

sieving the grain every two weeks through Aug and Sep 1992, and a laboratory culture of *X. galactinus* was derived therefrom. Other insects found in the spilled grain, and potentially available as food for *X. galactinus* included: *Trogoderma* spp. (Dermestidae); grain beetles, *Cryptolestes* spp. (Silvanidae); hairy fungus beetles, *Typhea stercorea* (L.) (Mycetophagidae); picnic beetles, *Carpophilus* spp. (Nitidulidae); red flour beetles, *Tribolium castaneum* (Herbst) (Tenebrionidae); and larger black flour beetles, *Cynaues angustus* (LeConte) (Tenebrionidae).

Because *X. galactinus* is a beneficial insect exempted from tolerance by the U.S. Environmental Protection Agency and the U.S. Food and Drug Administration (Anonymous. 1992. Federal Register, 57, No. 78, April 22, 1992), it is a possible biocontrol agent for insects destructive to stored grain. Efforts are underway to adapt *X. flavipes* culture techniques to *X. galactinus* that may provide a better control option in colder climates.

Record.—Montana. YELLOWSTONE CO.: nr Huntley, Aug/Sep 1992, F. Dunkel, ex. barley spill nr storage bins.

Acknowledgment.—We thank T. J. Henry, U.S. Department of Agriculture-Systematic Entomology Laboratory, Washington D.C., for confirming the identification of *X. galactinus*. This paper was supported by Montana Agricultural Experiment Station (MAES) Projects 156 (M. Ivie P.I.), 157 and 161 (F. Dunkel P.I.) and is contribution J-2830 of the Montana Agricultural Experiment Station. This is a contribution to Regional Project NC-151 Delivery and Marketing of Quality Grain and Oilseeds.

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PAN-PACIFIC ENTOMOLOGIST
70(4): 328–330, (1994)

Scientific Note

DESCRIPTION OF A SLEEPING AGGREGATION OF MALE *CHALICODOMA CHIOPSIS* (COCKERELL) (HYMENOPTERA: MEGACHILIDAE)

The occurrence of male sleeping aggregations is characteristic of many species of aculeate Hymenoptera (Linsley, E. G. 1962. Ann. Entomol. Soc. Amer., 55: 148–164). The majority of these aggregations occur on “sleeping plants,” where the bees grasp a stem with mandibles and/or legs. The bees show a preference for dead or dry, relatively rigid, moderately tall (1 to 2 m), multibranched plants. This behavior has been recorded for many species of bees and wasps, but has been poorly documented for the diverse family Megachilidae. Linsley (1962) recorded two megachilid species (*Anthidiellum notatum robertsoni* Cockerell and the cleptoparasite *Coelioxys deplanata* Cresson) as members of larger mixed species sleep-

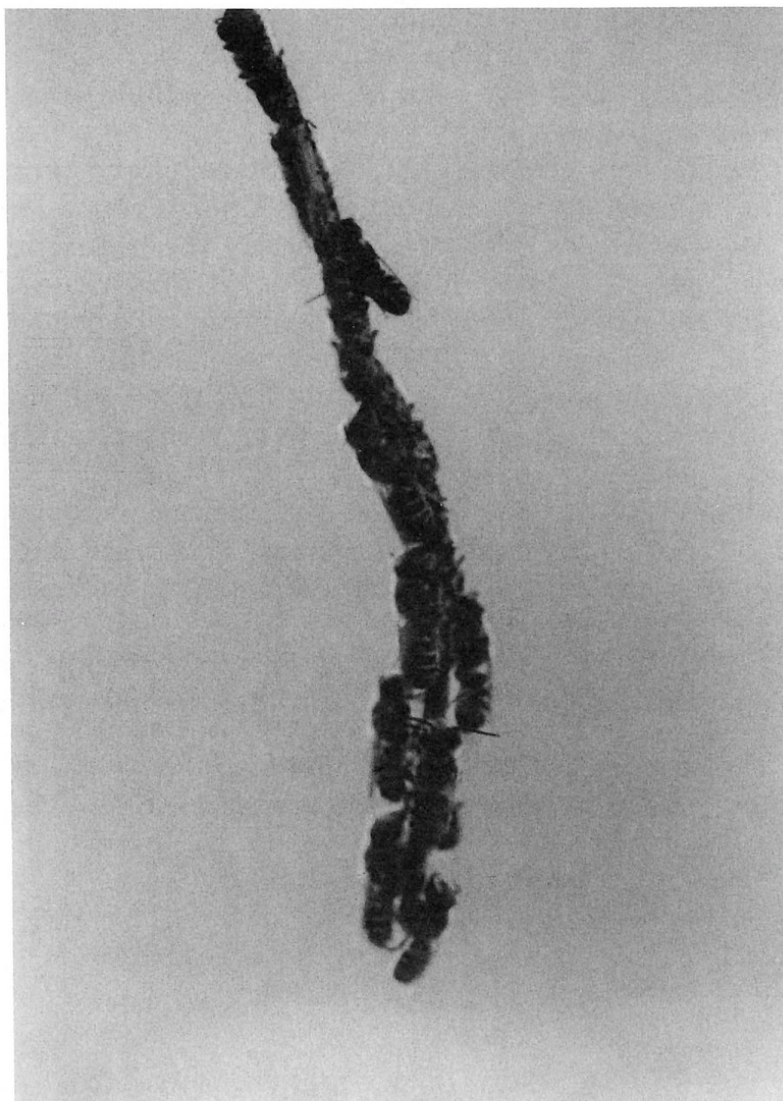


Figure 1. A male sleeping aggregation of the megachilid bee *Chalicodoma chilopsis* containing thirteen bees.

ing aggregations. Sleeping *Anthidiellum* grasp stem tips with their mandibles only, and extend wings laterally. Adjacent stems may be occupied by individuals of this species. Sleeping *Coelioxys* individuals grasp the periphery of stems with their mandibles and the first two pairs of legs, fold their wings back over the body, and orient head-down on the stem. This species does not aggregate with conspecifics for sleeping. Osgood (unpublished) has been cited (Stephen, W. P., G. E. Bohart & P. F. Torchio. 1969. Oregon State Univ. Press, Corvallis, page 72) for a record of aggregating male *Megachile rotundata* (Fabr.) that returned to a cavity under the siding of a building for several weeks.

On the evening of 21 Apr 1992 at 18:00 h (MST) in Tucson, Arizona, I noticed an aggregation of megachilid bees. The bees were resting on the apical end of a dead branch on an Alepo pine (*Pinus halepensis* Miller) approximately 3 m above ground. At this time, the bees were actively shifting positions along the branch, but activity ceased at sundown. The bees were arranged in a single layer, 360° around the stem from the apical end to approximately 15 cm up the stem. The

bees were in close proximity, often in direct contact. Each individual grasped the stem with mandibles and all legs, folded the wings back over the body and oriented the head upwards (Fig. 1). There were no other megachilid bees located in the vicinity of this tree.

Before sunrise the next morning, I collected the cold and immobile bees by placing a plastic bag over the branch and shaking. Upon examination, I discovered that all 87 bees were males of the same species. The bees were identified as *Chalicodoma chilopsis* (Cockerell) by Terry Griswold of the USDA-ARS Bee Lab in Logan, Utah. Even though the entire aggregation was collected on 22 Apr, more individuals of the same species utilized the same branch on successive nights. The site was used continuously for a total of 20 nights by 10 to 40 bees. Occasionally there were smaller aggregations of up to three individuals on a branch in close proximity to the main aggregation.

Thus, megachilid's also exhibit the monospecific male sleeping aggregations typical of anthophorids. Most likely such aggregations are not rare, but have not been recorded due to the difficulty in finding a cluster, as well as correctly identifying megachilid bees.

Acknowledgment.—I thank Terry Griswold for species identification, Stephen L. Buchmann, James Cane, and E. Gorton Linsley for manuscript reviews.

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PAN-PACIFIC ENTOMOLOGIST
70(4): 330–332, (1994)

Scientific Note

FAN PALM AS AN URBAN NESTING SUBSTRATE FOR *XYLOCOPA CALIFORNICA ARIZONENSIS* CRESSON (HYMENOPTERA: ANTHOPHORIDAE)

The city of Tucson, Arizona has been expanding into the desert for years. As a result, much of the native vegetation has been removed or severely reduced. *Xylocopa californica arizonensis* Cresson typically nests in the dried fruiting stalks (infructescences) of *Yucca*, *Agave*, and *Dasyllirion*, preferring stalks that are only 1–2 years old. These plants have been virtually eliminated from the native plant communities within the Tucson area, but do exist in ornamental plantings. Fruiting stalks are removed by homeowners after they have dried, due to their “unsightly” nature. This has created shortages of nesting substrates within the city, however *X. c. arizonensis* persists in large numbers. Thus, we began to examine whether *X. c. arizonensis* has begun using ornamental plants or structural timbers as nesting substrates.

We discovered large numbers of *X. c. arizonensis* associated with the fan palm [*Washingtonia filifera* (Lindley) Wendland] which is not native to the Sonoran



Thoenes, Steven C. 1994. "Description of a sleeping aggregation of male *Chalicodoma chilopsis* (Cockerell) (Hymenoptera: Megachilidae)." *The Pan-Pacific entomologist* 70(4), 328–330.

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