New records, new combination and two new species in the genus *Achaenops* Suffrian, 1857 (Coleoptera: Cryptocephalinae)

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**Abstract.** Two new species in the genus *Achaenops* Suffrian, 1857 are described and illustrated, *A. lopatini* sp. n. and *A. nanus* sp. n. from South Africa. *A. lopatini* sp. n. differs from all other species with impunctate pronotum and dark brown to black pronotum and elytra, by the confused punctuation of the elytra and the expanded pronotal side margins. *A. nanus* sp. n. is the smallest species in the genus, with sparse punctuation of pronotum, yellowish fore legs and dark brown mid- and hind legs. *Coptocephala klassi* Medvedev, 2006 is transferred to *Achaenops*: *A. klassi* (Medvedev, 2006) comb. n. New records are given for *A. monstrosus* Schöller, 2006, *A. klassi* and *A. sericinus* (Suffrian, 1857). The previously unknown male of *A. sericinus* is described. The genus is recorded for the first time from Free State, North West and Mpumalanga Provinces of South Africa. A check-list and a distribution map for the ten species in this genus endemic to South Africa are given.
Achaenops lopatini sp. n.  (Fig. 1–9)

**Type locality.** Republic of South Africa, Mpumalanga, 10 km South of Carolina, on Chrisissmeer road, 26.09S 30.09E.


**Description.** Holotype (male). Size (mm): length 2.4, width of elytra at humeri 1.3, length of pronotum 0.8 and width 1.25.

Head. Head visible in dorsal view, shiny, with sparse coarse punctures, not shagreened, labrum black, mandibles brown; labial palpi acute; eyes small and upper lobes distant, therefore distance between upper lobes as long as eye length in lateral view, eyes evenly convex, canthus deep; antenna 0.6 × body length, segments 1–3 of antennae dark brown, 4–11 black, 5–11 apically expanded, antennae inserted low on frons. Thorax. Pronotum black, wet showing feebly blue metallic reflex, lateral margins expanded, simultaneously visible in dorsal view; median lobe of basal margin truncate, slightly raised, pronotum shiny and practically impunctate (at 70 × magnification very small and shallow puncturation detectable), prothorax black, intercalary proximal process elongate, as wide as coxal cavity, apically straight, front margin with a broad carina, basally blunt triangular; hypomeron not punctured; scutellum narrowly triangular, apically raised above elytra; elytra blackish brown, with confused puncturation on disk, partly regular rows apically, basally and laterally, interstices shiny, smooth; epipleuron half the length of the elytra; legs blackish brown, external edge of tibiae simple, fore tibiae only slightly longer than hind tibiae, and only slightly bent, tarsi brown, claws simple, small; no tibial spurs. Abdomen. Venter dark brown, sternites and pygidium with coarse punctures and short white setae, pygidium shagreened; elytra covering 50% of pygidium; aedeagus well sclerotized, ventrally almost straight in lateral view (fig. 5), aedeagus with a rounded, slightly asymmetric tip, a pair of lobate frenulae and a broad, wide transverse endosculate visible in ostium (fig. 4), ventral side irregularly depressed with a sharp longitudinal ridge (fig. 5), tegmen as in fig. 6, length of aedeagus 0.85 mm. Male. Head. Head as in male, eyes relatively small, distant, ratio eye width 1.28 times eye length, canthus triangular; egg-hollow shallow; spermatheca light brown, hook-shaped, prominent longer than reservoir, spermathecal ductus emerging from a cone-shaped extension of spermatheca, spermathecal ductus narrow and densely coiled up close to spermatheca, getting wider basally (fig. 9), coiled with ventral sclerite a crosswise band of almost regular length, apodemes small, wider than rectum, ventral chitinous prolongation of lateral fold p. 23 (fig. 8), dorsal sclerites triangular, transverse, dorsal sclerites not

**Differential diagnosis.** A medium sized blackish brown species with black head and pronotum, with non-modified clypeus in males, differs from all other species by the combination of impunctate pronotum with expanded side margins, black pronotum and elytra, and partly confused punctuation of elytra (fig. 1–2).

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Head. Head visible in dorsal view, shiny, with sparse coarse punctures, not shagreened, labrum black, mandibles brown; labial palpi acute; eyes small and upper lobes distant, therefore distance between upper lobes as long as eye length in lateral view, eyes evenly convex, canthus deep; antenna 0.6 × body length, segments 1–3 of antennae dark brown, 4–11 black, 5–11 apically expanded, antennae inserted low on frons. Thorax. Pronotum black, wet showing feebly blue metallic reflex, lateral margins expanded, simultaneously visible in dorsal view; median lobe of basal margin truncate, slightly raised, pronotum shiny and practically impunctate (at 70 × magnification very small and shallow puncturation detectable), prothorax black, intercalary proximal process elongate, as wide as coxal cavity, apically straight, front margin with a broad carina, basally blunt triangular; hypomeron not punctured; scutellum narrowly triangular, apically raised above elytra; elytra blackish brown, with confused puncturation on disk, partly regular rows apically, basally and laterally, interstices shiny, smooth; epipleuron half the length of the elytra; legs blackish brown, external edge of tibiae simple, fore tibiae only slightly longer than hind tibiae, and only slightly bent, tarsi brown, claws simple, small; no tibial spurs. Abdomen. Venter dark brown, sternites and pygidium with coarse punctures and short white setae, pygidium shagreened; elytra covering 50% of pygidium; aedeagus well sclerotized, ventrally almost straight in lateral view (fig. 5), aedeagus with a rounded, slightly asymmetric tip, a pair of lobate frenulae and a broad, wide transverse endosculate visible in ostium (fig. 4), ventral side irregularly depressed with a sharp longitudinal ridge (fig. 5), tegmen as in fig. 6, length of aedeagus 0.85 mm. Male. Head. Head as in male, eyes relatively small, distant, ratio eye width 1.28 times eye length, canthus triangular; egg-hollow shallow; spermatheca light brown, hook-shaped, prominent longer than reservoir, spermathecal ductus emerging from a cone-shaped extension of spermatheca, spermathecal ductus narrow and densely coiled up close to spermatheca, getting wider basally (fig. 9), coiled with ventral sclerite a crosswise band of almost regular length, apodemes small, wider than rectum, ventral chitinous prolongation of lateral fold p. 23 (fig. 8), dorsal sclerites triangular, transverse, dorsal sclerites not...
attached to sinuose sclerotisation of the lateral fold, a pair of sclerotized areas posterior to dorsal sclerites present (fig. 7).

Variability. Size (mm) (mean ± standard deviation (max., min., n)): length of male 2.55 ± 0.12 (2.75, 2.45, 5), female 3.08 ± 0.15 (3.35, 3.5), width of elytra at humeri in male 1.41 ± 0.04 (1.45, 1.35), in female 1.74 ± 0.07 (1.85, 1.7), length of elytron in male 1.76 ± 0.07 (1.85, 1.65), in female 2.23 ± 0.1 (2.4, 2.15), length of pronotum in male 0.82 ± 0.07 (0.9, 0.75), width 1.37 ± 0.04 (1.4, 1.3), length of pronotum in female 0.96 ± 0.05 (1, 0.9) and width 1.63 ± 0.07 (1.75, 1.6), length of antenna in male 1.5, in female 1.51 ± 0.02 (1.55, 1.5).

The ridge on the ventral side of the aedeagus is narrow and distinct in some males, but blunt and less distinct in others.

Etymology. This species is dedicated to Prof. Dr. Igor Lopatin (1923–2012), who devoted his research to the taxonomy of Chrysomelidae, especially to the Cryptocephalinae. His published work guided me from my early beginnings as a school boy interested in beetles via our personal meeting in Munich within the frame of the Entomofaunistic Society to the honour of a joint publication for the Catalogue of Palaearctic Coleoptera.

Distribution and biology. Known from the provinces Free State, KwaZulu-Natal, North West, Eastern Cape and Mpumalanga (fig. 10). No information on the biology is available, one specimen is known to be obtained by beating.

Achaenops nanus sp. n. (Fig. 11–19)

Type locality. Republic of South Africa, Western Cape, 80 km North of Cape Town, route R27 (33.15S, 18.15E).


Differential diagnosis. A small species with reddish dark brown head and pronotum, and black elytra, with non-modified clypeus in males, differs from the similar A. dorsalis by the combination of size, sparse punctuation of pronotum, dark brown mid- and hind legs (fig. 18–19), and male and female genitalia.

Description. Holotype (male). Size (mm): length 1.65, width of elytra at humeri 0.4, length of pronotum 0.4 and width 0.35.

Head. Head visible in dorsal view, shiny, with sparse coarse punctures, not shagreened, labrum reddish brown with yellowish margin, mandibles brown, gena yellowish brown; labial palpi acute; eyes small and upper lobes distant, therefore distance between upper lobes 1.3 times eye length in lateral view, eyes evenly convex, canthus moderately deep; antenna short, i.e. 0.46 × body length, segments 1–6 of antennae yellowish brown, 7–11 dark brown, 7–11 apically expanded, antennae inserted low on frons.
horizontally bend (fig. 11), in dorsal view gradually narrowing towards apex (fig. 12), aedeagus with a rounded, asymmetric tip, a pair of triangular frenulae and a wide transverse endosclerite visible in ostium (fig. 14), ventral side with a blunt longitudinal ridge (fig. 13), length of aedeagus 0.5 mm.

Female. Head. Head as in male, eyes relatively small, distant, eye width 1.53 times eye length, canthus triangular, moderately deep; egg-hollow shallow, punctured; spermatheca dark brown, hook-shaped, slender, pump as long as reservoir, spermathecal ductus emerging from a cone-shaped extension of spermatheca, spermathecal ductus fine and densely coiled up (fig. 15); kotpresse with ventral sclerite a broad crosswise band, hind margin convex, apodemes small, wider than rectum, with four longitudinal sclerotized rows parallel to lateral fold, ventral sclerotisations of lateral fold present (fig. 17), dorsal sclerites triangular, transverse, wider than rectum, dorsal sclerotisation of the lateral fold present (fig. 16).

Variability. Size (mm) (mean ± standard deviation (max., min., n)): length of male 1.52 ± 0.09 (1.63, 1.4, 5), female 1.81 ± 0.08 (1.9, 1.75, 5), width of elytra at humeri in male 0.82 ± 0.04 (0.88, 0.78), in female 0.93 ± 0.03 (0.98, 0.9), length of elytron in male 1.09 ± 0.09 (1.23, 1.03), in female 1.37 ± 0.03 (1.4, 1.33), length of pronotum in male 0.42 ± 0.03 (0.48, 0.4), width 0.78 ± 0.04 (0.83, 0.75), length of pronotum in female 0.46 ± 0.03 (0.5, 0.43) and width 0.87 ± 0.02 (0.9, 0.85), length of antenna in male 0.71 ± 0.03 (0.73, 0.65), in female 0.67 ± 0.01 (0.68, 0.65).

The punctuation on the disk of the pronotum ranges from sparse but regular to almost absent.

Etymology. The name refers to the small size of the species, nanus (Latin) means dwarf.

Distribution and biology. Known from the type locality in the Western Cape Province only (fig. 10). No information on the biology is available.

Achaenops nanus sp. n. (Fig. 20–27)

Coptocephala klassi Medvedev, 2006 comb. n.

(Fig. 20–27)

Coptocephala klassi Medvedev, 2006: 139 (described in Clytrinae).

This species was described based on 6 males and 7 females (fig. 20–21) from South Africa, Western Cape Province, Grootbos N Gansbaai (34°54’S, 19°41’E), 31.08.2003. Three paratypes from SMTD were re-examined.

Thorax. Pronotum reddish dark brown, lateral margins narrow, not simultaneously visible in dorsal view; median lobe of basal margin truncate, apically slightly raised, pronotum shiny, punctures coarse, on disk very sparse, more dense laterally; prothorax blackish brown, intercoxal prosternal process elongate, half as wide as coxal cavity, front and hind margin straight without carina; hypomeron with sparse coarse punctures; scutellum triangular, apically not raised above elytra; elytra blackish brown, wet showing feeble blue metallic reflex, with regular rows of fine punctures, striae not impressed, interstices shiny, smooth; epipleuron 2/3 the length of the elytra; hind legs blackish brown, mid legs dark brown and fore tibia and fore femur yellowish brown, external edge of tibiae simple, fore tibiae only slightly longer than hind tibiae, and only slightly bent, all tarsi dark brown, claws simple, small; no tibial spurs.

Abdomen. Venter dark brown, sternites with coarse punctures and short white setae, with longer setae at mid of last ventrite, hind margin of last ventrite convex, pygidium with fine punctures; elytra covering 50% of pygidium; aedeagus well sclerotized, dark brown, ventrally almost straight in lateral view, wide, apex with ostium visible in ostium (fig. 23), ventral side regularly rounded except for a basal depression, endosclerite visible through aedeagan lobe (fig. 24), length of aedeagus 0.8 mm.

Spermatheca light brown, hook-shaped, pump longer than reservoir, spermatical ductus emerging from a cone-shaped extension of spermatica, spermatical ductus thick and coiled up close to spermatica, but not spiral, getting very thin basally (fig. 27); kotpresse with ventral sclerite, visible in ostium (fig. 23), ventral side regularly rounded except for a basal depression, endosclerite visible through aedeagan lobe (fig. 24), length of aedeagus 0.8 mm.

Spermatheca light brown, hook-shaped, pump longer than reservoir, spermatical ductus emerging from a cone-shaped extension of spermatica, spermatical ductus thick and coiled up close to spermatica, but not spiral, getting very thin basally (fig. 27); kotpresse with ventral sclerite,
i.e. a crosswise band narrowing towards centre, apodemes small, slightly wider than rectum and bend downwards, ventral chitinpolster present, ventral sclerotisations of lateral fold present (fig. 26), dorsal sclerites transverse, semi-rectangular, with an extension directed posteriorly towards dorsal fold, dorsal sclerites not attached to the broad sclerotisation of the lateral fold (fig. 25).

Achaenops monstrosus Schöller, 2006
(Fig. 28, 29)

From this species described based on 6 specimens, more material was made available for study by SANC.


Achaenops sericinus (Suffrian, 1857)
(Fig. 30–34)


Description of a male of A. sericinus. Size (mm): length 3, width of elytra at humeri 1.5, length of pronotum 1.05 and width 1.5.

Head. Head visible in dorsal view, matt, densely punctured and shagreened, clypeus simple, apically convex, labrum and mandibles brown; labial palpi acute, brown; a shallow, short longitudinal impression on frons; eyes small and upper lobes distant, therefore distance between upper lobes 1.44 times eye length in lateral view, eyes evenly convex, canthus deep, rounded; antenna short, 0.42 × body length, segments 1–4 of antennae light brown, 5–11 dark brown, 5–11 apically expanded, antennae inserted low on frons.

Thorax. Pronotum black, lateral margins expanded, simultaneously visible in dorsal view; median lobe of basal margin truncate, slightly raised, pronotum matt, densely punctured, punctures fine but deep, explanate lateral margin with a row of punctures, whole pronotum shagreened; scutellum narrowly triangular, in one level with elytra except for very tip only raised above elytra; prothorax black except for very tip only raised above elytra; prothorax black except for brown mesosternal process, intercoxal prosternal process very narrow, about 1/3 of coxal width, apically straight, basally blunt triangular; hypomeron with dense coarse punctures, elytra blackish brown, with puncturation on disk confused by extra-punctures and some irregular rows, almost regular rows at base and apex of elytra, elytra shagreened, matt, elytral lateral margins explanate; epipleuron 2/3 the length of the elytra, basally broad and gradually narrowing, with a row of punctures; legs dark brown except for lighter brown trochanter, all tibiae explanate and with a longitudinal ridge, external edges of tibiae triangularly broadened, all tibiae of similar length, tarsal claws black, claws appendiculate, no tibial spurs.

Abdomen. Venter blackish brown, sternites and pygidium with punctures and shagreened, with short white setae; elytra covering 50% of pygidium; aedeagus long, lobes broad in lateral view, ventral side bulging in lateral view (fig. 32), aedeagus apically straight, a pair of triangular frenulae and a semi-circular endosclerite visible in ostium (fig. 33), ventrally a minute rounded symmetric tip visible,
Aedeagus regularly rounded on ventral side except for a basal depression (fig. 34), length of aedeagus 0.7 mm.

Check-list for the genus Achaenops Suffrian, 1857

Achaenops Suffrian, 1857: 234.
Achaenops dorsalis Suffrian, 1857: 236.
= Protinocephalus weiseanus Reineck, 1913: 648.
Achaenops lopatini sp. n.
Achaenops nanus sp. n.

Discussion

The study of the new species described and the male of A. sericinus resulted in a number of character states previously not known for the genus Achaenops, including dorsal sclerites of kotpresse wider than rectum in females, and asymmetric aedeagus and central pit on frons in males. Within the genus Achaenops, now a wide variability of sexual dimorphism can be observed. Males A. lopatini sp. n. are just smaller in habitus than females. Enlarged head and mandibles in male A. klossi resemble the genus Coptocephala Chevolat, 1836, where this species was originally described in. The enlarged head, clypeus, mandibles and fore-legs resemble the characters e.g. of the Clytrini genus Miopristis Lacordaire, 1848. In A. sericinus, the head is not modified, but the male pronotum is wider than the elytral base and the legs are broader compared to the female. These observations point to specifically different strategies of male agonistic behaviour within the genus Achaenops. Moreover, presumably similar mating systems independently developed in Achaenops and different genera of Clytrini. Recently Reid and Beatson [2013] reviewed the scattered occurrence of enlarged male mandibles in various tribes and subtribes of Cryptocephalinae, and suggested to use this character with caution as a supra-specific diagnostic character within Cryptocephalinae. The same may apply to enlarged male heads, legs, pronotum or modified clypeus as suggested by the study of Achaenops.

A. lopatini sp. n. is the second species beside A. dorsalis with the ventral side of the aedeagus not being regularly vaulted. Moreover, variability of the ventral aedegal ridge was recorded for A. lopatini sp. n. It was found to be distinct in most males, but blunt in some males from the same collection site. Variability in aedagus-characters was rarely recorded in Cryptocephalini, e.g. in the Cryptocephalus hypochaeridis-species group, where a ventral longitudinal impression might be present or lacking [Leonardi, Sassi, 2001].

Another interesting observation is the presence of appendiculate claws in A. sericinus while the claws are simple in the other species of Achaenops. Appendiculate claws are highly ranked characters in Cryptocephalinae taxonomy, their presence is the main character to separate e.g. Melixanthus Suffrian, 1854 spp. from Cryptocephalus spp. [Schöller, 2013].

The records of A. lopatini sp. n. are the first records of Achaenops from the provinces Free State, North West and Mpumalanga and consequently the most northern records for the genus, up to 25.5°S. The record from USA shows that Achaenops can potentially be imported together with Protea plants to other parts of the world.

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References

Reid C.A.M., Beatson M. 2013. Chrysomelid males with enlarged mandibles: three new species and a review of occurrence in the family (Coleoptera: Chrysomelidae) // Zootaxa. 3619(1): 79–100.
References


