

Lech BOROWIEC

New species, new synonyms and new records in the genus *Caryedon* SCHÖNH.
(Coleoptera, Bruchidae, Pachymerinae)

[With 36 figures]

Abstract. Three new species of the genus *Caryedon* SCHÖNH. are described: *C. beniowskii* (Madagascar), *C. danielssoni* (Thailand and Sumba Is.), and *C. proszynskii* (Ghana). *C. denticulatus* (KLUG) is redescribed. Four new synonyms are proposed: *C. cassiae* (GYLLENHAL, 1833) (= *C. minutus* (PIC, 1902)), *C. indus* (MOTSCHULSKY, 1858) (= *C. punjabensis* PAJNI et SINGH, 1977 and *C. arori* SINGH et SAINI, 1978), and *C. prosopidis* ARORA, 1977 (= *C. kizilkumensis* TER-MINASSIAN, 1978). New records for 21 species are given. Figures of male genitalia are presented for 9 species for the first time.

INTRODUCTION

The genus *Caryedon* was proposed by SCHÖNHERR in 1823 for *Bruchus serratus* OLIVIER, 1790, but the name remained forgotten during the next 105 years. Most of the species classified recently in the genus *Caryedon* were originally described in the genera *Caryoborus* and *Pachymerus*. BRIDWELL (1929) established the generic name *Caryedon* for six names of Old World *Pachymerinae*, and DECELLE (1951, 1956, 1958, 1960a, b, 1961) classified several more species in this genus. The turning-point in the knowledge of the genus *Caryedon* was PREVETT's (1965) paper. He redescribed the genus and paid attention to characteristic structures of male and female genitalia. Most species of the genus are rather uniform in their external structure, but have very different genitalia, especially the shape and number of the sclerites of the internal sac and vagina or ovipositor. The fact rendered it to possible to describe many new species within the last twenty years, but the knowledge of the distribution of most of them is not sufficient because of the

scarcity of museum materials. On the other hand, some species are actual or potential pests of cultivated plants of the families *Caesalpinaceae*, *Mimosaceae*, *Papilionaceae* and *Combretaceae*, and excite interest of quarantine services.

This paper has been based on the material preserved in the following collections (abbreviations used in the text given in brackets): Hungarian Natural History Museum, Budapest (HNHM), Institute of Zoology, Polish Academy of Sciences, Warsaw (IZPAS), Naturhistorisches Museum Basel (NMB), Staatliches Museum für Tierkunde, Dresden (SMTD), Zoologisches Museum, Humboldt Universität, Berlin (ZMB), Zoological Museum, Lund University (LU), and author's collection (LB). Three new species are described, four new synonyms are proposed, and new records for 21 species are given. Figures of male genitalia are presented for 9 species for the first time.

Acknowledgements. I would like to express my sincere thanks to Dr. M. BRANCUCCI (NMB), Dr. R. DANIELSSON (LU), Dr. R. KRAUSE (SMTD), Dr. O. MERKL (HNHM), Dr. S. A. ŚLIPINSKI (IZPAS), and Mrs. H. WENDT (ZMB) for the loan of specimens. I am grateful to Dr. J. DECELLE (Musée Royal de l'Afrique Centrale, Tervuren) for his help in determining some species and the information on synonymy.

REVIEW OF THE SPECIES

1. *Caryedon acaciae* (GYLLENHAL, 1833)

Bruchus (*Caryoborus*) *acaciae* GYLLENHAL, 1833: 97; DECELLE 1979: 329 (in *Caryedon*).
Caryoborus capicola MOTSCHULSKY, 1874: 248; DECELLE 1979: 328 (as syn.).

New records: ETHIOPIA: Lake Langano, 12 X 1980, 5 ex., 15 X 1980, 22 ex., 17 X 1980, 1 ex., leg. A. DEMETER (HNHM, LB); TANZANIA: Laiverero, 22 I 1960, 2 ex., leg. SZUNYOGHY (HNHM), Morogoro, II 1970, light trap, 1 ex., leg. T. PÓCS (HNHM); ZAMBIA: Livingstone, I 1942, 1 ex., leg. W. EICHLER (IZPAS).

Distribution: Mauritania, Senegal, Upper Volta, Niger, Chad, Cameroon, Sudan, Ethiopia, Saudi Arabia, Somalia, Kenya, Tanzania, Rwanda, SE Zair, Angola, Namibia, Mozambique, South Africa (Natal, Transwaal, Swaziland). New to Zambia. Recorded also from India (ARORA 1977) but this record needs confirmation. One of the most common Afrotropical species, feeding on seeds of several *Acacia* species. The male and female genitalia were figured by DECELLE (1975).

2. *Caryedon albonotatum* (PIC, 1898)

Caryoborus albonotatus PIC, 1898: 371; PREVETT 1965: 530 (in *Caryedon*).

New record: NIGERIA: Mubi, Gongola St., 18 XI–9 XII 1979, 1 ex., leg. Polish Students' Exp. (LB).

Distribution: hitherto known from Nigeria only. The genitalia were figured by PREVETT (1965).

3. *Caryedon alluaudi* (ALLARD, 1895)

Caryoborus alluaudi ALLARD, 1895: CLIV; DECELLE 1965: 223 (in *Caryedon*).

New record: MADAGASCAR: near Tamatave, XI 1904, 1 ex., leg. VOELTZKOW (ZMB).

Distribution: hitherto known only as the type specimen collected in Diego Suarez (N Madagascar). Male genitalia very characteristic, internal sac without large sclerites (fig. 11).

4. *Caryedon atrohumerale* PREVETT, 1965

Caryedon atrohumerale PREVETT, 1965: 538.

New record: ZAMBIA: Livingstone, VI 1942, 1 ex., 6 X 1942, 1 ex., 29 XI 1942, 1 ex., leg. W. EICHLER (IZPAS, LB).

Distribution: hitherto known only from Nigeria.

5. *Caryedon beniowskii* n. sp.

Etymology. Named after the count Maurycy BENIOWSKI (1741–1786), a Polish globe-trotter and King of Madagascar (1776–1786).

Diagnosis. The longitudinally white stripped elytra near this species to *C. alluaudi* only. It differs in slimmer body, shorter apical antennal segments, and especially in male genitalia with six pairs of large sclerites in internal sac (in *C. alluaudi* internal sac has no large sclerites).

Description

Length (pronotum–elytra): 3.9 mm, width: 2.0 mm.

Uniformly yellowish-red. Vestiture uniform, whitish, scarce, not covering body surface. Elytral rows unpubescent or with very short and scarce hair, so elytra longitudinally white stripped.

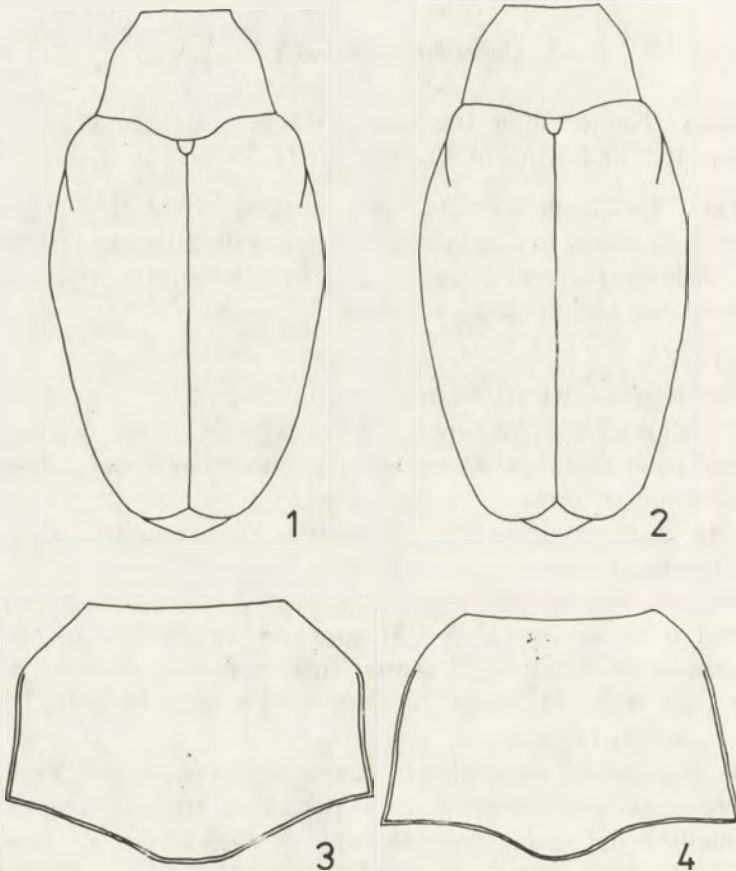
Head short, distance from base of antenna to apex of labrum about $\frac{1}{3}$ distance from upper limits of eyes to apex of labrum. Frons narrow with sharp median carina, in narrowest part about as wide as two eye facets together. Ocular sinus about 0.1 times as long as eye. Tempora as wide as ocular facet diameter. Antennal segments 1–4 filiform, 2 shorter than any other segment, 5–10 about twice longer than wide, 11 about 2.4 times longer than wide (fig. 8). Antenna reaching to $\frac{1}{3}$ of elytral length.

Prothorax pentagonal, sides slightly converging anterad, disc slightly convex, without impressions, moderately densely punctured (fig. 4). Distance between punctures usually equal to puncture diameter or slightly smaller. Space between punctures with small secondary puncturation. Lateral prothoracic carina extending from base to 0.6 distance to anterior edge of pronotum. Prosternum separating procoxae for about 0.3 their length.

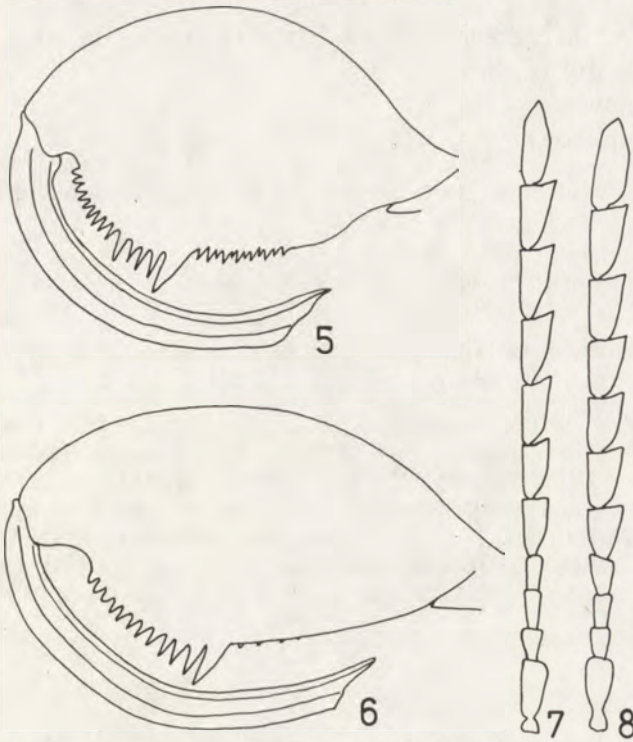
Scutellum small, rounded apically. Elytron 3.25 times longer than wide (fig. 2). Striae moderately impressed, indistinctly punctate, intervals smooth. Striae 4 and 5 shortened posterad. Hind coxa smooth. Hind femur about twice longer than wide, femoral pecten with 12 spines, the first about twice longer than second one, remainder gradually smaller. Femoral edge before pecten slightly serrate (fig. 6). Hind tibia strongly arcuate with complete set of sharp carinae, mucro about as long as width of tibial apex.

Abdomen unmodified, last sternum not emarginate, pygidium moderately convex in lateral view.

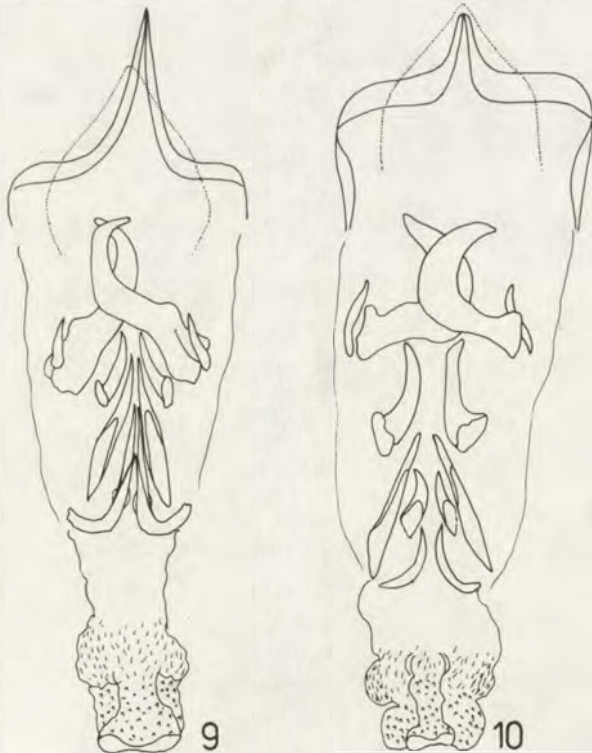
Male genitalia: Median lobe short, ventral valve square with short apical, acuminate process, dorsal valve subtriangular. Internal sac with six pairs of large sclerites: first pair very large, hook-like, second – small, at base of sclerite of first pair, third – hook-like, about twice smaller than first one, fourth – elongate



Figs. 1, 3. *Caryedon denticulatus*, 2, 4. *C. beniowskii*; 1, 2 – body outline, 3, 4 – pronotum.



Figs. 5, 7. *Caryedon denticulatus*, 6, 8. *C. beniowskii*; 5, 6 – hind femur and tibia, 7, 8 – antenna.



Figs. 9, 10. Male genitalia: 9 – *Caryedon cassiae*, 10 – *C. beniowskii*.

spine, fifth — horn-like, about twice shorter than fourth one, sixth — arch-like, as long as fifth (fig. 10).

Female unknown.

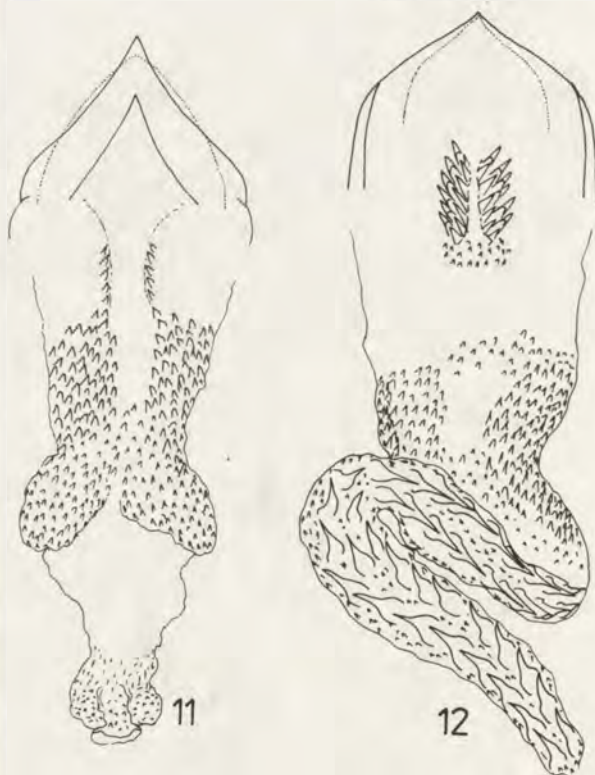
Host plant unknown.

Holotype male: "Madagascar, Mont D'Ambre, HAMMERSTEIN S.", preserved in IZPAS.

6. *Caryedon cassiae* (GYLLENHAL, 1833)

Bruchus (Caryoborus) cassiae GYLLENHAL, 1833: 95; SOUTHGATE and POPE 1957: 670 (in *Caryedon*).
Caryoborus minutus PIC, 1902a: 146, n. syn.

New records: GUINEA: Conakry, 8 I–10 II 1965, 1 ex., V 1965, 1 ex., leg. K. FERENCZ (HNHM); NIGERIA: Mubi, Gongola St., 18 XI–9 XII 1979, 4 ex., leg. Polish Students' Exp. (LB); SUDAN: Prov. North Darfur, El Geneina, 3–10 VII 1978, 1 ex., VII 1979, 1 ex., 17 IX 1979, 1 ex., at light, leg. I. M. ABUZIMID (HNHM); ETHIOPIA: Erer Vall, no date, 1 ex., leg. KOVÁCS (HNHM); KENYA: Malindi, 25 VIII 1983, 1 ex., leg. H. J. BREMER (HNHM); TANZANIA: Lindi, 1909, 3 ex., leg. G. W. MÜLLER (SMTD); ZAMBIA: Livingstone, 8 I 1942, 2 ex., 11 I 1942, 5 ex., leg. W. EICHLER (IZPAS, LB); MADAGASCAR: Diego Suarez, 28 XI 1937, 1 ex., leg. A. KRECZMER (IZPAS).



Figs. 11, 12. Male genitalia: 11 — *Caryedon alluaudi*, 12 — *C. denticulatus*.

Distribution: little known. The name *C. cassiae* was usually used for the specimens now classified in other species. The species redescribed by PREVETT (1965) as *C. cassiae* is conspecific with *C. crampeli* (PIC, 1924). Apart from above mentioned localities it is known also from Sierra Leone (type locality) and Cap Verde Is. Probably widespread in whole Afrotropical Region. The male genitalia have never been figured hitherto. Ventral valve strongly acuminate, internal sac with five pairs of sclerites shaped similarly as in *C. beniowskii* n. sp. (fig. 9), but sclerites of first pair longer and slimmer, of second pair smaller, and of fourth and fifth pairs longer than in *C. beniowskii*.

7. *Caryedon conformis* (FAHRAEUS, 1871)

Bruchus (Caryoborus) conformis FAHRAEUS, 1871: 450; PREVETT 1965: 532 (in *Caryedon*).

New record: ZAMBIA: Livingstone, 3 VIII 1942, 1 ex., leg. W. EICHLER (IZPAS).

Distribution: Nigeria, Zair, Tanzania, and South Africa (Natal, Transvaal, Swaziland). New to Zambia. PREVETT (1965) figured male genitalia of this species with ventral valve strongly emarginate apically. In my specimen ventral valve is almost angulate apically, but number and shape of sclerites of internal sac is identical with PREVETT'S specimen.

8. *Caryedon danielssoni* n. sp.

Etymology. Dedicated to Dr. R. DANIELSSON, the curator of the *Coleoptera* collection in the Zoological Museum of Lund University.

Diagnosis. *C. danielssoni* belongs to the *serratus* group which comprises also *C. serratus* (OLIVIER, 1790), *C. palaestinus* SOUTHGATE, 1976, *C. acaciae* (GYLLENHAL, 1833), *C. grandis* DECELLE, 1979, and *C. johani* BOROWIEC, 1890. *C. palaestinus* and *C. grandis* differ in two last pairs of sclerites of internal sac of similar shape, *C. johani* differs in two first pairs of sclerites of internal sac of about equal size, *C. acaciae* differs in first two pairs of sclerites of internal sac smaller, without enlarged bases. *C. serratus* is the most similar; it differs externally in shorter and stouter antennae. First two pairs of sclerites of internal sac are similar in both species, but two last pairs are longer and slimmer in *C. danielssoni*, more similar to the sclerites of *C. acaciae*, especially third pair of sclerites has flattened and enlarged base (fig. 14) while in *C. serratus* the base of these sclerites is not flattened or enlarged (fig. 13).

Description

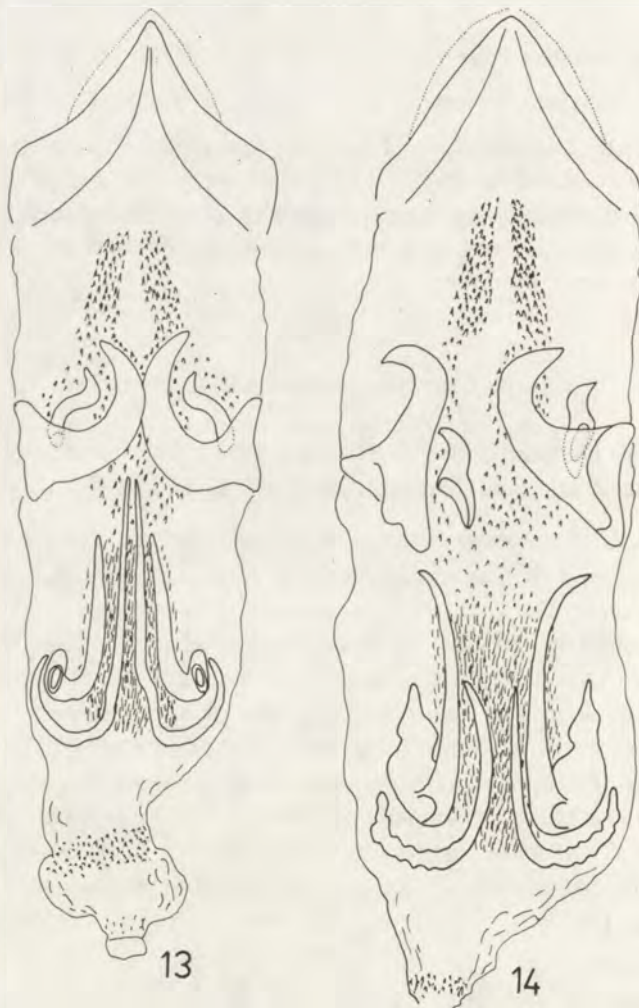
Length (pronotum – elytra): 5.8 – 6.4 mm, width: 2.9 – 3.2 mm.

Yellowish-red. Elytra with several small dark, brown spots. Hind femur before

apex and basal half of hind tibia infusate. Antenna uniformly reddish or apical segments more or less infusate.

Vestiture golden, dense, covering body surface; on dark parts of elytra hair usually darker than on unpigmented parts.

Head moderate in length, distance from base of antenna to apex of labrum about half distance from upper limits of eyes to apex of labrum. Frons narrow, with sharp median carina, in narrowest part about as wide as three ocular facets together. Ocular sinus about 0.1 times as long as eye. Tempora as wide as ocular facet diameter. Antennal segments 1–4 filiform, 2 shorter than any other segment, 5–10 about 2.4–2.5 times longer than wide, 11 about three times longer than wide (fig. 27). Antenna reaching to $\frac{1}{3}$ of elytra length.



Figs. 13, 14. Male genitalia: 13 – *Caryedon serratus*, 14 – *C. danielssoni*.

Prothorax pentagonal, about 1.5 times wider than long, sides almost parallel (fig. 23). Disc slightly flattened, moderately dense punctate, distance between punctures usually equal to puncture diameter but sometimes punctures grouping in 2–4. Space between punctures with small secondary puncturation. Lateral prothoracic carina extending from base to about 0.6 distance to anterior edge of pronotum. Prosternum separating procoxae for about 0.3 their length.



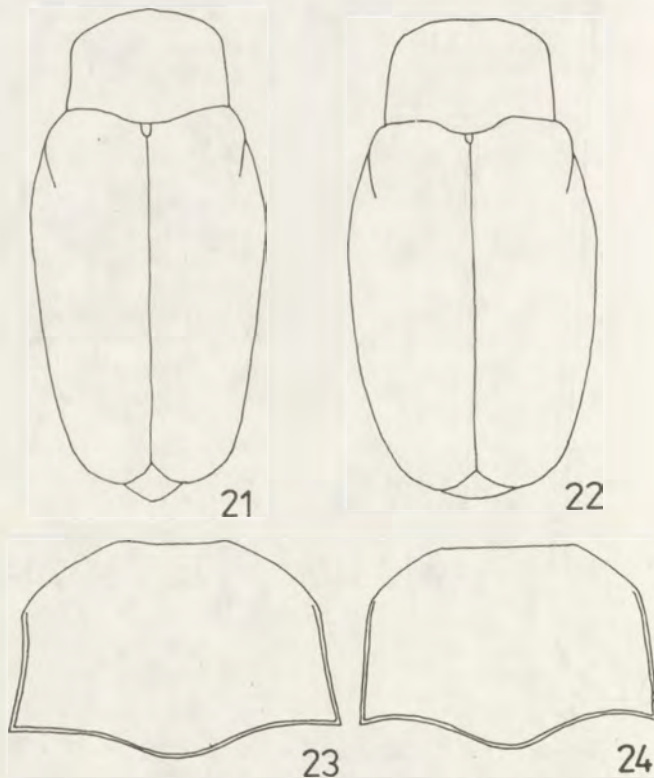
Figs. 15–20. Female genitalia: 15, 17 – *Caryedon denticulatus*, 16, 18, 20 – *C. danielssoni*, 19 – *C. serratus*; 15–18 – sclerites of ovipositor, 19, 20 – vaginal sclerites.

Scutellum small, rounded apically, elytron 3.1–3.3 times longer than wide (fig. 21). Striae moderately deep, distinctly punctate, intervals smooth. Striae 2 and 3, and 6 and 7 closer to one another at base than to adjacent striae, striae 4 and 5 shortened posterad. Hind femur about twice longer than wide, femoral pecten with 13–14 spines, the first spine about thrice longer than second one, the remaining ones gradually smaller (fig. 25). Hind tibia strongly arcuate with complete set of carinae, mucro about as long as width of tibial apex.

Abdomen unmodified. Last sternum in male emarginate to half length, pygidium moderately convex in lateral view.

Male genitalia: Median lobe short, ventral valve pentagonal, obtuse apically, dorsal valve subtriangular. Internal sac with four pairs of large sclerites: first pair small, s-shaped, second – large, hook-like, with strongly enlarged base, third pair very long, sword-like with strongly enlarged base, fourth – elongate, sword-like, about $\frac{2}{3}$ as long as third pair with base regularly curved in arch. Between large sclerites numerous small spines or needles (fig. 14).

Female similar to male but last sternum not emarginate. Ovipositor very long, similar as in *C. serratus* (figs. 16, 18). Vaginal sclerite similar as in *C. serratus* but strongly narrowed anterad (figs. 19, 20). Bursa copulatrix with group of spines behind vaginal sclerite, and scarce, small spines on the whole surface.



Figs. 21, 23. *Caryedon danielssoni*, 22, 24. *C. prozysniskii*; 21, 22 – body outline, 23, 24 – pronotum.

Holotype male, allotype female, paratypes male and female: "Thailand, Pattaya, 15/12 1979, T. PALM" (holotype and allotype in LU, paratypes in LB); paratype male: "O. Sumba, Melolo, Waldrand, 1. Juni 1949, Dr. BÜHLER-Dr. SUTTER" (NMB), paratype female: "O. Sumba, Melolo, 27. Mai 1949, Dr. BÜHLER-Dr. SUTTER" (NMB).

9. *Caryedon denticulatus* (KLUG, 1833) n. comb.

Burchus denticulatus KLUG, 1833: 187.

This species was treated as "nomen dubium" hitherto. I have examined a holotype female (preserved in ZMB) and specimen male (IZPAS) and in my opinion it is a very distinct taxon not related to any other Afrotropical species. Its redescription is given below.

Diagnosis. It is one of the largest *Caryedon*. Only *C. multinotatus* (PIC) and large specimens of *C. serratus* (OL.) and *C. danielssoni* n. sp. have similar size. *C. multinotatus* differs distinctly in antennae variegate coloured, and species of *serratus* group differ in elytra with distinct spots of darker hair while in *C. denticulatus* antennae are unicolour and elytra uniformly pubescent. The internal sac of *C. denticulatus* with 18 (!) pairs of large sclerites is unique.

Description

Length (pronotum—elytra): 6.1–6.6 mm, width: 3.3–3.5 mm.

Brownish-red. Pronotum and elytra with indistinct, scarce, small dark spots. Hind femora infuscate in middle. Antennae, fore and mid legs reddish, unicolour.

Vestiture yellowish-gray, moderately dense, not fully covering body surface, uniform.

Head moderate in length, distance from base of antenna to apex of labrum about half distance from upper limits of eyes to apex of labrum. Frons narrow, with sharp median carina, in narrowest part about as wide as three ocular facets together. Ocular sinus about 0.2 times as long as eye. Tempora obsolete. Antennal segments 1–4 filiform, 2 shorter than any other segment, 5–10 elongate, about 2.0–2.2 times longer than wide, 11 about three times longer than wide. Antenna reaching to half body length (fig. 7).

Pronotum pentagonal, about 1.5 times wider than long, disc slightly flattened with two small pits before middle, densely punctate, distance between punctures about half as wide as puncture diameter. Lateral edge in basal half parallelsided, lateral carina extending from base to about 0.6 distance to anterior edge of pronotum (fig. 3). Prosternum separating procoxae for about 0.3 their length.

Scutellum small, rounded apically, elytron 2.9–3.0 times longer than wide (fig. 1). Striae moderately deep, distinctly punctate, intervals smooth. Striae 2 and 3, and 4 and 5 closer to one another at base than to adjacent striae; striae 4 and 5 shortened posterad, 3 and 8 closed posterad. Hind femur about twice longer than wide, femoral pecten with 14 spines, the first about twice longer than the second, remaining ones gradually smaller, edge before pecten strongly serrate (fig. 5). Hind

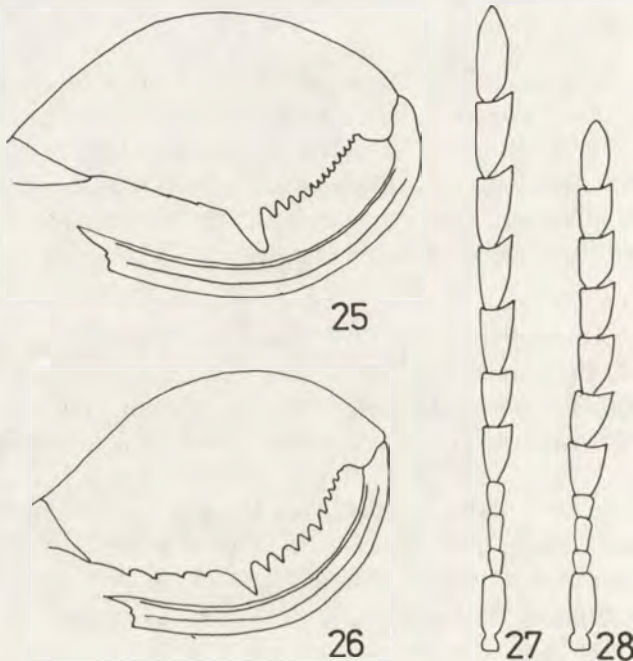
tibia strongly arcuate with complete set of carinae, mucro about as long as tibial apex.

Abdomen unmodified, last sternum not emarginate.

Male genitalia: ventral and dorsal valvae pentagonal. Internal sac with two groups of moderately large spines in anterior third, dense small spines in middle, and 18 pairs of large spines in apical part (fig. 12).

Female similar to male. Ovipositor very long, its base divided into two lobes (figs. 15, 17). No vaginal sclerites. Bursa copulatrix with a group of strong spines.

Material: holotype female: "Madagascar Goud." (ZMB); specimen male, Madagascar, Ambodimanga, HAMMERSTEIN (IZPAS).



Figs. 25, 27. *Caryedon danielssoni*, 26, 28. *C. prozysniskii*; 25, 26 — hind femur and tibia, 27, 28 — antenna.

10. *Caryedon indus* (MOTSCHULSKY, 1858)

Caryoborus indus MOTSCHULSKY, 1858: 98; DECELLE 1975: 150 (in *Caryedon*).

Pachymerus ceylonicus PIC, 1924: 25; DECELLE 1975: 190 (as syn.).

Caryedon punjabensis PAJANI et SINGH, 1977: 225, **n. syn.**

Caryedon arori SINGH et SAINI, 1978: 131, **n. syn.**

New records: INDIA: Orissa, Bhubaneswar, 3 I 1973, 1 ex., leg. R. BIELAWSKI (IZPAS); Maharashtra, Bombay, 10 X 1981, 1 ex., leg. A. KUŠKA (LB); CEYLON: Western Prov., Hettipola, 28 XI 1953, 1 ex., leg. F. KEISER (NMB).

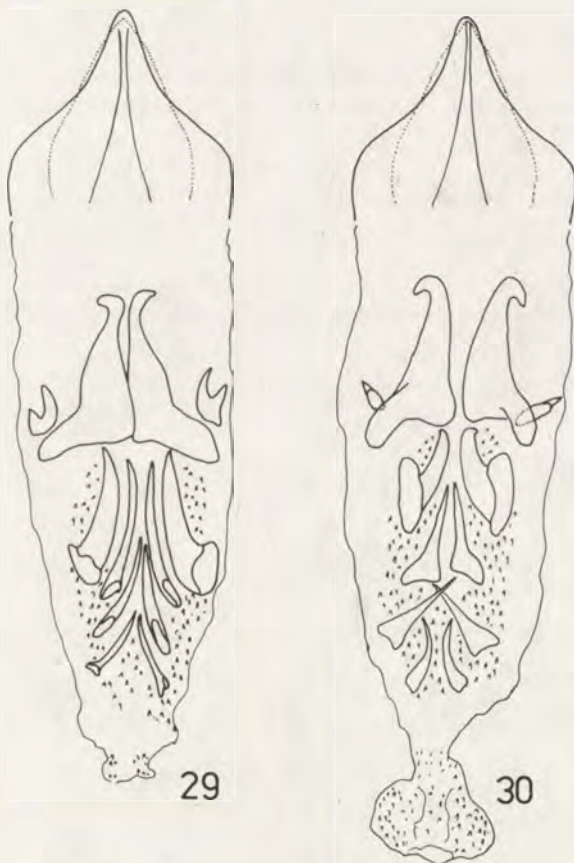
Distribution: India and Ceylon. This species is common in this region and slightly varying in structure of male genitalia, especially in shape of ventral valve and internal sclerites. I have not seen the types of the species described by Indian authors but good drawings of genitalia undoubtedly point to conspecificity of these taxons with *C. indus*.

11. *Caryedon interstinctus* (FAHRAEUS, 1871)

Bruchus (*Caryoborus*) *interstinctus* FAHRAEUS, 1871: 450; BRIDWELL 1929: 145 (in *Caryedon*).

New records: TANZANIA: Morogoro, II 1970, 1 ex., light trap, leg. T. PÖCS (HNHM); SOUTH AFRICA: Transvaal, Nylsvley, 3 II 1978, 1 ex., cow dung trap, leg. S. ENDRÖDI (HNHM); NAMIBIA: Windhoek-Swakopmund road, no date, 1 ex., leg. LINDT (ZMB).

Distribution: hitherto known from South Africa, Zair (Kivu Region) and Burundi. The male genitalia have never been figured hitherto (fig. 31).



Figs. 29, 30. Male genitalia: 29 — *Caryedon kivuensis*, specimen from Zambia, 30 — *C. kivuensis*, specimen from Ghana.

12. *Caryedon kivuensis* DECELLE, 1951

Caryedon kivuensis DECELLE, 1951: 190.

New records: GHANA: Accra, Plain ad Akuse, 29 VII 1963, 1 ex., leg. J. and M. PRÓSZYŃSKI (IZPAS); ZAMBIA: Abercorn, 6 II 1947, 2 ex., 7 II 1947, 1 ex., leg. W. EICHLER (IZPAS, LB).

Distribution: hitherto known from Zair and Ruanda. The male genitalia have never been figured hitherto (figs. 29, 30).

13. *Caryedon languidus* (GYLLENHAL, 1839)

Bruchus (Caryoborus) languidus GYLLENHAL, 1839: 129; BRIDWELL 1929: 145 (in *Caryedon*).

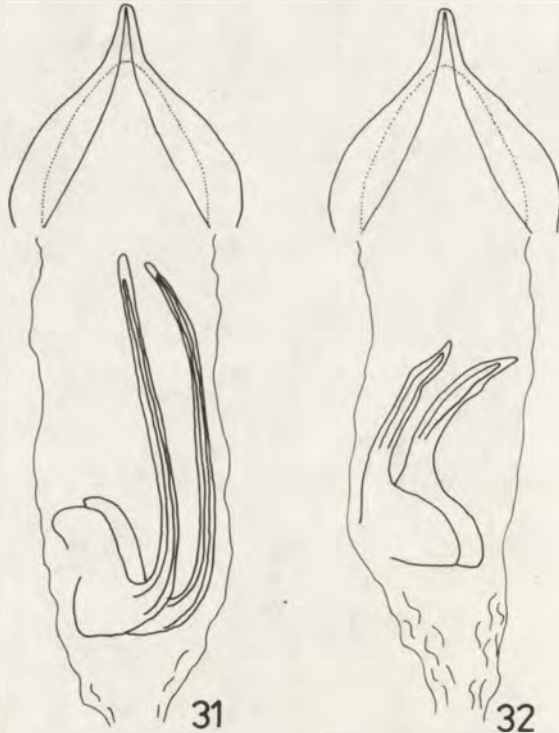
New records: INDIA: Orissa, Bhubaneswar, 3 I 1973, 1 ex., leg. R. BIELAWSKI (IZPAS); Maharashtra, Bombay, 10 X 1981, 1 ex., leg. A. KUŠKA (LB).

Distribution: India and Ceylon.

14. *Caryedon lineaticollis* (PIC, 1906)

Caryoborus lineaticollis PIC, 1906: 58; DECELLE 1985: 78 (in *Caryedon*).

Caryedon lineatonota ARORA, 1977: 100; DECELLE 1985: 79 (as syn.).



Figs. 31, 32. Male genitalia: 31 - *Caryedon interstinctus*, 32 - *C. multinotatus*.

New records: INDIA: Assam, Gouhati Distr., Kamrup, 6 I 1973, 2 ex., leg. R. BIELAWSKI (IZPAS); INDONESIA: Timor, Amarassi, V 1935, 1 ex. (NMB).

Distribution: India, Andaman Is., and Vietnam. New to Indonesia.

15. *Caryedon lisaeae* SOUTHGATE, 1971

Caryedon lisaeae SOUTHGATE, 1971: 413.

New records: TURKEY: Izmir vil., Selçuk-Efes, 50 m, 10 VII 1980, 2 ex., leg. O. MERKL (HNHM); GREECE: Athen-Voula (UTM GG 49), 2-9 VIII 1986, 1 ex., leg. RIEGER (ZMB); YUGOSLAVIA: Hercegovina, Mostar, no date, 1 ex., leg. GRABOWSKI (HNHM), Macedonia, Šar Planina, Popova šapka, 25 VII 1937, 6 ex., leg. J. FODOR (HNHM), Macedonia, Skopje, VII 1937, 5 ex., leg. J. FODOR (HNHM).

Distribution: Bulgaria, Georgia, Armenia, Turkey, Greece and Dalmatia. New to Hercegowina and Macedonia.

16. *Caryedon maculipes* (PIC, 1911)

Caryoborus maculipes PIC, 1911: 124; DECELLE 1951: 188 (in *Caryedon*).

New records: TANZANIA, Lindi, 1909, 1 ex., leg. G. W. MÜLLER (SMTD); ZAMBIA: Ndola, XI 1944, 1 ex., leg. W. EICHLER (IZPAS), Abercorn, 11 I 1947, 1 ex., leg. W. EICHLER (IZPAS).

Distribution: Tanzania, Uganda, Zair, Rwanda, Burundi, and Zimbabwe. New to Zambia. The male genitalia have never been figured hitherto (fig. 33).

17. *Caryedon multinotatus* (PIC, 1935) n. comb.

Pachymerus albonotatus var. *multinotatus* PIC, 1935: 12.

New records: NAMIBIA: Windhoek, no date, 1 ex., leg. JESKE (IZPAS), Otjosondu-Kub, no date, 2 ex., leg. CASPER (ZMB), Damara to Ngami Lake road, no date, 1 ex., leg. FLECK (ZMB).

Distribution: Namibia only. This species distinctly differs from *C. albonotatum* (PIC) and it is more related to *C. interstinctus* (FAHR.), but has spines in internal sac about twice shorter (fig. 32).

18. *Caryedon nigrosignatus* (PIC, 1902)

Caryoborus nigrosignatus PIC, 1902b: 5; DECELLE 1970: 257 (in *Caryedon*).

New record: SUDAN: Prov. North Darfur, El Geneina, 17 IX 1979, 2 ex., at light, leg. I. M. ABUZIAID (HNHM).

Distribution: South Africa, Zimbabwe, and Zambia. New to Sudan.

19. *Caryedon palaesticus* SOUTHGATE, 1976

Caryedon serratus palaesticus SOUTHGATE, 1976: 195; PFAFFENBERGER 1984: 220 (as species).

New records: EGYPT: Idfu, 29 X 1957, 1 ex., leg. GOZMANY (HNHM); YUGOSLAVIA: Dalmatia, no further data, 5 ex., probably introduced (HNHM).

Distribution: Israel, Iraq, Iran, Saudi Arabia, Egypt, Sudan and Chad.

20. *Caryedon pallidus* (OLIVIER, 1790)

Bruchus pallidus OLIVIER, 1790: 199; BRIDWELL 1929: 145.

Pachymerus pallidus var. *annulicornis* PIC, 1950: 250; DECELLE 1969: 295 (as syn.).

New records: NIGERIA: Mubi, Gongola St., 18 XI–9 XII 1979, 1 ex., leg. Polish Students' Exp. (LB); GAMBIA: Bukau, 6–26 XI 1984, 1 ex., leg. T. PALM (LU).

Distribution: From Senegal to Nigeria. New to Gambia.

21. *Caryedon prosopidis* ARORA, 1977

Caryedon prosopidis ARORA, 1977: 105.

Caryedon kizilkumensis TER-MINASSIAN, 1978: 55, n. syn.

New record: AFGHANISTAN: Bashgul Vall., Nuristan, 6 V 1953, 1 ex., leg. J. KLAPPERICH (HNHM).

Distribution: hitherto known from Uzbek SSR and NW India. I have examined types of neither species, but good drawings of genitalia in original descriptions point to their conspecificity.

22. *Caryedon prozyskii* n. sp.

Etymology. Named after J. and M. PRÓSZYŃSKI, who collected all specimens.

Diagnosis. Small, uniformly coloured body nears this species to *C. pallidus* and its relatives. It differs distinctly in structure of male genitalia with six pairs of sclerites (in *C. pallidus* five pairs only), the third pair of sclerite large, hook-like (in *C. pallidus* these sclerites are small, spine-like). *C. cassiae* has similarly shaped sclerites, but the last pair of sclerites is arch-like while in *C. prozyskii* it is completely straight.

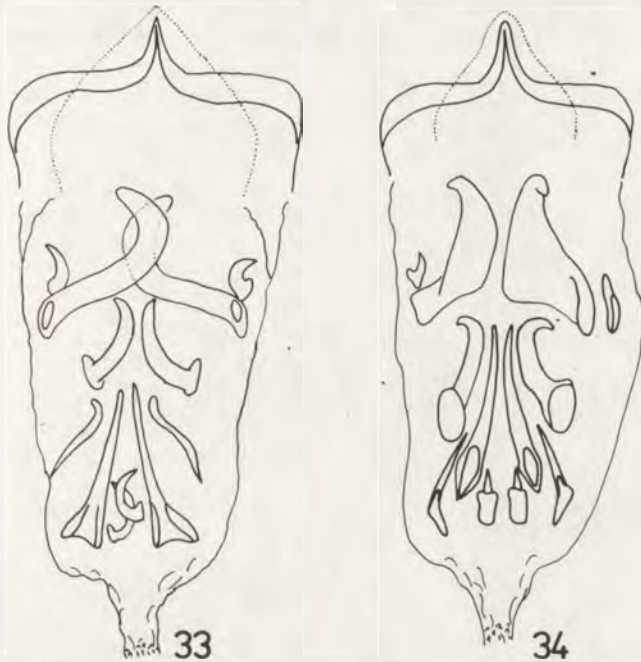
Description

Length (pronotum–elytra): 2.8–3.3 mm, width: 1.5–1.7 mm.

Yellowish-red, last seven antennal segments black. Vestiture uniform, grayish, scarce, not covering body surface.

Head short, distance from base of antenna to apex of labrum about $\frac{1}{3}$ distance from upper limits of eyes to apex of labrum. Frons narrow with sharp median carina, in narrowest part about as wide as three eye facets together.

Ocular sinus about 0.1 times as long as eye. Tempora as wide as two ocular facets together. Antennal segments 1–4 filiform, 2 shorter than any other segment, 5–10 about 1.2 times longer than wide, 11 about twice longer than wide (fig. 28). Antennae reaching to $\frac{1}{4}$ of elytral length.



Figs. 33, 34. Male genitalia: 33 – *Caryedon maculipes*, 34 – *C. proszynskii*.

Pronotum pentagonal, sides in basal $\frac{2}{3}$ length subparallel, disc flat, without impressions, densely punctured (fig. 24). Distance between punctures about twice narrower than puncture diameter. Space between punctures with small secondary puncturation. Lateral prothoracic carina extending to 0.7 distance to anterior edge of pronotum. Prosternum separating procoxae for about 0.3 their length.

Scutellum small, rounded apically. Elytron about 3.2 times longer than wide (fig. 22). Striae moderately impressed, indistinctly punctate, intervals smooth. Striae 4 and 5 shortened posterad, striae 2 and 3 sometimes closed posterad. Hind femur about twice longer than wide. Femoral pecten with 10 spines, the first about twice longer than the second, remaining gradually smaller, edge before pecten distinctly serrate (fig. 26). Hind tibia arcuate, with complete set of carinae, mucro about as long as width of tibial apex.

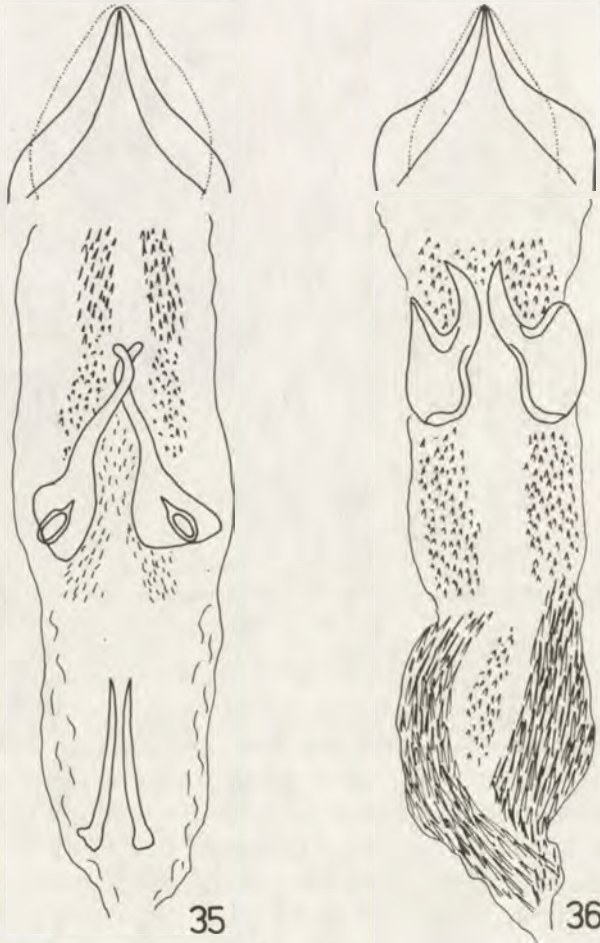
Abdomen unmodified, last sternum not emarginate.

Male genitalia: median lobe short, ventral valve square with long, acuminate apical process. Dorsal valve subtriangular. Internal sac with six pairs of large sclerites: first pair large, sickle-like, second – very small at base of sclerite of first

pair, third — hook-like, about twice shorter than first pair, fourth — elongate, straight, sword-like, fifth — elongate, straight, sword-like, about twice shorter than fourth one, sixth — short spine with enlarged base (fig. 34).

Female similar to male but last sternum more elongate.

Holotype male, allotype female, and paratype male: "GHANA, Legon, Botanical Garden, 11 IV 1965, at light, leg. J. and M. PRÓSZYŃSKI (holotype and allotype in IZPAS, paratype in LB).



Figs. 35, 36. Male genitalia: 35 — *Caryedon* sp. near *pallidus*, 36 — *C.* sp. near *interstinctus*.

23. *Caryedon* sp. near *interstinctus*

New records: TANZANIA: Morogoro, II 1970, 1 ex., light trap, leg. T. Pócs (HNHM); ZAMBIA: Livingstone, 28 X 1941, 1 ex., leg. W. EICHLER (IZPAS).

This large, variegated coloured species with elongate tempora will be described by Dr. J. DECELLE. It has very characteristic male genitalia with one pair of large sclerites of internal sac (fig. 36).

24. *Caryedon* sp. near *pallidus*

Caryedon sahelicus DECELLE, 1979: 328, nomen nudum.

New records: ETHIOPIA, Assab, 1907, 2 ex., leg. KATONA (HNHM); Gibdo, V 1907, 5 ex., leg. KATONA (HNHM, LB).

This small, pale yellowish-red species will be described by Dr. J. DECELLE. Male genitalia of this species are very characteristic (fig. 35).

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STRESZCZENIE

[Tytuł: Nowe gatunki, nowe synonimy i nowe stanowiska w rodzaju *Caryedon* SCHÖNH. (Coleoptera, Bruchidae, Pachymerinae)]

W pracy opisano trzy nowe gatunki z rodzaju *Caryedon* SCHÖNH.: *C. beniowskii* z Madagaskaru, *C. danielssoni* z Tajlandii i wyspy Sumba oraz *C. proshynskii* z Ghany. Zaproponowano cztery nowe synonimy: *C. cassiae* (GYLLENHAL, 1833) (= *C. minutus* PIC, 1902), *C. indus* (MOTSCHULSKY, 1858) (= *C. punjabensis* PAJNI et SINGH, 1977 i *C. arori* SINGH et SAINI, 1978), oraz *C. prosopidis* ARORA, 1977 (= *C. kizilkumensis* TER-MINASSIAN, 1978). Podano nowe stanowiska dla 21 gatunków oraz dla 9 po raz pierwszy rysunki narządów populacyjnych.

РЕЗЮМЕ

[Заглавие: Новые виды, новые синонимы и новые места нахождения в роде *Caryedon* SCHÖNN. (Coleoptera, Bruchidae, Pachymerinae)]

В работе описаны 3 новых вида из рода *Caryedon* SCHÖNN.: *C. beniowskii* из Мадагаскара, *C. danielssoni* из Тайландии и острова Сумба, а также *C. prozynskii* из Ганы. Здесь предложено 4 новых синонима: *C. cassiae* (GYLLENHAL, 1833) (= *C. minutus* PIC, 1902), *C. indus* (MOTSCHULSKY, 1858) (= *C. punjabensis* PAJANI et SINGH, 1977 и *C. arori* SINGH et SAINI, 1978), а также *C. prosopidis* ARORA, 1977 (= *C. kizilkumensis* TER-MINASSIAN, 1978). Представлены новые места нахождения 21 видов, а для 9 видов рисунки копуляционных органов сделаны впервые.
