

SOME BUTTERFLIES AND SKIPPERS FROM THE MILK RIVER-LOST RIVER AREA OF SOUTHEASTERN ALBERTA

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Very few ecological investigations have been conducted in the Milk River and Lost River valleys of southeastern Alberta. In the summer of 1974, intensive field work was carried out in this area, by Smith. Periodic checks were also made throughout the summers of 1975 and 1976. During the course of this field work, 29 species of butterflies and skippers were observed, with collections made of most species. Included here are the first published report of Weidemeyer's Admiral (*Limenitis weidemeyeri oberfoelli*) for Canada, the first published report of Dun Skipper (*Euphyes vestris metacomet*) for Alberta, as well as reports of several other species whose occurrence in Alberta has been poorly documented. Also included are three species that were collected by other people previous to 1974.

The area dealt with in this paper is some 270 square miles of grassland and valleys centered on the Milk River in the Pinhorn Grazing Reserve, and the Lost River on the west edge of the Onefour Experimental Station. This arid area, corresponding to a tute Upper Sonoran zone, is geographically unique. Such interesting species as Yucca (*Yucca elata*), Northern Scorpion (*Vejois scorpionus*), Short-horned Lizard (*Phrynosoma douglassi*), Yellow-bellied Marmot (*Marmota flaviventris*), and Bullock's Oriole (*Icterus bullockii*) occur here. The dominant feature of this region is the gently undulating native grasslands. These grasslands are of the mixed grass type with the major species being *Stipa* spp. and *Bouteloua gracilis*. The two major valleys and their associated coulees lend a great degree of diversity to the otherwise

simplicistic grasslands. Communities range from barren, actively eroding slopes, short-grass prairie hillsides, numerous shrub communities, to tree stands. Shrub communities of this area are highly variable and include Thorny Buffalo Berry (*Shepherdia argentea*), Wolf Willow (*Elaeagnus commutata*), Buckbrush (*Symphoricarpos occidentalis*), Rose (*Rosa* spp.), Sagebrush (*Artemisia cana*), Greasewood (*Sarcobatus vermiculatus*), Willow (*Salix* spp.), Juniper (*Juniperus* spp.), Saskatoon (*Amelanchier alnifolia*), and Chokecherry (*Prunus virginiana*). Shrub stands may be of a single species, or a heterogenous mixture of several to many species. Mixed shrub communities occurring in the upper reaches of small, damp coulees support the largest populations of butterflies.

Tree stands are of two main types. Pure, sometimes extensive, stands of Cottonwood (*Populus sargentii*) occur along the Milk River. Stands of hybrid poplars grow in thick, but usually small, clumps in the moister portions of some coulees.

The badland topography of the Milk River is similar to, but not as extensive as, the badlands occurring along the Red Deer River in the Drumheller-Dinosaur Park area. In many cases, the vegetation of the two areas is quite similar. Many species of butterflies that occur along the Milk River, also occur along the Red Deer River.¹ A rather similar area is that of the former Nemiskam National Park, 40 miles to the northwest.⁵

Both the study area and that of the Red Deer River badlands are quite arid and receive the lowest amount of rainfall in Alberta. The mean annual



Fig. 1. Milk River, Alberta, showing Weidemeyer's Admiral habitat

W. W. Smith

precipitation at Onefour is 12.0 inches, the mean annual temperature is 40.3°F, and the mean annual evaporation is 30.6 inches. Precipitation varies from year to year (7.62 inches to 18.06 inches) and the temperature has ranged from a low of - 51° F to a high of + 108° F. The prevailing winds are north-westerly, with westerly chinooks occurring during the winter. High winds throughout the year are frequent.⁶

Intensive collecting of butterflies and skippers was done every two weeks from early June to early August in 1974. As a result, a few species that fly in early spring, and fall were undoubtedly missed. Collecting was done throughout the entire study area with a slight emphasis on coulee habitats.

The butterfly fauna of the Milk River-Lost River area may be influenced by the Sweetgrass Hills, of Montana, which are some 30 miles south-south-west of the study area. These hills could serve as a source of wind-blown strays; and may allow for colonization of similar pockets of habitat in the study area.

SPECIES LIST

The common and scientific names employed are essentially those of Hooper's "Butterflies of Saskatchewan". Dates listed after a species name refer to the date specimens were collected, and/or observed.

DUN SKIPPER (*Euphyes vestris metacomet*). June 30, 1974. This is the first published report from Alberta, although specimens had been previously collected in southern Alberta and are in a private collection in Lethbridge. Hooper indicated that this species should occur widely in Alberta.⁴ The specimen collected was in a coulee bottom containing greasewood and sagebrush.

DELAWARE SKIPPER (*Artystone delaware lagus*). July 3, 1974; July 24, 1975. Found in shrubby areas of coulee bottoms.

COMMON CHECKERED SKIPPER (*Pyrgus communis communis*). June 10, 1974. Found in sagebrush flats and grassy areas of coulee bottoms.

PERSIUS DUSKY WING (*Erynnis persius fredericki*). August 3, August 7, 1974. Found in low shrub areas in coulees.

SILVER-SPOTTED SKIPPER (*Epargyreus clarus clarus*). July 3, July 10, 1974. Found in tall shrub areas in coulees.

CYPRESS HILLS OLD WORLD SWALLOWTAIL (*Papilio machaon dodi*). June 11, 1974. Found in mixed grassland and willows along the edge of cottonwoods.

MURCE'S SWALLOWTAIL (*Papilio bairdii Mueci*). July 24, 1975. Found in mixed grassland near coulee edges.

CANADIAN TIGER SWALLOWTAIL (*Papilio glaucus canadensis*). Only occasionally observed in treed side coulees.

CABBAGE WHITE (*Pieris rapae*). Common in most habitats.

ALFALFA BUTTERFLY (*Colias erytheme*). Common in most habitats.

GRAY HAIRSTREAK (*Strymon melinus meli*). August 7, 1974. Found in coulee bottoms containing sagebrush and mesewood.

SPRINKLING COPPER (*Lycaena helloides*). June 29, 1975. Found in rose and sagebrush clumps on the edge of an oxbow lake.

MELISSA BLUE (*Lycaeides melissa melissa*). June 30, July 3, July 5, August 3, August 7, 1974; June 29, June 30, July 24, 1975. Found commonly in many habitats.

GREENISH BLUE (*Plebejus saepiolus saepiolus*). June 6, June 7, June 8, June 10, June 24, June 29, 1975. Found in low shrub areas throughout.

SPOTTED BLUE (*Philotes enoptes anax*). June 30, 1974; June 30, 1975. Specimens were found in short-grass and scrubby areas in coulee badlands. Previously known from Alberta only from the Cypress Hills, with its main range further south in the United States.⁴

SILVERY BLUE (*Glaucopsyche lygdamus couperi*). June 10, 1974. Found in low shrub areas.

SPRING AZURE (*Celastrina argiolus lucia*). June 3, 1973. Collected by G. Hilchie. The food plant, Red Osier Dogwood, is present.

VICEROY (*Limenitis archippus archippus*). July 3, 1974. Found commonly in tall shrub areas in moister coulees.

WEIDEMEYER'S ADMIRAL (*Limenitis weidemeyeri oberfoelli*). July 3, 1974. This species has not been previously reported as occurring in Canada, although a specimen from the late 1800's-early 1900's in the National Museum is labelled as having come from the Belly River, Canada. Gregory reports this specimen as *Limenitis weidemeyeri weidemeyeri*.³ The subspecific status is probably wrong, and there is some doubt about where the material was collected.

This species was frequently observed in the study area wherever poplars and pools of still water occurred together. The subspecies, described by Brown is known from North and South Dakota.² Material mentioned by Hooper from Big Sandy, Montana, probably belongs to this subspecies.⁴ F. Martin Brown, who described subspecies *L. w. oberfoelli*, states in a letter dated May 28, 1975 that: "*L. w. oberfoelli* is easily recognized by the red spots between the submarginal white points and white band on the dorsal hindwing." It is of interest to note that no White Admirals (*Limenitis arthemis*) have been observed in the study area. At Writing-on-Stone, some 20 miles upstream, a few White Admirals and many Weidemeyer's Admirals



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2. Weidemeyer's Admiral (*Limenitis weidemeyeri oberfoelli*) collected in the Milk River-Lost River area, Alberta on July 3, 1974 by W. W. Smith. The scale is in centimeters

were observed in early July 1976 along creekside shrub habitats.

RED ADMIRAL (*Vanessa atalanta*). Observed in cottonwood stands.

MOURNING CLOAK (*Nymphalis antiopa*). Observed in tall shrub and poplar stands.

PEARL CRESCENT (*Phyciodes tharos pulchella*). June 7, June 10, 1974; June 29, 1975. Found in low shrub areas.

CARLOTA CHECKERSPOT (*Chlosyne gorgone carlota*). June 10, 1974. Found in low shrub and grassy areas.

ACASTA CHECKERSPOT (*Chlosyne acastus acastus*). June 30, July 5, 1974; June 30, 1975. Found in coulee bottoms containing sagebrush, greasewood and grasses. This species is previously known in Alberta only from badland areas along the Red Deer and Oldman River systems.

EDWARD'S FRITILLARY (*Speyeria edwardsii*). July 21, 1967. Collected by A. G. Edmund.

CALLIPPE FRITILLARY (*Speyeria callippe calgariana*). July 1, July 3, July 5, 1974; July 24, 1975. Found in mixed prairie areas.

APHRODITE (*Speyeria aphrodite mayae*). July 24, 1975. Found in long grass and shrub areas.

RINGLET (*Coenonympha inornata benjamini*). June 7, 1974; June 29, 1975. Found in grassland areas.

COMMON WOOD NYMPH (*Cercyonis pegala ino*). July 6, August 3, 1974; July 24, 1975. Found in most grass and shrub areas.

SMALL WOOD NYMPH (*Cercyonis oedon charon*). June 30, July 8, 1974; July 24, 1975. Found in areas of sagebrush and greasewood.

RIDING'S SATYR (*Neominois ridingi ridingsii*). July 3, 1973. Collected by Hilchie.

VARUNA ARCTIC (*Oeneis uhleri varuna*). June 7, June 10, June 11, 1974. Found in mixed grassland areas.

¹BIRD, C. D. and N. KONDLA. 1974. Some skippers and butterflies from Dinosaur Provincial Park, Alberta. *Blue Jay* 52: 87-88.

²BROWN, F. M. 1960. A badlands species of *Limenitis weidemeyeri* Edwards (Lepidoptera, Nymphalidae). *American Museum Novitates*, Number 2018, 6 pp.

³GREGORY, W. W. 1975. Check-list of the butterflies and skippers of Canada. *Lyman Entomological Museum and Research Laboratory Memoir No.* 1975.

⁴HOOPER, R. 1974. Butterflies of Saskatchewan. Saskatchewan Department of Renewable Resources.

⁵SOPER, J. D. 1949. Notes on the fauna of the former Nemiskam National Park and vicinity, Alberta. *Canadian Field-Naturalist* 63: 167-182.

⁶THOMAS, M. K. 1953. Climatological atlas of Canada. Canada Department of Transport. Ottawa 255 pp.

A SNAKE'S WINTER

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Any animal that lives year-round in the Prairie Provinces must tolerate long and cold winters. Different animals cope with these severe conditions in different ways. Many homeotherms (warm-blooded animals) are capable of staying active throughout the winter if food remains available. Maintenance of a high metabolic rate and good insulation

(i.e., hair, feathers, and subdermal fat) permit maintaining a body temperature high enough to allow activity. Some homeotherms become torpid during the winter, occasionally becoming active to feed on stored food. Others, particularly those whose food source essentially ceases to appear for the winter, cannot meet the high energy demands of staying active under such cold conditions and are forced to hibernate.

Since their body temperature

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