wheat, when wheat fields are planted sufficiently close together. It is, therefore, possible that the ASM disease could become serious in wheat if similar conditions were to occur in Ontario.

In Ontario, the low acreage of spring wheat precludes it as an important source of infective mites. However, an indication of what might happen was found in a field at the Central Experimental Farm, Ottawa. Winter wheat was sown in May 1958 to provide a ground cover in some experimental plots. Many of the plants survived when the plots were cultivated in September. In October, all the surviving plants were found diseased with ASM. If winter wheat had been sown early in the fall adjacent to, or within these plots, it is likely that the disease would have been spread much as WSM spreads under similar conditions in Alberta.

The spread of ASM from Agropyron to fall wheat does occur in Ontario but further study is needed to assess the seriousness of Agropyron streak mosaic in wheat.

Barley Yellow Dwarf and Oat Red Leaf in the Ottawa Area

J.T. Slykhuis, F.J. Zillinsky and A.E. Hannah

Barley yellow dwarf and oat red leaf occurred generally in the Ottawa area in 1958, and affected up to 15% of the plants in some fields. Late-sown crops were usually more heavily infected than earlier crops. In a date of seeding experiment, at least 50% of the oats sown in late June showed symptoms by heading time.

A highly virulent isolate of the virus obtained from timothy was included in an experiment in which Rhopalosiphum padi was used as the vector to infect Clintland and Garry oats, and Montcalm and York barley in field plots The yields of both varieties of oats were reduced by about 75% when infected in the one-leaf stage, 50% when infected in the 4-to 5-leaf stage, and 25% when infected in the shot-blade stage. Similar results were obtained with Montcalm barley, but York was affected less by the isolate of virus used. No reduction in yield resulted from the feeding of non-viruliferous aphids in these experiments.

Ascospore Discharge by Leptosphaeria avenaria f. sp. avenaria in Prince Edward Island in 1958

Carl Willis

Studies on the discharge of ascospores by the speckled leaf blotch pathogen were begun on 28 May 1958, and continued for a 90-day period. Oat stubble from a heavily infected 1957 crop was chosen for the project. Careful observations of the asci were made at frequent intervals to determine the maturity of the ascospores and to detect ascospore discharges. Mature ascospores were first observed on 18 June and discharge took place over the

remainder of the period of examination but with no period of peak discharge being noted. Very little speckled leaf blotch infection was observed in 1958 as compared to 1957.

Cereal Rusts in Canada in 1958

B. Peturson, G.J. Green and D.J. Samborski

The following is a condensation of Report No. 14 issued by the Plant Pathology Section, Canada Dept. of Agriculture Research Laboratory Winnipeg, Man. in January, 1959.

Influence of Weather on Cereal Rust Development

Weather conditions were unfavorable for the development of cereal rusts throughout the Prairie Provinces during most of the summer of 1958. In May, temperatures were slightly above normal but precipitation was from 50 to 100% below normal. Precipitation at Winnipeg for the whole of May was only .42 inches and in many prairie localities even less precipitation was received. During June temperature and precipitation in Sask. and Man. were sub-normal. The deficiencies in temperature ranged from 2 to 6F.° and deficiencies in precipitation ranged from 30 to 70%. In some prairie localities in Sask. and Man. the spring drought came to an end on 28 June, but in many localities the first substantial spring precipitation occurred during the first week in July. June temperatures were generally near normal in Alta. while precipitation was about 30% above normal in the foothills area and about 40" below normal in the eastern parts of the province. The average July temperature in Man. ranged from normal to three degrees below normal; in Sask. the temperatures ranged from 1° above normal to 3° below normal; and in Alta. temperatures were slightly below normal. Above normal pre cipitation across the prairies in July favored the rusts but temperatures were too low for rapid rust development. During the remainder of the crop season temperatures were near normal in Sask. and Man. but much above normal in Alta. Precipitation was from 30 to 50% below normal excepting in a few areas such as Regina, Edmonton and Lethbridge.

Prevalence of Air-borne Rust Inoculum in Western Canada

Northerly winds prevailed over the Great Plains area of the United States and Canada during May, June and early July. As a result of the unfavorable conditions for the northward movement of spores and a smaller than usual amount of cereal rusts in southern areas, the number of air-borne rust spores over Man. and e. Sask. was relatively small. Spore-trap data (Table 7) show that there was much less rust inoculum in the air over the rust area in 1958 than during the two heavy rust years of 1954 and 1955.