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NOTES ON MATING, PREY PROVISIONING, AND NESTING OF
SPHEX PROCERUS (DAHLBOM)¹

By

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A large population of SpheX procerus (Dahlbom) was observed in an area of stabilized sand dunes near Pahvant, Utah, on July 24, 1951. Attention was drawn first to the intense mating activity. The females were clinging to small branches of squawbush, Rhus trilobata Nutt. In most cases each female was receiving attention from two to four males. The male rode astride the female and grasped her by the posterior part of the thorax with his fore- and mid-legs. His abdomen was rotated and turned under at the tip, giving a venter-to-venter contact of the copulatory structures. Less successful suitors formed a precariously balanced stack on top of the mating pair. Since each male grasped the thorax of the wasp beneath him, the stacks tended to be overbalanced at the rear. In the taller stacks, the uppermost males became restless and sometimes flew to other mating groups. This called to mind the impatient shopper in the grocery store who becomes convinced that his line at the checking stand is moving more slowly than the others.

The squawbush, which formed the dominant vegetation on the dunes, was at that time being defoliated by notodontid caterpillars (Datana sp.). These insects were gregarious and, when disturbed, assumed a grotesque U-shaped posture. Several female wasps (those not engaged in the mating activities described above) were seen to sting and carry off full-grown caterpillars to their nests at the base of the dunes. In the manner characteristic of many of the larger sphecids, the wasps deposited the larvae on the sand several inches from the nest entrance and then "inspected" the entrance before dragging the prey closer. The wasps then backed into their burrows, dragging their prey behind them. In the few cases observed they grasped the prey by the head with their mandibles.

In some areas there were five or more nests per square yard. Most of them were located in small flats between the dunes where the sand was dry and crusty at the top but moist below 3 inches. The nest burrows were nearly perpendicular and about 8 inches deep. They terminated in a single cell that rested on a stratum of wet blue clay. Many of the wasps were observed carrying excavated sand away from the nest entrances. They held the sand in a basket of curved hairs under their head and flew backwards with it several inches before flinging it away with a quick turn of their entire body. Other wasps were seen plugging the entrance to their burrows with small pebbles and sand grains and smoothing the surrounding area. These observations of nesting agree essentially with those made by Krombein (Amer. Phil. Soc. Yearbook 1950: 148, 1951) for the same species in North Carolina. The wasps he observed were also preying on notodontid caterpillars.

¹ Proc. of the Ent. Soc. of Wash. Vol. 55, No. 2, pp. 100-101. 1953.