Plant Protection Service
Secretariat of the Pacific Community

Pest Alert

No. 23 **October 2001**

Bactrocera philippinensis and *Bactrocera occipitalis* recorded in Palau

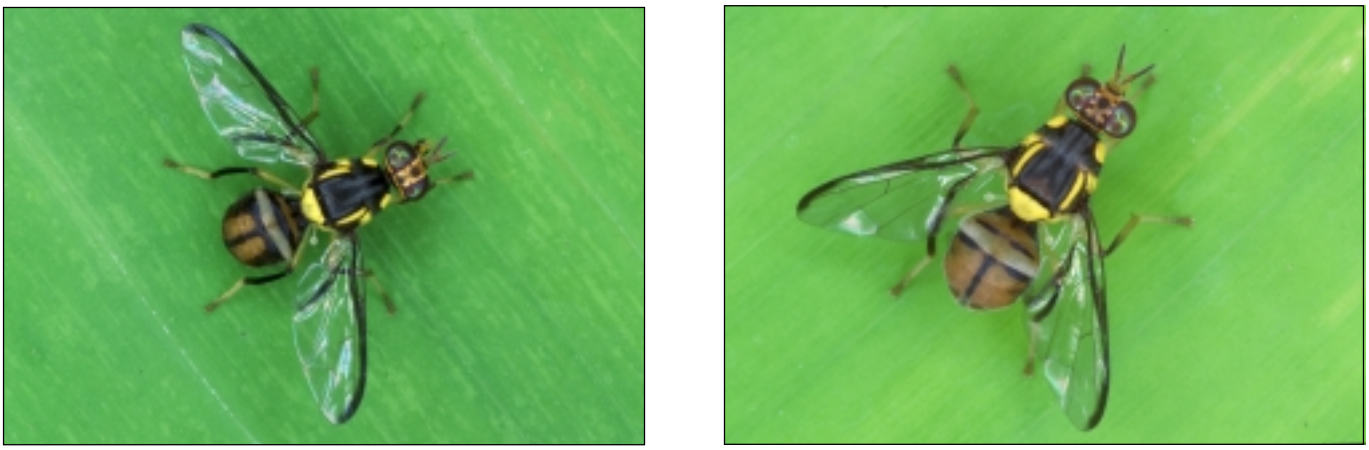
In August 2001, the Government of Palau notified the SPC Plant Protection Service of the confirmation of the presence of two fruit fly (family Tephritidae) species, *B. philippinensis* (Drew & Hancock) and *B. occipitalis* (Benzi), in Palau. Initial identifications made in 1996 by Professor Richard Drew of Griffith University indicated that male flies from traps were oriental fruit fly (*B. dorsalis* (Hendel)). In early 2001, fruit fly specimens, mainly female flies reared from crops such as guava (*Psidium guajava*), starfruit (*Averrhoa carambola*) and *Terminalia catappa*, were sent to Professor Drew for the purpose of confirming the species present before final arrangements were made for an eradication effort. The results confirmed the presence of *B. philippinensis* and *B. occipitalis*. No oriental fruit fly specimens were present in the samples submitted and, as the trapping and fruit surveys were extensive, it was deduced that oriental fruit fly was not in fact present.

B. philippinensis and *B. occipitalis* belong to the *dorsalis* complex and are closely related to oriental fruit fly, Asian papaya fruit fly (*B. papayae* Drew & Hancock) and carambola fruit fly (*B. carambolae* Drew & Hancock). Fruit fly species in the *dorsalis* complex are the most economically important fruit fly pest species in Asia and Southeast Asia. There are 52 species in this complex from the Asia and Pacific region.

B. philippinensis is present in the Philippines and is known to attack papaya (*Carica papaya*), mango (*Mangifera indica*), *Syzygium malaccense*, Breadfruit *Artocarpus altilis* and *Pouteria duklitan*. The presence of *B. philippinensis* in Palau has extended its distribution to the Pacific. *B. occipitalis* occurs in the Philippines and Borneo. It has been recorded from mango and guava. Both species are attracted to methyl eugenol. Although their current host ranges are limited to the hosts listed, they are likely to have wide host ranges, similar to that of oriental fruit fly and therefore, are potentially serious pest species.

An eradication program has been proposed for *B. philippinensis* and *B. occipitalis* based on sound crop hygiene (i.e., destroying fallen, unwanted fruits) in farming and urban areas, Male Annihilation Technique, and, where necessary, application of protein bait sprays. Meanwhile, a public awareness program targeting the travelling public has been put in place. A vigilant quarantine surveillance program is also operating. The commencement of the eradication program is subject to funding approval by the Palau Government.

The differences between male specimens of the two species and oriental fruit fly are very difficult to determine using the normal microscopic examination. The differences are evident only by examining female flies or by using DNA analysis. To assist in future identifications of taxonomically similar species, such as those belonging to the *dorsalis* complex, DNA analyses of specimens from Palau and Philippines are being performed at Lincoln University in New Zealand.



B. occipitalis (left) and B. phillipinensis (right) Photo: Anthony O'Toole.

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Communications of pest and disease incidents of interest to the Pacific region should be sent to: **Plant Protection Service**, Secretariat of the Pacific Community, Private Mail Bag, Suva, Fiji Islands. Tel:(+679) 370733; Fax: (+679)386326; email:pps@spc.int