RECORDING PHENOLOGICAL DATA

R. C. Russell

Last year I was delegated by the Sub-Committee on Plant Disease Survey to co-ordinate the collection of phenological records for the year 1936 in the three Prairie Provinces. The following persons helped secure the records compiled in the table below: Peturson, Winnipeg; B. J. Sallans, Indian Head; R. C. Russell, Saskatoon; W.C. Broadfoot, M. W. Cormack, L. E. Tyner and G. B. Sanford, Edmonton.

At the beginning of the past season, we consulted W.P. Fraser and I. L. Conners, and increased the list of species to be observed to about twenty. The records for Saskatoon include several more so that thirty species, all told, appear in the accompanying table. In all cases, the dates in column (a) show when the first plant was observed in flower, and column (b) shows when the flowers were becoming common.

From our experience in the past two years the following suggestions are offered:-

1. Phenological data are more valuable when taken at the same spot each year and on the same individual plants, where possible, than when taken in different locations from year to year.

2. At each recording centre the plant species selected for observation should be ones which can be kept under daily observation. This, I believe, is more important than having the same list of species observed in all three provinces. For example, of the 30 species listed in the table of 1936 observations, I can observe 21 species right on the University Campus on my way to and from work. I feel surer of the records in connection with these than I do of the ones which I have to go to the country to obtain.

3. More exact results are apt to be achieved if one person makes all of the observations in any one district.

4. Plants may be considered in bloom as soon as they commence to shed pollen. Obviously they should be recorded at the same stage each year.

5. Of the two observations made on the same species, i.e. (a) time of first flower coming into bloom, and (b)

Summary of Phenological Data taken at
Winnipeg, Indian Head, Saskatoon and Edmonton, 1936

	Winnipeg		Indian Head		Saskatoon		Edmonton	
Pulsatilla ludoviciana	-	22/4	-	5/5	24/4	2/5	7/5	15/5
Populus tremuloides	1/5	5/5	-	5/5	27/4	2/5	10/5	15/5
Phlox hoodii	-	-	11/5	15/5	8/5	9/5	-	17/5
Acer negundo	11/5	13/5	5/5	12/5	11/5	13/5	-	-
Betula papyrifera	12/5	15/5	15/5	-	13/5	18/5	12/5	20/5
Hierochloe odorata	20/5	22/5	-	-	18/5	19/5	2/6	3/6
Amelanchier alnifolia	19/5	21/5	19/5	-	17/5	20/5	18/5	22/5
Smilacina stellata	24/5	28/5	-	-	22/5	25/5	15/5	20/5
Thermopsis rhombifolia	-	-	-	28/5	15/5	20/5	-	-
Viola canadensis	-	-	-	3/6	22/5	25/5	-	-
Elaeagnus commutata	4/6	7/6	3/6	8/6	30/5	6/6	1/6	7/6
Anemone canadensis	8/6	11/6	3/6	13/6	5/6	12/6	-	20/6
Achillea lanulosa	-	30/6	13/6	18/6	11/6	15/6	22/6	30/6
Diholcos bisulcatus	-	-	-	-	10/6	15/6	-	-
Rosa (alcea?)	-	-	20/6	25/6	18/6	27/6	-	-
Bromus inermis	17/6	26/6	24/6	29/6	23/6	2/7	20/6	24/6
Campanula petiolata	-	26/6	23/6	29/6	19/6	29/6	12/6	30/6
Oenothera (strigosa)	-	-	29/6	4/7	3/7	15/7	-	-
Lactuca pulchella	-	19/7	5/7	9/7	26/7	1/8	-	-
Psoralidium argophyllum	-	-	-	-	9/7	14/7	-	-
Spiraea alba	-	-	27/6	4/7	27/6	6/7	-	-
Steironema ciliatum	-	13/7	3/7	6/7	4/7	10/7	-	-
Grindelia perennis	-	-	17/7	28/7	26/7	10/8	-	-
Oligoneuron canescens	30/7	8/8	-	-	28/7	10/8	7/7	10/7
Aster crassulus	-	-	16/7	4/8	5/8	8/8	-	-
Aster laevis	-	-	1/8	7/8	10/8	12/8	-	-
Cirsium undulatum	-	27/6	4/7	13/7	-	-	-	-
Prunus pennsylvanica	-	-	-	-	-	-	20/5	-
Lilium philadelphicum	26/6	27/6	-	-	-	-	20/6	28/6
Hedysarum boreale	-	-	-	-	-	-	9/6	-

time when the flowers are becoming common, the former is perhaps the more exact.

6. In looking over the table of observations for all places in 1936 it appears that some of the species listed are difficult to find at one or more of the places, but the last three in the list do not necessarily come under this category as we were not attempting to record them at Indian head and Saskatoon. If asked to select from the list the fifteen species best suited to our purpose at Saskatoon, I would choose the following:

24/4	Pulsatilla ludoviciana	5/6	Anemone canadensis
27/4	Populus tremuloides	10/6	Diholcos bisulcatus
8/5	Phlox hoodii	18/6	Rosa (? alcea) (low species on open prairie)
11/5	Acer negundo		
15/5	Betula papyrifera		
17/5	Amelanchier alnifolia	27/6	Spiraea alba
22/5	Viola canadensis	9/7	Psoralidium argophyllum
30/5	Elaeagnus commutata	26/7	Grindelia perennis
		10/8	Aster (? laevis) (purple).

7. I am not in favor of adopting a standard list that cannot be altered to suit conditions at the different places, particularly until we have had one or two more years experience in gathering this data. Of the 30 species appearing in the table for 1936 about eight were additional ones observed in Saskatoon only. Probably a total of 15 species as a final selection would be sufficient for each place.

8. I shall be glad to receive the suggestions, of all others interested in this work, re suitable species, number to be observed, improvement of method, etc.

9. The longer accurate data are taken the more valuable the records become.

Note: At the meeting of the Associate Committee on Field Crop diseases held in Winnipeg, Man., April 5-8, 1937, a resolution was passed requesting that future Plant Disease Survey Reports contain summaries of the Phenological Data now being collected in the Prairie Provinces. On account of its interest Dr. Russell's paper before that meeting has been given in full.-

- I. L. Conners.