of seed produced at Camden, and obtained in Melbourne from Kyabram (Victoria) germinated poorly and produced diseased seedlings.

Anthracnose of soybean is widespread in North America where it is not regarded as a serious disease (2, 3). In India, however, the disease can be devastating (Sinclair, personal communication).

In Europe and North America, this pathogen also infects species of *Glycine, Lotus, Melilotus, Medicago, Phaseolus, Pisum, Trifolium* and *Vicia* (1). In Australia, *C. dematium* is recorded in Queensland on *Medicago sativa* L. and several other hosts (4). As von Arx (1957) considers all isolates of *C. dematium* on legumes as forma *truncata,* the pathogen may have been in Australia for some time.

It is not known whether the soybean isolate was introduced in imported seed or was a local isolate. As anthracnose is potentially serious on soybeans, planting stocks of seed should be free of the pathogen.

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FOREST TREE RUSTS IN VICTORIA

Three new rust diseases of introduced deciduous trees have been found recently in Victorian nurseries. Their appearance has been associated with an unseasonable cool, wet summer.

Poplar rust, *Melampsora medusae* Thuem, which was recorded previously from New South Wales (1), appeared in Melbourne in mid-April 1972. *Populus deltoides* Marsh and its clones were severely affected and, in nurseries, moderate infection was seen on *P. balsamifera* L., *P. deltoides* var. *monilifera* (Ait.) Henry, and *P.* X *canadensis* Moench, and its hybrids. Very light infection occurred on *P. simonii* Carr.

In the Soil Conservation Authority nursery at Kew, Victoria, uredinia of another rust, *Melampsora epitea* Thuem. were found on various willows. Severe defoliation occurred on *Salix purpurea* L. and on an unidentified *Salix* sp. (Specimens labelled *'S. bolane').* Necrotic spotting but no sori were seen on plants of *S. viminalis* L. in the same nursery. *M. epitea* has not been recorded previously in Australia.

Rust of silver birch *(Betula pendula* Roth) caused by *Melampsoridium betulinum* (Fr.) Kleb. has been known in New South Wales since 1948 (DAR 3894) and is usually inconspicuous, causing little damage. Only uredinia have been seen. Silver birch rust was found recently in both the uredinial and telial stages in the Forests Commission Nursery, Creswick, and this is its first record in Victoria. It was causing little damage to seedlings and was readily controlled by spraying with copper oxychloride.

Specimens of the above rust records (with the exception of *M. medusae* on *P. balsamifera)* have been filed in the Biology Branch herbarium (DAR) at Rydalmere.

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RESEARCH NOTES

A NEW SOURCE OF MOSAIC RESISTANCE IN SORGHUM

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In recent years an increasing amount of grain sorghum has been grown in Queensland and it has been found that sugar cane mosaic virus (Johnson grass strain; SCMV—Jg) causes a serious disease problem in these crops. Consequently a screening program to search for resistance was initiated by the Queensland Department of Primary Industries in 1970.

Over 500 lines of sorghum were tested either in the glasshouse or in the field. A sorghum line of Nigerian origin from the World Sorghum Collection and designated Q7539 in Queensland was found to possess useful resistance to SCMV—Jg isolates collected in South Queensland. In glasshouse tests using manual inoculation procedures on Q7539 material selfed for 3 generations, only highly infective inocula were able to infect more than 20 percent of Q7539 plants. Commercial grain sorghum types inoculated under the same conditions became totally infected.

The field resistance of Q7539 was evaluated under conditions of high natural infection by SCMV—Jg. The results obtained are shown in table 1.

Table 1. A comparison of percent infections of sorghum line Q7539 with three sorghum cultivars.

Site	Line or Hybrid	Number of Infected plants/Total number of plants	Percent Infection
Hermitage Research Station *	Q7539**	4/143	2.8
	Sugardrip**	142/143	99.3
	Yates NK220Y***	97/136	71.3
Gatton Research Station****	Q7539	0/87	0.0
	Yates NK220Y***	39/94	41.5
	TX610**	46/62	74.2

* Randomized block design with single row plots containing 6–11 plants per plot. Sixteen replicates were used.

** Mosaic symptoms

*** Red-stripe symptoms

**** Randomized block design with single row plots containing 6–13 plants per plot. Eight replicates were used.

Inheritance tests of plants from F_1 and F_2 generations of crosses between Q7539 and fixed breeding lines showed the resistance to be recessive.

Small quantities of seed are now being made available to interested people.

TRANSMISSION OF APPLE CHLOROTIC LEAFSPOT VIRUS FROM PEACH TO PEACH ON THE BUDDING KNIFE

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Apple chlorotic leafspot virus (CLSV) infects both pome and stone fruits (2); it spreads in apple orchards (6) when roots graft (4) or by contact (5). At the Victorian Plant Research Institute at least 10 records of the transmission of CLSV through root grafts between infected and healthy apples are known. No spread of dark green sunken mottle virus (DGSMV), the name usually given to CLSV in peach, has been observed in peaches, which do not root graft. However, the symptoms in the peach cv. Elberta, the indicator most commonly used, are often indistinct and it is possible that spread by contact could occur and be undetected.

It is possible that the virus is spread in both commercial and experimental nurseries during budding, a mode of accidental transmission often overlooked in research on fruit tree viruses. Four isolates of DGSMV were used in a series of transmission experiments to test this possibility; two isolates were from peach and one each from apricot and apple. The apple isolate from an outbreak in a nursery had been passaged through *Chenopodium quinoa,* returned to apple by approach-grafting, and caused CLSV symptoms in the indicator apples Hybrid 6, Russian Seedling and Spy 227(1). Attempts to transmit the three *Prunus* isolates from peach to apple by bud-grafting and approach-grafting had been unsuccessful.

In the transmission experiments, a bud was cut from a peach plant infected with DGSMV and, without wiping the scalpel blade, another bud was cut from and returned to a healthy Elberta seedling and tied, as usual with budding tape. A new scalpel blade was used for cutting each pair of buds. As controls, both uninoculated Elberta seedlings and Elberta seedlings budded with each of the four DGSMV isolates were kept (a total of nine treatments, each replicated five times). All plants were grown, without foliage contact, in an insect-screened, shaded glasshouse maintained at a temperature of 18–24°C and were observed for 18 months.

The apple isolate of CLSV was transmitted to one of the 20 test plants cut with a contaminated scalpel blade. Microscopic examination of scalpel blades after using them to cut buds showed that small fragments of plant tissue often adhered to them and presumably they could occasionly unite in the cut tissues during callusing.

This result, together with previously published evidence on citrus exocortis virus (3), highlights the need for adequate precautions to be taken in experiments on transmission of viruses using grafting techniques.

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SEARCH FOR POTATO MOP TOP VIRUS UNSUCCESSFUL IN TASMANIA

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Potato mop top virus (PMTV) is spread by zoospores of the powdery scab fungus *(Spongospora subterranea* (Wallr.) Lagerh.) and is widespread in potatoes in Great Britain (1,3).

Plants of the cultivars currently grown in Britain which are affected by mop top may show either the typical bunched foliage, or alternatively chlorotic arcs and chevrons particularly on older leaves (3). PMTV may be transmitted directly by sap to the indicator plants *Nicotiana tabacum* L., *N. glutinosa* L., *Chenopodium quinoa* Willd., and *C. amaranticolor* Coste and Reyn. or indirectly via the vector by baiting contaminated soil (2).

In Australia, powdery scab is common in Tasmanian seed and ware crops, particularly in cool and wet seasons. Attempts were made to determine if PMTV was associated.

A wide range of local and introduced potato cultivars and hybrids was observed for symptoms, and plants with possible PMTV infection were checked for sap transmission to the standard indicators. Samples included Red Craigs Royal showing the chlorotic flecking that has generally been attributed to cold, but which may be associated with PMTV (3). No PMTV was found.

Several hundred plants raised from tubers affected by powdery scab, representing several commercial cultivars, were observed under glasshouse conditions, but no mop top symptoms were seen.