considérables aux hydrangers dans une serre à Toronto, Ontario, et la pourriture de la tige (Sclerotinia sclerotiorum) a détruit la majeure partie d'un lot expédié de Colombie Britannique en Ontario. La rouille (Cumminsielle sanguinea) du Mahonia Aquifolium fut observée dans l'est du Québec; c'est un premier rapport pour l'est de l'Amérique du Nord. Le déclin (virus) du narcisse est très répandu en Colombie; bien que cette maladie ait été connue depuis quelque temps sous divers noms, elle n'a pas été rapportée dans l'enquête. La brûlure des feuilles et des tiges (Helminthosporium Portulacae Rader) a été observée en Ontario sur Portulaca grandiflora, et en Saskatchewan et dans Québec sur P. oleracea, une mauvaise herbe.

The Weather and Its Influence on Plant Diseases

The weather on Vancouver Island during 1949 was featured by a very dry May, fairly dry September, and a warm and wet November. Due to low rainfall in May, some potato fields showed wilt, but showers in July greatly reduced its further spread. Late blight of potatoes did not appear until late in the season. The dry weather also checked various diseases of ornamentals, particularly those caused by Botrytis spp. Apple and pear scab were held under control except in areas of poor air drainage. Powdery mildew was possibly more prevalent in strawberries than usual, but since mites were prevalent, the symptoms were not always clear. Harvesting weather was satisfactory for flower and vegetable seed crops, and such diseases caused by Botrytis and Alternaria either did not appear or were held in check. The warm, wet November weather was undoubtedly favourable for the development of root rots caused by Phytophthora and Pythium spp. etc., and it is anticipated that these will show up in spring in strawberry and possibly raspberry crops (W. Jones).

On the lower mainland of B.C. the weather in 1949 was very favourable for growth and harvest. The fall was particularly fine and losses from storage rots such as late blight of potato were negligible (R.E. Fitzpatrick).

In the Cariboo district frosts on 8 and 9 Sept. blackened potato vines and caused vascular discoloration in the tubers throughout the area (N.S. Wright).

In the Kootenays the winter of 1948-49 was very severe, but a snow cover of 3 to 4 ft. averted serious injury. The spring and summer were moderately dry. Except for brown rot of stone fruits in the moister parts of the West Kootenay district, fungus diseases were not severe (M.F. Welsh).

The fall of 1948 and spring of 1949 were very dry throughout most of Alta. Winter injury of the various crops was not severe, but dry conditions resulted in light stands of both winter and spring grains. In southern Alta. substantial rains during late June, July, and early August produced good crops. These moist conditions during midsummer were probably responsible for the unusual development of bacterial blight on both wheat and barley in southern Alta. Common root rot of wheat was much more prevalent in southern Alta. than in other parts, where dry conditions prevailed throughout most of the season. Slight stem rust infection of

spring wheat was observed at Claresholm and Raymond, but it was somewhat more severe in a few fields of the later-maturing soft wheats. This disease was not recorded elsewhere in Alberta. In central Alta., rains during mid-July resulted in considerable second growth of spring grains, and many leaf diseases developed. A very heavy frost in early September stopped crop growth and prevented further spread of most diseases. In southern Alta. a heavy snowfall early in October provided cool, moist conditions favourable for the development of root rot in sugar beets (T.R. Davidson).

In Sask. the dry fall of 1948 aggravated winter injury of some perennial crops and gave poor conditions for seed germination, but a gradual spring thaw with little run-off improved the situation. Seeding of wheat was about three weeks in advance of 1948. May was warm, dry and with high winds, which quickly depleted soil moisture; consequently germination was uneven and some wheat seed moulded in the ground. The dry, early spring checked development of winter crown rot of alfalfa.

Heavy frosts in late May caused serious damage to wheat in western and to barley in northern areas. Rain in central areas and cool weather aided recovery from frost injury. The frosts struck when alfalfa was 4-6 in. high and black stem (Ascochyta imperfecta) was well started; but although subsequent weather was favourable to it little spread occurred in June. From late May onward rainfall was average or above average at Saskatoon, and temperatures normal except in August which was 5°F. above average. Evenly distributed rainfall in August offset the effect of the high temperature. Garden crops were good and potato yields well above average for the area.

In general, rainfall was high in the northeast part of the province, with wheat yields running over 19 bu./acre, but low in the southwest where the yield was only 5-8 bu. in the brown soil zone. Rains in early July in the northeast were followed by hot, dry weather that evidently checked cereal rusts; for these diseases, especially leaf rust of wheat, developed freely in moist areas. Large areas of wheat in the northeast suffered severely from common root rot and take-all. Leaf diseases of alfalfa and clovers developed late and caused little defoliation (T.C. Vanterpool, R.C. Russell).

In southern Ont. the hot, dry summer and mild, open fall had a marked influence on the incidence of diseases whose pathogens are particularly sensitive to humidity. Late blight of potatoes was of no importance until the fall when growing conditions for both host and pathogen became ideal. Lack of frost to kill the vines and the abnormally late growing season facilitated tuber infection. Late blight was practically non-existant on field tomatoes, which were harvested before the pathogen could spread to them from diseased potatoes. Apple scab was of little economic importance, being most prevalent in the extreme south-western region where the weather was not as dry as elsewhere. Primary infection occurred generally in Ontario between late bloom and the first cover spray, but subsequent dry weather prevented significant secondary infection. Cereal rusts and powdery mildews were generally light, but, owing to the mild, open fall, leaf rust and powdery mildew were more prevalent than usual on the newly-sown winter wheat (J.D. MacLachlan).

Rainfall in the Niagara Peninsula, Ont., was below the 20 year average in April, May, June and July. As a result the usually important fungous diseases, apple scab, brown rot of stone fruits, leaf spot of cherries, downy mildew of grapes, celery blight and tomato late blight were of no consequence.

Only three minor scab infection periods occurred, one on 26-27 April of about 12 hours duration and in which primary infection took place, and others on 19-20 May and 22-24 May, each of about 10-12 hours. Scattered infection of the young fruits resulted from these rainy spells. Dry, hot weather in June and July prevented development of mid or late season infections. The blossom blight phase of brown rot was negligible in spite of abundant apothecia and conidia on mummied fruits remaining on the trees. From the pre-bloom to after the petal fall period the weather was fair with low humidity and for several consecutive days the temperature rose to over 85°F.

On 23 April a heavy shower with hail knocked buds off peach and sweet cherry trees, bruised apple and pear buds still in the tight cluster stage and lacerated foliage of early lettuce, cabbage and spinach in localized areas.

Grape chlorosis was very prevalent. The trouble developed rapidly with the onset of dry weather in June and reached a peak in early July. Following rains and cooler weather in mid-July there was a general improvement although many vines remained paler than normal throughout the season. Warm weather following petal-fall of sour cherries delayed the appearance and reduced the amount of yellowing and leaf fall due to cherry yellows.

Drought conditions caused heavy losses in the staked tomato crop from blossom-end rot. Another physiological disease of importance and of widespread occurrence was heat spot of prunes. This trouble developed on several occasions after several days of high temperature (G.C. Chamberlain).

At Ottawa, Ont., January and February were exceptionally mild; rainfall was heavy and snowfall light, but snow cover was continuous and generally about 8-12 in. From March to May, temperatures were close to average; precipitation was normal in March and April but low in May. From then on the weather was unusually hot and fairly dry until late August, when heavy rains brought the precipitation above average for that month. Notable hot spells were 11-19 June, 29 June-4 July, 26-29 July, and 5-9, 22-23 and 26-27 Aug. September was cool and wet, but October was very warm and dry. November was cold with continuous snow cover from the 24th, but after mid-December rain and warm weather left the ground bare for a number of days. Foliage diseases were less important than usual under the dry conditions of the summer. The fair weather of October assisted the safe harvesting of late potatoes, following the threat of blight in September (D.B.O. Savile).

Plant diseases were not important in southwestern Que. during 1949, owing to weather conditions unfavourable for their development. Spring was dry with only few rains in May and June. July and August were exceptionally hot and dry, with the result that practically no disease developed on any crop. Powdery mildews, preferring dry conditions, were the only parasitic fungi observed in abundance, and they were growing on weeds and wild plants (L. Cinq-Mars).

The snow cover was light and of short duration in eastern Que. during the winter 1948-49; this condition did not favour development of perithecia of Venturia inaequalis. Moreover, the spring was particularly late and cool. Only during May and June could the perithecia mature and discharge ascospores.

Cool weather throughout June was favourable for the pycnial and aecial stages of many rusts and for such diseases as Botrytis blight and leaf curl (Taphrina sp.).

July and, especially, August were hot and dry, but most rusts and powdery mildews were able to persist. September was wet and cool, but, after a severe drought, no serious epidemic developed on the few unharvested crops. October was exceptionally mild and permitted new growth of vegetation and, as well, the development of many fungi, pathogenic and otherwise. The aecial stage of Uromyces Trifolii was found together with the telial stage. November brought severe weather (A. Payette).

There were no extremes of temperature or prolonged cold spells in N.B. during the winter of 1948-49. The fields were bare the first 3 weeks of January but successive snow-falls at first light and later progressively heavier increased the snow cover until it reached 24 in. on 23 March. During the last week of the month rising temperatures and a rainfall of 0.6 in. melted most of the snow and the ground became bare. The ice broke in the Saint John River on 5 April, and considerable rain fell on 14 days of the month. At the beginning of May the soil was firm and frost-free. Light rains during the first week delayed seeding, which became general by 9 May. Weather conditions were most favourable for farm work from 10 to 22 May. During the last week in the month almost 2.5 inches of rain fell.

The relatively warm weather in March and April stimulated growth of grasses and clover. However, clover stands, especially red clover, were thin. Dry weather in mid May, cool weather in late May, and dry weather in the first three weeks in June, all further retarded clover, which contributed little to the hay crop or pasturage. Apple orchards wintered fairly well and there was little or no injury to strawberries, raspberries, perennial flowers and shrubbery. Full bloom in apple orchards was earlier than average, from 23 to 27 May. Apple scab ascospore discharge was first recorded on 25 May and scab made its appearance on the foliage on 11 June.

Scattered showers made up much of the summer rainfall. The precipitation for June, July and August was considerably below the 36-year average, but the rainfall was timely. Grain ripened rapidly in late July and early August. The straw was short, very free from rust, with little lodging. Yields were considerably above average, but the grain was light in weight per bushel.

Harvest conditions were good during July, August and the first 13 days of September, but rain fell on 14 of the last 17 days of September. Fortunately, little rain fell in October, and root crops were harvested under ideal conditions. The yields of most garden and root crops were exceptionally good. Potato yields were decidedly above average and there was little blight in the tuber crop. The apple crop was heavy and fairly clean with good colour but slightly under-sized fruit. An early frost on the night of 11 Sept. killed the tops of potatoes, tomatoes, cucumbers, and other garden crops. No freezing temperatures occurred again during the month.

Ten inches of snow fell in November, but rain left but three inches of snow on the ground by the end of the month. The first three weeks of December were cold, with -10°F. on 11 Dec. A snowfall of 18½ in. occurred on 5 Dec., but by 21 Dec. 80% of the fields were bare (J.L. Howatt).

In N.S. an early spring with normal to sub-normal precipitation and slightly above normal temperature was unfavourable to fungus disease development. Apple scab was less serious than usual, as were brown rot of stone fruits, cereal rusts and the Botrytis diseases of many plants. A general outbreak of red stele of strawberry in 1948 was followed in 1949 by the finding of only a few specimens. Late blight of potatoes appeared in July in coastal districts, but was markedly scarce until late September in inland plantings.

The dry summer induced severe blossom-end rot of tomatoes which was followed by severe fruit cracking as the result of a heavy rain. Bitter pit of apples also appeared late this year and was severe in susceptible varieties. An appreciable amount of storage pit developed in Cox Orange after a month's storage.

The season as a whole was more favourable to physiological disorders than to the fungus diseases usually observed (J.F. Hockey).

Very mild weather in P.E.I. during January, February, and March permitted rail shipment of potatoes without the usual frost hazard. The winter being mild and without serious sub-cooled rains, orchards escaped injury to the young shoots; no die-back of apples, pears, and plums occurred and the trees came through in a thrifty condition. Apple scab spore discharge was delayed until late May due to light rainfall. It subsequently became active in neglected orchards, infection becoming very heavy during the rainy month of September.

The main growing season having been warm, and free from droughts and early frosts, crop returns have been exceptionally good. Freedom from excessive rainfall held turnip club root to a minimum, although this crop suffered considerably from boron deficiency due to low soil moisture reducing its availability. Potato scab increased on soils of low water-holding capacity.

Trace infections of late blight were found on plants of Irish Cobbler in mid-July. During early August it became severe in unsprayed fields of this variety in localities on the south shore where fogs had occurred. Later varieties showed no infection until September, when daily rain 6-10 Sept. allowed the disease to become established. With rain on 13 of the last 15 days of the month the disease developed rapidly and reached epidemic proportions, but came too late to reduce yields significantly. During this wet period spraying and vine killing could not be done efficiently. Growers who killed the vines before the advent of the rainy period harvested healthy crops, unless digging was undertaken before the plants were completely dead; but where vine-killing was post-poned until the end of September the rain washed spores into the soil and tuber rot resulted.