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## The Genus *Achaenops* Suffrian, 1857 (Chrysomelidae: Cryptocephalinae), Designation of Neotypes and Description of New Species<sup>1</sup>

Matthias SCHÖLLER

Berlin, Germany

**Abstract.** Described in 1857 by Eduard SUFFRIAN, the identity of the monotypic genus *Achaenops* remained doubtful. The type specimens were never re-examined after the original description and later lost when the collection of the Natural History Museum in Hamburg was destroyed. In this study, a neotype is designated for the generic type species *A. dorsalis*. Two other species described later in *Achaenops* were not found to be congeneric with *A. dorsalis*, and were transferred: *Lophistomus mandibularis* (Jacoby, 1901: 240) comb. nov. and *Acolastus nigrolineatus* (Bryant, 1944: 336) comb. nov. Four species originally described in *Cryptocephalus* are transferred to *Achaenops*: *Achaenops ruficornis* (Suffrian, 1857: 75) comb. nov., *Achaenops obscurellus* (Suffrian, 1857: 76) comb. nov., *Achaenops sericinus* (Suffrian, 1857: 80) comb. nov., and *Achaenops gilvipes* (Suffrian, 1857) comb. nov. *Protinocephalus weiseanus* Reineck, 1913: 648 was found to be a junior synonym of *A. gilvipes*, and consequently *Achaenops* Suffrian, 1857 (= *Protinocephalus* Reineck, 1913 syn. nov.). A neotype is designated for *C. obscurellus*. Lectotypes are designated for *Cryptocephalus ruficornis* and *C. gilvipes*. Two species are described as new to science from South Africa, *Achaenops punctatellus* sp. nov. from the Cape Peninsula and *Achaenops monstrosus* sp. nov. from the Western Cape. Male and female genitalia are figured for the first time. A map showing the collection sites is given.

**Key words.** Coleoptera, Achaenopina, South Africa, taxonomy

### 1. INTRODUCTION

The genus *Achaenops* was described by monotypy by SUFFRIAN (1857), who gave a detailed diagnosis for it. CLAVAREAU (1913) erected the tribe Achaenopini for this genus and no more genera were added to this tribe that is currently ranked as a subtribe Achaenopina of Cryptocephalini. There is no published record of a re-examination of the generic type species *A. dorsalis* after its original description. Consequently, the study of *A. dorsalis* is of interest for the understanding of the systematics of the Cryptocephalini. More specifically, it is the only subtribe of Cryptocephalini endemic to the Afrotropical Region. The designation of a neotype for *A. dorsalis* is necessary. Two species that were later described in *Achaenops* (JACOBY 1901; BRYANT 1944) are examined as well as types of Afrotropical species of *Cryptocephalus* and undetermined specimens in order to evaluate the diversity and distribution of *Achaenops*.

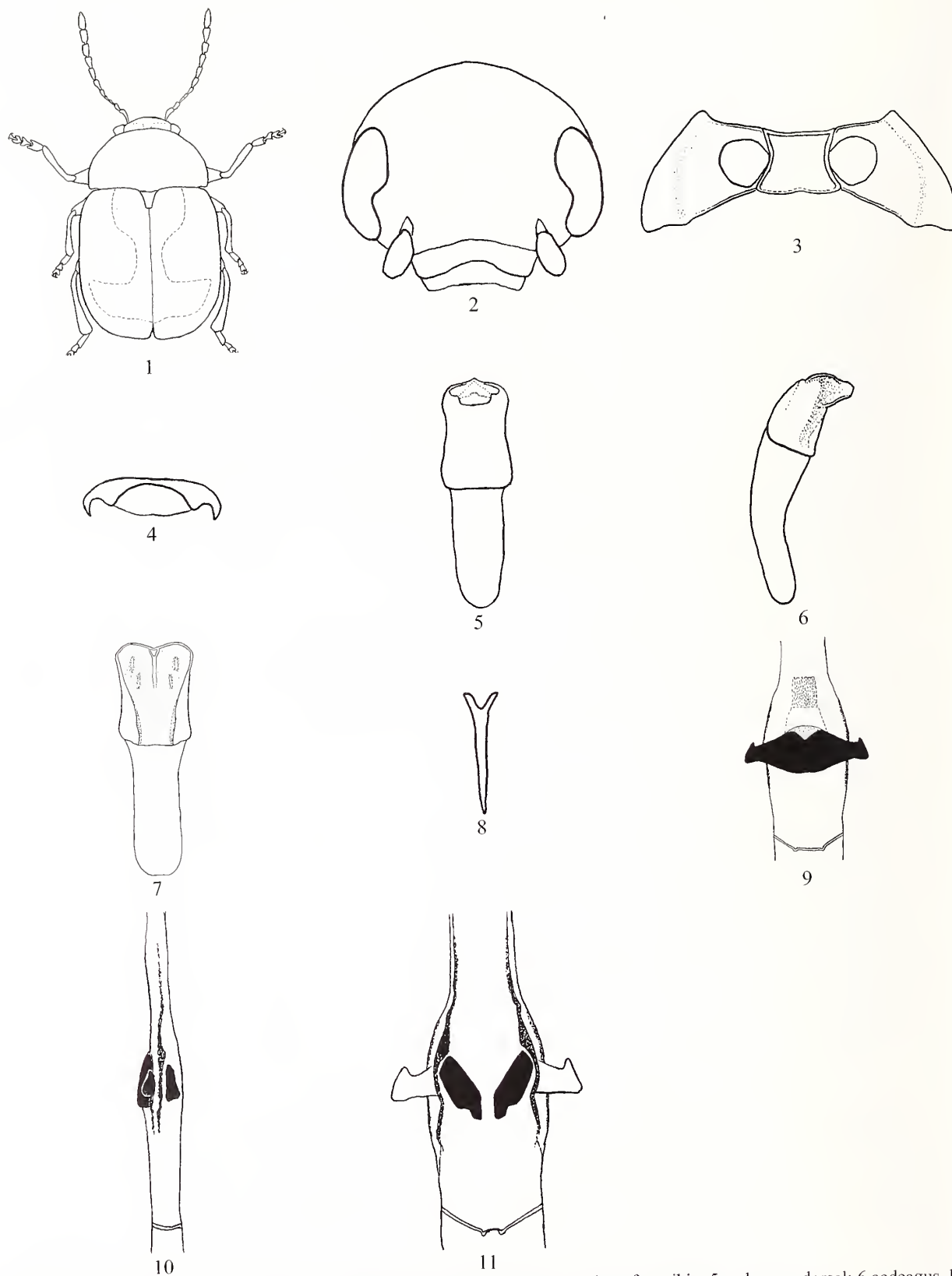
### 2. MATERIAL AND METHODS

The dried adults were dissected by separating the abdomen in water, the contents were soaked in cold diluted KOH and then washed in water. The eye length was measured in lateral view, the interocular space in frontal view.

Included in this study are specimens located in the following nine collections. The letter codens used in the text are according to the list "Abbreviations for Insect and Spider Collections of the World" (EVENHUIS & SAMUELSON 2005).

<b>BMNH</b>	Natural History Museum, London, Great Britain (J. Beard and S. Shute)
<b>MESC</b>	Matthias Schöller personal Collection, Berlin, Germany
<b>MLUH</b>	Martin-Luther-Universität Halle/Saale, Germany, Wissenschaftsbereich Zoologie (K. Schneider)
<b>NHMB</b>	Naturhistorisches Museum Basel, Switzerland (E. Sprecher and D. Burckhardt)
<b>NMW</b>	Naturhistorisches Museum Wien, Austria (H. Schönmann und H. Schillhammer)
<b>SAMC</b>	Iziko Museums of Capetown (South African Museum) Cape Town, South Africa (M. Cochrane)
<b>SANC</b>	South African National Collection of Insects, Pretoria, South Africa (E. Grobbelaar)
<b>TMSA</b>	South Africa, Gauteng, Pretoria, Transvaal Museum (R. Müller)
<b>ZMHB</b>	Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (J. Frisch and M. Uhlig)

<sup>1</sup> Paper presented to the 6th International Symposium on the Chrysomelidae, Bonn, Germany, May 7, 2004.



**Figs. 1-11.** *Achaenops dorsalis*. 1 habitus; 2 head, frontal; 3 thorax ventral; 4 claw, fore tibia; 5 aedeagus, dorsal; 6 aedeagus, lateral; 7 aedeagus, ventral; 8 tergalapodem; 9 kotpresse, dorsal; 10 kotpresse, lateral; 11 kotpresse, ventral.

### 3. RESULTS

#### *Achaenops dorsalis* Suffrian, 1857 (Figs. 1-13)

*Achaenops dorsalis* Suffrian, 1857 (SUFFRIAN 1857: 236)

**Type specimen.** Neotype (male, NHMB): / Graaff-Reinet-Karoo Nat. Res., 830-1300 m, 24.X.1988 [white] / S. Afr., Cape Prov., W. Wittmer [white] / Neotypus *Achaenops dorsalis* SUFFRIAN, des. Matthias Schöller [red, printed] /.

A neotype is designated here in order to ensure the name's proper and consistent application.

**Other specimens studied:** 1f (MESC): South Africa, East Cape, Tsitsikamma nat. park, Storm river mouth, 34°01'S, 23°52'E, 5-11-1999, R. Constantin; 1m (BMNH): Mossel Bay, Cape Province, October 1921, R. E. Turner, Brit. Mus., 1921-450; 2m (BMNH): Mossel Bay, 1.-14.xi.1921, R. E. Turner, Brit. Mus., 1921-476; 1m (BMNH): Mossel Bay, 18.-30.xi.1921, R.E. Turner, Brit. Mus., 1922-2; 1m 1f (MESC) 2f (NHMB): Cape Province, Graaff-Reinet-Karoo Nature Reserve, 830-1300 m, 24.X.1988, leg. W. Wittmer; 1m (NHMB): Cape Province, Heidelberg, 12-24 km W, 05.XI.1988, leg. W. Wittmer & M.J.D. Brendell.

**Type locality.** The type locality of the neotype is approximately 32°41'S, 24°29'E, the collection locality of the lost types of Suffrian was Kaffernland, which means the territory of the Xhosa people in South Africa.

**Diagnosis.** A small orange-brown species with punctuation of pronotum dense and coarse.

SUFFRIAN (1857) listed the short, ovate body and the distant eyes with shallow canthus as characters to differentiate *A. dorsalis* from species of *Cryptocephalus*.

#### Description of neotype (male)

**Habitus.** Body small, shape oval (Fig. 1), surface glabrous, size [mm]: length 1.8, width of elytra at humeri 1.0, length of pronotum 0.5, width 1.0.

**Head.** Head orange, regularly vaulted, glabrous, shiny, punctuation sparse and coarse, head sunk into prothorax but still visible in dorsal view; clypeus punctate; eyes evenly convex, both laterally and longitudinally, eyes small, canthus shallow, triangular, eyes distant (Fig. 2), ratio of distance between upper lobes to eye length is 2.7 : 1.8., eye length about 2.5 x gena, gena with a rim for the first antennomere; antenna (Fig. 1) orange, antennomeres without circular sensillate depressions, antennomere 1 swollen, antennomeres 5-11 apically dilated, brown, longer than wide, clypeal area not distinctly separated, labial palpi acute.

**Thorax.** Pronotum: orange, punctuation dense and coarse, interstices glabrous, shiny, all margins even, i.e., basal margin of pronotum without a row of teeth, lateral margins with a fine, narrow carina, only basal parts in posterior angles simultaneously visible in dorsal view; median lobe of basal margin truncate at apex but not raised; prosternal cavities closed; prosternal process transverse; ratio minimum width : length of prosternal process like 2:1.4, sides concave, apically and laterally with a fine ridge, apex concave (Fig. 3); scutellum triangular, elongate, glabrous, impunctate, without basal ridge, apically raised above elytra; elytra striate, scutellar row + 9 rows + marginal row, interstices glabrous; elytra apically rounded, reaching upper third of pygidium; epipleura long and broad, 4/5 the length of the elytra, with few punctures only, basal margin very fine; legs orange except for black claws; external edge of front tibiae not distinctly grooved; tarsi stout, first tarsomere of mid- and hind tarsi shorter than the following together; claws slightly dentate (Fig. 4).

**Abdomen.** Pygidium fuscous, side margins orange, sparsely and coarsely punctured, with short white setae, pygidium not visible in dorsal view; sternite 3 as long as sternites 4-7 along midline; lateral lobe at base of abdomen truncate; sternites orange with margins fuscous, densely and coarsely punctured, dull, with short white setae. Length of aedeagus 0.65 mm, apex with a fine tip (Fig. 5), bent in lateral view (Fig. 6) ventral side excavated with a central longitudinal ridge and four nodes (Fig. 7). Tergal apodeme small, Y-shaped with apical branches very short (Fig. 8).

#### Description of female:

**Habitus.** Size [mm]: length 2.3, width of elytra at humeri 1.3, length of pronotum 0.6, width 1.1.

**Head.** Ratio of distance between upper lobes to eye length is 3.0 : 1.9.

**Thorax.** Pronotum: centre of basal margin black; Elytra: additional punctures between scutellar row and suture.

**Abdomen.** Pygidium orange, base fuscous, sparsely and coarsely punctured, pit of female abdomen very shallow, almost as long as wide, diameter shorter than length of sternite, base of pit weakly limited and covered with long setae; kotpresse (Figs. 9-11): dorsal sclerites large, length about 2 X width (Fig. 11), not attached to the broad sclerotization of the lateral fold (Fig. 10); posterior of the ventral band two weakly sclerotized areas are present which are not sharply delimited, one close to the middle of posterior margin of ventral band and the other, rectangular one not attached to the ventral band (Fig. 9).



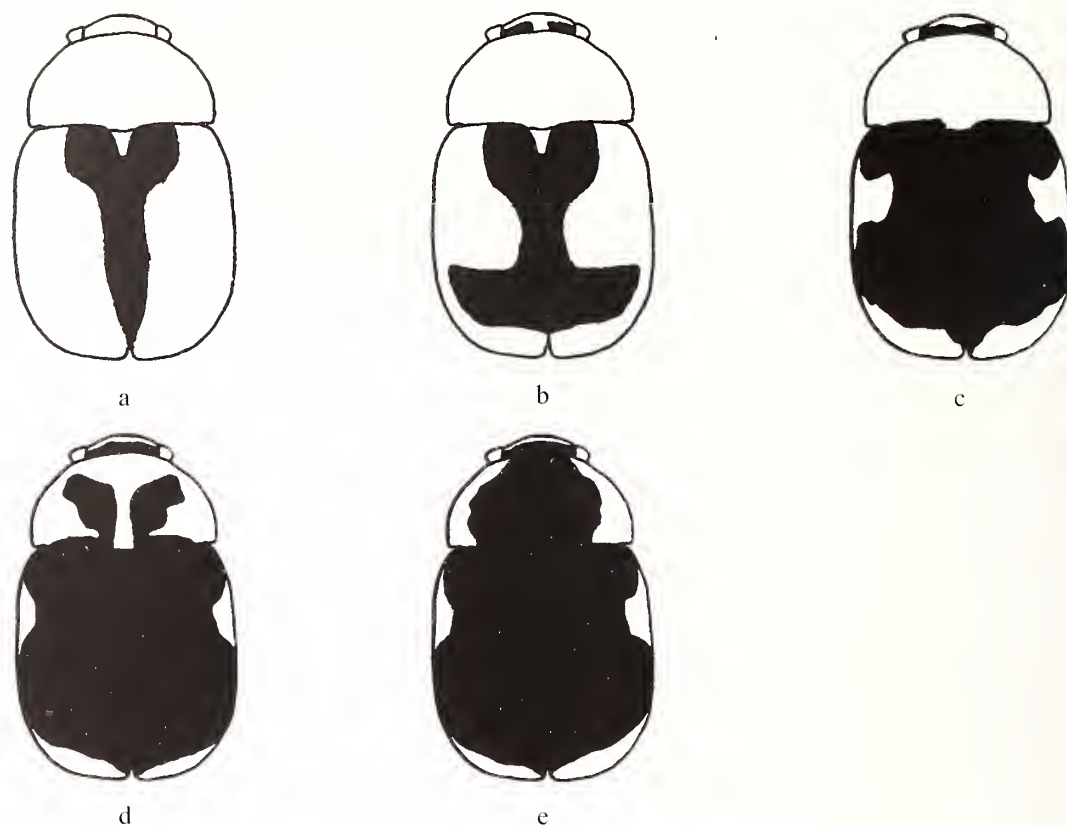


Fig. 12. Chromatic variability of *Achaenops dorsalis*.

**Variability.** The chromatic variability is shown in Fig. 12 a-e.

**Distribution and biology.** Known from four localities at the eastern part of the Western Cape and the western part of the Eastern Cape (Fig. 13). Figure 14 shows the habitat in Tsitsikama National Park (2Xm).

**Note.** The neotype of *A. dorsalis* is in accordance with the original description by SUFFRIAN (1857). The description of *A. dorsalis* was based on a series of specimens located in the collection of the Natural History Museum Hamburg, Germany. The types in Hamburg were not found and are presumed to have been destroyed during World War II together with almost the complete collection of the museum in 1945. Moreover, the collections in Halle/Saale, Berlin (Germany) and Stockholm (Sweden), which harbour type specimens of SUFFRIAN were consulted, but unfortunately none of them had specimens of *A. dorsalis*.

*Achaenops ruficornis* (Suffrian, 1857) comb. nov. (Figs. 13, 15-16)

*Cryptocephalus ruficornis* Suffrian, 1857 (SUFFRIAN 1857: 75)

**Type specimen.** Lectotype *Cryptocephalus ruficornis* (female, ZMHB): / 23639 [white] / Pt. Natal Boh. [blue]

/ *ruficornis* (Boh\*) Suffr.\* [blue] / Type [red] / *Cryptocephalus ruficornis* Suffrian, 1857 Lectotypus designiert Matthias Schöller [red] / *Achaenops ruficornis* (Suffrian, 1857), det. M. Schöller 2005 [white]/.

A lectotype was designated here in order to ensure the name's proper and consistent application.

**Type locality.** South Africa, Port Natal (Durban, 29°49'S 30°56'E).

**Size.** Length female lectotype 2.60, width of elytra at humeri 1.45, length of pronotum 0.90 and width 1.4.

**Head.** Eyes relatively large, ratio of minimum distance between upper lobes to eye length is 3.0 : 2.4.

**Thorax.** Claws relatively large, simple.

**Female.** Kotpresse with two small dorsal sclerites separated from the broad sclerotizations of the lateral fold (Fig. 15) and a ventral band (Fig. 16) terminating in two small apodemes.

**Distribution and biology.** Known only from the type locality.

**Note.** SUFFRIAN (1857: 75-76) gave a detailed description of this species. He mentioned male and female specimens communicated by Bohemann in ZMHB and Stockholm. I was only able to trace one female in

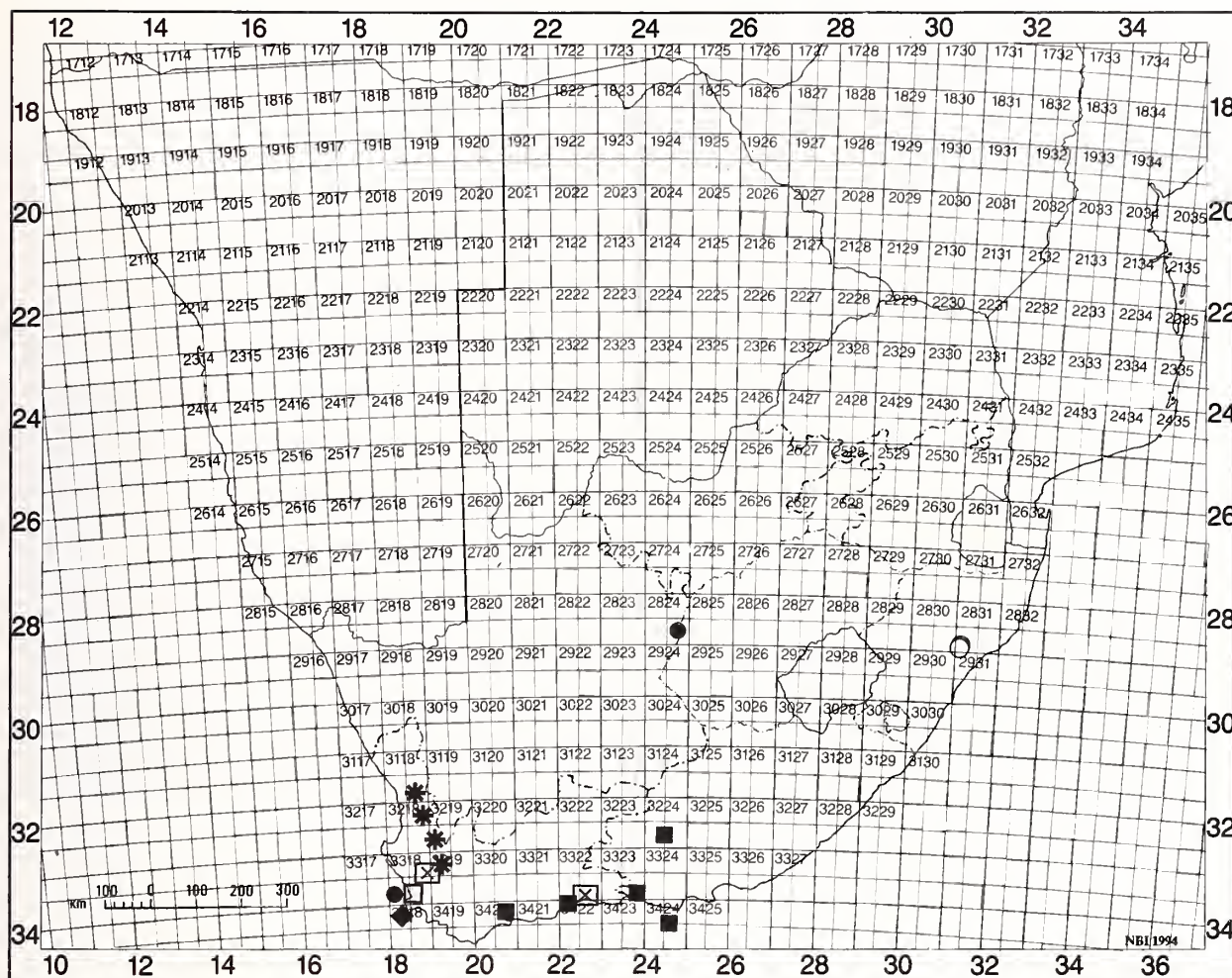


Fig. 13. Collection localities of *Achaenops* Suffrian; ■ = *A. dorsalis*, ○ = *A. ruficornis* (Natal), ◆ = *A. obscurellus*, ● = *A. sericinus*, □ = *A. punctatellus*, ☒ = *A. gilvipes*, \* = *A. monstrosus*.

ZMHB. *Achaenops ruficornis* is the first species SUFFRIAN (1857: 75) listed in his second species-group (2. Rotte) of *Cryptocephalus*, which comprised five species from South Africa.

*Achaenops obscurellus* (Suffrian, 1857) comb. nov. (Figs. 13, 17-27)

*Cryptocephalus obscurellus* Suffrian, 1857 (SUFFRIAN 1857: 76)

**Type specimen.** Neotype (male, SAMC): / South Africa, W. Cape pr. Cape Town, 34°13'S 18°28'E, Simon's Town, Miller Pt, 31.10.1999, R. Constantin [white label] / Neotypus *Cryptocephalus obscurellus* des. Matthias Schöller [red, printed] / *Achaenops obscurellus* (SUFFRIAN, 1857), det. Matthias Schöller 2005 [white, printed] /.

A neotype is designated here in order to ensure the name's proper and consistent application.

**Other specimens studied:** 1m (MESC): South Africa, W. Cape pr. Cape Town, 34°13'S 18°28'E, Simon's Town, Miller Pt, 31.10.1999, R. Constantin; 1m (ZMHB), 1f (SANC), 1f (MESC): S. Africa, Western Cape, Cape Peninsula, Hout Bay, slope 500m S., 34°03'S, 18°21'E, 20 m, 18.10.2003, R. Constantin.

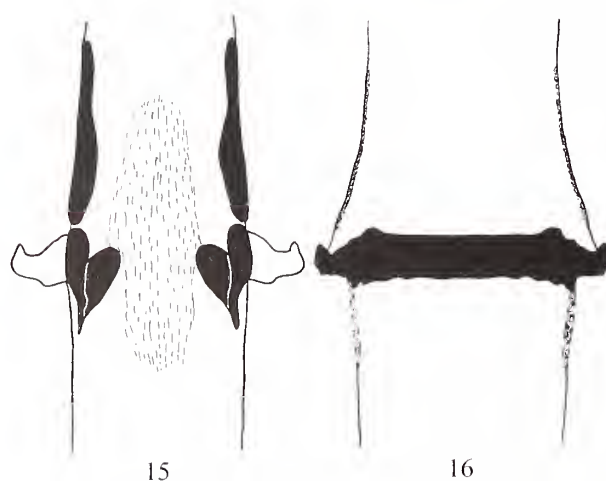
**Type locality.** The type locality of the neotype is Simon's Town, Miller Point (34°13'S 18°28'E), the collection locality of the lost types of SUFFRIAN was Kafferland, which means the territory of the Xhosa people in South Africa.

**Diagnosis.** A small black species with shining, impunctate pronotum and pronotal and elytral side margins simultaneously visible in dorsal view, elytra with regular rows of punctures, and brown legs, differs from *A. dorsalis* and *A. punctatellus* in the structure of the pronotum, the aedeagus and the colouration.





Fig. 14. Habitat of *Achaenops dorsalis*, Tsitsikamma National Park, South Africa. The "Mouth trail" along the seaside dominated by *Erica fourcadei*, *Erica* spp., many Asteraceae shrubs (*Chrysanthemoides monilifera*) on the border of a relict indigenous rain forest of *Podocarpus falcatus* and *P. latifolius*.



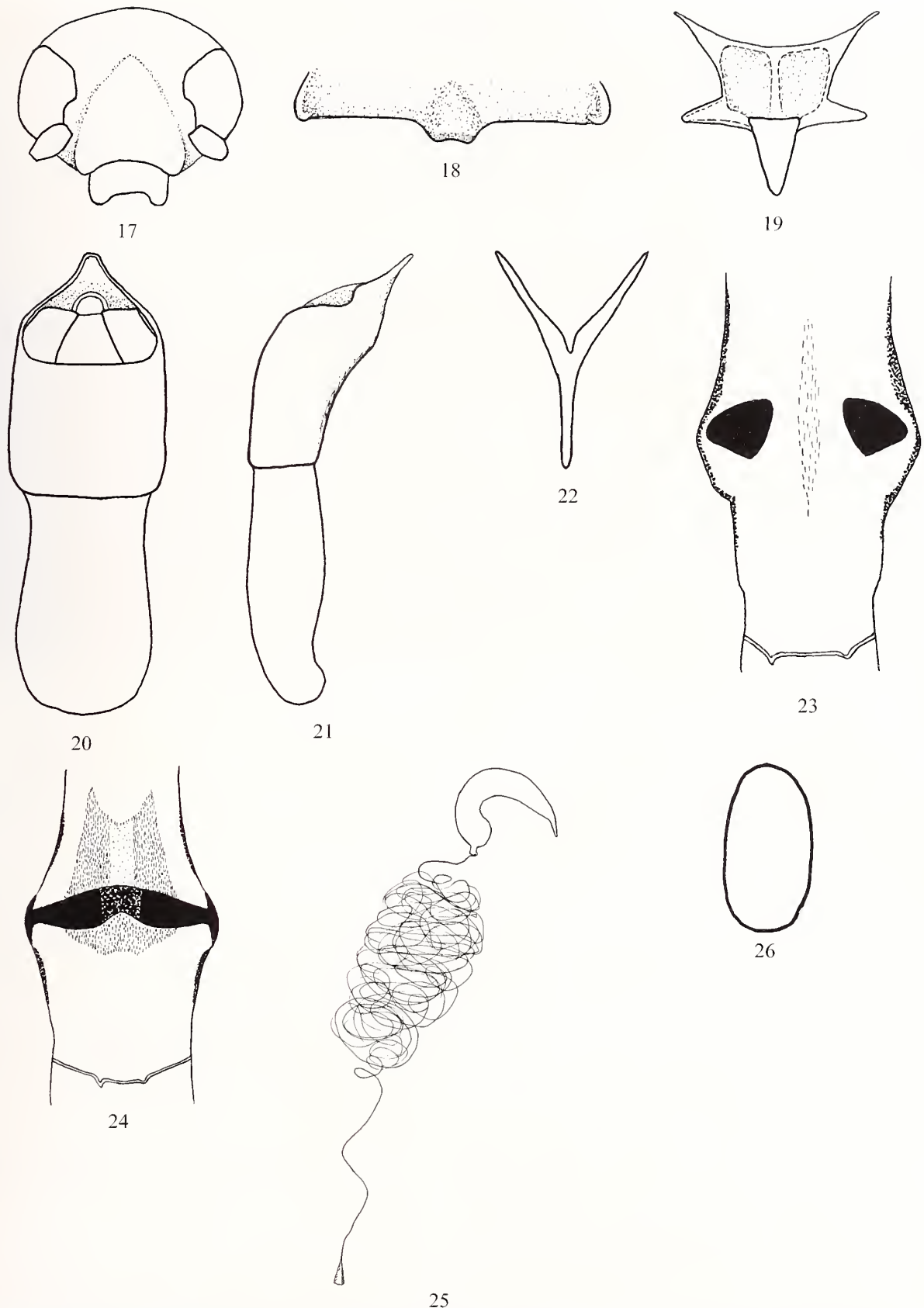
Figs. 15-16. *Achaenops ruficornis*. 15 kotpresse, dorsal; 16 kotpresse, ventral.

#### Description of neotype (male)

**Habitus.** Body small, shape oval; size [mm]: length 1.90, width of elytra at humeri 1.00, length of pronotum 0.50, width 1.00.

**Head.** Head visible in dorsal view, shiny, with coarse punctures; clypeus simple; labrum brown, mandibles brown, symmetric; eyes large and upper lobes approached (Fig. 17), ratio of minimum distance between upper lobes to eye length is 1.9 : 2.0; eye length about 4 X gena; canthus shallow and sinuate; antenna light brown, segments 6-11 black and apically expanded, antennae inserted low on frons; labial palpi acute.

**Thorax.** Pronotum shining and impunctate, with distinct margins, lateral margins with a fine, narrow carina and a row of punctures, simultaneously visible in dorsal view, median lobe of basal margin convex (Fig. 18); prosternal cavities closed, prosternal process transverse; scutellum elongate triangular (Fig. 19), without basal ridge, not apically raised above elytra, base without emargination; elytra with nine regular rows of punctures plus scutellar row which is not reaching the middle of the elytra plus marginal row, rows vanishing towards the base, interstices glabrous, lateral margins entirely simultaneously visible in dorsal view, elytra apically rounded, epipleuron half the length of the elytra, impunctate; legs brown, no tibial spurs, claws simple, small, apical margin of tarsomere 2 wider than tarsomere 1, fore tibia straight.



**Figs. 17-26.** *Achaenops obscurellus*. 17 head, frontal; 18 basal margin of pronotum; 19 scutellum; 20 aedeagus, dorsal; 21 aedeagus, lateral; 22 tergalapodem; 23 kotpresse, dorsal; 24 kotpresse, ventral; 25 spermatheca; 26 egg.





**Fig. 27.** Habitat of *Achaenops obscurellus*, Cape Peninsula, East coast South of Simon's Town at Miller's Point. A coastal shrub dominated by *Erica* spp and *Felicia* spp. among some indigenous *Protea* and alien *Pinus* tree, South Africa.

**Abdomen.** Venter dark brown, sternites and pygidium with coarse punctures and short white setae, lateral lobe at base of abdomen rounded; elytra covering 50% of pygidium; aedeagus simple (Fig. 20), with ventral side regularly vaulted (Fig. 21), length of aedeagus 0.6 mm, tergalapodem Y-shaped (Fig. 22).

#### Description of female:

**Habitus.** Size [mm]: length 2.50, width of elytra at humeri 1.35, length of pronotum 0.65, width 1.25.

**Head.** As in male, but eyes more distant, ratio of minimum distance between upper lobes to eye length is 2.5 : 1.9.

**Abdomen.** Kotpresse: dorsal sclerites triangular, not attached to the sclerotization of the lateral fold, dorsal fold slightly sclerotized (Fig. 23), posterior of the ventral band a trapeziform, sclerotized area, and another sclerotized area close to the middle of anterior margin of ventral band (Fig. 24); spermatheca (Fig. 25), spermathecal ductus coiled up and base extended; an egg found during dissection was longitudinal oval (Fig. 26).

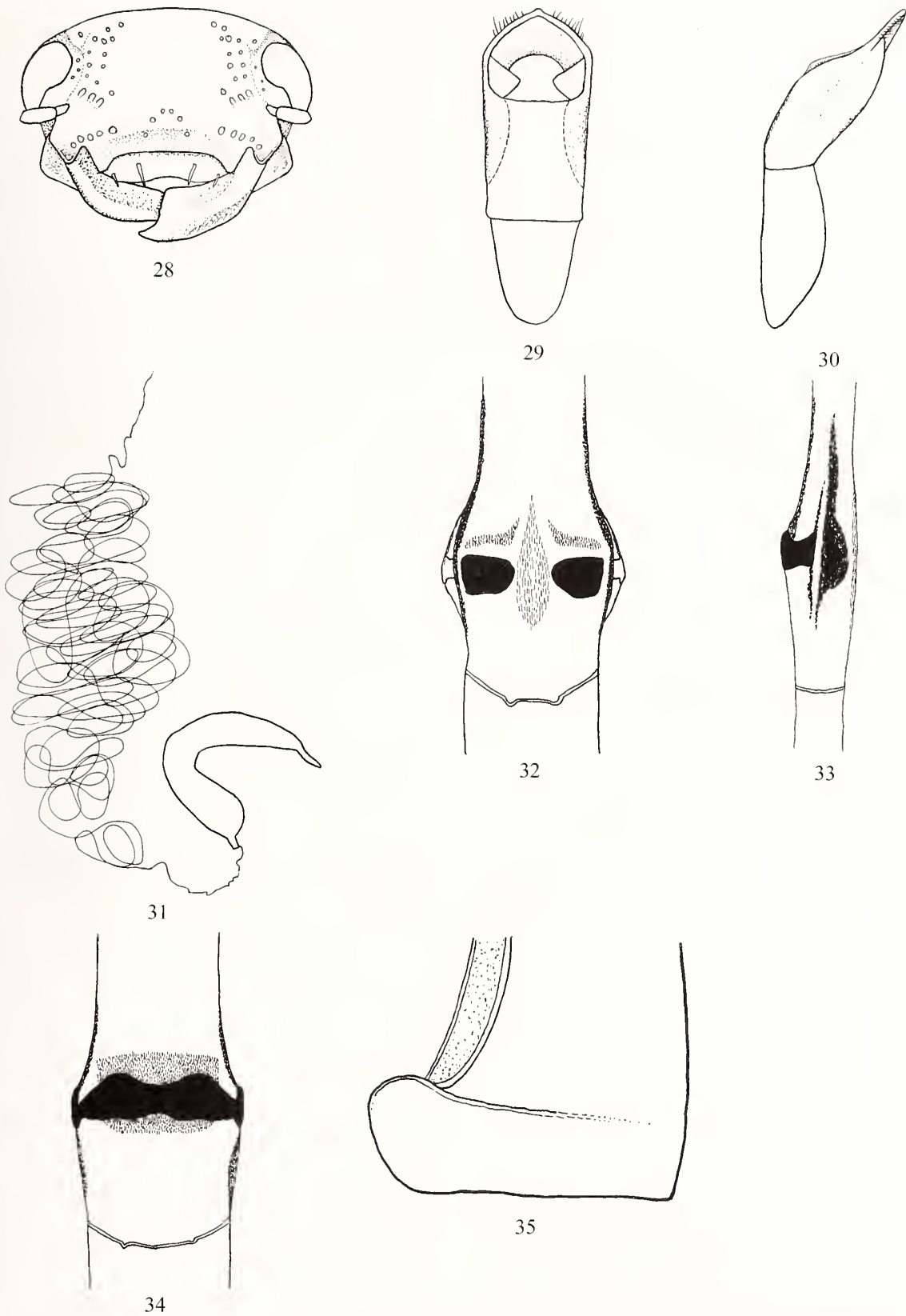
**Variability.** No significant variability was detected.

**Distribution and biology.** Known from two localities on the Cape Peninsula (Fig. 13). Figure 27 shows the habitat on Miller Point.

**Note.** The neotype of *A. obscurellus* is in accordance with the original description by SUFFRIAN (1857). The description of *A. obscurellus* was based on a single female specimen located in the collection of the Natural History Museum Hamburg, Germany, but it is presumed destroyed (see above under *A. dorsalis*). Moreover, the collections in Halle/Saale, Berlin (Germany) and Stockholm (Sweden), which harbour type specimens of SUFFRIAN were consulted, but none of them had a specimen of *A. obscurellus*.

*Achaenops obscurellus* is the second species SUFFRIAN (1857: 75) listed in his second species-group (2. Rotte) of *Cryptocephalus*, which comprised five species from South Africa.





**Figs. 28-35.** *Achaenops gilvipes*. 28 head, frontal; 29 aedeagus, dorsal; 30 aedeagus, lateral; 31 spermatheca; 32 kotpresse, dorsal; 33 kotpresse, lateral; 34 kotpresse ventral; 35 lateral lobe at base of abdomen.

*Achaenops gilvipes* (Suffrian, 1857) **comb. nov.** (Figs. 13, 28-35)

*Cryptocephalus gilvipes* Suffrian, 1857 (SUFFRIAN 1857: 77)

*Protinocephalus weiseanus* Reineck, 1913 (REINECK 1913: 648) **syn. nov.**

**Type specimens.** Lectotype *Cryptocephalus gilvipes* (male, MLUH): /29252 (red ink) [white]/ MLU Halle, WB Zoologie, S.-Nr. 7/1/5 [white]/ *Cryptocephalus gilvipes* Suffrian, 1857 Lectotypus designiert Matthias Schöller [red]/ *Achaenops gilvipes* (Suffrian, 1857), det. M. Schöller 2005 [white]/.

A lectotype was designated here in order to ensure the name's proper and consistent application.

In his notebook preserved in Halle, Germany, SUFFRIAN wrote for the specimen no. 29252: "von Thorey erhalten (received from Thorey)", Thorey was also mentioned in the original description.

3 Paralectotypes (females, MLUH): /22791 (red ink) [white]/ MLU Halle, WB Zoologie, S.-Nr. 7/1/5 [white]/; 23711 (red ink) [white]/ MLU Halle, WB Zoologie, S.-Nr. 7/1/5 [white]/; 29251 (red ink) [white]/ MLU Halle, WB Zoologie, S.-Nr. 7/1/5 [white]/; all three with my labels: *Cryptocephalus gilvipes* Suffrian, 1857 Paralectotypus designiert Matthias Schöller [red]/ *Achaenops gilvipes* (Suffrian, 1857), det. M. Schöller 2005 [white]/.

Holotype *Protinocephalus weiseanus* (male, MLUH): /Caffrar, Thorey (ink) [blue]/ *gilvipes* Suffr. Typ (ink) [blue]/ ex coll. J. Weise [white]/ Type [red]/ *Protinocephalus Weiseanus* Rk. (ink) [white]/ (my label) Holotypus *Protinocephalus weiseanus* REINECK vid. Schöller XI 1996 [red]/ *Achaenops gilvipes* (Suffrian, 1857), det. M. Schöller 2005 [white]/.

**Other specimens studied:** 1 female, NHMW: Cape, 1867. Note: this record was published in Reineck, 1915 (as *Cryptocephalus gilvipes*); 2 females BMNH: E. Coll. Chevt., 6756, 273 and 6756, 275; 1 male BMNH, Cape Province, George, 15.-17.XI.1921.

#### Characters not mentioned in previous descriptions.

**Head.** Male with enlarged mandibles (Fig. 28) and gena with triangular projections.

**Abdomen.** Apex of aedeagus (Fig. 29) slightly bend upwards, with a small apical tip, ventral side regularly vaulted (Fig. 30). Length of aedeagus 0.6 mm.

**Female.** Spermatheca (Fig. 31) hook-shaped, slender, spermathecal ductus long and thin, densely coiled up; kotpresse: dorsal sclerites large, two slender sclerotized areas posterior to the dorsal sclerites, dorsal fold slightly

sclerotized (Fig. 32), lateral fold strongly sclerotized (Fig. 33), posterior of the ventral band a rectangular sclerotized area, and another sclerotized area close to the middle of anterior margin of ventral band (Fig. 34); lateral lobe at base of abdomen rounded (Fig. 35).

**Variability.** No significant variability was detected.

**Distribution.** All specimens except for one male from the Western Cape (Fig. 13) were collected in the 19<sup>th</sup> century without exact data.

**Note.** *Achaenops gilvipes* is the third species SUFFRIAN (1857: 75) listed in his second species-group (2. Rotte) of *Cryptocephalus*, which comprised five species from South Africa.

*Achaenops sericinus* (Suffrian, 1857) **comb. nov.** (Figs. 36-40)

*Cryptocephalus sericinus* Suffrian, 1857 (SUFFRIAN 1857: 80)

**Type specimen.** Holotype (female, MLUH): 21756 [white label, red ink]/ HOLOTYPUS *Cryptocephalus sericinus* Suffrian, 1857; vid. Matthias Schöller [red, printed] / *Achaenops sericinus* (Suffrian, 1857) det. Matthias Schöller 2003.

**Other specimens studied:** 1f (SAMC) / Kimberley Bro. Power 1912 [white] / South African Museum Cape Town (SAMC) [white] /; 1f (SAMC) / CT 10.86 [white] / South African Museum Cape Town (SAMC) [white] /.

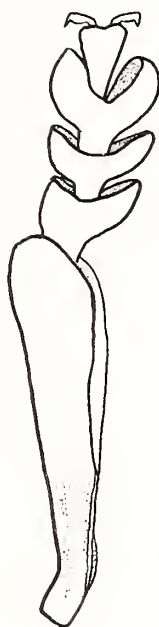
**Size [mm]:** length 3.1-3.4, width of elytra at humeri 1.6-1.7, length of pronotum 0.95-1.05, width 1.6

**Head.** Head shagreened and punctation dense, head sunk into prothorax; eyes evenly convex, both laterally and longitudinally, eyes relatively small, distant, ratio eye width : length 1.4 : 2.4, ratio of distance between upper lobes to eye length is 1.9 : 1.2, canthus shallow; antennal segments 1-5 yellowish orange, 6-11 brown and apically expanded, antenna (Fig. 36) 0.36 x body length.

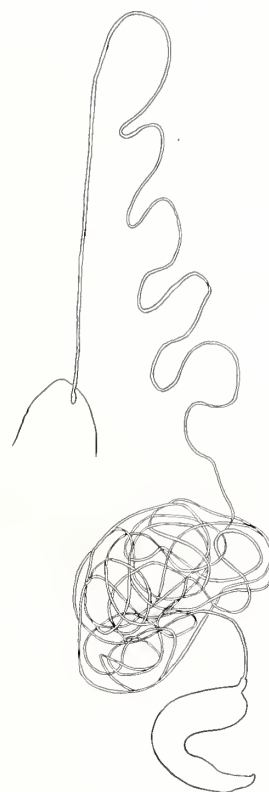
**Thorax.** Pronotum: shagreened and punctation dense; lateral margins even, simultaneously visible in dorsal view; median lobe of basal margin truncate, slightly raised; prosternal process narrow, ratio minimum width: length like 1:2.5, sides concave, apically with a fine ridge, apex concave; scutellum triangular, glabrous, shagreened and impunctate, without a basal ridge, not apically raised above elytra; elytra semistriate, center of rows 1-3 confused, and other rows might be disturbed by additional punctures, too; interstices shagreened, microstructures round, elytra apically rounded, reaching upper third of pygidium; epipleura long,  $\frac{3}{4}$  the length of the elytra, with few small punctures only; external edge of tibiae distinctly grooved (Fig. 37); claws appendiculate.



36



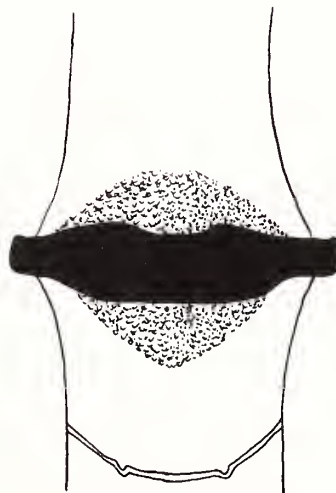
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38



39



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**Figs. 36-40.** *Achaenops sericinus*. 36 right antenna; 37 right fore leg; 38 spermatheca; 39 kotpresse, dorsal; 40 kotpresse, ventral.

**Abdomen.** Pygidium densely punctured, shagreened, dull, female abdomen with deep longitudinal pit of equal diameter to length of sternite, base of pit straight, sternite 3 as long as sternites 4-7 along midline; lateral lobe at base of abdomen rounded; sternites dark brown, chagreened, with sparse punctation and short white setae.

**Spermatheca and kotpresse:** spermathecal ductus long, simple (i.e. not spiral), coiled up voluminous ball-like close to the spermatheca, insertion to vaginal sac slightly inflated (Fig. 38). kotpresse: dorsal sclerites large, dorsal fold slightly sclerotized (Fig. 39), lateral fold strongly sclerotized, posterior to the dorsal sclerites a tooth-like extension, anterior and posterior of the ventral band a triangular sclerotized area (Fig. 40).



**Variability.** No significant variability was detected.

**Distribution and biology.** Indicated from two localities. Kimberley (28°43'S 24°44'E) in the eastern Northern Cape and Cape Town (33°55'S 18°26'E), but both records are not unambiguous collection localities and need confirmation.

**Note.** *Achaenops sericinus* is the fifth species SUFFRIAN (1857: 75) listed in his second species-group (2. Rotte) of *Cryptocephalus*, which comprised five species from South Africa.

*Achaenops punctatellus* sp. nov. (Figs. 41-45)

**Type specimens.** Holotype (female, MLUH): 19196 [white label, red ink] / Holotypus *Achaenops punctatellus* MIHL, des. Matthias Schöller [red, printed] /.

**Note:** a new piece of cardboard was used to glue the specimen, and the original cardboard was kept on the original pin, too.

3 Paratypes: 1m (BMNH) / Table Mt. Cape of G. Hope, W. Bevins, 1906-167 [white, blue line] /; 1m (SAMC) / Cape Town J. Purell 1886 (ink) / South African Museum Cape Town (SAMC) [white] /; 1f (BMNH) / Camps Bay, Cape Peninsula, 1-20.x.1920 [white] / S. Africa E. Turner 1920-423. [white, blue line] /; all paratypes with my label Paratypus *Achaenops punctatellus* MIHL, des. Matthias Schöller [red, printed] /.

### Diagnosis

A brown species with tibia and femur yellowish orange and pronotum shagreened and punctured, differs from *A. dorsalis* in the structure of the pronotum and the colouration, and from *A. sericinus* in the colour of the legs and the invaginated clypeus.

### Description of Holotype (female)

**Size [mm]:** length 2.40, width of elytra at humeri 1.30, length of pronotum 0.60 and width 1.20.

**Head.** Head visible in dorsal view, shagreened, with coarse punctures, labrum and mandibles yellow; labial palpi acute; eyes small and upper lobes distant, therefore ratio of distance between upper lobes to eye length is 2.25 : 1.00, eyes evenly convex, relatively small, canthus deep; segments 1-3 of antennae yellowish orange, 4-11 brown, 5-11 apically expanded, antennae inserted low on frons.

**Thorax.** Pronotum with distinct margins, basal margin of pronotum without a row of teeth, lateral margins even, not simultaneously visible in dorsal view; median lobe of basal margin truncate, slightly raised, expanded but not impressed prior to the expansion; punctures only on disk of pronotum, very shallow and moderately

dense, interstices glabrous; prosternal cavities closed; scutellum triangular, not apically raised above elytra; elytra with punctation striate, 9 regular rows plus scutellar row which is not reaching the middle of the elytra, interstices glabrous; epipleuron half the length of the elytra; tibia and femur yellowish orange, external edge of tibiae simple, tarsi brown, claws simple, small; no tibial spurs.

**Abdomen.** Venter brown, sternites and pygidium with coarse punctures and short white setae, pygidium shagreened; kotpresse (Fig. 41): dorsal sclerite not attached to the sclerotization of the lateral fold, an extension directed towards the dorsal fold, posterior of the dorsal sclerite, a linear twig of the sclerotization of the lateral fold directed towards the dorsal fold; dorsal fold slightly sclerotized, posterior of the ventral band a diffuse, weakly sclerotized additional band is present, and another sclerotized area close to the middle of anterior margin of ventral band; spermatheca relatively small, spermathecal ductus coiled up densely close to the spermatheca (Fig. 42).

**Description of male.** Head: clypeus V-shaped invaginated, mandible asymmetric (Fig. 43); size [mm]: length 2.05, width of elytra at humeri 1.10, length of pronotum 0.6, width 1.05; length of aedeagus 0.55 mm, tip moderately acute, orificium large (Fig. 44), with four internal sclerites visible, ventral side regularly vaulted (Fig. 45).

**Variability.** In the female paratype, segments 1-4 of the antennae and the first two tarsal segments are yellow.

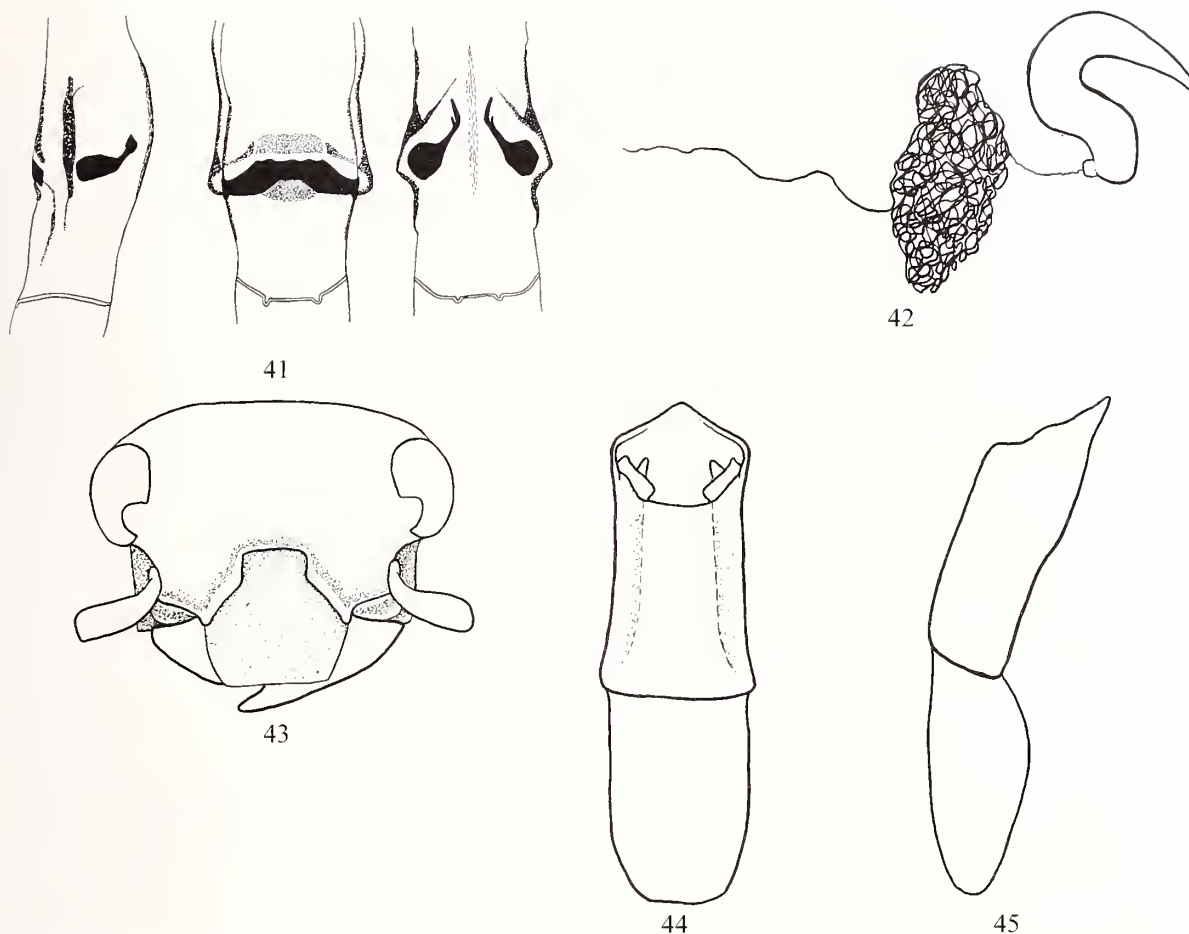
**Etymology.** The name *punctatellus* was proposed by SUFFRIAN in his notebook preserved in Halle, Germany. It is a Latin adjective.

**Distribution and biology.** Known from the surroundings of Cape Town only. No information on the biology is available.

*Achaenops monstrosus* sp. nov. (Figs. 46-53)

**Type specimens.** Holotype (male, SANC): / SOUTH AFRICA, C.P. Middelberg Pass nr Citrusdal, 32.38S 19.09E. 19.ix.1986 R. Oberprieler [white] / collected on *Protea nitida* [white] / NATIONAL COLL. OF INSECTS Pretoria, S. Afr. [white] / Holotypus *Achaenops monstrosus* MIHL, des. Matthias Schöller [red] /.

5 Paratypes: 1f (SANC) / SOUTH AFRICA, C.P. Middelberg Pass nr Citrusdal, 32.38S 19.09E. 19.ix.1986 R. Oberprieler [white] / collected on *Protea nitida* [white] /; / 1m, 1f (SANC) / SOUTH AFRICA, C.P. Gydo Pass near Prince Alfred, 33.14S 19.20E. 19.ix.1986 R. Oberprieler [white] / collected on *Protea nitida* [white] /; 1f (NHMB) / Süd Afrika Cape Prov. W. Wittmer [white] / Algeria Cederberg 520/1200m 10.X.1990 [white] /; / 1m (TMSA) / S.Afr. ;SW Cape Prov., Wiedow farm



**Figs. 41-45.** *Achaenops punctatellus*. 41 kotpresse (lateral, ventral, dorsal); 42 spermatheca; 43 head, frontal; 44 aedeagus, dorsal; 45 aedeagus, lateral.

31.46 S – 18.46 E [white] / 12.9.1987; E-Y: 2492 fynbos vegetation leg. Endrödy-Younga [white] /; all paratypes with my label Paratypus *Achaenops monstrosus* MIHI, des. Matthias Schöller [red, printed] /.

### Diagnosis

A large black species with tip of mandibles and base of antennae brown, male with extremely enlarged clypeus and mandibles and pronotum not shagreened.

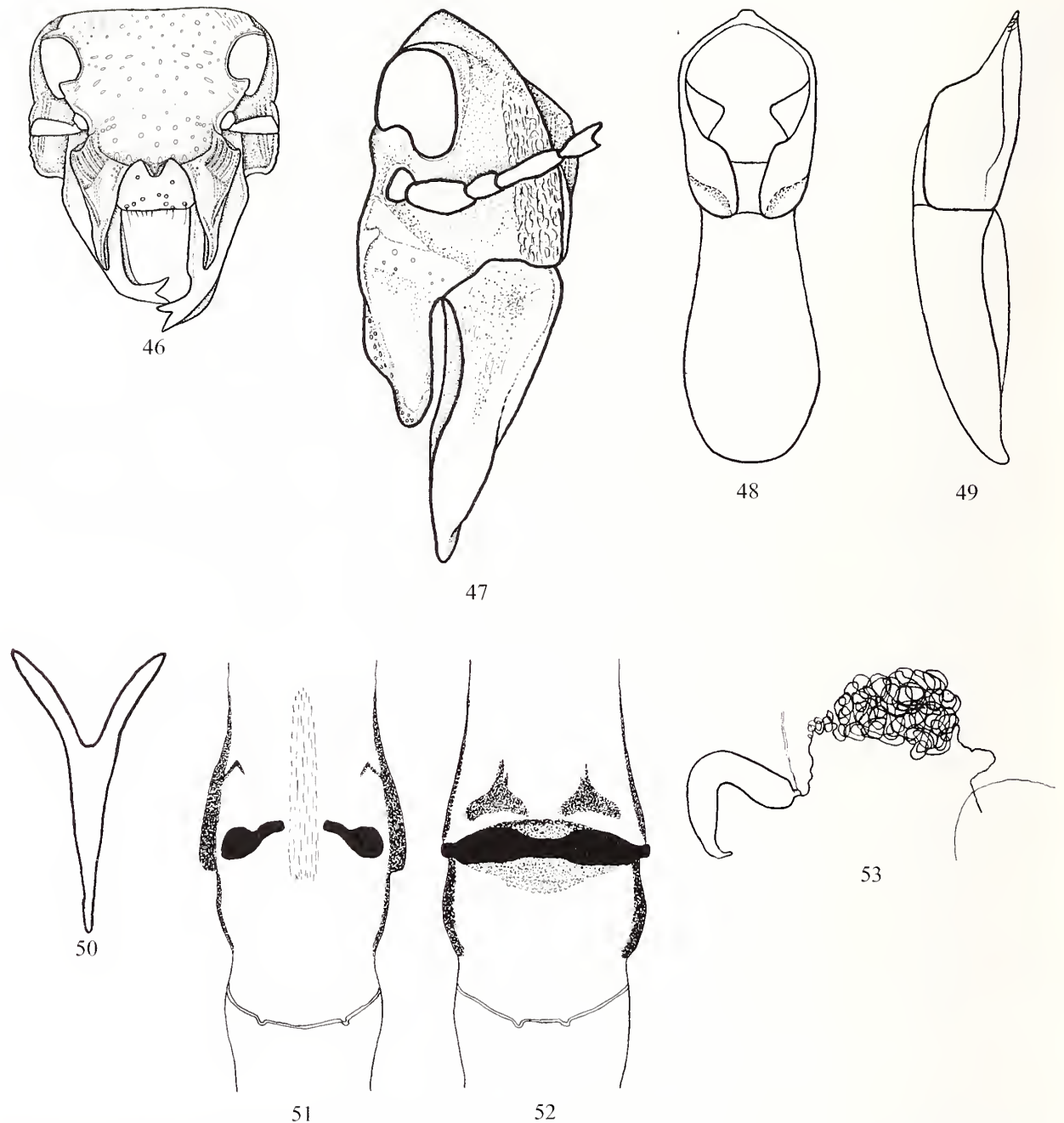
### Description of Holotype (male)

**Habitus.** Body large, shape cylindrical, size [mm]: length 3.50, width of elytra at humeri 1.80, length of pronotum 1.20, width 1.90.

**Head.** Head visible in dorsal view, shiny, punctation sparse and coarse, clypeus with two acute thorns and a median triangular extension (Fig. 46), labrum brown, mandibles large, black with reddish-brown apex, apex with three teeth, asymmetric with left mandible larger; eyes comparatively small and upper lobes distant, there-

fore ratio of minimum distance between upper lobes to eye length is 2.0 :1.0, eye length about 2 x gena (Fig. 47); canthus normal and sinuate; antenna black, first two segments brown, segments 4-11 apically expanded, antennae inserted at lower third of frons; labial palpi acute.

**Thorax.** Pronotum shiny and impunctate, but surface of pronotum irregularly undulated (seen at high magnification), with distinct margins, lateral margins with a fine, narrow carina and a row of punctures, simultaneously visible in dorsal view, median lobe of basal margin convex; prosternal process transverse; scutellum elongate triangular, without basal ridge, not apically raised above elytra, base without emargination; elytra with nine regular rows of punctures plus scutellar row which is not reaching the middle of the elytra plus marginal row, interstices glabrous, with very fine wrinkles, lateral margins not simultaneously visible in dorsal view, basal margin without carina, elytra raised around scutellum, elytra apically rounded, epipleuron 2/3 the length of the elytra, apically with a row of punctures; legs black, no



**Figs. 46-53.** *Achaenops monstrosus*; 46 head frontal; 47 head, lateral; 48 aedeagus, dorsal; 49 aedeagus, lateral; 50 tergalapodeme; 51 kotpresse, dorsal; 52 kotpresse, ventral; 53 spermatheca.

tibial spurs, fore tibiae bend, about 1/3 longer than mid and hind tibiae, apically extended, claws relatively small, dentate, apical margin of tarsomere 2 wider than tarsomere 1.

**Abdomen.** Venter black, sternites and pygidium with coarse punctures and short white setae; elytra covering 50% of pygidium; aedeagus with dorsal side weakly sclerotized along the median line (Fig. 48), with a rounded tip, almost straight in lateral view (Fig. 49),

with ventral side regularly vaulted, length of aedeagus 0.9 mm; tergalapodeme simple, y-shaped (Fig. 50).

#### Description of female

Clypeus prominent, with shallow projections ventral to the antennae, but without thorn-like projections; eyes small and upper lobes distant, therefore ratio of minimum distance between upper lobes to eye length is 2.4 : 1.3; fore tibiae only slightly longer than hind tibiae, and



only slightly bent; abdominal pit shallow, almost as long as wide, sides straight; kotpresse: dorsal sclerites slender, with an extension directed towards the dorsal fold (Fig. 51), posterior of the dorsal sclerite, a rectangular bent twig of the sclerotization of the lateral fold directed towards the dorsal fold, dorsal fold slightly sclerotized; posterior of the ventral band (Fig. 52), two sclerotized patches are present, and another two sclerotized areas attached to the anterior and posterior margins of the ventral band, respectively; spermatheca (Fig. 53), spermathecal ductus coiled up.

**Variability.** Size [mm] (mean (max., min., n)): length of male 3.27 (3.50, 3.00, 3.00), female 3.53 (3.60, 3.50, 3.00), width of elytra at humeri in male 1.73 (1.80, 1.70), female 1.77 (1.80, 1.70), length of pronotum in male 1.07 (1.20, 0.90), width 1.80 (1.90, 1.80) length in female 1.00 (1.00, 1.00) and width 1.92 (1.95, 1.90). The puncturation on the clypeus is more dense and coarse in the male from Wiedow farm.

**Etymology.** This species is named after the monstrous appearance of the male's head. It is a Latin adjective.

**Distribution and biology.** Known from the northern part of the Western Cape (Fig. 13); collected on wagon tree or waboon, *Protea nitida* Philip Miller, a shrub or tree up to 9 m which is growing typically on drier, lower slopes from 0-1200 m NN on gravely acid sandy soil.

#### Species to be transferred to other genera.

Two more species described in *Achaenops* (JACOBY, 1901; BRYANT, 1944) were found neither to be congeneric nor to belong to *Achaenops*. This illustrates the need for a neotype for *A. dorsalis* in the sense of article 75.3 of the International Code of Zoological Nomenclature. The two species have to be transferred to other genera:

#### *Lophistomus mandibularis* (Jacoby, 1901) comb. nov.

*Achaenops mandibularis* Jacoby, 1901 (JACOBY 1901: 240)

#### *Acolastus nigrolineatus* (Bryant, 1944) comb. nov.

*Achaenops nigrolineatus* Bryant, 1944 (BRYANT 1944: 336)

## 4. DISCUSSION

SUFFRIAN (1857) placed *Achaenops dorsalis* between *Cryptocephalus* and *Acolastus* because of its habitus, shape of the head and the movability of the pronotum, the latter was a character which was of special importance to SUFFRIAN for generic classification. *Achaenops dorsalis* has an oval habitus, whereas the species described in *Cryptocephalus* by SUFFRIAN and transferred

to *Achaenops* in this study have a more or less cylindrical habitus. All species of SUFFRIAN's (1857) second species group (=2. Rotte) of *Cryptocephalus* were transferred to *Achaenops*, except for *C. atratulus*, the holotype of which was examined during this study and found to belong to *Cryptocephalus*. The short diagnosis of the second species group is in accordance with the diagnosis of *Achaenops* by SUFFRIAN, except for the cylindrical habitus. The female genitalia, studied here for the first time, are homogeneous. The spermatheca is hook-shaped, and the spermathecal ductus is coiled up densely. The arrangement of the sclerites of the kotpresse is homogeneous, too. The lateral fold is strongly sclerotized, and a pair of dorsal sclerites is present which are not attached to the lateral fold. Ventrally, a band-like sclerite is present. The species differ in the shape of the dorsal sclerites as well as in the presence or absence, or shape of sclerotized areas close to the ventral band. The male genitalia show few external characters, however, the shape differs well enough to separate species, especially in lateral view. The ventral side of the aedeagus is regularly vaulted in all species except for *A. dorsalis*.

The history of the genus *Protinocephalus* is curious; REINECK (1913) published the genus based on a single male specimen. In 1915, he published a large paper on Afrotropical *Cryptocephalinae* including females of *A. gilvipes*, but he did not recognise that the female specimens belonged to the male he described as *P. weiseanus*. *Protinocephalus* was published too late to be included in the catalogue of *Cryptocephalinae* (CLAVAREAU 1913) and was never re-examined. I found the holotype in a drawer with in-litteris specimens in ZMHB.

The only known plant *Achaenops* was collected from is *Protea*. Future studies will show if *Achaenops* is associated with the fynbos-vegetation.

In this publication, two new species were described to illustrate the variability of the genus. There are more undescribed species, a total of at least 25 species. A key to the species of *Achaenops* and a revised diagnosis for the genus will be given later together with the description of the remaining species.

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**Author's address:** Dr. Matthias SCHÖLLER, Grünberger Str. 33, 10245 Berlin, Germany. E-mail: [schoeller@tricho.b.shuttle.de](mailto:schoeller@tricho.b.shuttle.de)

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