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First record of *Aleiodes (Hemigyronneuron)* (Hymenoptera: Braconidae: Rogadinae) from the Arabian Peninsula: description of new species with remarkable wing venation convergence to *Gyroneuron* and *Gyroneuronella*

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Abstract. A new species of *Aleiodes (Hemigyronneuron)* from Saudi Arabia is described and illustrated. It represents the first species known from outside of sub-Saharan Africa, Madagascar, South East Asia and the East Palaearctic. It belongs to a species group comprising *A. (H.) plurivena*, *glandularis* and *sharkeyi*, but displays even more derived wing venation which is remarkably convergent with that of two distantly related rogadine genera, *Gyroneuron* and *Gyroneuronella*.

Key words: Wing venation, new species, Saudi Arabia, parasitoid wasp

Introduction

A new species of *Aleiodes (Hemigyronneuron)* (Baker) from Saudi Arabia is described and illustrated. It is the first record of the group from the Arabian peninsula—other species are known from sub-Saharan Africa including Madagascar, and from China, through S.E. Asia, Brunei and the Philippines to Papua New Guinea. Saudi Arabia straddles the traditional Palaearctic and Ethiopian biogeographic realms and the collection locality, Al Lith, is a short distance into the Ethiopian Region. However, recent faunistic analyses recognise the distinct difference between the sub-Saharan Afrotropical Region and a North Africa+Arabia zone (Kreft & Jetz 2010) or between Africa and an Arabic-Sindic Zone, placing Al Lith in a distinctly different faunistic region from sub-Saharan Africa.

Members of the subgenus *Hemigyronneuron* are separated from other groups of *Aleiodes* Wesmael by their derived fore wing venation with vein M+CU usually angled and thickened distally, the subbasal cell somewhat expanded distally with a large glabrous area usually containing sclerome and the subdiscal cell glabrous, though some of these features are present in a few unrelated *Aleiodes* species as a result of convergence (Butcher & Quicke 2011). With the exception of *H. dubiosus* from Papua New Guinea, males of *Hemigyronneuron* have tergal glands opening at a medial subposterior pore on metasomal tergites 4-6, a feature associated with many basal lineages of *Aleiodes*.

Modification of wing venation and the presence of glabrous areas of wing membrane, sometimes with associated scleromes, is quite common among nocturnal Ichneumonoidea (Quicke & Shaw 2005, Quicke 2015) though the function of these features remains unknown. Within the braconid wasp subfamily Rogadinae, rather extreme modification of the subbasal and subdiscal cells is also found in the East Palaearctic and S.E. Asian genera *Gyroneuron* Kokujev and *Gyroneuronella* Baker (Figs 1, 2) (Chen & He 1997). The only known specimen of the new species was mixed among some *Gyroneuron* specimens in the Natural History Museum, London, collection, quite understandably since it has the subbasal cell massively expanded and ovoid distally and more than twice the height of the subdiscal cell, a very good example of convergent morphology.

Materials and methods

The holotype is deposited in the Natural History Museum, London. It was imaged using an Olympus SXZ16 microscope with automated multiple image capture at preset focal levels using an Olympus DP72 camera, and image combination using the Cell^D image processing system.

Terminology follows van Achterberg (1988) except for wing venation nomenclature which follows Sharkey and Wharton (1997) and particularly relevant veins are labeled on Fig. 1; see also Figure 2.2 in Quicke (2015) for comparison of wing venation naming systems.