

Summary

The 55 species listed for Whiteshell, represent 76 per cent of the 72 species known to occur in southeastern Manitoba. It is quite likely that another five or six will be eventually recorded at Whiteshell. Skippers (Hesperiidae) have not been included in my study. Bird (1956) recorded seven species of skippers for Whiteshell, but there are possibly a dozen species occurring here.

A LIST OF BUTTERFLIES TAKEN AT NORTHWEST ANGLE PROVINCIAL FOREST, MANITOBA

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Manitoba's Northwest Angle Provincial Forest is located in the extreme southeast corner of the province. It borders Minnesota's Northwest Angle and Buffalo Bay of the Lake of the Woods, but is traversed by a single highway — Manitoba's No. 308 which can be taken out of Sprague or East Brainerd. The forest reserve is comprised of over 150,000 acres, most of which is in seral forest growth. A tourist court and campgrounds and picnic areas are located at Moose Lake. The entire area is Canadian Zone forest with birch and aspen gradually yielding back to pine and spruce interspersed with large marshy areas and smaller sphagnum bogs.

During the last six years, I have been studying butterfly distribution in Manitoba and have spent three weekends in the Northwest Angle Provincial Forest. Since I now have the butterfly distribution of southeast Manitoba pretty much in hand and expect to concentrate on the northwest and southwest areas during the next two to three years, I don't contemplate any further studies in the Northwest Angle Forest. Since there are no published records of butterflies from here, it seems worthwhile to record those species that I have found.

LITERATURE CITED

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Masters, J. H., and J. T. Sorensen. 1968. Bionomic notes on the Satyrid butterfly *Oeneis macounii* at Riding Mountain, Manitoba. *Blue Jay*, 26:258-260.

My collecting was done in July and August of 1969 and August of 1970; thus I have no records of species flying in May and June. In all, 33 species are recorded, this being only slightly over half of the 50 to 60 that are expected here. Whiteshell Provincial Park is directly north of the Northwest Angle Forest and contains almost identical habitats. All but two of the known Northwest Angle species, *Polygonia comma* and *Lycaena helloides*, have also been taken at Whiteshell. The remaining 30 species have identical flight periods and habitats at both spots, these having been given in some detail in another paper (Masters, 1972. The butterflies of Manitoba's provincial parks. I. Whiteshell Provincial Park. *In Press*). The species observed are as follows:

PAPILIONIDAE:

Papilio glaucus canadensis Rothschild & Jordan.

PIERIDAE:

Pieris napi oleracea Harris, *Pieris rapae* (Linnaeus), *Colias eurytheme eurytheme* Boisduval, *Colias philodice philodice* Godart, *Colias interior interior* Scudder.

SATYRIDAE:

Lethe anthedon borealis (Clark), *Lethe eurydice eurydice* (Johansson), *Cercyonis pegala nephele* (Kirby).

NYMPHALIDAE:

Limenitis arthemis arthemis (Drury), *Limenitis archippus archippus* (Cramer), *Vanessa atalanta rubria* (Fruhstorfer), *Nymphalis j-album j-album* (Boisduval & LeConte), *Nymphalis antiopa antiopa* (Linnaeus), *Nymphalis milberti milberti* (Godart), *Polygonia satyrus neomarsyas* dos Passos, *Polygonia faunus faunus* (Edwards), *Polygonia comma* (Harris), *Polygonia progné* (Cramer), *Phyciodes tharos* (Drury) ssp., *Phyciodes batesii* (Reakirt), *Boloria selene atrocotalis* (Huard), *Boloria bellona toddi* (Holland), *Boloria titania grandis* (Barnes & McDunnough), *Speyeria atlantis atlantis* (Edwards), *Speyeria cybele* (Fabricius) ssp.

LYCAENIDAE:

Harkenclenus titus titus (Fabricius), *Satyrium liparops fletcheri* (Michener & dos Passos), *Lycaena epixanthe*

(Boisduval & LeConte) ssp., *Lycaena helloides* Boisduval, *Everes comyntas comyntas* (Godart), *Glaucopsyche lygdamus couperi* (Grote), *Celastrina argiolus pseudargiolus* (Boisduval & LeConte).

The first two weeks of August, usually a poor time to study Lepidoptera in Manitoba, produced exceptional results for me at the Northwest Angle Forest. *Nymphalis j-album* and *Polygonia faunus* congregate in large numbers at roadside puddles; *Boloria titania grandis* was taken at roadside puddles and at flowers bordering bogs in better numbers than I have ever encountered it elsewhere; *Pieris napi* and *Cercyonis pegala* were frequently seen in the edges of wooded areas; *Harkenclenus titus*, *Satyrium liparops* and worn *Speyeria atlantis* covered flowers along the roadsides; and collecting in bogs produced numbers of *Lycaena epixanthe* plus worn examples of *Lethe eurydice*.

MAMMALS OF THE HAND HILLS FORMATION OF SOUTHERN ALBERTA: PRELIMINARY FAUNAL LIST

by John E. Storer, Provincial Museum and Archives of Alberta, Edmonton

The Hand Hills, south-central Alberta's highest topographic feature, rise to an altitude of 3,500 feet at their northwestern edge, and stand about 700 feet above the prairie. Located about 15 miles east of Drumheller, the hills are remnants of an ancient plateau, long since uplifted and dissected by erosion.

The age of the Hand Hills Conglomerate, which lies at the summit of the Hand Hills, in townships 29 and 30, ranges 16 and 17 west of the 4th meridian, has long posed a problem. Until recently, the horse astragalus reported by L. S. Russell (A horse astragalus from the Hand Hills conglomerate of Alberta. Nat. Mus. Can., Nat. Hist. Papers, No. 1.

1958) was the only identifiable fossil recovered from the deposit. Russell's find pertains to an advanced type of horse, probably *Equus*, and demonstrates that the Hand Hills Conglomerate must be in part Blancan (latest Pliocene — earliest Pleistocene) or younger.

Collections made in 1970 and 1971 by the University of Alberta and Provincial Museum and Archives of Alberta have added to the known fauna of the Hand Hills Formation, and fossil mammals of two different ages are now known. A preliminary faunal list of the two components, one uppermost Miocene or lowermost Pliocene, and the other Irvingtonian (middle Pleistocene) or later, follows. A more thorough account is in preparation.

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