

## A northern range extension of *Tanypteryx hageni* (Odonata: Petaluridae)

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### ABSTRACT

An adult female of the dragonfly *Tanypteryx hageni* (Selys) was collected near the Kowesas River in western British Columbia (53°18' N latitude) in August 1995. This collection increases its northern range and represents the most northerly collection of any member of the family Petaluridae. While no larvae were collected, it is likely that the muskegs that occur in the Kowesas River valley serve as the larval habitat. This distribution record supports the prediction that *Tanypteryx hageni* is not restricted to mountain habitats, but rather is a resident in low-elevation coastal forests in the northern part of its range.

**Key words:** Odonata, Petaluridae, *Tanypteryx hageni*, distribution, Kowesas River

### DISCUSSION

The Family Petaluridae contains eight extant species that exhibit disjunct distributions in both the northern and southern hemispheres (Cannings and Stuart 1977). Only two species occur in North America. *Tanypteryx hageni* (Selys) occurs in western North America, ranging from California and Nevada into Oregon, Washington and British Columbia, while *Tachopteryx thoreyi* (Hagen) is limited to the eastern U.S. and southern Quebec (Smith and Pritchard 1956; Walker and Corbet 1975). Petalurids are well represented in the fossil record, suggesting that at one time they were a dominant component of the odonate fauna (Svihla 1959).

*Tanypteryx hageni* occurs in association with montane bogs and swamps, which serve as the larval habitat. Most collections in British Columbia were made in the Cascade Mountains and southern Coast Mountains (Cannings and Stuart 1977). Until recently this species was thought to be restricted to mountain habitats (> 1000 m) and collections made at lower elevations were considered accidental (Walker 1958; Cannings 1978). However, Cannings (1978) reported a distribution record from the mouth of the Ahnuhati River on Knight Inlet (lat. 50° 52') and suggested that *T. hageni* does occur naturally at lower elevations, particularly at the northern extent of its range. While Cannings (1978) suggested that the species probably has a wider distribution than previously thought, *T. hageni* is considered one of the rarest dragonflies in British Columbia and is formally listed as a potentially rare or threatened species in the province (Cannings and Stuart 1977; Scudder 1994).

In August 1995, an adult female of *T. hageni* was collected during a macroinvertebrate survey of the Kowesas River in western British Columbia. The

specimen was collected in the river valley near Cole Creek ca. 5 km from the mouth of the Kowesas River (lat. 53° 18', long. 128° 10'). This collection site is ca. 400 km north of the Ahnuhati River and thus represents a significant range extension for the species. The only other family member occurring in the northern hemisphere besides *Tachopteryx thoreyi*, is *Tanypteryx pryeri* from Japan (Svihla 1959). Consequently, the northern range extension of *T. hageni* reported here represents the northern-most occurrence of the Family Petaluridae. The specimen is deposited in the Systematic Entomology Laboratory at Oregon State University.

Only adult specimens of *T. hageni* have been collected in British Columbia. In other parts of its range, larvae inhabit burrows in the muck of mountain bogs, swamps, or seepage areas (Cannings and Stuart 1977; Smith and Pritchard 1956). Larvae appear to require permanent water where burrows are constructed, but may move away from water for extended periods, when they apparently breathe air (Svihla 1959). In Oregon and Washington, where life-history studies were conducted, *T. hageni* required 5-6 years for larval development (Svihla 1959; Corbet 1963). Muskegs in the Kowesas River valley near where the adult specimen was collected probably serve as the larval habitat.

This distribution record for *T. hageni* supports the predictions made by Cannings (1978) that the species is a resident of coastal forests and enjoys a wider distribution than previously thought. However, *T. hageni* is rare throughout its known range and no doubt still merits its position on the list of potentially rare or threatened invertebrate species in British Columbia (Scudder 1994). Documenting the occurrence and habitat preferences of larvae of *T. hageni* in British Columbia would be a logical step in determining the status of this dragonfly.

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