

Ryszard BIELAWSKI

**Four new species of the genus *Afidentula* KAPUR (Coleoptera,
Coccinellidae) from New Guinea**

**Cztery nowe gatunki rodzaju *Afidentula* KAPUR (Coleoptera,
Coccinellidae) z Nowej Gwinei**

**Четыре новых вида рода *Afidentula* KAPUR (Coleoptera, Coccinellidae)
из Новой Гвинеи**

[With 48 text-figures]

By the kindness of Dr. J. T. WIEBES from the Rijksmuseum van Natuurlijke Historie in Leiden I have received a rich material of *Coccinellidae* from New Guinea which revealed several undescribed species of the genus *Afidentula* KAPUR. This material has been supplemented by specimens, belonging to one of the undescribed species, which had been sent to me by Dr. J. L. GRESSITT from the Bernice P. Bishop Museum in Honolulu. I express my heartest thanks to both of the persons mentioned.

The material examined is kept at the Bernice P. Bishop Museum in Honolulu, at the Institute of Zoology of the Polish Academy of Sciences in Warszawa and at the Rijksmuseum van Natuurlijke Historie in Leiden.

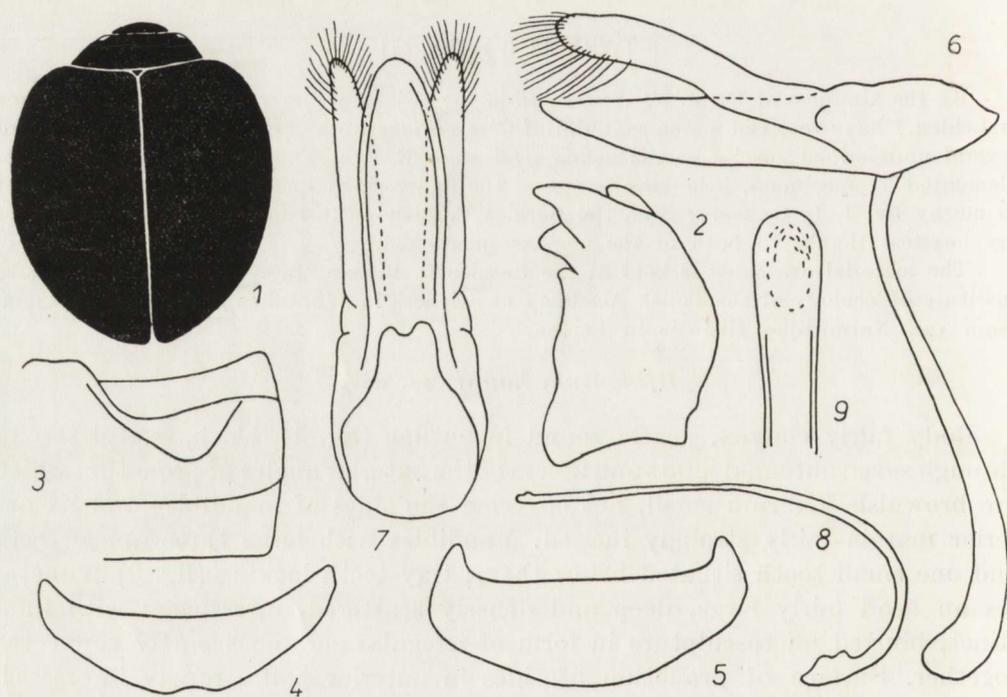
***Afidentula kapuri* sp. nov.**

Body fairly convex, nearly round in outline (fig. 1), black, except second through seven antennal joints and apices of the anterior angles of pronotum which are brownish. Labrum small, not covering the sides of mandibles and its anterior margin fairly strongly incised. Mandibles with large three apical teeth and one small tooth situated below them; tiny teeth lacking (fig. 2). Punctures on head fairly large, deep and densely scattered, interspaces with indistinct, blurred microsculpture in form of irregular scratches partly connected together. Surface of pronotum at sides in anterior half strongly impressed. Lateral margin regularly arched, anterior margin curved on half its length. Punctures on pronotum slightly smaller than those on head and less numerous. Interspaces with irregular scratches concentrated mainly near punctures; in certain specimens the microsculpture strongly blurred. Scutellum

elongate. Lateral bending of elytra broad. Humeral tubercles large, but feebly protruding. Apical angle of elytra rounded. Large punctures on elytra deep and several times larger than small ones, irregularly scattered and not numerous. Small punctures shallow, distances between them exceeding their diameter. Interspaces shiny with microsculpture only in form of fairly long, irregular scratches. Pubescence scarce, hairs fairly long, silvery and strongly erect. Epipleures of elytra impressed on their whole length.

Femoral line (fig. 3) almost complete, disappearing near the anterior margin, its curvature reaching half of segment length. Form of femoral line varies slightly with specimens. Last abdominal sternite of male (fig. 4) short, on about a half of its posterior margin slightly incised, pilosity fairly long and dense. Last abdominal tergite of male (fig. 5) with basal processes narrow and short, its posterior margin very slightly arched in the middle, straight at sides; pilosity long and profuse. Last abdominal sternite of female (fig. 10) short with posterior margin irregularly arched and slightly convex at half its width; pilosity short and very dense. Last abdominal tergite of female (fig. 11) with basal processes short and pilosity very long and profuse.

Body length 6.0–7.2 mm.



Figs. 1–9. *Afidentula kapuri* sp. n. Fig. 1 – Body outline, Fig. 2 – Mandibel, fig. 3 – Femoral line, fig. 4 – Last abdominal sternite of male, fig. 5 – Last abdominal tergite of male, figs. 6–7 – Male genitalia, fig. 8 – Syphon, fig. 9 – Apex of syphon, dorsal view.

Male genitalia (figs. 6 and 7). Penis slightly longer than parameres. Length of penis 0.69–0.76 mm., its maximum width 0.15–0.18 mm. Penis viewed laterally almost straight, with only slightly bent apex. Upper margin straight, or even a little concave, the lower one slightly arched. Penis viewed ventrally broad, its maximum width being at half its length, with broadly rounded apex. Parameres broad, slightly bent at half their length, pilosity fairly profuse and long. Basal part of parameres elongated. Trabes narrow, slightly bent S-like and very long, its length exceeding that of penis and basal part taken together. Syphon (fig. 8) narrow and very long, with a small syphonal sack. Apical part of syphon as on fig. 9.

Female genitalia (fig. 12). Genital plates situated transversally, 0.25–0.27 mm long and 0.45–0.47 mm broad. Sexual tubercles very small, hairs fairly long but not particularly numerous. Inferior margin of genital plates slightly bent before sexual tubercles, superior margin feebly sclerotized.

Holotypus: „Museum Leiden, Nieuw Guinea Exp., K. N. A. G. 1939, Araboebivak, 5. XI. 1939”, male.

Paratypes: 51 specimens, same locality as above, but collected at different times, as well as 3 specimens: „New Guinea (Neth.) Wisselmeren, 1530 m, Urapura, Kamo V., Aug. 10. 1955”.

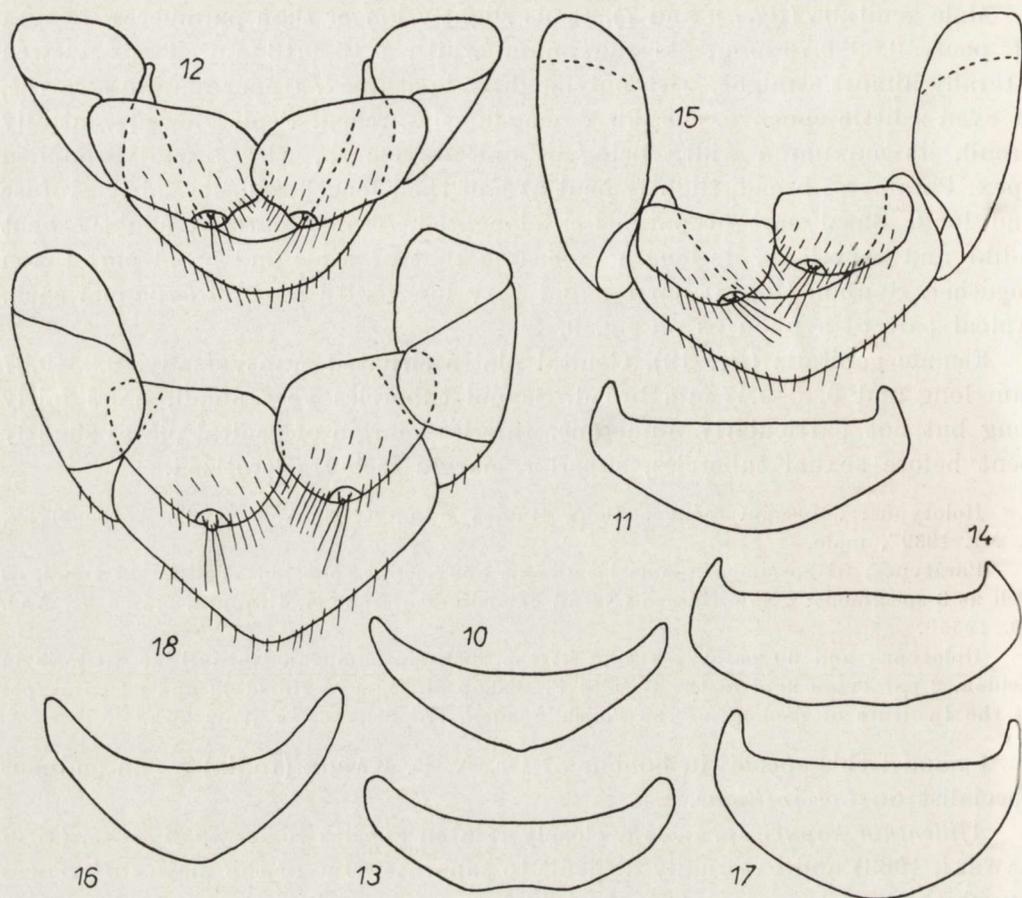
Holotypus and 30 paratypes kept at the Rijksmuseum van Natuurlijke Historie in Leiden, 2 paratypes kept in the Bernice P. Bishop Museum in Honolulu and 22 paratypes at the Institute of Zoology of the Polish Academy of Sciences in Warszawa.

I named this species in honour of Dr. A. P. KAPUR (India) — an eminent specialist on *Coccinellidae*.

Afidentula kapuri sp. n. is a closely related species to *A. nasti* BIEL. (BIE-LAWSKI, 1963) and externally difficult to separate. One of the main differences by which these two species can be told from each other is the apex of anterior angle of pronotum, brownish in *A. kapuri* sp. n. and usually black in *A. nasti* BIEL. The mentioned species also differ by their femoral line which is almost reaching the anterior margin in *A. kapuri* sp. n. and petering out far from the anterior margin in *A. nasti* BIEL. Distinct differences between these two species are also found in the form of their mandibles as well as in the structure of male genitalia. Mandibles in *A. nasti* BIEL. have, apart three apical teeth, also one large tooth situated at half of its inner edge, while in *A. kapuri* sp. n. such tooth is very small and situated near apical ones. The syphon in *A. nasti* BIEL. is short and fairly massive with elongated apex, whereas in *A. kapuri* sp. n. it is slender, very long and has a round apex. The shape of penis is also different in these two species.

Afidentula tenmana sp. nov.

Body fairly strongly convex, almost round in outline (fig. 19), black, except anterior angles of pronotum and second through eight antennal joints which are brownish. Labrum small not covering mandibles sides. Mandibles with



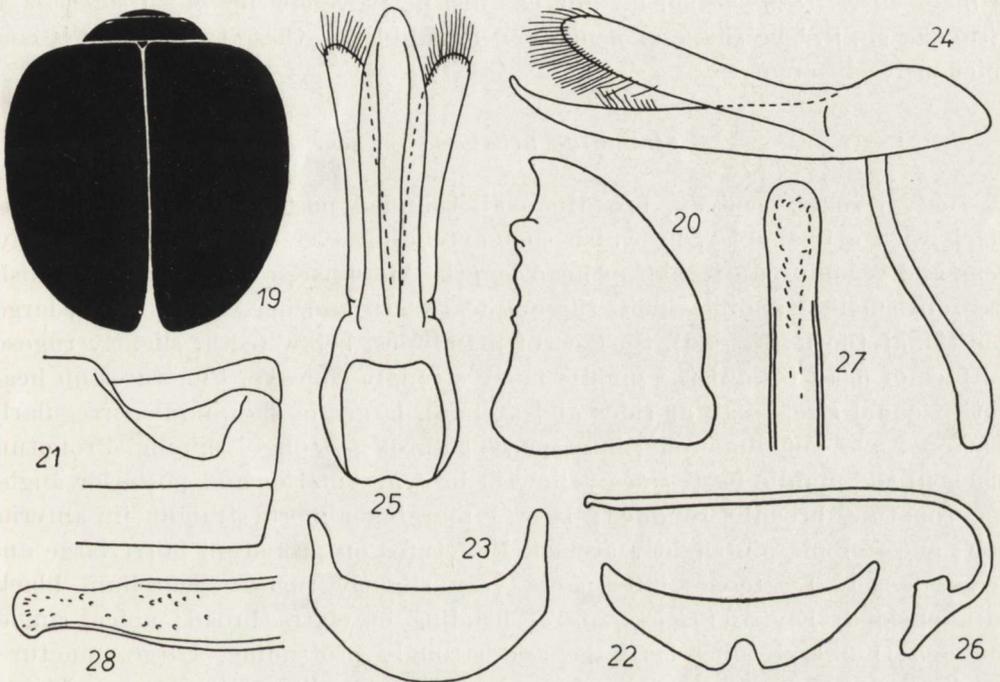
Figs. 10–18. Figs. 10–12. *Afidentula kapuri* sp. n., figs. 13–15. *Afidentula bivakana* sp. n., figs. 16–18. *Afidentula wiebesi* sp. n., figs. 10, 13 and 16 — Last abdominal sternite of female, figs. 11, 14 and 17 — Last abdominal tergite of female, figs. 12, 15 and 18 — Female genitalia

strongly reduced apical teeth (fig. 20); there are tiny prominences below them. Punctures on head small, shallow and scarce, the interspaces mat with strongly developed microreticulation, meshing deep and dense. Surface of pronotum not impressed at sides; lateral margins regularly arched, anterior one straight. Anterior angles of pronotum slightly protruding with fairly sharply pointed apices. Punctures on pronotum a little larger, deeper and denser than those on head; interspaces with delicate scratches concentrated near punctures. Scutellum parallel-sided. Lateral bending of elytra fairly broad. Humeral tubercles large and distinctly protruding. Apical angles of elytra broadly rounded. Puncturation on elytra consisting of larger and smaller punctures arranged similarly as in the preceding species; interspaces with delicate, tiny perforations. Pubescence of elytra very scarce, hairs silvery, short and sube-

rect. Epipleures impressed on their whole length. The inner tarsal claw small, triangular and shorter than the outer one.

Femoral line (fig. 21) almost complete but terminating far from anterior margin, its curvature reaching beyond half of segment length. Last abdominal sternite (fig. 22) with posterior margin deeply and broadly (on half its length) incised; pilosity short and poor. Last tergite with basal processes narrow but fairly long and with posterior margin regularly arched; pilosity profuse but hairs not particularly long.

Body length 7.1 mm.



Figs. 19–28. *Afidentula tenmana* sp. n. Fig. 19 – Body outline, fig. 20 – Mandible, fig. 21 – Femoral line, fig. 22 – Last abdominal sternite of male, fig. 23 – Last abdominal tergite of male, figs. 24–25 – Male genitalia, fig. 26 – Syphon, figs. 27–28 – Apex of syphon, dorsal and lateral view

Male genitalia (figs. 24 and 25). Penis longer than parameres. Length of penis 1.0 mm, its maximal width 0.18 mm. Penis viewed laterally gradually tapering posteriorly, its apex slightly bent towards parameres. Penis surface (facing parameres) in anterior half with few hairs. Penis viewed ventrally broad, broadest at one third of its length from the apex; from two third of its length narrowing toward apex. Apex of penis slightly rounded. Basal part elongated. Trabes narrow, slightly broadened at apex, a little shorter than penis. Syphon (fig. 26) long and slender with fairly large syphonial sack. Apex of syphon as on fig. 27 and 28.

Holotypus: „Museum Leiden, Neth. New Guinea Exp., Star Range, 1800 m., Tenma Sigin, 21. V. 1959”, male.

Holotypus kept at the Rijksmuseum van Natuurlijke Historie in Leiden.

The species by its external characters seems to stand closest to *A. kapuri* sp. n., from which it can be separated by a more distinct microsculpture on head. By its genitalia structure and the shape of last abdominal sternite *A. tenmana* sp. n. is related to *A. bivakana* sp. n.; these two species can be, however separated by the body shape which is almost rounded in *A. tenmana* sp. n. but oval in *A. bivakana* sp. n., and by the colour-pattern of pronotum which is black in *A. tenmana* sp. n., but has distinctly yellow brownish sides in *A. bivakana* sp. n. The shape of penis, and mandibles in these two species is conspicuously different.

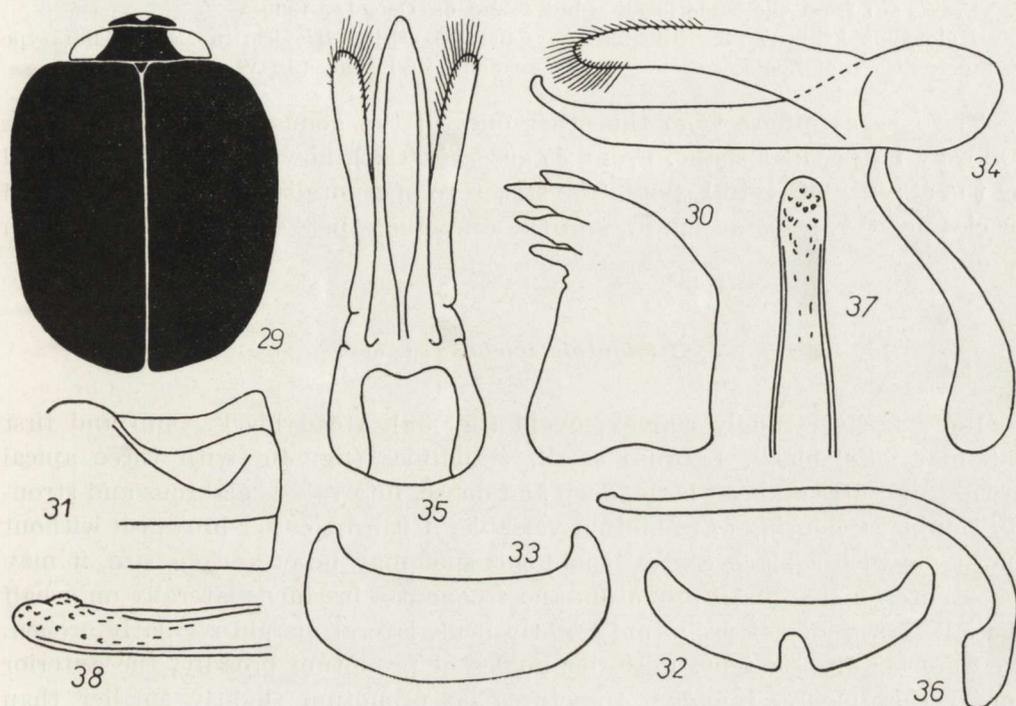
Afidentula bivakana sp. nov.

Body strongly convex, broadly oval, rounded posteriorly (fig. 29). Head black with a triangular, brownish spot extending over the whole base of clypeus and reaching up to half of head length. Antennae, except club, brownish. Labrum small. Mandibles with three apical teeth and one, below them, large, additional tooth (fig. 30). Surface of mandibles, below teeth, slightly rugose. Surface of head toward the middle fairly strongly concave. Punctures on head not of equal size, small at sides and at base, larger in the middle, irregularly scattered and not numerous; interspaces glabrous, strongly shining. Pronotum black in the middle part, sides yellowish brown. Anterior and posterior angles of pronotum broadly rounded; lateral margins almost straight in anterior half; anterior margin slightly arched. Punctures on pronotum fairly large and deep, densely scattered; interspaces very slightly rugose. Scutellum black, parallel-sided. Elytra black. Lateral bending of elytra broad; apical angles rounded; humeral tubercles large and strongly protruding. Large punctures on elytra deep, scarce and irregularly scattered; small punctures several times smaller than large ones, shallow, distances between them exceeding several times their diameter; interspaces with fairly long, sparse, singly scattered scratches. Pubescence of elytra poor, hairs clinging, short, silvery. Epipleures of elytra impressed on their whole length. Underside of body and legs except brownish black inner face of anterior femora, black. Inner tarsal claw shorter than outer one. Basal claw small, triangular.

Femoral line (fig. 31) not complete and terminating at nearly same distance from the anterior as from lateral margin, its curvature reaching beyond half of segment length. Last abdominal sternite of male (fig. 32) with posterior margin deeply and broadly emarginate at half of its length, pilosity long and profuse. Last abdominal tergite of male (fig. 33) with posterior margin regularly incised, basal processes broad but short, and with pilosity fairly long and profuse. Last abdominal sternite of female (fig. 13) with posterior mar-

gin slightly concave in the middle and with pilosity short and dense. Last abdominal tergite of female (fig. 14) long with basal processes narrow and very short, pilosity very short and not particularly profuse.

Body length of male 7.8 mm, that of female 8.3 mm.



Figs 29-38. *Afidentula bivakana* sp. n. Fig. 29 - Body outline, fig. 30 - Mandible, fig. 31 - Femoral line, fig. 32 - Last abdominal sternite of male, fig. 33 - Last abdominal tergite of male, figs. 34-35 - Male genitalia, fig. 36 - Syphon, figs. 37-38 - Apex of syphon, dorsal and lateral view

Male genitalia (fig. 34 and 35). Penis longer than parameres, length of penis 1.0 mm, breadth 0.14 mm. Penis viewed laterally equally broad on $\frac{4}{5}$ of its length, straight from base toward apex, further tapering and bending towards parameres; apex sharply pointed and bent posteriorly. When viewed ventrally penis almost of the same breadth on $\frac{4}{5}$ of its length from base toward apex, apical part gradually tapering posteriorly. Parameres broad, slightly arched, their pilosity short but fairly profuse; basal part almost round; trabes inconspicuously bent S-like, broadening from base towards apex; length of trabes equalling that of penis. Syphon (fig. 36) fairly broad and long with a small syphonal sack, apex of syphon as on figs. 37 and 38.

Female genitalia (fig. 15). Genital plates situated transversally, length

of genital plate 0.2 mm, breadth 0.36 mm; lower margin regularly arched, the upper one (facing sexual tubercle) truncated and feebly sclerotised. Sexual tubercles fairly large, their pilosity long and profuse.

Holotypus: „Leiden Museum, Nieuw Guinea Exp., K. N. A. G., 1939, Araboebivak, 5. XI. 1939”, male.

Paratype: from the same locality but found on Oct. 14, 1939.

Holotypus kept at the Rijksmuseum van Natuurlijke Historie in Leiden, paratype at the Institute of Zoology of the Polish Academy of Sciences in Warszawa.

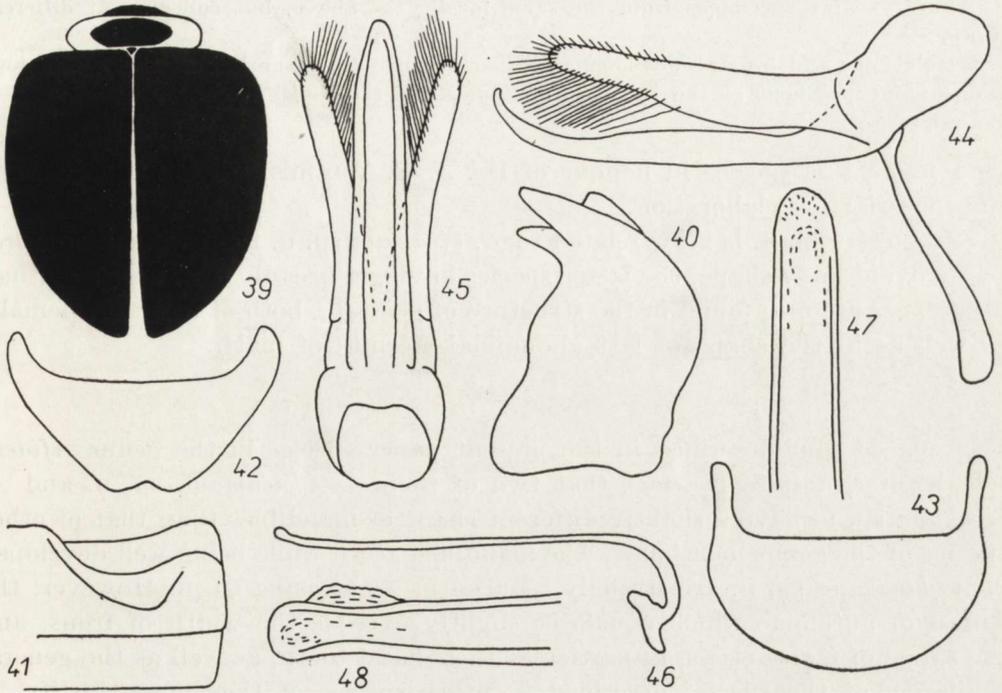
The species differs from the other ones of the genus, except *A. aruensis* (CR.), by its peculiar shape. From *A. aruensis* (CR.), however, easily separated by the absence of elytral spots. The structure of genitalia places the described species near *A. tenmana* sp. n., and the differences between the two are given before.

Afindentula wiebesi sp. nov.

Body fairly strongly convex, ovoid (fig. 39). Head black. Club and first antennal joint black. Labrum small. Mandibles (fig. 40) with three apical teeth. Punctures on head large, deep and dense, interspaces glabrous and strongly shining. Colouring of pronotum variable, it can be either brownish without marks, or with a black central spot; this spot may be of various size, it may reach anterior margin of pronotum and frequently broadens laterally on a half of its length. Sides of pronotum slightly bent, lateral margin regularly arched, the anterior one straight. Posterior angles of pronotum broadly, the anterior ones rather feebly, rounded. Punctures on pronotum slightly smaller than those on head, deep and densely scattered, interspaces glabrous, shiny. Scutellum black, parallel-sided. Elytra black. Lateral bending of elytra broad. Apical angles of elytra rounded. Humeral tubercles large and distinctly protruding. Punctures on elytra, both large and small, very deep and very dense, interspaces glabrous without microsculpture. Pubescence of elytra dense, hairs silvery, long and erect. Underside of body and legs except epipleures of pronotum and inner margin in their anterior part, brownish. Tarsal claws with a broad, triangular basal tooth.

Femoral line (fig. 41) not complete, its curvature reaching beyond the half of segment length. Last abdominal sternite of male (fig. 42) very long with posterior margin slightly but broadly incised; hairs fairly short and not numerous. Last abdominal tergite of male (fig. 43) with basal processes narrow and long, and with long and profuse pilosity. Last abdominal sternite of female (fig. 16) fairly long, strongly bent, its pilosity not particularly long but dense. Last abdominal tergite of female (fig. 17) with basal processes narrow and short, pilosity long and fairly profuse.

Body length 7.0–7.8 mm.



Figs. 39-48. *Afidentula wiebesi* sp. n. Fig. 39 - Body outline, fig. 40 - Mandible, fig. 41 - Femoral line, fig. 42 - Last abdominal sternite of male, fig. 43 - Last abdominal tergite of male, figs. 44-45 - Male genitalia, fig. 46 - Syphon, figs. 47-48 - Apex of syphon, dorsal and lateral view.

Male genitalia (figs. 44 and 45). Penis length 1.45 mm, width 0.12 mm. Penis longer than parameres, viewed laterally very slender, narrow, slightly bent at apex towards parameres; upper margin (facing parameres) slightly bent in at about half length, the lower one straight. In ventral view penis equally broad on its almost whole length, apex slightly tapering to a broadly rounded point. Parameres broad, slightly bent up, its apical (one third from apex to base) part nearly a half narrower than the remaining one. Pilosity fairly long and profuse, particularly the part from penis side. Basal part elongated and bent off obliquely in relation to the penis. Trabes narrow and short, its length slightly exceeding half of penis length. Syphon (fig. 46) narrow and long, only bent near syphonal sack, syphonal sack small but well developed. Apical part of syphon as on figs. 47 and 48.

Female genitalia (fig. 18). Genital plates situated obliquely, pear-shaped, length of genital plate 0.32 mm, breadth 0.45 mm. Sexual tubercles large, their pilosity profuse and long.

Holotypus: „Leiden Museum, Nieuw Guinea Exp., K.N.A.G., 1939, Araboebivak, 16. X. 1939”, male.

Paratypes: 9 specimens from the same locality as above, but collected at different times.

Holotypus and 5 paratypes kept at Rijksmuseum van Natuurlijke Historie in Leiden and 4 paratypes kept at the Institute of Zoology of the Polish Academy of Sciences in Warszawa.

I name this species in honour of Dr. J. T. WIEBES, who kindly sent me the material for elaboration.

A. wiebesi sp. n. is most related to *A. bivakana* sp. n. from which it differs by its ovoid body shape, the latter species having a broadly oval body. Distinct differences are also found in the structure of genitalia both of male and female, as well as in the shape of last abdominal sternite of male.

I placed four described in the present paper species in the genus *Afidentula* KAPUR, despite the fact that two of them — *A. tenmana* sp. n. and *A. bivakana* sp. n. have a slightly different shape of mandibles than that of other species of the genus mentioned. The mandibles teeth while being well developed in *A. bivakana* sp. n. are strongly reduced in *A. tenmana* sp. n. However, the length of antennae which equals or slightly exceeds the width of frons, and the shape of tarsal claws, in particular their basal tooth, as well as the general similarity of the species described to other species of the genus, justify, it seems this classification.

The genus *Afidentula* KAPUR, established by KAPUR in 1958 hitherto included only two Australian species — *A. aruensis* (CR.) and *A. nasti* BIEL. (BIELAWSKI, 1963). *A. aruensis* (CR.) occurs in the New Guinea and in the Aru island, whereas *A. nasti* BIEL. is so far known only from New Guinea. The described in the present paper species were also taken in New Guinea.

Below I give a key for the identification of all known at present species of *Afidentula* KAPUR of the Australian Region.

1. Elytra entirely black, without markings 2
- Each elytron with two large spots *A. aruensis* (CR.)
2. Body broadly oval or ovoid, pronotum brown or brown with a large black spot across the middle 3
- Body almost round in outline, pronotum either wholly black or black with brownish apices of anterior angles 4
3. Body broadly oval. Last abdominal sternite of male short with a deep incision. Last abdominal sternite of female feebly bent and with posterior margin concave *A. bivakana* sp. n.
- Body ovoid. Last abdominal sternite of male long with a shallow emargination. Last abdominal sternite of female strongly arched and with posterior margin not incised *A. wiebesi* sp. n.
4. Head mat, interspaces between punctures with a well developed microreticulation. Anterior angles of pronotum only slightly pointed *A. tenmana* sp. n.

- Head shiny, interspaces between punctures without microreticulation or with merely traces of it. Anterior angles of pronotum rounded . . . 5
- 5. Femoral line almost complete and terminating near anterior margin *A. kapuri* sp. n.
- Femoral line distinctly not complete and petering out far from the anterior margin *A. nasti* BIEL.

I tried to include into the above key such characters which would enable the student to indentify them without resorting to the microscopic slides. However, if any doubts would arise the identification should be checked upon the male genitalia or the structures of mandibles where the differences between the species are very conspicuous.

LITERATURE

- BIELAWSKI R. 1963. Monographie der *Epilachninae* (Coleoptera, Coccinellidae) der Australischen Region. Ann. Zool., Warszawa, **21**, Nr. 17: 297-461, 403 ff., 2 map.
- KAPUR A. P. 1958. *Coccinellidae* of Nepal. Rec. Ind. Mus., Calcutta, **53**, pars 3 & 4: 309-338, 12 ff.

STRESZCZENIE

W pracy niniejszej autor opisuje cztery nowe gatunki rodzaju *Afidentula* KAPUR, występujące na Nowej Gwinei. W zakończeniu podano klucz do oznaczania wszystkich gatunków tego rodzaju występujących w Obszarze Australijskim. Obecnie z tego Obszaru znanych jest sześć gatunków należących do omawianego rodzaju.

РЕЗЮМЕ

В настоящей работе автор описывает четыре новых вида принадлежащих к роду *Afidentula* KAPUR из Новой Гвинеи. В концевой части автор дает определитель к обозначению всех видов этого рода встречающихся в Австралийской Области. В настоящее время известных из этой Области является шесть видов рода *Afidentula* KAPUR.