INFORMATION WANTED
A FRUIT GALL WASP OF CITRUS IN PAPUA NEW GUINEA

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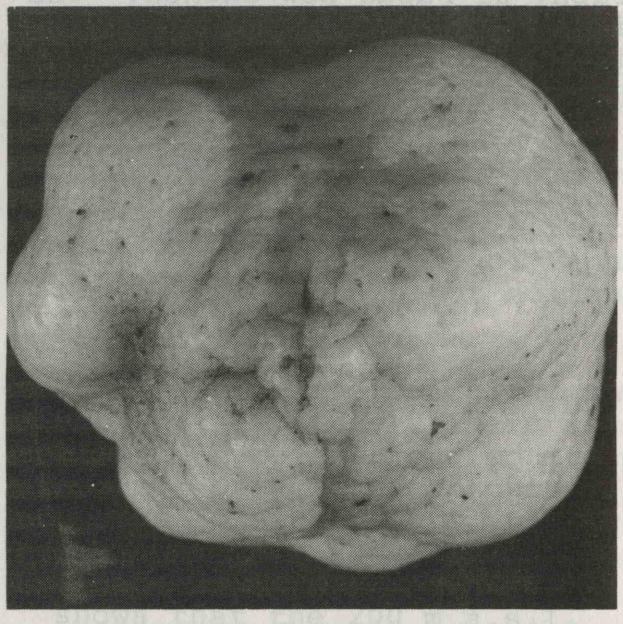
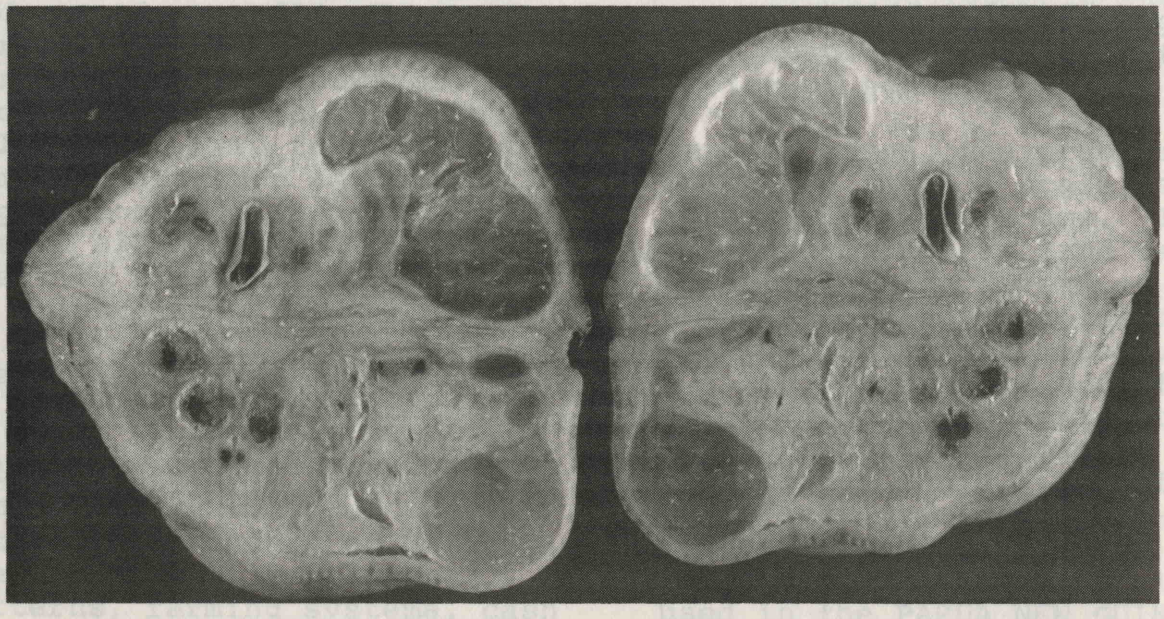
INTRODUCTION

The fruit of the West Indian lime, *Citrus aurantifolia,* is sold at markets in Papua New Guinea and is commonly called muli or sapora. People who grow lime trees in the Port Moresby area often find that some of the fruits become very misshapen as they mature. When these misshapen fruit are cut open, the black remains of dead insects are often found lying in tough, hard, circular patches.

The damage is caused by a small black wasp. This wasp has not been reported from other South Pacific countries. It is possible that it is found only on the island of New Guinea.



The deformed fruit of a mature West Indian lime which has been infested by the wasp

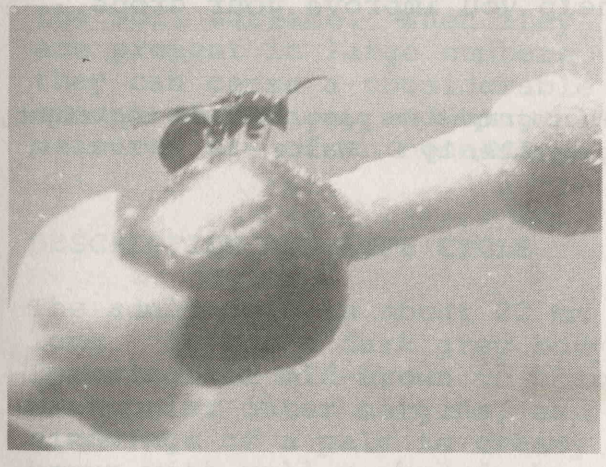


The same fruit as in the picture above, cut in half to show the galled tissue and the remains of dead wasps

Within Papua New Guinea it has been collected from limes at Marshall Lagoon, Boroko, Laloki and Bereina in Central Province; from Ferguson Island in Milne Bay Province; and from Afore in Northern Province. It has been recorded only from West Indian limes although there is one unconfirmed report of it being present in a grapefruit.

BIOLOGY AND IMPORTANCE

The female wasp lays its eggs in the developing fruit of the lime flower, usually when the petals are dropping and the young fruit is exposed.



A female wasp about to lay eggs into the young developing ovary of a lime flower. The petals have dropped

The larvae, which hatch from the eggs, cause the developing fruit to form gall tissue (abnormal growth) around them. Thus each larva comes to lie in a small cavity surrounded by soft gall tissue. The larvae feed and grow within these galls and finally pupate (enter a resting stage) within the enlarged cavity. Several batches of eggs may be laid in one fruit and as many as 165 developing larvae have been found in a single young fruit weighing only 4.5 g.

A cross section of a young lime showing developing wasp larvae, living in soft fleshy galls which have pushed aside the juicy flesh of the fruit

When the adult wasps emerge from the pupal stage they chew a tunnel through the gall tissue to the outside of the fruit. The females fly off to seek new fruit in which to lay their eggs. The abandoned fruit continues to grow but becomes more and more misshapen; the gall tissue hardens and the exit holes become surface scars. The juicy edible flesh of the lime is very reduced and may even be completely absent in fruit that has been heavily infested.

Usually not all the adult wasps can make their way out of the fruit and some die within their galls. These are the black bodies found when the fruit is cut open.

SPECIMENS AND INFORMATION WANTED

To help with mapping the distribution of this pest insect, the author would be grateful to receive any citrus fruit which

is misshapen as described in this article and illustrated in the photographs on page 128.

Put the fruit into a plastic bag which has no holes in it, and tie a tight knot at the top of the bag to close it. Then wrap it in a strong paper bag or carton and post to:

Dr. E.J. Brough
Biology Department
Box 320 University P.O.
WAIGANI
National Capital District.

All postage costs will be refunded.

Information about the fruit is also needed. Write this in pencil on a piece of paper and put it into the paper bag or carton. The information needed is:

1. The type of citrus tree from which the fruit came, i.e. lime, orange, grapefruit, etc.

2. The name of the nearest village or post office, or plantation.

3. The name and address of the person who found the fruit.

Your help in providing this information will assist in finding a way to control this very destructive insect pest, and help you improve your crops.

Photographs on page 128 and top right, page 129, by D. Waite