
MYSTERY PHOTO

SEPTEMBER 2002 MYSTERY PHOTO



This object is one of several such objects found on the ground at Doré Lake, SK in late summer. It measures 8 cm from front to back and is 6.5 cm high. What is it?

ANSWER to the JUNE 2002 MYSTERY PHOTO



The holes, some with pendant tubes, in a claybank were made by a digger bee (*Anthophora occidentalis* Cress.) found in the prairie provinces, British Columbia, Montana, South Dakota, Oregon, Wyoming,

Kansas, Colorado, Utah, New Mexico, Arizona. *Anthophora* is a large genus of fast-flying bees found on all continents except Australia.

Nest site selection is one of the most important factors limiting the distribution and populations of native bee species. *A. occidentalis* females exhibit a distinct preference for vertical, hard-packed clay banks and because of this they tend to nest in aggregations. A sparse covering of vegetation or refuse is a common feature of selected nest sites. Availability of water is also important because females transport water to soften the hard dry surface for tunnel and brood cell excavation, and for construction of the down-turned turret. The tunnel is unbranched and usually a few cm long, ending in a cluster of up to 10 brood

cells. Each brood cell is about 1 cm across and contains pollen and nectar that females collect from mid-July to the end of August from a number of flower sources including Wavy-leaved Thistle (*Cirsium undulatum*), nodding thistle (*Carduus* sp.), Pink Cleome (*Cleome serrulata*), and Hedge Bindweed (*Convolvulus sepium*). A single egg is laid in each cell and the bee larva feeds on the food provisions until it emerges from the cell.

Because females nest in aggregations, they tend to be subjected to pressure from a number of parasites, predators and opportunists. The blister beetle, *Hornia minutipennis minutipennis* (Coleoptera: Meloidae), the most important of the pillagers and parasites found in a nesting site in southern Alberta¹, has larvae that swarm over the face of the bank, and in and out of tunnels, trying to contact an adult bee that will carry it into a cell where it completes its larval stage. Two bee species, *Melecta californica* and *Triepeolus* sp. known to be parasites of other bees, were found with *Anthophora* cells in southern Alberta¹. Adults of the chalcid wasp, *Monodontomerus montivagus*, were commonly seen moving

in and out of tunnels parasitizing intact cells. A bombyliid fly and a chrysidid wasp were also observed as associated with *Anthophora* cells. Another bee, *Osmia texana* and a vespid wasp *Ancistrocerus catskill* frequently utilize abandoned cells of *A. occidentalis* as nesting sites for their own brood and are considered opportunists. The distinctive turret may have evolved to protect the brood from parasites and predators, or as a nest orientation mechanism.

1. Hobbs, G.A., W. O. Nummi, J. F. Virostek. 1961. *Anthophora occidentalis* Cress. (Hymenoptera: Apidae) and its associates at a nesting site in southern Alberta. Canadian Entomologist 93:142-148.

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The editors would like to thank Ken Richards for researching and preparing the answer for the June mystery photo, and Paul Geraghty for taking the photograph and making it available to *Blue Jay*.

ERRATA

The photograph of a Roundleaf Monkey-flower on page 83 of the June 2002 issue was taken by Elizabeth Reimer, not Eric Reimer as credited.

In order to read the article "The butterfly fauna of Beaverhill Lake" in the sequence submitted by the author, start with page 93, then jump to 100, then go back to 94 and on to 103. Because the page sequence of the published article is so difficult to follow, we will send a copy of the article in the correct sequence to anyone who would like one. Please contact the editors at the address given at the top of the inside front cover of every issue. Please note our email address, as of June 2002, is <leighton@sasktel.net>.

- Anna & Ted Leighton



Moving bee and clay turret.

Paul Geraghty