999).

Priority Research, Survey, and Monitoring: 1) Conduct night searches of dune habitats on Pitt and Chatham Island to try and find a specimen (R. Emberson pers. comm. 1999). Scoop sand from under plant and scatter, weevils will move and be seen if present (G. Kuschel pers. comm. 1999).

Management Needs: 1) Dependent on result of survey, move to Category X if repeated surveys are unsuccessful.

Contacts: Rowan Emberson, Guillermo (Willy) Kuschel.

See Plate 3, No. 8.

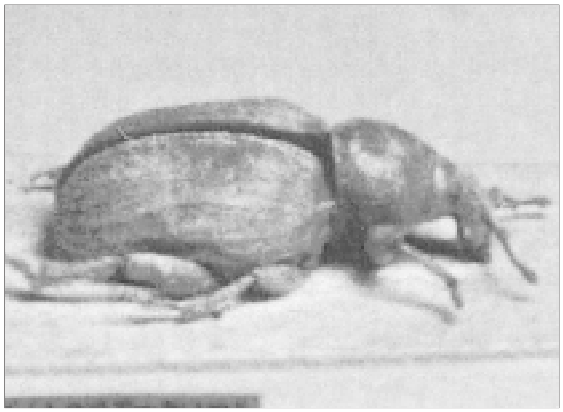


Photo: John Marris, Lincoln University.

Order: Coleoptera

Family: Curculionidae

Taxonomic Name: *Tychanopais tuberosus* (Broun, 1923)

Common Names: -

Synonyms: *Hatasu tuberosa, H. tuberosum* (Lyal 1993), *H. tuberosus* (Hudson 1934).

M&D Category: I

Conservancy Office: NM, CA

Area Office: Golden Bay, Sounds, St Arnaud, Waimakariri

Description: A flightless matt black weevil (Lyal 1993), 12 - 16 mm long, with the elytra (wing cases) covered with rounded tubercules (Hudson 1934). This family (Cryptorhynchinae) is distinguished by the presence of a 'groove' on the underside of the body, into which the rostrum (snout) can fit.

Body length: 16 mm

Type Locality: Lectotype male designated, Mt. Arthur (Broun) '*Hatasu; tuberosa*'.

Specimen Holdings: NHML (Lyal 1993), NZAC.

Photo: Andrew Townsend.

Distribution: Has been collected from Mt Arthur 914 m; Maud Island (1980), Pelorus Sound; east side of Cassy, Andrews Stream Saddle; Bullock Track, Cobb catchment area; Mt Roberts, Lake Rotoiti, Nelson; Canaan 609 m, Nelson; Lake Mason, Hurunui; Flora Track, Mt Arthur (NZAC), and at various locations in the Nelson Lakes region (R. Hornabrook pers. comm. 2000).

Habitat: Adults of *Tychanopais tuberosus* have been collected from *Nothofagus*, kawakawa (*Macropiper excelsum*), and on dead wood (Lyal 1993), including dead beech branches (R. Hornabrook pers. comm. 2000).

Threats: Not believed to be endangered (G. Kuschel pers. comm. 2000; R. Craw pers. comm. 2000).

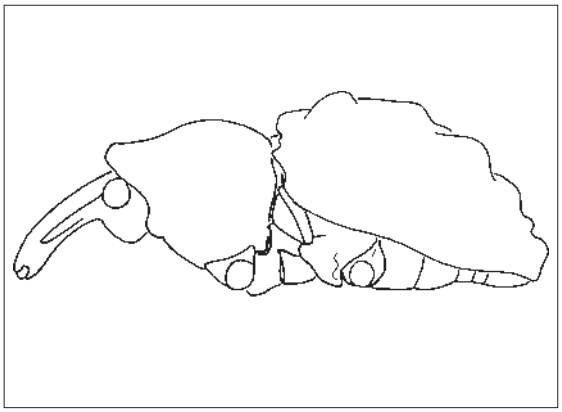
Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: -

Management Needs: 1) Recommend that this species is removed from the list based on current available information.

Contacts: Robin Craw, Guillermo (Willy) Kuschel.

See Plate 3, No. 4.



Permission: Manaaki Whenua Press. Lyal 1993, p. 181, Fig. 66.

Family: Elateridae

Common name: **Click beetles, skipjacks, wireworms (larvae)**

Order: Coleoptera

Family: Elateridae

Taxonomic Name: *Amychus candezei* Pascoe, 1876

Common Names: Chatham Islands click beetle (Scott & Emberson 1999)

Synonyms: *Amychus schauinslandi, A.rotundicollis* (Schwarz 1901 cited in Emberson 1998b). Hudson incorrectly thought *A. candezei* and *Psorochroa granulata* to be synonymous (J. Marris pers. comm. 2000)

M&D Category: C

Conservancy Office: WL

Area Office: Chatham Islands

Description: A large flightless click beetle,16 - 23 mm long. Generally brown, but variegated and variable in colour, with a rough surface resembling bark (Emberson & Marris 1993a; Emberson et al. 1996; Klimaszewski & Watt 1997).

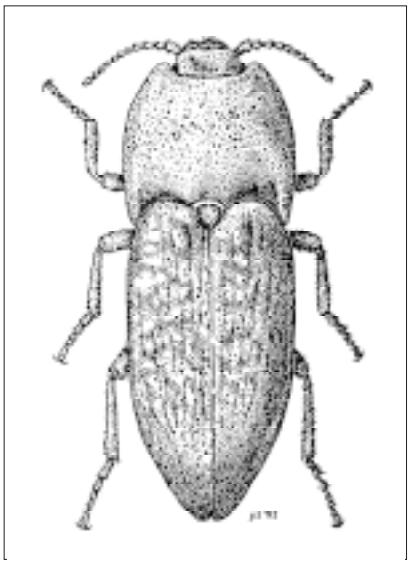
Type Locality: Pitt Island, Chatham Islands (Pascoe 1876).

Body length: 23 mm

Specimen Holdings: LUNZ, MONZ, NZAC.

Distribution: Found on Rangatira (South East) Island; Main Dome, Middle Sister Island; Big Sister Island; Robin Bush, Mangere Island; (Emberson & Marris 1993a; Emberson et al. 1996); Little Mangere (Tapuaenuku) Island; and Motuhope Island, Star Keys (Emberson 1998b). Originally described from Pitt Island, however, it has not been seen there for many years. It was also present at Hapupu, Chatham Island, until at least 1967 (Emberson 1998b). Estimate a population in the thousands (Emberson 1998a).

Habitat: Adults are most commonly found on tree trunks at night (Emberson & Marris 1993a), but have occasionally been found under logs, rocks, and amongst organic litter (Emberson 1998b; Emberson et al. 1996; Klimaszewski & Watt 1997; J. Marris pers. comm. 2000). The larvae have been found in soil, litter, and rotten wood (Emberson et



Permission: Manaaki Whenua Press.
Klimaszewski & Watt 1997, p 144, Fig. 167.

Permission: Manaaki Whenua Press.
Meads 1990a, p. 39.

al. 1996; R. Emberson pers. comm. 2000; J. Marris pers. comm. 2000), where they probably feed on organic matter and opportunistically prey on insect larvae. One pupa was collected from soil among tussock roots on Star Keys (J. Marris pers. comm. 2000)

Threats: Not under any threat at present (R. Emberson pers. comm. 1999). The main potential threat is the establishment of introduced vertebrate predators on any of the islands which currently hold populations of *A. candezei*.

Work Undertaken to Date: Goats eradicated in 1916 and sheep removed in 1961, from RangatirA. Cattle were also removed at some stage (Atkinson & Taylor 1992). Sheep removed from Mangere Island in 1968 (Island animal pest eradication database DOC). Goats, rabbits and cats have also been eradicated from the island (Atkinson & Taylor 1992). A draft management plan has been written for the Hapupu National Historic Reserve (R. Emberson pers. comm. 2000). Robin Bush has undergone protection (rodent quarantine etc.) and revegetation to extend the bush area (H. Aikman pers. comm. 2000).

Priority Research, Survey, and Monitoring: 1) Determine if *A.candezei* is still present on Chatham Island. Search areas in the south of Chatham Island which have little modified understorey.

2) Investigate the status of the populations on the Sisters Islands because the vegetation may have suffered from a series of dry years and increased seabird populations.

3) Check outlying vegetated islands of the Chatham Island Group for additional populations of *A.candezei* (Emberson et al. 1993).

Management Needs: 1) Maintain island security i.e. rodent quarantine procedures.

2) If baiting for rodents check to see if any *A.candezei* are present because they have been found in association with Talon and Ditrac baits (R. Emberson pers. comm. 1999).

Contacts: Rowan Emberson, John Marris.

Order: Coleoptera

Family: Elateridae

Taxonomic Name: *Amychus granulatus* (Broun, 1886)

Common Names: Cook Strait click beetle (Scott & Emberson 1999)

Synonyms: *Psorochroa granulata* (Emberson et al. 1993), *Amychus stephensiensis* (Marris 1996b)

M&D Category: B

Conservancy Office: NM

Area Office: Sounds

Description: A large flightless click beetle, 18 - 20 mm long (Gibbs & Allen 1990). The body is broad and rough surfaced, brown with the thorax paler and brighter (Broun 1886).

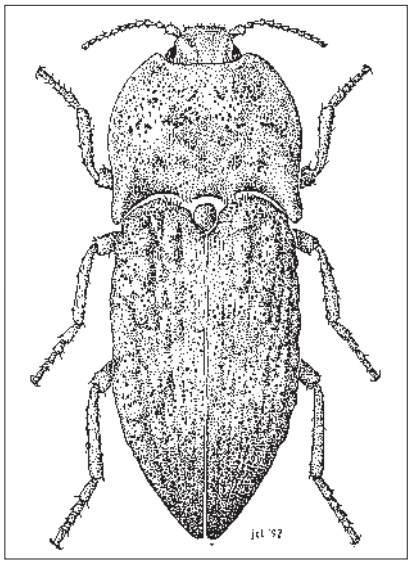
Type Locality: Little Brother (North Brother) Island.

Body length: 20 mm

Specimen Holdings: NZAC, CUNZ, LUNZ, NHML, MONZ, AMNZ, VUNZ (Marris 1996b).

Distribution: Found on islands in the Marlborough Sounds. Present distribution: Keepers Bush and Frog Bank Bush (also Top Winch Bush in 1963), Stephens Island; Middle Trio Island; South Trio Island; Main Bush area above the Comalco Lodge, Maud Island; Sentinel Rock (Hudson 1934; Gibbs & Allen 1990; Marris 1996b). Historically present on North Brother (Little Brother) Island; probable remains have been found in North Canterbury (Worthy & Holdaway 1996), and there was a sighting of the beetle on Outer Chetwode (Te Kakaho) Island (M. Meads pers. comm. 2000).

Habitat: Adults have been found at the base of rank grass, under rocks, and on tree trunks at night, including ngaio (*Myoporum laetum*), *Coprosma*, tawa (*Beilschmiedia tawa*), kohekohe (*Dysoxylum spectabile*) and under New Zealand spinach (*Tetragonia tetragonioides*). They often favour craggy knot-holed trees (Marris 1996b). During the day they are generally found sheltering under logs (I. Millar pers. comm. 1999). Adults are present throughout the year, and feed on sap oozing from tree trunks (Marris 1996b).



Drawing: Joanna Liddiard
Permission: Landcare Research (NZ) Ltd.

Permission: Manaaki Whenua Press.
Meads 1990a, p. 39.

Only one larva has been collected, it was found in the rotten roots of an *Olearia* tree on Middle Trio Island (J. Marris pers. comm. 2000).

Threats: On Stephens Island they appear to be declining. This decline is thought to be linked to forest deterioration, especially lack of rotten wood. Predation by tuatara could also factor (Gibbs & Allen 1990). Appear to have become extinct on Little Brother Island sometime during the past 2 - 3 decades (I. Millar pers. comm. 2000).

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey South Brother Island to see if *A.granulatus* may be present there.

2) Survey North Brother and the Outer Chetwode Island (Te Kakaho) to determine if *A.granulatus* is present on these islands (Marris 1996b; I. Millar pers. comm. 1999).

3) Survey and monitor Maud Island to get an idea of distribution and to assess the feasibility of establishing a monitoring programme (I. Millar pers. comm. 1999).

Management Needs: 1) Provide 'substitute logs' on Stephens Island as artificial refuges, to compensate for the lack of rotten wood on the island.

2) Investigate the possibility of transferring *A.granulatus* to other islands such as Motuara Island (Marris 1996b), or possibly Titi Island (I. Millar pers. comm. 1999), but not to Outer Chetwode because a population may still exist there (Marris 1996b).

Contacts: John Marris, George Gibbs, Ian Millar, Brian Paton.

Order: Coleoptera

Family: Elateridae

Taxonomic Name: *Amychus* sp.

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: NL

Area Office: Kaitaia

Description: A rough surfaced, flightless click beetle, about 23 mm long, and with a broad body.

Type Locality: Not described.

Body length: 23 mm

Specimen Holdings: -

Distribution: Found on Great Island (Marris 1996a), and South West Island (R. Parrish pers. comm. 2000) in the Three Kings Islands group.

Habitat: Have been found on kanuka (*Kunzea ericoides*) at night, on Great Island (A. Booth pers. comm. 2000).

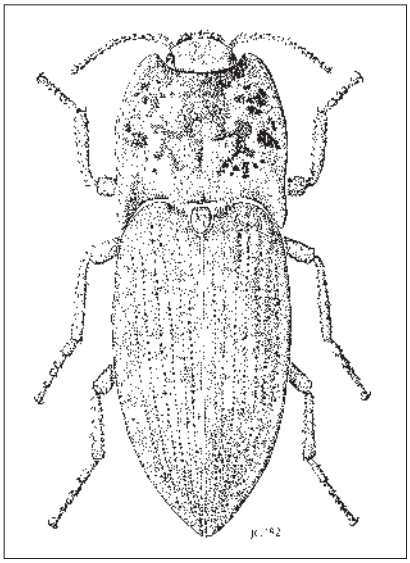
Threats: Not known.

Work Undertaken to Date: Goats introduced to Great Island 1889, eradicated from Great Island in 1946 (Turbott 1948).

Priority Research, Survey, and Monitoring: 1) Survey Great Island and South West Island to obtain an estimate of distribution and abundance.

Management Needs: -

Contacts: Andrea Booth, John Marris.



Drawing: Joanna Liddiard
Permission: Landcare Research (NZ) Ltd.

Photo: John Marris, Lincoln University.

Order: Coleoptera

Family: Elateridae

Taxonomic Name: *Metablax* sp.

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: NL

Area Office: Kaitaia

Description: A large bodied click beetle with stripes down the side.

Type Locality: Not described.

Body length: 21 mm

Specimen Holdings: NZAC.

Distribution: Spirits Bay, Mt Unuwhao, 640 m (1966) (NZAC). There is also a possible record from Tauputaputa (A. Booth pers. comm. 2000).

Habitat: Not known, has been found at 640 m.

Threats: -

Work Undertaken to Date: Survey planned in 2000 (A. Booth pers. comm. 2000).

Priority Research, Survey, and Monitoring: 1) Survey to obtain an estimate of distribution and abundance, and determine whether this species is of conservation concern.

Management Needs: -

Contacts: Andrea Booth.

See Plate 3, No. 16.

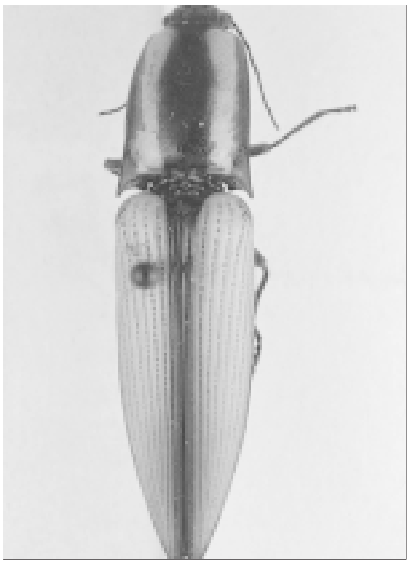


Photo: Andrew Townsend.

Family: Lucanidae

Common name: **Stag beetles**

Order: Coleoptera

Family: Lucanidae

Taxonomic Name: *Geodorcus auriculatus* (Broun, 1903)

Common Names: Te Aroha stag beetle (Scott & Emberson 1999)

Synonyms: *Dorcus auriculatus, Lissotes auriculatus* (Holloway 1961, 1996)

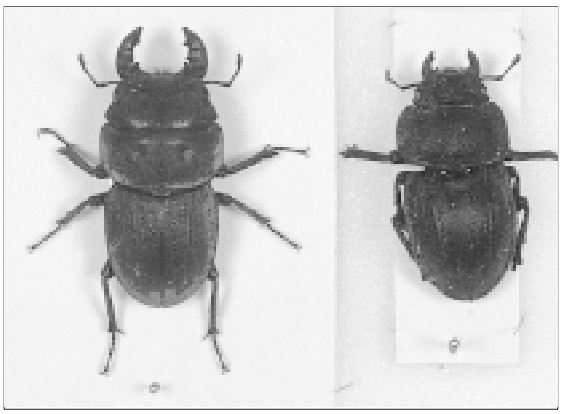
M&D Category: A

Conservancy Office: WK, BP

Area Office: Hauraki, Tauranga

Body length: 20 mm

Description: A large flightless stag beetle. The body is blackish, flecked with brown (Veitch 1991), and glossy. Males have an expanded head compared to females (Klimaszewski & Watt 1997). Males measure around 25 mm including mandibles (or 20 mm excluding mandibles), and are 11.5 mm wide. Females measure around 20.1mm including mandibles (or 18.4 mm excluding mandibles), and are 9.2 mm wide. The male is best distinguished by the mandibles, which are forked in two at the tips, and have a large vertical, forked, tooth, on the top of the mandible, near the middle (Holloway 1961). The wing cases and the front part of the thorax often appear hairy, although the hairs may be rubbed off the thorax of older specimens (C. Green pers. comm. 1999).

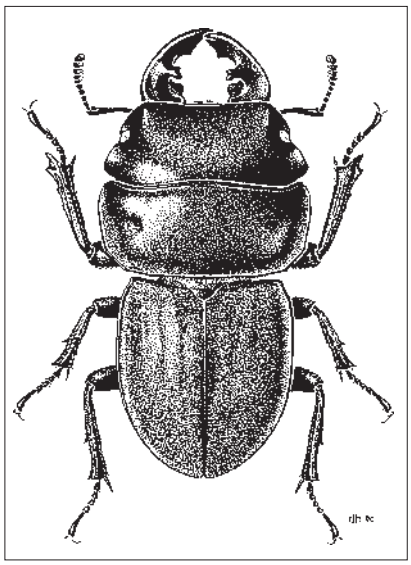


Permission: Landcare Research (NZ) Ltd.

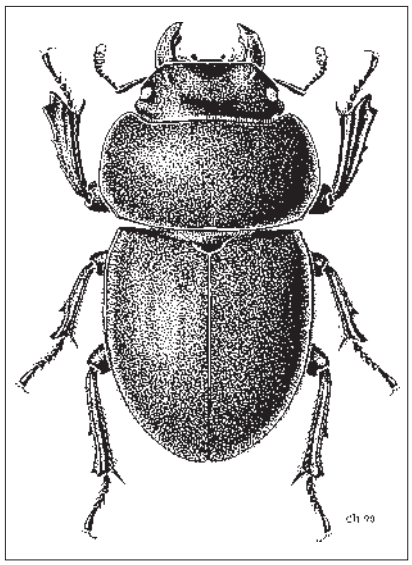
Type Locality: Thames (Holloway 1961).

Specimen Holdings: NHML, NZAC.

Distribution: This is the most widely distributed of the North Island *Geodorcus* species (C. Green pers.comm. 1999), being recorded from the Waikato and Coromandel areas (Holloway 1961; Klimaszewski & Watt 1997). Specimens have been collected recently (since 1980) from; Trig 1092, Te Puru 700-720m; Grace Darling Stream catchment of the Waitekauri River, 500 m, southern Coromandel Ranges; Mount Te Aroha 950m; Mt Te Aroha summit, summit BCLTV repeater, and near summit (Owen 1991); 1 km below summit, Mt Te Aroha; Mangakino Ridge, Coromandel (Sherley et al. 1994); walking track from Mt Te Aroha summit to Te Aroha Domain in the Tutumangae Stream catchment, 620 m; upper Mangakino Stream track near Lewis and Bartley Creeks, 640 m (Owen 1991); near Motutapere Hill; about 7 km south-east of Manaia (Sherley 1990); Tui Stream headwaters; Waiorongomai Stream headwaters; Dog Kennel Flat,



Male. Permission: Manaaki Whenua Press. Klimaszewski & Watt 1997, p 138, Fig. 141.



Female. Permission: Manaaki Whenua Press. Klimaszewski & Watt 1997, p 138, Fig. 142.

Mt Te Aroha (unpublished reports, Tauranga Area Office); The Pinnacles, Kauaeranga Valley, Coromandel (AMNZ). Occurs as far north as Kakatarahae, on the Coromandel Peninsula (F. Buchanan pers. comm. 1999). Historically present in Thames (Owen 1991).

Habitat: Found on the ground or at the base of tree trunks at night, and is probably a sap feeder. It has been found under logs of 200 - 250 mm diameter, in decaying matter between the sound timber and the soil (Sherley et al. 1994), and where a good humus and leaf litter layer are present. It occurs in a moist to relatively dry microhabitat, and has been found between 500 - 719 m (Sherley et al. 1994). Found associated with a variety of vegetation (see Owen 1991 and Sherley et al. 1994 for detail), common characteristics have been the presence of unmodified tawa (*Beilschmiedia tawa*)/ tawari (*Ixerba brexioides*) or tawa/rimu (*Dacrydium cupressinum*)/northern rata (*Metrosideros robusta*)/kauri (*Agathis australis*) forest, the exception being specimens from Mt Te Aroha at 900 - 950 m in the general area of the TV repeater station, or in the adjacent silver beech (*Nothofagus menziesii*)/tawari forest (Owen 1991). Kamahi (*Weinmannia racemosa*), and kanono (*Coprosma grandifolia*) are also present at some sites.

Threats: Threatened by habitat modification and introduced predators (Sherley 1990). Rats and possums are potential threats to both the habitat and the insect (Owen 1991). Pigs could be a problem at Coromandel sites (C. Green pers. comm. 1999), and are also present in very low numbers at Mt Te Aroha (J. Heaphy pers. comm. 1999).

Work Undertaken to Date: Survey: Mt Te Aroha, 3 day, 5 person; 1992, ridges off Mt Te Aroha, 2 day, 5 person; 1993, Mangakino Ridge off Mt Te Aroha, 3 day, 5 person; 1993, Coromandel Peninsula (Castle Rock area from T11 390850 to 391855; the forest to within 20 m of the road verge along Hodder East Rd from the start of Castle Rock track to a point at T11 380874, and neighbouring stream catchment; walking track to Kauri Grove; summit of Route 25 to Kaipawa Trig, then to Radio-Mast Trig and out to the Kennedy Bay Rd) 24 person hours (Sherley et al. 1994).

Priority Research, Survey, and Monitoring: 1) Survey outside of the known range of this species on Mt Te Aroha and the Coromandel, in an attempt to determine the distribution.

2) Examine the effects of rat predation on *G.auriculatus* to determine the impact of this threat (C. Green pers.comm. 1999).

Management Needs: 1) May not warrant intensive management, dependent on the outcome of survey work.

Contacts: Chris Green, Beverley Holloway, Keith Owen, Greg Sherley.

Order: Coleoptera

Family: Lucanidae

Taxonomic Name: *Geodorcus ithaginis* (Broun, 1893)

Common Names: Mokohinau stag beetle (Scott & Emberson 1999)

Synonyms: *Dorcus ithaginis* (Holloway 1961, 1996), *Lissotes ithaginis* (Broun 1893)

M&D Category: A

Conservancy Office: AU

Area Office: Great Barrier

Description: A large flightless stag beetle. The body is blackish-brownish, glossy, 25.5 - 32.8 mm long, including the mandibles (or 20.5 - 24.8 mm excluding mandibles), and 10.4 - 12.4 mm wide. It is distinguished from all other New Zealand stag beetles by the presence of a long, conical, vertical, tooth, on the top of the mandible, in both sexes (Holloway 1961). However, if you find a large lucanid in the Mokohinau Islands, it is likely that it is *G. ithaginis* (C. Green pers.comm. 1999).

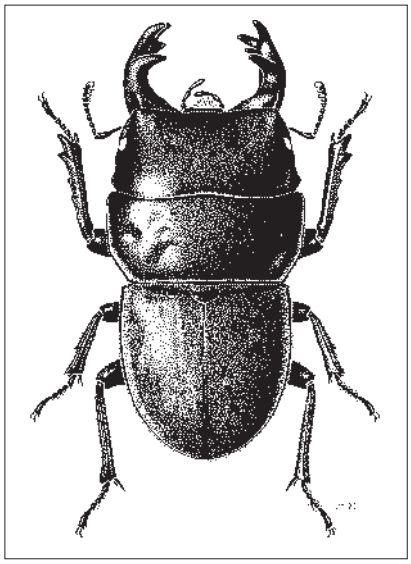
Body length: 24.8 mm

Type Locality: Halodroma Islet, Mokohinau Islands (Holloway 1961). There is no Halodroma Islet in the Mokohinau Islands group and it is thought that the Type Locality is most likely Lizard Island (B. Holloway pers. comm. In Sherley et al. 1994), or possibly Stack H (C. Green pers.comm. 1999).

Specimen Holdings: NHML (type), MONZ, NZAC (B. Holloway pers. comm. 2000).

Distribution: Appears to be restricted to Stack H, Mokohinau Islands (Sherley 1990a; Sherley et al. 1994).

Habitat: Stack H is arid with very poor moisture retention and a complete absence of rotten logs, habitat which is associated with other *Geodorcus* spp on the mainland (Green 1997). The beetle can be found in the peat-like layer formed by the native succulent plant horokaka (*Disphyma australe*) (Veitch 1991), which it burrows through (Broun 1893). It has also been found under rocks and leaf litter beneath low coastal pohutukawa (*Metrosideros excelsa*), and dead specimens have been collected from the grass *Chionochloa bromoides* (Sherley et al. 1994).



Male. Drawing: Des Helmore. Permission: Landcare Research (NZ) Ltd.

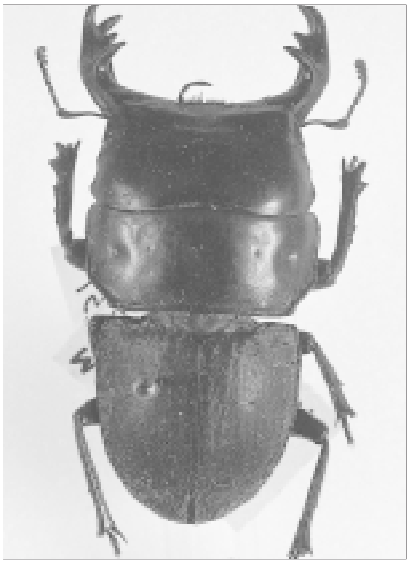


Photo: Andrew Townsend.

Threats: Introduction of rodents or fire poses the greatest threat. Lizards are present on the island, and whilst they will prey on the beetle are not considered a threat to its survival. Long term climatic change, specifically an increase in temperature resulting in a drying out of habitat is also a possible threat (C. Green pers.comm. 1999).

Work Undertaken to Date: Lizard Island, Burgess Island, "Flax" Island,

Sphinx Rocks, Groper Rock, and Stacks B, D, F, and G searched but no sign of *G. ithaginis* found (Sherley et al. 1994). An estimation of population size, and information on the habitat requirements and life history is currently in progress. Nine specimens is the maximum observed in recent times. The north-west islets of the Hen and Chicken group have also been surveyed, no specimens were found (C. Green pers.comm. 1999).

Priority Research, Survey, and Monitoring: 1) Keep an eye out for large stag beetles on Hen & Chicken, Mokohinau and islands in the Poor Knights Islands group (C. Green pers.comm. 1999).

Management Needs: 1) Maintain habitat, and monitor for rodents (C. Green pers.comm. 1999).

Contacts: Chris Green, Greg Sherley, Beverley Holloway.

Order: Coleoptera

Family: Lucanidae

Taxonomic Name: *Geodorcus* sp. "Moehau"

Common Names: Moehau stag beetle

Synonyms: -

M&D Category: A

Conservancy Office: WK

Area Office: Hauraki

Description: A large flightless stag beetle, 23.5 - 27 mm long including mandibles (20 - 23 mm long excluding mandibles), and about 8.5 - 11 mm wide (Sherley et al. 1994). The head margin behind the eyes has a large, almost truncate, horizontal lobe in males, and a very small rounded projection in females (B. Holloway pers. comm. 2000).

Body length: 23 mm

Type Locality: Not described.

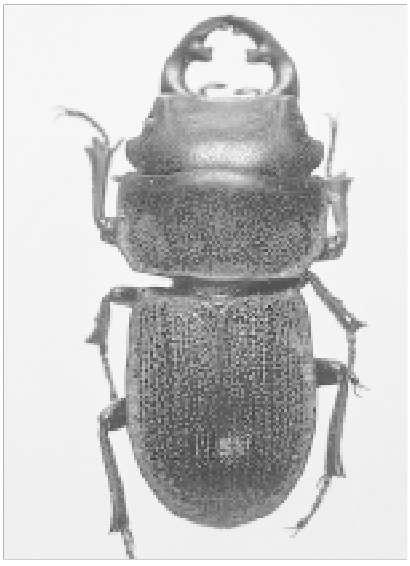
Specimen Holdings: AMNZ, NZAC.

Distribution: Mt Moehau, Coromandel Peninsula (Sherley et al. 1994).

Habitat: Have been found in moist microhabitats under rocks, and under decaying rata (*Metrosideros* spp.) or kaikawaka (*Libocedrus bidwillii*) logs, in the interface of the dark red-brown humus layer and the timber of the log (Sherley et al. 1994). Specimens have been collected between 683 and 820 m (Sherley et al. 1994; J. Roxburgh pers. comm. 1999).

Threats: Rodents and possibly pigs may threaten this species, through both direct predation and habitat destruction.

Work Undertaken to Date: Surveyed Mt Moehau in 1992, about 120 person hours (Sherley et al. 1994) plus additional searches post 1992 (C. Green pers.comm. 1999). Moehau Range undergoing intensive pest control (C. Green pers.comm. 1999). Possum and goat control has been undertaken at Mt Moehau since the mid 1980s. Rat indexing is occurring at Moehau every 6 weeks over the 1999/2000 financial year (J. Roxburgh pers. comm. 1999).



Permission: Landcare Research (NZ) Ltd.
Photo: J.F. Goulstone.

Priority Research, Survey, and Monitoring: 1) Survey Mt Moehau and surrounding areas to obtain information on the distribution and abundance of this species (C. Green pers.comm. 1999).

Management Needs: -

Contacts: Chris Green, Greg Sherley, Beverley Holloway.

Order: Coleoptera

Family: Lucanidae

Taxonomic Name: *Paralissotes mangonuiensis* (Brookes, 1927)

Common Names: -

Synonyms: *Lissotes mangonuiensis* (Holloway 1961, 1996)

M&D Category: I

Conservancy Office: NL

Area Office: Kaitaia, Kerikeri

Body length: 10.6 mm

Description: A flightless, dark brownish-black, glossy, stag beetle. The body is uniformly covered with moderately fine, dense, circular punctures, containing minute, barely discernible, erect scales. The male is 11.6 mm long including mandibles (or 10.6 mm excluding mandibles) and 4.8 mm wide. The female is 11.5 mm long including mandibles (or 10.8 mm excluding mandibles), and 4.6 mm wide (Holloway 1961).

Type Locality: Oruru, Mangonui (North Auckland), New Zealand (Brookes 1927; Holloway 1961).

Specimen Holdings: NZAC.

Distribution: Oruru, Mangonui (Holloway 1961); Punurulu Stream, Russell State Forest; Waima; Shag, Bay, Tawhiti Rahi, Poor Knights Islands; Waimamaku, Hokianga; Yakas Track, Waipoua State Forest; Cape Brett (information from Maddison 1991; S.Thorpe pers.comm to A. Booth; S.Thorpe pers. comm. 2000).

Habitat: In rotten logs in forest (Brook 1999b).

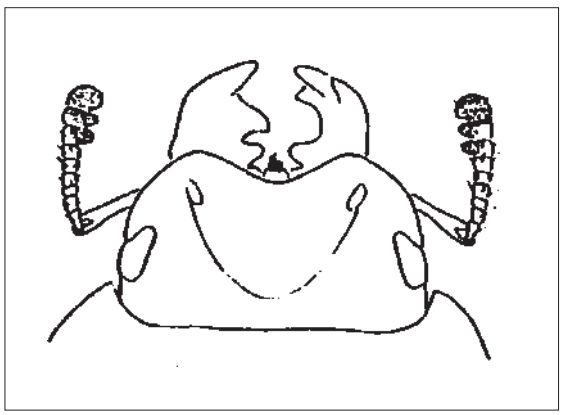
Threats: Not known.

Work Undertaken to Date: -

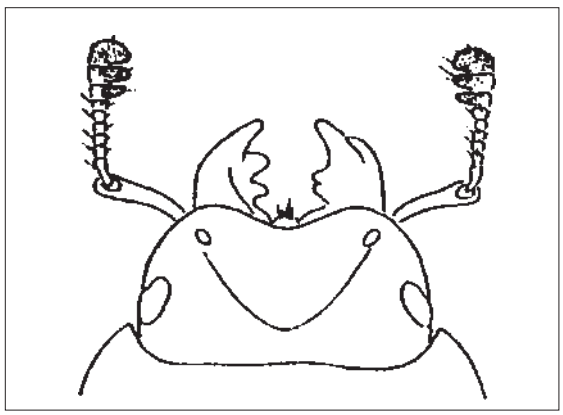
Priority Research, Survey, and Monitoring: 1) Survey to obtain an estimate of distribution and abundance, and determine whether this species is of conservation concern.

Management Needs: -

Contacts: Beverley Holloway.



Head and part of pronotum of male.



Head and part of pronotum of female.
Permission: Museum of New Zealand Te Papa Tongarewa.
Holloway 1961, p. 117, Figs. 60, 61.

Family: Rhysodidae

Common name: **Heraldic beetles**

Order: Coleoptera

Family: Rhysodidae

Taxonomic Name: *Tangarona pensus* (Broun, 1880)

Common Names: -

Synonyms: *Rhysodes pensus* (Broun 1880), *Tangaroa pensus* (Bell & Bell 1978)

M&D Category: I

Conservancy Office: NL, AU, WK, BP

Area Office: Whangarei, Warkworth, Hauraki, Tauranga

Body length: 9 mm

Description: A rhysodid beetle, with lines of regularly spaced, puncture-like depressions on the wing case. The body is 7.1 - 9.0 mm long (Watt 1980).

Type Locality: Vicinity of Whangarei Harbour (Broun 1880).

Specimen Holdings: -

Distribution: Confined to the North Island (Bell & Bell 1978). Has been collected from Whangarei; Wairoa, south of Auckland (Broun 1880); Little Barrier Island (Molloy & Davis 1994); ?Pukerui Hills, Whangarei; Kopu Rd, Coromandel Ranges; and possibly Te Aroha; and Waikare, Bay of Islands (NZAC).

Habitat: Has been collected from bush and rotting wood (NZAC).

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Check pitfall trap collections from Little Barrier Island for records of this species (C. Green pers. comm. 2000).

Management Needs: -

Contacts: -

Family: Scarabaeidae

Common name: **Scarab beetles, dung beetles, chafer beetles**

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Pericoptus frontalis* Broun, 1904

Common Names: Sand scarab (Patrick & Chisholm 1989)

Synonyms: -

M&D Category: I

Conservancy Office: OT

Area Office: Central Otago

Description: A black, sand scarab beetle, with golden brown hairs on the underside of the body. The body is about 20 mm long.

Type Locality: Cromwell.

Length: 20 mm

Specimen Holdings: Broun Collection NHML (Given 1955).

Distribution: Cromwell chafer beetle reserve (P. Johns pers. comm. 1999); in cherry orchard, Alexandra; on river bends, Matukituki Valley, below Mt Aspiring (R. Hornabrook pers. comm. 2000); Otekaieke River Mouth terrace, and locally common in many inland areas, which have sandy free draining soils (Patrick & Chisholm 1989). Distribution is restricted by sandy habitat requirement (P. Johns pers. comm. 1999).

Habitat: Stable sand-dunes. Most often found on sand at night (NZAC).

Threats: Apart from the restricted distribution, this species appears to be okay (P. Johns pers. comm. 1999).

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: -

Management Needs: 1) This species appears to be range restricted, and as long as the habitat remains, the species should be secure.

Contacts: Peter Johns, Barbara Barratt, Rowan Emberson.

See Plate 5, No. 11.

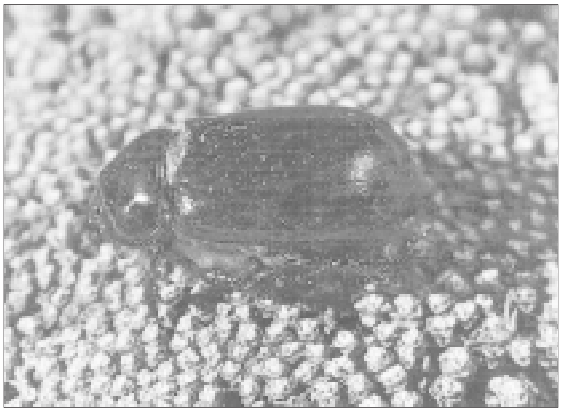


Photo: Brian Patrick.

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Pericoptus nitidulus* Broun, 1880

Common Names: -

Synonyms: -

M&D Category: X

Conservancy Office: AU

Area Office: Great Barrier

Description: A scarab beetle.

Type Locality: Great Barrier Island stated in species description, but no locality data on specimen.

Specimen Holdings: Broun collection NHML (Type) (Given 1955).

Distribution: Great Barrier Island (Given 1955).

Habitat: Not known.

Threats: Not known. Little collecting has been done from Great Barrier Island for this species (P. Johns pers. comm. 1999).

Work Undertaken to Date: Searched for without success in 1999 (S. Thorpe pers. comm. 2000).

Priority Research, Survey, and Monitoring: 1) Survey Great Barrier Island for this species to determine distribution and abundance.

Management Needs: -

Contacts: Peter Johns, Rowan Emberson.

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Prodontria grandis* Given, 1964

Common Names: -

Synonyms: -

M&D Category: B

Conservancy Office: SL

Area Office: Southern Islands

Body length: 19.5 mm

Description: A dark brown, velvety chafer beetle, uniformly covered with hairs. The head and underside of the body are darker than other parts. The body is 19.5 mm long, and 11.1 mm wide (Given 1964).

Type Locality: Mt Anglem, Stewart Island.

Specimen Holdings: NZAC, LUNZ.

Distribution: Found on Stewart Island, at Mt Anglem and Table Hill (Emerson 1994).

Habitat: High altitudes. Has been collected from 700 m (Patrick et al. 1992a).

Threats: Rodents are potential predators (E. Edwards pers. comm. 1999).

Work Undertaken to Date: Remains of an elytra found in kiwi shelter in 1988 (Patrick et al. 1992a). Still present in 1991 (R. Emberson pers. comm. 2000). This species may be critically endangered if it still exists (B. Barratt pers. comm. 1999).

Priority Research, Survey, and Monitoring: 1) Survey Mt Anglem, Table Hill and surrounding areas to determine the distribution and abundance of this species.

Management Needs: -

Contacts: Barbara Barratt, Rowan Emberson, Bruce Given.

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Prodontria jenniferae* Emerson, 1997

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: OT

Area Office: Central Otago

Body length: 14.1 mm

Description: A dark, reddish-brown or dull black chafer beetle, with a shiny black head. The body is 12.2 - 14.1 mm long, and 6.6 - 7.5 mm wide (Emerson & Barratt 1997).

Type Locality: Southern end of the Pisa Range, Central Otago, 750m.

Specimen Holdings: NZAC, OMNZ, BENZ (Emerson & Barratt 1997).

Distribution: Southern end of the Pisa Range, 750m; Kawarau Gorge, 300m, Central Otago (Emerson & Barratt 1997).

Habitat: Not known. Has been collected from under a rock in bush (B. Barratt pers. comm. 1999), a pitfall trap, a malaise trap, and beaten from foliage at night (Emerson & Barratt 1997).

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey to obtain an estimate of distribution and abundance, and determine whether this species is of conservation concern.

Management Needs: -

Contacts: Barbara Barratt, Rowan Emberson.

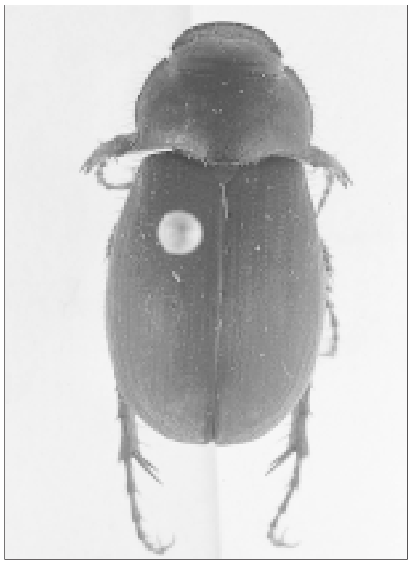


Photo: Andrew Townsend.

See Plate 5, No. 16.

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Prodontria lewisii* Broun, 1904

Common Names: Cromwell chafer beetle (Scott & Emberson 1999)

Synonyms: *Prodontria lewisi*

M&D Category: A

Conservancy Office: OT

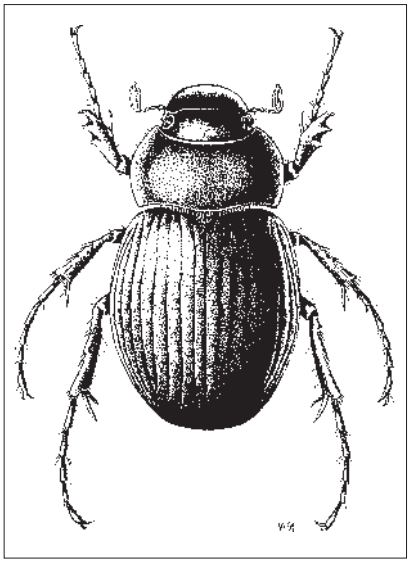
Area Office: Central Otago

Description: A large, flightless, pale reddish-brown chafer beetle, with lined, and strongly convex elytra (wing cases). The body is 15 - 16 mm long. (Klimaszewski & Watt 1997), and 8.5 mm wide (Given 1952). Females are longer and wider than males, but the males have longer tibia (lower leg) and hind feet (Ferreira & McKinlay 1999a).

Body length: 16 mm

Type Locality: Cromwell, on the sandhills of Molyneux River (Broun 1904).

Specimen Holdings: Broun Collection NHML, LUNZ.



Permission: Manaaki Whenua Press. Klimaszewski & Watt 1997, p 140, Fig. 150.

Distribution: Cromwell Chafer Beetle Nature Reserve, 81 ha, located between Cromwell and Bannockburn (Ferreira et al. 1999). There are four discrete populations present (*Rare Bits* No.31 Dec 1998).

Habitat: A nocturnal beetle occurring in stabilised dunes of Cromwell sand and Molyneux shallow loamy sand (Meads 1990a; Patrick 1994f; Ferreira & McKinlay 1999b). They spend the day buried in the soil, emerging at night to feed on the cushion plant golden scabweed (*Raoulia australis*), field speedwell (*Veronica arvensis*), sheep's sorrel (*Rumex acetosella*) and various lichens (Watt 1979b; Meads 1990a; Emerson 1994; Ferreira & McKinlay 1999b). Before daybreak the adults bury themselves up to half a metre deep, usually at the bases of silver tussock (*Poa cita*) (Meads 1990a), retiring to the same plant or burrow they inhabited during the previous day. Activity is highest on warm nights with low humidity and cloud cover (Armstrong 1987). The beetles generally will not emerge if it is below 6°C (Armstrong 1990). Females engage in minimal dispersal activities, the males do all the searching for females to mate with. Little is known about the larvae, and no pupae have been located. Larvae may be associated with the roots of silver tussock (Watt 1979b; Ferreira & McKinlay 1999b).

Permission: Manaaki Whenua Press. Meads 1990a, p. 41.

Threats: Little owl (*Athene noctua*) (Watt 1979b; Armstrong 1987; Meads 1990a), hedgehogs, and feral cats prey upon the beetle (Brignall-Theyer 1998). However, it is not thought that little owl predation would be of great concern to a healthy population (Armstrong 1987). There is not enough information available on the predation rates of the hedgehog or cat to quantify the threat they pose. The native tunnelweb spider (*Porrhothele antipodiana*) is also likely to prey upon this beetle (Mudford 1997). Habitat modification may also be a potential threat. The existing population is restricted to only a fraction of the habitat available (Ferreira & McKinlay 1999b), and until the limiting factors are identified, the causal factors

behind this distribution will remain unknown. Of the factors examined so far, vegetative composition and invertebrate community composition best explained the variation in density, although neither did so significantly (Fereira & McKinlay 1999b).

Work Undertaken to Date: 1975: Beetles at the Antrim St site transferred to a site between Cemetery Rd and Bannockburn-Cromwell Rd (now in the reserve) (Anon 1984).

1979: Proposed reserve fenced off (Ferreira & McKinlay 1999b).

1982: Land bought by Crown.

1983: Gazetted as a Reserve. (Anon 1984), biological survey of the reserve undertaken.

1991: Trial rabbit control started. 1993; formal rabbit management plan initiated.

1994: Rabbit fence upgraded, 760 silver tussock planted.

1995: Chafer predation study initiated, 3000 silver tussocks planted.

1997: Predation study completed, action plan prepared.

Monitoring of the chafer population has been undertaken in 1986, 1989, 1993, 1994, 1996, and 1997 (Ferreira & McKinlay 1999b). Numerous vegetation surveys have been conducted over the years. (Ferreira & McKinlay 1999b). Persistent rabbit control has eliminated rabbits for the present. Sustained control of broom is now being undertaken (Otago Conservancy Status Report 04/08/98).

Priority Research, Survey, and Monitoring: 1) Determine the impact of hedgehogs on the beetle, building on the work done by Brignall-Theyer (1998). Identify hedgehog distribution and habitat use. Analyse more hedgehog scats to determine the percentage containing chafer remains, and their percentage composition (only five scats from inside the reserve were analysed by Brignall-Theyer (1998), one having Cromwell chafer remains, giving the 20% figure quoted).

2) Requires work done on larval population dynamics because this is a good way to monitor population numbers. Pitfall traps for adult beetles are not as effective in measuring the population. Larval stages are present for longer and would allow the possibility of forecasting trends (B. Barratt pers. comm. 1999) through a time series analysis.

3) Investigate the possibility of a population existing close to Felton Rd (Brignall-Theyer 1998).

4) Conduct a literature survey on potential competitors, then investigate correlations and associations with the Cromwell chafer beetle using invertebrate data collected during yearly monitoring (Ferreira & McKinlay 1999b).

Management Needs: 1) Increase vegetation cover by planting tussock (*Poa cita*) because the highest density of *P. lewisii* was found associated with this type of ground cover (Hunt 1998).

2) Even with the fence encircling the reserve, hedgehogs are still present. There is a need to determine how they are getting in, and manage this problem (Brignall-Theyer 1998).

Contacts: Barbara Barratt, Bruce McKinlay.

See Plate 5, No. 12.

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Prodontria matagouriae* Emerson, 1997

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: CA

Area Office: Twizel

Description: A dark reddish-brown chafer beetle, with a shiny head. The elytra (wing cases) are dark reddish-brown, almost black, and weakly lined. The body is 11.8 - 13.5 mm long, and 6.5 - 7.2 mm wide (Emerson & Barratt 1997).

Body length: 13.5 mm

Type Locality: Sheldon Downs, Mackenzie Basin, 500m.

Specimen Holdings: NZAC, OMNZ, BENZ (Emerson & Barratt 1997).

Distribution: Found in the Mackenzie Country, Mackenzie Basin area at Ben Ohau roadside; Seldon Downs 500 m; Twizel (Emerson 1994; Emerson & Barratt 1997).

Habitat: Associated with matagouri (*Discaria toumatou*). Adults were found in soil around the roots, and were observed feeding on leaves at night. This beetle has not been found on any other plant species (Emerson & Barratt 1997).

Threats: If matagouri disappears so will this species (B. Barratt pers. comm. 1999).

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey to obtain an estimate of distribution and abundance, and determine whether this species is of conservation concern.

Management Needs: -

Contacts: Barbara Barratt, Rowan Emberson.

See Plate 5, No. 17.

Photo: Andrew Townsend.

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Prodontria modesta* (Broun, 1909)

Common Names: Alexandra chafer beetle

Synonyms: *Prodontria bicolorata* (Emerson & Barratt 1997), *Lewisiella modesta* (Given 1952)

M&D Category: A (*P. bicolorata*), C (*P. modesta*)

Conservancy Office: OT

Area Office: Central Otago, Alexandra

Description: A flightless chafer beetle, with two main colour forms. The specimens originally attributed to *Prodontria bicolorata* are brown, with a black upper body. The body is 12.5 mm long, and 7.3 mm wide (Given 1952). The specimens relating to the original *P. modesta* are black or pitchy black. The elytra (wing cases) are regularly lined, and have regular, fine puncture-like depressions, with scattered hairs between the lines. The body is 12 mm long by 6.5 mm wide (Given 1952). The taxonomy of this species is under question, and in this profile, original records and observations for each species will be kept separate. This will allow easy separation if subsequent work determines that the original species names should be reinstated. The information listed first refers to *P. modesta* with *P. bicolorata* information included after it.

Body length: 12.5 mm

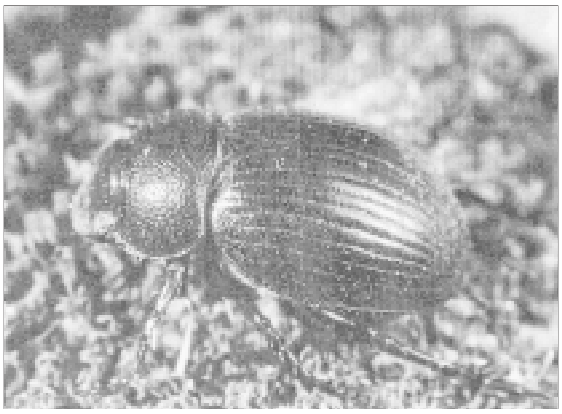
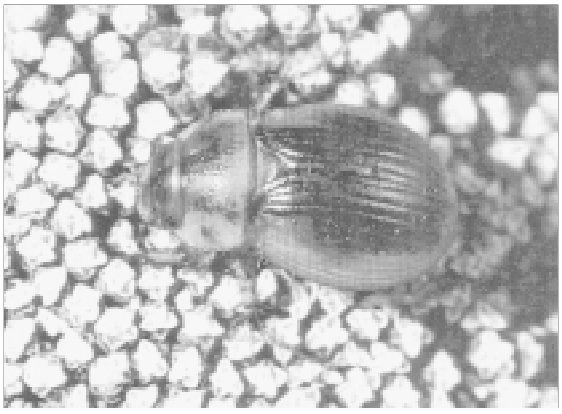


Photo: Brian Patrick.



Specimen originally attributed to Prodontria bicolorata. *Photo: Brian Patrick.*

Type Locality: Manor Burn, Central Otago (Given 1952). *P. bicolorata* was originally described from Alexandra.

Specimen Holdings: Broun Collection NHML, NZAC, LUNZ.

Distribution: Found in the lowland hills to the south and east of Alexandra (Emerson 1994; Patrick 1994f), in the Alexandra/Manorburn areas (Patrick 1994e), including Butchers Dam end of Flat Top Hill (Emerson 1984). Specimens formerly attributed to *P. bicolorata* have been found to the north, west and south of Alexandra (Patrick 1994f), including the terrace north-east of Dunstan Rd, and at Alexandra airport (NZAC).

Habitat: Usually found in areas where pasture is dominant, but which are not irrigated. The populations appear to be well established and widespread (Jamieson 1999a). At the Butchers Dam end of Flat Top Hill, they are found in an area covered mostly with thyme and scabweeds (*Raoulia* spp.), and adults have been observed feeding on the thyme (Emerson 1984). Specimens originally attributed to *P. bicolorata* are restricted to loose sandy soil (Jamieson 1999b). They were noted as being typically a species of glacial terraces, which will feed on exotic species such as sheeps sorrell (*Rumex acetosella*) (Emerson 1994). At the outer margin of a terrace just north of the Alexandra "Cromwell sand", it has been found at night feeding on scabweed growing on "Lowburn stoney sand" and "Lowburn sandy loam" (Watt 1979b).

Threats: Ploughing and irrigation (Emerson 1984). Specimens originally attributed to *P. bicolorata*, in areas near the airport, are under threat from wilding pine (*Pinus* spp.) and invasion of *Thymus vulgaris* (common thyme). *T. vulgaris* should be kept below 50% cover (Jamieson 1999a).

Work Undertaken to Date: Species status and genetic structure investigated by Emerson & Wallis (1994). *P. modesta* and *P. bicolorata* synonymised by Emerson & Barratt (1997), now proposed that the two are separate species (Jamieson 1999a).

Priority Research, Survey, and Monitoring: 1) Determine the taxonomy of this species. It is imperative that the confusion surrounding whether this is a single species or two separate species is quickly resolved because it seriously alters the conservation status and management requirements of the species.

Management Needs: -

Contacts: Barbara Barratt, Rowan Emberson.

See Plate 5, No. 13, No. 14.

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Prodontria patricki* Emerson, 1997

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: OT

Area Office: Central Otago

Description: A brownish-yellow flightless chafer beetle, with a velvety appearance, and broken, black, striated markings. Parts of the body are densely covered with golden hairs. The body is 11.9 - 12.7 mm long and 6.7 - 7.0 mm wide. In some specimens the brown colour of the thorax is worn to a light brown. The colour of the wing cases varies depending on the amount of brownish-yellow colouration. This species bears some resemblance to the flighted chafer, *Odontria striata* (Emerson & Barratt 1997).

Body length: 12.7 mm

Type Locality: Danseys Pass, 1250 m.

Specimen Holdings: NZAC, OMNZ, BENZ (Emerson & Barratt 1997).

Distribution: Dansey Pass, 1000 - 1250 m (Emerson & Barratt 1997).

Habitat: Subalpine tussock (B. Barratt pers. comm. 1999).

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey to obtain an estimate of distribution and abundance, and determine whether this species is of conservation concern.

Management Needs: -

Contacts: Barbara Barratt, Rowan Emberson.

See Plate 5, No. 15.

Photo: Brian Patrick.

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Prodontria regalis* Emerson, 1997

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: OT

Area Office: Wanaka, Wakatipu

Description: A dull black, sometimes blue-grey, flightless scarab beetle, with a velvety appearance. The hairs are arranged in rows, giving a striped effect. The body is 12.0 - 14.4 mm long, and 6.4 - 7.9 mm wide. It is similar in appearance to *Prodontria pinguis*, but is larger on average (Emerson & Barratt 1997). Older specimens in which the velvet has worn off, can look like *Prodontria capito* (B. Barratt pers. comm. 1999).

Body length: 14.4 mm

Type Locality: Crown Range, Central Otago, 1650 m.

Specimen Holdings: NZAC, OMNZ, BENZ (Emerson & Barratt 1997).

Distribution: Found in Central Otago at Crown Range, 1550 m & 1650 m ; Pisa Range, 1700 m; Rock Peak, 4.5 km north of Gibston, 1400 m; Rock Peak, 2 km east of Crown Range, 1463 m; Mt Cardrona, Central Otago (Emerson & Barratt 1997).

Habitat: Found at high altitude (P. Johns pers. comm. 1992). Individuals have been found under *Hebe buchananii*, and in mixed swards litter (Emerson & Barratt 1997). The larvae may feed on grass roots, but no special vegetation association is known (B. Barratt pers. comm. 1999).

Threats: The Crown Range road is soon to be sealed, this may lead to greater activity and/or development in the area, which may have an impact on the population (B. Barratt pers. comm. 1999).

Work Undertaken to Date: -

Photo: Andrew Townsend.

Priority Research, Survey, and Monitoring: 1) Survey Crown Range, Pisa Range, Rock Peak, Mt Cardrona, and suitable surrounding areas to obtain an estimate of the distribution and abundance of this species.

Management Needs: 1) Keep an eye on population because it has a very limited distribution (B. Barratt pers. comm. 1999).

Contacts: Barbara Barratt, Rowan Emberson.

See Plate 5, No. 18.

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Prodontria setosa* Given, 1952

Common Names: Bristly cockchafer (Foord 1990)

Synonyms: *Lewisiella setosa* (Given 1952)

M&D Category: I

Conservancy Office: SL

Area Office: Te Anau

Body length: 16 mm

Description: A glossy black chafer beetle, with a dull black head. The upper, front part of the thorax (pronotum) has long, greyish-yellow hairs, lying flat against it. The body is 16 mm long, and 8 mm wide (Given 1952).

Type Locality: Hunter Mountains (Given 1952).

Specimen Holdings: NZAC.

Distribution: Hunter Mountains (Given 1952; Emerson 1994).

Habitat: Not known.

Threats: Not known.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey for distribution and elevational range (E. Edwards pers. comm. 1999).

Management Needs: -

Contacts: Barbara Barratt, Rowan Emberson, Bruce Given.

See Plate 5, No. 19.

Permission: Manaaki Whenua Press.
Given 1952, Plate 4, Fig. 12

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Prodontria* sp. "Five Rivers"

Common Names: -

Synonyms: -

M&D Category: X

Conservancy Office: SL

Area Office: Murihiku

Description: A flightless chafer beetle.

Type Locality: Not described.

Specimen Holdings: -

Distribution: Mid-Dome, Otago.

Habitat: Not known.

Threats: Landuse change (E. Edwards pers. comm. 2000). May be extinct.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey Mid Dome and Five Rivers area in an attempt to locate this species.

Management Needs: -

Contacts: Barbara Barratt, Rowan Emberson.

Order: Coleoptera

Family: Scarabaeidae

Taxonomic Name: *Stethaspis convexa* (Given, 1952)

Common Names: -

Synonyms: *Chlorochiton convexa* (Given 1952)

M&D Category: X

Conservancy Office: CA

Area Office: North Canterbury

Description: A large brightly glistening, deep-green chafer beetle. The striae (lines) on the elytra (wing cases) are deeply and coarsely punctured. The body is 15 mm long, and 9 mm wide (Given 1952).

Body length: 15 mm

Type Locality: Oxford, Canterbury (Given 1952).

Specimen Holdings: CMNZ, NZAC.

Distribution: Apparently known only from Oxford, North Canterbury (Watt 1984).

Habitat: If this species is typical of other *Stethaspis* species then the most likely habitat is at the edge of broadleaf forest (P. Johns pers. comm. 1999).

Threats: Not known.

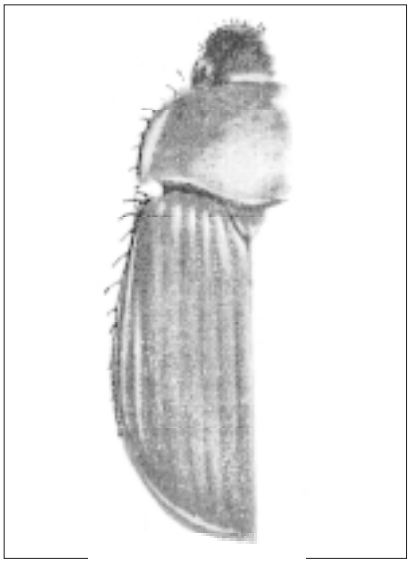
Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Search suitable sites around Oxford in an attempt to locate this species.

Management Needs: -

Contacts: Rowan Emberson.

See Plate 5, No. 20.



Permission: Manaaki Whenua Press. Given 1952, Plate 4, Fig. 3

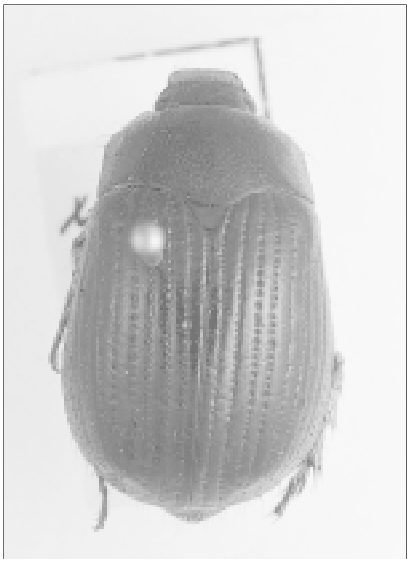


Photo: Andrew Townsend

Family: Scydmaenidae

Common name: **Stone beetles**

Order: Coleoptera

Family: Scydmaenidae

Taxonomic Name: *Euconnus microcilipes* Franz, 1985

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: NL

Area Office: Kerikeri

Description: A minute beetle, 1.5 mm long and 0.6 mm wide. The body is red-brown with yellowy hairs (Franz 1985).

Body length: 1.5 mm

Type Locality: Toronoui Track, 150 m, Waipoua Forest (Franz 1985).

Specimen Holdings: -

Distribution: Toronoui Track (Franz 1985).

Habitat: Has been collected from kauri (*Agathis australis*)/podocarp/nikau palm (*Rhopalostylis sapida*)/broadleaf forest (Franz 1985). Scydmaenids are generally nocturnal and found in organic litter (Klimaszewski & Watt 1997).

Threats: Not known. These beetles are small and generally litter dwellers, therefore it is likely that they have been overlooked, and are not actually under any immediate threat.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey Toronoui Track and surrounding areas to obtain an estimate of the distribution and abundance of this species. Utilise appropriate collection methods, such as litter samples with the invertebrates being extracted via a Tullgren Funnel.

Management Needs: -

Contacts: -

Photo: Andrew Townsend.

Order: Coleoptera

Family: Scydmaenidae

Taxonomic Name: *Euconnus paracilipes* Franz, 1985

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: NL

Area Office: Kerikeri

Description: A minute beetle 2.0 mm long and 0.8 mm wide. The body is red-brown, with brown-yellow hairs (Franz 1985).

Body length: 2 mm

Type Locality: Yakas Tree Track, 350 m, Waipoua Forest (Franz 1985).

Specimen Holdings: -

Distribution: Yakas Tree Track (Franz 1985); Kauri Ricker Track (S. Thorpe pers. comm. 2000).

Habitat: Has been collected from broadleaf/podocarp forest (Franz 1985). Scydmaenids are generally nocturnal and found in organic litter (Klimaszewski & Watt 1997).

Threats: Not known. These beetles are small and generally litter dwellers, therefore it is likely that they have been overlooked, and are not actually under any immediate threat.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey Yakas Track, Kauri Ricker Track and surrounding areas to obtain an estimate of the distribution and abundance of this species. Utilise appropriate collection methods, such as litter samples with the invertebrates being extracted via a Tullgren Funnel.

Management Needs: -

Contacts: -

Order: Coleoptera

Family: Scydmaenidae

Taxonomic Name: *Maorinus hunuaeformis* (Franz, 1985)

Common Names: -

Synonyms: *Euconnus (Maorinus) hunuaeformis* (Franz 1985)

M&D Category: I

Conservancy Office: NL

Area Office: Kerikeri

Body length: 2.2 mm

Description: A minute beetle, 2.2 mm long and 0.8 mm wide. The body is dark red-brown with yellow-brown hairs (Franz 1985).

Type Locality: Wairau summit, 387 m, Waipoua Forest (Franz 1985).

Specimen Holdings: -

Distribution: Wairau summit, Waipoua Forest (Franz 1985).

Habitat: Has been collected from podocarp/mixed broadleaf forest (Franz 1985). Scydmaenids are generally nocturnal and found in organic litter (Klimaszewski & Watt 1997).

Threats: Not known. These beetles are small and generally litter dwellers, therefore it is likely that they have been overlooked, and are not actually under any immediate threat.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey Wairau summit and surrounding areas to obtain an estimate of the distribution and abundance of this species. Utilise appropriate collection methods, such as litter samples with the invertebrates being extracted via a Tullgren Funnel.

Management Needs: -

Contacts: -

Order: Coleoptera

Family: Scydmaenidae

Taxonomic Name: *Maorinus* sp.

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: NL

Area Office: Kerikeri

Description: A minute beetle, about 2 mm long.

Type Locality: Not described.

Specimen Holdings: ?NZAC.

Distribution: Waipoua Forest (Maddison 1991).

Body length: 2 mm

Habitat: Scydmaenids are generally nocturnal and found in organic litter (Klimaszewski & Watt 1997).

Threats: Not known. These beetles are small and generally litter dwellers, therefore it is likely that they have been overlooked, and are not actually under any immediate threat.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey areas in Waipoua Forest to obtain an estimate of the distribution and abundance of this species. Utilise appropriate collection methods, such as litter samples with the invertebrates being extracted via a Tullgren Funnel.

Managment Needs: -

Contacts: -

Order: Coleoptera

Family: Scydmaenidae

Taxonomic Name: *Maorinus toronouii* (Franz, 1985)

Common Names: -

Synonyms: *Euconnus (Maorinus) toronouii* (Franz 1985)

M&D Category: I

Conservancy Office: NL

Area Office: Kerikeri

Description: A minute beetle, 2.1 - 2.2 mm long and 0.80 - 0.84 mm wide. The body is brown-black with yellow hairs. The elytra (wing cases) are dark sepia-brown, and the legs red-brown (Franz 1985).

Body length: 2.2 mm

Type Locality: Toronui Track, 150 m, Waipoua Forest (Franz 1985).

Specimen Holdings: -

Distribution: Toronui Track, Waipoua Forest (Franz 1985).

Habitat: Kauri (*Agathis australis*)/podocarp/broadleaf/nikau palm (*Rhopalostylis sapida*) forest (Franz 1985), 100-150 m elevation, under logs (Brook 1999b). Scydmaenids are generally nocturnal and found in organic litter (Klimaszewski & Watt 1997).

Threats: Not known. These beetles are small and generally litter dwellers, therefore it is likely that they have been overlooked, and are not actually under any immediate threat.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey Toronui Track and surrounding areas to obtain an estimate of the distribution and abundance of this species. Utilise appropriate collection methods, such as litter samples with the invertebrates being extracted via a Tullgren Funnel.

Photo: Andrew Townsend.

Managment Needs: -

Contacts: -

Order: Coleoptera

Family: Scydmaenidae

Taxonomic Name: *Sciacharis yakasensis* Franz, 1985

Common Names: -

Synonyms: -

M&D Category: I

Conservancy Office: NL

Area Office: Kerikeri

Description: A minute beetle, 1.2 - 1.5 mm long and 0.46 - 0.50 mm wide. The body is bright red-brown with yellow hairs (Franz 1985).

Body Length: 1.5 mm

Type Locality: Yakas Tree Track, 350 m, Waipoua Forest (Franz 1985).

Specimen Holdings: -

Distribution: Yakas Tree Track, Waipoua Forest (Franz 1985).

Habitat: Broadleaf/podocarp forest (Franz 1985). Scydmaenids are generally nocturnal and found in organic litter (Klimaszewski & Watt 1997).

Threats: Not known. These beetles are small and generally litter dwellers, therefore it is likely that they have been overlooked, and are not actually under any immediate threat.

Work Undertaken to Date: -

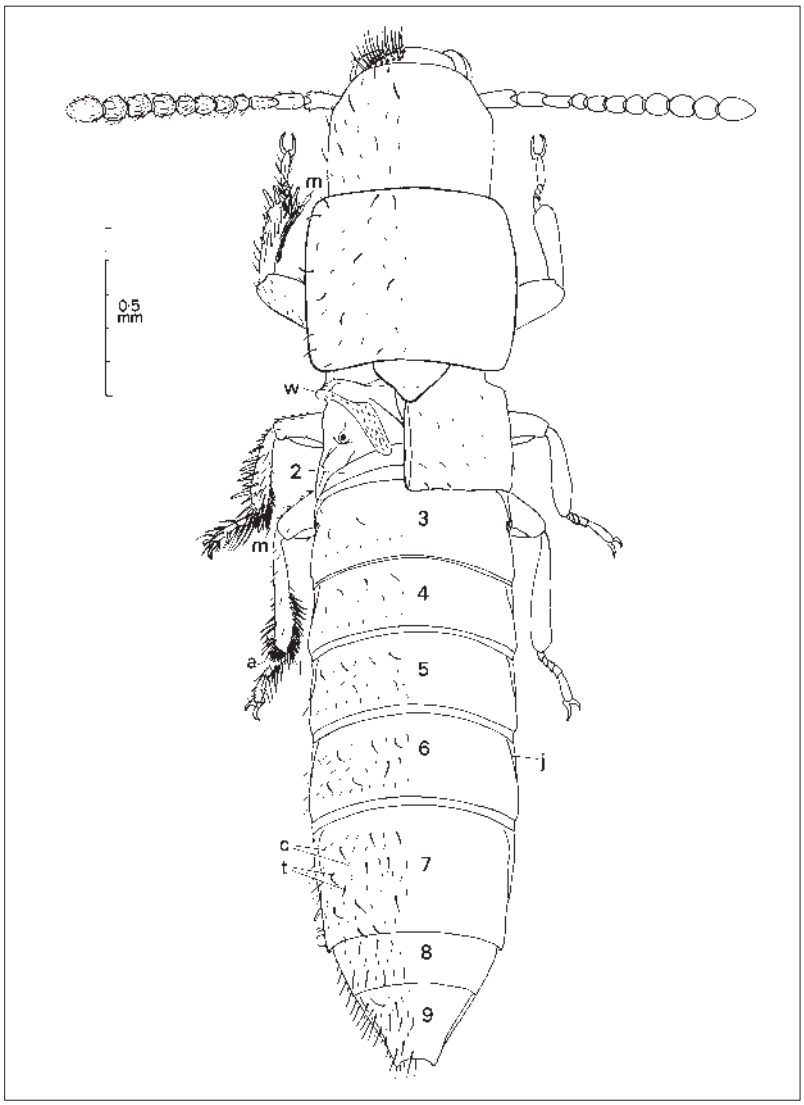
Priority Research, Survey, and Monitoring: 1) Survey Yakas Tree Track and surrounding areas to obtain an estimate of the distribution and abundance of this species. Utilise appropriate collection methods, such as litter samples with the invertebrates being extracted via a Tullgren Funnel.

Managment Needs: -

Contacts: -

Family: Staphylinidae

Common name: **Rove beetles, cocktail beetles**



Paratorchus hamatus, *type species of the genus and a typical osoriine staphylinid beetle.*
Permission: Manaaki Whenua Press. McColl 1982 , p. 74, Fig. 1.

Order: Coleoptera

Family: Staphylinidae

Taxonomic Name: *Paratorchus alifer* (McColl, 1982)

Common Names: Common genus name; cylindrical rove beetle (Scott & Emberson 1999)

Synonyms: *Paratrochus alifer* (McColl 1984b)

M&D Category: I

Conservancy Office: NL

Area Office: Kerikeri

Body length: 2.9 mm

Description: A dull, yellowish-brown rove beetle, with the antennae and legs paler than the body. The upper surface of the body has fine puncture-like depressions, and is moderately clothed with fine short hairs. The body is about 2.9 mm long, and 0.6 mm wide (McColl 1982).

Type Locality: Omahuta Kauri Reserve, Northland, 135 m, litter under kauri, tawa, tawari, aka, and kauri grass.

Specimen Holdings: NZAC (McColl 1982).

Distribution: Collected only from Omahuta Kauri Reserve (McColl 1982).

Habitat: Has been collected from litter beneath kauri (*Agathis australis*) dominant forest (McColl 1982) including tawa (*Beilschmiedia tawa*), tawari (*Ixerba brexioides*), clinging rata (*Metrosideros perforata*), kauri grass (*Astelia trinervia*) (McColl 1981, 1982), and *Gahnia*.

Threats: Not known. This is a small, litter dwelling beetle, therefore it is likely that it has been overlooked and may not be under any threat.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey to obtain an estimate of distribution and abundance, and determine whether this species is of conservation concern.

Management Needs: -

Contacts: -

Order: Coleoptera

Family: Staphylinidae

Taxonomic Name: *Paratorchus flexuosus* (McColl, 1982)

Common Names: Common genus name; cylindrical rove beetle (Scott & Emberson 1999)

Synonyms: *Paratrochus flexuosus* (McColl 1984b)

M&D Category: I

Conservancy Office: NL

Area Office: Kerikeri

Description: A moderately shiny, reddish-brown rove beetle. The antennae and legs are paler than the body. The upper surface of the body has fine puncture-like depressions, and is moderately clothed with fine short hairs. The body is about 2.6 mm long, and 0.6 mm wide (McColl 1982).

Body length: 2.6 mm

Type Locality: Puketi State Forest, Northland.

Specimen Holdings: NZAC.

Distribution: Puketi State Forest (McColl 1982).

Habitat: Has been collected from litter under totara (*Podocarpus totara*), kohekohe (*Dysoxylum spectabile*), taraire (*Beilschmiedia tarairi*), tawa (*Beilschmiedia tawa*), and *Pittosporum* sp. (McColl 1981, 1982).

Threats: Not known. This is a small, litter dwelling beetle, therefore it is likely that it has been overlooked and may not be under any threat.

Work Undertaken to Date: -

Priority Research, Survey, and Monitoring: 1) Survey to obtain an estimate of distribution and abundance, and determine whether this species is of conservation concern.

Management Needs: -

Contacts: -