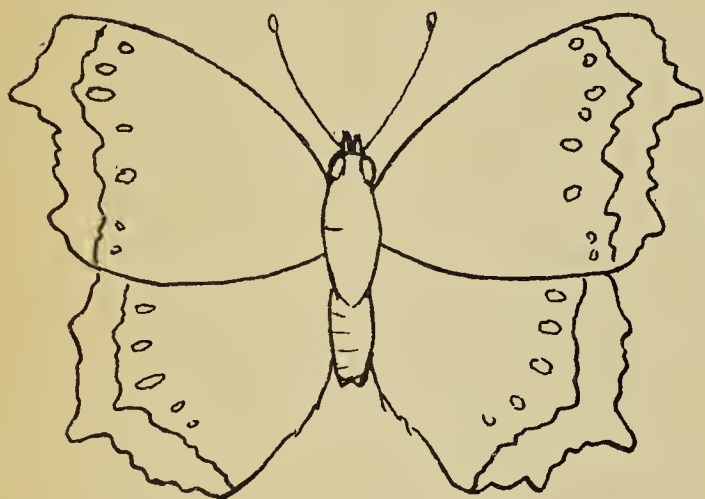


Phenology

The Study of Recurring Natural Phenomena



Sketch by Joyce Dew

MOURNING CLOAK BUTTERFLY

Recently a group of four Regina naturalists, three of them employed by the Museum, noticed an interesting coincidence: each had observed the first appearance of the Mourning Cloak Butterfly on April 6 this year. The observations took place in four different localities: Riverhurst, Joyce Dew; Regina, R. Nero; King's Park, F. Brazier and Mortlach, F. Lahrman. In the ensuing discussion, someone commented on the amazing fact that year after year one species of bird too will appear in the same locality on practically the same date. Further discussion led to our attention being drawn, by Dr. Nero, to a scientific study of "first appearances": a phenological record for Sauk and Dane Counties, Wisconsin, 1935-1945. (1947. *Ecological Monographs*, 17:81-122) by Aldo Leopold and Sara Elizabeth Jones. An article in the *Canadian Field-Naturalist* for April-May, 1943, called *Phenology, the Most Natural of Sciences* by R. Glendenning deals with the same subject. Ideas and, in fact, whole paragraphs have been "lifted" from these studies for this article.

Phenology is described as "the study of recurring natural phenomena" and this science is alive among farmers, gardeners, Indians and nature lovers whose work or interests are outdoors. Among contemporary phenologists we find also botanists,

foresters, game managers, ornithologists, range managers and zoologists. Phenology, in short, is a "horizontal science" which transects all ordinary biological professions. Whoever sees the land as a whole is likely to have an interest in it. Phenology is more ancient than the "vertical" categories which it transects; its first paper published about 974 B.C., cuts across three sciences then not yet born: meteorology, botany and ornithology.

For, lo, the winter is past
The rain is over and gone;
The flowers appear on the earth
The time of the singing of birds is come
And the voice of the turtle is heard
in our land.

(Solomon 2:12)

Records of seasonal incidents in both plant and animal life are kept by those interested in this science. Plant records usually consist of date of first leafing, flowering or appearance of autumnal color. Native plants are most frequently used. The time of arrival and departure of migratory birds provide good records of seasonal activity and the first songs of resident species are also useful. Insects are used to a lesser extent; the earliest flight of the honey bee is a staple record and, as noted above, the butterflies may be fairly constant in their appearance.

The recording of seasonal occurrences has been criticized by some as an interesting hobby but of little scientific value; however, phenological studies when properly organized using data from hundreds of observers—sifted, tabulated and averaged—may yield some striking facts relative to climate, wild life, and cycles of growth. In England, studies have shown that cycles of growth have occurred with an average length of 12.1 years. For a discussion of a possible cycle in the numbers of Snowy Owls see *Blue Jay* for December, 1957, page 155. In the Wisconsin study, which is very detailed and deserves careful study, an example of a practical use for phenological data is given. A game manager learned from scientific data that the most frequent date of first egg-laying in

pheasants is May 6. What else is going on at that time? Records show spring grain well up, the Franklin Ground Squirrel has emerged, blue grass will head out in eight days, Sugar Maple, Chokecherry and other plants are in first bloom. In a year when the season is advanced, the same game manager may start looking for eggs when the other phenomena mentioned were observed.

Part of the terrain for which data was gathered in Winconsin was prairie, so the table showing the first blooming of prairie plants is of interest to us. The following dates are given for familiar plants: Pasque Flower (April 10); Hoary Puccoon (May 2); Shooting Star (May 16); Lilac-flowered Beard-tongue (June 14). It is interesting to compare these dates with the following supplied by Mr. Lloyd Carmichael, Regina: Pasque Flower (April 8); Hoary Puccoon (May 6); Shooting Star (June 4); Lilac-flowered Beard-tongue

(June 18). A chart prepared by Arch. C. Budd giving the flowering sequence of spring plants may be found in the March 1957 *Blue Jay*.

For those who are keeping records of first appearances, R. Glendenning has some useful suggestions. Plant records kept should be of cultivated plants that are successfully grown in your area, or of native plants growing in a location where they are unlikely to be destroyed, such as on wild land or roadsides. It is important that records be kept for the same location each year. Frogs croaking should be recorded from the same swamp, and birds from the same farm or similar area. Records kept in this way from year to year have significant comparative value. When they have been kept for many years, these records are also interesting to other people keeping similar records. A comparison of such long-term records would make a worthwhile study for the *Blue Jay*.

Mammal Notes

Skunk Attacked by Badger

by Joyce Gunn, Spirit Lake, Sask.

At sunset on January 7 Mother and I were walking towards home along a well-packed road when we saw just ahead of us a skunk hurrying south in our direction. We decided discretion was the better part of valour and stepped off into the snow to give the skunk the right of way! It paused only momentarily to look at us then continued southward at a skunk gallop.

As we stepped back on to the road we saw the reason for the half-grown skunk's haste. It was being chased along the road by a badger. The badger stopped, however, when he saw us and turned back north. We followed him for about 100 yards before he turned off into the bush, bleeding profusely from one of his front paws. He wasn't much larger than the skunk. Watching the scene from a poplar near the road was a

great horned owl that flew just as we saw the badger coming.

A few yards north of where the badger turned off we came to a spot that reeked of skunk, and then about fifty yards further on we came to the battle area. Skunk and badger must have gone at it tooth and nail, for the hard-packed snow was blood-stained and discoloured and there were claw marks around. Closer to home we saw where the skunk had come out of the bush, and farther on, the badger. Apparently the badger had been wounded before tackling the skunk as there were faint blood stains on his trail before he got to the road.

Two days later I heard that the skunk was killed by a dog a half mile south of where we had met it and only ten minutes later—so he was really making time! People also remarked on the fact that the skunk seemed to be wounded. No doubt he was exhausted after his run, to say nothing of his fight with the badger.