



Insect of the week (79), *Foenatopus* sp., (Hymenoptera: Stephanoidea: Stephanidae)

Bob Copeland (ICIPE)

The Insect of the Week, *Foenatopus* sp., is a species of the largest genus of the family Stephanidae in Africa. The family is a small one of ca. 350 extant species of ectoparasitoid wasps. Although Stephanidae are found in all the major biogeographical realms (except Antarctica), it is nowhere common. The family has had an interesting and confounding taxonomic journey. For most of the time its species were placed in the Ichneumonoidea, but recent phylogenetic studies have shown them to be a basal group of the Hymenoptera and along with the Evanoidea (ensign wasps) likely a link with the Apocrita (wasp-waisted Hymenoptera).

The family is known from the fossil record with stephanids found in Baltic and Burmese amber, the latter dated to around 100 mya. Most extant species are forest dwellers, but species have also been collected in savannah and near-desert climates. Their size ranges from less than ca. 5 mm to 35 mm in length, not counting the ovipositor. Compared to the difficulty in placing the family in a phylogeny of the Hymenoptera, stephanids are very easy to identify. Specimens have a crown of five small teeth on the head (in Greek, stephanos means crown, hence the common name of Crown Wasps). Their hind legs are greatly modified with very long coxae and swollen femora with large, robust teeth. The antennae are filiform and multi-segmented. The pronotum is large and conical, narrowing to the base, and the ovipositor is long (longer than the body). No other insect has this combination of

characteristics. They are so different from other wasps that they now have their own superfamily, Stephanoidea, comprised of the single family Stephanidae.

Little is known of their biology but compared to some of the other parasitoid wasps in the Insect of the Week series there are several host records. These data suggest that stephanid species are ectoparasitic on several species of wood-boring beetles, particularly longhorn beetles (Cerambycidae) and metallic wood-boring beetles (Buprestidae). Other host records include weevils, sawflies and solitary bees. Developing larvae are found outside of their host, imbibing haemolymph through a puncture in the host integument.

Frederick Smith (1805-1879) described the genus *Foenatopus* in a paper that appeared in the venerable Zoological Journal of the Linnean Society, a mere four years after the first volume of that journal was published. The complete reference for Smith's publication is:

Smith, F. 1860. Descriptions of New Species of Hymenopterous Insects collected by Mr. A. R. Wallace at Celebes. Zoological Journal of the Linnean Society *Volume 5, Issue suppl_1*, July 1860, Pages 57–93.

Smith was an English Hymenopterist. As a young man his favourite collecting site was Hampstead Heath. Smith was a contemporary of Karl Marx (1818-1883) for whom Hampstead Heath was his family's favourite picnic spot. Although Marx didn't move to London until 1849, it is not a stretch to think that Smith and Marx may have crossed paths in this famous London parkland.

As some of you have probably guessed, the A. R. Wallace who collected the insects that Smith described was the great Alfred Russel Wallace who, together with Charles Darwin, conceived of the theory of Evolution by Natural Selection. Wallace, whose contribution to the development of the theory did not, in his lifetime, bring him the fame that Darwin enjoyed, was an avid collector and traveller particularly in what is now Indonesia (Sulawesi is the current name for Celebes) and in Brazil. Sadly, most of his Brazilian collection was lost when the ship, on which he was a passenger returning to England, caught fire and sank. He was lucky to escape with his life. Within the past 50 years or so his scientific work has been recognized as being of the highest calibre. He published several hundred papers and a considerable number of books, most of which are considered of great scientific value. He almost single-handedly developed the study of Zoogeography, the geographic distribution of animals.