

LIMNICHIDAE:
Description of a new species from New Caledonia,
and checklist of the taxa recorded from the
Australian/Pacific Region
(Coleoptera)

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Abstract

Only two species of Limnichidae (Coleoptera) have so far been recorded from New Caledonia, both by FAUVEL (1903): *Byrrhinus antipodum* FAUVEL, 1903 and *Pelochares versicolor* (WALTL, 1833). *Byrrhinus antipodum* is supposed to be endemic to New Caledonia. The types could not be retrieved by the authors. The record of *Pelochares versicolor* is probably based on misidentification, because this species is confined to the Palearctic Realm. The New Caledonian specimens of *Pelochares* MULSANT & REY examined are specifically different from *P. versicolor* and described here as *P. fauveli* sp.n.

A checklist of the Limnichidae species known from the Australian/Pacific Region is provided. All original descriptions are listed in the references. The following new combinations are introduced: *Pelochares australis* (ERICHSON, 1842) comb.n. [*Limnichus*], *Pelochares decorus* (BROUN, 1880) comb.n. [*Limnichus*], *Pelochares ellipticus* (LEA, 1920) comb.n. [*Limnichus*], *Pelochares nigripes* (BROUN, 1893) comb.n. [*Limnichus*], *Pelochares picinus* (BROUN, 1881) comb.n. [*Limnichus*], and *Pelochares punctatus* (BROUN, 1880) comb.n. [*Limnichus*]. *Pseudeucinetus novabritannica* DELÈVE, 1973 is recorded from New Guinea for the first time.

Key words: Coleoptera, Limnichidae, *Byrrhinus*, *Limnichus*, *Pelochares*, new species, new combination, New Caledonia, Australian/Pacific Region.

Introduction

Two species of Limnichidae have so far been recorded from New Caledonia, both by FAUVEL (1903): *Byrrhinus antipodum* FAUVEL, 1903 and *Pelochares versicolor* (WALTL, 1903). The former is likely to be endemic to New Caledonia, never referred to after its description. The latter is a Palearctic species.

The pantropical genus *Byrrhinus* MOTSCHULSKY is the most speciose genus among Limnichidae, with ca. 90 described species, and many undescribed ones (HERNANDO & RIBERA 2005). Numerous new species are for instance housed in the NMW.

The genus *Pelochares* MULSANT & REY is comprised of 23 described species from the Old World. The taxonomy of this genus is still poorly understood. Many species described in related genera (especially *Limnichus* LATREILLE) will have to be transferred to *Pelochares*, and, conversely, some of the species currently placed in *Pelochares* will have to be transferred to other genera (HERNANDO & RIBERA 2005). *Pelochares versicolor* is a Palearctic species, and the

specimens recorded from New Caledonia by FAUVEL (1903) belong to a new species described below.

The limnichids of the Australian/Pacific Region are largely unknown. We provide here a literature compilation, with some taxonomic changes based on the examination of the material housed in the Natural History Museum, London, and in the Naturhistorisches Museum Wien.

Material and methods

The specimens examined are deposited in the following collections:

IRSNB	Institut royal des Sciences naturelles de Belgique, Brussels, Belgium
MNHN	Muséum national d'Histoire naturelle, Paris, France
NHML	The Natural History Museum, London, U.K. (formerly British Museum of Natural History)
NMW	Naturhistorisches Museum Wien, Vienna, Austria

List of Localities

(Locs. 2009/NC: leg. Jäch)

Loc. 2009/NC 18 (JÄCH & BALKE 2010: Fig. 37): ca. 2 km NNE Farino, Refuge de Farino – Petite Cascade, ca. 270–340 m a.s.l., 21°38'55"S/165°46'53"E (coordinates taken at Refuge de Farino), 29.XI.2009. Rock pools and residual pools of two very small, almost dry streams (right tributaries of River Farino), flowing through degraded forest.

Loc. 2009/NC 21 (JÄCH & BALKE 2010: Fig. 38): ca. 7 km SE La Foa, ca. 20 m a.s.l., 21°44'04"S/165°53'23"E, 30.XI.2009. River Pocquereux, epipotamal, ca. 5–10 m wide, flowing through forest.

Loc. 2009/NC 31 (JÄCH & BALKE 2010: Fig. 48): ca. 17 km NE Népoui, ca. 110 m a.s.l., 21°13'30"S/ 165°05'30"E (and about 2 km upstream), 4.XII.2009. River Népoui, ca. 10–20 m wide, flowing through degraded forest and cultivated land.

Genus *Byrrhinus* MOTSCHULSKY, 1858

Type species: *Byrrhinus latus* MOTSCHULSKY, 1858 (designated by CHAMPION 1923: 248).

Byrrhinus antipodum FAUVEL, 1903

TYPE LOCALITY: New Caledonia, Grande Terre, North Province, Koné.

TYPE MATERIAL: The types of *Byrrhinus antipodum* could not be traced. They were found neither in the IRSNB (P. Limbourg, personal communication, 7.IV.2006), nor in the MNHN ("New Caledonia collection"), where the second author was looking for them in December 2006.

REMARKS: According to the original description, the pronotum would have the "basi utrinque profunde sinuatus, ante scutellum arcuatim emarginatus", i.e. base deeply sinuated, with a deep emargination for the insertion of the pronotum. These characters agree well with the most apparent diagnostic character of the genus, i.e. the strong double sinuation of the base of the pronotum (see DELÈVE 1968, WOOLDRIDGE 1975). Other characters of the description are not diagnostic, but it could well refer to a species which would have to be included in the genus *Byrrhinus* as currently recognized. The original description is based on two specimens, one from Koné, identified by FAUVEL (1903) as "specimen A", and one from Kanala ("specimen B").

A total of 18 specimens of *Byrrhinus* sp. was collected in New Caledonia (Grande Terre) by M.A. Jäch recently (see Fig. 4; SOUTH PROVINCE: 1 ex.: Loc. 2009/NC 18, 6 exs.: Loc. 2009/NC 21, NORTH PROVINCE: 11 exs.: Loc. 2009/NC 31). All specimens seem to belong to

the same species, most likely *B. antipodum*, but as long as the types of this species have not been located it is impossible to confirm their identification.

Genus *Pelochares* MULSANT & REY, 1869

Type species: *Pelochares emarginatus* MULSANT & REY, 1869 (by monotypy).

Pelochares fauveli sp.n.

Pelochares versicolor (WALTL, 1833): FAUVEL 1903 (misidentification); SPANGLER et al. 2001 (checklist).

TYPE LOCALITY: New Caledonia, Grande Terre, North Province, River Népoui, ca. 17 km NE Népoui, ca. 110 m a.s.l., 21°13'30"S/ 165°05'30"E (about 2 km upstream) (Loc. 2009/NC 31).

TYPE MATERIAL: **Holotype** ♂ (NMW): "NEW CALEDONIA (NC 31) / Grande Terre (N-Prov.) / ca. 17 km NE Népoui / 4.XII.09. leg. M.A. Jäch", "River Népoui / ca. 11 m a.s.l. / 21°13'30"S/165°05'30"E / and about 2 km upstream", plus holotype label. Aedeagus mounted on a transparent card, last five sternites dissected and mounted on the same card.

Paratypes: 2 exs. (NMW), same data as holotype; 1 ex. (IRSNB): pink label, with handwritten label of Fauvel glued on it: "Nouvelle Calédonie / Koné [Fauvel's handwritten glued card] / Rec. Atkinson [handwritten] / ex coll. Fauvel", "Pelochares / sp. / m# [handwritten] / det. A.Pütz 1993", plus holotype label; genitalia and last five sternites mounted separately on a transparent card; 1 ex. (IRSNB) – see Fig. 1: pink label, with handwritten label of Fauvel glued on it: "Coll. R. I. Sc. N. B. / Nouvelle Calédonie / Anse Vata / marais vase sèche/ avril 86re [Fauvel's handwritten glued card] / Rec. Savès [handwritten] / ex coll. Fauvel", "Coll. et det. A. Fauvel / Pelochares / versicolor Waltl [Fauvel's handwritten glued card]"; plus paratype label; 1 ex. (IRSNB): "Pelochares sp. [male symbol] / det. A. Pütz 1993"; 1 ex. (IRSNB): pink label, "Coll. R. I. Sc. N. B. / Nouvelle Calédonie / Anse Vata avril / marais vase sèche – Savès [handwritten]/ ex coll. Fauvel", "Coll. et det. A. Fauvel / Pelochares / versicolor Waltl [handwritten] / R.I.Sc.N.B. 17.479", "Pelochares / sp. [handwritten] / det. A. Pütz 1993", "71 [handwritten]", plus paratype label.

DESCRIPTION: Length 1.9–2.0 mm; maximum width 1.2 mm. Body elongate, oval (Fig. 1). Dorsal surface dark brown, covered with golden-silvery, short, very dense recumbent pubescence, with an alternate orientation, forming a zig-zag (Fig. 1). Body appendages with paler brown coloration. Covered with uniform, strong setiferous punctures; surface between punctures smooth and shiny.

Eyes flat, although visible from above; upper margin of eyes bordered, border reaching insertion of antennae. Surface of head behind eyes flat, without depressions or fossae (as characteristic of the *Pelochares* group of genera). Antennae with 11 symmetrical antennomeres, last four forming a loose club.

Pronotum transverse; anterior margin of pronotum straight, without crenulations, posterior margin with a double sinuation; lateral margins straight, bordered. Hypomeron flat, without excavations or fossae.

Elytra with humeral callus; lateral margins bordered from humerus to apex; apex acuminate, with a locking device. Membranous wings well developed.

Surface of abdominal sternites with uniform, strong and sparse punctures; covered with long pubescence. Inter-metacoxal plate on first ventrite triangular, strongly acuminate; first abdominal sternite with excavations for the reception of metafemora and metatibiae. Last abdominal sternite strongly emarginate, with a medial protuberance (as characteristic of the genus); pubescence denser in the medial area (in males denser than in females).

Protibia without pre-apical comb of setae (as characteristic of the *Pelochares* group of genera).



Fig. 1: Habitus photograph of *Pelochares fauveli* (paratype).
 Figs. 2–3: Aedeagus of *Pelochares fauveli* (holotype), dorsal view.

Aedeagus as in Figs. 2–3. Median lobe shorter than parameres, acuminate. Parameres ca. twice as long as phallobase; apex round. Phallobase asymmetrical, with short struts. No other genital segments are preserved for the holotype.

DISTRIBUTION (Fig. 4): New Caledonia, widely distributed on Grande Terre.

ETYMOLOGY: This species is named after A. Fauvel, the only author who had so far published on the Limnichidae of New Caledonia.

REMARKS: When FAUVEL (1903) recorded this species from New Caledonia there were only two species of *Pelochares* known world-wide: *P. versicolor* and *P. murinus* (BAUDI, 1870). Both were described in the genus *Limnichus*, and later transferred to *Pelochares* by WEISE (1877). *Pelochares versicolor* is a West Palearctic species, recorded from numerous countries in Europe, North Africa and western Asia (HERNANDO & RIBERA 2006).

The external morphology of *P. fauveli* is indeed very similar to that of *P. versicolor*. As noted in the original description, “Il m’est impossible de trouver un caractère pur séparer les individus calédoniens de ceux d’Europe, si singulière que puisse paraître la présence de cet insecte aux deux antipodes du globe” (FAUVEL 1903). There are, however, clear differences in the male genitalia (not examined by FAUVEL 1903).

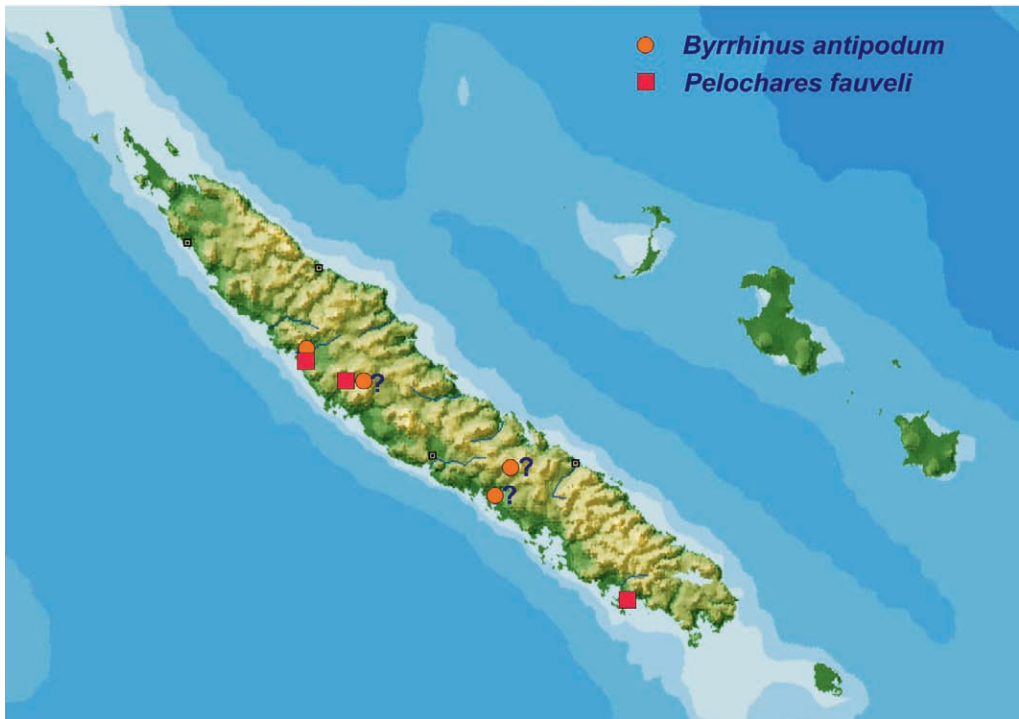


Fig. 4: Geographical distribution of *Byrrhinus antipodum*, and *Pelochares fauveli*.

Checklist of the species of Limmichidae of the Australian/Pacific Region

Australia

We have not studied the types of the species of *Limmichus* described from Australia, but based on the figures and the characters given in the original descriptions, and on the absence of species of *Limmichus* among all material from Australia studied so far, we can conclude that the genus *Limmichus* is absent from at least most parts of Australia.

Stictoxis frontalis (MACLEAY, 1871) was originally described as *Limmichus frontalis* from Queensland (MACLEAY 1871), but transferred to Histeridae by LEWIS (1899).

In the collections of the NHML and NMW and the Australian National Insect Collection in Canberra (J.F. Lawrence, personal communication 2010) there are numerous Australian specimens of undescribed species of the genera *Paralimmichus* DELÈVE and *Pelochares*, as well as several undescribed genera.

***Hyphalus insularis* BRITTON, 1971**

Distribution: Australia (Queensland: Great Barrier Reef, Heron Island) (BRITTON 1971).

***Byrrhinus convexus* (BLACKBURN, 1896)**

Notiocyphon convexus BLACKBURN 1896: 272.

Notiocyphon convescens BLACKBURN: PIC 1914 (misspelled?).

Byrrhinus convexus BLACKBURN: CHAMPION 1923; LEA 1925: 416.

Distribution: Australia (Northern Territory: Palm Creek) (BLACKBURN 1896).

***Byrrhinus noctivagus* LEA, 1920**

Distribution: Australia (Queensland: Cooktown, Mulgrave River) (LEA 1920).

***Byrrhinus pubiventris* LEA, 1920**

Distribution: Australia (Queensland: Upper Ord River) (LEA 1920).

***Byrrhinus punctipennis* (MACLEAY, 1871)**

Trinodes punctipennis MACLEAY 1871: 171.

Byrrhinus punctipennis MACLEAY: ARROW 1915: 450.

Distribution: Australia (Queensland, Gayndah) (MACLEAY 1871, LEA 1920).

***Limmichus ater* LEA, 1920**

Distribution: Australia (northern Queensland) (LEA 1920).

***Pelochares australis* (ERICHSON, 1842) comb.n.**

Limmichus australis ERICHSON 1842: 153.

Distribution: Australia (Western Australia, Queensland, New South Wales, South Australia, Tasmania) (ERICHSON 1842, LEA 1920). LEA (1920) recognized several "morphological types" with different geographical distribution.

***Pelochares ellipticus* (LEA, 1920) comb.n.**

Limmichus ellipticus LEA 1920: 280.

Distribution: Australia (Queensland: Hamilton, Upper North Pine) (LEA 1920).

Paralimnichus castaneus* (LEA, 1920)Limnichus castaneus* LEA, 1920: 279.*Paralimnichus castaneus* LEA: LAWRENCE 1987: 360.

Distribution: Australia (LEA 1920).

New Guinea

We have studied material of at least two undescribed genera from New Guinea, belonging to the *Pelochares* and *Limnichus* groups of genera respectively. In the NHML and NMW there are also numerous undescribed species of *Paralimnichus*, *Byrrhinus*, *Pelochares* and *Limnichus* from this island.

***Byrrhinus biroi* PIC, 1956**

Distribution: Papua New Guinea (PIC 1956, DELÈVE 1971).

***Byrrhinus neoguineensis* PIC, 1956**

Distribution: Papua New Guinea (Astrolabe Bay) (PIC 1956).

***Byrrhinus nitidicollis* PIC, 1956**

Distribution: Papua New Guinea (Astrolabe Bay) (PIC 1956).

Pelochares biroi* (PIC, 1956)Limnichus biroi* PIC 1956: 75; DELÈVE 1973: 372.*Pelochares biroi* PIC: SPANGLER et al. 2001: 158 [transferred to *Pelochares* without comment, possibly based on DELÈVE (1973)].

Distribution: Papua New Guinea (Astrolabe Bay) (PIC 1956).

Limnichus biroi var. *incertus* PIC, 1956 was described from the same locality as the nominotypical form based on a color variation. These specimens have to be studied in order to determine their taxonomic status.

Byrrhinus grandis* (PIC, 1956)Cyphonichus grandis* PIC 1956: 74.*Byrrhinus grandis* PIC: SPANGLER et al. 2001: 152.

Distribution: Papua New Guinea (Tigidu, Huon Golf) (PIC 1956).

***Cyphonichus neoguineensis* PIC, 1956**

Distribution: Papua New Guinea (Astrolabe Bay) (PIC 1956).

The genus *Cyphonichus* was synonymised with *Byrrhinus* by CHAMPION (1923). However, M. Pic continued considering *Cyphonichus* and *Byrrhinus* as different genera (e.g. PIC 1956). DELÈVE (1973) described the genus *Paralimnichus* for *Cyphonichus punctatus* PIC, 1923, and some specimens of *Cyphonichus grandis* PIC, 1956 housed in the NHML were identified as *Paralimnichus grandis* by D.P. Wooldridge. It is likely that M. Pic identified as *Cyphonichus* what is currently considered *Paralimnichus*. In that case, *Cyphonichus neoguineensis* would not be a homonym of *Byrrhinus neoguineensis*. The types will have to be studied to solve this problem.

***Pseudeucinetus novabritannica* DELÈVE, 1973**

Distribution: Bismarck Archipelago (DELÈVE 1973), Papua New Guinea (1 ♂, NHML: Kokoda, 1200 ft., VII.1933, leg. L.E. Cheesman). First record for New Guinea.

Bismarck Archipelago

***Pseudeucinetus novabritannica* DELÈVE, 1973**

Distribution: Bismarck Archipelago (New Britain) (DELÈVE 1973), Papua New Guinea.

Solomon Islands

***Paralimnichus punctatus* (PIC, 1923)**

Cyphonichus punctatus PIC 1923: 5.

Paralimnichus punctatus PIC: DELÈVE 1973: 25.

Paralimnichus punctatus var. *obscurior* PIC 1923: 5.

Paralimnichus rufescens PIC 1923: 5.

Distribution: Borneo, Philippines, Solomon Islands (PIC 1923).

***Pseudeucinetus spilmani* SPANGLER, 1995**

Distribution: Solomon Islands (Guadalcanal, New Georgia) (SPANGLER 1995).

New Caledonia

***Byrrhinus antipodum* FAUVEL, 1903**

Distribution: New Caledonia (Grande Terre).

***Pelochares fauveli* HERNANDO & RIBERA, 2010**

Distribution: New Caledonia (Grande Terre).

Tonga

***Babalimnichus splendens* HERNANDO & RIBERA, 2003**

Distribution: Tonga (Tongatapu: Makeke Beach) (HERNANDO & RIBERA 2003).

Hawaiian Islands

***Parathroscinus murphyi* WOOLDRIDGE, 1990**

Distribution: Singapore, Hawaiian Islands (Oahu) (WOOLDRIDGE 1990, NISHIDA & IMADA 1997) – according to SAMUELSON (1998) and NISHIDA & IMADA (1997) this species has been introduced to Hawaii.

New Zealand

***Hyphalus kuscheli* BRITTON, 1977**

Distribution: New Zealand (North Island: Leigh) (BRITTON 1977).

***Hyphalus prolixus* BRITTON, 1977**

Distribution: New Zealand (North Island: Karikari Peninsula) (BRITTON 1977).

***Hyphalus ultimus* BRITTON, 1977**

Distribution: New Zealand (North Island: Moturoa Island) (BRITTON 1977).

***Hyphalus wisei* BRITTON, 1973**

Distribution: New Zealand (North Island: Rodney County, Goat Island) (BRITTON 1973).

***Pelochares decorus* (BROUN, 1880) comb.n.**

Limnichus decorus BROUN 1880: 247.

Distribution: New Zealand (North Island: Tairua) (BROUN 1880).

***Pelochares nigripes* (BROUN, 1893) comb.n.**

Limnichus nigripes BROUN 1893: 1449.

Distribution: New Zealand (South Island: Canterbury, Ashburton) (BROUN 1893).

***Pelochares picinus* (BROUN, 1881) comb.n.**

Limnichus picinus BROUN 1881: 671.

Distribution: New Zealand (South Island: Canterbury) (BROUN 1881).

***Pelochares punctatus* (BROUN, 1880) comb.n.**

Limnichus punctatus BROUN 1880: 247.

Distribution: New Zealand (South Island: Otago, Lindis Pass) (BROUN 1880).

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