La maladie hollandaise de l'orme (Ceratostomella Ulmi) a été observée dans 7 comtés additionnels du Québec et sur un seul arbre à Ottawa, Ont. Le pathogène a également été isolé de 13 arbres provenant de 6 comtés de l'est de l'Ont., fait remarquable, aucun de ces arbres ne manifestait les symptômes de la maladie. La brûlure du saule (Fusicladium salicipердum) fut observée pour la première fois en Ont. Le chancre (Dothichiza populea) a pratiquement détruit une plantation de peupliers de Lombardie (Populus nigra var. italica) dans l'ouest du Qué. La brûlure du tronc (cause inconnue) de Pinus monticola a été signalée pour la première fois au Canada en C.-B.; cette maladie est grave dans l'Idaho et dans le Montana. Au Man., la rouille (Chrysomyxa ledicola) attaqua Picea glauca au point de causer une défoliation marquée. L'examen de chancres sur Laburnum récoltés en Ont. a révélé que Fusarium lateritium l'agent responsable.

Voici quelques observations intéressantes sur les maladies des plantes ornementales: le blanc (?Erysiphe Cichoracearum) des bégonia en Sask. et en Ont.; la pourriture des boutons (Fusarium Rosae) sur Dianthus plumarius en Ont.; la pourriture de la tige (Coniothyrium Euphorbiae) sur Euphorbia epithymoides en Ont.; la gale des glaïeuls (Phytomonas marginata) observées dans plusieurs endroits; la mosaïque (Phaseolus virus 2) très répandue sur les glaïeuls de même que la bigarrure blanche (virus) en Ont.; la pourriture molle (Erwinia carotovora) sur les jacinthes de serre, variété L'Innocence, en Ont.

The Weather and Its Influence on Plant Diseases

The weather during the 1948 season was abnormal throughout B.C. On Vancouver Island the main features were a mild winter and abnormally high rainfall in May, July and August. Owing to the wet May weather, potato planting was delayed and blackleg was accelerated in early plantings. Considerable losses occurred in Certified seed, partly due to holding too long before planting. During the very wet months of July and August, many fungus diseases were unusually prevalent and caused serious losses. This was particularly true of late blight of potato and tomato. Tomato crops in many gardens were ruined, even on the Saanich Peninsula where late blight has rarely been found previously. Botrytis diseases were abnormally severe on tulips, gladioli, roses, pansies and other ornamentals, affecting both foliage and blossoms. Precipitation in September and October was slightly below normal, and diseases were somewhat checked, but heavy losses had already been incurred (W. Jones).

The exceptionally wet weather throughout B.C. in May, June, July and August favoured the development of many diseases. Rainfall for twelve scattered stations varied from 139 to 263% of average. The following diseases were much more severe than usual: fireblight of pears in the Okanagan and Kootenays; scab of apples and pears in the Kootenays, northern Okanagan and on the coast; coryneum blight of peaches and apricots in the

Kootenays and Okanagan; peach leaf curl in the Okanagan; brown rot of stone fruits; late blight of potato on the coast and in most of the interior; downy mildew of hops in the Kamloops area; downy mildew of onions in the coastal, northern Okanagan and Grand Forks areas; late blight of tomato in the coastal, northern Okanagan and Kootenay areas; late blight of celery; red stele of strawberry on southern Vancouver Island; and shot-hole of cherry on the coast and in the Kootenays. Serious spring floods killed many kinds of plants, but sensitivity to flooding varied greatly. Most small fruits, many broad-leaved maples (Acer macrophyllum) mountain ash (Sorbus pumila) and cherries were quickly killed. Cherries were much the most sensitive tree fruits, most of them dying soon after their roots were covered with water. Peach was next in sensitivity, followed by plum and pear, and finally apple, which was fairly resistant (W.R. Foster).

Rainfall at Summerland from April to August was nearly three times the average, resulting in general outbreaks of many fungus diseases in the Okanagan. Sphaerotheca pannosa was less serious than usual, perhaps because of the wet season, but Podosphaera leucotricha on apple was exceptionally hard to control in southern sections. The wet season also appeared to have other effects. Prunes in many orchards were shrivelled at the stem end, apples failed to size up well, some Bartlett pears were spongy, and peaches were low in sugar and did not ripen normally (H.R. McLarty). In the Kootenays effects of the high rainfall were comparable to those in the Okanagan. Tree fruit diseases were unusually severe, and floods in May prevented delivery of some spray materials. Many growers applied seven scab sprays instead of three or four. Late September and the whole of October were unusually dry, facilitating application of Coryneum sprays (M.F. Welsh).

In Alta. the spring was very cold and the snow did not melt until late April. Winter-killing in legumes was negligible, but up to 29% killing in fall wheat was reported from parts of southern Alta. and the Peace River district. There was a remarkable recovery of these crops in southern areas where rainfall was above normal until mid-July, but the rest of the season was very dry. As a result of this prolonged wet weather, severe chlorosis in spring wheat developed near Lethbridge. In central and northern Alta. drought conditions existed after spring floods, and general rains were not reported until mid-July. Leaf rust of wheat was reported from various points in central and southern Alta. in mid-July; it developed rapidly in the south where heavy rains had resulted in dense growth. By mid August infection was moderate to severe throughout this region. In central Alta. leaf rust developed somewhat during cool, cloudy weather in August. A slight general infection was reported by 1 Sept. Stem rust was reported in southern Alta. on 1 Aug., and was slight but general on susceptible varieties by mid August. Damage was severe on late-maturing stands of soft spring wheat in the Brooks district. In central Alta. traces of stem rust were found in a few widely separated fields. Very dry fall weather in the south resulted in a poor secondary root development in winter wheat, and severe winter killing may result (M.W. Cormack, S.G. Fushtey).

The spring thaw in Sask. was late but very rapid, resulting in rapid run-off and flooding, followed by high temperatures for about 10 days with very fast germination and growth. Wheat seedlings appeared yellow as

a result of the fast growth, and banding of the leaves was caused by the high temperatures. The warm weather was unfavourable for development of bunt of wheat but favoured the covered smuts of oats and barley. Crown rot of alfalfa was checked quickly.

Dry weather during June and early July caused serious crop deterioration west of the third (106°W) meridian. Rusts and leaf spots were slow in developing. Showery, warm weather over the province in July revived the crops and aided in filling of the heads. The eastern half of the province was most favoured with rainfall and it was in this area that diseases were generally most prevalent. Two exceptions were scald of barley, which was common in the dry area around Scott, and common root rot of cereals, which was most severe in the dry western areas. All crops matured well in fine weather and were harvested in good condition (R.C. Russell).

At Saskatoon, Sask., sunshine was above average from May to Sept., rainfall was below average except in July, and temperature was above average except in Aug. Relatively low evaporation rates tended to offset the abundant sunshine. May was featured by an unseasonably warm spell from the 17th. to the 25th. with daily maxima of 75° to 84°F. This hot weather may have been responsible for unidentified leaf browning of roses, mountain ash, alfalfa and brome grass.

June temperatures were generally uniform, with a warm period during the first week (maximum in the eighties). The only hot spell of the summer occurred during the first week of July when maximum temperatures were above 90°F. for four days. Heavy rains on the 15th and 16th brought the total precipitation above average for the month. August temperatures were reasonably uniform (T.C. Vanterpool).

Winter and early spring in the Niagara Peninsula, Ont., were favourable for orchard fruits. Fair weather in late March afforded good opportunity to apply dormant sprays for peach leaf curl, which was not a factor except in orchards sprayed inadequately or too late.

Daily showers and frequent fogs during the bloom period for stone fruits, 3-17 May, resulted in heavy outbreaks of blossom blight and stem rot. On susceptible varieties of sweet cherries losses were up to 50%. Fair weather after bloom prevented rot of the green fruit. Weather during harvest was very favourable and there was no loss from rotting or splitting of mature fruit.

The early bloom period for apples was cloudy, cool and wet. Growth was very slow, the trees remaining in bloom over three weeks. A heavy primary scab infection resulted from a rain of 1.15 in. on 10 May followed by 0.57 in. on 11 May, which kept the trees almost continually wet for 28 hours. Secondary infections were favoured by prolonged rains on 7 and 22 June. On the latter date infection showed on young fruit. Drought in July, August and September checked later development and practically no late infection occurred.

A period of high temperature, 23-28 Aug., following the dry weather, caused wilting and scorching of the foliage of sour cherries and pears grown on heavy soils. The drought prevented appreciable brown rot of mid and late season peaches and other stone fruits, and did not permit cherry shot hole to develop until late September, but it also reduced fruit size.

A threatened outbreak of tomato late blight was checked by the dry, hot weather of late August. Heavy losses from blossom-end rot of early staked tomatoes was associated with very dry weather when the early fruits were maturing (G.C. Chamberlain).

At Ottawa, January and February were unusually cold. March temperature was normal. Snow cover was unusually light and had virtually disappeared from open fields by 21 Mar. April was warm, May and June somewhat cool, July normal, and August and September unusually warm. Rainfall was close to normal in April and May, but was light for the rest of the season. Sunshine was low in June, high in July, and close to average in the remaining months. Light snowfall and light rainfall after May caused a serious water deficiency late in the season. Cool, wet weather in early May caused much spread of tulip fire. No measurable rain fell from 23 May to 7 June or from 7 to 15 July. Otherwise rains were fairly frequent until late August. From 11 to 24 Aug. there were frequent showers, fogs and heavy dews. In this period Sclerospora graminicola developed abundantly on foxtail millet and wild foxtail, and Phytophthora infestans became established on potato and tomato. On 26 Aug. about 1/10 acre patch in one potato field showed the underside of nearly every plant white with late blight sporangia. However, development was checked by four days of extremely hot weather; and from 6-30 Sept. rainfall totalled 0.07 in. Consequently the threatened epidemic did not materialize. Temperature and precipitation in October were normal. November and early December were wet and very mild (D.B.O. Savile).

The growing season in eastern Que. was characterized by a cool spring, a summer with evenly distributed rain just sufficient to permit a good growth, and a dry fall. The conditions did not favour disease epidemics, and ordinary control measures easily checked most of the common diseases of cultivated plants. Little tuber rot was observed even in fields where potato foliage had been severely damaged by late blight. Although only traces of potato leak (Pythium ultimum) could be observed in a field at Ste. Anne de la Pocatière, it caused about 1% loss of the crop in storage. On the other hand, a higher percentage of bacterial ring rot could be observed in the fields than in cellars because conditions favoured rapid decay of infected tubers. Rust was again unimportant on cereals. Leaf rust of wheat, though abundant, occurred too late to do any damage. Similarly, heavy infection of alfalfa by Pseudopeziza Medicaginis was encountered only in places where harvesting had been abnormally delayed (A. Payette).

The longest cold spell in the history of N.B. was recorded from January to early March. In this period there were forty-nine days of sub-zero weather. Despite from 12 to 30 in. of snow cover sod land was frozen

to a depth of 37 in. Rain and warm weather rapidly melted the snow and by 20 March the fields were bare. Only one inch of rain fell during April and by the end of the month sandy soils were almost ready to work. In May precipitation was 5.46 in. Wet ground delayed seeding considerably, especially in the eastern section of the province where most of the land was not dry enough to seed until late June.

Despite the severe winter cold, grasses and legumes wintered well. Growth was slow during early May and much chlorosis was evident in grasses and clovers. These crops developed luxuriantly in June and a very heavy hay crop was eventually harvested. A feature of the season was the exceptionally vigorous growth of red clover. Apple trees wintered well in some sections but not in others. Considerable bud injury to McIntosh and Cortland was reported from some localities. The varieties Linda and Sandow showed considerable frost injury in the branches and trunks in some areas. Strawberries and perennial flowers wintered exceptionally well, but raspberries, some shrubs and many hedges suffered severely.

A heavy ascospore discharge of the apple scab fungus was first recorded 25 May and for the next six days discharge was intense.

Precipitation amounted to 2.54 in. in June. In July it was 4.47 in. and was well distributed. However, there were 39 more hours of sunshine than for the 35-year average for the month. During a damp, dull period extending from 12 to 14 Aug. late blight of potatoes became generally established, but abundant sunshine and restricted rainfall during the rest of August and September checked its spread. Water shortage developed in many districts and was not relieved until early October. November was mild and 6.93 in. of rain were recorded. On the whole, the month of December was mild. Ploughing ceased on 12 Dec. Sub-zero temperatures were experienced only on two days of this month. At the end of the year, frost had penetrated 11 in. into the soil (J.L. Howatt).

The two critical months of May and June in N.S. were wet. It was one of the wettest springs in many years as soil water was high and a rainfall of 10.39 in. during the two months aggravated the soil conditions. Planting was seriously delayed. Orchard spraying was exceedingly difficult. Apple scab started early and became well established. Botrytis blights were prevalent on many crops. Magnesium deficiency was reported on several crops. The first general outbreak of red stele in strawberries occurred in several parts of the province. These were some of the influences of the weather in the early season. The summer was more favourable but late blight developed in several districts on potatoes and tomatoes, causing reductions in marketable crops. Autumn weather favoured the maturing of most crops but frosts occurred in some districts to cause injury to late apples and kill the foliage on many apple trees. Orchard defoliation was very erratic. Well fertilized orchards appeared to have most of the frozen foliage. A similar condition in some previous years has reduced the carry-over of the scab fungus in the orchards concerned (J.F. Hockey).

Weather conditions had a marked effect upon the development of crop diseases in P.E.I. The spring was backward and seeding late; grain came up slowly and there were many instances of potato seed pieces decaying in cold soil. Tree fruit bloom was delayed at least a fortnight because of backward weather.

Apple scab spore discharge was very late but the disease was a threat with the onset of warm, wet weather. Rainy weather during June and July made spraying difficult and many orchards suffered accordingly.

Strawberry mildew, usually troublesome in dry, hot weather, was not serious, presumably owing to the comparatively wet season. Turnip brown heart was less troublesome than usual, it being evident that the boron applications were fully effective with high soil moisture. The same was doubtless true of potato magnesium deficiency.

July weather conditions favoured potato late blight development, yet precipitation for July, August and September was slightly under the 26 year average of 10.53 in. During September heavy dews and warm days ensured rapid development of blight, which finally got out of control in many fields. Fortunately, plants thus killed no longer produced spores, and fine frost-free weather made it possible to delay harvesting until the spores were dead. Consequently little tuber rot developed (R.R. Hurst).

Notes on Some Plant-Parasitic Nematodes

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The finding of the potato-rot nematode, Ditylenchus destructor Thorne, 1945, attacking potatoes in Prince Edward Island a few years ago (P.D.S. 25:66) attracted an appreciable amount of attention, particularly from those interested in potato culture in other parts of the world. Fears were evident that this nematode might be an important threat to potato growing. Accordingly, in order that the excellent reputation enjoyed by Prince Edward Island potatoes should be well protected, vigorous steps were taken at once to prevent any spread of this pest even though it was not at all certain that a potato enemy of major economic importance was involved. While there has been no relaxing of the protective measures there has been no evidence, as yet, that the potato-rot nematode presents a threat of great importance to successful potato culture. Potato plantings in sod land have resulted in a few fairly heavy infestations and the planting of infested potatoes may also cause important injury, but this level of infestation has not been increased or even maintained by subsequent plantings of non-infested potatoes. With the planting of land to potatoes in areas in Prince Edward Island where potatoes had not been planted since the identification of this parasite, some few new infested fields are being located. Potato culture is still prohibited in all fields reported infested. However, most of the land now classified as infested is land where trace infestations only are present. The matter of infested land has about