

Appendix 1

A Comprehensive Key for Identification of the Swarming Conehead, *Ruspolia differens* Serville, 1838 (Orthoptera: Tettigoniidae) Occurring in the Afro-tropical Region\

- ➤ A tendency to form swarms strikingly during wet seasons.
- Existing in at least six sympatric colour forms, that are namely green (predominantly females), brown (predominantly males and with black speckled tegmina), purple striped green (rare), purple suffused green (very rare), purple suffused brown (very rare), and purple striped brown (extremely rare).
- A pair of active male metathoracic flaps with a corresponding pair of vestigial female metathoracic nodules.
- Paired subequal black markings on the mid and hind tibia.
- ➤ A white inter-ocular oval mark appearing like a simple eye.
- ➤ Face is slanted and it lies at the acute angle of approximately 50° with respect to the pronotal dorsum in repose.
- Cone is distinctly longer than wide, narrowing from base to apex and forming an acute angle of around 40° anteriorly between the lateral sides in repose.
- Vertex of cone which does not extend beyond the basal antennal segments.
- The anterior of vertex has a slightly rounded tubercle with dorsal and ventral conical endings posteriorly.
- The fastigium of vertex is slightly extended in front of the eyes in profile.
- > Oval compound eyes that may be black or grey.
- Each of the left and right male tegmina has a stridulatory organ with a crescentic rib; the left rib has 74–94 pegs (usually around 86 pegs) and it is positioned on the ventral aspect and is convex distally and it lacks a scraper. The right rib has 70–80 (usually

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around 76) pegs, it is positioned on the dorsal aspect, it is concave distally, and it has a scraper.

- The right stridulatory mirror frame that is roughly D shaped with a distinct V-shaped notch proximally along the *Radius* vein.
- > A pair of finger-like prosternal protuberances.
- Tympanum is situated at the base of fore tibia and has paired longitudinal auditory slits and pits.
- Male antenna is almost 1.5-times longer than female antenna (filiform in both).
- Tympanal length is approximately one-quarter as long as the fore tibia.
- Wings are held roof-like in cross-section. The hind wing is slightly longer (by around 3 mm) than the fore wing.
- Tarsi are 4-segmented with obvious remnants of the 5th segment (tarsomere).
- Hind femur is as long as hind tibia, each being 4-fold longer than fore femur.
- > Each fore and mid femur has a single, indented prolateral lobe at the inferior (lateroventral) margin.
- Each mid femur is armed with a single inferior prolateral spine at the inner margin. Hind femur has 8 (rarely 9 or 10) inferior spines; hind tibia has two inferior rows each usually with 23 (range 20–25) spines, two superior rows (i.e., on laterodorsal margin) each usually with 22 (range 20–25) spines, and 4 apical spurs; mid femur is armed with a single inferior prolateral spine; foretibia and mid tibia have 6 and 7 spines, respectively, per each of the two inferior rows.
- Male cercus <1/4 length of hind femur or hind tibia and it is subequally bilobed in which the ventral (superior) lobe is almost twofold longer than the dorsal (inferior) lobe; the spine of the ventral lobe is almost twofold

larger than that of the dorsal lobe; female cerci are unbranched and unarmed and they are much more protruded than the male cerci.

- The apical margin of the male subgenital plate (the ninth abdominal tergite) between the two titillators is concave posteriorly; the female subgenital plate is triangular apically and it is divided into 2 concavities that are separated by a distinct median fissure.
- The margin of the male supraanal plate is concave posteriorly; female supraanal plate is equally bilobed and the two lobes are separated by a medial V-shaped

invagination anteriorly with a lobe that is angulate at its distal end.

- A reticulated mesosternal interspace; a pair of triangular mesosternal nodes and a pair of saclike metasternal nodes between the bases of the median legs.
- The ovipositor is as long as the combined lengths of the hind femur and hind tibia, or of the thorax and abdomen.
- ➢ Eggs are slender (approximately 6.0 × 1.1 mm) and slightly conical and curved.



Matojo ND. A Comprehensive Key for Identification of the "Swarming Conehead" Ruspolia Differens Serville, 1838 (Orthoptera: Tettigoniidae) Occurring in the Afro-Tropical Region. Int J Zoo Animal Biol 2020, 3(1): 000200.