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Procirrus hlavaci sp. nov., from KwaZulu-Natal Province, South Africa (Coleoptera: Staphylinidae: Paederinae: Procirrina)

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Abstract. A new species of the genus *Procirrus* Latreille, 1829, *Procirrus hlavaci* sp. nov. from KwaZulu-Natal Province, South Africa is described, illustrated and distinguished from related species.

INTRODUCTION

The subtribe Procirrina is represented by eight extant genera and one extinct genus and about 650 species (Herman 2010, Shaw et al. 2020). The genus *Procirrus* Latreille, 1829 comprises 30 species and 2 subspecies (Herman 2010, Newton, 2024) reported from Canary Islands, southern Europe, continental Africa, Madagascar, southern Asia to Japan and Australia. Sixteen species are known from Africa south of the Sahara (Fagel 1971, Drugmand 2003) and one species from Madagascar (Janák 2021).

Among Staphylinidae specimens collected by Peter Hlaváč in South Africa a new species was discovered, which is described in the present paper. Additional specimens of *Procirrus* were found in the museum collection in Pretoria.

MATERIAL AND METHODS

Dry-mounted specimens were studied under a binocular stereomicroscope MBS 10. Habitus images were taken with a Canon EOS 700D camera in combination with a Canon MP-E65 1-5x macro lens. Images of some body details, aedeagi and male and female terminalia were made using a Canon EOS 700D camera mounted on a Motic BA 410E-T compound microscope in transmitted or difused reflected light. Resulting images were focus stacked using Zerene Stacker and then postprocessed in Paint.Net, Paint, XnView and Live Photo Gallery.

Measurements were taken with the above mentioned stereomicroscope using an ocular scale. Measurements and indices in this study are based on all type specimens. Body length was measured from the tip of closed mandibles to the end of the abdomen, the length of the forebody was measured from the base of the labrum, the length of pronotum was measured along the midline.

Specimens were mounted on card plates using a water-soluble glue. Males were dissected and male genitalia were glued on the same plate as the specimen or embedded in Euparal. Locality labels for the material examined were cited in the original version and marked with quotation marks (“ ”).

The following abbreviations are used to indicate the depository of specimens:

JJRC Jiří Janák, private collection, Rtyně nad Bílinou, Czech Republic;

TMSA Ditsong Museum (former Transvaal Museum), Pretoria, South Africa (Ruth Müller, Werner Strümpher).

Other abbreviations: HW = width of head, PW = width of pronotum, M = arithmetic mean, R = ratio, HT = holotype, n = number of specimens measured.

TAXONOMY

Procirrus Latreille, 1829

Type species: *Procirrus lefebvrei* Latreille, 1829.

Diagnosis. The following diagnosis was published by Herman (2010): *Procirrus* is separated from other Procirrina by the four inflated protarsomeres, pedunculated base of the head, quadridentate labrum, elongate pronotum, and absence of a pronotal marginal ridge. Abdominal segment III has a paratergal carina laterally, the tergum and sternum are fused, and the segment is cylindrical. Tergum and sternum VII are separated. The quadridentate labrum will separate *Procirrus* from *Paraprocirrus* Bernhauer, 1923. The absence of a ventral cephalic groove that extends diagonally from the margin of the eye to the neck distinguishes *Procirrus* from *Neoprocirrus* Blackwelder, 1952. The absence of setae on the edge of the posterior margin of the elytra will separate *Procirrus* from *Neoprocirrus*, *Oedodactylus* Fairmaire & Germain, 1861, *Pseudoprocirrus* Bernhauer, 1934, and *Stylokyrtus* Herman, 2010.

Description. For detailed description see Herman (2010).

Overview of Afrotropical and Madagascan species:

P. bicolor group

P. allardianus Fagel, 1971	D.R. Congo
P. bicolor Fagel, 1971	D.R. Congo
P. nimbaensis Fagel, 1971	Guinea

P. congoensis group

P. congoensis Fagel, 1971	D.R. Congo
P. iti Drugmand, 2003	Gabon
P. kwangensis Fagel, 1971	D.R. Congo
P. uniformis Fagel, 1971	D.R. Congo

P. filiformis group

P. bacillus Fagel, 1971	Tanzania
P. filiformis Fagel, 1971	Kenya
P. malgaceus Janák, 2021	Madagascar
P. strictus Fagel, 1957	D.R. Congo

P. garambanus group

P. crocodilus Bernhauer, 1927	D.R. Congo
P. garambanus Fagel, 1971	D.R. Congo
P. keanus Fagel, 1971	D.R. Congo
P. senegalensis Fagel, 1971	Senegal

P. lefebvrei group

P. abyssinicus Fagel, 1971	Ethiopia
P. hlavaci sp. nov.	South Africa
P. latipennis Fagel, 1971	Rwanda, Burundi, D.R. Congo, Zimbabwe

***Procirrus hlavaci* sp. nov.**

(Figs. 1-15)

Type locality. South Africa, KwaZulu-Natal, St. Lucia.

Type material. Holotype (♂): "RSA: Kwazulu Natal 0 m, St. Lucia, 7-8.II.2004, S28°23,2', E32°24,3', P. Hlaváč lgt.", "HOLOTYPUS Procirrus hlavaci sp. nov., J. Janák det. 2024", (TMSA). Paratypes: (1 ♂, 6 ♀♀): same data as holotype, (JJRC), (3 ♂♂): "S. Afr., Zululand, Dukuduku For. St., 28.22 S - 32.19 E", "23.2.1992, light, leg. M. Krüger", (2 ♂♂ TMSA, 1 ♂ JJRC), all with additional label "PARATYPUS Procirrus hlavaci sp. nov., J. Janák det. 2024".

Description (n = 10). Body length 7.9-9.2 mm (M 8.4 mm, HT 8.5 mm), forebody length 4.0-4.2 mm (M 4.1 mm, HT 4.1 mm). Winged, reddish to reddish brown, legs, palpi and antennomeres 1-8 light reddish brown, tarsi and antennomeres 9-11 slightly lighter, reddish yellow, head and abdomen slightly shiny, pronotum and elytra dull (Figs. 1, 2).

Head (Fig. 2) about 1.1 times as long as wide (R 1.06-1.13, M 1.10, HT 1.13), slightly wider than pronotum (HW/PW = 1.12-1.17, M 1.15, HT 1.15), eyes large, temples slightly longer than eyes (R 1.13-1.29, M 1.21, HT 1.16), behind eyes slightly roundly narrowed, markedly elevated in middle, very densely and moderately coarsely punctate, less dense in middle; very narrow interspaces shiny, without reticulation, anterior margin of epistoma markedly elevated. Antennae (Fig. 1) long, all antennomeres longer than wide, antennomere 3 narrowest, following segments gradually widened, antennomere 5 more than twice as long wide (R 2.39-3.27, M 2.78, HT 2.39), antennomere 8 longer than 7, antennomere 10 about 1.4 times as long as wide (R 1.29-1.58, M 1.46, HT 1.42), last antennomere about as long as two preceeding segments combined.

Pronotum (Fig. 2) about 1.7 times as long as wide (R 1.66-1.74, M 1.71, HT 1.70), lateral sides behind anterior angles slightly straight narrowed up to middle, in apical half emarginate and slightly narrowed behind, posterior angles largely rounded, with shallow lateral impressions along midline, base slightly convex or with more or less deep transversal basal impression, rugosely, very densely and coarsely punctate, punctures not or only very

rarely confluent, almost as wide as diameter of apical part of antennomere 3, with very narrow shiny interspaces, without reticulation, unpunctured midline extremely narrow, but mostly visible up to anterior half, near the base slightly elevated.

Elytra (Fig. 3) long and wide, slightly longer than wide (R 1.11-1.23, M 1.19, HT 1.16), slightly longer than pronotum (R 1.08-1.15, M 1.11, HT 1.10), with moderately deep sutural and very shallow lateral impressions, not markedly elevated, humeri only slightly marked, lateral sides behind humeri slightly widened behind up to posterior fifth, straight or very slightly emarginate in basal third; rugosely, very densely and coarsely punctate, punctures similar as on pronotum, not confluent, narrow interspaces with very fine isodiametric mesh.

Abdomen (Fig. 1) parallel, base of tergites III-VI with basal impressions, tergites III-V rugosely, very densely and coarsely punctate, many punctures forming short transverse groups of connected or confluent punctures (Figs. 3, 4), following tergites gradually less coarsely punctate, tergite VII finely and densely punctate, all tergites with dense reticulation forming of triangular or isodiametric mesh (Fig. 4).

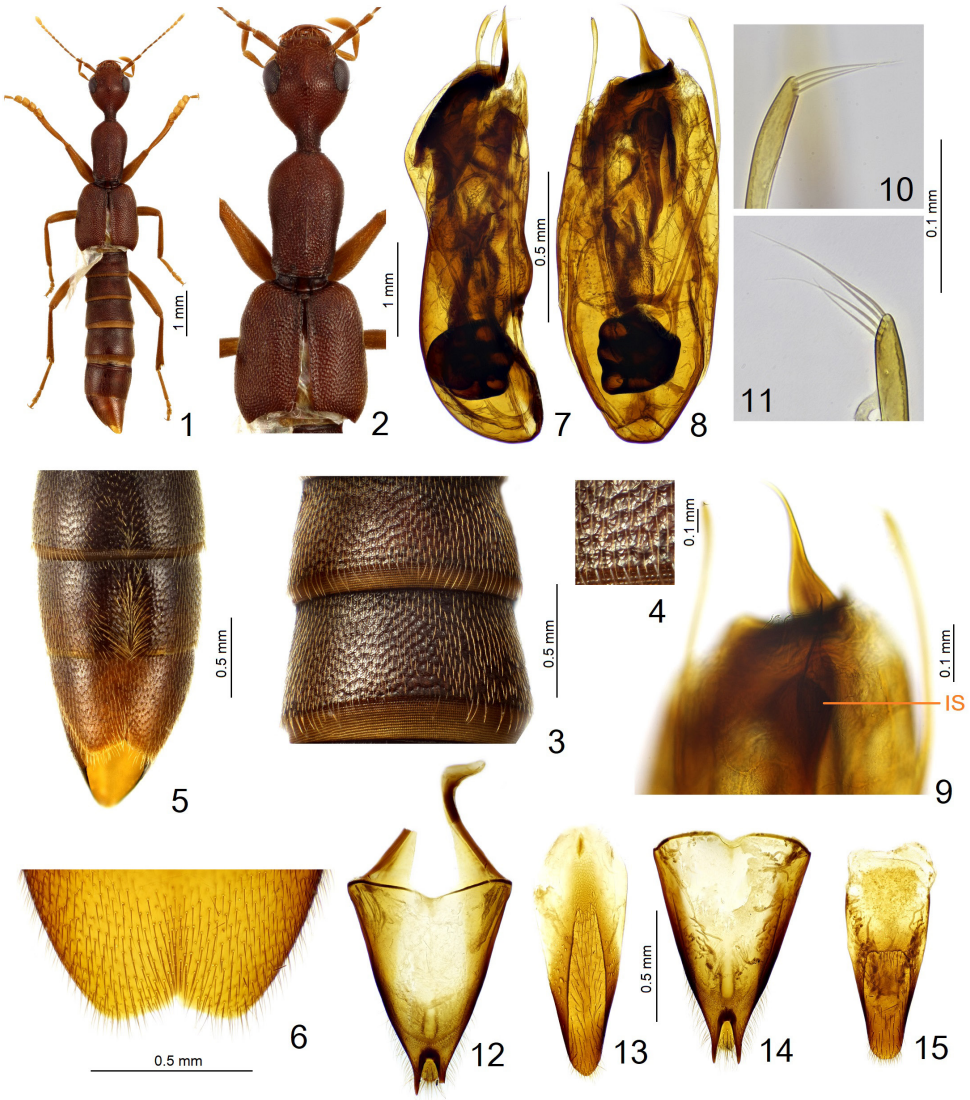
Male. Aedeagus (Figs. 7, 8) asymmetric, elongate, sharply pointed apically (n = 4, length 1.36-1.48, M 1.42 mm, HT 1.45 mm), with internal structure (Fig. 9, *IS*) elongate, apically forming a long sharp thorn. Parameres slender starting from base, with about 3-4 apical setae (Figs. 10, 11). Sternite VI flattened medially in posterior half and here with long convergent setae, sternite VII impressed medially and here with dense long convergent setae, sternite VIII shorter than tergite VIII (Fig. 5), sharply elevated medially in posterior half and moderately emarginate at posterior margin (Fig. 6). Sternite IX as in Fig. 13. Tergites IX-X as in Fig. 12.

Female. Sternite VIII slightly shorter than tergite VIII, broadly rounded at posterior margin. Tergites IX-X as in Fig. 14, tergite IX with long, wide and deep longitudinal impression (Fig. 14), median gonocoxal plate as in Fig. 15.

Differential diagnosis. *Procirrus hlavaci* sp. nov. shows most characters of the *P. lefebvrei* and *P. congoesis* groups defined by Fagel (1971) as: body large, abdominal microsculpture very distinct, male sternites VI and VII with groups of convergent long setae, male sternite VIII apically emarginate and with basal part elevated medially, aedeagus asymmetrical, but differs by the parameres with more setae (left paramere with 3-4, right paramere with 4 setae in contrast to one seta in *P. congoensis* group and two setae *P. lefebvrei* in group). The new species belongs to the *P. lefebvrei* group, which is here redefined as having more than one terminal setae in the parameres. The new species belongs in Fagel's key (Fagel 1971) at couplet 11 near *P. abyssinicus* Fagel, 1971 (described by females only) but differs from this species by the temples more roundly and less markedly narrowed behind and the markedly emarginate lateral parts of the pronotum

Etymology. The species is named in honour of colleague Peter Hlaváč, well-known specialist of the subfamily Pselaphinae and hypogean Coleoptera of the Balkan Peninsula, on the occasion of his recent 60th birthday.

Bionomics. All specimens were found in siftings.



Figs. 1-15. *Procirrus hlavaci* sp. nov.; 1-5, 9-13- holotype; 6- paratype male; 14-15- paratype female. 1- habitus; 2- forebody; 3- abdominal tergites IV, V; 4- abdominal tergite V, detail of structure; 5- male abdominal segments VI-VIII, ventral view; 6- apical part of male sternite VIII; 7- aedeagus lateral, 8- aedeagus ventral; 9- apical part of aedeagus (IS = internal structure); 10- left paramere; 11- right paramere; 12- male tergites IX, X; 13- male sternite IX; 14- female tergites IX, X; 15- female median gonocoxal plate. Figs. 7, 8; 12-15- scale 0.5 mm.

Distribution. *P. hlavaci* sp. nov. is currently known only from St. Lucia and the nearby situated Dukuduku forest in the iSimangaliso Wetland Park, KwaZulu-Natal Province, South Africa (Fig. 16).

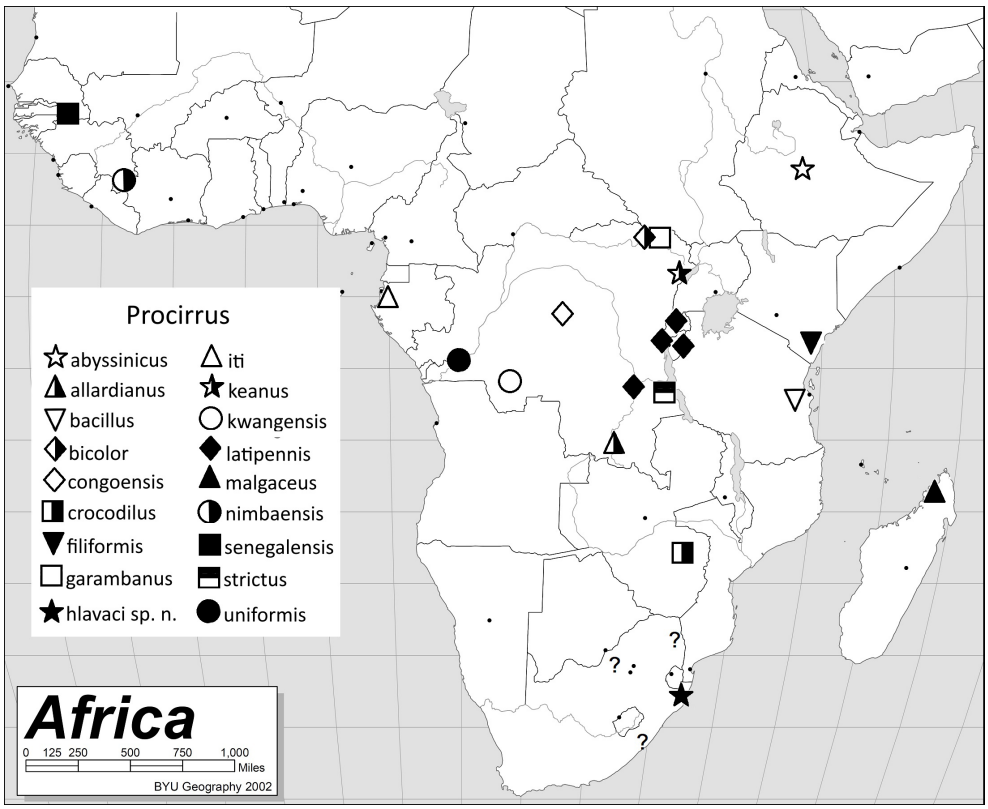


Fig. 16. Distribution of Afrotropical and Madagascan *Procirrus* (? = unidentified specimens from South Africa).

Note. *Procirrus hlavaci* sp. nov. shows also all generic characters as described in the diagnosis by Herman (2010).

Procirrus sp.

Material examined: South Africa: Eastern Cape: "S. Afr. Transkei, Port St Jones, Silaka, 31.33 S - 29.30 E, 28.11.1987; E-Y: 2542, UV light collection, leg. Endrödy-Younga", (2 ♀♀, TMSA); KwaZulu-Natal: "S.Afr: Kruger Nat Pk, Pafuri res. camp, 22.25 S - 31.12 E, 14.2.1994; E-Y: 3001, UV light & trap, leg. Endrödy-Younga", (2 ♀♀, TMSA); "S.Afr: Kruger Nat Pk, Skukuza res. camp, 24.59 S - 31.36 E, 28.1.1994; E-Y: 2952, UV light & trap, leg. Endrödy-Younga", (2 ♀♀, TMSA); "S.Afr: Kruger Nat Pk, Skukuza res. camp, 25.00 S - 31.35 E, 19.2.1995; E-Y: 3102, UV light & trap, leg. Endrödy-Younga", (2 ♀♀, TMSA); "S.Afr: Kruger Nat Pk, Skukuza res. camp, 24.59 S - 31.36 E, 25.2.1995; E-Y: 3120, UV light & trap, leg. Endrödy-Younga", (1 ♀, TMSA); North-West Province: "Swartruggen Dam, W. Tvl., III.1970, L.Schulze & R.Jones", (1 ♀, TMSA).

Note. These female specimens show many characters similar to those of *P. hlavaci* sp. nov. and may represent additional populations of the new species or one or more similar species. Precise identification is currently impossible without males because our knowledge of the

variability of Afrotropical *Procirrus* is still insuffient. Localities of these specimens are indicated with question marks in the distribution map (Fig. 16).

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