

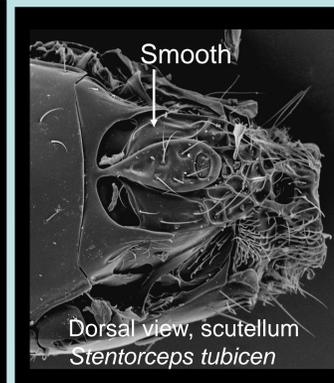
A revision of the Afrotropical genus *Stentorceps* Quinlan, 1984 (Hymenoptera: Figitidae) with a description of five new species

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Introduction

With nearly 3000 described species, the Cynipoidea represent an incredibly diverse superfamily of parasitic wasps, and the figitid subfamily Eucoilinae contains nearly one third of these species (Ronquist, 1999). Some of these species have proven economically important as parasitoids of many different leaf-mining pests (Buffington, 2010) and fruit-flies (Wharton et al., 1998). Despite their economic importance and almost 1000 described species, the diversity of Eucoilinae remains poorly understood throughout the world, with an estimated 80-95% of species not yet described (Nordlander, 1984).

Quinlan (1984) described *Stentorceps tubicen*, a new eucoiline genus and species from Kenya characterized by many unusual features, including extremely large mandibles, a peculiar trumpet-shaped protrusion between the antennae, and two smaller knobs beneath them (Quinlan, 1984). Despite these distinctive characters, *Stentorceps* has received almost no attention since its description, so even its basic morphology and diversity remain poorly understood. This summer, we have started addressing this lack of knowledge by revising this previously monotypic genus in light of a detailed investigation of recently collected specimens from Kenya and Madagascar.



Key to the species of *Stentorceps*

1. Corniculus large, obscuring most of the frons and part of toruli (in anterior view), heavily flared.....2
 - Corniculus small, much of the frons and all of the toruli exposed, flaring weak or absent.....4
2. Anterior half of the dorsal surface of scutellum smooth; dorsal surface of corniculus variably shaped, but not oblong.....3
 - Anterior half of dorsal scutellar surface striate; dorsal surface of corniculus oblong.....**S. n. sp. 4**
3. Dorsal surface of corniculus circular.....**S. n. sp. 5**
 - Dorsal surface of corniculus ovoid.....**S. tubicen**
4. Corniculus parallel sided, not flared; pyriform protuberances variable in width.....5
 - Corniculus weakly flared; promontoric protuberances half width of toruli.....**S. n. sp. 3**
5. Distinct spine immediately dorsal to medial protuberance on clypeus; pyriform protuberances width of toruli.....**S. n. sp. 2**
 - Spine dorsal to medial protuberance on clypeus absent; pyriform protuberances half width of toruli.....**S. n. sp. 1**

Conclusions

We have described five new species of *Stentorceps* in addition to Quinlan's original *S. tubicen*. The two species from Madagascar are extremely similar, suggesting radiation following vicariance on the island, while the phylogenetic affinities of the Kenyan species are more obscure. Further genetic work using these specimens could test and resolve these relationships and determine the location of *Stentorceps* among the *Rhoptromeris* genus group, believed to contain the most closely related genera (Quinlan, 1984). Most specimens from both geographic regions came primarily from traps associated with riverine, swampy, or littoral forest, indicating a characteristic habitat for *Stentorceps* and its hosts.

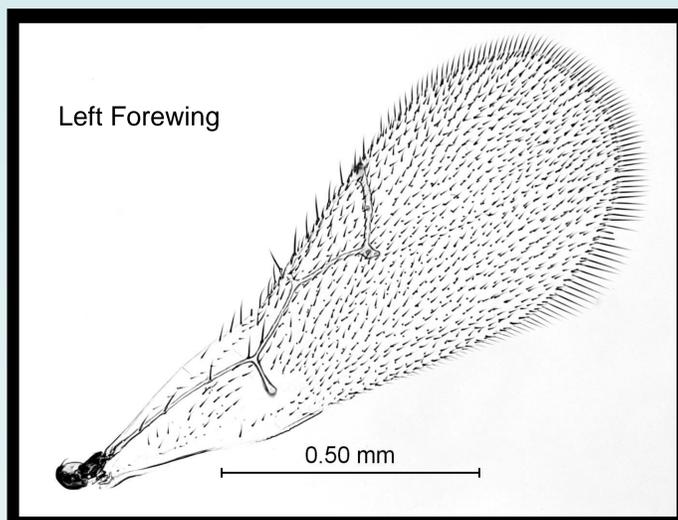
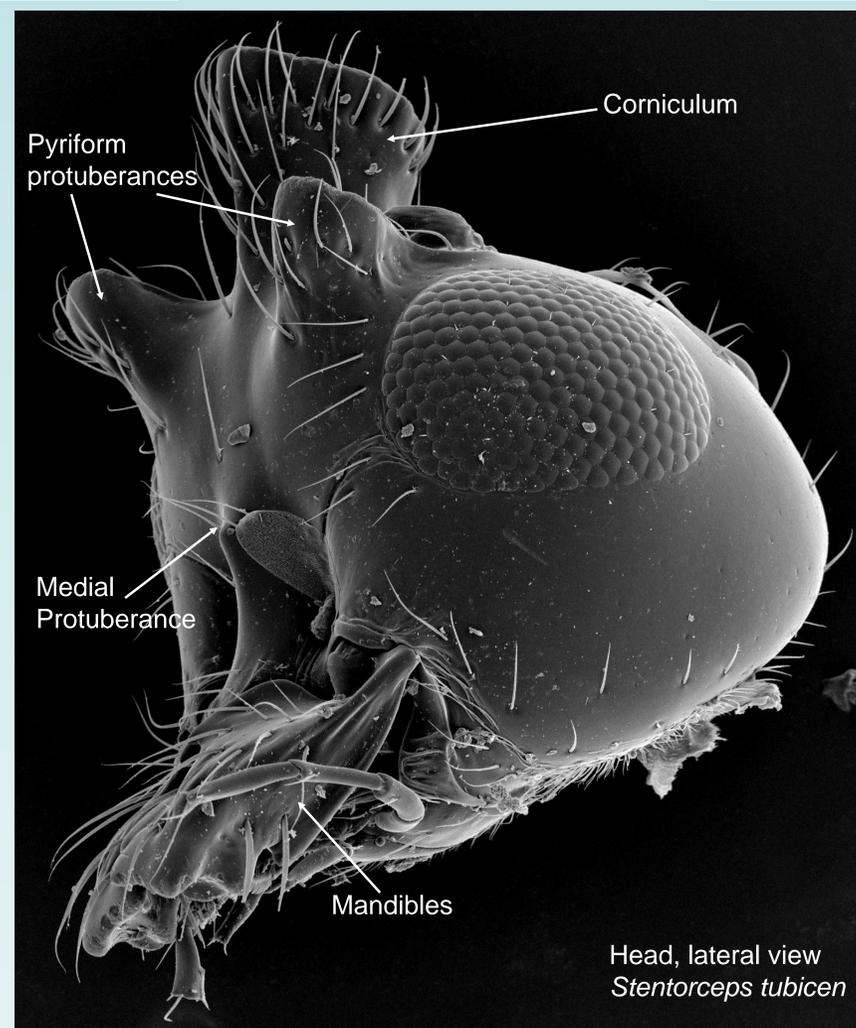
Like the host, the purpose of the bizarre head morphology remains a mystery. The corniculus is entirely unique among Hymenoptera. The diapiids *Coptera* and *Psilus* have wedge-shaped heads with armaments similar to the pyriform protuberances in *Stentorceps*, but even in these taxa, the function of the unusual morphology remains unknown. Nevertheless, we have gained a clearer understanding of the basic morphology and diversity of *Stentorceps* and can now begin a more thorough investigation of the many questions about this unusual genus.

Acknowledgements

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References

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Methods

Specimens were collected using malaise traps in Kenya and Madagascar. Scanning electron microscope images for this project were made using coated specimens at the Scanning Electron Microscopy Lab, NMNH; light microscope images were generated at the Hymenoptera Imaging Suite, NMNH. We used vSysLab for species description (<http://vsyslab.osu.edu>); images are stored on MorphBank (www.morphbank.net); all species are registered with ZooBank (www.zoobank.org).

