FIRST RECORD OF DION SKIPPER (LEPIDOPTERA: HESPERIIDAE) IN MANITOBA, CANADA

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The Dion skipper, *Euphyes dion* W.H. Edwards, 1879 (Lepidoptera: Hesperiidae) is associated with sedge meadows and bog fen habitats (Shuey 1985). They use *Carex lacustris* (Cyperaceae) and other sedges as larval host plants and have also been associated with the exotic *Carex acutiformis* (Cyperaceae) (Catling and Kostiuk 2014). The butterfly's known range extends north to northwestern Ontario, northern Minnesota, and southeastern North Dakota, but they have never been reported from Manitoba (Klassen *et al.* 1989; Layberry *et al*. 1998).

Figure 1. Dion skipper nectaring on swamp milkweed, 25 July 2022. Photo by K. Eckhardt.

During an informal survey for butterflies in late July 2022, I encountered two Dion skippers 11.7 km southeast of the hamlet of Molson, Manitoba (49.99 N, 96.15 W), about 70 km east-northeast of Winnipeg. The observations were made along a 10 m section of Moss Spur Road at an elevation of 267 m. The gravel road is bordered by mixed forest and wetlands, namely Julius Bog and Shelley Bog. A wide ditch with several inches of standing water, and many sedges (*Carex* spp.), lay between the road and the Canadian Pacific Railway tracks.

Figure 2. Dion skipper nectaring on thistle, 29 July 2022. Photo by K. Eckhardt.

On 25 July, at 14:30h two Dion skippers were seen amongst stands of sedges (*Carex* spp.) growing in a ditch. I was able to approach the butterflies as they nectared on swamp milkweed (*Asclepias incarnata*) (Apocynaceae), thistle (*Cirsium* sp.) (Asteraceae) and vetch (*Vicia* sp.) (Fabaceae). Dozens of Dun skippers, *Euphyes vestris* Boisduval, 1852 (Lepidoptera: Hesperiidae), frequented the same flowers alongside Dion skipper. Near the end of this survey around 14:55h CDT, I photographed and collected as a voucher specimen a single worn female (Figure 1) who had presumably laid eggs. I was unable to determine the sex of the second worn individual. On 29 July I returned to the site, hoping to locate more Dion skippers before the end of their flight period. I began surveying at 10:30h. I again observed two Dion skippers, one of which was a female with minimal wing wear (Figure 2). Both individuals observed on 25 July were worn, which rules out the possibility that the fresh female from 29 July was a re-sighting. Minimum number of individuals observed for the two dates is therefore three. I walked east along Moss Spur Road for 1 km without further Dion skipper sightings and ended my survey at 11:30h CDT.

Dion skippers are distinctly marked, with two pale orange streaks on the ventral hind wing (Layberry *et al.* 1998). The orange rays are clearly visible on my voucher specimen despite moderate wing wear (Figure 3). The voucher specimen I collected closely resembles verified *E. dion* specimens from Ohio (Figure 4). The identity of the Manitoba specimen was confirmed by lepidopterist Peter W. Hall, an honorary research associate with the Canadian National Collection of Insects. The specimen is currently held in the author's personal collection, with plans to move it to the J.B. Wallis/R.E. Roughley Museum of Entomology at the University of Manitoba.

Dion skipper was not included in a comprehensive list of the province's butterflies (Klassen *et al*. 1989). There are no Dion skipper specimens of Manitoba origin in either the Manitoba Museum or the J.B. Wallis/R.E. Roughley Museum of Entomology. As of April 2023, community science databases (www.iNaturalist.org, www.DiscoverLife.org, www.butterfliesandmoths.org, www.bugguide.net) also lack Dion skipper observations from Manitoba.

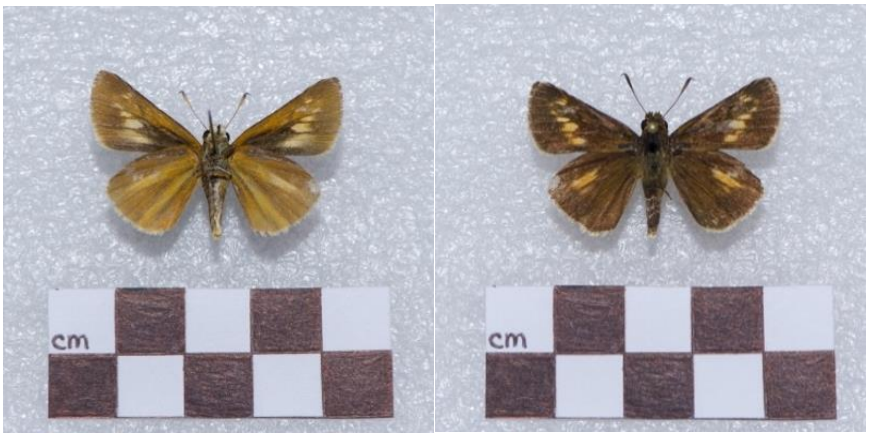

Figure 3. Female Dion skipper collected near Molson, MB, 25 July 2022. Ventral view (left), dorsal view (right). Wingspan 33.9 mm. Photos by K. Eckhardt.

Figure 4. Female Dion skipper collected in Marion County, OH, 20 July 1983. Manitoba Museum specimen MM658. Ventral view (left), dorsal view (right). Wingspan 40.0 mm. Photos by K. Eckhardt.

The Canadian range of Dion skipper is discontinuous (GBIF 2022). The species is primarily distributed in southern Ontario; additional populations in northwest Ontario, as far north as Lake of the Woods, are thought to be the result of recent range expansions (Kamstra *et al.* 2019). Dion skipper was first reported in Ontario's Rainy River district in 2013 (Layberry and Jones 2014). It

is therefore likely that movement into Manitoba occurred sometime in the past ten years. The Manitoba records reported here are roughly 160 km northwest of the northernmost Rainy River sightings (49.15 N, 94.16 W) and provide possible further evidence of an ongoing northern range expansion for this species (Kamstra et al. 2019; Layberry and Jones 2014).

Considering there are no similar-looking species found in Manitoba, it is unlikely that Dion skippers as occurring here have been overlooked in the past due to misidentification. Eastern Manitoba has been extensively surveyed for butterflies in the past (Westwood and Blair 2010). Range expansions into southeastern Manitoba have been documented for other lepidopterans including Northern broken-dash, *Wallengrenia egeremet* Scudder, 1864 (Lepidoptera: Hesperiidae) and Baltimore checkerspot, *Euphydryas phaeton* Drury, 1773 (Lepidoptera: Nymphalidae) (Taylor and Westwood 2010; Semmler and Westwood 2013). It is possible that the skippers at the Molson site may represent a breeding population established because of range expansion. In support of this conclusion, a fresh female was observed on 29 July, suggesting recent eclosion at or near the Molson site, rather than immigration from the nearest location in Ontario.

Future surveys should take place earlier in the skipper's flight season to estimate population size at the Molson site. Identification of sedge species in the area would help determine the likely host plants in Manitoba. A search for additional Dion skippers in southeast Manitoba, in appropriate marshy habitat, may also prove fruitful. Possibly there are other populations waiting to be discovered in the 160 km between Molson and Lake of the Woods.

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REFERENCES

Catling, P. and B. Kostiuk. 2014. Use of a marsh dominated by the introduced European lake sedge, *Carex acutiformis*, by highly localized native butterflies. Canadian Field Naturalist, 128: 358–362.

GBIF. 2022. GBIF occurrence download. Available from https://doi.org/10.15468/dl.y7ht2x [Accessed 23 April 2023].

Kamstra, J., M. Dawber and D. Elder. 2019. Northern range expansion of Dion skipper (*Euphyes dion*) in Ontario. In: R. Cavasin and J.E. Linton (eds) Ontario Lepidoptera 2018. Toronto Entomologists' Association Occ. Pub. 50: 15–17. Available from https://www.ontarioinsects.org/publications/lep_sum.html [Accessed 8 May 2023].

Klassen, P., A.R. Westwood, W.B. Preston and W.B. McKillop. 1989. The butterflies of Manitoba. Manitoba Museum of Man and Nature, Winnipeg, Manitoba, Canada.

Layberry, R.A. and C.D. Jones. 2014. Summary of Ontario butterflies and skippers in 2013. *Edited by:* R.A. Layberry and C.D. Jones. Ontario Lepidoptera 2013. Toronto Entomologists' Association Occ. Pub. 44: 21–81.

Layberry, R.A., P. Hall and J.D. Lafontaine. 1998. The butterflies of Canada. University of Toronto Press Incorporated, Toronto, Canada.

Semmler, S. and A.R. Westwood. 2013. *Wallengrenia egeremet* (Hesperiidae): A new population for western Canada. Journal of the Lepidopterists' Society, 67: 59–61.

Shuey, J.A. 1985. Habitat associations of wetland butterflies near the glacial maxima in Ohio, Indiana, and Michigan. Journal of Research on the Lepidoptera, 24: 176–186.

Taylor, P. and A.R. Westwood. 2010. Records of the Baltimore checkerspot butterfly in Manitoba. Blue Jay, 68: 87– 89.

Westwood, A.R. and D. Blair. 2010. Effect of regional climate warming on the phenology of butterflies in boreal forests in Manitoba, Canada. Environmental Entomology, 39: 1122–1133.