

mosaic disease in California⁵. A more commonplace and apparently similar case to which Dr. R. Markham has directed my attention is that of tomato 'fern-leaf' disease, which may occur in a high percentage of plants without any aphid colonies.

It follows that the key considerations affecting the virus-spreading efficiency of a given aphid species are its ability to transmit the virus, and the abundance and activity of its winged forms, rather than its potentialities as a direct pest of the crop. Now *Myzus persicae* seems to be an outstandingly restless aphid compared with, for example, *Aphis rhamni* Fonsc. and *Aphis fabae* Scop., judging by the relative frequency with which their nymphs are found abandoned by the winged mothers. If we exclude *Myzus persicae*, and assume that most other aphids are considerably less inclined than it to fly away again after alighting on a suitable plant, then it seems that the aphids and plants best suited to one another would not form the best system for virus spread, especially if the aphids can pick up and hand on the virus in short feeding periods. Among the winged aphids available and capable of transmitting the virus, those species also capable of becoming serious pests would be at some disadvantage, as virus-spreaders, compared with species less well adapted to the given plants. Those kinds or conditions of plants which were more susceptible to colonization by virus-transmitting aphids would have some advantage, in resisting virus spread, over plants more resistant to colonization. These points may be worth keeping in mind not only when seeking the insect vectors of plant virus diseases, but also when seeking to control the diseases by cultural or plant-breeding methods.

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¹ Doncaster, J. P., and Gregory, P. H., "The Spread of Virus Diseases in the Potato Crop" (London, 1947).

² Heinze, K., *Nachr. Biol. Zent. Braunschweig*, 1, 3 (1949).

³ Broadbent, L., *Ann. App. Biol.*, 36, 334 (1949).

⁴ Broadbent, L., *Ann. App. Biol.*, 35, 379 (1948).

⁵ Dickson, R. C., Swift, J. E., Anderson, L. D., and Middleton, J. T. *J. Econ. Ent.*, 42, 770 (1949).

Recent Irish Records of Rare Fish

WITH reference to Mr. Colin Matheson's records of rare marine fish in British waters¹, it is worth recording that on October 11, 1949, a globe-fish (*Lagocephalus lagocephalus* L.) was found dead at the pier, Dingle, County Kerry. Two days previously it had been seen apparently swimming aimlessly around. In the meantime it had received several shot wounds. It is interesting to note that, according to the *Fishing News*², another specimen of this species was found off Mousehole Harbour in Cornwall, it having been seen in similar circumstances to the Dingle specimen a few days earlier.

Two specimens of the file or trigger-fish (*Balistes caprisicus* Gmelin) were taken on October 31, 1947, five miles south of Dingle Harbour and on November 18, 1948, five miles south-east of the same place.

Only two previous Irish specimens have been recorded. On March 30, 1948, a boar-fish (*Capros aper* Lacep.) was captured in Dingle Bay. This species has been recorded on only a few occasions from Irish waters.

A specimen of an even rarer species *Luvarus imperialis* Rafinesque was taken off Castletownsend, County Cork, on July 27, 1948. It was identified by several people; but unfortunately it was not preserved. A long-finned tunny (*Orcymus germo* Day) was taken near Brandon Creek, west of Dingle, on September 16, 1947, and although the species is common in the Mediterranean and more southerly waters of the Atlantic, it has only been recorded three times from Irish waters. Ray's bream (*Brama raii* Bloch), which has been recorded a few times previously from the Irish coast, was represented by two specimens taken at Castletownsend and Dingle respectively, on October 25, 1948, and November 15, 1948.

Finally, the sting ray (*Trygon pastinaca* L.), which has been recorded only a few times in Irish waters, was noted twice, on November 19, 1947, and February 16, 1948, again in Dingle Bay. Most of these specimens of rare Irish fish have been deposited in the Natural History Section of the National Museum, Dublin.

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¹ *Nature*, 165, 193 (1950).

² *Fishing News*, Nov. 6, 1949.

A Little-known Tyroglyphoid Mite, *Histiostoma polypori* (Oud.), and its Association with the Earwig, *Forficula auricularia* Linn.

MICHAEL¹ described only four species of the genus *Histiostoma* from the British Isles. Of these, *H. pulchrum* Kramer and *H. spiniferum* Michael have been renamed as *Sellea pulchrum* and *Wichmannia spiniferum* respectively². I found the hypopi of *Histiostoma polypori* (Oud.) on the body of the common European earwig, *Forficula auricularia* Linn., in Edinburgh, and all its stages were reared in the laboratory of the Department of Zoology there. Hence *H. polypori* is the third valid species of the genus *Histiostoma* to be recorded from the British Isles. Oudemans first described this species in 1914 as *Anoetus polypori* and gave an insufficient description based only on the hypopus.

The hypopus stage of Tyroglyphoid mites has been regarded by various authors (like Vitzthum³ and Solomon⁴) as a migratory phase the association of which with the vector insect was only temporary. In the case of *H. polypori*, the infection of hypopi on the body of the earwig was found to be very heavy in the region of the head and the mouth-parts, and mere numbers in heavy infestations interfered with the feeding and locomotion of the host. The hypopi remained attached to the nymphs and adults of the earwig until the hosts died or until a favourable situation was encountered, when they dropped off and moulted into deutonymphs to form a flourishing colony. Hypopi cling to nymphs of *F. auricularia* migrated to the new cuticle of the