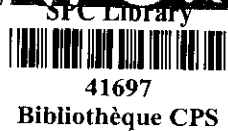




INFORMATION CIRCULAR



Date June 1983

6076

Classification

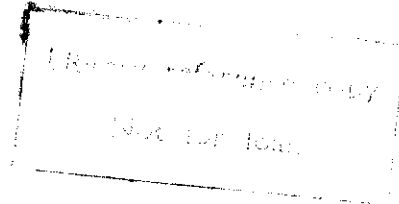
Serial No. 91

Plant Protection

A

PLANT PROTECTION NEWS

Compiled by
SPC Plant Protection Officer
Bob Ikin



NEW PROBLEMS

1. Giant African Snail in Fiji

Probably the most significant pest introduction in the last few years has been that of the Giant African Snail into Fiji on a container ship, which had called into Port Vila, Vanuatu, before discharge of containers at Lautoka. Prompt recognition of the pest and responsible and rapid countermeasures seem to have eradicated the pest.

Stuart Revell (Veterinary Officer) reports:

In early March several specimens of Giant African Snail *Achatina fulica* were found on the edge of the Lautoka wharf container area. Following the discovery of the snail and its identification, the Fiji Ministry of Agriculture and Fisheries acted promptly, and under the supervision of quarantine officers the area around the wharf was cleared of all vegetation. A total of 21 live snails and five shells were found.

Lautoka wharf is surrounded by roads and paved areas, and the only area of grassland between the main road and the wharf, about one hectare, was also dug over and baited with metaldehyde. No Giant African Snail specimens were found in this area.

As some of the containers had been moved from the wharf before the discovery of the snails, the areas to which these had been taken were also baited and sprayed. The containers were all tracked down and carefully inspected. Some containers had been transhipped to Suva so the wharf there was baited and sprayed with cuprox. No further snails have been found.

Fiji authorities believe that they have eradicated the outbreak and no more Giant African Snails have been found at any likely locations despite an extensive publicity campaign using both South Pacific Commission and Australian Plant Quarantine posters and literature.

Bal Ram Singh (Chief Agricultural Quarantine Officer) of the Fiji Ministry of Agriculture and Fisheries considers that the outbreak has been a very useful logistics exercise in pest detection and eradication and has certainly sharpened the inspection procedures of his staff. It is an exercise that Pacific Island nations could do without for without the particular conditions around the Lautoka wharf, which were generally inhospitable to Giant African Snails, the outbreak could have become serious and permanent.

7288



Giant African Snail. From *Australian Plant Quarantine leaflet No. 2.*

2. Rose beetle in Vanuatu

Bob Weller (Senior Plant Quarantine Officer) reported the identification of *Adoretus versutus*, the rose beetle, as the cause of extensive damage to a large range of plants in Vanuatu. The pest was first detected in the vicinity of Bauerfield Airport, Efate, and he suggests that it may have been introduced into Vanuatu on aircraft.

The insect is a small scarab beetle 10-12 mm in length with an almost completely nocturnal habit. Detection and identification of the pest took almost a year because during daylight hours it disappears, probably into grass or humus. Insect damage to leaves results in a 'shot hole' symptom in all crops attacked, and it has been causing extensive damage to cocoa, coffee, yams, Island cabbage (*Hibiscus* spp.), *terminalia*, rose and *Hibiscus tiliaceus*.

Adoretus versutus, according to Commonwealth Institute of Entomology (CIE) distribution maps, occurs in the South Pacific Region in Fiji, American and Western Samoa, Tonga, and Wallis Island, and has been detected by New Zealand Quarantine on items and aircraft from some of these countries.

AID PROJECTS

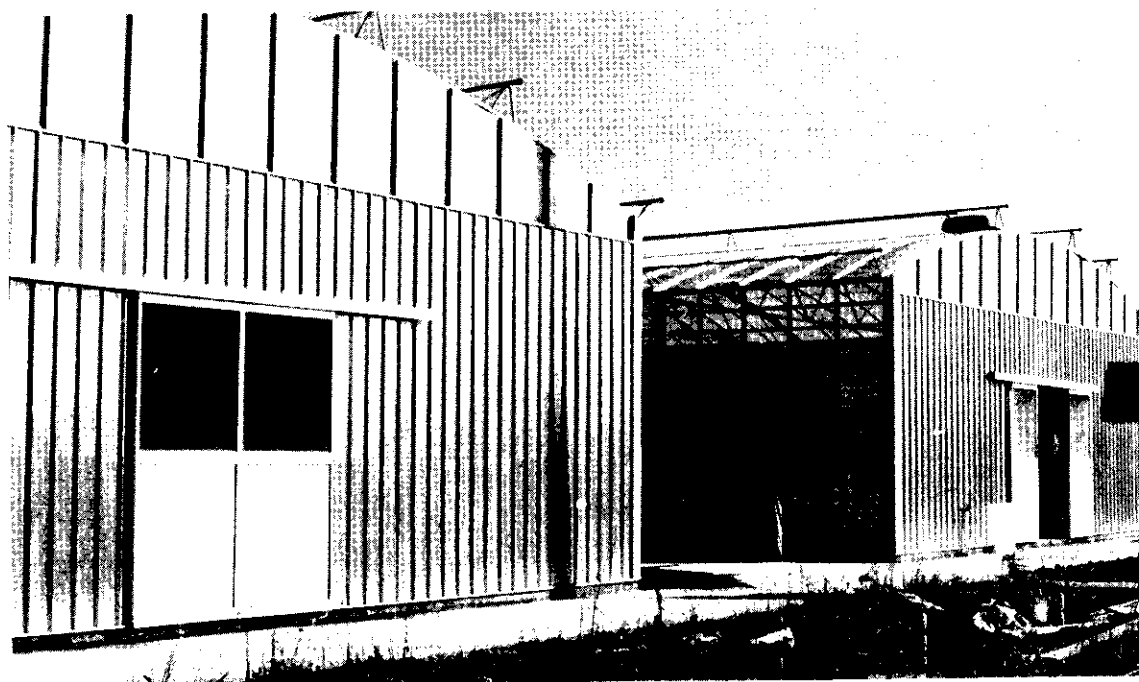
In May 1983, Pat Dale and Eric McKenzie from DSIR, New Zealand, were in Vanuatu to complete a pest and disease survey of the islands. (Vanuatu was not included in the recent UNDP/SPEC survey.)

The Australian Development Assistance Bureau, the aid agency of the Australian Government, has been utilising the plant quarantine branch of the Department of Health as managing agents for its quarantine aid projects in the South Pacific. At present Australia is assisting Kiribati, Vanuatu, Fiji and Tonga in direct assistance and has given technical assistance to Western Samoa.

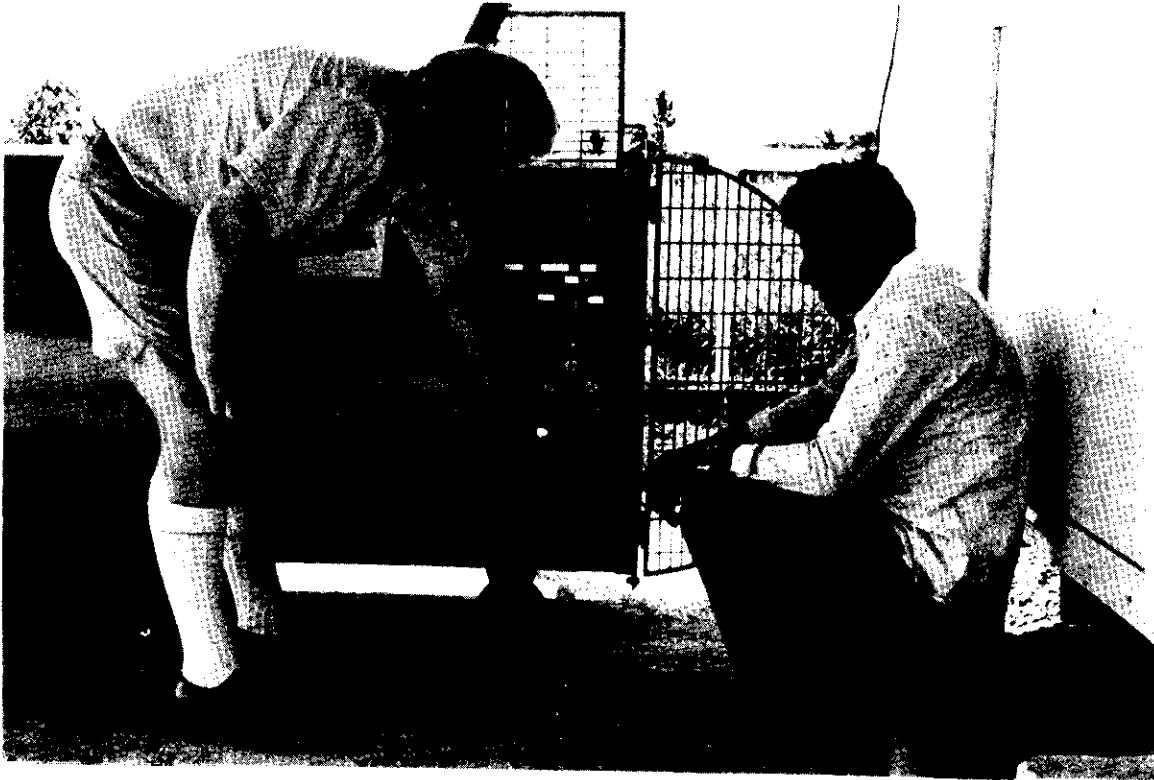
In early 1983, George Khair from Australian Plant Quarantine visited Kiribati to install fumigation equipment and instruct Kiribati quarantine personnel in its use.

In August 1982, Bob Ikin from the same organisation (currently SPC Plant Protection Officer) visited Tonga and Fiji with Des Wallace, Technical Officer from the Plant Quarantine Station, Canberra, to install fumigation equipment at Fua'amotu Airport and Queen Salote wharf and to examine the post-entry quarantine house at Viani for damage following cyclone Isaac. Only minor damage was sustained and Des Wallace returned in October to install replacement roofing and other items.

Whilst in Fiji, Bob Ikin and Des Wallace installed the fumigation door and all the gas dispensing and measuring equipment to the Nadi fumigation building and demonstrated its use. A small fumigation chamber was also installed at the post-entry quarantine area at Koronivia and they were present to see the beginning of construction of the two screenhouses at the site. The two 20 m x 10 m screenhouses were completed in September and Des Wallace installed electrical fittings on his round trip from Tonga. A selection of appropriate equipment for the small laboratory at Koronivia was also supplied in this aid package.



Two 20 m x 10 m screenhouses, located at the Koronivia Post-Entry Quarantine Station, provided by Australian aid.



Bob Ikin (SPC Plant Protection Officer) demonstrates to Ajmad Ali, Quarantine Officer, Fiji Ministry of Agriculture, the correct amount of liquid Methyl bromide required for dispensing into the chamber. The chamber is the latest in a continuing line of development by Australian Plant Quarantine. This model, developed mainly by Des Wallace, has electrically operated valves.



Laboratory building within the Koronivia Post-Entry Quarantine Station showing location of fumigation chamber.

In Vanuatu, Des Wallace and Bob Paton, also from Canberra, did some major modifications to the fumigation facilities which had been installed many years ago by the French Government. Bob Weller has extended his contract in Vanuatu where he is Senior Quarantine Officer.

In association with the aid projects, training is carried out on site and also in Australia. During 1982, Bal Ram Singh, Chief Agricultural Quarantine Officer, Fiji, visited Canberra, Darwin, Melbourne and Sydney, to gain experience in administrative procedures and post-entry quarantine operations.

Moses Tari and Dumont Boe, quarantine inspectors from Vanuatu, also went to Australia and joined a local training course in Melbourne which is specifically designed for recent recruits to the quarantine service.

COURSES

Sub-Regional Training Course in Methods of Controlling Diseases, Insects and Other Pests of Plants in the South Pacific – Tonga – Viani, October 1982

This course, postponed from May 1982 because of the damage to Tonga by cyclone Isaac, had participants from most Pacific Island countries. The course was sponsored by the Consortium for International Crop Protection (CICP), German Agency for Technical Co-operation (GTZ) and the South Pacific Commission (SPC) and was held at the recently completed agricultural laboratory/training complex at the Government Farm at Viani. The course ran for three weeks and covered most aspects of crop protection relevant to the South Pacific Region. Some considerable emphasis was placed on the use of 'integrated pest control' involving careful use of pesticides, cultural methods and biological control. Lecturers and demonstrators from the Pacific, New Zealand, Australia and the United States of America, were involved. The course notes are being produced by Dr Dale Bottrell of CICP and will be available in the future.

Australian Plant Quarantine Course – Riverina College of Advanced Education – 1982

Over the last decade the plant quarantine branch of the Australian Department of Health has organised three-month long courses in plant quarantine for students from Africa, Asia and the Pacific Region. In 1982, the organisation of this course was delegated to the Riverina College of Advanced Education and several Pacific Islands quarantine personnel attended: Cook Islands, Nooroa Tokari; Fiji, Jagdish Chandra and Aritema Rakulu; Papua New Guinea, Palalau Sion; Solomon Islands, Cameron Rini Eta; Tonga, Mosese Fonohea; Western Samoa, Tapene Afamasama.

The course embodied an outline of the scientific principles of crop protection with lectures in basic biological disciplines. Specialist topics were covered by experts from the Riverina College and State Departments of Agriculture. Emphasis on plant quarantine was given through lectures by Australian Plant Quarantine staff in Canberra and other locations. The students also travelled extensively in South-eastern Australia and visited the Plant Quarantine Station in Canberra and plant quarantine operations at ports and airports in Melbourne and Sydney.

The Riverina College is also planning a four-year Associate Diploma in Agricultural Protection by correspondence that would be suitable training for anyone working in the plant protection area. Negotiations are proceeding by which the residential qualification required for six to eight days at the Wagga Wagga campus can be performed at local agricultural colleges.

Further details can be obtained from Dr R. Banyer, Riverina College of Advanced Education, P.O. Box 588, Wagga Wagga, New South Wales 2650, Australia.

PUBLICATIONS

The South Pacific Commission has published *Advisory Leaflet 14* (1982) entitled 'Fruit-Piercing Moth' *Othreis fullonia*, an economic and migratory insect which is widespread in the area of the Pacific but which does not occur in Kiribati, Marshall Islands, Nauru, Pitcairn, Tokelau or Tuvalu. The leaflet was prepared by Dr Peter Maddison, DSIR, New Zealand, and illustrations were obtained from DSIR, and ORSTOM, Paris.



Fruit-piercing moth.

PATIENCE IS A VIRTUE – POSSESS IT IF YOU CAN

Of interest to all in the Pacific is a recent report on research on the elucidation of the cause of lethal yellowing in coconuts, a programme which in all has taken twenty years to come up with an answer.

Lethal yellowing has been known as a serious disease in coconuts in Jamaica for many years, and within the region the rapid spread of the disorder over short and long distances and the susceptibility of many widely grown coconut varieties constituted a grave threat to coconut production in the Caribbean and worldwide.

Following the sudden outbreak of the disease in the heart of the coconut-growing areas of Eastern Jamaica in 1961, a task force, initially under technical assistance from FAO and some US aid, was assembled to find out what was the cause of the problem and possibly to determine the vectors involved (if any).

Until 1972, several FAO experts worked on the project with varying degrees of success; most of the work eliminated rather than identified potential pathogens and vectors.

In 1972, the Overseas Development Administration (ODA) took over the project on behalf of the Jamaican Coconut Industry Board and began to investigate the possibility of the disease being caused by a mycoplasma-like organism (MLO) with an insect vector, after preliminary results had noted the effectiveness of antibiotic treatment in the remission of typical symptoms. The major problem with the disease was that it could not be mechanically transmitted!

Now, after almost another ten years, the ODA workers are prepared to postulate that an MLO is the cause of lethal yellowing and that the fulgorid vector *Myndus crudus* is the likely culprit. Unfortunately, they have not been able to culture the MLO and identify it positively and *M. crudus* has only occasionally transmitted the disorder and is *not* found in high populations in coconuts.

Much more research still needs to be done on this disease, particularly as Jamaica has a large gene bank of coconuts used in its breeding programme, and this could be at some time distributed worldwide.

Fortunately, lethal yellowing does not occur in the Pacific Region, only in the Northern Caribbean (Bahamas, Cayman, Dominican Republic, Haiti and Puerto Rico). Other diseases of unknown etiology, which could be similar to lethal yellows, have been reported in East Africa, India, Malaysia, Indonesia and the Pacific. Therefore, the sooner a method of positively identifying lethal yellows is found the sooner nations throughout the world will be able to apply the technique to their own problems.

In September 1982, J.F. Julia of the Institut de Recherches pour les Huiles et Oléagineux (IRHO), Vanuatu, published the results of work on a Vanuatu disease of coconuts which has devastated introduced coconut lines in that country. It is evident from the results that this disease may have some similarities with lethal yellowing because it, too, is fatal in susceptible clones and is spread by a fulgorid insect *Myndus taffini*, a new species. It is hoped that further work will permit more rapid identification of the disorder and possible vector control measures.

REFERENCES

- Dabek, A.J., S.J. Eden-Green and H. Waters. *Lethal Yellowing of Coconuts Research Scheme, Jamaica*. United Kingdom Overseas Development Administration Technical Summary Report on Research 1972-81.
- Julia, J.F. (1982). *Myndus taffini* (Homoptera Cixiidae) vector of foliar decay in coconuts in Vanuatu. *Oléagineux* 37 (8-9): 409-414.

A REMINDER

News of regional plant protection interest is needed for our next edition. We want to hear about:

Changes or additions to plant protection staff.

Changes or additions to legislation (e.g. plant quarantine or pesticide legislation).

News of new research programmes, recent important research findings, etc.

News of aid programmes in plant protection.

Recent publications on any aspect of plant pathology, entomology, nematology, weed control, vertebrate pests, etc.

New records of, or important outbreaks of, pests, diseases and weeds.

New biological control agents introduced for testing.

New local recommendations for pest, disease and weed control.

News of training courses held or to be held.

News of meetings, seminars, etc.

News of local staff in training overseas and of visiting scientists.

Such information should be sent to the SPC Plant Protection Officer, Box 2119, Suva, Fiji.



AGRICULTURE

ISSUED IN THIS SERIES

1. Annual Conference of O.I.E. held in Paris, 13th-18th May 1968. Report of South Pacific Commission Observer: September 1968. *Livestock Production and Health*
4. 'A' Level: Australia's Notification on Bovine Pleuropneumonia Regulations. March 1968. *Plant and Animal Quarantine*
5. Study Tour to Noumea, Brisbane, Territory of Papua and New Guinea and British Solomon Islands Protectorate. March 1969. *Tropical Crops*
6. 'A' Level: Agricultural Education - Bulletin No. 1. April 1969. *Agricultural Education and Extension*
9. 'A' Level: Agricultural Education - Bulletin No. 2. May 1969. *Agricultural Education and Extension*
10. 'A' Level: Agricultural Education - Bulletin No. 3. November 1969. *Agricultural Education and Extension*
11. Agricultural Extension Workshop - Western Samoa. November 1969. *Agricultural Education and Extension*
12. Asian-Pacific Weed Science Society. December 1969. *Tropical Crops*
13. The Status and Potential of the Chilli Industry in the Solomon Islands. December 1969. *Tropical Crops*
22. Breadfruit Diseases in the South Pacific. June 1970. *Tropical Crops*
23. Second World Consultation on Forest Tree Breeding. June 1970. *Forestry*
24. Agricultural Research in the South Pacific. July 1970. *Tropical Crops
Livestock Production and Health*
25. Crown-of-Thorns Starfish. July 1970. *Fisheries*
26. Counter-Attack - Crown-of-Thorns Starfish. September 1970. *Fisheries*
28. Asian Coconut Community. January 1971. *Tropical Crops*
29. O.I.E./F.A.O. Regional Conference on Epizootics in Asia, the Far East and Oceania. January 1971. *Livestock Production and Health*
30. Plant Pest Control. January 1971. *Tropical Crops
Plant and Animal Quarantine*
31. The Effect of Cultural Method and Size of Planting Material on the Yield of *Colocasia esculenta*. February 1971. *Tropical Crops*
33. Weed control. August 1971. *Tropical Crops*
34. Taro. August 1971. *Agricultural Research*
35. Transmission of Virus Samples. August 1971. *Plant and Animal Quarantine*
37. Training Programmes for Out-of-School Rural Youth. March 1972. *Agricultural Education and Extension*
43. The Fifth FAO Regional Conference on Animal Production and Health in the Far East. December 1972. *Livestock Production and Health*

- | | |
|---|---|
| 47. Useful References for Animal Production and Agricultural Extension Workers of the South Pacific Commission territories. March 1973. | <i>Animal Production</i> |
| 50. South Pacific Agricultural Extension Survey - 1967. April 1973. | <i>Agricultural Education and Extension</i> |
| 52. Fruit Cultivation. June 1973. | <i>Tropical Crops</i> |
| 54. Shellfish Poisoning in the South Pacific. February 1974. | <i>Fisheries</i> |
| 55. Special Project - Vegetable Production in the South Pacific. January 1974. | <i>Tropical Crops</i> |
| 56. Comments on Experiments Recently Undertaken in some Pacific Islands on certain varieties of Vegetables. March 1974. | <i>Tropical Crops</i> |
| 58. Some Aspects of Pasture Research and Development. April 1974. | <i>Livestock Production</i> |
| 62. Potential of Animal Feed Production in Western Samoa. November 1974. | <i>Livestock Production and Health</i> |
| 63. Names of Food Plants in Niue Island (South Pacific). November 1974. | <i>Tropical Crops</i> |
| 64. Some Effects of Temperature on Pasture Germination and Growth. April 1975. | <i>Livestock Production and Health</i> |
| 65. The Marketing of Fresh Vegetables. May 1975. | <i>Vegetable Production</i> |
| 66. Special Project on Vegetable Production - Results of 1974 Variety Trials. June 1975. | <i>Tropical Crops</i> |
| 67. Principal 1974 Vegetable Growing Results for the Pirae Agricultural Research Station, Tahiti (French Polynesia). June 1975. | <i>Tropical Crops</i> |
| 68. Evaluation of Broiler (Meat Chicken) Performance. September 1975. | <i>Livestock Production and Health</i> |
| 71. Preliminary Information on the Intestinal Parasites of Livestock in Tongatapu, Tonga. March 1976. | <i>Livestock Production and Health</i> |
| 72. Expérimentation fourragère en Polynésie française. Mars 1976. (<i>Will not be issued in English</i>) | <i>Livestock Production</i> |
| 73. Vegetable trials in 'Motu' environment, Huahine (French Polynesia). March 1976. | <i>Tropical Crops</i> |
| 76. Results of 1975-76 soya bean trials in certain South Pacific Territories. October 1976. | <i>Tropical Crops</i> |
| 80. Special project for the development of vegetable production in the South Pacific. April 1978. | <i>Vegetable Production</i> |
| 82. Red ring disease and palm weevil - threats to the coconut palm. July 1979. | <i>Plant Protection</i> |
| 83. Coconut disease caused by <i>Marasmiellus cocophilus</i> in Solomon Islands. October 1979. | <i>Plant Protection</i> |
| 84. Plant Protection News. January 1980. | <i>Plant Protection</i> |
| 85. Using the predatory ant, <i>Oecophylla smaragdina</i> , to control insect pests of coconuts and cocoa. June 1980. | <i>Plant Protection</i> |
| 86. Plant Protection News. August 1980. | <i>Plant Protection</i> |
| 87. Trials for village Solar Driers in the South Pacific. August 1980. | <i>Agriculture</i> |

88. Plant Protection News. February 1981.
89. Plant Protection News. January 1982.
90. Plant Protection News. April 1982.

Plant Protection
Plant Protection
Plant Protection

