REFERENCES

(1) Anon. (1961) — Watch that peat. *Mushroom Growers Association Bulletin* **139:** 308.

(2) Hesling, J. J. (1972) — Nematode pests of mushrooms. In *Economic Nematology* edited by J. M. Webster, Academic Press, 1972. 562 pp.

(3) Hesling, J. J. and Gaze, R. H. (1975) — Eelworms (nematodes) and peat. *The Mushroom Journal* **28,** 126-128.

(4) Seinhorst, J. W. (1959) — A rapid method for the transfer of nematodes from fixative to anhydrous glycerin. *Nematologica* **4:** 67-69.

(5) Weischer, B. (1973) — Uber das Vorkommen pflanzenparasitarer Nematoden in Torf und Blumenerden. *Mededelingen Fakulteit Landbouwwetenschappen Gent* **38:** 1287-1290.

(6) Whitehead, A. G. and Hemming, J. R. (1965) — A comparison of some quantitative methods of extracting small vermiform nematodes from soil. *Annals of Applied Biology* **55:** 25-38.

NEW DISEASES

Bacterial Stem Canker of Loquat

D. L. S. Wimalajeewa and I. G. Pascoe
Plant Research Institute,
Burnley, Vic. 3121

and

D. L. Jones
Horticultural Research Institute,
Knoxfield, Vic. 3180

In December 1977 we received specimens of diseased branches of loquat (*Eriobotrya japonica* (Thunb.) (Lindl.) from a country grower in Victoria. These branches bore numerous cankers similar to those produced by *Pseudomonas eriobotryae* (Takimoto) Dowson on loquat in California (3, 4). The cankers appear as dry open wounds which in advanced cases girdle the stem. The surface of each canker is filled with tan to dark brown shredded bark and callus tissue, and it resembles a crown gall except that its surface tissue is loosely packed and sloughs away easily (Fig. 1). The disease considerably weakens stems and branches, and affected trees become susceptible to wind damage. Canker lesions may also appear on leaves, especially on the petiole, midrib and on the basal region of lamina.

A bacterium was isolated on King B medium (2) from deeper tissues of the cankers. It was tested for pathogenicity on loquat seedlings using a 48 h old culture on nutrient agar. Stems of seedlings (15-18 cm high), grown in pots, were pricked at several points with a sterile needle and immediately sprayed with a suspension of the bacterium in sterile water (*c.* 10^8 cells/ml). The seedlings were covered with plastic bags for 5 days and maintained in an air-conditioned glasshouse (*c.* 25°C). Wounded seedlings atomized with sterile water were used as controls. All seedlings inoculated with the bacterium developed cankers 5-6 weeks later. A bacterium with cultural characteristics identical to those of the originally isolated one was reisolated from these cankers.

The pathogenic bacterium consisted of gram negative rods (0.8-0.9 x 1.2-2.8 μm) motile by 1-6 polar flagella. It fluoresced green on King B medium, was negative for oxidase, gelatinase, arginine dihydrolase, nitrate reductase and for 2-ketogluconate; positive for lipase (Tween 80) and

Figure 1. Bacterial stem canker of loquat.

catalase, and produced a hypersensitive reaction on tobacco (5). It did not produce indole nor hydrolyze starch but produced hydrogen sulphide from peptone (6). It produced acid, but no gas, from glucose, galactose, mannitol, sucrose and xylose, and did not produce either acid or gas from cellobiose, salicin or sorbitol (1). It did not produce a visible pigment either on nutrient agar or on Tween 80 medium (3, 4). On the basis of these characteristics the organism isolated is identified as *P. eriobotryae* and it is considered similar to culture SL 4083 which Lai *et al* obtained from Japan (4).

This report constitutes the first record of the disease in Australia.

Diseased specimens and a culture of the bacterium have been lodged at the Plant Research Institute, Herbarium, Department of Agriculture, Victoria (VPRI — 10290). A culture has also been deposited in the Culture Collection of the Department of Microbiology, University of Queensland (UQM — 1747).

REFERENCES

(1) Dye, D. W. (1962) — The inadequacy of the usual determinative tests for the identification of *Xanthomonas* spp. *New Zealand Journal of Science* **5:** 393-416.

(2) King, E. O., Ward, M. K. and Raney, D. E. (1954) — Two simple media for the demonstration of pyocyanin and fluorescein. *Journal of Laboratory and Clinical Medicine* **44:** 301-307.

(3) Lai, M., McCartney, W. O. and Morin, C. W. (1971) — Canker of loquat caused by *Pseudomonas* sp. *Phytopathology* **61:** 248-249.

(4) Lai, M., Morin, C. W. and Weigle, C. G. (1972) — Two strains of *Pseudomonas eriobotryae* isolated from loquat cankers in California. *Phytopathology* **62:** 310-313.

(5) Lelliott, R. A., Billing, E. and Hayward, A. C. (1966) — A determinative scheme for the fluorescent plant pathogenic pseudomonads. *Journal of Applied Bacteriology* **29:** 470-489.

(6) Manual of Microbiological Methods (1957) — Committee on Bacteriological Technic, Society of American Bacteriologists (ed.). McGraw-Hill, New York. 315 p.