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USE OF COMMUNAL NEST ENTRANCES BY *OSMIA SIMILLIMA*  
(HYMENOPTERA: MEGACHILIDAE)Virginia Scott<sup>1</sup>

## ABSTRACT

Six *Osmia simillima* females used communal nest entrances to gain access to their nests in a piece of buried wood. Some nest characteristics are described.

Six female *Osmia simillima* Smith were observed using two communal nest entrances to enter a piece of wood in which they were nesting. This observation occurred on the afternoon of 13 June 1992 at the crest of a sand ridge overlooking Sable Creek at the eastern end of Grand Sable Dunes at Pictured Rocks National Lakeshore on Lake Superior in Alger County, Michigan.

Within a 10 minute period, two bees were observed entering a single nest entrance while four other bees were observed entering a second entrance. All six bees were retained for identification. No interactions between female bees as they entered or exited through these communal entrances were observed. Two of the bees brought in pollen while one was observed bringing in chewed vegetation. Two bees were observed removing wood or old nesting materials. The activity of the other bee was undetermined. After the wood was excavated a seventh female was seen searching in the area, apparently looking for her nest. She was not collected.

The wood (possibly *Populus*) that contained the nests of *O. simillima* measured 4.5 cm wide 3.5 cm thick and 20.5 cm long. It was weathered, charred on one end, and buried in the sand except for a small 2.5 by 5 cm section. The two nest entrances were in the sand adjacent to the exposed wood and separated from each other by 3 cm. Each entrance led to a chamber within the wood. A small passageway through the wood connected the two entry chambers, but this passageway was filled with sand at the time of excavation, and thus each of the two entrances would have provided sole access to different nesting tunnels.

The wood was riddled with at least seven linear nesting galleries, some separated by only 1 mm. These ranged in length from 2.0 to 8.0 cm. Although the nest entrances were located in the sand, all reproductive cells were found within the wood; none were in contact with the surrounding sand. Cells were entirely lined with chewed leaf material that consisted mostly of *Fragaria*. *Osmia simillima* was reported by Saunders (1872) to be destructive to the foliage of strawberry plants. Based on the color and character of the vegetation in the nest, it appeared that the tunnels in this piece of wood had been used by this species as nests for at least the last three nesting seasons.

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A description of a similar use of communal nest entrances by *Chalicodoma pluto* (Smith) is given by Messer (1984). Since there were more female *C. pluto* than active cells in at least one of the nests studied, there was some suspicion that this species may be primitively social. For *O. simillima*, there were many nesting tunnels. It seems likely that each female was constructing her own nest within one of the nesting galleries in the wood, and that they were simply using these communal entrances to gain access to their nests.

The wood containing *O. simillima* nests was at one time probably laying on the surface of the ground. Each nesting tunnel would have had its own entrance. Over a period of several years, as the sand on the dune shifted, the wood became buried. At this point the bees emerging from this wood and the females nesting in it may have found it more efficient to use communal entrances through the sand rather than constructing separate entrances.

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#### LITERATURE CITED

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