

Andrej V. GOROCHOV & Vicenta LLORENTE

**Remarks on the genus *Megalotheca*  
and new species of *Conocephalus*  
(Orthoptera Tettigoniidae)**

**Abstract** - Systematic position and composition of the genus *Megalotheca* are shortly discussed. Two stick-like species usually included in this genus are transferred to the genus *Conocephalus* Thunberg (*C. longiceps* (Peringuey) and *C. xiphidioides* (Karny)). Two new species closely related to them are described (*C. phasma* **sp. n.** (Tanzania) and *C. marcelloi* **sp. n.** (Madagascar)).

**Riassunto** - Considerazioni sul genere *Megalotheca* e nuove specie di *Conocephalus* (Orthoptera Tettigoniidae).

Gli Autori, dopo avere brevemente trattato la posizione sistematica e le specie afferenti al genere *Megalotheca* Karny, trasferiscono due specie nel genere *Conocephalus* (*C. longiceps* (Peringuey) and *C. xiphidioides* (Karny)). Infine descrivono due nuove specie strettamente affini ad esse, una della Tanzania (*C. phasma* **sp. n.**), l'altra del Madagascar (*C. marcelloi* **sp. n.**).

**Key words:** Conocephalinae, taxonomy, new species, Africa, Madagascar.

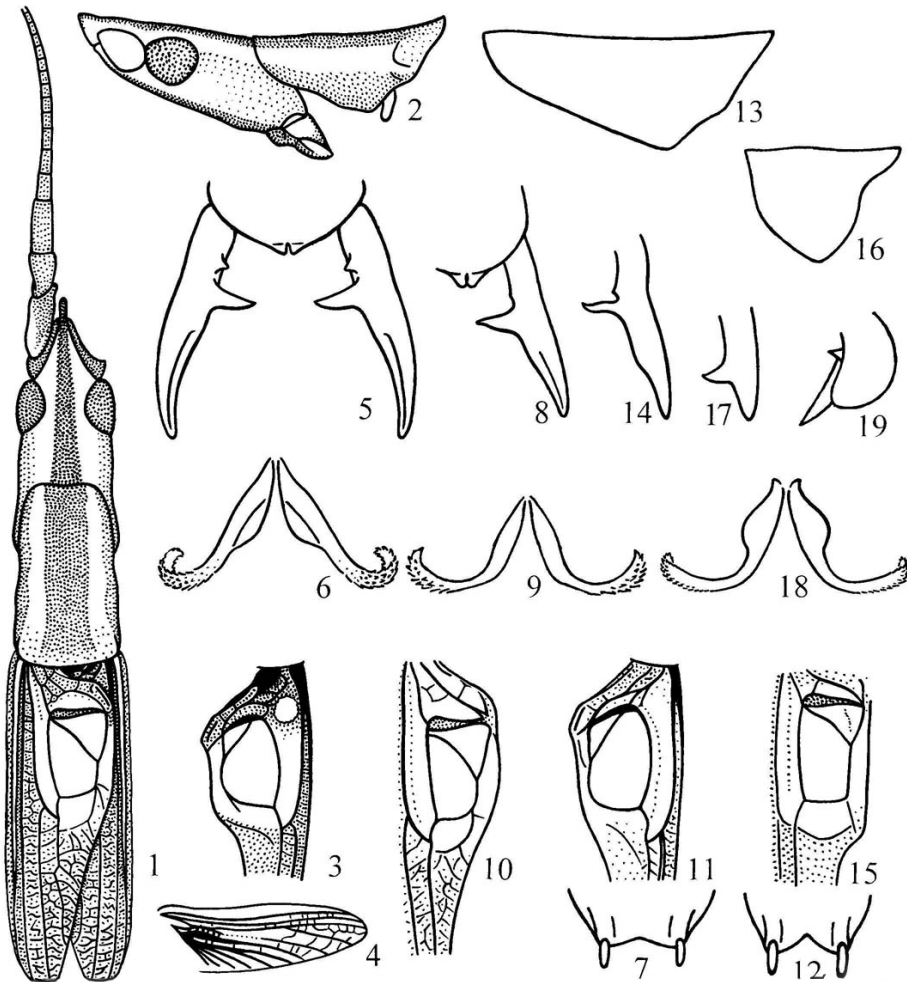
INTRODUCTION

According to Otte (1997), the genus *Megalotheca* Karny includes six species of stick-like Tettigoniidae from Africa and Madagascar. The opinions about the systematic position of this genus are rather diverse: Peringuey (1916), Uvarov (1928), and Otte (1997) considered it to be closely related to the genus *Conocephalus* Thunberg (Conocephalinae: Conocephalini); Karny (1907, 1912) put this genus into the tribe Agraeciini (Conocephalinae); Rentz (1979) suggested that it could belong to Saginae.

The position of the type species *Megalotheca vaginalis* Karny, 1907 (= *Xiphidion restiorum* Peringuey, 1916), *X. parvulum* Peringuey, 1916, and *M. montana* Uvarov, 1928 is to be considered problematical. In their general appearance they are somewhat similar to *Conocephalus*, but their male cerci are very different (fig. 19). At this moment, it is reasonable to keep the genus *Megalotheca* only for these South African species. *M. nigrifrons* Chopard, 1952 (Madagascar) presents a characteristic head rostrum: long, spine-like, with acute apex. It possibly belongs to Agraeciini or Euconchophorini (Conocephalinae).

*X. longiceps* Peringuey, 1916 (Zimbabwe) and *M. xiphidioides* Karny, 1907 (Madagascar), as well as two new similar species, are clearly closely related to *Conocephalus* species. They must be included in this genus (maybe as a separate subgenus) since all their important characters are very similar to those of true *Conocephalus*: the structure of head rostrum (fig. 2), stridulatory apparatus (figs 1, 3, 10, 11, 15), male abdominal apex including 10<sup>th</sup> tergite and cerci (figs 5, 8, 14, 17), and the shape of sclerites of male genitalia (figs 6, 9, 18). The differences in body shape between the majority of

*Conocephalus* species and these stick-like species are connected with life forms. The life form of the above-mentioned species is probably strongly adapted to the cryptic phytophilous life among grasslands. There are also some species with intermediate life forms: for example *C. rhodesianus* (Peringuey), whose pronotum is more or less intermediate between those in figs 2 and 16, and whose male cerci are almost as in fig. 8.



Figs 1-19. *Conocephalus* and *Megalotheca*, male. 1-7 - *C. phasma* sp. n. (holotype); 8-12 - *C. marcelloi* sp. n.; 13-14 - *C. longiceps* (Pering.) (Uvarov, 1928); 15 - *C. xiphidioides* (Karny) (Karny, 1907); 16-18 - *C. discolor* Thunb.; 19 - *M. vaginalis* Karny (Peringuey, 1916). Head, pronotum, and tegmina from above (1); head, pronotum, and acoustical stigma from side (2); stridulatory apparatus of lower (3; 11) and upper (10; 15) tegmina; hind wing (4); 10th abdominal tergite and cerci from above (5; 8, without left part); sclerites of genitalia (6; 9; 18); distal part of genital plate from below (7; 12); pronotum from side (13; 16); right cercus from above (14; 17; 19).

## SYSTEMATIC PART

This paper is based on material from the following institutions: National Museum of Natural Sciences, Madrid (MNCN); Zoological Institute, RAS, S. Petersburg (ZIAS).

***Conocephalus phasma* sp. n.** (figs 1-7, 20)

HOLOTYPE. Male, Tanzania, "Bukoba, Victoria Nyanza, 21.IV.912, Troitzkij" (ZIAS). Paratypes. 2 males, Tanzania, "Zanzibar, E. Deville", "*Terpandrus* Stal ?? spec.?" (MNCN).

DESCRIPTION. Male (holotype). Body narrow and long, stick-like. Coloration yellowish, with four longitudinal brown stripes: from rostral apex to hind edge of pronotal disc, along ventral side of head and lower parts of pronotal lobes. Head opisthognathous, with very narrow rostrum and wide proximal segments of antennal flagellum. Pronotum long, but distinctly shorter than head; lateral lobes partly covering acoustical stigmatae; their lower edge with fore part slightly S-shaped (figs 1, 2, 20). Fore and middle legs very short; hind legs long, with narrow femora. Tegmina shortened, extending to middle part of 4<sup>th</sup> abdominal segment, with narrowly round apex (fig. 20); stridulatory apparatus as in figs 1, 3; hind wings distinctly shorter than tegmina (fig. 4). 10<sup>th</sup> abdominal tergite with a pair of small tubercles at middle of hind edge; cerci long; their large medial hook situated in proximal half of cerci; medial denticle near it distinct; medial edge between this hook and cercal apex with middle part concave (fig. 5); genital plate with shallow hind median notch (fig. 7); sclerites of genitalia as in fig. 6.

Variations. Coloration of paratypes with only one brown upper stripe.

Female unknown.

Length (mm). Body 19-20; pronotum 3.6-3.8; tegmina 6.8-7.2; fore femora 2-2.2; hind femora 12.5-13.5.

COMPARISON. *C. phasma* differs from *C. longiceps* in the shorter pronotum (length of hind femur/ length of pronotum = 3.5 in *C. phasma* and 3 in *C. longiceps*), the shape of lower edge of its lateral lobes (see figs 2, 13), and the shape of medial edge between large cercal hook and cercal apex (the middle part of this edge is concave in *C. phasma* and convex in *C. longiceps*; see figs 5, 14). This new species is distinguished from *C. xiphidioides* by the shorter mirror and the longer cell between stridulatory vein and mirror in upper tegmen (this cell is longer than half of the mirror in *C. phasma* and shorter than half of the mirror in *C. xiphidioides*) (see figs 1, 15) as well as the position of large cercal hook: in proximal half of cerci in *C. phasma* and in distal half in *C. xiphidioides*.

DERIVATIO NOMINIS. *Phasma* – generic name of stick-insects.

***Conocephalus marcelloi* sp. n.** (figs 8-12, 21)

HOLOTYPE. Male, Madagascar, "Sud de Madagascar, Ampandrandave, I.1932, A. Seyrig" (MNCN).

DESCRIPTION. Male (holotype). Body very similar to that of *C. phasma* including shape



20



21

Figs 20, 21. *Conocephalus*, general view of male from side. 20 - *C. phasma* sp. n. (holotype); 21 - *C. marcelloi* sp. n.

of head, pronotum, and legs. Coloration almost uniformly yellowish (possibly greenish in living condition), but with indistinct light brown stripe from rostral apex to hind edge of pronotal disc (fig. 21). Tegmina long, distinctly protruding beyond abdominal apex; their apex and stridulatory apparatus similar to those of *C. phasma*; hind wings much longer than tegmina (figs 10, 11, 21). 10th abdominal tergite and sclerites of genitalia also similar to that of *C. phasma* (figs 8, 9), but cerci distinctly shorter, their medial denticle (near large hook) somewhat smaller than in *C. phasma*, and genital plate with hind notch slightly deeper (figs 8, 12).

Female unknown.

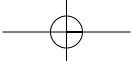
Length (mm). Body 18; body with wings 25; pronotum 3.9; tegmina 16; fore femora 2.3; hind femora 13.

COMPARISON. *C. marcelloi* differs from *C. phasma*, *C. longiceps*, and *C. xiphidioides* in the completely developed wings and some other characters: from *C. phasma*, in the characters listed above; from *C. longiceps* and *C. xiphidioides*, in the same characters as *C. phasma*.

DERIVATIO NOMINIS. This species is named in memory of Italian orthopterist Prof. Marcello La Greca.

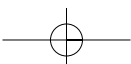
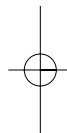
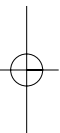
#### ACKNOWLEDGEMENTS

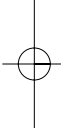
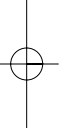
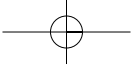
We thank Dr I. Izquierdo (MNCN), who gave the opportunity to study some specimens from the collections of the museum, B. Massa and P. Fontana, editors of this issue. This study was supported by the Russian Foundation for Basic Research (grant No. OO-04-48833).



## REFERENCES

- KARNY H., 1907. Revisio Conocephalidarum. Abhandlungen der K. K. Zool.-Botan. Gesellschaft in Wien, 4 (3). 114 S.
- KARNY H., 1912. Orthoptera Fam. Locustidae Subfam. Agraeciinae. Genera Insectorum dirigés par P. Wytsman, 141: 47 p. Bruxelles.
- OTTE D. 1997. Orthoptera species file 7. Tettigonioida. 373 p. The Orthopterists' Society at the Academy of Natural Sciences of Philadelphia.
- PERINGUEY L., 1916. Descriptions of new or little-known Orthoptera in the collection of the South African Museum. Annals of the South African Museum, 15 (5): 401-452.
- RENTZ D. C. F., 1979. Comments on the classification of the orthopteran family Tettigoniidae, with a key to subfamilies and description of two new subfamilies. Australian Journal of Zoology, 27: 991-1013.
- UVAROV B. P., 1928. Notes on the types of Orthoptera described by Dr. L. Peringuey. Annals of the South African Museum, 25 (2): 341-357.





*Authors' addresses:*

A. V. Gorochov, Zoological Institute, Russian Academy of Sciences, Universitetskaya nab. 1, St. Petersburg 199034, Russia. Email: orthopt@zin.ru

V. Llorente, Museo Nacional de Ciencias Naturales (CSIC), Jose Gutierrez Abascal, 2, Madrid 28006, Spain.

