THE RITES OF SPRING

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During the past week (March 28-April 3) in southwestern Wisconsin, the grass has turned a healthy green, chorus frogs have begun to croak, and I have been surprised to find some of our "winter" species of birds present along with the earlier spring arrivals - juncos, evening grosbeaks, common redpolls, along with the volumes of redwings and grackles, the robins, the flickers. The National Weather Service in Madison reported that March had 675 heating degree days, 202 less than normal, and that the month averaged 6.3° F above normal.

These observations collectively fall under the heading of phenology. We all have been practicing phenologists even though some of you may never have been formally introduced. Phenology, if you haven't guessed, is the branch of biology that studies the timing of seasonal biological events. It may compare those of a single species of plant or animal from year to year or from place to place during the same year. It has been also used to correlate events between different species the same way. Naturally, it includes the relationship of these events to weather and climate. Phenology should not be confused with phrenology. The first may require some of the latter, but the latter probably has little to do with the weather.

One particular event that has impressed me on several occasions concerns the differences in blooming time of lilacs. In the area of southern Wisconsin away from Lake Michigan they bloom during the middle of May. However, along the Lake Superior shore at the top of our Bayfield County peninsula I've seen flowering lilacs in mid-June. At La Pointe, the community on Madeline Island, the largest of the Apostles, I've seen it in flower on July 4th.

I've been speaking in general terms. The 1976 data form for the Wisconsin Phenological Society requests: 1) Date when first bud has leafed. 2) Date when nearly all (95%) buds have already leafed. 3) Date of the opening of first bloom, etc. The great variety of records the Society keeps includes such observations as when the sugar maple sap begins to flow, when the soft maple or pussy willow first sheds pollen, the first gopher seen, and the first flashing of the firefly. During 1975 within the 2nd-4th tiers of southern Wisconsin counties fireflies first flashed as early as May 14 and as late as July 4th. This example is given to illustrate what is found by means of these observations. The answers to explain why are yet to come.

Phenology has been of interest to layman and biologists for decades and centuries. From the Spring, 1976, publication of the Wisconsin Phenological Society comes this rhyme:

"If the oak is out before the ash
'Twill be a summer of wet and splash;
But if the ash is before the oak
'Twill be a summer of fire and smoke."²

In both Europe and North America various phenological events have been used as a guide for the arrival of spring. "Certain North American Indians waited for the flowering dogwood to bloom before planting corn."²

Agriculturalists have used phenologically related events to forecast pesticide sensitive points in the life cycles of crop insects. In the May 23, 1975, issue of the Wisconsin Cooperative Pest Survey Bulletin is the suggestion: "Pine Needle Scale-Egg hatch should occur very soon, just as lilac is in 1/2 full flower,"³ and in the June 20th issue, "Squash Vine Borer - Moths appear and lay eggs as pumpkins, cantaloupe, watermelons, and squash plants start to run."⁴
Recently, however, it has been much more common to determine the accumulation of degree days as the growing season progresses and to correlate biological events with this value. The degree day measures, somewhat crudely, the amount of every available each day to promote biological processes—photosynthesis, plant and animal (cold-blooded) development, and the like. Each day, from the average temperature is subtracted a base temperature; 50°F is commonly used. The positive values are added as the season progresses. Again, through previous observations and correlation, predictions can be made. From the August 1, 1975, Wisconsin Cooperative Pest Survey Bulletin: "The degree-day accumulation above base 50°F since March 1 at the Madison airport was 1727 as of July 30, which compares to 1482 on the same date last year; on this basis we are 15 days ahead of last year. . .; at the present rate of temperature accumulation, the major flight of the corn earworm can be expected about August 20. . .".\(^5\)

The most of us phenology started out as a series of casual observations—the first crocus of spring, or the first dandelion, the first redwing or first singing of the cardinal, even the first sign of campus madness. As the years have progressed it was probably noted (maybe only mentally) that a particular event was either earlier or later in the season; following this more plants and animals were recognized as being influenced by the weather, some occurring in the same sequence, others differing.

If your interest continues, and it begins to take on a more serious aspect, you will begin to keep written notes. Eventually you may reach the stage where you have friends of the same frame of mind; then you have a source of information that can prove to be more than a hobby, of potential scientific value. This is probably how the Wisconsin Phenological Society began to grow to its present 600 or so members. To its data bank it has contributors from almost half of Wisconsin's counties plus upper Michigan. I can see possibilities for either expanding the Wisconsin Society coverage into a wider area, or for the development of similar organizations in other areas.

But regardless of how you look at it, phenology has possibilities for everyone as an individual, but the larger the group the more interesting and valuable it becomes.

If you are wondering about the title, "Rights of Spring", the dictionary says that a rite is a ceremonial or a serious event. I do not think of phenology in either frame of mind. However, for the plants and animals involved that start us off on this track, it must be serious and might be considered ceremonial.


Spring: p. 1.


4 June 20, 1975. 20: 7-38.

5 August 22, 1975. 20: 16-94.

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The world is a scene of changes; to be constant in nature were inconstancy.  
Abraham Cowley