

***Poanes viator* (Edwards) (Lepidoptera: Hesperiidae), a rare skipper found in Whiteshell Provincial Park, Manitoba.**

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ABSTRACT

Fifteen specimens of *Poanes viator* (W. H. Edwards, 1865), the broad-winged skipper, were collected in Whiteshell Provincial Park, Manitoba (50.00 N; 95.32 W) near Red Rock Lake in 2003 – 2006. Eight of the broad-winged skippers were female and seven were male. There has been only one other confirmed collection of a female specimen, in 1987, in Manitoba. This is the northern-most distribution of this skipper to date. The broad-winged skipper breeds locally in isolated wet-lands of southeastern Manitoba, flying from late June to early August, but principally in the latter part of July.

INTRODUCTION

Poanes viator (W. H. Edwards, 1865), the broad-winged skipper, is a large, dark brown and orange skipper. It has an inland range from Massachusetts, southern Ontario, Minnesota, and Nebraska, south to Alabama and Texas (Klots 1951). In Canada, it is found throughout southern Ontario, north to Renfrew County, and in southwestern Québec as far as Sorel. Two isolated records are reported outside this range, one from Lake of the Woods, Ontario and one in the Whiteshell Provincial Park, Manitoba. (Layberry *et al.* 1998).

Klots (1951) and Brock and Kaufman (2003) identified two populations; an inland freshwater marsh population, which is only found in Canada, and the coastal population, found in salt water marshes from the eastern United States to Texas. In the United States,

this species occurs from south coastal and eastern Texas, through to Florida, mainly close to the gulf, then on the east coast from northern Florida and along the Atlantic coast north to the northeastern coastal states (<http://www.nearctica.com/butter/index/htm> (May 2006)). The inland population includes Pennsylvania (and Ontario) westward bordering the southern portion of the Great Lakes. In the Midwest, it is recorded in Wisconsin, Michigan, Minnesota, Nebraska North and South and Dakota. The Manitoba population is consistent with descriptions of the inland subspecies. Only the nominate subspecies, *Poanes viator viator* occurs in Canada (Layberry et al. 1998).

Except for an isolated locality in the Lake of the Woods, Ontario, (Layberry et al. 1998), sites in Minnesota and mid-eastern North and South Dakota are the closest indigenous locations in relation to possible breeding sites of *P. viator* in Manitoba. It is usually locally distributed, being found in isolated populations, indicative of strict habitat needs (Klots 1951; McCabe and Post 1978; Pyle 1981).

Layberry et al. (1998) remarked that its restriction of habitat to sedge marshes was probably responsible for *P. viator* not being collected in the Ottawa area until 1977, despite intensive collection for over a century. Since then, more than 60 colonies (isolated populations) have been discovered in the Ottawa area alone.

Pyle (1981), and Brock and Kaufman (2003) identified the larval food-plant for the inland populations as hairy sedge (*Carex lacustris* Willd.) and other sedges; the coastal populations feed on common reed (*Phragmites communis* Trin.), wild rice (*Zizania aquatica* Linnaeus) and marsh millet (*Zizaniopsis miliacea* (Michx.) Doell. and Asch.). In Canada, Layberry et al. (1998) reported that *P. viator* in Ontario is a sedge-area skipper feeding on broad-leaved sedges, *C. lacustris* and *Carex rostrata* Stokes.

The dorsal forewing of *P. viator* is brown with orange spots and the hind-wing is orange with a wide brown border. The underwings have similar, but lighter markings appearing less distinctly. There is relatively little, or subtle, sexual dimorphism in the ventral wing-colour patterns (Klassen et al. 1989). They also stated that the forewing tips in females are more pointed and the dorsal spots may be more whitish than the male. Identification of sex in the field is also subtle, with the underwing markings paler than above, and “the hindwing traversed from the base to middle of outer margin by a light-coloured longitudinal ray which is not as plain in the female as the male” (Holland 2003). The most distinctive feature of the broad-winged skipper is its comparatively large wingspan at 32 - 44 mm (Klots 1951), while Layberry et al. (1998) reported the wingspan in Canada at 27 to 34 mm.

Poanes viator was reported by Klots (1951) to fly mainly in July. Layberry et al. (1998) reported it having one generation per year, with adults present from June to mid-August, but commonest in mid-July. McCabe and Post (1978) noted that the flight period for this skipper lasted only a relatively short period of time. Much further south, there may be more than one brood, possibly three in the southern states, with adult flights from April to October (<http://www.dallasbutterflies.com/> May, 2006).

Similar species in Manitoba: females of *Poanes hobomok* (Harris, 1862) [Hobomok skipper,] and *Hesperia leonardis* (Harris, 1862) [Leonardis skipper] are the only skippers in Manitoba that remotely resemble *P. viator*. The size of the former, and the distinct spots and dark-brown underwing of the latter readily separate the species. *Poanes*

viator has a deeper brown base to the ventral forewing, which makes the mid-wing orange spots stand out. The dorsal hind-wing of *P. hobomok* has a wider brown border. The ventral surfaces of the hind wings of *P. hobomok* have sharply delineated orange cells with a solid brown border. The ventral side of *P. viator* has deep brown root and base colour on the forewing, and a more diffuse, but similar pattern to the hindwing. The more prominent oblique buff-yellow longitudinal ray on the underside of the male hindwing, as described in field-collected specimen by the editors in Holland (2003), is also discernible on freshly emerged specimens. *Poanes hobomok* also seems to fly a little earlier in the season, in June and *H. leonardis* flies later in Whiteshell Provincial Park, principally in August (Klassen *et al.* 1989; personal records).

McCabe and Post (1977) reported its supposed presence in Manitoba, but until this time only one specimen has been on record for Manitoba, collected by W.H. Christie and J.E. Christie on 28 June, 1987 near Red Rock Lake in Whiteshell Provincial Park (Klassen *et al.* 1989). That specimen is in the collection at Manitoba Museum of Man and Nature (currently, The Manitoba Museum) (Catalogue # DP 78-1; Paris number: 57554, Star# 291406).

MATERIALS AND METHODS

A survey of Lepidoptera, including the Hesperioidea of the Whiteshell Provincial Park area has been ongoing, weather permitting, since 1986. Adult specimens were collected and mounted using standard mounting and drying techniques. Skippers were labeled and identified as *P. viator* when found in our collections. These specimens were measured for wing span and photographed on dorsal and ventral surfaces. Specimens were sexed using a dissecting microscope at 25X, when possible. The distinctive ventral hind-wing ray was also used secondarily to confirm identity of males in the collection.

RESULTS

Fifteen specimens of *P. viator* were collected by the first author during the summer flight periods in 2003 to 2006 in about the same locality. In 2003, five specimens were collected on July 18 (1 male, 2 females) and July 22 (1 male, 1 female). Two specimens of each sex were deposited in the J.B. Wallis Museum of Entomology, University of Manitoba, Winnipeg and the Manitoba Museum. One specimen, (male) was retained for reference in the first author's collection.

Three specimens were collected on 1 August, 2004 (1 female), and 2 August 2004 (1 male; 1 female). It should be noted that the onset of summer foliage was delayed that year (personal records). In 2005, two more specimens were collected on 22 July (2 males). In 2006, two specimens were collected on 3 July (1 male, 1 female). Summer foliage was early by nearly three weeks (personal records). A search further afield in similar habitat was then made and one specimen was collected on 4 July (1 female), but none were seen by the authors in what we considered to be suitable habitat approximately

7 km distant. On 6 July, another specimen was collected at a different site, feeding on thistle near a muskeg- and sedge-filled river (1 female), with other specimens noted in the vicinity. Photographs of up to a dozen specimens feeding on thistle flowers were taken in the original site that date. On 15 July, 2006, one specimen (1 female) in worn condition was collected at the original site.

A mean wingspan of all sixteen Manitoba specimens collected was 34.4 mm (range 28.8 to 38.0 mm). The smallest specimen, a male, was collected on 2 August, 2004. The largest female specimen was 38.0 mm, collected on 4 July, 2006. There were nine female and seven male specimens collected.

Vegetation found in the collecting area included the following plants: trees - alder, birch, dwarf birch, jack pine and tamarack; shrubs - heather sp., bog laurel, bog rosemary; understory - fern sp., broad leaf sedges, Canada thistle and *Carex* spp.

DISCUSSION

Whiteshell Provincial Park is quite far north of the reported range for *P. viator*, at 50.00 N; 095.32 W. The Park is situated in the Canadian Shield and does have numerous areas of acid bogs and sedge marsh, which seem to be preferred habitats for the caterpillar.

The larvae of *P. viator* are apparently undescribed, (Layberry *et al.* 1998). These fresh-water marshes are found throughout Whiteshell Provincial Park as water entrapment ponds by beaver-dam action and in the small creeks and are certainly prime sites to search for additional populations and for the larvae. These wet-land sites are not the usual collection areas for butterflies and skippers, but have been productive for observing feeding adult skippers when flowering plants were found nearby.

Poanes viator was observed flying with other commonly found skippers (male and female least skippers, *Ancyloxypha numitor* (Fabricius, 1793) in 2004 and 2005, and a dun skipper, *Euphyes ruricola* (Boisduval, 1852) in 2004. Other broad-winged skippers were observed feeding on common thistles and purple vetch near a sedge-filled beaver-dam swamp. Harvesters (*Feniseca tarquinius* (Fabricius, 1793)) were also collected in the same area, with the second brood flying at about the same time-period as *P. viator*. Their larvae were possibly feeding on woolly aphids found in the nearby alder thicket.

The occurrence of skippers in Whiteshell Provincial Park, as in much of the rest of Canada, is not well recorded. Ross (1873) included only one page on the family Hesperidae and mentioned skippers briefly in the description of butterflies and moths of Canada. In Manitoba, early lists of butterflies are by Wallis (1921) and Brodie (1929). Brooks (1942) published a revised checklist of butterflies in Manitoba, based upon the earlier lists, but identified Seven Sisters Falls (to the northwest), the Sandilands Provincial Park (to the west) and McMunn (to the southwest) as the closest collecting localities. The revised checklist includes only 27 skippers in all of Manitoba, with records from Victoria Beach or Fort Alexander, northwest of Whiteshell Provincial Park.

Masters (1972) published a checklist of butterflies of Whiteshell Provincial Park and the

Northwest Angle Forest Reserve, but does not include in that list, the numerous skipper specimens reported to be found there. Bird (1956) published a list of Rhopalocera from Whiteshell Forest Reserve taken over the previous two summers, all specimens coming from within ten miles (16 km) of Red Rock Lake. Bird was working at the Federal Forestry Research Station, Larch Sawfly Programme, which had its headquarters on Red Rock Lake. He noted that this locale is an interface for eastern and western, as well as many northern and southern faunal components. This is the identical collecting area in this report. *Poanes viator* was not included in his list of seven skippers. A comprehensive list and the range of butterflies and skippers of Manitoba by Klassen (1984) and Klassen *et al.* (1989) does include a number of those 19 species of skippers collected in the Whiteshell. A more detailed description of early lepidopterists in Manitoba can also be found in their text.

Hooper (1973), when describing the butterflies of Saskatchewan, included a hypothetical list of species for the province and postulated that *P. viator* may at some time be found in the south-eastern Saskatchewan bogs adjacent to North Dakota.

The authors identified three additional populations of *P. viator* within 5 km of Red Rock Lake in 2006. Further collection in mid-July should be made in similar habitat from the Northeast Angle to other areas in Whiteshell Provincial Park, and in wetlands with suitable host plants elsewhere in the Province to establish the northern and westernmost limits of this species. Throughout most of its range elsewhere, the broad-winged skipper cannot be considered endangered. It may be considered secure globally, though in some parts of its range it is considered rare. Its occurrence in Manitoba may be considered on the periphery of its range. Therefore, further collection and study for the distribution of *P. viator* in sedge marsh habitat in Manitoba could help decide if population management is required.

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