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## Observations on the Puddling Behavior of the Canadian Tiger Swallowtail Butterfly, *Papilio Glaucus Canadensis* in Northern Michigan

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**OBSERVATIONS ON THE PUDDLING BEHAVIOR OF THE  
CANADIAN TIGER SWALLOWTAIL BUTTERFLY, *PAPILIO  
GLAUCUS CANADENSIS* IN NORTHERN MICHIGAN**

J. Mark Scriber and Matthew P. Ayres<sup>1</sup>

The occurrence of "puddling" behavior in Lepidoptera has been reviewed by M. J. Norris (1936) by J. A. Downes (1973) and by P. H. Adler (1982). Butterflies have been previously reported on mammalian dung, urine, perspiration, saliva, salt, blood, campfire ashes, aphid honeydew, tree sap and animal carrion. The rarity of female puddling in butterflies, particularly the tiger swallowtail (*Papilio glaucus*) has been recently addressed by two studies (Berger and Lederhouse 1985, Scriber 1987).



Figure 1. Puddling site at rocky side of the Presque Isle River. One male *Papilio glaucus canadensis* is seen "puddling" among the rocks on a pile of guano under the park bridge where chimney swifts roost.

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We wish to add two previously unreported aspects to the puddling literature concerning *P. glaucus* L. First, on 4 June 1987, we observed and caught a single female *P. g. canadensis* probing moist sand/dirt of East Burt Lake Road in the University of Michigan Biological Research Station at Pellston (Emmet Co., MI). Female *P. g. canadensis* in particular have never been reported puddling (although the Florida subspecies, *P. g. australis*, and a New York *P. glaucus* population have been [Berger and Lederhouse 1985, Scriber 1987]). Secondly, on 6 June 1987, we observed and captured 5 male *P. g. canadensis* "puddling" on feces of chimney swifts (*Chaetura pelagica*) among the rocks under a highway bridge over the Presque Isle River in the western end of the Porcupine State Park (Gogebic Co., Michigan; Fig. 1). To our knowledge male butterflies in general have not been reported on bird guano and this may represent a unique if not rare event. These butterflies and the female from Emmet County have been deposited as vouchers in our research collection at Michigan State University.

The ecological significance of puddling behavior of Lepidoptera has remained an enigma for centuries (Bates 1863, Arms et al. 1974). Recent studies in our laboratory have shown that amino acids and electrolytes, when added to the sugar diet of adults, significantly increased the virility & reproductive success of *P. glaucus* males (R. C. Lederhouse, M. P. Ayres, & J. M. Scriber, pers. obs.).

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