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PSELAPHINAE (COLEOPTERA: STAPHYLINIDAE) OF NEW CALEDONIA AND LOYALTY ISLANDS. I. *TAOMICA*, NEW GENUS OF PSELAPHINI AND A CATALOGUE OF PSELAPHINAE

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Hlaváč, P., Monteith, G.B. & Dunay, G. 2006 11 10: The Pselaphinae (Coleoptera: Staphylinidae) of New Caledonia and the Loyalty Islands. I. *Taomica*, new genus of Pselaphini and a catalogue of Pselaphinae. *Memoirs of the Queensland Museum* **52**(1): 79-86.

A remarkable new genus and species of Pselaphini, *Taomica cassani* Hlaváč, from the mainland of New Caledonia in the south-west Pacific, is described and illustrated. This is the first record of the tribe from New Caledonia. An annotated catalogue of the Pselaphinae recorded from New Caledonia and the Loyalty Islands (7 genera, 14 species) is also provided. ❐ *Staphylinidae, Pselaphinae, Pselaphini, new genus, new species, New Caledonia, catalogue*.

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The two archipelagos of New Caledonia (including the large main island or 'grande terre', Isle of Pines and Belep) and the Loyalty Islands (including Ouvéa, Lifou and Maré) lie closely adjacent in the SW Pacific (Fig. 1). The Pselaphinae of this region are poorly known and have not been studied for many years. The first papers dealing with the fauna were published in the 19th Century (Montrouzier, 1864; Raffray, 1896) and described 5 species in 3 genera of the supertribe Goniaceritae. Fauvel (1903) published a large paper on the Coleoptera of New Caledonia and added 6 new species in 2 genera of Goniaceritae, and a new monotypic genus in the tribe Tyrini of the supertribe Pselaphitae. For the next 50 years nothing further was written on the area's pselaphine fauna until Park (1952) described a new species of the supertribe Euplectitae in a contribution devoted mostly to the Fiji Islands. Thus, to date, only 13 species and 6 genera are known from New Caledonia and the Loyalties, and the present paper is the first to deal with the taxonomy of the fauna for 54 years.

It is obvious that such a large and tropical area must house a much higher diversity of Pselaphinae than the taxonomic literature indicates. Fogging of the forest canopy at several sites in New Caledonia showed that Pselaphinae comprised up to 7.9% of individuals of all Coleoptera sampled (Guilbert et al., 1994), and in another study Guilbert et al. (1995) noted that 'Pselaphidae are more abundant in our samples than in any other published (canopy) results'. A recent survey by the Queensland Museum of a small area at the southern tip of New Caledonia revealed 48 pselaphine species (Monteith et al., 2006). Good collections of New Caledonian Pselaphinae are now available and it is clear that the fauna is highly diverse and contains many new genera and species. The aim of the senior author is to revise the fauna of New Caledonia and the Loyalties in future years, and this paper makes a start by describing a striking new genus of Pselaphini and presenting a catalogue of the described species.

CONVENTIONS

The following abbrevations and symbols are used through the text: MNHN, Muséum National d'Histoire Naturelle, Paris, France; QM, Queensland Museum, Brisbane, Australia; TL, type locality; p (printed), h (hand-written), / (used to separate different labels). For nomenclatural purposes the sole author of the new taxa is the senior author.

Taomica Hlaváč, gen. nov.
(Fig. 2A-E)

ETYMOLOGY. The name is taken from Mt Taom, the type locality. Gender female.

TYPE SPECIES. *Taomica cassani* Hlaváč sp. nov.

DIAGNOSIS. The genus is preliminarily placed in the tribe Pselaphini by the presence of single tarsal claws, although in general appearance it

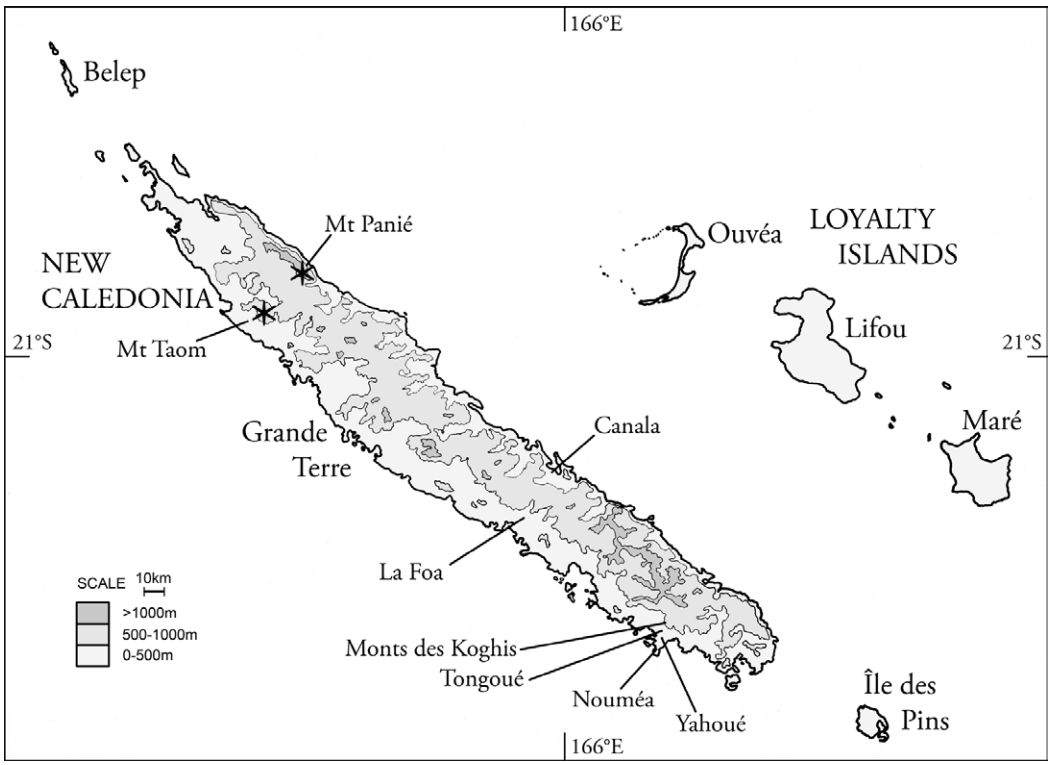

FIG. 1. Map of New Caledonia showing localities for *Taomica cassani* gen. et sp. nov. (∗) and other localities from which pselaphine species have been recorded in the catalogue.

more closely resembles members of the tribe Tyrini. *Taomica*, due to the strange development of maxillary palpi, the presence of two pairs of long, acute spines on the ventral side of head, and the presence of a single basal fovea on each elytron, is strongly isolated within the tribe and this distinctive genus cannot be placed near any other at this time. Further important generic characters are as follows: frontal fovea absent; two setose foveae on vertex; eyes large; maxillary palpi very characteristic, segment II curved basally and IV extremely large, curved, machete-like; pronotum with minuscule antebasal median and lateral foveae; antebasal sulcus absent; elytron with sutural stria well defined along entire length; tergite III distinctly longer than tergites IV-VIII combined, with two large setose basal depressions.

DESCRIPTION. *Body*. Elongate (Fig. 2A), shiny, with golden pubescence, elytra widest at apex. Head longer than wide, hexagonal, widest at level of eyes, evenly narrowed anteriorly and posteriorly, shiny and densely pubescent; frontal fovea absent; vertexal foveae well defined and setose; frons strongly bilobed; frontal lobe large and deep prolonged into large channel; lateral frontal carinae present; suprantennal prominences well defined; tempora straight; eyes large; maxillary palpi (Fig. 2C) with segment I minuscule, II long and strongly curved basally, III small and triangular, IV flat, large and long, larger than II, curved, machete-like, terminal segment V absent; ventral part of head (Fig. 2C) with 2 pairs of long and acute spines on each side, and with 2 large depressions, neck entirely covered with squamous setae.

Antennae. 11-segmented, extending beyond basal margin of pronotum, finely tuberculate and evenly pubescent; club weakly formed by 1 segment and weakly defined, about as long as scape; scape more than twice as long as wide, distinctly longer than pedicel; segments II-X elongate and symmetrical.

Pronotum. Almost spherical, shiny with very fine, sparse punctation, naked on disc and densely pubescent at sides; median antebasal and lateral

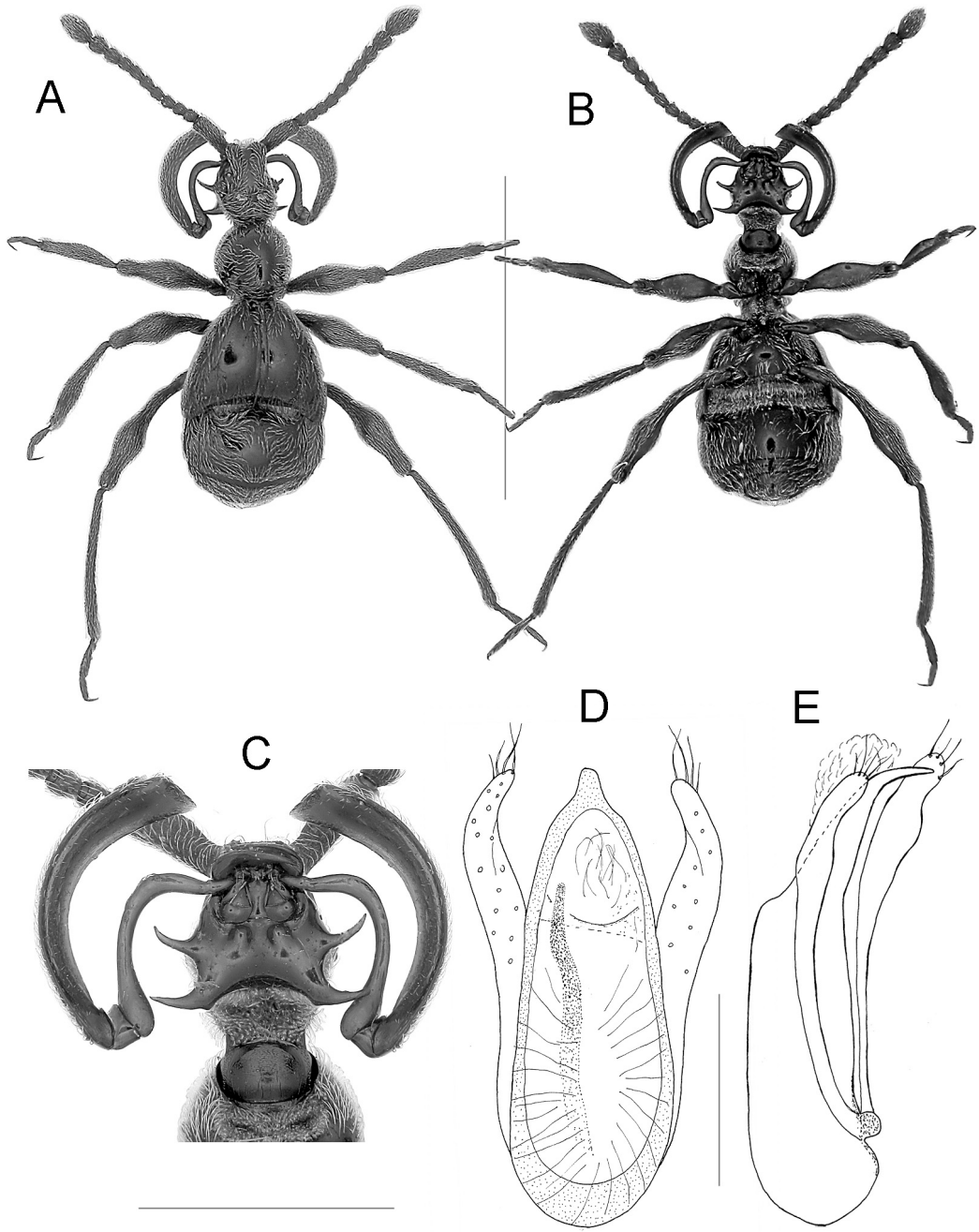

FIG. 2. A-E, *Taomica cassani* gen. et sp. nov. A-B, holotype ♀, scale bar, 2mm; A, dorsal view; B, ventral view; C, holotype ♀ head, ventral view, scale bar, 1mm; D-E, aedeagus, scale bar, 0.5mm; D, dorsal view; E, lateral view.

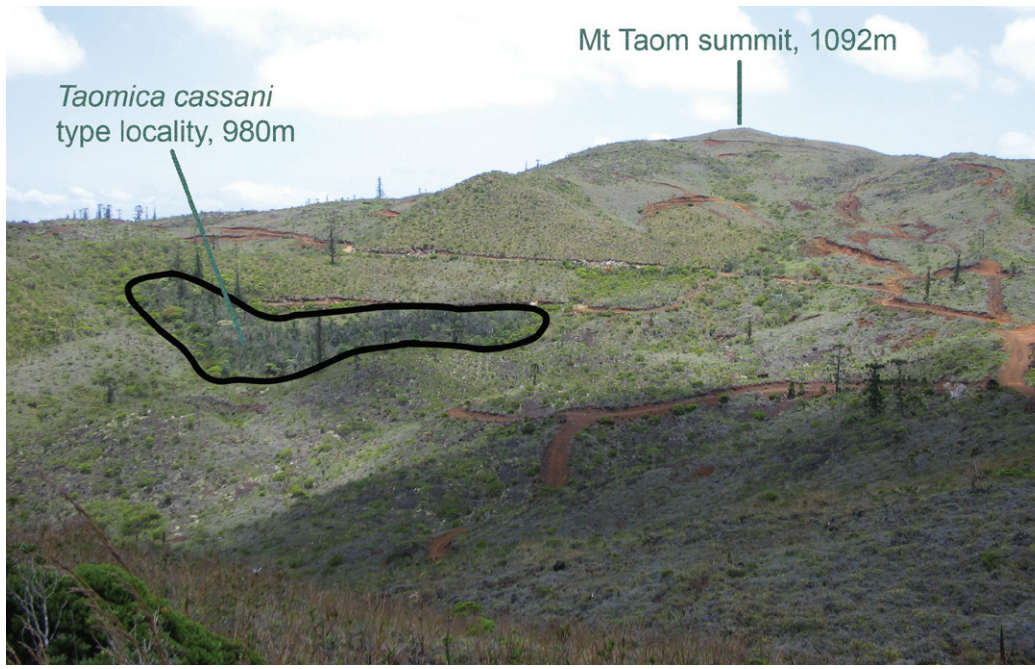

FIG. 3. Summit area of Mt Taom. The type locality of *Taomica cassani* is the small relict patch of rainforest indicated by the arrow. The absolute summit of the mountain is also indicated. The vehicle tracks visible are made by prospectors for nickel ore. The tall, dark trees are the native conifer, *Araucaria montana*.

foveae minuscule but well defined; antebasal sulcus absent; ventral pronotum (Fig. 2B) with anterior part covered with squamous setae, sides shiny with long, golden setae. Mesosternum small, anterior part with squamous setae, sides shiny with long, golden setae. Metasternum about 3 times as wide as long, lacking foveae, middle with shallow, oval depression; apex of metasternum broadly truncate.

Elytra. Shiny with very fine and sparse punctulation; setae lacking on disc and sides densely pubescent; elytra strongly triangular, 5 (♂) or 6 (♀) times as wide at apex as at base, each elytron with a basal, sutural fovea prolonged into sutural stria reaching apex of elytron.

Abdomen. Slightly convex, all visible tergites shiny, almost glabrous, apex of each tergite with long, golden setae; tergite III very long, distinctly longer than IV-VIII together, with two large, basal, setose depressions; paratergites well developed; all visible tergites lacking carinae. Abdominal sternites (Fig. 2B): III narrow, with large, long sternal process, base entirely covered with two lines of squamous setae; IV-VIII shiny with long, sparse, golden setae; IV largest, about as long as V-VIII combined.

Legs. Long and slender; femora clavate, simple; no spines on femora or trochanters.

Sexual Dimorphism. Both sexes very similar; female more robust, with wider mesotibiae, and simple apices of metatibiae that bear apical spurs in male.

Taomica cassani Hlaváč, sp. nov.
(Fig. 2A-E)

ETYMOLOGY. The species is named after Jean Jerome Cassan, Environment Officer with the Province Nord government, who kindly arranged access to the habitat on the summit of Mt Taom, type locality of the species.

MATERIAL. HOLOTYPE ♂: (p) NEW CALEDONIA, 11960, 20°47'S × 164°35'E, 980m, Mt Taom summit, Site 1, 4 Jan 2005, G.B. Monteith, Berlesate, sieved litter, RF./red label (p) HOLOTYPE *Taomica cassani* sp. nov., P. Hlaváč des., 2006. (MNHN). PARATYPE ♀: (p) NEW CALEDONIA 8764, 20°34'S x 164°46'E, Mt Panié refuge, 1300m, 8-9 Nov 2001, C. Burwell, Pyrethrum, trees & logs/red label (p) PARATYPE *Taomica cassani* sp. nov., P. Hlaváč des., 2006. (QM).

DESCRIPTION. *Body*. (Fig. 2A) Shiny, reddish-brown, elongate. Measurements (mm): length/combined width of elytra at apex/combined width of elytra at base, ♀: 3.42/1.35/0.26; ♂:

3.26/1.15/0.24; antennae, maxillary palpi and legs similar in colour to rest of body.

Head. Elongate, hexagonal, at level of eyes about 0.75 times as wide as long, from eyes evenly narrowed anteriorly and posteriorly, shiny and densely pubescent; tempora straight, almost twice as long as diameter of eyes; maxillary palpi very large, with unusually shaped segments II and IV as in Fig. 2C; venter of head with two pairs of large, acute laterally-projecting spines that are clearly visible dorsally.

Antennae. With scape about 2.7 times as long as wide and about 3.2 times as long as pedicle; pedicle almost transverse; segments III-VIII subequal in size; segment IX longer and larger, 1.25 times as long as wide; segment X about 1.5 times as long as wide, symmetrical; terminal segment more than twice as long as wide and about same length as scape, relative lengths of antennal segments from basal to apical: 23: 6: 8: 8: 8: 8: 8: 8: 10 12: 24.

Pronotum. About as long as wide. Abdominal tergite III 5 times as long as tergite IV and about 4 times as long as IV-VIII combined; tergite III with two large, setose depressions extending almost the entire basal width of tergite. Elytra triangular, apical corners prolonged and sharply rounded. Abdomen about as wide as elytra at apex.

Aedeagus. (Fig. 2D-E) Symmetrical in dorsal view, elongate and evenly narrowed apically, pointed at apex; internal sac with well defined elongate spine; parameres elongate, symmetrical.

Sexual Dimorphism. As for the genus and with antennal segment X in female about as long as wide, asymmetrical, about 1.7 times wider at apex than at base; terminal antennal segment 1.9 times as long as wide, slightly shorter than scape.

DISTRIBUTION AND HABITAT. (Figs 1, 3-4) The main island of New Caledonia is elongate, about 400km long and 50km wide and oriented from the NW to SE in the SW Pacific Ocean. An irregular series of mountains runs the length of the island and these greatly affect rainfall patterns. South-easterly winds blow off the sea bringing rain which falls largely on the east coast and adjacent mountains. The western half of the island lies in the rainshadow of the mountains and receives very reduced rainfall. For this reason most rainforest lies on the eastern side

FIG. 4. Dense rainforest, locality of *Taomica cassani* gen. et sp. nov. paratype at 1,300m on the east face of Mt Panié. The area lies within a special botanical reserve.

of the island, while the west is covered with heaths, savannas and sclerophyll forests. The highest (1,629m) and wettest mountain on the island is Mt Panié which lies very close to the east coast at 20°34'S, about 90km south of the northern tip of the island. The mountain is covered with luxuriant rainforest and the only walking track to the summit starts from the coast on the east side and passes via a refuge hut at 1300m. The paratype of *Taomica cassani* was taken by pyrethrum spraying of mossy logs and tree trunks near that refuge hut. The forest at that point is very diverse, with many primitive conifers such as *Agathis* and *Araucaria* and a dense understorey of palms, *Pandanus* and other plants (Fig. 4). The holotype specimen was collected by Berlese funnel extraction of sifted leaf-litter from near the summit of Mt Taom (1,092m) which is 30km south of Mt Panié. Mt Taom is the the highest point of the Ouazangou-Taom Massif (length 30km), which is one of a series of isolated mountain massifs which parallel the north west coast of New Caledonia. These massifs have low rainfall because they are in the rainshadow of the higher eastern mountains and their vegetation is mostly the low, sclerophyllous, fire-induced heath known as 'maquis'. This contrasts strongly with the habitat on Mt Panié, but at several favourable sites near the summit of Mt Taom small patches of stunted rainforest survive, supported by orogenic fogs and mists which occur mostly at night. The holotype was collected from Monteith's 'Site 1' rainforest patch which is only about 2 hectares in size and lies at 980m, 1km WNW of the absolute summit of Mt Taom (Fig. 3). A new flightless scarabaeine dung beetle seems to be restricted to the same rainforest patches (Monteith, pers. obs.). These records indicate the importance of these tiny patches of rainforest as refuges for fauna more typical of the wet eastern mountains. Mt Taom is difficult to visit because the only access is via a private road, operated by a company mining nickel at the western end of the mountain, followed by a walk of 5km.

ANNOTATED CATALOGUE OF PSELAPHINAE OF NEW CALEDONIA AND LOYALTY ISLANDS

EUPLECTITAE

Placodium Broun, 1893: 1431. Type species: *Placodium zenarthrum* Broun, 1893 by monotypy. Distribution: New Zealand, New Caledonia.

P. remingtoni Park, 1952: 14 (*Placodium,* TL: 7 miles south-east La Foa, under bark of a tree).

GONIACERITAE

Anasopsis Raffray, 1904: 179. Type species: *Anasis savesi* Raffray, 1896, designated by Newton & Chandler 1989: 42. Distribution: New Caledonia.

A. adumbrata Raffray, 1896: 300 (*Anasis,* TL: Loyalty Islands, Maré). Distribution: Loyalty Islands, New Caledonia (Monts des Koghis).

A. aubei Montrouzier, 1864: 92 (*Tichus* (sic), TL: Canala). Distribution: New Caledonia (Canala, Monts des Koghis). = savesi Raffray, 1896: 300 (Anasis, TL: Monts des Koghis). Note: Fauvel (1903: 281) incorrectly placed *A. aubei* as a junior synonym of *A. savesi* due to Montrouzier's inadequate description. According to the ICZN rules of priority the valid name of the species must be *A. aubei* with *A. savesi* its junior synonym.

A. distans Fauvel, 1903: 282. (*Anasis,* TL: Monts des Koghis and Tonghoué). Distribution: New Caledonia (Monts des Koghis, Tonghoué).

Baraxina Raffray, 1896: 301. Type species: *Baraxina francoisi* Raffray, 1896 by monotypy. Distribution: New Caledonia.

B. francoisi Raffray, 1896: 301 (*Baraxina*, TL: Nouméa).

Eupines King, 1866: 309. Type species: *Bryaxis clavatula* King, 1864, designated by Jeannel, 1952: 84. Distribution: Oriental region, New Guinea, Australia, New Zealand, New Caledonia.

E. caledonica Raffray, 1896: 302 (*Eupines*, TL: Nouméa).

E. spinifera Fauvel, 1903: 283 (*Eupines*, TL: Nouméa).

E. suturalis Fauvel, 1903: 284 (*Eupines*, TL: Tonghoué).

E. trapezus Fauvel, 1903: 284 (*Eupines*, TL: Nouméa).

E. villosula Raffray, 1896: 283 (*Eupines*, TL: Nouméa).

Physoplectus Reitter, 1882: 210. Type species: *Euplectus armipes* Raffray, 1882 by subsequent monotypy Reitter, 1885: 338. Distribution: Japan, Mauritius, Reunion, Somalia, Society Islands, New Guinea, Australia, New Caledonia.

P. homaliinus Fauvel, 1903: 280 (*Amauronyx,* TL: Nouméa).

PSELAPHITAE

Anagonus Fauvel, 1903: 284. Type species: *Anagonus fracticornis* Fauvel, 1903 by monotypy. Distribution: New Caledonia. ***A. fracticornis*** Fauvel, 1903: 285 (*Anagonus,* TL: Yahoué).

Taomica Hlaváč, gen. nov. Type species: *Taomica cassani* Hlaváč, sp. nov. by original designation. Distribution: New Caledonia.

T. cassani Hlaváč, sp. nov. (*Taomica,* TL: Mt Taom summit).

DISCUSSION

In the catalogue of species above, spellings in the early literature of the localities 'Mont Kogui' and 'Kanala', have been changed to the modern spellings of Monts des Koghis and Canala, respectively. All localities from which Pselaphines have been recorded in the above catalogue are shown in Fig. 1.

It is well known that New Caledonia has a highly endemic fauna (Chazeau, 1993) so it is not surprising that the New Caledonian Pselaphinae fauna also has a very high degree of endemism. All 14 described species are endemic to New Caledonia and all are present on the main island (Grande Terre). Only one of these species, *Anasopsis adumbrata* Raffray, also occurs elsewhere; on Maré in the nearby Loyalty Islands. Of the 7 recorded genera, 4 are endemic to New Caledonia and the Loyalties (*Anagonus*, *Baraxina*, *Anasopsis* and *Taomica*). *Eupines* (136 described spp.) and *Physoplectus* (8 described spp.) are widely distributed in the Oriental and Australian region (Newton & Chandler, 1989) while *Placodium* has one species in New Caledonia and one in New Zealand.

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