

DIOSCOREA PISCATORUM OR TUBA-UBI, A FISH-POISON.

Dioscorea piscatorum, Prain and Burkill, is a newly published name for a plant which appeared in Mr. Ridley's *Materials for a Flora of the Malay Peninsula, Monocotyledons*, 2, (1907) p. 84, as *Dioscorea* sp. He had made acquaintance with it from a sterile herbarium specimen collected by Mr. A. D. Machado of the Kemuning Estate in Perak; and then about the same time a reward was offered at an Agri-Horticultural exhibition in Kuala Lumpur for a collection of such fish-poisons as act like Derris; and in one of the competing exhibits was a tuber labelled "tuba-ubi" which Mr. Ridley, acquiring it for the Botanic Gardens, Singapore, identified as the *Dioscorea* collected by Machado (*Agric. Bull. Straits and F. M. S.*, 7, 1908, p. 443). He grew it until 1912; but it did not flower and no specimens were preserved. In 1915 a plant was found on Pulau Tiunan with the characters of Machado's; but it was impossible to get it into cultivation as it was in full growth. In 1921 herbarium specimens and tubers, corresponding closely, were got from Sibolangit in Sumatra. These are in cultivation in the Singapore Botanic Garden, and the piscicidal properties have been proved, as the following note shows. A tuber from Sibolangit was figured in this Bulletin in the plate opposite p. 4 of the current volume, under the title of "a spiny yam from Sumatra."

Half of a tuber about 15 cm. long was pounded up with water. The tuber was very fibrous and light reddish in colour; the juice was slightly milky, with a soapy froth, and of the same colour as the flesh. It was poured into a vessel 60 by 38 cm., into which water had been run to a depth of 10 cm. Eight fish of the species *Puntius binotatus* (Cuv. and Val.) of length varying from 6.5 to 10.5 cm., freshly caught from the Gardens lake, had previously been placed in the vessel, and were swimming about vigorously. When the juice of the tuber was poured in, the fish at once appeared uneasy. They swam round and round the vessel rapidly, and frequently came to the surface with open mouths; then their movements gradually became less and in under ten minutes they turned over, floating motionless for a few seconds at a time, showing their white lower surface. The quiescent periods grew longer, and after a few more minutes active motion was occasional, and only by slight vibrations of fins and tail. When in this condition they were transferred to fresh water, but the poison had gone too far to admit of recovery and in a few minutes more they were quite dead.

We are indebted to Mr. F. N. Chasen of the Raffles Museum for the identification of the fish.

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