

A new species of *Systelloderes*
(Hemiptera: Heteroptera: Enicocephalidae)
from South Africa

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Abstract. *Systelloderes stysi* sp. nov. from South Africa is described, and the apicibial and tarsal armature of the fore leg is illustrated and described in detail.

Key words. Heteroptera, Enicocephalidae, *Systelloderes stysi*, taxonomy, new species, South Africa

Introduction

In this paper I describe a new species of the genus *Systelloderes* Blanchard, 1852, from South Africa. The genus *Systelloderes* is nearly cosmopolitan in distribution but many species still remain undescribed. In his monograph, VILLIERS (1969) revised Afrotropical (19 species) and Madagascan (one species) faunas, keyed all species and provided their, unfortunately inadequate, descriptions. Only *S. bergeri* Villiers, 1976, from Tanzania and *S. olivaceus* Maldonado Capriles, 1988, from South Africa were described since then (VILLIERS 1976, MALDONADO CAPRILES 1988). ŠTYS (1970) described *S. oculatus* Štys, 1970, from Nigeria, but later on erected a separate monotypic genus *Owenoderes* Štys, 2002, to accommodate this species (ŠTYS 2002).

Material and methods

This study is based on an examination of a single specimen mentioned below. The label data are cited verbatim, using a slash (/) to separate rows on the label. Drawings of the fore leg were prepared from a glycerine mount and the photographs taken from a dry-mounted specimen.

The following standard abbreviations, established in preceding papers (ŠTYS & BAŇAŘ 2007, 2008), are used in the text:

Cx; *Cx*₁, *Cx*₂, *Cx*₃ – coxa, coxae, coxal; fore, middle, and hind coxae, respectively;

F; *F*₁, *F*₂, *F*₃ – femur, femora, femoral; fore, middle, and hind femur, respectively;

L – length;

max – maximum;

min – minimum;

Ta; *Ta*₁, *Ta*₂, *Ta*₃ – tarsus, tarsi, tarsal; fore, middle, and hind tarsus, respectively;

Ti; *Ti*₁, *Ti*₂, *Ti*₃ – tibia, tibiae, tibial; fore, middle, and hind tibia, respectively;

Tr; *Tr*₁, *Tr*₂, *Tr*₃ – trochanter, trochanters, trochanteral; fore, middle, and hind trochanter, respectively;

tr-setae – trichobothrium-like setae;

W – width.

Taxonomy

Systelloderes Blanchard, 1852

Systelloderes Blanchard, 1852 in BLANCHARD & SPINOLA (1852: 224). Type species: *Systelloderes moschatus* Blanchard, 1852 in BLANCHARD & SPINOLA (1852: 224), by monotypy.

Systelloderes stysi sp. nov.

(Figs. 1-10)

Type locality. South Africa, Eastern Cape, Hogsback.

Type material. HOLOTYPE: ♀, 'South Africa, Eastern Cape / Hogsback, 970-1300m / 32°35'S 26°56-57'E / 5-7.xii.2006, P.Bulirsch leg'. The specimen bears a red label 'HOLOTYPUS / *Systelloderes* / *stysi* sp. nov. / P. Baňář det. 2008'. The specimen is card-mounted, with the abdomen mounted separately on the same card and right fore leg mounted on a second card on the same pin; deposited in the collection of Moravian Museum in Brno (Czech Republic).

Description. Large species, general facies (Fig. 1) elongate, moderately robust, extremities relatively short, modestly submacropterous.

Measurements (all in mm). Total body length – 5.71. Head. Anterior lobe, *L* – 0.64; posterior lobe, *L* – 0.31, *W* – 0.35; distance of eye to apex of antennifer – 0.27; diatone (max *W* across eyes) – 0.38; min dorsal interocular distance – 0.22; min ventral interocular distance – 0.24; eye, *L* – 0.16. Labium. Total *L* – 0.86; segment I, *L* – 0.11; segment II, *L* – 0.16; segment III, *L* – 0.37; segment IV, *L* – 0.22. Antenna. Segment I, *L* – 0.22; segment II, *L* – 0.47; segment III, *L* – 0.53; segment IV, *L* – 0.36. Pronotum. Total *L* (max) – 0.84; collum: *L* (median) – 0.18, max *W* – 0.44; mid lobe: *L* (max) – 0.44, *W* (max) – 0.62; hind lobe: *L* (max) – 0.28, *L* (median) – 0.18, *W* (max) – 0.87. Forewing. Max *L* – 2.71. Fore leg. *F*₁: *L* – 0.89, max *W* – 0.38; *Ti*₁: *L* – 0.76, max *W* – 0.36; *Ta*₁: *L* – 0.23, max *W* – 0.14; anterior claw, *L* (basis – apex) – 0.26; posterior claw, *L* (basis – apex) – 0.24. Middle leg. *F*₂: *L* – 0.67, max *W* – 0.16; *Ti*₂: *L* – 0.61, max *W* – 0.09; *Ta*₂: *L* (without claw) – 0.29, max *W* – 0.08. Hind leg. *F*₃: *L* – 0.98, max *W* – 0.31; *Ti*₃: *L* – 1.01, max *W* – 0.12; *Ta*₃: *L* (without claw) – 0.47, max *W* – 0.08.

Coloration (Fig. 1). Head, pronotum and mesoscutellum dark brown, with posterior lobe of head slightly paler than anterior lobe and hind lobe of pronotum paler than rest of pronotum, rest of thorax and forewings brown, legs and antennae light brown, labium yellowish brown. Abdomen much paler than rest of body, whitish with sclerotized dark brown spots.



Figs. 1. *Systelloderes stysi* sp. nov., holotype, female, dorsal view (5.71 mm).

Collum with long, erect setae, directed anteriad. Middle and hind lobe of pronotum with long, sparse and differently directed setae, setae on lateral and ventral parts of thorax directed caudad. Mesoscutellum with sparse, conspicuous setae in proximal part. *Tr*-setae on thorax indistinct (broken off?).

Fore leg. *Cx*₁ with semierect setae on anteroventral and posteroventral faces, directed proximad. *Tr*₁ with sparse, long, curved setae, mostly directed distad, with 4-5 *tr*-setae. *F*₁ with anterior face nearly bare, posterior, ventral and dorsal faces with regularly distributed, curved,

Cuticle. Head, labium, antennae and legs shiny and smooth, *Cx*₁ with minute cuticular processes on anterior and ventral faces, *F*₁ with small group of cuticular processes on anterior face (see Foreleg). Thorax and forewing membrane lustrous, all parts of thorax irregularly covered with minute non-setigerous cuticular granules, collum and ventral parts of thorax more densely covered than middle and hind lobe of pronotum and mesoscutellum. Abdomen mat, including sclerotized dark spots.

Vestiture yellowish, generally long and sparse, consisting of two types of setae; a) shorter setae occurring on all body parts; b) long, conspicuous *tr*-setae.

Dorsal face of head sparsely covered with erect setae directed anteriad, lateral parts of both posterior and anterior lobes with semi-erect, shorter and denser setae directed anteriad. Ventral face of head densely covered with erected setae, slightly directed anteriad. Labium covered with semi-erect setae directed apicad. Antennae regularly covered with semi-erect, short setae, segment III in addition with longer, outstanding setae. *Tr*-setae on head: 2+2? preocular (vestiture on dorsum of head and pronotum slightly abraded), 1+1 ocular, very close to mesal eye margins, 1+1 postocellar; labium segment I: 1+1 dorsal, labium segment II: 1+1 dorsal and 1+1 ventral, labium segment III: 2+2 dorsal.



Fig. 2. *Systelloderes styxi* sp. nov., holotype, female, head in lateral view.

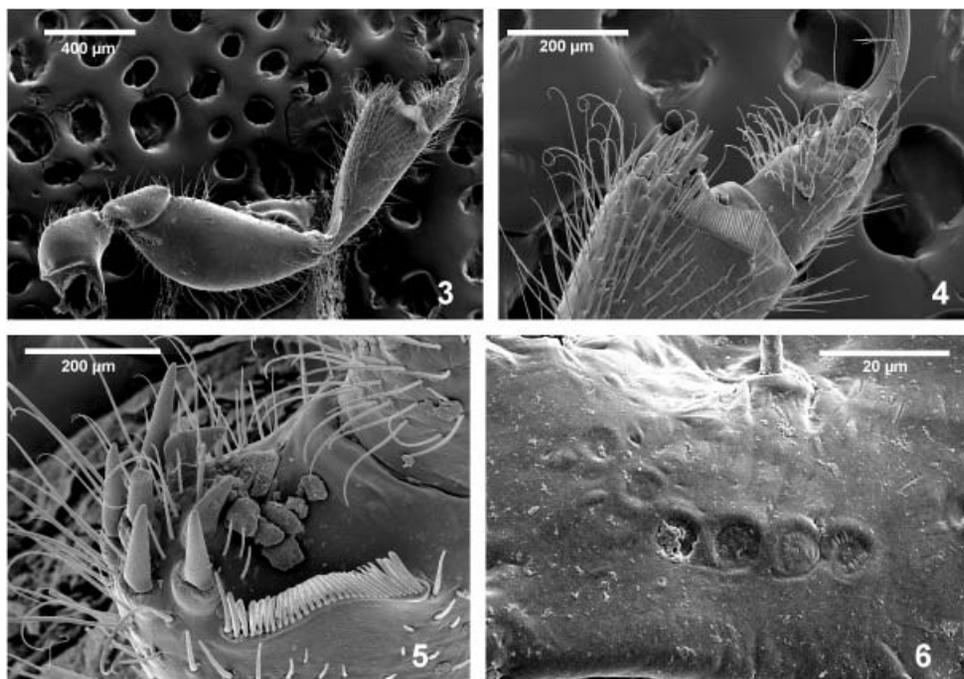
semierect setae, directed distad. Dorsal and ventral faces with erect *tr*-setae (double-row of 4+4 on each face). Anterior face of Ti_1 on proximal half sparsely and on distal half densely covered with long, curved setae, ventral, dorsal and posterior faces with long semierect setae and numerous *tr*-setae. Ta_1 densely covered with long outstanding setae on all faces; unguitactor plate with 1+1 parempodial setae, anterior one (near to anterior, longer claw) much shorter than posterior one (Fig. 9).

Middle and hind legs densely covered with semierect setae, F_2 and Ti_2 on all faces, F_3 and Ti_3 on anterior, ventral and dorsal faces only, posterior face smooth. Ventral faces of F_2 and F_3 with several (4-5) *tr*-setae each, dorsal faces of F_2 and F_3 with 1+1 subterminal (adtibial) *tr*-setae each. Ti_2 and Ti_3 with adpressed setae becoming longer and denser distally. Dorsal face of Ti_2 and Ti_3 with group of 4-6 *tr*-setae subterminally. Ta_2 and Ta_3 with 8-10 *tr*-setae on dorsal face.

Forewings with sparse, short setae on veins, none on wing membrane.

Abdomen with short, adpressed setae, becoming longer on laterotergites of segments 7 and 8.

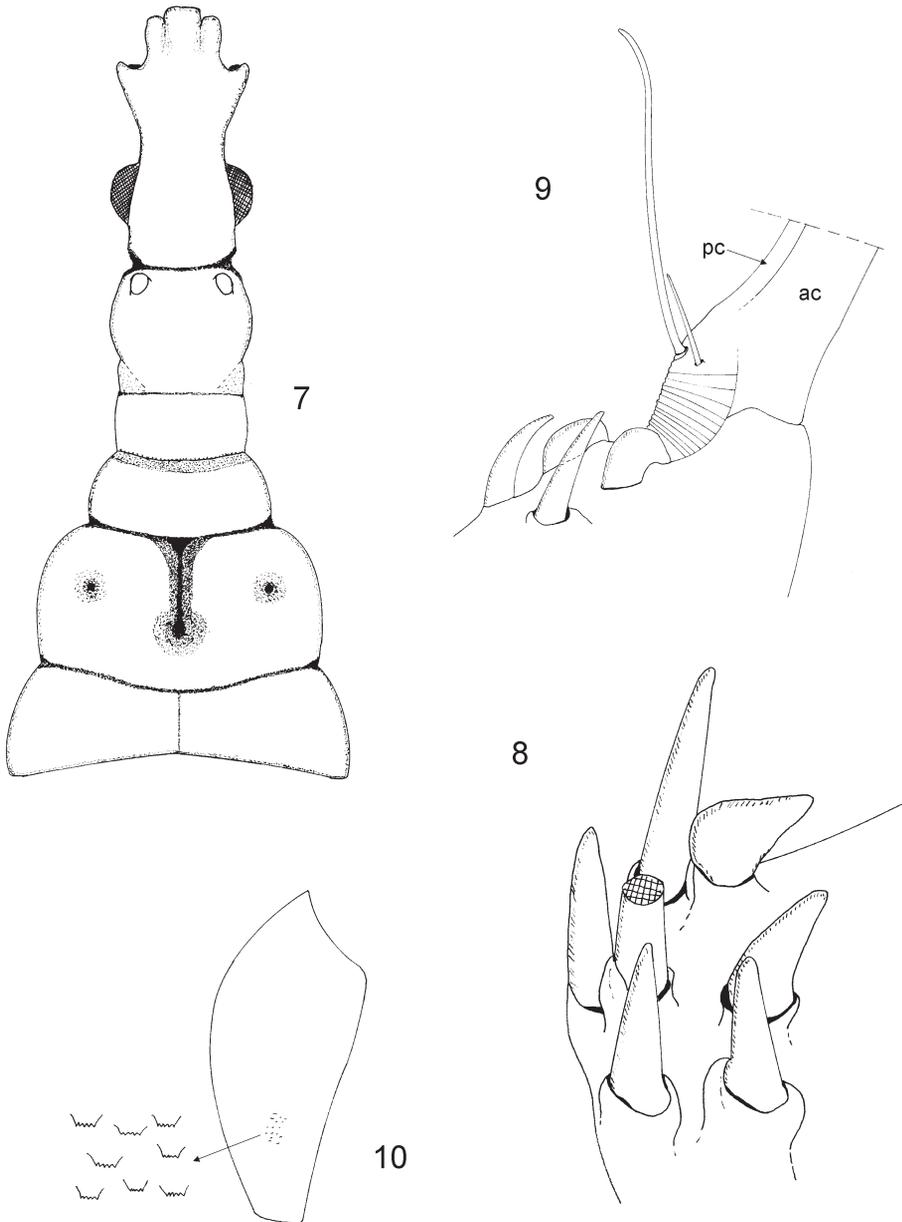
Structure. Head (Fig. 1-2) strikingly narrow and long, slightly longer than pronotum (1.13 times as long as pronotum). Anterior lobe markedly longer than posterior one, 2.06 times as long. Lateral margin of preocular part parallel-sided proximally, its long distal part convex, diverging towards antennifer. Eye 0.59 times as long as distance between eye and apex of antennifer. Postocular impression of anterior lobe broad and shallow. Posterior lobe transverse, 0.89 times as long as wide, its dorsum slightly convex, lateral sides more convex. Eyes small, in lateral view not exceeding dorsal or ventral outlines of head. Ocelli large, ocellar tubercles low. Ventral outline of head continuous, very slightly concave, only the apex (fused bucculae) and basis (association with the neck) outstanding. Dorsal ocular index 4.75, ventral ocular index 5.97. Antennae moderately long, thin, segment I long, cylindrical, II-IV terete (not flagelliform, neither IV subfusiform), antennal formula (with the longest segment first) III, II, IV, I; segment III being 1.13 times as long as segment III. Labium (Figs. 1-2) directed anteriorly,



Figs. 3-6. *Systelloderes styxi* sp. nov., holotype, female, right fore leg. 3 – total view; 4 – apex of tibia and tarsus; 5 – apicital armature; 6 – anterior trochanteral organ. All anterior view.

without particular structures, labial formula (longest segment first) III, IV, II, I. Segment III: 2.3 times as long as segment II. Labrum reaching approximately middle of segment II.

Pronotum (Figs. 1-3). Collum 2.44 times as wide as long, with narrow precollum, dorsum with straight, impressed median groove and a pair of elevations. Collar constriction sharply delimited. Middle lobe (dorsal side) with straight, broad and deep median impression terminating in three quarters of its length; disc with plastic relief, with a) inversely triangular anteromedial depression, b) broad and not distinctly delimited, subcircular posteromedial depression, c) sublinear median connection of both depressions, and d) paired deep lateral pits emitting one lateral depression each. Lateral margins convex. Constriction between middle lobe and hind lobe broad, sharply demarcated. Middle lobe 2.4 times as long as collum, 1.57 and 2.44 times as long as hind lobe maximum and median length, respectively. Middle lobe 1.4 times as long as wide. Hind lobe very short, with shallow median groove, its median length as long as collum, lateral margins rounded, posterolateral angles subrectangular; medially broadly and shallowly concave. Hind lobe 4.83 times as wide as medially long. Proepimeral lobe (sensu ŠTYS & BAŇAŘ 2006) extensive but not closing fore acetabula. Concave central part of mesoscutellum shaped as equilateral triangle.



Figs. 7-10. *Systelloderes stysi* sp. nov., holotype, female. 7 – head and pronotum, dorsal view; 8 – right fore tibia, apicitibial armature, anterior view; 9 – right fore tarsus, tarsal armature and parempodial setae, antero-ventral view; 10 – right fore femur, anterior view, detail of tile-shaped cuticular processes. Abbreviations: ac – anterior claw; pc – posterior claw. Hairs omitted except of parempodial setae.

Legs rather short, fore legs strikingly stout. Fore leg (Figs. 3-5, 8-9) extremely stout, particularly femur and tibia incrassate. Fore leg sensilla not studied except anterior trochanteral organ. Cx_1 (Fig. 3) conical, anteroventral face with dense, prominent, drop-type cuticular thorns. Tr_1 with anterior trochanteral organ (Fig. 6) consisting of 6+1 sensilla (group of six on anterior face, well visible in Fig. 6), one isolated on dorsal face, not visible in Fig. 6). F_1 2.34 times as long as wide, with small group of tile-shaped cuticular processes with several apical teeth each (Fig. 10) in the distal third of anterior face. Ti_1 2.1 times as long as wide, broadly triangular, compressed at antero-posterior plane. Cleaning comb short, formed by tightly packed short 30 setae. Armature-bearing distiventral process absent. Apicitibial armature (Figs. 5, 8) consisting of seven spiniform setae: three ventral (two marginal straight and short, one broken median), two long subventral (posterior one slightly oblique towards tarsus), and two short dorsal (strongly oblique towards tarsus). Ta_1 cylindrical, 1.64 times as long as wide, tarsal armature (Fig. 9) consisting of 1+1 proximal spiniform setae, anterior one being straight and posterior one curved, and 1+1 distal setae (both semicircular). Claws of the same shape, regularly curved, posterior one shorter.

Middle and hind leg. F_3 much stouter than F_2 , tibiae widening distad, apices of both middle and hind tibiae with strikingly short posteroventral and anteroventral setal comb each; every comb terminated ventrally by long spiniform seta. Claws isomorphic.

Forewings reaching midlength of abdominal segment 6, venation as usual for *Systelloderes*, not studied in detail.

Abdomen (distorted in the holotype) with series of 1+1 large sclerites on ventrites and tergites 3-8.

Terminalia (distorted in the holotype, not studied in detail). Subgenital plate large, strongly sclerotized, elongate, basal margin convex.

Differential diagnosis. *Systelloderes stysi* sp. nov. can be distinguished from all African species by a large body, its length being 5.7 mm. The 10 species of *Systelloderes* living in South Africa (*S. beieri* Villiers, 1969, *S. bergeri* Villiers, 1976, *S. brincki* Villiers 1962, *S. brunneai* Villiers, 1969, *S. capensis* Villiers, 1962, *S. meridionalis* Villiers, 1962, *S. olivaceus* Maldonado Capriles, 1988, *S. pugnatorius* (Distant, 1904) (described as *Henicocephalus*), *S. rudebecki* Villiers, 1969, and *S. stuckenbergi* (Villiers, 1960) (described as *Compsoderes*) are much smaller (body length of all species except *S. olivaceus* at most 4 mm, body length of *S. olivaceus* 4.6 mm). *Systelloderes stysi* sp. nov. differs from *S. olivaceus* by the following characters: antennal segment II shorter than segment III (segment II moderately longer than segment III in *S. olivaceus*); transverse hind lobe of head (lobe longer than wide in *S. olivaceus*); collum longer than hind lobe of pronotum; details of apicitibial armature (two dorsalmost spines much longer and less curved in *S. olivaceus*), and stouter fore tibia (ratio of length to maximum width equal to 2.1 in *S. stysi* sp. nov. and 2.8 in *S. olivaceus*).

Etymology. I dedicate this species to Pavel Štys (Charles University, Praha), an eminent entomologist and reputable researcher of the Heteroptera, my teacher and friend, on the occasion of his 75th birthday.

Bionomics. The holotype was collected by sieving leaf litter in a cloud forest (P. Bulirsch, pers. comm.).

Distribution. Known only from Eastern Cape, South Africa.

Discussion

The African fauna of *Systelloderes* urgently needs a revision, because many, especially smaller species, still remain undescribed. VILLIERS' (1969) monograph included only inadequate descriptions without morphometric data important for identification and provided no information on the fore leg armature, which seems to be a very important diagnostic character of enicocephalomorphans. Nevertheless, *Systelloderes stysi* sp. nov. could be easily distinguished from all known Afrotropical species of this genus by its large body size.

Acknowledgements

I am grateful to Petr Bulirsch (Praha) for the gift of this interesting specimen and to Michal Tkoč (Masaryk University, Brno) and Petr Šípek (Charles University, Praha) for technical assistance with photographs. This work was supported by grant of Ministry of Culture of the Czech Republic MK00009486201 to Moravian Museum, Brno.

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