ROOT ROT (Fusarium spp.) affected 2/22 fields in Sask. and killed several plants in plots at Saskatoon (H.W. Mead).

ROOT ROT (Phytophthora cactorum) infection killed the main stem but secondary stems developed rapidly after rains in July. Four/22 fields surveyed in Sask. were affected; one of these was severely damaged (H.W.M.).

COMMON LEAF SPOT (Pseudopeziza medicaginis) was present in 12/22 fields in Sask. but the disease developed late in the season, caused slight defoliation and the average damage was slight (H.W.M.).

B. OIL-SEED CROPS

FLAX

Flax Diseases in Saskatchewan in 1958

T.C. Vanterpool

The flax acreage in 1958 was 1,496,000 with an estimated yield of 7.0 bu./ac.; only 1 bushel below the yearly average. This good yield was surprising in view of the prolonged drought for the first two-thirds of the growing season, However, the incidence of infectious diseases was one of the lowest on record and no doubt contributed to the recovery in yield. The absence of damage from early fall frosts and the scarcity of boll infections from Polyspora lini and Alternaria linicola are largely responsible for the good quality of 1958 seed.

Blight (Alternaria linicola) was found only in trace amounts in northern fields toward the end of the season. Flax straw was unusually clean. There should be little carry-over of seed-borne A. linicola on 1958 seed.

Rust (Melampsora lini) was not found on field surveys. One moderately affected sample of Redwing was received from Maple Creek.

Seedling Blight (Pellicularia praticola) damage was only slight in areas where moderate infestation is usual.

Browning and Stem Break (Polyspora lini) damage was negligible. A trace of infection was found on immature bolls in the Landis-Biggar and Davidson areas. This suggests that a few seed samples from the 1958 flax crop may be carrying traces of P. lini.

Pasmo (Septoria linicola) was not encountered in central and northern Sask.

Aster Yellows (Callistephus virus I) infection was the lightest since yellows was first observed on flax in 1953. About 20 fields were examined in August in north central Sask. Infections were usually trace to slight, with a few fields free of disease. In one field in which no yellows could be found after a long search, stinkweed showed a trace of infection. The highest rating was one of

0.25% in a weedy field 10 miles north of North Battleford. In comparison, most fields examined in central Sask. where conditions were drier showed 0 to trace. Fields in the same areas showed 25-75% yellows in 1957. In flax fields swept for leafhoppers only an occasional one was caught, where last year one to two dozen would be obtained.

Stinkweed plants infected with aster yellows were collected at Melfort in the northeast before any leafhoppers appeared at Saskatoon. This indicates that the virus can overwinter in stinkweed which is frequently a winter annual.

There probably was a high carry-over of virus inoculum in perennial and winter annual weeds following the 1957 epidemic. The scarcity of the disease in 1958 should probably be attributed to the scarcity of the leafhoppers and their late emergence. In addition, the migrating populations of leafhoppers were late, low in number and carried a low inoculum potential. By the time the leafhoppers were plentiful, the flax crop was ripe or almost ripe.

Heat Canker. Early blighting was slight and less than normal. Several late-sown fields were moderately to severely damaged by the late type of heat canker following the hot clear days of 26 and 27 June.

Chlorosis ("lime-induced"). In mid-June chlorosis was conspicuous on over 50% of a crop grown in newly broken, semi-degraded soil north of Humboldt. The crop was a normal green one month later.

Frost late in May probably reduced stands slightly in some northern areas. Flax matured before the first fall frost.

Base Enlargement (Wind Damage) was conspicuous in the plots at Scott. The 'rocking' by strong winds caused irritation and produced slight enlargement of the stem bases in the region of the soil line (C.P.D.S. Ann. Rept. 25: 31. 1945 (1946).

Zinc Deficiency. A trouble previously referred to as 'lime (plaster) injury' (C.P.D.S. Ann. Rept. 35: 41. 1955 (1956), is very similar to the colored photograph of zinc deficiency symptoms published by E.F. Godoy and O. Bruni (Tercera Reunion de Lino (Pergamino, Argentina): 205. 1950), and is tentatively believed to be caused by the unavailability of zinc in areas in an experimental plot where building plaster was scattered several years ago.

Blighted Bolls. The proportion of small empty bolls to mature bolls was unusually high and conspicuous at harvest.

Apical Injuries. Flax appears to be susceptible to non-pathogenic terminal blights of various kinds. Dr. R.I.H. McKenzie reported severe apical blighting on a flax hybrid grown at Indian Head, but the same hybrid was free of apical blighting when grown at Ottawa.