V. DISEASES OF FOREST AND SHADE TREES

ASH (*Fraxinus*)

RUST - *Puccinia sparganioides* Ell. & Barth.
A small tree of white ash growing near a marsh was killed by rust in Kings county, N.S.

A leaf spot (*Phyllosticta viridis* Ell. & Kell.) caused slight to moderate damage to the leaves of ash at Lumsdom, Sask. *Piggotia Fraxini* Berk. & Curt. was also present on the leaves.

BALSAM FIR (*Abies balsamea*)

WITCHES' BROOM - *Melampsora Caryophyllacearum* Schroet.
N.B.- Witches' broom was common in York county.

N.S.- Two per cent of the balsam in a pasture were affected with witches' broom in Annapolis county.

P.E.I.- The disease was noticed first at Brackley Point. A survey made later in the year indicated that it was common in Prince Edward Island wherever balsam was growing.

BASSWOOD (*Tilia*)

A leaf spot (*Cercospora microsora* Sacc.) slightly to moderately infected basswood in Queens county. P.E.I.

BEECH (*Fagus*)

Ehrlich (Phytopath. 23:10, 1933) reports the occurrence of a destructive disease of beech in stands of this tree in the Maritime provinces of Canada. A survey of the afflicted regions disclosed that 90 per cent of the trees over 3 inches in diam, at breast height in forest stands are infected and 50 per cent of the trees that had been diseased for several years were dead. The disease is caused by *Creonectria coccinia* (Pers.) Seaver. following attacks by the beech scale, *Cryptococcus fagi*.

CHESTNUT (*Castanea*)

BLIGHT - *Endothia parasitic* (Murr.) Anders. & Anders.
Ont.- Trees dying from blight were found in Norfolk county.

ELM (*Ulmus*)

BLACK SPOT - *Gnomonia ulmea* (Schw.) Thüm.

Black spot waw observed on elms in 9 countries about Montreal. It was estimated that 95 per cent of the trees showed the disease, and on some trees nearby, 100 per cent of the leaves on the lower branches were affected.

FIRETHORN (*Pyracantha*)

SCAB - *Fusicladium Pyracanthae* (Otth.) Fuckel

A low percentage of firethorn were infected with scab in the Fraser valley; some bushes were severely infected.

HAWTHORN (*Crataegus*)

FIRE BLIGHT - *Bacillus amylovorus* (Burr.) Trev.

B.C.- A specimen of English hawthorn affected with fire blight was sent from Whonnock to the Ottawa laboratory by Dr. Wm. Newton.

P.E.I.- Some fire blight was present on C. *Oxyacantha* at Charlottetown, although the bushes had been carefully pruned to remove diseased wood in 1931.

HORSECHESNUT (*Aesculus*)

LEAF BLIGHT - *Guignardia Aesculi* (Pk.) Stewart
(*Phyllosticta Paviae* Desm.)

Leaf blight was prevalent along the highways in Halton county, Ont. Diseased specimens were also received from Hemmingford, Que., and it was reported to have caused moderate to severe damage in all 3 counties in Prince Edward Island.

MAPLE (*Acer*)

A heavy infection of tar spot (*Rhytisma acerinum* (Pers.) Fr.) was found at Drumheller, Alta. Tar spot was also reported on silver maple (*A. saccharinum*) as follows: 2 or 3 localities in western Quebec; trace in York county, N.B.; trace at Highbury, N.S.; 25 per cent of the leaves affected on several trees at Charlottetown, P.E.I.

Sugar maple (*A. saccharum*) was slightly infected with leaf spot (*Phyllosticta minima* (Berk. & Curt.) Ell. & Ev.) at Macdonald College, Que. It occurred principally on the leaves of young

trees, which were shaded by older and larger ones.

Blight due to Cytospora chrysosperma (Pers.) Fr., was found affecting 7 young maples, two of which were killed in Kamouraska county, Que.

MOUNTAIN ASH (Sorbus)

A leaf spot apparently caused by bacteria was common on mountain ash at the Experimental Farm, Indian Head, Sask.

Five mountain ash trees about 25 years old were killed by fire blight in a grove at Macdonald College. Several other trees were severely affected. Mountain ash and rowan trees were slightly to severely affected by fire blight at Charlottetown, Summerside and Souris, P.E.I. Many of these ornamentals are dying or are so severely diseased that they are being removed.

One canker caused by Nectria cinnabarina (Tode) Fr., was found on mountain ash at Kentville.

OAK (Quercus)

Leaf curl (Taphrina caerulescens (Desm. & Mont.) Tul.) heavily infected all the leaves on about 200 trees at Beaverlodge, Alta.

PINE (Pinus)

WHITE PINE BLISTER RUST - Cronartium ribicola Fischer

Ont.- Scattered infections of rust were shedding aecios pores in an old stand of white pine in Lincoln county, on May 18. Twenty to 30 per cent of the young trees were found diseased in a stand, where there was considerable reproduction, near Morton. Aeciospores were still being shed on June 6. Some trees had been killed and others bore cankers on the trunk. Ribes were already showing well developed uredinia.

Que.- Blister rust was found on young trees on the Mountain road near Wrightville. The blisters were showing, but had not yet opened (I.L. Conners).

In addition to the outbreaks of blister rust reported from Chateauguay and Oka last year, it was observed on about 10 trees 6 to 8 inches in diam. growing in a pasture near Hemmingford.

N.B.- Blister rust appears to be spreading in the province although it causes slight damage.

N.S.- Open aecia of blister rust were abundant on limbs of large trees at the Experimental Station, Kentville, on May 12.

P.E.I.- Blister rust has definitely increased in prevalence in the past 3 years in Queens county. It has heavily infected trees in woods and frequently may be found on ornamental plantings; the damage is severe.

POPLAR (Populus)

CANKER - Cytospora chrysosperma (Pers.) Fr.

Que.- Ten per cent of the 4 year old Carolina poplar trees were infected with canker in a block in Kamouraska county; badly diseased trees were killed.

LEAF BLIGHT - Sclerotium bifrons Ell. & Ev.

Ont.- Leaves of P. deltoides affected with leaf blight were sent in from Orillia to the Ottawa laboratory.

POWDERY MILDEW - Uncinula Salicis (DC.) Wint.

Que.- Leaves of young poplars only were heavily infected with powdery mildew near Hemmingford.

CANKER - Hypoxylon pruinatum (Klotzsch) Cke.

Man.- This canker causes the death of many trees of P. tremuloides in poplar bluffs.

SPRUCE (Picea)

NEEDLE RUST - Peridermium sp.

Sask.- Needle rust caused by Chrysomyxa sp. was common and serious on spruce between Prince Albert and the Prince Albert National Park. Heavy infection has resulted in the death of the majority of the needles on young twigs (W.P. Fraser, R.C. Russell and W.L. Kerr).

P.E.I.- Needle rust was widespread and moderately to heavily infected the leaves of native spruce, being especially severe in Prince county. A light infection was also observed on Picea pungens at the Experimental Station, Charlottetown.

CANKER - Cytospora sp.

A canker caused by Cytospora has been found in 3 localities in the Niagara peninsula: Vineland, Beamsville and Winona, Ont.

The disease first appears in the branches and extends from there down into the trunk causing cankers. The cortical region is involved primarily and if superficial cuts are made into dead or dying branches, black stromatic masses are laid bare. The disease is most easily recognized after rains in the spring, when striking orange tendrils of spores exude abundantly. Inoculation studies have been undertaken. This is apparently the first report of this disease for Canada (D. L. Bailey)

A similar, if not the same disease, is reported by Gilcut and Boyd, (Phytopath. 23:11. 1933).

TULIP TREE (Liriodendron)

TAR SPOT - Rhytisma Liriodendri Wallr.
Que.- The leaves were moderately infected with tar spot at Macdonald College.

WILLOW (Salix)

Tar spot (Rhytisma salicinum (Pers.) Fr.) moderately infected narrow leaved willows at several places in western Quebec.

Powdery mildew (Uncinula salicis (DC.) Wint.) was reported from Summerland, B.C. It was common in Quebec. Narrow-leaved willows in a swamp near Hemmingford were moderately infected. In Queens county, P.E.I., swamp willows were slightly to heavily infected.

SCAB - Fusicladium saliciperdum (All. & Tub.) Tub.
Que.- Fifty per cent of the trees between Levis and Rimouski are affected with scab. Where the disease is well established the trees were completely killed. A moderate infection of scab was also observed at Bowker Lake, Lennoxville, Waterville and Compton.

N.B.- Scab was widespread; the damage was severe.

N.S.- At Grand Pré, 10 per cent of the twigs were diseased on Salix vitellina.

P.E.I.- Scab caused slight damage in all 3 counties in 1932, but it was very injurious in 1931.

BLACK CANKER - Physalospora Miyabeana Fukushi
N.S.- It was estimated that black canker caused 2 to 3 per cent damage on Salix vitellina at Grand Pré. This disease was not so noticeable this year.