

NOTES ON THE BIOLOGY  
OF THE EYELESS BEETLE *GLACICAVICOLA*  
(COLEOPTERA : LEIODIDAE),

by Stewart B. PECK.

Museum of Comparative Zoology,  
Harvard University, Cambridge, Mass. 02138 U.S.A.

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Observations nouvelles sur le Coléoptère *Lioididae* anophtalme *Glaciacavicola bathyscoides* Westcott. L'espèce a été trouvée dans une localité nouvelle à une température de 4°C (39°F). Cette découverte montre que cette espèce ne se limite pas aux cavités contenant de la glace permanente, comme on l'avait auparavant pensé. On peut attirer ce Coléoptère avec des appâts : viande décomposée ou excrément humains. L'espèce a été mise en élevage en vue d'obtenir des larves et des données sur son cycle de vie.

New observations are reported for the blind leiodid beetle *Glaciacavicola bathyscoides* Westcott. The species has been found in a new locality at a temperature of 39°F (4°C). This shows that it is not limited to caves containing permanent ice as was earlier thought. The beetle can be attracted using baits of rotted meat or human dung. The beetles are now being cultured to obtain larvae and life cycle data.

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Westcott (1968) (1) described the remarkable blind beetle *Glaciacavicola bathyscoides* and erected the new subfamily Glaciacavicolinae to contain it in the family Leiodidae, delimited in a broad sense. The beetle was known only from three caves in the southeastern corner of the state of Idaho, in the northwestern corner of the United States. These caves are lava tubes and are in geologically young lava flows which erupted during the Recent or late Pleistocene. They are separated by a maximum distance of 184 km. All contain permanent ice and the beetles were found only in direct contact with the ice.

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(1) Westcott, R. 1968 : A new subfamily of blind beetle from Idaho ice caves with notes on its bionomics and evolution (Coleoptera : Leiodidae). Contr. Sci. Los Angeles County Mus. Nat. Hist. no. 141:1-14.

On 1 and 2 October, 1969, James H. Peck and I had the opportunity to observe and collect these beetles. I would like to report the following new observations on their biology.

1) *Glacivicola* has been found in a fourth locality. Forty-two individuals were found in Beauty Cave in Craters of the Moon National Monument, Idaho. This cave is 210 m southwest of Boy Scout Cave in which the beetles were previously known. This fourth locality is not exceptionnally significant in that we believe that the two caves are only segments of a formerly continuous lava tube cave. The beetles can undoubtedly pass through the broken rock separating the two cave segments.

2) The temperature in Beauty Cave was 39°F (4°C) at the site where the 42 beetles were collected. No ice was visible in the 50 m length of the cave. This demonstrates that the beetles are not limited to environments containing permanent ice as implied by all earlier collections. Thus, we may expect the beetles to be more widely distributed and abundant than if they were limited to caves containing permanent ice.

3) The only feeding observation reported by Westcott was of one individual chewing on portions of a dead individual of the same species. The 42 beetles found by us in Beauty Caves were among rock fragments under a pile of semi-fluid human dung under a ceiling drip. Though no feeding or immatures were observed, the dung obviously attracted the beetles either for feeding or reproductive purpose. This is suspected since adult and larval leiodid beetles are generally scavengers on decaying plant and animal matter.

4) Additional cave localities may be discovered for the beetles if a bait may be used to attract them from their hiding places. A simple experiment was conducted in Boy Scout Cave to test two possible baits. Decayed meat was used because it is known to be attractive to cavernicolous *Ptomaphagus* beetles (Leiodidae ; Catopinae, Peck 1967) (2). The observation in Beauty Cave suggested human dung as a second bait.

Before placing the bait we searched Boy Scout Cave for a total of three hours and found only one beetle which was at the edge of the ice. The cave is floored irregularly with ice for 50 m of its 66 m length. We placed five fresh human dung and eleven partly decayed beef liver baits on the ice, in the broken rocks at the edge of the ice, and among the broken rocks away from the ice. Each piece of bait was about 40 cubic cm in volume (about 40 gm in weight). The baits were examined 15 hours later.

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(2) Peck, S. 1967 : Trapping and the ecology of cave *Ptomaphagus* beetles (Catopidae). Bull. Nat. Spel. Soc., 29:100.

Ten beetles were found at the eleven liver stations, while only one beetle was found at the five dung stations. This demonstrates that the beetles will concentrate at baits, and that decayed liver is roughly five times more attractive than human dung.

Eight beetles were attracted to three baits placed among the rocks contrasted with only three beetles at eleven stations on rocks at the edge of the ice and no beetles at two stations on the ice. This suggests the beetles are more abundant among the rocks of the caves, and are found on the ice as wanderers where they are more conspicuous to collectors.

The beetles are tolerant of the twilight zone of the cave because two were attracted to a bait in this region.

5) As Westcott has pointed out, the classification of this beetle is difficult. The adult characters do not conclusively place it within the Leiodidae. Life cycle and larval characteristics, which are currently unknown, may help to solve the problem of the relationships of the beetle. I am currently keeping 35 individual *Glacicavicola* in laboratory culture in the hopes of obtaining this data.