

COLEOPTERA : CANTHARIDAE, MALACHIIDAE
AND DASYTIDAE FROM NEW CALEDONIA,
NEW HEBRIDES AND FIJI IN BISHOP
MUSEUM, HONOLULU

By W. Wittmer
HERRLIBERG-ZÜRICH

Family CANTHARIDAE

1. *Caccodes marquesanus* (Blair)

New Hebrides : Efate I. (NW), Limestone Plateau, N of Maat, 100 m, 18.VIII.1957, 1 ♂ ;
19.VIII.1957, 1 ♀ ; 20. VIII. 1957, 1 ♂, J. L. Gressitt.

DISTRIBUTION : See *Ins. Micronesia* 16 : 69, 1958. This species is new for the New
Hebrides.

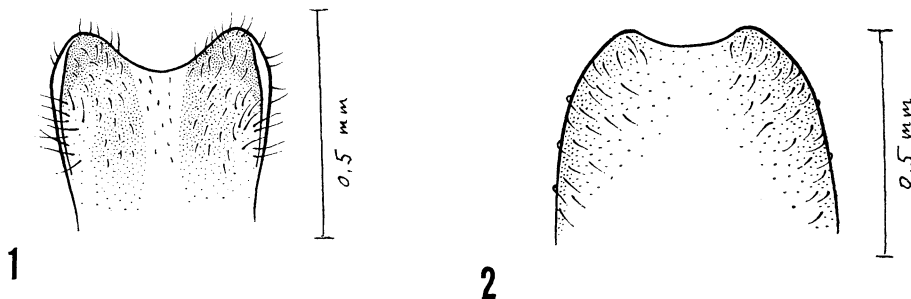
2. *Caccodes oceaniae* (Bourg.).

New Caledonia : Anse Vata, Ifo, 1. X. 1958, 1 ♀, C. R. Joyce.

3. *Sphaerarthrum oceaniae* (Bourg.), n. comb. Fig. 2.

Cantharis oceaniae Bourg., 1897, Bull. Soc. Ent. Fr. : 73.

Discodon ruei Pic, 1938, Rev. France Ent. 5 : 173.



1. Part of the specimens on which this paper is based was collected during fieldwork supported
by a National Science Foundation grant (G 2127) to Bishop Museum.

Anisotelus oceaniae: Wittmer, 1961, Ent. Arb. Mus. Frey **12**:363.

The Muséum de Paris has 2 ♀ ex coll. Bourgeois, one with a label "Mallicolo" and the other with a label "Santo Fr.". I have been able to study quite an abundant material of both localities from the Bishop Museum and from the British Museum and extracted the copulatory organ from a number of ♂♂. It resulted that the organs from the ♂♂ from Espiritu Santo are constantly different from those from Malekula. For this reason I am designating as allotype the specimen from Malekula ex coll. Bourgeois. Pic described from Malekula a *Discodon ruei*, which is identical with *oceaniae*. Therefore *Discodon ruei* Pic must be considered a synonym of *oceaniae* Bourg.

DISTRIBUTION: New Hebrides: Malekula, 1 ♀ coll. Bourgeois (Paris Mus.; Allotype); Malekula, XII.1929-II.1930, L. E. Cheesman (BMNH); Malekula, Ounua, III-IV. 1929, Cheesman (BMNH); Malekula, Tenmaru, 14. IX. 1958, 1 ♀, Borys Malkin (BISHOP).

4. *Sphaerarthrum oceaniae* ssp. *auberti* (Pic) n. comb.

Discodon auberti Pic, 1938, Rev. Fr Ent. **5**:172

Discodon auberti var. *signatithorax* Pic, l. c. **5**: 173.

The copulatory organ of *Discodon auberti* Pic, of which I examined the type in Paris differs so little from *oceaniae* (Bourg.), that I consider *auberti* Pic and its variety *signatithorax* Pic as a subspecies of *oceaniae*.

The subspecies has been recorded so far only from Tanna I. Its external appearance is conspicuous because the legs are uniformly red-orange with only the tarsi dark, the prothorax is red-orange or sometimes with the beginning of a small dark spot in the middle, either on the anterior border or on the basal border, very seldom on both.

DISTRIBUTION: New Hebrides: Tanna I., E. Aubert de la Rüe, (Holo-, Allo- and Paratypes in Muséum de Paris, 1 Paratype in Wittmer coll.); Tanna I., IX. & X. 1925, P. A. Buxton & G. H. Hopkins (BMNH); Tanna I., IX. & X. 1930 L. E. Cheesman (BMNH);

5. *Sphaerarthrum efateense* Wittmer, new species Fig. 3-4.

♂. Black, front portion of head, beginning at insertion of antennae, reddish, 1st segment of antenna, sometimes also 2nd, specially on underside, paler; prothorax red-orange with an irregular, longitudinal spot, broadened on anterior and basal border and sometimes interrupted by a small clear spot in middle before base; femora usually red-orange, seldom brownish, tibiae usually darkened.

Head with eyes narrower than prothorax, frons slightly, almost triangularly depressed above each insertion of the antennae, forming a slight, somewhat oblique impression above each insertion, surface finely, dispersed punctate and smooth between the punctures, pubescence short, not very dense. Antenna not very long, surpassing hind coxa by about 1 segment, segments broadened only slightly towards apex, segment 2 about 1/3-1/4 shorter than 3, 4 almost as long as 2 and 3 combined, 5 and following a trifle shorter than 4. Prothorax (fig. 3) broader than long, sides almost parallel, foldings in posterior angles slightly prominent, anterior angles rounded, porus quite visible, lobe in anterior angle very close to border, disc with 2 little pronounced bumps which are separated in middle by a shallow longitudinal impression, surface of about the same puncturing and pubescence as head. Elytra almost parallel, obsoletely wrinkled with traces of 1

or 2 longitudinal costae. Copulatory organ as in fig. 4.

♀. Of the same coloring as the ♂.

Length: 6-7 mm.

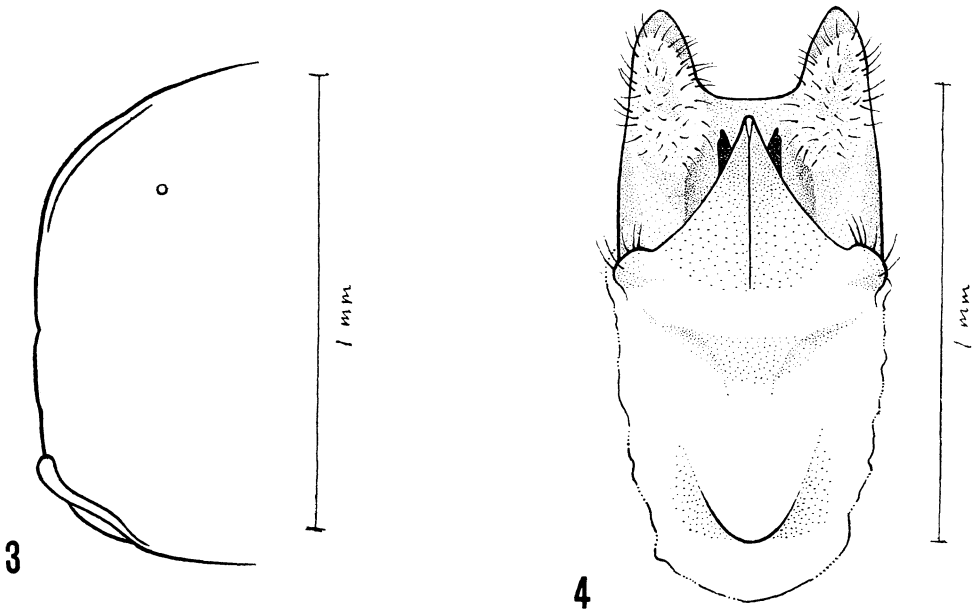
DISTRIBUTION: New Hebrides: Efate I. (NW), Maat, Ambryn village, 3 m, 15-22. VIII. 1957, J. L. Gressitt (Holo- BISHOP 7635, Allo- and Paratypes; BISHOP); Efate I. (NW), Limestone Plateau, N. of Maat, 100 m, 16-22. VIII. 1957, Gressitt (Paratypes: BISHOP and Wittmer coll.)

This species is closely related to the other species of *Sphaerarthrum* occurring in the New Hebrides. The species can be easily recognised by the front border of the basal piece dorsal part of the copulatory organ which is broadly and deeply emarginate.

6. *Sphaerarthrum santoense* Wittmer, new species Fig. 1.

The specimens from Espiritu Santo I. cannot be separated externally from *oceaniae* (Bourg.), but the front border of the basal piece dorsal part of the copulatory organ is always of a different shape (fig. 1), more strongly and broader cut out than in *oceaniae* (fig. 2). Furthermore its sides are a little raised and divergent in *santoense*, narrowed towards the tip in *oceaniae*.

Length: 6-7 mm.



DISTRIBUTION: New Hebrides: Espiritu Santo I (SW), Namatasopa, 300 m, 28-30. VIII. 1957 and 1. IX. 1957, J. L. Gressitt, (Holo-, BISHOP 7635, Allo- and Paratypes; BISHOP & 2 Paratypes in Wittmer coll.); Espiritu Santo I, Baldwin Bay, 28-30. IX. 1958, Borys Malkin

(BISHOP); Espiritu Santo I., Hill E. of Luganville, 100 m, 6.IX.1957, J. L. Gressitt (BISHOP); Santo, VIII-IX. 1929, L. E. Cheesman (BMNH).

Family MALACHIIDAE

It should be mentioned here that the species described as *Carphurus* in this paper can be placed only provisionally into this genus. Only the genus *Carphuroides* is well characterized by its smooth, uniformly and slightly convex prothorax, which is not transversely depressed before the base. Regarding the other genera, like *Carphurus*, *Microcarphurus*, *Neocarphurus* etc. still many doubts exist regarding the generic characters. About 3/4 of all the Carphurini described heretofore, and they may number at present approximately 450 species, are from Australia. Several genera seem to be endemic in Australia, but several of them are of doubtful interpretation, are synonyms or might also occur outside Australia. Therefore a revision of the Australian forms is necessary together with all the genera. Only this work would provide us the solid basis for classifying also the Carphurini of the other regions where this very interesting insect group occurs.

1. *Carphurus vagemaculatus* Wittmer, new species

♂. Dark brown, except clypeus, mouthparts, basal segments of antennae, base of prothorax and scutellum, testaceous, elytra testaceous with 1 brown basal vitta extending from humeri towards suture, touching neither the sides nor suture and a brown, transverse, M-shaped postmedian vitta, extending from side to side, its maximum breadth lying on sides, all 3 vittae poorly defined, legs testaceous, upper 1/2 of hind femur darkened.

Head with eyes slightly broader than prothorax, frons slightly convex, with 2 very shallow depressions above antennal sockets, upper surface somewhat rugose. Antenna elongate, segment 7 reaching humerus, 2 broader than long, shorter than 3, from 3 onwards slender, width increasing only slightly towards apex, 4 distinctly longer than 3, 5 about same length as 4, 8 slightly longer than 5, 9-11 missing. Prothorax about as long as wide, sides constricted towards base, quite convex and transversely depressed before base, on each side before base and not quite reaching it, with a short, longitudinally raised elevation, but without being sharp like a carina as in other species; upper surface in front of transverse base very strongly and deeply punctate, Elytra leaving 2 or 3 abdominal segments uncovered, sides almost parallel, only slightly broadened towards apex, punctures on disc about same as on prothorax, but vanishing gradually towards sides and apex. Pubescence of head, prothorax and elytra very short, not very dense.

Length: 1.7-2.0 mm.

DISTRIBUTION: Fiji, Viti Levu, Lami, IV. 1951, N. L. H. Krauss, (Holotype; BISHOP 7637).

This species is similarly colored as *Microcarphurus evansi* Pic, which was described from Fiji (Taveuni, Waiyevo). The new species can be easily distinguished by its longer antennae, its much stronger punctate prothorax and elytra. The elytra of *M. evansi* are practically unpunctate, according to the type in the Paris Museum, although the original description says: "elytris minute et sparse punctatis."

2. *Carphurus carinatus* Wittmer, new species

♂. Black, only front part of head, 1st 2 antennal segments and all femora with a tendency to become testaceous.

Head with eyes wider than prothorax, frons between eyes almost completely applanate, upper surface shining, completely smooth. Antenna long, quite stout, reaching apex of elytron, segments 3-11 thickened towards apex, but maximum width lying before tip, because segments rounded outwardly, this character is more apparent on 3-7 than on last segments, 2 broader than long and shorter than 3, 4 longer than 3, 5 about same length as 4, 6-10 of about equal length, 11 only slightly longer than 10. Prothorax a little longer than broad, sides gradually constricted towards base, quite strongly convex and transversely depressed before base, on each side, beginning at base with a short, longitudinal carina, space between edge of carina and sides irregularly and transversely strigose, rest of upper surface, shining, completely smooth. Elytra leaving 2 to 3 abdominal segments uncovered, sides broadening a little towards apex, puncture all over surface strong and quite deep, except apical 1/6 where punctures disappear completely, distance from one puncture to next about diameter of a puncture. Head and prothorax almost without pubescence, elytra briefly and sparsely pubescent, hairs semierect.

Length about 2 mm.

DISTRIBUTION: New Hebrides, Espiritu Santo I. (SW), below Namatasopa, 250 m, 1. IX. 1957, J. L. Gressitt (Holotype; BISHOP 7638).

This species is closely related to *C. emarginatus* n. sp. from Fiji, but *carinatus* is bigger with the upper surface completely black, and with prothorax not punctate. In *emarginatus* the elytra have usually 1 whitish spot at humeri and at apex, the prothorax very often reddish on disc and puncturing still visible, nearly extinct, and with elytra even more strongly punctate than in *carinatus*.

3. *Carpurus emarginatus* Wittmer, new species

♂. Head testaceous or reddish testaceous, gradually darkening towards base; antenna dark brown, 1st 2 to 3 segments testaceous with upper surface of 2nd usually darkened, extreme tip of last with tendency of becoming testaceous; prothorax dark brown, anterior and convex part with a reddish-brown patch of variable extent; scutellum and elytra dark brown, the latter with 1 whitish or yellowish spot on each humerus, reaching extreme base, but not suture, laterally it reaches the sides under the humeri, but not always, apex yellowish to light brown, maximum width of the light coloring is on suture and becomes narrower towards sides; the femora and tarsi usually testaceous and tibiae more or less darkened.

Head with eyes wider than prothorax, frons slightly convex, sometimes with a shallow punctiform depression between eyes, upper surface shining, almost completely smooth. Antenna quite elongate but not reaching tip of elytron, segments, beginning from 3 onwards, dilated and rounded outwardly towards apex, maximum width before apex, 3-7 more strongly rounded than following, 2 a little shorter than 3, 4 slightly longer than 3, 5-10 subequal, 11 longer than 10. Prothorax slightly longer than wide, sides constricted towards base, quite convex in front of transversely depressed base, on each side, beginning at base with a short, longitudinal carina, space between edge of carina and sides irregularly and transversely strigose, rest of upper surface shining and scattered with a few extinct punctures. Elytra leaving 3 to 4 abdominal segments uncovered, sides almost parallel, puncture all over surface very strong and deep, except apical part where puncturing gradually disappears completely, distance from one puncture to next very often a little less than diameter of a puncture. Elytra only slightly more pubescent than head and prothorax. Last tergite very wide and short, deeply and broadly emarginate in middle, emargination in middle almost touching penultimate tergite.

♀. Always of darker color than ♂. This refers to head, to prothorax, on which the light patch on the disc is completely missing or there is only a hint of a patch, and elytron, where

testaceous area at apex is reduced. Legs dark with tarsi only, bases of femora and coxae testaceous. In one specimen an isolated light brown spot is found on each elytron before apex instead of common testaceous area and in another specimen from Vanua Levu I., Navakuru to Nakawanga apical spot is very big and almost connected with humeral spots, in this same specimen the 3 to 4 basal antennal segments testaceous and coloration of legs is as in ♂.

Head less broad than in ♂, last tergite much broader, tip cut straight.

Length: ca 1.7-2.00 mm.

DISTRIBUTION: Fiji: Viti Levu: Lami, IV. 1951 & I. 1953, N. L. H. Krauss (Holo- BISHOP 7639, Allo- and 4 Paratypes); 2, Viti Levu, Tholo-i-Suva, 2. 1951, N. L. H. Krauss; Viti Levu, Nagali, 11. 1957, Krauss; 1, Vanua Levu I., Navakuru to Nakawanga, 7. X. 1955, J. L. Gressitt. (Holo-, Allo- and Paratypes, BISHOP; Paratypes also Wittmer coll.)

More robust than *C. carinatus* n. sp and to be distinguished from this species by its particular coloring and the less smooth prothorax.

4. *Carphurus bispinosus* Wittmer, new species

♂. Head testaceo-orange, genae usually narrowly darkened, antenna dark, basal 3-5 segments more or less testaceous, prothorax testaceo-orange, basis narrowly bordered with yellow to whitish; scutellum and elytra testaceo-orange to brown, apical 1/2 turning gradually into black, dark apical coloring extending sometimes along suture up to scutellum, leaving sides with humeri testaceous to a greater or lesser extent; abdomen testaceo-orange, legs dark, femora usually of lighter color, specially front femur which is almost always yellow.

Head with eyes wider than prothorax, frons almost flat, upper surface shining only slightly, moderately opaque, with isolated long, erect, dark hairs and a short pubescence which is almost invisible. Antennae quite long and robust, segments 3-10 rounded and widened inwardly towards apex, 2 wider than long, 3 and following up to 10 of increasing length. Prothorax almost as wide as long, widest part just before middle, more strongly rounded and narrowed towards base than towards front, disc moderately convex, base transversely depressed, same structure and pubescence as head. Elytra leaving about 4 abdominal segments uncovered, sides almost parallel, surface completely opaque, more strongly furnished with long, erect, strong hairs than head and prothorax. Penultimate tergite feebly rounded and emarginate over whole width, each side produced into a narrow, spiniform process, slightly bent inwardly. Last tergite wider than long, narrowed conically towards apex, apex cut straight, almost imperceptibly emarginate. Tibiae of hind leg normal.

♀. Of the same coloring as ♂. Penultimate tergite without spiniform process at sides, ultimate sternite completely divided along middle. Tibiae of hind legs slightly compressed and bent, narrowed towards tip.

Length: 2.3-2.5 mm.

DISTRIBUTION: New Hebrides: Efate I. (NW), Maat, Ambryn village, 3 m, 15.VIII.1957, J. L. Gressitt (Holo-, BISHOP 7640, and Paratypes); Efate I. (NW), Limestone Plateau, N of Maat, 100 m, 17-20. VIII. 1957, Gressitt (Allo- and Paratypes); Espiritu Santo I. (SW), below Namatasopa, 250 m, 1. IX. 1957, Gressitt (Paratypes). (Holo-, Allo & Paratypes, BISHOP; paratypes also in Wittmer coll.)

This species is allied with *C. setifer* Wittm. and has the opaque sculpture of the elytra in common with this species. *Bispinosus* is distinct through the bicolored elytra, the

penultimate tergite in the male, provided with a spiniform process on each side and by the form of the hind tibia in the female.

5. **Carphurus paulomarginatus** Wittmer, new species

♂. Dark brown to black, 2 basal segments of antennae, clypeus and basal border of prothorax very narrowly testaceous. One specimen with front of prothorax very narrowly and sides of elytron underneath humeri slightly testaceous.

Head with eyes only slightly wider than prothorax, frons quite flat, anterior portion of head with a faint longitudinal elevation, which can best be observed between insertions of antennae and disappearing gradually towards frons, upper surface smooth, furnished sparsely with hair puncture (64x). Antennae elongate, segment 1 oval, almost as long as 2 and 3 together, 2 noduliform, rather wider than long, 3 and 4 subequal, 5 and following imperceptibly longer than 4. Prothorax about as long as wide, sides quite strongly rounded, somewhat narrowed just before base and also transversely depressed at this place, anterior portion convex, upper surface shining, smooth, sparsely pubescent, hair puncture rather less distinct than on head. Elytra leaving 3 to 4 abdominal segments uncovered, slightly widened towards apex, almost completely smooth, with scattered, coarse and almost extinct puncture. Last tergite very short, tip rounded. Length about 2 mm.

DISTRIBUTION: New Hebrides: Efate I., Limestone Plateau, N of Maat, 100 m, 22. VIII. 1957, Gressitt (Holotype, BISHOP 7641; idem 17. VIII. 1957, Gressitt, Paratype in Wittmer coll.)

This species is closely allied to *C. nasutus* Wittm. and can be distinguished by the dark head and prothorax, parts which are testaceous-orange in *nasutus*. The elytron of *nasutus* have a faint bluish gloss and the coarse, extinct puncture of the elytron is missing in *nasutus*.

6. **Carphurus** sp.

1 ♀, of a small black form, related to *Microcarphurus atriventris* Pic was found at: Fiji: Viti Levu, Navai, I. 1951, N. L. H. Krauss. Without the ♂ it cannot be identified for the moment.

KEY TO CARPHURINI ♂ OCCURRING IN THIS AREA

- 1. Antennae strongly dentato-pectinate in ♂ or serrate in ♀.....2
Antennae more or less filiform.....3
- 2. Prothorax almost smooth, not transversely depressed before base. Antennae strongly dentato-pectinate in ♂, serrate in ♀. Color black, including legs, only basal segments 1 to 3 of the antennae are testaceous (Fiji, Samoa) **Carphuroides pectinatus** Sharp
Prothorax strongly and transversely depressed before base. Antennae feebly serrate in ♀. Black, with basal 6 segments of antennae, base of prothorax, an indeterminate band across middle of elytra and legs yellow (after description). (Samoa).....
..... **Carphurus flavipes** Blair
- 3. Sides of prothorax with a short longitudinal carina near base (in *vagemaculatus* with only a hint of a carina4
Sides of prothorax without a longitudinal carina near base.....7
- 4. Prothorax punctate, carina on each side very short, not reaching base or with only a

- hint of a carina..... 5
 Prothorax smooth impunctate or puncturing completely extinct, carina well developed 6
5. Elytra practically impunctate, antennae shorter (Fiji) **Microcarphurus evansi** Pic
 Elytra as strongly punctured as front part of prothorax, antennae longer (Fiji)
 **Carphurus vagemaculatus** Wittm.
6. Prothorax completely impunctated, shining. Body dark brown or blackish, only 1st 2
 antennal segments, head in front and femora with a tendency of becoming testaceous
 (New Hebrides)..... **Carphurus carinatus** Wittm.
 Prothorax with puncturing almost completely extinct. Dark brown, antennal segments 1 to
 3 and last to some extent, head almost completely testaceous, elytra normally with
 a whitish or yellow spot on each side at humeri and a yellowish spot at apex (Fiji)
 **Carphurus emarginatus** Wittm.
7. Upper surface of head, prothorax and elytra completely opaque, unpunctured. Penulti-
 mate tergite emarginate, each side ending in a spiniform process in ♂ (New Hebrides)
 **Carphurus bispinosus** Wittm.
 Upper surface of head, prothorax and elytra shining, the latter with coarse, somewhat
 extinct puncturing. Penultimate tergite normal, not emarginate and without spiniform
 processes at sides in ♂ (New Hebrides)..... **Carphurus paulomarginatus** Wittm.

Family DASYTIDAE

1. **Acanthocnemus nigricans** Hope

New Caledonia : Bourail, 5. II. 1963, J. L. Gressitt ; La Foa, 3. II. 1945, H. E. Milliron.
 New Hebrides : Malekula, Tenmaru, 14. IX. 1958, Borys Malkin.