

THE BUTTERFLIES OF KENT ISLAND, GRAND MANAN, NEW BRUNSWICK

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ABSTRACT. A list of 23 species of butterflies found to be on Kent Island, New Brunswick has been compiled.

Kent Island, New Brunswick (44°35'N, 66°45'W) is the southernmost island in the Grand Manan archipelago in the Bay of Fundy. Kent Island is approximately 7.2 kilometers from Grand Manan and 9.3 kilometers from Maine, which is the nearest point of mainland (Fig. 1).

Thirty-four of Kent Island's 75.15 hectares are characteristically Canadian Zone forest, dominated by white spruce (*Picea glauca*) and balsam fir (*Abies balsamea*). The rest of the island is open grassy fields. McCain et al. (1973) and McCain (1975) have described the vegetation in some detail. Kent Island's weather is dominated by cool wet maritime air with frequent and dense summer fog. The Bowdoin College Scientific Station maintains a weather recording station on the island and data from this station for several meteorological variables are presented in Table 1.

Twenty-three species of butterflies have been found on Kent Island. Over 95 species have been recorded in nearby Maine (Brower & Payne, 1956) and, though it has not been systematically studied, Grand Manan hosts many lepidopteran species not found on Kent Island (Cannell & Maddox, personal observations). The number of species occurring on Kent Island is probably limited by its remote location, small size, and climatic conditions. Gobiell's (1965) preliminary study of Kent Island butterflies included one species, *Limenitis archippus* Cramer, not found during our study, but each of the twenty-three species listed here is also found in Maine (Brower & Payne, 1956) and Nova Scotia (Ferguson, 1954).

Many of the species in the following list are known migrants (*P. interrogationis*, *V. atalanta*, *V. virginiensis*, *N. antiopa*, *N. j-album*,

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and *D. plexippus*) and would be expected to reach such an island even if they could not breed there. Since there is no *Salix* or *Populus* on Kent Island *L. archippus* must be a non-breeding migrant. This is surprising since it is usually considered a fairly sedentary species.

The following list is based on observations conducted between June and early September 1979 and between June and mid-October 1980. Daily abundances for 1980 were derived from daily estimates of population sizes (counts of flying adults) and are presented in Fig. 2. Larvae were not systematically hunted; so, for most species, definite statements about breeding status cannot be made. Nomenclature follows Howe (1975). Voucher specimens are held at the Bowdoin College Scientific Station, Kent Island.

SYSTEMATIC LIST

Danaus plexippus L. Seen regularly in summer and abundant in fall.

No *Asclepias* species are found.

Cercyonis pegala Fabricius. Infrequent and uncommon in both years.

Limenitis arthemis Drury. One seen in each year. The principal larval food plants (Howe, 1975) are not found. However, *Alnus* and *Sorbus*, secondary hosts, are common.

Limenitis archippus Cramer. Seen rarely in 1960 (Thomas Skaling, communication to C. Huntington) and once in 1964 (Gobiel, 1965).

There is no *Salix* on Kent Island and therefore *L. archippus* must be a migrant.

Chlosyne harrisii Scudder. Seen only once, on 8 July 1980. The larval food plant, *Aster unbellatus*, is uncommon.

Polygonia interrogationis Fabricius. Common for a brief period in July of both years. Adults were always seen near an *Alnus* bog but never near the reported larval food plant, *Urtica dioica*, which is common.

Vanessa atalanta L. Very common in both years. Adults often seen visiting flowers. The larval food plant, *Urtica dioica*, is common.

Vanessa virginiensis Drury. Frequently seen in 1979, but less common in 1980. Usually found in open field of *Achillea millefolium*. Potential larval food plants are abundant, especially *Artemisia*, *Gnaphalium*, and *Anaphalis*.

Nymphalis antiopa L. Frequently seen in August of both years. Larval food plants are not present.

Nymphalis j-album Boisduval. Seen only once, in late August 1980. Larval food plants are not present.

Nymphalis milberti Godart. Uncommon during July of both years. *U. dioica*, the larval food plant, is common.

Speyeria cybele Fabricius. Very common from early July until mid-August. Larval food plants, *Viola cucullata* and *V. pallens*, are common.

Speyeria aphrodite Fabricius. Seen once but not collected on 28 June 1980.

Speyeria atlantis Edwards. Rare in both years.

Lycaena phleaus americana Harris. The first butterfly seen each summer. This species was common in June and July of both years. A second brood seemed to appear in late August (Fig. 2). The principal larval food plant, *Rumex*, is abundant.

Lycaena epixanthe Boisduval & Le Conte. In each year ten to twenty individuals appeared over a two day period in July. These were restricted to a small acid bog. The only reported larval food plant, *Vaccinium macrocarpum*, is not found, but *V. oxycoccus* is locally abundant.

Glaucopsyche lygdamus Doubleday. This species was seen only once, in mid-July 1980. Some of the food plants, *Lathyrus* and *Vicia*, are found.

Pieris rapae L. Very common in late summer of both years. Crucifers are not numerous, but *Cakile edentula* and *Capsella bursa-pastoris* are present. August females were seen ovipositing on the latter species.

Colias eurytheme Boisduval. Not seen in 1979 and uncommon in 1980. Several *Trifolium* species are common. *C. eurytheme* is an annual immigrant to this region but is probably unable to overwinter. It is surprising that *C. philodice*, a much commoner insect in New Brunswick and Nova Scotia, did not occur on Kent Island.

Colias interior Scudder. Fairly common in August 1980. Several *Vaccinium* species are uncommon.

Papilio glaucus L. Seen once in 1979 and once in 1980. One of the larval food plants, *Sorbus*, is common.

Papilio polyxenes Fabricius. Seen twice in late August 1980.

Polites coras Cramer. The only skipper seen in the two years, on 21 July 1980. The food plant in nature is unknown.

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TABLE 1. Meteorological variables for Kent Island in 1979 and 1980.

	1979			1980		
	June	July	Aug	June	July	Aug
Mean daily maximum (°C)	—	16.9	17.3	14.3	17.4	18.2
Mean daily minimum (°C)	—	10.2	10.8	7.3	9.9	11.4
Mean daytime (°C)	—	14.6	14.7	12.4	14.5	16.6
Precipitation (cm)	—	12.0	12.9	9.7	18.9	7.3
Days with dense fog	—	17	7	5	11	7
Maximum temperature (°C)	—	23	22	20	22	24
Minimum temperature (°C)	—	8	10	3	8	10

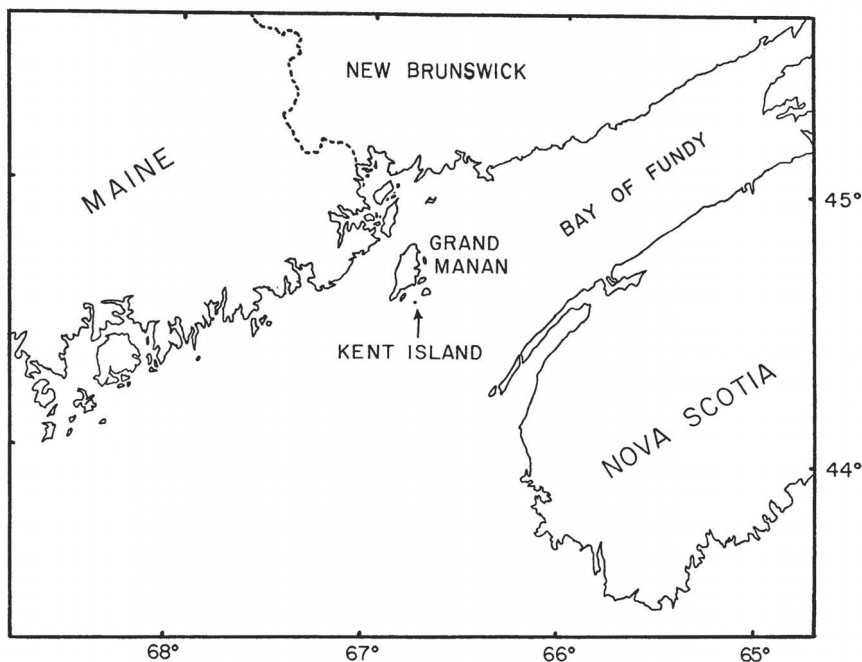


FIG. 1. Map of the Bay of Fundy indicating the position of Grand Manan and Kent Island.

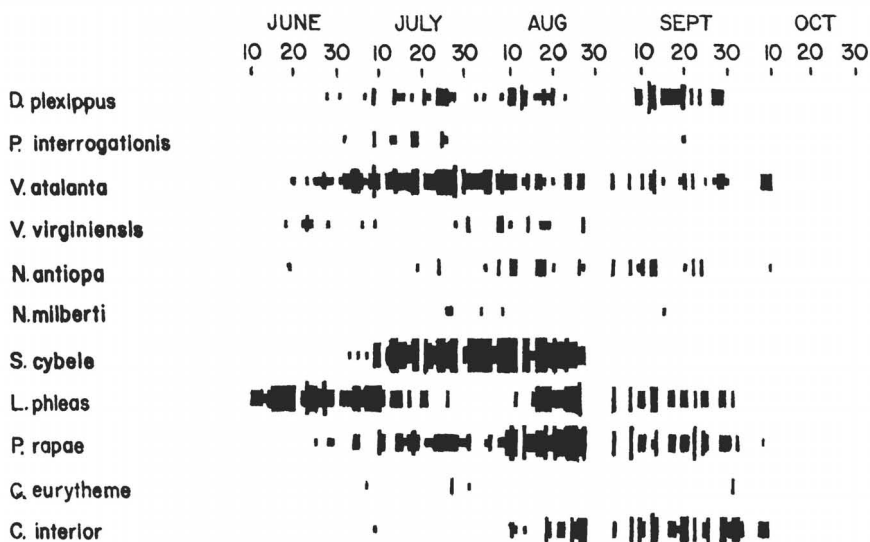


FIG. 2. Abundance and phenology for 1980 of the eleven species seen at least four times in 1980.