Crown rust of oats was very severe during the past summer. The most severe outbreak observed occurred on the Experimental Farm plots which are in close proximity to buckthorn (Rhamnus cathartica) the alternate host of crown rust. Stem rust of wheat reached serious epidemic proportions in some localities.

Brown rot of stone fruits was quite severe on sweet cherries and plums, infection on the hosts occurring in June when high moisture conditions prevailed; thus it would appear that the hot weather served to promote its growth within the host tissue. During the fall when the plums were ripening the excessive rainfall caused considerable spread of this disease from fruit to fruit. Shot hole of cherries was more prevalent than usual, spray schedules at present in use by fruit growers being apparently ineffective in checking this disease. Infection and subsequent development of this destructive disease was much greater during the early part of the season when high moisture conditions prevailed.

Except for those diseases discussed above, foliage and other diseases did not materially effect production during the season of 1937. Lack of complete turnip brown heart control by borax has been attributed to the lack of sufficient moisture to render the boron available.

Recording Phenological Data

R.C. Russell

In the table below is summarized the phenological data gathered at Winnipeg, Saskatoon and Edmonton in 1937. We had no one stationed at Indian Head last summer, so no records appear for that place. The observations for the other places were made by B. Peturson, R.C. Russell and G.B. Sanford.

Table 1. Summary of Phenological data taken at Winnipeg, Saskatoon and Edmonton in 1937.

Name of Plant	Winnipeg		Saskatoon		Edmonton	
	a	b	a	b	a	b
Pulsatilla ludoviciana	-	11/4	17/4	26/4	6/5	10/5
Populus tremuloides	30/4	2/5	20/4	27/4	13/4	18/4
Phlox hoodii	-	-	28/4	4/5	-	-
Acer negundo	7/5	7/5	3/5	5/5	2/5	4/5
Ranunculus ovalis	-	-	2/5	5/5	-	-
Cogswellia villosa	-	-	29/4	6/5	-	-
Betula papyrifera	15/5	-	4/5	6/5	30/5?	3/6?
Hierochloe odorata	19/5	20/5	12/5	15/5	-	-
Amelanchier alnifolia	15/5	17/5	7/5	12/5	9/5	13/5

Table 1 (Cont'd)

Name of Plant	Winnipeg a	Winnipeg b	Saskatoon a	Saskatoon b	Edmonton a	Edmonton b
Smilacina stellata	27/5	31/5	18/5	22/5	10/5	15/5
Thermopsis rhombifolia	-	-	7/5	13/5	5/5	8/5
Viola rugulosa	-	-	very scace		7/5	10/5
Elaeagnus commutata	-	-	28/5	31/5	-	4/6
Anemone canadensis	15/6	18/6	8/6	13/6	-	-
Achillea lanulosa	-	-	13/6	15/6	-	10/6
Diholcos bisulcatus	-	-	7/6	13/6	-	-
Rosa (alcea ?)	-	-	15/6	19/6	-	1/6
Bromus inermis	24/6	26/6	21/6	25/6	18/6	20/6
Lactuca pulchella	-	-	-	6/7	-	-
Spiraea alba	-	-	28/6	2/7	-	-
Steironema ciliatum	1/7	5/7	-	5/7	-	-
Grindelia perennis	-	-	14/7	19/7	-	-
Oligoneuron canescens	-	-	16/7	28/7	-	-
Aster laevis (purple)	-	-	4/8	11/8	-	-
Prunus pennsylvanica	-	-	18/5	22/5	11/5	13/5
Cirsium (lanceolatum?)	8/7	10/7	8/7	14/7	-	-
Galium boreale	-	-	-	-	15/6	20/6
Quercus macrocarpa	28/5	29/5	-	-	-	-
Ulmus americana	4/5	5/5	-	-	-	-
Prunus americana	17/5	17/5	-	-	-	-
Viburnum lentago	4/6	8/6	-	-	-	-
" opulus	13/6	15/6	-	-	-	-
" pubescens	14/6	15/6	-	-	-	-
Cornus stolonifera	30/5	3/6	-	-	-	-
Symphoricarpos occidentalis	23/6	27/6	-	-	-	-
Gaillardia aristata	-	-	20/6	25/6	-	-
Campanula petiolata	-	-	20/6	25/6	-	-
Mentha penardi	-	-	-	5/7	-	-

Comparing these data with those obtained last year, it appears as though the two seasons were about equally early at Winnipeg. At Saskatoon the 1937 season was about a week earlier than the previous season until towards the end of May when it began to lag so that during June both seasons were about equally advanced. After the excessive heat of late June and early July the 1937 season became more advanced so that at harvest time it was again about a week ahead. The 1937 season at Edmonton was somewhat earlier than the 1936 season throughout April, May and June, but there is no data for July or August.

It has been suggested that we attempt to correlate our phenological data with records taken at the Experimental Farms situated at Winnipeg, Saskatoon and Edmonton

on the date of seeding, emergence and harvest of the earliest sown wheat each year. This has been done for the years 1936 and 1937 at Saskatoon and the agreement is remarkably close as may be seen by comparing the data in the following table with the conclusions, given in the previous paragraph, regarding the relative earliness of the two seasons at Saskatoon.

Table 2 Concerning the development of Marquis wheat in 1936 and 1937. Compiled from data supplied by the Field Husbandry Department of the University of Saskatchewan.

Year	Seeding	Emergence	Heading	Harvest
1936	22/4	9/5	26/6	29/7
1937	14/4	1/5	23/6	19/7

In conclusion there are several things in connection with the collection of phenological data which are worth considering:

(1) It is best to select species which are under daily observation.
(2) Insofar as possible observations on each species should be made on the same individuals or in the same situation each year.
(3) A sufficient number of species should be recorded to give a continuous record throughout the season. While it was suggested last year that 15 was sufficient, it would probably be better to plan on recording about six per month during May, June and July with two or three for April and the same number for August, depending on the earliness of the season.