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Revision of the New Caledonian genus *Scaphodius* CHAPUIS (Coleoptera: Chrysomelidae: Cryptocephalinae)

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Abstract: The genus *Scaphodius* is revised. A neotype is designated for *Cryptocephalus striaticollis* MONTROUZIER 1861. Lectotypes are designated for *Scaphodius comptus* CHAPUIS 1874, *Scaphodius pictipennis* FAUVEL 1907 and *Nyetra forcipata* BALY 1877. Eight new species from the mainland of New Caledonia are described, *Scaphodius amieus* nov.sp., *S. bituberculatus* nov.sp., *S. complanatus* nov.sp., *S. gibbosus* nov.sp., *S. joliveti* nov.sp., *S. megalognathus* nov.sp., *S. montrouzieri* nov.sp. and *S. suffriani* nov.sp. The lectotype of *Nyetra forcipata* is redescribed, and the following synonymy is suggested: *Scaphodius* CHAPUIS 1874 = *Nyetra* BALY 1877. *Scaphodius compactus* SHARP from New Zealand is removed from *Scaphodius*, i.e. *Ditropidus compactus* (SHARP) comb.nov. *Scaphodius* was found to be endemic to New Caledonia. A determination key and a distribution map to the species of *Scaphodius* is presented. A check-list of New Caledonian Cryptocephalinae as well as a key to genera is given.

Key words: Taxonomy, Coleoptera, Chrysomelidae, Cryptocephalini, Monachulina, New Caledonia, *Cryptocephalus*, *Diachus*, *Ditropidus*, *Monachus*, *Nyetra*.

Introduction

New Caledonia is located in the South-west Pacific Ocean, some 1200 km east of Queensland and 1700 km north of New Zealand. The archipelago is composed of Grande Terre, i.e. the mainland, the continental islands Ile-des-Pins and Belep islands, and the Loyalty islands Ouvéa, Lifou and Maré. Moreover, some small plain coral islands can be found (Fig. 59). Generally, tropical-oceanic climatic conditions are typical for New Caledonia, but the eastern part of Grande Terre is significantly more humid compared to its western part. The fauna of the island is comparatively species-rich. Approximately 1500 beetle species were described, and a total of at least 2100 estimated (SCHÖLLER 1995). Out of these, presumably 80 % are endemic. The number of leaf beetle species currently estimated to exist in New Caledonia is 69, from 34 genera and 10 subfamilies (JOLIVET 2005). The first three New Caledonian species of the subfamily Cryptocephalinae were described by MONTROUZIER (1861) in the genus *Cryptocephalus* GEOFFROY 1762 and transferred in the same publication to *Monachus* CHEVROLAT 1837 (= syn. of *Lexiphanes* GISTEL 1848). These insects were collected by MONTROUZIER prior to 1859 in Balade, a missionary town in the North-East of New Caledonia main

island, and in Lifou in the Loyalty archipelago (JOLIVET 2005). In 1874, Chapuis erected the genus *Scaphodius* to receive *Cryptocephalus comptus* CHAPUIS 1874. Sixteen years later, BALY (1877) described the monotypic genus *Nyetra*. Finally, FAUVEL (1907) wrote comprehensively about the Cryptocephalinae of New Caledonia and described three new species. No more species were added during the last 100 years. In this work, the genus *Scaphodius* is revised and a check list of New Caledonian Cryptocephalinae is given.

Materials and Methods

Included in this study are specimens located in the following collections: BMNH = Natural History Museum, London, Great Britain (J. Beard and S. Shute); CRIRD = Collection de référence IRD Centre de Nouméa, New Caledonia (Hervé Jourdan); CRSRFP = Collection de référence SRFP Station de Recherches Fruitières de Pocquereux, Institut Agronomique néo-Calédonien (IAC), La Foa, New Caledonia (Christian Mille); IRSNB = Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium (Patrick Grootaert); MDPC = Mauro Daccordi personal collection, Torino, Italy; MESC = Matthias Schöller personal collection, Berlin, Germany; MNHN = Muséum National d'Histoire Naturelle, Paris, France (Nicole Berti†); ZMHB = Museum für Naturkunde der Humboldt-Universität, Berlin (Johannes Frisch, Manfred Uhlig).

The dried adults were softened in water, and subsequently dissected. The abdomen contents were soaked in cold diluted KOH and then washed in water. The eye length was measured in lateral view, the interocular space in frontal view.

The exact label data are cited for the type specimens. The type localities are cited in the original spelling. A slash (/) divides data on different labels, the data are printed if not otherwise mentioned, the author's remarks are presented in brackets: (ink) = preceding data are handwritten, [white] = white label.

Results

Revised diagnosis of *Scaphodius*

Scaphodius CHAPUIS 1874

= *Nyetra* BALY 1877 **syn.nov.**

Type species: *Scaphodius comptus* CHAPUIS 1874, by monotypy.

Diagnosis: A genus of Cryptocephalinae, Cryptocephalini, Monachulina. Eyes convex, small, curvature even, no canthus; antennal segments 7-11 usually broadest; anterior and lateral sides of pronotum distinctly bordered, basal margin unbordered, i. e. toothed, base of pronotum triangularly extended at middle, notched to receive scutellum; prosternal process quadrate to transverse rectangular, with or without a pair of acute projections; scutellum plain, small, flat, fusiform, i.e. spindle-shaped; elytral puncturation, colour, and surface sculpture variable, dorsally glabrous or setose; tarsi elongate; claws toothed, kotpresse with one ventral and two dorsal sclerites, spermatheca hook-shaped.

H a b i t u s : (Figs 44-52). Size 2.4-6.4 mm; body short cylindrical, elytra slightly narrowed apically, pronotum plain to strongly vaulted; colour entirely yellowish, or reddish-brown to rust red, or black, with or without yellow markings; dorsum glabrous or setose.

H e a d . (Figs 24-32) Large, hypognathous, sunk into thorax, puncturation coarse, sometimes with wrinkles, eyes evenly convex, small, distant; no canthus, inner margin of eye at most arcuate (Figs 24, 28); antennae inserted low on frons, without grooves between them, antennae with all segments elongate, scape very long, pedicel shortest, and 6-11 usually broadest, setae present on all antennomeres, dense on sixth to eleventh, antennal length 0.45 to 0.60 body length, antennae relatively longer in males, antennal basiconic sensilla in circular pits at apices of segments, interantennal space 3.5 times diameter of antennal socket, below antennal socket with a shallow groove to receive antenna; clypeal area not delimited, i.e. frontoclypeal suture weak to reduced, clypeus basally straight to convex in female, slightly to strongly modified in male, glabrous; gena short, lobate at apex, labrum transverse to quadrate; last maxillary and labial palps narrowing apically, concave, apical segment of labial palp shaped as maxillary palp; mandible robust, with two large teeth, male usually with slightly to strongly enlarged mandibles.

T h o r a x . Prothorax: pronotum straight to evenly curved at sides and contracted at apex, pronotum broadest at base, approximately two times wider than long and anteriorly half as wide as basally, with or without lateral transverse impressions, in lateral view pronotum plain to humped; apical and lateral sides bordered, lateral margins even, carinate, anterior margin semi-circular, basal margin unbordered, i. e. toothed, posterior lobe of pronotum narrow, triangular, notched to receive scutellum; puncturation on disc shallow to coarse, or with longitudinal furrows, hind corners with setiferous pore, front edge of pronotum ridged, sides of front margin not projecting beyond prosternum, posterior angles of pronotum triangularly produced, male pronotum as wide as or slightly wider than elytral base; intercoxal prosternal process wide, quadrate to transverse i.e. approximately two times wider than long, wider than coxal cavity, with more or less coarse punctures, front margin convex or concave, with a narrow carina, plain or slightly bend downwards, hind margin simple, or bearing a pair of flat acute or blunt rounded posterolateral projections between coxae, slightly convex, straight or deeply concave, prosternal opening relatively narrow, posterior margin of prosternal process does not extend beyond hypomer projection, coxal cavity closed, prosternal process densely setose, hypomeron impunctate, but irregularly wrinkled; proendosternites about as long as prosternal process, their base long and ca. 0.5 times width of apex; procoxal cavity wider than long; mesothorax: scutellum small, flat, rombiform, i.e. spindle-shaped, impunctate, smooth or with fine punctures; mesoscutum nearly twice as long as mesoscutellum, medially with coarse puncturation, keeled on midline, anteriorly angulate with narrow, elongate arms, without lateral patches of microchaetae; mesosternum distinct between coxae, broad, mesosternal intercoxal process as wide as prosternal process, elytra $2-3 \times$ length of pronotum, slightly apically expanded for basal $\frac{1}{4}$ then gradually attenuate, with nine rows of punctures or non-punctured regular striae, plus a short scutellar stria or puncture row and a stria or row of punctures abutting epipleura, at least outer interstriae convex, or puncturation substriate or confused, basal margin of elytra simple, elytra with prominent humeri, elytra without lateral transverse impressions, in some species elytra with ridges or tubercles, elytra regularly oblate or apically truncate, reaching base of pygidium, elytral suture bordered, not toothed; epipleuron strongly bend inwards, short, abruptly

narrowing, reaching anterior to apical margin of first abdominal sternite only, smooth or irregularly punctured; metathorax: hind wing transparent or apically dark, radial triangle cell closed, small to moderately in size, radial transverse short, radio-mediane absent, i.e. medial cell open, median veins poorly sclerotized, cubital nerves normally developed, 1st cubital nerve small to simple, 1st anal nerve and median nerves 1 and 2 strongly developed, 2nd anal nerve reduced, 3rd anal nerve normal to enlarged, two cubito-anal cells present; metasternum even, not prominent and convexly swollen ventrally, epimeron densely covered with short white adpressed setae; legs (Fig. 49) strong and relatively short, all femora of similar size, or hind femora slightly larger, without ventral keel, tibiae almost straight, tibial spurs absent, external edge of tibia not or only slightly excavate, excavation with or without fringe of strong setae, tarsal segments subquadrate to elongate, in male first segment of fore- and mid tarsi widened in some species, but still elongate, tarsomeres dorsally convex, claws relatively small, symmetrical, dentate to appendiculate.

A b d o m e n . Tergites hard, strongly sclerotised, spiracles free in basal tergites; lateral lobe at base of abdomen large, rectangular, intercoxal abdominal process of sternite III broad, straight to slightly concave, sternite III slightly shorter or as long as sternites IV to VII along midline; sternite VII not indented in male, apex of male abdomen without or with a shallow hollow; tergites reaching sternites; pygidium densely microsculptured, dull, regularly convex, sometimes with a bulging carina along midline.

Male genitalia . (Figs 1-19) Aedeagus straight, aedeagal lobe with a specific tip, venter simple, without longitudinal ventral keel or transparent "windows" in wall of reflexed apex, ventral and dorsal aedeagal setae present, basal 1/3 to 1/2 of ostium covered by a large endosclerite, in some species additional endosclerites visible; tegmen broad, U- or V-shaped, keeled, with expanded sides and bifid base, spiculum gastrale fused.

Female genitalia and Kotpresse . (Figs 33-43) Vaginal palp with lateral and basal borders sclerotized, apical border not sclerotized, rounded (Fig. 43); spermatheca hook-shaped, pump relatively narrow, as long as or shorter than receptacle, spermathecal ductus straight, i.e. not spiral, long, sometimes ball-like coiled up (Figs 39-42), accessory gland simply emerging from a little stick; rectum with dorsal fold of intestine and lateral folds, kotpresse with two dorsal and one ventral sclerites; dorsal sclerites straight (Figs 33, 35), rarely extended towards dorsal fold (Fig. 38), ventrally bend part of dorsal sclerite absent, apodemes slightly wider than the rectum, dorsal sclerotisation of the lateral fold present (Figs 33, 35, 38); ventral sclerite is a crosswise band, ending in apodemes, that are large and wider than the rectum (Figs 34, 36, 37), rarely additionally with pigmented chitinpolster (Fig. 37); females with large deep egg-hollow, apex not indented.

Immature stages . Unknown, the egg of one yet undescribed species from Mt. Panie with long spines on the faecal plates.

Differential diagnosis . *Scaphodius* may be distinguished from *Coenobius* SUFFRIAN 1857 and *Aprionota* MAULIK 1929 by the basiconic sensillae located in circular pits at the apices of the antennomeres, and the hook-like spermatheca. *Scaphodius* differs from *Ditropidella* REID 1998 by setae on the mandibles, punctate gena, clypeal area not delimited and the absence of a canthus. *Scaphodius* is very similar to *Ditropidus*, especially some species described in *Elaphodes*. The only difference I noticed among the species available for my study are the eyes being not emarginate, i.e.

without deep canthus, but this has to be verified in other species as the genus *Ditropidus* has more than 200 species.

Distribution. The genus is endemic to New Caledonia.

Note. The genus *Nyetra* was described by monotypy. The generic type species *Nyetra forcipata* is re-described below. Baly (1877) first mentioned the prolongation of the male mouth-parts and clypeus being remarkable. In this study, it was shown that this sexual dimorphism can also be found in *Scaphodius striaticollis* and that intermediate forms exist from absence of dimorphism to very strong dimorphism (Figs 24-32). BALY (1877) proposed the shape of the hind margin of the prothorax to be a suitable character to distinguish *Scaphodius* from *Nyetra*, with the margin being straight in *Scaphodius* and concave in *Nyetra*. As figured in Figs 53-58, the apical margin of the prosternal process is straight in *S. striaticollis* and deeply concave in *S. amieus* nov.sp., there are several intermediate forms, and it is even convex in *S. complanatus* nov.sp. The shape of the prothorax was rated to be an important character to distinguish genera by SUFFRIAN (1859), but this cannot be confirmed in the group under study.

Redescriptions and descriptions of *Scaphodius*-species

Characters given in the revised diagnosis for the genus are not repeated here.

Scaphodius striaticollis (MONTROUZIER 1861)

Cryptocephalus striaticollis MONTROUZIER 1861: 397

Monachus striaticollis MONTROUZIER 1861; MONTROUZIER 1861: 397 (note)

Scaphodius striaticollis (MONTROUZIER 1861): FAUVEL 1907: 150.

= *Scaphodius comptus* CHAPUIS 1874: 180.

striaticollis = *comptus*: FAUVEL 1907: 150.

Type specimens: Neotype *Cryptocephalus striaticollis* MONTROUZIER 1861 (this designation), male (IRSNB): / Nouméa [white] (ink), historic label glued on more recent one: Coll.R.I.Sc.N.B., Nouvelle Calédonie, rec. Savés, ex coll. Fauvel [red] / *Scaphodius striaticollis* MONTR. [white] (ink), historic label glued on more recent one: Coll. et det. A. Fauvel [white] / Syntype [red on white] / (my label) Neotypus *Cryptocephalus striaticollis* MONTROUZIER 1861; des. Matthias Schöller [red] /.

Note. A neotype is designated here in order to ensure the name's proper and consistent application, the taxonomic state of *Cryptocephalus striaticollis* had to be clarified as similar species were discovered which are described below. *S. striaticollis* can be distinguished from other species of *Scaphodius* with the help of the determination key given below. The neotype of *C. striaticollis* is in accordance with the original description given by MONTROUZIER 1861. Moreover, it is in accordance with the understanding of A. FAUVEL of this species. FAUVEL (1907) saw a type specimen of MONTROUZIER and compared it with specimens in his collection. It was a light brown coloured specimen, no such potential type specimen is present in the collection in Brussels, Belgium (IRSNB). The original description of *C. striaticollis* was based on an unknown number of specimens located in the collection of MONTROUZIER. The collection of MONTROUZIER was once in Paris. I was looking for these types in Paris but was not able to find them. Pierre JOLIVET, who studied the biography of MONTROUZIER, didn't find the types of

MONTROUZIER, too (JOLIVET 2005), and assumed the types of *C. striaticollis* are lost (JOLIVET in litt.). The holotype was from Lifou, so the neotype is from the geographic area of the lost holotype.

Lectotype *Scaphodius comptus* CHAPUIS 1874 (this designation): male, ZMHB: / N. Caled. [white] (ink) / 39. [white] (ink) / Coll L. W. Schaufuß/ N. Caled. [white] / *comptus* Suffr. Nov-Caledonia [white] (ink) / (my label) Lectotype *Scaphodius comptus* Chapuis, 1874, des. Matthias Schöller [red]/.

Note. A lectotype is designated here in order to ensure the name's proper and consistent application. This is one of the specimens that Suffrian communicated to Chapuis for study and that was returned later on to Suffrian. In the lectotype, the right antenna, the right fore tarsus, and the left mid- and hind tibiae are missing.

Other specimens studied: 1♂, ZMHB: N. Caledon., *comptus* Chap.; 1♀, DEIC: Montrouzier, Coll. Haag, *comptus* Suffr. *Scaphodius* Suffr.; 1♀, 1♂ (IRSNB), Tonghoué, Janvier, rec. Savès, ex. Coll. Fauvel; 1♂ (IRSNB), Koné, rec. Savès, ex. Coll. Fauvel; 1♂, 1♀ (CRSRFP): Nouvelle-Calédonie, Thio, route à horaire, S21°35.305' E165°09.084, alt. 16 m, collecté par battage sur divers arbres en bordure de rivière, le 04.V.2006, leg. S. Cazères; 1♂ (MDPC): Nouvelle-Calédonie, Noumea, Mont-Dore, 90 m, 11.II.2006, leg. M. Daccordi; 1♀ (CRSRFP), Farino, Barbou L., S 21.63325, E 165.71342, 258 m, on *Schefflera gabriellae* Ralia, 4.XI.2004, leg. S. Cazères; 1♀ (CRSRFP), Farino, M. Barbou, S 21.61431, E 165.70065, 406 m, by beating on *Schefflera gabriellae* Ralia, 9.IX.2004, leg. S. Cazères; 1♀ (CRSRFP), Farino, Barbou L., S 21.61454, E 165.70097, 393 m, on Banian, *Ficus microcarpa*, by beating, 6.XI.2004, leg. S. Cazères; 2♀♀ (CRSRFP), Maré, La Roche, 16.IV.2004, leg. C. Mille; 2♂♂ m, 2♀♀ (CRSRFP), Thio, route à horaire, S 21°35.305', E 165°09.084', 16 m, by beating from trees at the river-side, 04.V.2006, leg. S. Cazères; 1♂, 2♀♀ (MDPC), Noumea, Mont Dore, 11.II.2006, 90 m, leg. M. Daccordi; 1♂ (CRSRFP), La Foa, S 21.73393, E 165.89605, 23 m; 1♂ (CRSRFP), La Foa / Meare, collected from *Litchi chinensis* Sonn., 11.XII.2006, leg. S. Lebegin.

D i a g n o s i s. A small species with pronotum regularly vaulted, convex, completely covered with parallel longitudinal furrows, only close to lateral margin with many coarse punctures, pronotal basal margin with a triangular notch opposite to each humerus, elytra glabrous, punctures in regular rows, in male distance between upper lobes of eyes 1.76 times eye length, in female 1.44 times eye length.

Type locality. Nouvelle-Calédonie, Nouméa, 22°15'S, 166°26'O.

Description of neotype (male) (Figs 1, 2, 20, 24, 44)

Habitus. Dark brown, with margins of pronotum, interstices partly and legs yellowish brown, pronotum matt, completely covered with longitudinal wrinkles, elytra glabrous, matt, with transverse wrinkles, interstices vaulted, body small, shape cylindrical, truncate (Fig. 44), pronotum wider than base of elytra, size [mm]: length 2.3, width of elytra at humeri 1.5, length of elytra 1.5; length of pronotum 0.9, maximum width 1.55.

Head. Sunk into thorax up to hind margin of eyes, frons with longitudinal wrinkles, with a shallow depression on frons, distance between upper lobes of eyes 1.79 times eye length; antennae inserted near lower margin of eyes, antennae light brown; clypeus short, light brown, covered with short white setae, basal margin bearing a central tooth and a pair of lateral subrectangular extensions; labrum quadrate, yellowish brown, slightly convex at apex; mandible moderately large, laterally densely setose, light brown with dark brown tip with two large teeth (Fig. 24).

T h o r a x . Prothorax: pronotum evenly curved at sides and constricted towards apex from basal 2/3 onwards, pronotum broadest at base, in lateral view pronotum most vaulted at middle (Fig. 20), dark brown with anterior margin, lateral margins and a longitudinal stripe on disc yellowish brown, lateral margins even, carinate, narrow but completely visible in dorsal view, hind edges acute, tooth-like, basal margin with a triangular notch opposite to each humerus; pronotum glabrous, completely covered with longitudinal furrows and a few coarse punctures close to lateral margins, opposite to scutellum some semicircular furrows, prothorax densely covered with coarse punctures, with front margin straight, lateral carina simple, narrow, hind margin almost straight (Fig. 53); mesothorax: scutellum smooth, yellowish brown; elytra subparallel in basal ½, then gradually attenuate, elytra glabrous, matt, with transverse wrinkles, with nine regular rows of distinct punctures, plus scutellar row of punctures and row abutting lateral margin of elytra, interstices convex, vaulted; metathorax: legs yellowish brown, apex of fore- and mid-tibiae with a fringe of strong setae, fore tibiae almost straight, first tarsomeres of fore- and mid-tarsus widened, claws appendiculate, tarsungulus black.

A b d o m e n . Sternites dark brown, laterally lighter, with short white setae, sternite VII regularly vaulted, tergites and pygidium light brown, sternite III as long as sternites IV to VII along midline, lateral lobe of sternite III angular, subquadrate; aedeagus (Figs 1, 2), length of aedeagus: 1.0 mm.

N o t e . The original historic cardboard plate of the specimen is beneath the new cardboard plate. The lectotype of *Scaphodius comptus* is in agreement with the description of the neotype presented here for *S. striaticollis*, hence the synonymy is confirmed.

D e s c r i p t i o n o f f e m a l e (Figs 33, 34). Dorsum coloured as in male; distance between upper lobes of eyes 1.44 times eye length; the wing of this species has been described by JOLIVET (1954); sternites brown, tergites yellowish brown, pygidium brown with lateral margins and usually a longitudinal central line yellow, thorax brown, laterally dark brown; mandibles shorter than in male, clypeus concave, simple, and labrum quadrate, apical margin convex; kotpresse with dorsal sclerites straight (33), apodemes slightly wider than rectum; ventral sclerite is a crosswise band, ending in apodemes, which are large, convex and wider than the rectum (Fig. 34).

V a r i a b i l i t y . Pronotum and elytra are yellowish creamy brown, with additional predominant light brown to dark brown colour that leaves always the apex of the elytra and parts of the elytral interstices creamy brown, usually additionally the anterior and / or lateral margins of the pronotum as well as a central longitudinal line on the pronotum yellowish. The longitudinal central yellow line on the pygidium is more or less gibbous. Variability in size [mm] (mean±SD (max., min., n)): length of male 2.30±0.11 (2.45, 2.20, 5), female 2.61±0.10 (2.75, 2.50, 5), width of elytra at humeri in male 1.49±0.04 (1.55, 1.45), female 1.64±0.07 (1.70, 1.55), length of pronotum in male 0.87±0.027 (0.90, 0.85), width 1.49±0.04 (1.55, 1.45) length of pronotum in female 0.94±0.04 (1.00, 0.90) and width 1.65±0.06 (1.70, 1.55); distance between upper lobes of eyes in male 1.76 (1.66, 1.85) times eye length, in female 1.44 (1.43, 1.47) times eye length.

D i s t r i b u t i o n a n d b i o l o g y . Recorded from the coastal areas of Grande Terre, Ile des Pins, and from Lifou, Ouvea and Maré (Fig. 59). One specimen was collected from *Schefflera gabriellae* RALIA, *Ficus microcarpa* L., and *Litchi chinensis* SONN., respectively, others beaten from *Lantana*, *Acacia* and leguminous plants. I obtained one individual by sweep-netting a disturbed area close to the coast with grasses, herbs and few small trees.

***Scaphodius suffriani* nov.sp.**

Holotype Male (MNHN): POYA: N-Calédonie: Beupré chez M. DALSTAIN, 27/09/2007, S.C. & B.G. Coll., Battage de *T. cherrieri* S21°21.146'; E165°11.128'; 11 m [orange with black border] / Holotypus *Scaphodius suffriani* nov.sp. des. Matthias Schöller [red] /.

11 Paratypes: 1♂ 2♀♀ (ZMHB) 2♀♀ (MNHN) 1♂ 1♀ (CRIRD) 1♂ 1♀ (CRSRFP) 1♂ 1♀ (IRSNB): same labelling as Holotype; all with my label: Paratypus *Scaphodius suffriani* nov.sp. des. Matthias Schöller [red] /.

D i a g n o s i s. A small species with pronotum regularly vaulted, completely covered with fine parallel longitudinal furrows with many punctures in-between, as wide as elytra, elytra glabrous with punctures in regular rows, male mandibles ca. twice as long as in female, and first segment of fore- and mid tarsi normal.

Type locality. The type locality is near the Southern coast of mainland New Caledonia, Poya, Beupré near M. Dalstain, S 21°21.146'; E 165°11.128'; 11 m NN (Fig. 59).

Description of holotype (male) (Figs 5, 6, 21, 27)

H a b i t u s. Yellowish brown with irregular darker brown markings on interstices of elytra, head, pronotum and elytra matt, body small, shape cylindrical, truncate (Fig. 60), pronotum as wide as base of elytra, pronotum with fine longitudinal furrows and additionally punctured, elytra glabrous with punctures in regular rows; size [mm]: length 2.15, width of elytra at humeri 1.3, length of elytra 1.45; length of pronotum 0.8, maximum width 1.3.

H e a d. Sunk into thorax up to hind margin of eyes, puncturation very dense and coarse, in-between microsculptured, matt, with shallow longitudinal groove on frons, eyes distant, distance between upper lobes of eyes 1.95 times eye length; antennae inserted above level of lower margin of eyes, antennae yellowish brown, antennomeres 7-11 darker and widened; clypeus short, light brown, glabrous, basal margin slightly convex with a pair of lateral longitudinal hollowed extensions; labrum transverse, convex at apex; mandible large, yellowish brown with dark brown tip (Fig. 27).

T h o r a x. Prothorax: in lateral view, pronotum most vaulted near apical margin (Fig. 21), pronotum evenly curved at sides and constricted towards apex from basal 1/2 onwards, pronotum broadest at base; yellowish brown, a pair of blurred spots darker brown, lateral margins even, carinate, in dorsal view hind edges visible only, hind edges acute, tooth-like; pronotum glabrous, covered completely with both narrow longitudinal furrows and dense punctures, the latter more dense near lateral margin, prothorax densely covered with coarse punctures, with apical margin straight, prothorax densely covered with very coarse punctures, with front margin straight, lateral carina simple, narrow, hind margin straight; mesothorax: scutellum smooth, dark brown; elytra basally broadest then gradually attenuate, glabrous, with nine regular rows of distinct punctures, plus scutellar row of punctures and row abutting lateral margin of elytra, interstices convex, with transverse wrinkles, matt; metathorax: legs yellowish brown, claws appendiculate, fore tibiae slightly bend, first tarsomeres of fore tarsi slightly widened.

A b d o m e n. Sternites, tergites and pygidium yellowish brown, with short white setae, sternite VII with a very shallow fovea, sternite III as long as sternites IV to VII along midline; aedeagus (Figs 5, 6), length of the aedeagus: 0.8 mm.

Description of female. Dorsum and venter coloured as in male;

pygidium with a very short longitudinal ridge at middle at apex; mandibles, clypeus and labrum simple; egg dimple broad and deep.

V a r i a b i l i t y . Body darker brown than holotype, sometimes elytra with blurred brown markings. Variability in size [mm] (mean \pm SD (max., min., n)): length of male 2.21 \pm 0.04 (2.25, 2.15, 5), female 2.57 \pm 0.03 (2.60, 2.55, 5), width of elytra at humeri in male 1.32 \pm 0.03 (1.35, 1.30), female 1.57 \pm 0.03 (1.60, 1.55), length of pronotum in male 0.79 \pm 0.02 (0.80, 0.75), width 1.32 \pm 0.03 (1.35, 1.30), length of pronotum in female 0.87 \pm 0.03 (0.90, 0.85) and width 1.53 \pm 0.03 (1.55, 1.50).

D i f f e r e n t i a l d i a g n o s i s . Differs from the similar species *S. striaticollis* (Montrouzier), *S. complanatus* nov.sp., and *S. montrouzieri* nov.sp. by the many punctures in-between the parallel longitudinal furrows of the pronotum.

D i s t r i b u t i o n a n d b i o l o g y . Known from type locality only, collected by beating from *Terminalia cherrieri* (Combretaceae). This tree is endemic to New Caledonia and threatened by habitat loss.

E t y m o l o g y . Dedicated to Eduard SUFFRIAN (1805-1876), who wrote the major revisions on Cryptocephalinae and proposed the genus *Scaphodius* in litteris.

***Scaphodius montrouzieri* nov.sp.**

H o l o t y p e Male (MNHN): POYA: N-Calédonie / Nouvelle-Calédonie, Sarraméa, Col d'Amieu, Lat. S. 165.4809 Long. E 21.3530, Alt. 345 m [orange with black border] / Collecté sur: divers Par battage, Le 04.10.06, Par S. CAZERES [orange with black border] / Holotypus *Scaphodius montrouzieri* nov.sp. des. Matthias Schöller [red] /.

F i v e p a r a t y p e s : 1♀ (MNHN): / Nouvelle-Calédonie, Sarra., Col d'Amieu, Lat. S. 21°34,694 Long. E 165°46,278, Alt. 489 m [orange with black border] / Collecté sur: divers Par battage, Le 04/10/06, Par S. Cazères [orange with black border] /; 1♀ (CRSRFP), 1♀ (CRIRD): / Nouvelle-Calédonie, Sarra., Col d'Amieu, Lat. S. 21.35,30 Long. E 165.48,09, Alt. 345 m [orange with black border] / Collecté sur: divers Par battage, Le 18/10/06, Par S. Cazères [orange with black border] /; 1♀ (ZMHB): / N. Calédonie, Pocquereux, 21°44'S 165°54'E, 08.VII.01, Jujube, JP Kataoui, CAZERES Sylvie [orange with black border] /; 1♂ (ZMHB): / Nouvelle-Calédonie, Sarraméa, Col d'Amieu [orange with black border] / Collecté sur: Malaise trap, Le 09/01/06, Par J. Brinon [orange with black border] /; (all with my label) Paratypus *Scaphodius montrouzieri* nov.sp. des. Matthias Schöller [red] /.

D i a g n o s i s . A small species with pronotum convex, regularly vaulted, wider than elytra, completely covered with parallel longitudinal furrows, without punctures in-between, close to lateral margin with few coarse punctures, with a row of bulging areas above lateral margin, basal margin with a triangular notch opposite to each humerus, eyes close, in male distance between upper lobes of eyes 1.2 times eye length, in female 1.3 times eye length, male mandibles simple, and elytra glabrous with punctures in regular rows.

T y p e l o c a l i t y . Sarraméa, Col d'Amieu, Lat. S. 165.4809 Long. E 21.3530, Alt. 345 m (Fig. 59).

D e s c r i p t i o n o f h o l o t y p e (m a l e) (Figs 3, 4, 25)

H a b i t u s . Dark brown with yellowish markings on pronotum and elytra, pronotum shiny with longitudinal furrows (Fig. 61), elytra matt, basal four antennomeres yellowish brown, body small, shape cylindrical, truncate, male mandibles simple, pronotum wider as base of elytra, size [mm]: length 2.25, width of elytra at humeri 1.55, length of elytra 1.6; length of pronotum 0.85, maximum width 1.5.

H e a d . Sunk into thorax up to hind margin of eyes, dark brown with a pair of triangular yellow spots at level of upper margin of eyes, puncturation of frons dense and coarse, at base with longitudinal furrows, with shallow longitudinal groove on frons, distance between upper lobes of eyes 1.13 times eye length; antennae inserted slightly above level of lower margin of eyes, antennae yellowish brown with antennomeres 6–11 dark brown; clypeus triangular, yellow, with transverse furrows, glabrous, basal margin simple (Fig. 25); labrum transverse, slightly arcuate at apex, with long white setae surpassing apex; mandible simple, dark brown.

T h o r a x . Prothorax: pronotum evenly curved at sides and constricted towards apex from basal 1/5 onwards, pronotum broadest at base, in lateral view pronotum most vaulted at middle, dark brown with apical margin, hind angles and a pair of longitudinal markings at base yellowish brown, lateral margins even, carinate, not visible in dorsal view, basal margin with a triangular notch opposite to each humerus, hind edges acute, tooth-like, pronotum glabrous, completely covered with longitudinal furrows, without punctures, opposite to scutellum semicircular furrows, prothorax densely covered with very coarse punctures, lateral carina simple, front margin slightly concave, bend downwards, hind margin concave; mesothorax: scutellum smooth, dark brown; elytra basally broadest then gradually attenuate, glabrous, with nine regular rows of distinct punctures, plus scutellar row of punctures and row abutting lateral margin of elytra, interstices convex with transverse wrinkles; metathorax: legs yellowish brown with femur and tibia partly dark brown, first tarsomeres of fore- and mid tarsus widened, claws appendiculate, fore tibiae straight.

A b d o m e n . Sternites dark brown, with short white setae, sternite VII with a distinct fovea, tergites light brown, pygidium yellowish brown with a bulging yellow longitudinal carina and apical margin bulging yellow, sternite III longer than sternites IV to VII along midline; aedeagus (Figs 3, 4), length of the aedeagus: 0.9 mm.

Description of female . In female distance between upper lobes of eyes 1.36 times eye length, dorsum and venter coloured as in male; mandibles, clypeus and labrum simple; egg dimple broad and shallow; spermathecal duct very long, straight and densely coiled up ball-like close to spermatheca, spermatheca hook-shaped, as long as wide, receptacle little wider than pump only (Fig. 40).

V a r i a b i l i t y . Sometimes basal margin of pronotum broadly yellowish brown. Variability in size [mm] (mean±SD (max., min., n)): length of male 2.35 ± 0.13 (2.50, 2.25, 3), female 2.66 ± 0.09 (2.80, 2.60, 4), width of elytra at humeri in male 1.53 ± 0.03 (1.55, 1.50), female 1.71 ± 0.10 (1.80, 1.60), length of pronotum in male 0.80 ± 0.05 (0.85, 0.75), width 1.52 ± 0.03 (1.55, 1.50), length of pronotum in female 0.89 ± 0.03 (0.90, 0.85) and width 1.70 ± 0.12 (1.80, 1.55); distance between upper lobes of eyes in male 1.069 (1.066, 1.071) times eye length, in female 1.356 (1.266, 1.448) times eye length.

Differential diagnosis . Differs from the similar species *S. striaticollis* (MONTROUZIER) by the concave hind margin of prothorax and the less distant eyes.

Distribution and biology . Known from central New Caledonia mainland only.

E t y m o l o g y . Dedicated to Xavier MONTROUZIER (1820-1897), who described the first species of *Scaphodius* and many more insects from New Caledonia in the 19th Century.

***Scaphodius gibbosus* nov.sp.**

H o l o t y p e Female (MNHN): / Nouvelle-Calédonie, Sarraméa, Col d'Amieu [orange with black border] / Collecté sur: Divers, Par battage, Le 15.05.06, Par J.B. & JPK [orange with black border] / Holotypus *Scaphodius gibbosus* nov.sp. des. Matthias Schöller [red] /.

D i a g n o s i s. A medium-sized species with pronotum humped, completely covered with parallel longitudinal furrows, elytra glabrous with punctures in regular rows and with four tubercles.

T y p e l o c a l i t y. Nouvelle-Calédonie, Sarraméa, Col d'Amieu, S 21.63411, E 165.89527, 465 m (Fig. 59).

D e s c r i p t i o n o f h o l o t y p e (female) (Figs 23, 37, 38, 39).

H a b i t u s. Yellowish brown with dark brow pattern (Fig. 63), dorsum matt, pronotum humped (Fig. 64), with fine longitudinal furrows, attenuate towards anterior margin, elytron with three tubercles (Fig. 23), attenuate towards apex, elytra wider than pronotum, elytra with wrinkled microsculpture, glabrous, body medium-sized, size [mm]: length 3.8, width of elytra at humeri 2.5, length of elytra 2.6; length of pronotum 1.4, maximum width 2.2.

H e a d. Sunk into thorax up to hind margin of eyes, frons with fine transverse wrinkles and few coarse punctures at middle, and with longitudinal wrinkles along midline, matt, with adpressed white setae, distance between upper lobes of eyes 1.4 times eye length; antennae inserted near lower margin of eyes, antennae dark brown, scape yellowish brown; clypeus wider than long, microsculptured, matt, labrum quadrate, brown with yellow margins, with three pairs of long white setae; mandible yellowish brown.

T h o r a x. Prothorax: pronotum broadest at basal 3/7, then attenuate towards apical margin, humped, yellowish brown with longitudinal dark brown stripes arranged as indicated in Fig. 23, lateral margins carinate, expanded, widest at base, then abruptly attenuate, completely visible in dorsal view, hind edges tooth-like, but only slightly extended; pronotum glabrous, with a narrow longitudinal groove from anterior margin to mid of pronotum, pronotum completely covered with fine longitudinal furrows, and with coarse punctures close to lateral margin, prothorax densely covered with coarse punctures, with front margin straight, plain, lateral margins simple, hind margin straight; mesothorax: scutellum smooth, dark brown; mesothorax black at middle; elytra broadest at humerus, then parallel and gradually attenuate in apical 1/3, glabrous, puncturation coarse and dense, confused except for some semiregular rows on disc, no scutellar row of punctures but a row abutting lateral margin of elytra, interstices plain except for two interstices bulging on disc, each elytron with prominent humerus and two prominent tubercles, one in basal 1/4 close to suture and the second one centrally in apical 1/3; metathorax: metathorax black at middle, legs long, yellowish brown with tibiae and hind femur darker brown, claws appendiculate, fore tibiae straight.

A b d o m e n. Sternites light brown, with short white setae, except for sternite III dark brown; sternite VII with egg dimple longitudinal oval, laterally with a pair of foveae densely covered by setae, tergites and pygidium light brown, pygidium with distinct carina along midline, sternite III slightly shorter than sternites IV to VII along midline; kotpresse with ventral sclerite apically bisinuate, with apodemes oblique and slightly wider than rectum, with a semi-circular chitin-polster attached (Fig. 37), dorsal sclerites straight with spine-like extensions towards dorsal fold, apodemes significantly wider

than rectum (Fig. 38); spermatheca hook-shaped (Fig. 39), spermathecal ductus straight, length 2.3 mm, fragile, weakly pigmented.

Differential diagnosis. Differs from all other species of *Scaphodius* by the humped pronotum, the four tubercles on the elytra, the colouration and the spine-like extensions of the dorsal sclerites of the kotpresse.

Distribution and biology. Known from central New Caledonia mainland only.

Etyymology. Gibbosus means gibbous, with hump-like swellings and refers to the surface of the pronotum and elytra.

***Scaphodius complanatus* nov.sp.**

Holotype female (MNHN): / Nouvelle-Calédonie, Sarra., Col d'Amieu, Lat. S 21°34,694 Long. E 165°46,278, Alt. 489 m [orange with black border] / Collecté sur: divers, Par battage, Le 04.10.06, Par S. Cazères [orange with black border] / Holotypus *Scaphodius complanatus* nov.sp. des. Matthias Schöller [red] /.

7 Paratypes: 1♀ (CRSRFP), 1♀ (ZMHB): same labelling as holotype; 1♀ (CRSRFP): / Nouvelle-Calédonie, Sarra., Col d'Amieu, Lat. S 21°35,30 Long. E 165°48,09, Alt. 345 m [orange with black border] / Collecté sur: divers, Par battage, Le 18.10.06, Par S. Cazères [orange with black border] /, 1♀ (MNHN), 1♀ (CRIRD), 1♀ (IRSNB), 1♀ (ZMHB): Nouvelle-Calédonie, Sarraméa/Col d'Amieu, Lat. S 165.4809, Long. E 21.3530, Alt. 345 m [orange with black border] / Collecté sur: Battage sur divers, Le 04/10/06, Par S. CAZERES [orange with black border] /; (all with my label) Paratypus *Scaphodius complanatus* nov.sp. des. Matthias Schöller [red] /.

Diagnosis. A small species with pronotum in lateral view plain, in one level with elytra, narrower than elytra at humerus, completely covered with very fine parallel longitudinal furrows, without punctures except for some small punctures on lateral carina and hardly visible punctures in front edges, elytra glabrous, punctures in regular rows.

Type locality. Nouvelle-Calédonie, Sarra, Col d'Amieu, S 21°34', E 165°46', 489 m.

Description of holotype (female) (Figs 22, 41)

Habitus. Cinnamon brown, with clypeus, lateral and apical margins of pronotum, and interstice 10 of elytra yellow (Fig. 62), pronotum matt, in lateral view plain (Fig. 22), with very fine longitudinal furrows, elytra matt, body small, shape longitudinal oval, base of elytra wider than pronotum, size [mm]: length 2.7, width of elytra at humeri 1.6, length of elytra 0.95; length of pronotum 0.8, maximum width 1.5.

Head. Sunk into thorax up to hind margin of eyes, frons covered very densely with micropunctures, matt, with shallow longitudinal groove on frons, distance between upper lobes of eyes 1.85 times eye length; antennae inserted above level of lower margin of eyes, and distant from eye; antennae yellowish brown, segments 7-11 darker brown and extended; clypeus transverse, yellowish brown, covered with few short white setae, apical margin bearing a pair of short lobes with a long seta each; labrum transverse, arcuate at apex; mandible yellowish brown with dark brown tip.

Thorax. Prothorax: pronotum evenly curved at sides and constricted towards apex from basal 1/3 onwards, pronotum broadest at base, in lateral view, pronotum in one level with elytra, i.e. not vaulted; anterior margin narrowly, lateral margins broadly yellow, lateral margins even, carinate, completely visible in dorsal view, basal margin not

notched opposite to humerus, hind edges triangularly extended; pronotum glabrous, with very fine longitudinal furrows, without punctures except for some small punctures on lateral carina and hardly visible punctures in front edges, prothorax almost quadrate (Fig. 57), with coarse punctures, lateral margins simple, front margin slightly concave and plain, hind margin slightly convex; mesothorax: scutellum with fine punctures, dark brown; elytra broadest at humerus, then parallel to apical 1/5, glabrous, with nine regular rows of distinct punctures, plus scutellar row of punctures and row abutting lateral margin of elytra, interstices convex with fine transverse wrinkles; metathorax: legs yellowish brown, claws appendiculate, fore tibiae straight.

A b d o m e n . Sternites and tergites yellowish brown, sternite III distinctly shorter than sternites IV to VII along midline, pygidium evenly vaulted with short white setae; egg dimple large, eggs found during the dissections measured 0.5×0.3 mm, kotpresse with dorsal sclerites straight, apodemes wider than rectum, ventral sclerite with apodemes rounded; spermatheca narrow, hook-shaped (Fig. 41).

V a r i a b i l i t y . Elytra lighter, i.e. yellowish-brown with blurred cinnamon-brown markings; variability in size of females [mm] (mean \pm SD (max., min., n)): length 2.47 ± 0.15 (2.65, 2.25, 7), width of elytra at humeri 1.42 ± 0.12 (1.55, 1.20), length of pronotum 0.80 ± 0.06 (0.90, 0.70) and width 1.36 ± 0.12 (1.50, 1.15).

D i f f e r e n t i a l d i a g n o s i s . Differs from all other species of *Scaphodius* in the pronotum being in one level with the elytra, from *S. montrouzieri* nov.sp., a species of similar size, by the pronotum being narrower than the elytra at humerus.

D i s t r i b u t i o n a n d b i o l o g y . Known from central New Caledonia mainland only.

E t y m o l o g y . Complanatus means flattened out, in one plane, referring to the pronotum.

***Scaphodius bituberculatus* nov.sp.**

H o l o t y p e male (ZMHB): / NOUVELLE CALEDONIE, Aoupinié, près de scierie [white] / 17.III.1994, 700-900 m, leg. M. Schöller [white] / Holotypus *Scaphodius bituberculatus* nov.sp. des. Matthias Schöller [red] /.

6 P a r a t y p e s : 1♀ (ZMHB), 2♀♀ (MESC): same labelling as holotype; 1♀ (MNHN) / Ponérihouen / Aoupinié, Lat. S. 165.1707, Long. E 21.1038, Alt. 945 m [orange] / Collecté sur: Battage sur divers, Le 11/10/06, Par C. Mille [orange] /; 1♀ (CRSRFP) 1♀ (CRIRD): / Ouégoa/Mandjélia, Lat. S 20.39683 Long. E 164.53218, Alt. 787 m [orange with black border] / Collecté sur: Divers COL/X05/05, Le 07 et 08/02/05, S. Cazerès & C. Mille [orange with black border] /; (all with my label) Paratypus *Scaphodius bituberculatus* nov.sp. des. Matthias Schöller [red] /.

D i a g n o s i s . A medium-sized species with pronotum with adhesive setae, with punctures and longitudinal wrinkles, the latter missing at base of disc, elytra dark brown, glabrous, punctures in regular rows, with an apical tubercle each.

T y p e l o c a l i t y . Nouvelle-Calédonie, Ponérihouen, Massif de l'Aoupinié: S 21°08.946, E 165°19.407, 465 m.

D e s c r i p t i o n o f h o l o t y p e (male) (Figs 7, 8, 26, 46)

H a b i t u s . Rusty brown, with disc of pronotum, humerus and a longitudinal stripe on elytron dark brown, pronotum matt, elytra shiny, with scape and pedicel yellowish brown, body small, shape cylindrical, truncate (Fig. 46), pronotum wider than base of

elytra, pronotum with longitudinal wrinkles, elytra glabrous with a pair of apical tubercles, size [mm]: length 2.7, width of elytra at humeri 1.8, length of elytra 1.8; length of pronotum 1.1, maximum width 1.85.

Head. Sunk into thorax up to hind margin of eyes, frons with coarse punctures and longitudinal wrinkles, with shallow longitudinal groove on frons, distance between upper lobes of eyes 1.7 times eye length; antennae inserted near lower margin of eyes, antennae blackish brown, scape and pedicel yellow; clypeus elongate, brown, covered with short white setae, basal margin bearing a pair of teeth with apical setae; labrum transverse, arcuate at apex (Fig. 26); mandible large, laterally densely setose, dark brown with yellowish brown tip with two large teeth.

Thorax. Prothorax: pronotum evenly curved at sides and constricted towards apex from basal 2/3 onwards, pronotum broadest at base; anterior margin, lateral margins and a pair of transverse markings opposite to scutellum rust-red, lateral margins even, carinate, completely visible in dorsal view, hind edges acute, tooth-like; pronotum with adhesive setae, with punctures and longitudinal wrinkles, the latter missing at base of disc, prothorax with coarse punctures moderately dense, front margin straight, lateral margins simple, with hind margin slightly concave (Fig. 55); mesothorax: scutellum smooth, black; elytra basally broadest then gradually attenuate, glabrous, only laterally setose, with nine regular rows of distinct punctures, plus scutellar row of punctures and row abutting lateral margin of elytra, interstices convex, apex between rows 6 and 7 with a prominent tubercle; metathorax: legs rusty brown with base of tibiae somewhat lighter, claws appendiculate, fore tibiae slightly bend.

Abdomen. Sternites dark brown, with short white setae, sternite VII with a shallow fovea, tergites and pygidium light brown, sternite III as long as sternites IV to VII along midline; aedeagus (Figs 7, 8), length of the aedeagus: 1.0 mm.

Description of female. Dorsum coloured as in male, mandibles, clypeus and labrum simple, pronotum with wrinkles more shallow than in male; elytral interstices with weak transverse wrinkles, sternites dark brown except for yellowish brown lateral margins, tergites and pygidium yellowish brown, thorax dark brown; pygidium with a distinct longitudinal ridge at middle; ovipositor (Fig. 43); size [mm]: length 3.2-3.3, width of elytra at humeri 2.1-2.15, length of elytra 2.2-2.3; length of pronotum 1.15-1.25, maximum width 2.1-2.2.

Differential diagnosis. Differs from all other species of *Scaphodius* with densely punctured pronotum by the apical tubercle on each elytron, and in the apical pair of teeth above the apical margin of the male clypeus.

Distribution and biology. Known from central and north New Caledonia mainland.

Etymology. Tuberculatus means covered with wart-like projections, the name refers to the two tubercles on the elytra.

***Scaphodius amieus* nov.sp.**

Holotype Male (MNH): Nouvelle-Calédonie, Sarraméa, Col d'Amieu [orange with black border] / Collecté sur: Divers, Par battage, Le 18/01/06, J. BRINON & J. P. KATAOUI [orange with black border] / (my label) Holotypus *Scaphodius amieus* nov.sp. des. Matthias Schöller [red] /

Seven paratypes: 1♂ (CRIRD) 1♂ (CRSRFP): Nouvelle-Calédonie, La Foa, Poquereux,

Lat. 21°44 S Long. 165°54 E [orange with black border] / Collecté sur: Au laboratoire, Le 07/02/06, Par RM M'BOUERI [orange with black border] /; 1 ♀ (CRSRFP): Nouvelle-Calédonie, Sarraméa, Col d'Amieu [orange with black border] / Collecté sur: "Malaise trap", Le 26/12/05, par J. Brinon [orange with black border] /; 1 ♀ (MDPC): Nouvelle Calédonie, La Foa, Col d'Amieu, 8.II.2006, m 500, M. Daccordi leg. [white]; 1 ♀ (MESC): Sarraméa, Col d'Amieu [orange with black border] / Collecté sur: "Malaise trap", Le 16/01/06, par J. Brinon & J. P. Kataoui [orange with black border] /; 1 ♂ (ZMHB): Nouvelle-Calédonie, Sarraméa, Col d'Amieu, Lat. S 21.63411 Long. E 165.89527, Alt. 465 m [orange with black border] / Collecté sur: Divers, Par battage, Le 20/02/06, par C. Mille & JP KATAOUI [orange with black border] /; 1 ♂ (MESC): Nouvelle-Calédonie, Boulouparis / Mt Do, Lat. S. 21.7894 Long. E 161.99994, alt. 1029 m [orange with black border] / Collecté sur: Battage sur divers, Le 07/12/06, Par S. Cazerès [orange with black border] /; all with my label Paratypus *Scaphodius amieus* nov.sp. des. Matthias Schöller [red] /.

D i a g n o s i s . A large species with pronotum rusty brown with margins lighter brown, setose on disc, elytra setose, with regular striae punctured at base, all striae with relatively long white adhesive setae, interstices 4-10 convex, glabrous, and apex of male clypeus not extended.

T y p e l o c a l i t y . Nouvelle-Calédonie, Sarraméa, Col d'Amieu, S 21°63', E 165°89', 465 m.

D e s c r i p t i o n o f h o l o t y p e (male) (Figs 14, 15, 28, 47)

H a b i t u s . Black, matt, with clypeus, lateral margins of pronotum, mandibles, femur and apical half of tibia yellow, body large, shape cylindrical, truncate (Fig. 47), pronotum wider than base of elytra, pronotum glabrous, elytral striae with short white setae, size [mm]: length 4.5, width of elytra at humeri 2.6, length of elytra 2.8, length of pronotum 1.5, maximum width 2.8.

H e a d . Sunk into thorax up to hind margin of eyes, wrinkled, with longitudinal groove on frons, distance between upper lobes of eyes 1.7 times eye length; antennae inserted near lower margin of eyes, antennae black, scape and pedicel yellow, antennal length 0.55 body length; clypeus broad, yellow, basal margin broadly semicircular concave with a small notch at middle, covered with short white setae, apically with a pair of long setae; labrum sub-rectangular, swollen at middle; mandible yellowish brown with black tip, basally broadly extended (Fig. 28), laterally brown at extension, with two large teeth and apex laterally densely setose.

T h o r a x . Prothorax: pronotum evenly curved at sides and moderately attenuate towards apex from basal third onwards, pronotum broadest 0.25 mm apically of base; anterior margin rust-red, lateral margins even, carinate, completely visible in dorsal view, yellow, hind edges rounded, lobate; pronotum with adhesive setae, with puncturation regularly dense and shallow, base of disc with a narrow longitudinal impunctate area at middle, basal margin rust-red, prothorax densely covered with fine punctures, front margin concave, lateral margins slightly projecting apically, hind margin deeply concave (Fig. 56); mesothorax: scutellum smooth, black; elytra basally broadest then gradually attenuate, with nine regular striae that are punctured, punctures fine and irregular, plus scutellar row of punctures and row abutting lateral margin of elytra, all striae with relatively long white adhesive setae, interstices 4-10 convex, 1-5 not punctured, glabrous, 5-10 with irregular punctures and some setae; metathorax: yellowish brown, darkened at middle, legs yellowish brown, with apical 2/3 of tibia and tarsi black, claw-segment apically yellowish brown, claws black, appendiculate, fore tibiae slightly bend.

A b d o m e n . Sternites yellowish brown, with short white setae, sternite VII even,

tergites and base of pygidium dark brown, sternite III as long as sternites IV to VII along midline; aedeagus (Figs 14, 15), length of the aedeagus: 1.6 mm.

Description of female (Fig. 48). Dorsum brown, with basal margins of pronotum and elytra black only; venter including pygidium yellowish brown except for some blurred brownish darkenings on metathorax; base of pygidium with an indistinct ridge at middle; mandibles and clypeus simple, labrum swollen at middle; spermatheca hook-shaped, 0.30×0.35 mm, spermathecal ductus straight, 2.2 mm long, weakly pigmented, base simple, strongly coiled up close to spermatheca; size [mm]: length 4.9, width of elytra at humeri 3.4, length of elytra 3.5; length of pronotum 1.7, maximum width 3.5.

Variability. Male mandibles may be laterally yellowish as rest of mandible, sometimes basal margin of pronotum broadly yellowish brown and metathorax completely yellowish brown. Variability in size [mm] (mean \pm SD (max., min., n)): length of male 4.35 ± 0.13 (4.50, 4.20, 4), female 5.03 ± 0.06 (5.10, 5.00, 3), width of elytra at humeri in male 2.98 ± 0.10 (3.10, 2.90), female 3.50 ± 0.09 (3.60, 3.45), length of pronotum in male 1.58 ± 0.05 (1.60, 1.50), width 3.00 ± 0.14 (3.20, 2.90), length of pronotum in female 1.87 ± 0.12 (2.00, 1.80) and width 3.50 ± 0.09 (3.60, 3.45).

Differential diagnosis. Differs from the other species with setose elytra and black tarsi described below by the absence of lateral strongly contrasting yellow spots on the elytra, and in the male by the triangularly notched clypeus and the narrow, transverse labrum.

Distribution and biology. Known from central New Caledonia only.

Etymology. The name is referring to the type locality, Col d'Amieu.

***Scaphodius megalognathus* nov.sp.**

Holotype Male (MNHN): Nouvelle-Calédonie, Ouégoa/Mandjélia, Lat. S 20.39683 Long. E 164.53218, Alt. 787 m [orange with black border] / Collecté sur: Divers COL/X03/05, Le 07 et 08/02/05, S. Cazes & C. Mille [orange with black border] / (my label) Holotypus *Scaphodius megalognathus* nov.sp. des. Matthias Schöller [red] /.

Six paratypes: 1♀ (MNHN), 2♀♀ (CRSRFP), 1♀ (CRIRD), 1♀ (ZMHB), 1♀ (MESC): Nouvelle-Calédonie, Ouégoa/Mandjélia, Lat. S 20.39683 Long. E 164.53218, Alt. 787 m [orange with black border] / Collecté sur: Divers COL/X03/05, Le 07 et 08/02/05, S. Cazes & C. Mille [orange with black border] / (all with my label) Paratypus *Scaphodius megalognathus* nov.sp. des. Matthias Schöller [red] /.

Dagnosis. A large blackish brown, matt species with clypeus, lateral margins of pronotum, a pair of transverse markings at base of pronotum and a spot on elytron yellow, disc of pronotum glabrous, elytra setose, no punctures in rows, interstices smooth, glabrous, setae short and restricted to furrows and apex of elytra, apex of male clypeus extended, and labrum rectangular, apically straight.

Type locality. Nouvelle-Calédonie, Ouégoa/Mandjélia, S 20°39', E 164°53', 787 m.

Description of holotype (male) (Figs 16, 17, 29, 49)

Habitus. Black, matt, with clypeus, lateral margins of pronotum, a pair of transverse markings at base of pronotum and a spot on elytron yellow, body large, shape cylindrical, truncate (Fig. 49), pronotum wider than base of elytra, pronotum glabrous, elytral striae with short white setae; size [mm]: length 5.5, width of elytra at humeri 3.1, length of elytra 3.0; length of pronotum 1.8, maximum width 3.3.

H e a d . Large, hypognathous, sunk into thorax up to hind margin of eyes, puncturation moderately dense and coarse, with an impunctate longitudinal stripe at middle, eyes almost round and relatively small, distance between upper lobes of eyes 2.2 times eye length; antennae inserted near lower margin of eyes, antennae black, scape and pedicel yellowish brown, antennae with all segments elongate, first segment very long, nearly as long as following three segments combined, except for short pedicel, antennomeres expanded from 6 to 10 (10-11 of left antenna missing in holotype), interantennal space seven times diameter of antennal socket; clypeus broad, yellow, basal margin semicircular concave, covered with short white setae, apically with a pair of long setae; labrum sub-rectangular with lateral margins slightly convex and bend up; mandible yellowish brown with black tip, with a pair of dorsal ridges, with two large teeth (Fig. 29) and only laterally densely setose.

T h o r a x . Prothorax: pronotum evenly curved at sides and attenuate towards apex from basal third onwards, pronotum broadest 0.3 mm apically of base, without impressions; lateral margins even, carinate, completely visible in dorsal view, hind edges rounded, lobate; pronotum with puncturation regularly dense and shallow, disc with longitudinal shallow wrinkles, prothorax densely covered with fine punctures, front margin concave, lateral margins slightly projecting apically, hind margin deeply concave; mesothorax: scutellum smooth, black; elytra basally broadest then gradually attenuate, punctures small and in nine regular rows plus scutellar row and row abutting lateral margin of elytra, punctures becoming indistinct in rows eight and nine, all striae with short white adhesive setae, interstices 6-10 convex, glabrous; metathorax: legs yellowish brown, with apical 2/3 of tibia and tarsi black, claw-segment apically yellowish brown, claws black, appendiculate, fore tibiae slightly bend.

A b d o m e n . Sternites yellowish brown, with short white setae, sternite VII with a shallow oval fovea, tergites and pygidium brown, sternite III as long as sternites IV to VII along midline; aedeagus (Figs 16, 17), length of the aedeagus: 1.6 mm.

Description of female (Figs 42, 50). Dorsum brown with yellow markings as in male; venter including pygidium yellowish brown except for some blurred brownish darkenings on metathorax, and mesothorax yellow; base of pygidium with an indistinct ridge; mandibles, clypeus and labrum simple; spermatheca hook-shaped, 0.4 × 0.5 mm, spermathecal ductus straight, base simple, strongly coiled up close to spermatheca (Fig. 42); size [mm]: length 5.5, width of elytra at humeri 3.7, length of elytra 3.9; length of pronotum 2.0, maximum width 3.8.

V a r i a b i l i t y . Anterior margin of female pronotum at middle dark brown or yellowish brown, variability in size [mm] (mean±SD (max., min., n)): length of female 5.82±0.17 (5.90, 5.60, 6), width of elytra at humeri 3.99±0.16 (4.15, 3.80), length of pronotum 2.05±0.05 (2.10, 2.00) and width 3.97±0.08 (4.10, 3.90).

D i f f e r e n t i a l d i a g n o s i s . Differs from the other species with setose elytra and black tarsi, *Scaphodius amieus* nov.sp., by the presence of lateral strongly contrasting yellow spots on the elytra, and in the male by the concave clypeus and the large, quadrate labrum.

D i s t r i b u t i o n a n d b i o l o g y . Known from the North of New Caledonia mainland only.

E t y m o l o g y . Mega means large, gnathos is Greek for jaw, referring to the male mandibles.

***Scaphodius jolivet* nov.sp.**

H o l o t y p e Male (MNHN): Nouvelle-Calédonie, Yaté/Rivière bleue [orange with black border] / Collecté par battage et piège Ampoule à vapeur de mercure le 07 au 09/09/06, Par P. & M. Jolivet [orange with black border] / (my label) Holotypus *Scaphodius jolivet* nov.sp. des. Matthias Schöller [red] /.

T w o p a r a t y p e s: 1♂ (CRSRFP), 1♂ (ZMHB), same labelling as Holotype / (both with my label) Paratypus *Scaphodius jolivet* nov.sp. des. Matthias Schöller [red] /.

D i a g n o s i s. A species of intermediate size, pronotum and head unicolorous orange, elytra reddish brown, shiny, pronotum glabrous, densely punctured, as wide as base of elytra, elytra with very short adherent setae, more dense on apical part, with punctures in rows and interstices punctured and with transverse wrinkles.

T y p e l o c a l i t y. Nouvelle-Calédonie, Yaté, Rivière bleue, S 22°10, E 166°51.

D e s c r i p t i o n o f h o l o t y p e (male) (Figs 9, 10, 30)

H a b i t u s. Orange-brown, elytra reddish brown, shiny, pronotum glabrous, densely punctured, elytra with very short adherent setae, with punctures in rows and interstices punctured and with transverse wrinkles, body of intermediate size, shape cylindrical, widest at humerus and attenuate towards apex of elytra and pronotum, pronotum as wide as base of elytra; size [mm]: length 3.85, width of elytra at humeri 2.65, length of elytra 2.65; length of pronotum 1.45, maximum width 2.65.

H e a d. Moderately large, sunk into thorax up to hind margin of eyes, orange-brown, puncturation rugulose, with a very shallow longitudinal depression at middle, almost round and relatively small, eyes distant, distance between upper lobes of eyes 1.58 times eye length; antennae inserted above lower margin of eyes, antennae orange-brown, antennomeres 7 to 11 darkened and expanded; clypeus with transverse wrinkles, broad, apically with a pair of lobes; labrum transverse, narrow; mandible with dark brown tip, with two large teeth (Fig. 30).

T h o r a x. Prothorax: pronotum evenly curved at sides and strongly attenuate towards apex from basal 1/5 onwards, pronotum broadest at base, without impressions; lateral margins even, carinate, getting more explanate towards base, simultaneously visible in dorsal view in hind edges only, hind angles acute, tooth-like; pronotum with puncturation dense, partly punctures fused but not forming regular furrows, prothorax almost quadrate (Fig. 58), lateral margins simple, front margin slightly convex and bend downwards, hind margin slightly concave; mesothorax: scutellum smooth, brown; elytra basally broadest then gradually attenuate, punctures small and in nine regular rows plus scutellar row and row abutting lateral margin of elytra, punctures in furrows, all striae with very short white adhesive setae, interstices convex except for plain base of elytra, with micropunctures and irregular transverse wrinkles; metathorax: legs orange-brown, claws black, appendiculate, fore tibiae straight.

A b d o m e n. Sternites and tergites orange-brown, with short white setae, sternite VII without fovea, sternite III as long as sternites IV to VII along midline, pygidium without longitudinal median carina, only slightly bulging centrally; aedeagus (Figs 9, 10), length of the aedeagus: 1.0 mm.

D e s c r i p t i o n o f f e m a l e. Dorsum and venter coloured as in male; clypeus with a pair of lobes as in male, but lobes slightly shorter; pygidium as in male; size

[mm]: length 3.85, width of elytra at humeri 2.65, length of elytra 2.6; length of pronotum 1.3, maximum width 2.6.

V a r i a b i l i t y . No variability in external morphology was detected, variability in size [mm] (mean \pm SD (max., min., n)): length of male 3.77 \pm 0.08 (3.85, 3.70, 3), width of elytra at humeri 2.62 \pm 0.03 (2.65, 3.60), length of pronotum 1.43 \pm 0.03 (1.45, 1.40) and width 2.58 \pm 0.06 (2.65, 2.55).

D i f f e r e n t i a l d i a g n o s i s . Differs from the other species with setose elytra and yellow tarsi, *S. forcipatus* (Baly), by the regular rows of elytral punctures, the sparse short elytral setae, and the colouration of pronotum and head.

D i s t r i b u t i o n a n d b i o l o g y . Known from the South of New Caledonia mainland only.

E t y m o l o g y . Dedicated to its collector, the Chrysomelidae specialist Dr. Pierre Jolivet, Paris.

***Scaphodius pictipennis* FAUVEL 1907**

Scaphodius pictipennis FAUVEL 1907: 152.

T y p e s p e c i m e n s . Lectotype *Scaphodius pictipennis* FAUVEL 1907 (male, IRSNB): / Coll. R. I. Sc. N. B. (underlined), Nouvelle Calédonie, ex coll. Fauvel [printed], rec savés (ink) [red], Nouméa (white historic label glued on red label) / Coll. et det. A. Fauvel *Scaphodius pictipennis* Fvl R.I.Sc.N.B. 17.479 [white] / (my label) Lectotypus *Scaphodius pictipennis* Fauvel, 1907, des. Matthias Schöller [red]/.

A lectotype was designated here in order to ensure the name's proper and consistent application.

Paralectotype (male, IRSNB): same labeling as lectotype, with my label / Paralectotypus *Scaphodius pictipennis* Fauvel, 1907, des. Matthias Schöller [red]/.

A d d i t i o n a l s p e c i m e n s s t u d i e d . 2♀♀ (ZMHB): N. Caledon., Coll. W. Schaufuß; 1♂ (ZMHB): N. Caled.

N o t e : This species was already known to Suffrian, who gave it an in litteris name, written on a label pinned with a specimen in ZMHB that should not be published to avoid confusion.

D i a g n o s i s . A small yellowish brown species with blurred dark brown markings on pronotum and elytra, matt, pronotum with puncturation moderately coarse, regularly very dense, space between oval punctures much less than diameter of punctures, elytra glabrous, regularly vaulted, punctures in regular rows, in impressed furrows, and in male clypeus apically at middle with an acute triangular tooth.

T y p e l o c a l i t y . Nouvelle-Calédonie, Nouméa, 22°15'S, 166°26'O.

D e s c r i p t i o n o f l e c t o t y p e (male) (Figs 11-13, 31, 45)

H a b i t u s . Yellowish brown with blurred dark brown markings on pronotum and elytra, matt, body small, shape cylindrical, truncate (Fig. 45), pronotum slightly wider than elytra at base, pronotum and elytra glabrous; size [mm]: length 2.70, width of elytra at humeri 1.60, length of elytra 1.75; length of pronotum 0.9, maximum width 1.65.

H e a d . Puncturation dense and coarse, without longitudinal groove on frons, eyes small and distant, distance between upper lobes of eyes 2 times eye length; antennae inserted at level of mid of eyes, antennae yellowish brown, antennomeres 7-11 broadest; clypeus acute triangular at middle (Fig. 31), glabrous, laterally with a triangular exten-

sion covering base of mandible each with long white setae at tip; labrum longitudinal, in frontal view partly covered by extension of clypeus, yellowish brown, apical margin only slightly emarginate, covered with few long white setae; mandible yellowish brown with black tip, laterally raised, with two large teeth and laterally with coarse punctures.

T h o r a x . Prothorax: pronotum evenly vaulted, without lateral sulcus, evenly curved at sides and moderately attenuate towards apex from basal third onwards, pronotum broadest above base; anterior margin carinate, lateral margins even, carinate, narrow but completely visible in dorsal view, hind edges projecting, almost right-angled; pronotum with puncturation moderately coarse, regularly very dense, space between oval punctures much less than diameter of punctures, basal margin black, prothorax densely covered with very coarse punctures, with apical margin slightly concave, lateral carina simple, basal margin bend downwards; mesothorax: scutellum smooth, brown; elytra subparallel, glabrous, with nine regular striae punctured at base, plus scutellar row of punctures and row abutting lateral margin of elytra, interstices 5-10 convex, interstices with fine transverse wrinkles; metathorax: legs yellowish brown, claws-apically blackish brown, appendiculate, fore tibiae straight, first tarsomeres of fore- and mid-tarsus widened.

A b d o m e n . Sternites yellowish brown, with short white setae, sternite VII with a very shallow depression, tergites and pygidium yellowish brown, pygidium regularly vaulted, without carina, sternite III as long as sternites IV to VII along midline; aedeagus (Figs 10, 11), length of the aedeagus: 1.0 mm.

Description of female (Figs 35, 36). Dorsum yellowish brown, with a longitudinal brown stripe on mid of elytra on interstices 2-4, almost half the length of the elytron, and a blurred M-shaped pattern on pronotum brown; venter including pygidium yellowish brown; base of pygidium regularly vaulted; mandibles reddish brown, simple, clypeus simple, labrum regularly vaulted; spermatheca hook-shaped, 0.2×0.2 mm; kotpresse with dorsal sclerites straight (Fig. 35), apodemes slightly wider than rectum; ventral sclerite is a crosswise band, ending in apodemes, that are convex and slightly wider than the rectum (Fig. 36); size [mm]: length 2.9, width of elytra at humeri 1.8, length of elytra 2.0; length of pronotum 1.0, maximum width 1.75.

Distribution and biology. No information available.

Variability: The dark brown blurred marking of the elytra may extend to a longitudinal band widening at apex and fusing with humeral spot, the acute triangular extension of male clypeus may be longer or shorter than in lectotype.

***Scaphodius bifasciatus* FAUVEL 1907**

Scaphodius bifasciatus FAUVEL 1907: 151.

D i a g n o s i s . A small reddish species (length of male 2.66 mm), the 6 basal antennomeres darkened, pronotum regularly vaulted, punctured, elytra glabrous, striate-punctate, striae weak at base, deeper laterally and at apex, with two irregular transverse black markings, the first one larger, at base of elytron, the second one close to apex, arched, not reaching lateral margin of elytron, tarsi dark; male clypeus apically at middle with acute triangular tooth, and eyes small, distant.

Type locality. Nouvelle-Calédonie, Tonghoué, 22°10'S, 166°28'O.

Note. Known from holotype only, holotype not seen.

Scaphodius forcipatus* (BALY 1877) comb.nov.Nyetra forcipata* BALY 1877: 33.

Type specimens. Lectotype *Nyetra forcipata* BALY, 1877 (male, BMNH): / N. Caled. Marseul (ink) [white] / Type (ink) [light blue] / Type H.T. [round white label with red margin] / Baly Coll. [white] / *Nyetra forcipata* Baly New Caledonia (ink) [light blue] / (my label) Lectotypus *Nyetra forcipata* Baly, 1877, des. Matthias Schöller [red] /.

A lectotype was designated here in order to ensure the name's proper and consistent application.

Additional specimens studied. 1♀, DEIC: N. Caledon., Montrouzier, Marseul, Coll. Kraatz, *Scaphodius striaticollis*? Clavareau det.; 1♂, 1♀, ZMHB: *Nyetra forcipata* Baly.

Diagnosis. A large species with pronotum setose on disc, rusty brown with margins lighter brown, elytra setose, elytral puncturation completely confused, interstices smooth, setose, lateral two furrows on elytra hardly perceptible, rest of elytra even, apex of male clypeus extended, narrow with acute tip.

Terratypica. Nouvelle-Calédonie.

Description of lectotype (Figs 32, 51)

Habitus. Body large, shape cylindrical (Fig. 51), pronotum wider than base of elytra, dorsum with white adpressed setae, size [mm]: length 4.4, width of elytra at humeri 2.6, length of pronotum 1.5, width 2.7, length of elytra 2.5.

Head. Large, hypognathous, sunk into thorax up to eyes, puncturation dense and coarse, eyes evenly convex, relative small, distance between upper lobes of eyes 2.8 times eye length; circular, no canthus; antennae inserted near lower margin of eyes, antennae with all segments elongate, first segment very long, as long as following three segments combined, except for short segment 2, and 7-11 broadest, setae present on antennomeres 5-11, dense on seventh to eleventh, (left antenna with 7 segments only) segments with circular sensillate depressions, interantennal space five times diameter of antennal socket; clypeus narrow, elongate, covered with short white setae, apically with long setae; frontoclypeal suture reduced, without a pair of anterior pits, front edge of head lobate, produced, labrum triangular, hyaline, situated behind extension of clypeus, last maxillary and labial palps truncate; mandible as in Fig. 32, with two large teeth and densely setose; apical segment of labial palp shaped as maxillary palp.

Thorax. Prothorax: pronotum evenly curved at sides and attenuate towards apex from basal third onwards, pronotum broadest 0.3 mm apically of base, approximately as wide as long and anterior half narrower as basally, without impressions; apical and lateral sides bordered, lateral margins even, carinate, completely visible in dorsal view, hind edges rounded, lobate, more explanate and slightly bend upwards, anterior margin simple, convex, basal margin unbordered, i. e. toothed, base of pronotum extended at middle, notched; disc with microsculpture, puncturation regularly dense and fine, without lateral depressions, hind corners with setiferous pore, front edge of pronotum ridged, pronotum wider than elytral base; intercoxal prosternal process wide, elongate, narrowing towards apex, as wide as coxal cavity, front margin feebly convex with a narrow carina, hind margin bearing a pair of acute posterolateral projections between coxae, coxal cavity closed, hypomeron punctate; procoxal cavity wider than long, prothorax densely covered with coarse punctures laterally, more sparse at centre, front margin straight, lateral margins swollen, hind margin deeply convex (Fig. 54); mesothorax: scutellum triangular, slightly longer than wide, basally straight, rounded at apex, smooth with few micropunctures, not elevated; mesosternum distinct between coxae, broad, apex

as wide as apex of prosternum i. e. mesosternal intercoxal process as wide as prosternum; elytra $1.7 \times$ length of pronotum, basally broadest then gradually attenuate, punctures small and completely confused, but surface with nine furrows, interstices of the lateral ones convex, plus a short scutellar furrow, basal margin of elytra simple, elytra with prominent humeri, elytra without lateral transverse impressions, elytra regularly oblate, reaching mid of pygidium; epipleuron short, reaching mid of elytron, strongly attenuate behind humerus, irregularly punctured; metathorax: metasternum prominent, moderately convexly swollen ventrally, legs rusty brown, short, all femora of similar size, without ventral keel, tibiae almost straight, tibial spurs absent, external edge of tibia excavate, fringe of setae on excavation sparse, all tarsal segments elongate, in male first segment of fore- and mid tarsi widened, hind tarsi missing, dorsally convex, claws symmetrical, small, dentate.

A b d o m e n : Venter rusty brown, venter with short white setae, intercoxal abdominal process of ventrite I broad, concave, sternite III shorter than sternites IV to VII along midline; sternite VII convex in male, apex of male abdomen without hollow; pygidium densely punctured with short white setae, regularly convex; aedeagus of non-type (Fig. 18, 19), length of the aedeagus: 1.2 mm.

Description of female (Fig. 52). Coloured as male, habitus (Fig. 52); basal half of pygidium with an blunt ridge; clypeus arcuate, mandibles and labrum simple; size [mm]: length 4.0, width of elytra at humeri 2.5, length of elytra 2.7; length of pronotum 1.5, maximum width 2.5.

Distribution and biology. No information available.

Note. The wing of this species has been described by JOLIVET (1954).

***Ditropidus compactus* (SHARP 1881) comb.nov.**

Scaphodius compactus SHARP 1881: 50.

Holotype (BMNH): *Scaphodius compactus* Type D.S., New Zealand, Thurnay (ink) [white cardboard] / Type H.T. [round label, white with red boarder] / Sharp Coll. 1905 – 131. / *Ditropidus compactus* (Sharp), det. M. Schöller 2008 [white].

Revised diagnosis. A small (length 1.5 mm) elongate oval dark brown species with black metathorax and abdomen, shiny, eyes large and close together, with triangular canthus, clypeus separated from frons, labrum yellowish brown, quadrate, head with few coarse punctures, antennomeres 1-7 yellowish brown, antennal basiconic sensilla in circular pits at apices of last 5 antennomeres, width of pronotum 2.3 times length, pronotum with sparse puncturation, punctures elongate, lateral margins narrow, not simultaneously visible in dorsal view, posterior lobe of pronotum triangular, notched, elytra glabrous, regularly vaulted, punctures in regular rows, lateral interstices convex.

Note. This species from New Zealand was the only species placed in *Scaphodius* originating not from New Caledonia. In the type specimen, the antennae and one hind leg are disarticulated, the fragile specimen was not removed from the cardboard for study. It was transferred here to *Ditropidus* because of the following combination of character states: distinct deep canthus, eyes large and close, the raised part of clypeus is triangular below and between the antennae, the last 5 antennomeres have basiconic sensilla in circular pits, pronotum transverse, posterior lobe of pronotum slightly raised, posterior angles sharply produced, overlapping base of elytra, elytral punctures in regular striae,

and tibiae excavate on apex externally for 0.25 of length. The mandible setation, the aedeagus and spermatheca were not studied, so more recently collected non-type specimens are urgently needed to confirm the generic placement.

Key to the New Caledonian genera of Cryptocephalinae

- 1 Scutellum large, triangular, elytra with seven rows of punctures plus a scutellar puncture row and a row of punctures abutting epipleura..... *Diachus* LECONTE
- scutellum small, rombiform, i.e. spindle-shaped, elytra with nine rows of punctures or non-punctured regular striae, plus a scutellar stria or puncture row and a stria or row of punctures abutting epipleura, or puncturation confused.....2
- 2(1) Eyes with distinct, mostly triangular canthus.....*Ditropidus* ERICHSON
- Eyes without canthus, inner margin of eye at most arcuate.....*Scaphodius* CHAPUIS

Key to the New Caledonian species of *Scaphodius*

- 1 Elytra setose; body length > 3.5 mm2
- Elytra glabrous; body length usually < 3.5 mm, punctures usually in regular rows5
- 2(1) tarsi yellow, elytral interstices punctate.....3
- tarsi black, elytral interstices without punctures.....4
- 3(2) elytral punctures in rows, setae short, sparse, more dense on apical part, pronotum and head unicolorous orange.....*Scaphodius joliveti* nov.sp.
- elytral punctures confused, setae long, densely covering pronotum and elytra, pronotum and head brown with yellow markings.....*Scaphodius forcipatus* (BALY)
- 4(2) elytra laterally with a pair of strongly contrasting yellow spots, male clypeus concave, labrum long, quadrate.....*Scaphodius megalognathus* nov.sp.
- elytra laterally without a pair of strongly contrasting yellow spots, at most brown colour slightly lighter, male clypeus triangularly notched, labrum short, transverse.....*Scaphodius amieus* nov.sp.
- 5(1) pronotum completely covered with parallel longitudinal furrows6
- pronotum densely punctured, laterally additionally with or without longitudinal furrows....10
- 6(5) pronotum humped, elytra with four tubercles.....*Scaphodius gibbosus* nov.sp.
- pronotum regularly vaulted, elytra at most with two tubercles.....7
- 7(6) pronotum with parallel longitudinal furrows with many punctures in-between, pronotum as wide as elytra, male mandibles ca. twice as long as in female, first segment of fore- and mid tarsi normal*Scaphodius suffriani* nov.sp.
- pronotum with parallel longitudinal furrows without punctures in-between, at most close to lateral margin with coarse punctures.....8
- 8(7) in lateral view pronotum plain, in one level with elytra, pronotum narrower than elytra at humerus.....*Scaphodius complanatus* nov.sp.
- in lateral view pronotum convex, pronotum wider than elytra9
- 9(8) hind margin of prothorax concave, eyes close, in male distance between upper lobes of eyes 1.07 times eye length, in female 1.36 times eye length, male clypeus simple.....*Scaphodius montrouzieri* nov.sp.
- hind margin of prothorax straight, eyes distant, in male distance between upper lobes of eyes 1.76 times eye length, in female 1.44 times eye length, male clypeus with a pair of lateral subrectangular extensions*Scaphodius striaticollis* (MONTROUZIER)
- 10(5) elytra with an apical tubercle each, dark brown, in male clypeus apically at middle with a pair of teeth.....*Scaphodius bituberculatus* nov.sp.

- elytra without an apical tubercle each, all rows of punctures in impressed furrows, in male clypeus apically at middle with acute triangular tooth 11
- 11(10) elytra light brown with or without blurred markings, diameter of pronotal punctures larger than space between punctures, 2.7-3 mm..... *Scaphodius pictipennis* FAUVEL
- elytra with two irregular transverse black markings, the first one larger, at base of elytron, the second one close to apex, arched, not reaching lateral margin of elytron, elytra striate-punctate, pronotum coarsely punctured, 2.7 mm.....
.....*Scaphodius bifasciatus* FAUVEL

Check-list of New Caledonian Cryptocephalinae

Genus *Diachus* LECONTE 1880

Diachus auratus (FABRICIUS 1801)

Distribution: Neotropical, Australian, Nearctic, Oriental regions.

Note. This species is exotic to, but established in New Caledonia (REID, 1988).

Genus *Ditropidus* ERICHSON 1842

Ditropidus opacicollis FAUVEL 1907

Monachus oxythorax (MONTROUZIER 1861)

Cryptocephalus oxythorax MONTROUZIER 1861

Monachus pallens (MONTROUZIER 1861)

Cryptocephalus pallens MONTROUZIER 1861

The generic identity of these three species remains questionable, however, the presence of *Monachus* and *Cryptocephalus* in New Caledonia is most unlikely.

Here also four unavailable *Nomina nuda* published by FAUVEL (1907), even though a determination key for these species was given, the descriptions are lacking contrary to the species of *Scaphodius* described in the same publication:

Ditropidus aeneus FAUVEL 1907

Ditropidus nitidus FAUVEL 1907

Ditropidus striolatus FAUVEL 1907

Ditropidus sulcatus FAUVEL 1907

Genus *Scaphodius* CHAPUIS 1874

Scaphodius amieus nov.sp.

Scaphodius bifasciatus FAUVEL 1907

Scaphodius bituberculatus nov.sp.

Scaphodius complanatus nov.sp.

Scaphodius forcipatus (BALY 1877)

Scaphodius gibbosus nov.sp.

Scaphodius joliveti nov.sp.

Scaphodius megalognathus nov.sp.

Scaphodius montrouzieri nov.sp.

Scaphodius pictipennis FAUVEL 1907

Scaphodius striaticollis (MONTROUZIER 1861)

= *Scaphodius comptus* CHAPUIS 1874

Scaphodius suffriani nov.sp.

Discussion

Biodiversity of New Caledonian beetles was expected to be much greater than currently known. This was recently proven for the subfamilies Galerucinae (BEENEN 2008) and Eumolpinae (JOLIVET et al. 2007a, b), and also applies to the Cryptocephalinae as shown here. The number of known species of *Scaphodius* more than tripled, and more undescribed species are under study. FAUVEL (1907) published about ca. 20 specimens, but ca. 110 specimens were available for this study (excluding *Dichachus*), information about 80 out of these is published here. E.g., there are additional species similar to *S. amieus* and *S. megalognathus*, the females in this group are difficult to distinguish. Future studies should also address the species tentatively placed in *Ditropidus* in the check-list.

Out of the species known 100 years ago, only *S. striaticollis* was collected again. On the other hand, all the species described as new in this work were not represented by historic specimens in insect collections. This may be due to few collection efforts. Another hypothesis that might explain this is the destruction of coastal habitats where the species described by MONTROUZIER and FAUVEL might have been collected, and that the habitats of the species described in this work as new were not sampled previously.

The habitus of *Scaphodius* is similar to a number of genera currently placed in Monachulina. As pointed out by REID (1998), the Monachulina as currently understood (= Monachulini, see SEENO & WILCOX 1982) is a polyphyletic taxon. The position of the antennae, the location of antennal basiconic sensillae in circular pits and the shape of the posterior lobe of the pronotal margin as well as the scutellum suggest a close relationship with *Ditropidus* and allied genera. *Scaphodius* may be even congeneric with *Ditropidus*. However, the results presented here suggest *Scaphodius* to be a monophyletic group.

Acknowledgements

I thank all curators listed above for the possibility to study the specimens from their collections, especially Sharon SHUTE (BMNH) and Patrick GROOTAERT (IRSNB) for enabling me to study the types under their charge. Christian MILLE and Mauro DACCARDI provided me with the specimens collected during their field work in New Caledonia. Pierre JOLIVET (Paris) kept me updated with literature on New Caledonia. I would like to cordially thank Ron BEENEN (Nieuwegein, The Netherlands) for critically reviewing an earlier version of the manuscript and valuable suggestions for improvement, as well as Chris REID (Sydney, Australia) for substantial input on the final version.

Zusammenfassung

Die Gattung *Scaphodius* wird revidiert. Für *Cryptocephalus striaticollis* MONTROUZIER 1861 wird ein Neotypus designiert. Lectotypen werden designiert für *Scaphodius comptus* CHAPUIS 1874, *Scaphodius pictipennis* FAUVEL 1907 und *Nyetra forcipata* BALY 1877. Acht neue Arten aus Neukaledonien (Grande Terre) werden beschrieben: *Scaphodius amieus* nov.sp., *S. bituberculatus* nov.sp., *S. complanatus* nov.sp., *S. gibbosus* nov.sp., *S. joliveti* nov.sp., *S. megalognathus* nov.sp., *S. montrouzieri* nov.sp. und *S. suffriani* nov.sp. Der Lectotypus von *Nyetra forcipata* wird redeskribiert, und folgendes Synonym vorgeschlagen: *Scaphodius* CHAPUIS 1874 = *Nyetra* BALY 1877. *Scaphodius compactus* SHARP aus Neuseeland gehört nicht in die Gattung *Scaphodius*, d.h. *Ditropidus compactus* (SHARP) comb.nov., *Scaphodius* ist endemisch für Neukaledonien. Ein Bestimmungsschlüssel und eine Verbreitungskarte für die Arten der Gattung *Scaphodius* ist enthalten, außerdem eine check-list der Neukaledonischen Cryptocephalinae und ein Bestimmungsschlüssel für die Gattungen.

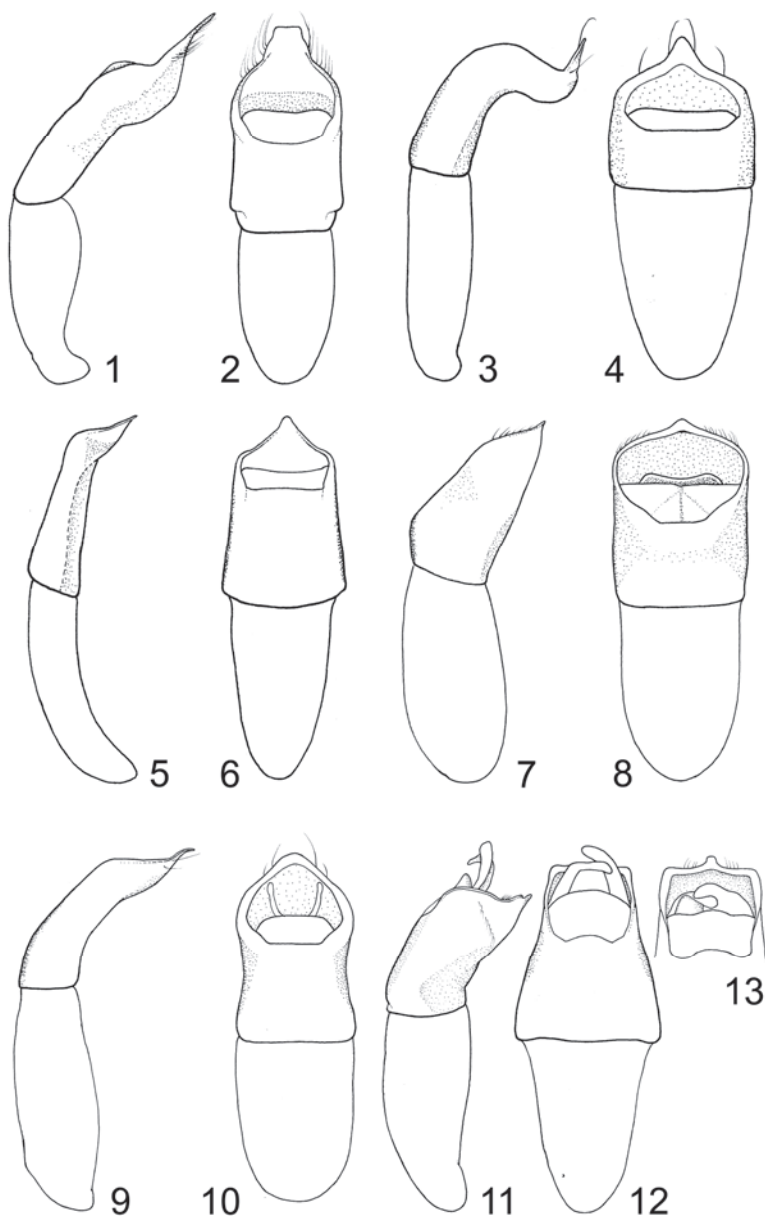
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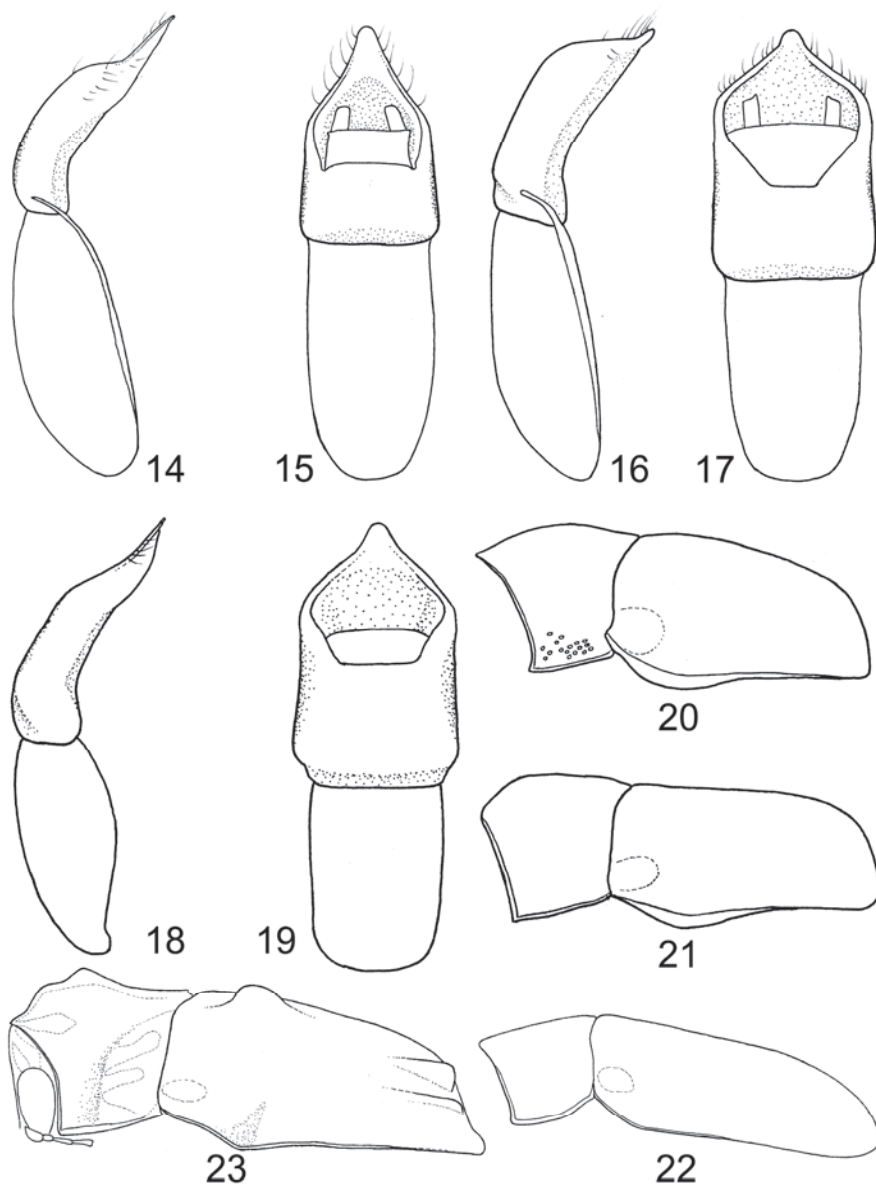
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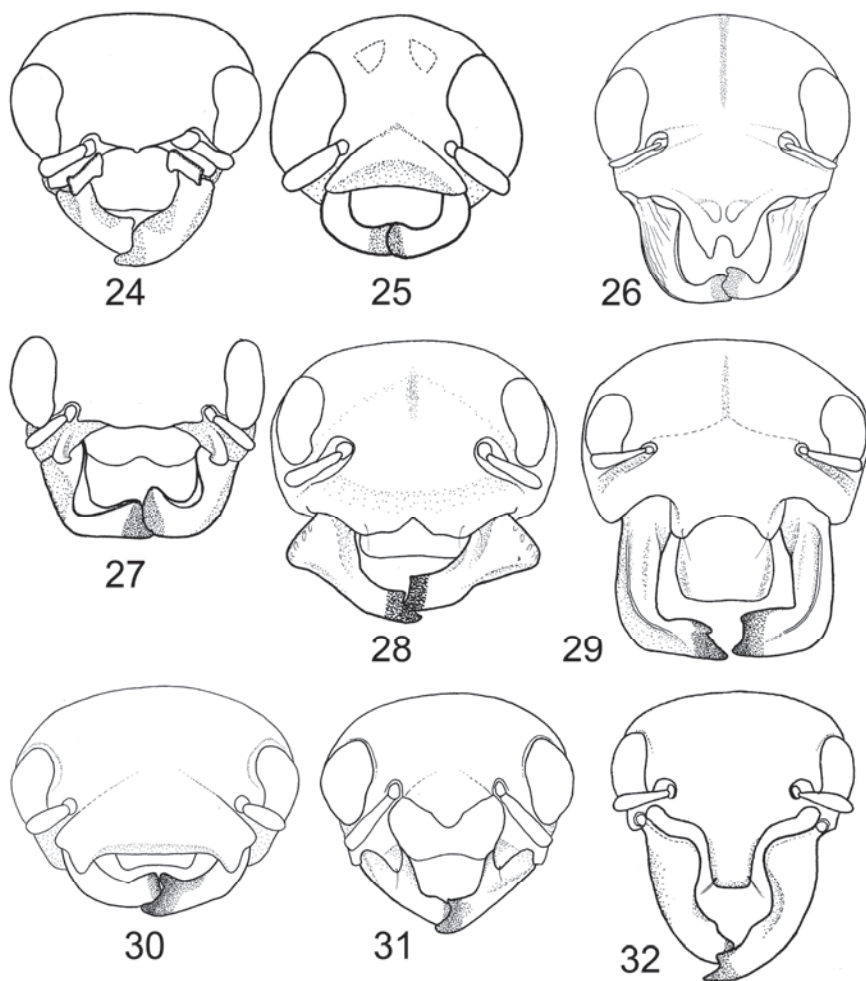
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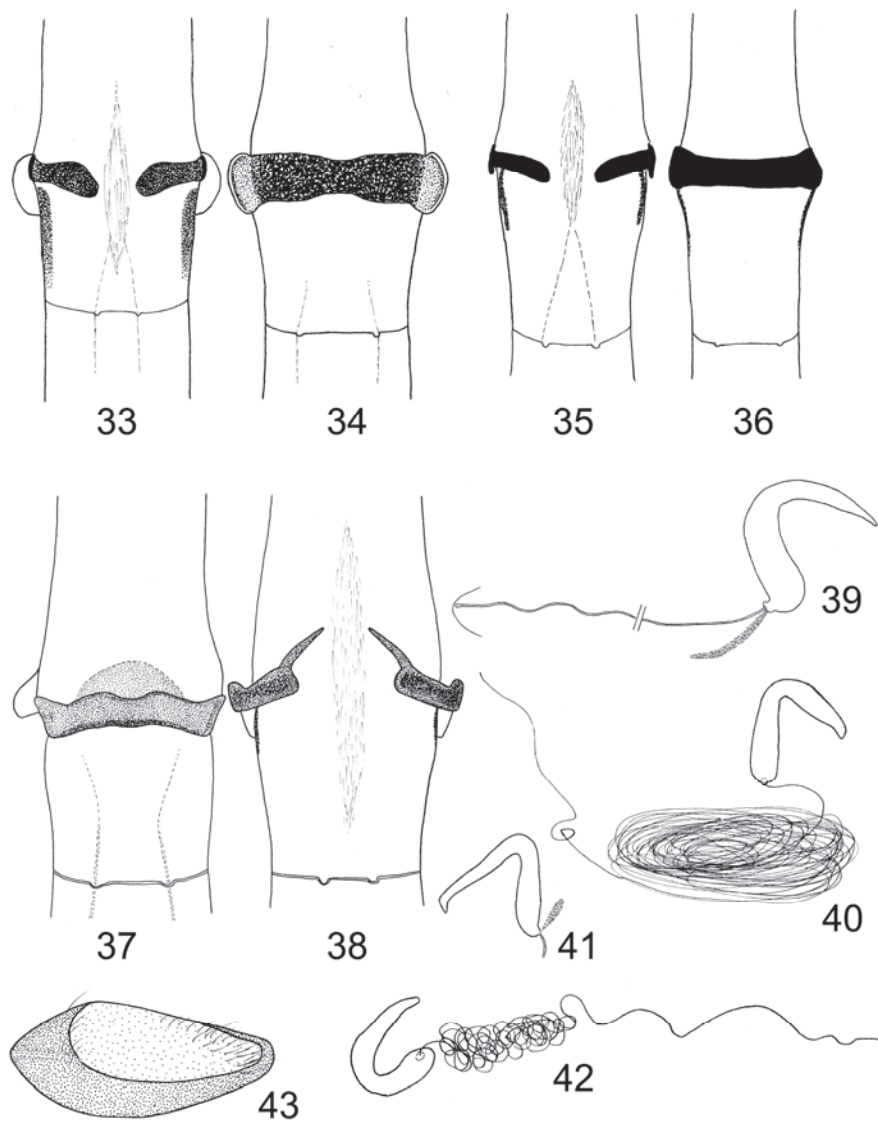
Figs 1-13: *Scaphodius* spp., aedeagi; *S. striaticollis* (MONTROUZIER), (1) lateral (2) dorsal; *S. montrouzieri* nov.sp., (3) lateral (4) dorsal; *S. suffriani* nov.sp., (5) lateral (6) dorsal; *S. bituberculatus* nov.sp., (7) lateral (8) dorsal; *S. jolivetii* nov.sp., (9) lateral (10) dorsal; *S. pictipennis* FAUVEL, (11) lateral (12) dorsal (13) apex fronto-dorsal.



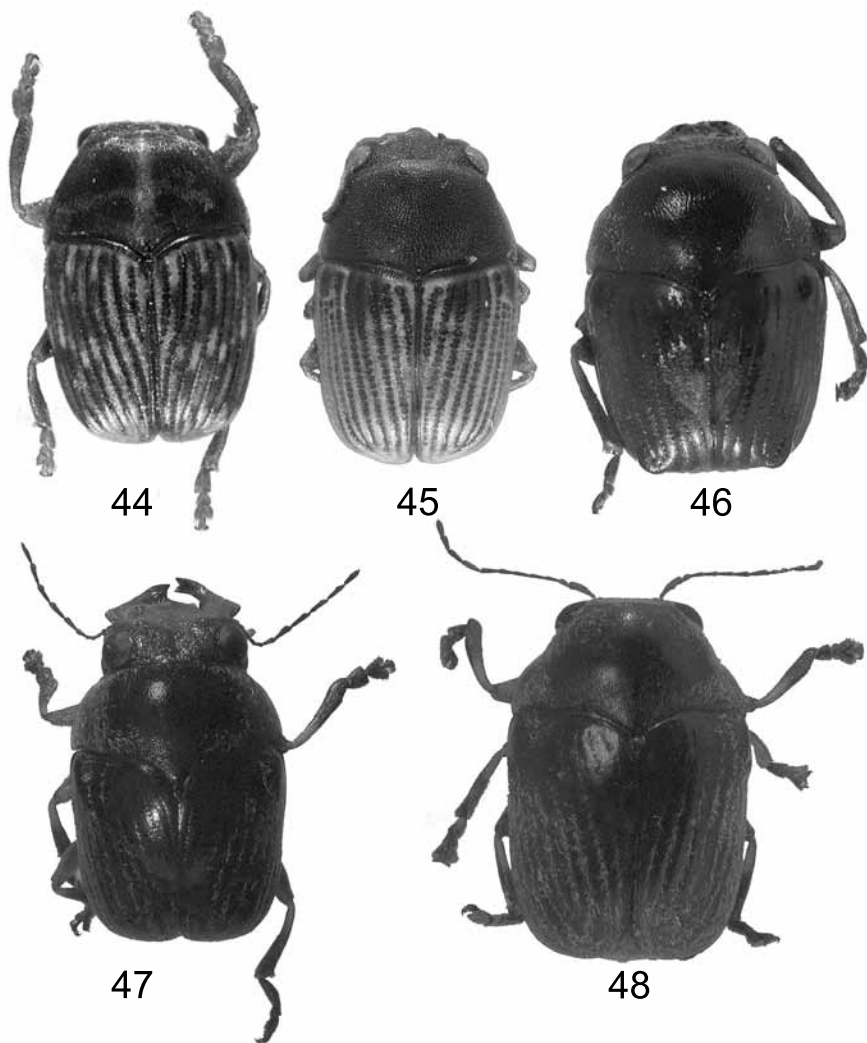
Figs 14-23: *Scaphodius* spp.; *S. amieus* nov.sp., (14) aedeagus lateral (15) aedeagus dorsal; *S. megalognathus* nov.sp., (16) aedeagus lateral (17) aedeagus dorsal; *S. forcipatus* (BALY), (18) aedeagus lateral (19) aedeagus dorsal; *S. straticollis* (MONTROUZIER), (20) habitus lateral; *S. suffriani* nov.sp., (21) habitus lateral; *S. complanatus* nov.sp., (22) habitus lateral; *S. gibbosus* nov.sp., (23) habitus lateral.



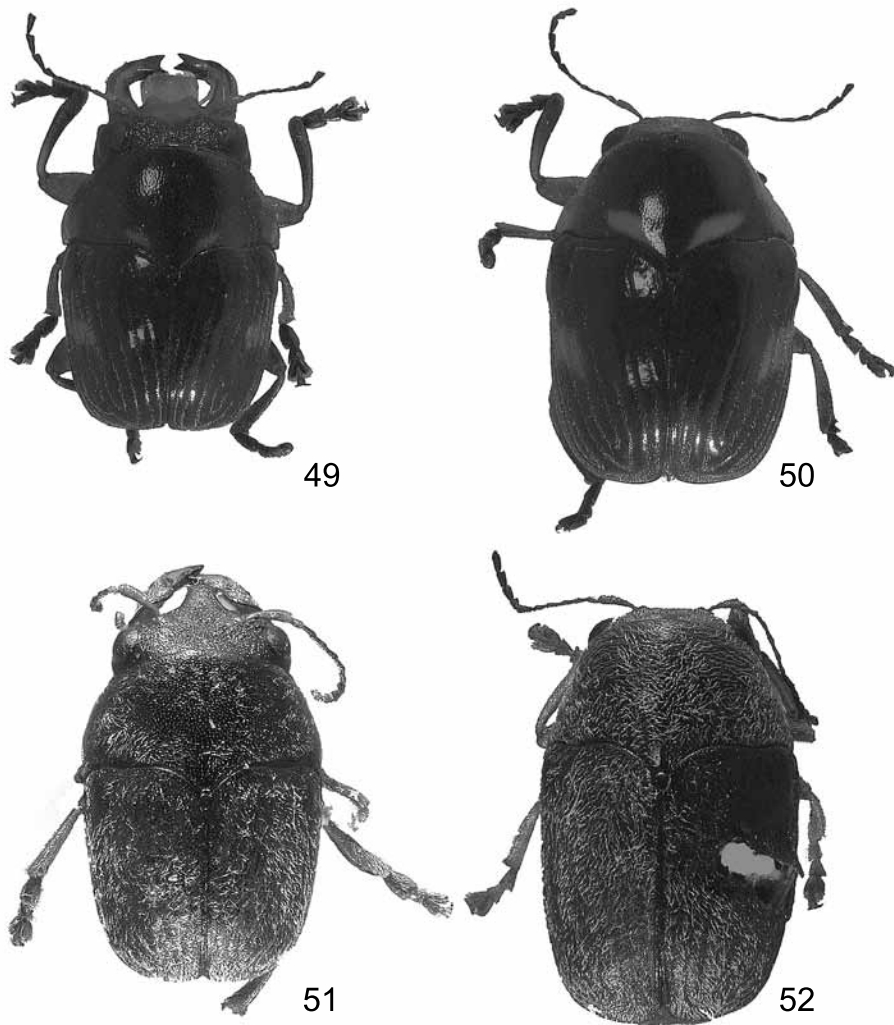
Figs 24-32: *Scaphodius* spp., male head frontal; (24) *S. striaticollis* (MONTROUZIER); (25) *S. montrouzieri* nov.sp.; (26) *S. bituberculatus* nov.sp.; (27) *S. suffriani* nov.sp.; (28) *S. amieus* nov.sp.; (29) *S. megalognathus* nov.sp.; (30) *S. joliveti* nov.sp.; (31) *S. pictipennis* FAUVEL; (32) *S. forcipatus* (BALY).



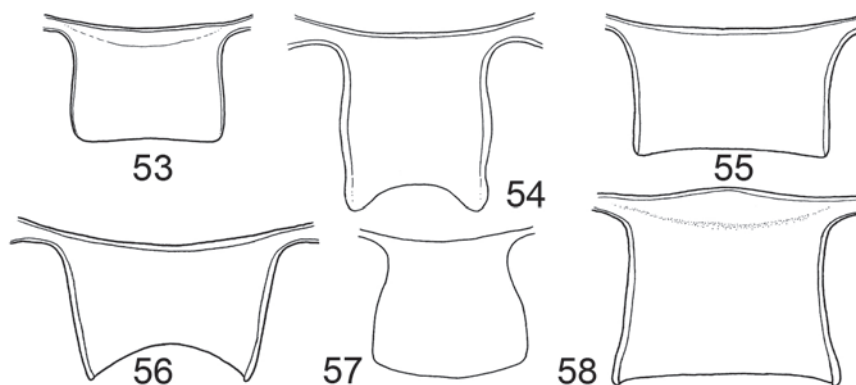
Figs 33–43: *Scaphodius* spp.; *S. striaticollis* (MONTROUZIER), (33) kotpresse dorsal (34) kotpresse ventral; *S. pictipennis* FAUVEL; (35) kotpresse dorsal (36) kotpresse ventral; *S. gibbosus* nov.sp., (37) kotpresse ventral (38) kotpresse dorsal (39) spermatheca; *S. montrouzieri* nov.sp.; (40) spermatheca; *S. complanatus* nov.sp., (41) spermatheca; *S. megalognathus* nov.sp., (42) spermatheca; *S. bituberculatus* nov.sp., (43) vaginal sclerite.



Figs 44–48: *Scaphodius* spp., habitus; *S. striaticollis* (MONTROUZIER), (44) male; *S. pictipennis* FAUVEL, (45) male; *S. bituberculatus* nov.sp., (46) male; *S. amieus* nov.sp., (47) male (48) female.



Figs 49-52: *Scaphodius* spp., habitus; *S. megalognathus* nov.sp., (49) male (50) female; *S. forcipatus* (BALY), (51) male (52) female.



Figs 53-58: *Scaphodius* spp., prothorax; (53) *S. striaticollis* (MONTROUZIER); (54) *S. forcipatus* (BALY); (55) *S. bituberculatus* nov.sp.; (56) *S. amieus* nov.sp.; (57) *S. complanatus* nov.sp.; (58) *S. joliveti* nov.sp.

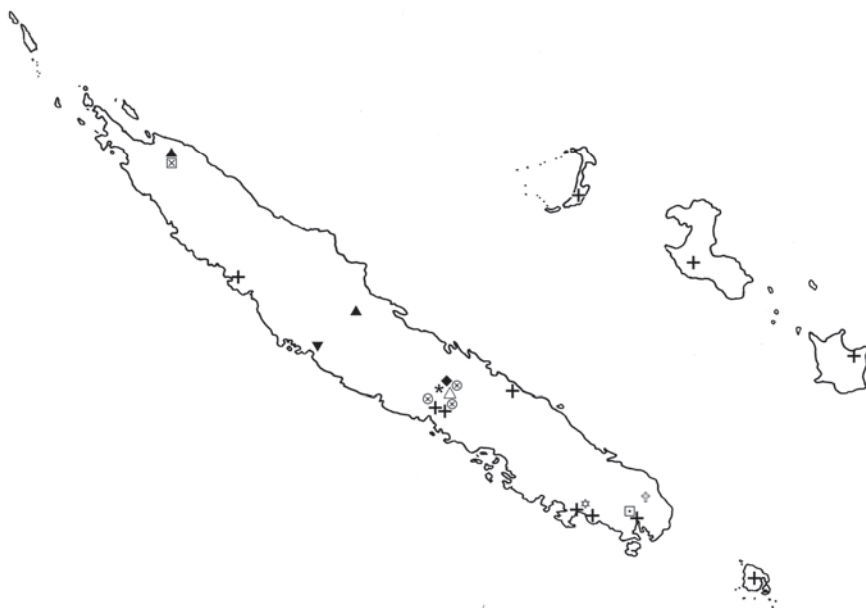
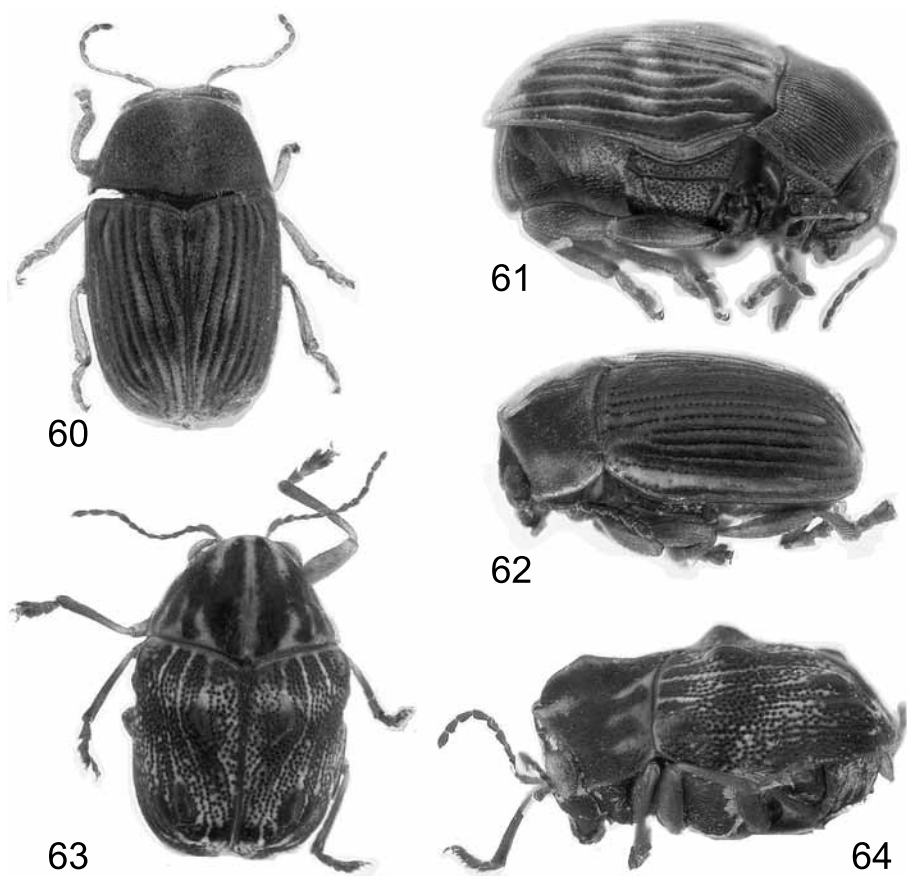


Fig. 59: Distribution of *Scaphodius* spp.; (cross) + = *striaticollis* (MONTROUZIER), (black inverse triangle) ▼ = *S. suffriani* n. sp., (white triangular) △ = *S. montrouzieri* n. sp.; (star) ★ = *S. gibbosus* n. sp.; (black square) ◆ = *S. complanatus* n. sp.; (black triangle) ▲ = *S. bituberculatus* n. sp.; (circle with cross within) ⊗ = *S. amieus* n. sp.; (square with cross within) ⊠ = *S. megalognathus* n. sp.; (cross) ⋈ = *S. joliveti* n. sp.; (six-star) ☆ = *S. pictipennis* FAUVEL; (square with central dot) ◻ = *S. bifasciatus* FAUVEL.



Figs 60-64: *Scaphodius* spp., habitus; *S. suffriani* nov.sp., (60) female, dorsal; *S. montrouzieri* nov.sp., (61) male, lateral; *S. complanatus* nov.sp., (62) female, lateral; *S. gibbosus* nov.sp., (63) female, dorsal; (64) female, lateral.

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