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## BIOECOLOGY AND CHEMICAL DIVERSITY OF ABDOMINAL GLANDS IN THE IRANIAN SAMSUM ANT *Pachycondyla sennaarensis* (Formicidae: Ponerinae)

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**ABSTRACT:** The genus *Pachycondyla* is a large group of ants in the Ponerini tribe, known mostly from tropical and subtropical regions. *Pachycondyla sennaarensis*, the so-called Samsum ant in the Middle East, is distributed throughout the African tropics, Arabian Peninsula and Iran, where it is responsible for many cases of insect-induced dermal lesions and systemic reactions in humans. Populations of *P. sennaarensis* were studied in two regions of Iran and some aspects of their biology, ecology and medical importance are herein presented. Colonies of *P. sennaarensis* contain less than 850 workers that live in complicated underground galleries approximately one meter deep. Because of the harsh weather conditions of southern Iran, they can survive only in human disturbed habitats with higher humidity. Neither a real queen (without reproductive division of labor) nor a caste system is found in a *P. sennaarensis* colony. Observations indicated that *P. sennaarensis* is omnivorous, feeding on seeds of various plants, dead ants of other species, the larvae of dipterans and a few other invertebrates. The effect of the *P. sennaarensis* sting is usually mild, resulting in papule formation, erythema and dermal itching. The abdominal gland secretion of *P. sennaarensis* is a complex mixture of saturated and unsaturated hydrocarbons and small amounts of terpenoids, ketones, pyrazines and phenolic compounds that are accompanied by straight-chain hydrocarbons. So far, no case of anaphylaxis has been reported in Iran, a fact probably due to the lack of proteins in *P. sennaarensis* venom. It appears that *P. sennaarensis* populations vary considerably in their toxin composition according to their geographic range, which may ultimately explain symptoms of different severity among local residents.

**KEY WORDS:** Samsum ant, sting, ants, Formicidae, Ponerinae, *Pachycondyla*.

**CONFLICTS OF INTEREST:** There is no conflict.

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