

**Title:** Glandular chemistry in the beetle *Sceptobius lativentris* allow for intimate integration into ant colonies

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**Abstract:** *Sceptobius lativentris* is one of three species of Aleocharine rove beetle found in the nests of the velvety tree ant, *Liometopum occidentale*. Of the three beetles, *Sceptobius* has integrated into the ant colonies to the greatest degree, in part due to evolved gland chemistries and behaviors that are absent in the other two beetle species. In order to overcome ant aggression upon initially entering nests, *Sceptobius* replaced the defensive gland that is present in all other higher Aleocharinae with an appeasement gland that the beetle uses to reduce *Liometopum* locomotion. This novel gland most likely produces sulcatol, the corresponding alcohol of the *Liometopum* alarm pheromone, sulcatone. Following gland use, the beetle mounts the slowed *Liometopum*, grasps the antennae with its mandibles, and grooms the ant, transferring nest-mate recognition pheromones from the surface of the ant to itself. The cuticular hydrocarbons that the beetle steals from the ant allow the beetle to move freely through the nest to the brood chambers, which provide a steady source of food.