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NEW FOODPLANT AND OVIPOSITION RECORDS FOR THE TIGER SWALLOWTAIL BUTTERFLY, *PAPILIO GLAUCUS CANADENSIS* IN ALASKA (LEPIDOPTERA: PAPILIONIDAE)

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The eastern tiger swallowtail butterfly *Papilio glaucus* L., is the most polyphagous of all swallowtails (Lepidoptera: Papilionidae) in the world (Scriber 1984). With a geographic range extending from Florida westward into Texas and north to the Brooks Mountain range in Alaska, and eastward across all of forested Canada, it may also have the largest distribution of any of 563 species of swallowtail butterflies in the world. Of several dozen reported host plants, no single foodplant range extends as far as the range of *P. glaucus*. Different local foodplant favorites exist by necessity (Scriber 1986) and with opportunity (Scriber 1988). The extent to which host races (Diehl and Bush 1984) exist across this large geographic range is unknown, however significant genetically-based differences in phytochemical detoxification abilities and survival on various plant species have been noted between the northern (*P.g. canadensis*) and southern (*P. g. glaucus* L.) subspecies (Scriber et al. 1989).

The Alaskan populations of *P. g. canadensis* (sometimes classified as a distinct subspecies *P. g. arcticus* Skinner) have not been extensively studied, and we have been unable to locate any published host plant records for Alaska. Here, we report our field observations of host plant use by the Alaskan *P. g. canadensis*.

We have found eggs and larvae of *Papilio glaucus canadensis* on species of native trees and one introduced tree species in two families (Salicaceae and Betulaceae) in central Alaska in 1988. One the south slope of the roadside (Farmer's road) 3 mi north of the University of Alaska, Fairbanks campus, we found eggs and early instar larvae of the tiger swallowtail on small trees (1–2 m in height). Five balsam poplar, *Populus balsamifera* (Salicaceae), trees were found to have two eggs, a 1st instar larva, a 2nd instar larva and a molting (1st/2nd instar) larva. Two alder trees, *Alnus tenuifolia* (Betulaceae) were discovered which had two eggs and one 2nd instar larva. A small quaking aspen (*Populus tremuloides* [Salicaceae]) sprout had one egg. All of these observations were made on 2 July 1988.

Two days earlier we followed a *P. g. canadensis* female until it oviposited a single egg on the lowest branch of a small quaking aspen tree on the north end of the University of Alaska, Fairbanks campus.

On 4 July, one egg and one 1st instar larva were found on *Salix novae-angliae* (Salicaceae) shrubs near Ballaine Lake (within 1 km of the other observations). These caterpillars were monitored throughout the season, and collected on 3 August as 5th instars (696 and 936 mg fresh mass). The following spring one produced an adult *P. g. canadensis* male while the other turned out to be parasitized by an ichneumonid wasp. Both have been retained as voucher specimens.

On 17 July, in the same vicinity, a 4th instar caterpillar was found on *Alnus tenuifolia*. This was photographed and collected on 28 July as a late 5th instar (1250 mg) caterpillar. It also was parasitized by an ichneumonid wasp.

On 20 July, a 5th instar caterpillar (ca. 500 mg) was discovered on *Betula pendula* (Betulaceae), the European white birch, in a University of Alaska prove-

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nance planting originating from southern Finland. This is particularly notable since we never saw any evidence of oviposition or larval feeding on Alaska paper birch, *Betula resinifera*, which is ubiquitous throughout the area and commonly forms large monospecific stands. The approximately 20 *B. pendula* trees in the birch garden are the only ones we know of in interior Alaska. The natural distributions of *P. glaucus* and *B. pendula* are entirely non-overlapping.

To our knowledge, these observations represent the first records of *Papilio glaucus canadensis* using *Alnus tenuifolia, Salix novae-angliae*, and *Betula pendula* as hosts. Both *A. tenuifolia* and *S. novae-angliae* are abundant in interior Alaska, but their distribution is primarily Beringial and they are not encountered by *P. g. canadensis* in the Great Lakes Region or most of Canada. Conversely, many of the host species reported from the northern Great Lakes region do not occur in interior Alaska. These include black cherry, *Prunus serotina,* chokecherry, *P. virginiana*; and bigtooth aspen, *Populus grandidentata* (Scriber et al. 1982), as well as white ash, *Fraxinus americana* (Scriber 1975); peachleaf willow, *Salix amygdaloides* (Scriber, pers. obs. Emmet Co., MI); lilac, *Syringa vulgaris* and *Carpinus caroliniana* (Shapiro 1974); basswood, *Tilia americana,* mountain ash, *Sorbus americanus* (McGugan 1958, Scriber 1988).

The only host species that appear to be common between interior Alaska and the Great Lakes are *Populus tremuloides* and *P. balsamifera*. Alaskan paper birch, *Betula resinifera*, was long regarded as a variant of *B. papyrifera*, but differs in chromosome number (2n = 56–84 for *papyrifera* vs. 28 for *resinifera*) and is now generally granted species status (Dugle 1966).

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