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ABSTRACT BOOK

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Specialized ovipositor sensilla of Cretaceous wasps (Insecta: Hymenoptera) possibly reveal a unique way of host detection

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Insects have evolved complex sensory systems which are important for feeding, defense, and reproduction. Parasitoid wasps often spend much time and effort to search for concealed hosts with help of sensilla. However, the early evolution of such behavior and sensilla is poorly known. We describe two fossil female wasps, †*Tichostephanus kachinensis* sp. nov. and †*Tichostephanus longus* sp. nov., from mid-Cretaceous Kachin amber. Phylogenetic analyses based on a morphological data retrieved †*Tichostephanus* as deeply nested within Evanioidea, closely related to extant Gasteruptiidae and Evanidae. Both these two Cretaceous wasps possess features, e.g., coronal tubercles and flexible ovipositor sheaths, indicating that they may have laid eggs in wood where their larvae possibly parasitized insect larvae. They have peculiar and unique ‘bottle brush’ of sensilla close to the apex of their ovipositor sheaths, which have not been observed in any extant parasitoid wasps. These sensilla comprise many regularly arranged plate-shaped setae, attached in relatively large sockets, and with rows of longitudinal ridges. Such specialized sensilla perhaps served to enhance the ability to detect hosts inside wood.