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### Oral presentation: O22

#### **Functional morphology of the sting apparatus of *Tetraponera rufonigra* (Smith F.) (Formicidae, Pseudomyrmecinae)**

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#### **Abstract**

The stings of *Tetraponera rufonigra* (Smith F.) workers cause allergic reactions in human beings and such cases were reported recently in Sri Lanka. The morphology of the sting apparatus in the adult castes, specially, the modifications for stinging and morphological differences, were investigated. Lactophenol was added to the dissected sting apparatus of the workers, winged female and the queen and, the dissected last two gastral segments and attached appendages of the male and kept for an hour; a drop of glycerin was added to each slide after draining the lactophenol and the sting apparatus, if present, was photographed at x100 magnification using a high power, trinocular microscope-camera unit (Optica M6 18). The structure of the sting apparatus was described by carefully examining the images of the sting apparatus. Also, the pronotal width and the sting shaft length of each caste were measured using a calibrated micrometer eye piece, for calculating the Index of Reduction (sting shaft length/ pronotal width).

Males lack the sting apparatus as they lack an ovipositor. The pentagonal spiracular plate, semi-circular quadrate plate, oblong plate and the single-segmented, slender elongate gonostylus were common to the sting apparatus of the other three castes. The retractable sting of the worker and winged female, consists of a well-sclerotized, longer and slender, slightly concave, distally pointed lancet, which bear three pairs of barbs. The queen had a shorter, distally

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blunt and slightly rounded sting without the barbs. Gonostylus of the worker is slender, elongate and weakly sclerotized with few setae at the distal tip; a longer gonostylus with fringes of dorso-terminal hairs were present in the other two castes. The Index of Reduction of the worker (0.69), winged female (0.70) and the queen (0.65) slightly varied indicating the smallest index value for the queen. It can be concluded that the sting apparatus of the workers and the winged females only have modifications for the stinging but the queen and the males are unable to sting people.

**Key words:** Stinging ants, sting, *Tetraponera* adult castes.

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