A NEW FRUIT ROT DISEASE OF SINGAPURI VARIETY OF BANANA

During a local survey of the fruits in the markets and store-houses, an undescribed, severe soft rot of Singapuri variety of Banana was discovered and the causal organism was identified as *Fusarium solani*. The first symptom appeared on the skin of the fruit as scattered circular or elongated dark brown spots (Fig. I), ranging in size from small to 1·5 cm and as the disease progressed the entire fruit became soft and rotten (Fig. 2). The

1

2

Figs. 1–2. Fig. 1. Banana fruit showing natural infection. Fig. 2. Dissected fruit inoculated with *F. solani* showing internal rot.

pathogenicity of the isolate was confirmed by various inoculation experiments of which the Koch's postulates were fully satisfied.

The fungus identified as *Fusarium solani* (Martius) App. and Wolf. has been confirmed by Dr. S. P. Raychaudhuri, Division of Mycology, IARI, New Delhi.

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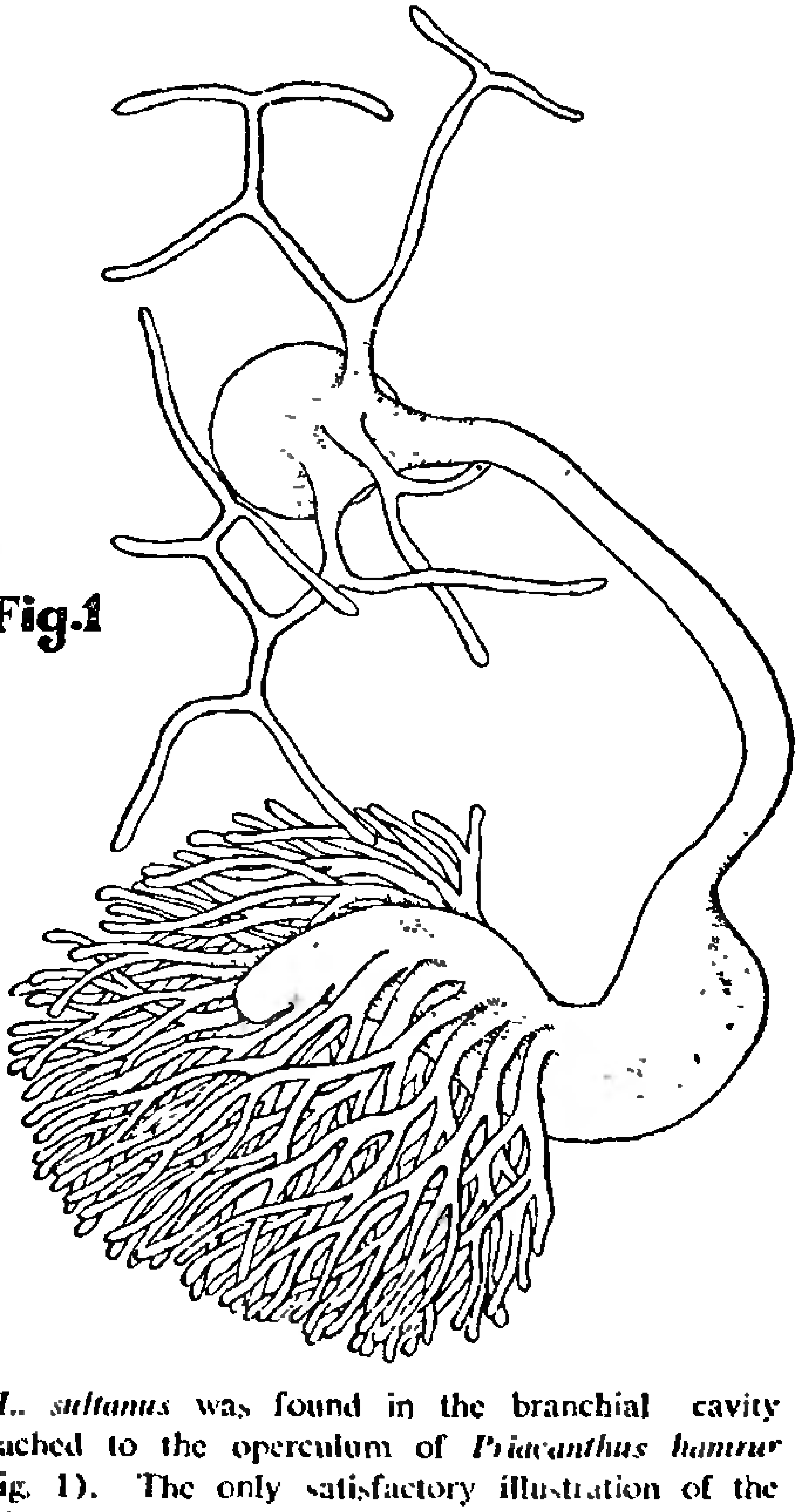
ON THE OCCURRENCE OF *LERNAEOLOPHUS SULTANUS* (NORDMANN) ON *PRIACANTHUS HAMRUR* (FORSKAL)

Lernaeolophus sultanus is a cosmopolitan species of copepod, parasitic on marine fishes[1-6]. This parasite has been recorded from the Atlantic coast of U.S.A., Mediterranean, West coast of Africa and has thus a very wide distribution. The present communication is the first record of this parasite from the Indian waters barring a record from Ceylon.

Fig.1



L. sultanus was found in the branchial cavity attached to the operculum of *Priacanthus hamrur* (Fig. 1). The only satisfactory illustration of the entire animal is that of Raibaut and Ktari[6], but the examination of the present material indicates that perhaps the specimens illustrated by them were not fully mature since the cephalic horns shown are shorter and less branched ; and the caudal processes fewer in number.

L. sultanus apparently exhibits variation in its external characters including shape of the body.

This is because as Kabata[3] observes "the definitive shape of the trunk of an adult female is an outcome of the adaptation to the particular type of host-parasite relationship, developed by individual genera. Although there are many and obvious exceptions to this rule, it can be maintained that the general trend is for the genera living exclusively on the outer surface of these hosts to retain a straight and elongate shape of the trunk. On the other hand it is probable that the genera with the sigmoid and flexed trunk have evolved in the more confined environment of the branchial chamber". How true this statement is can be seen by the shape of the body of the specimen illustrated here.

The cephalosoma of the parasite is directed towards the anterior end of the host and is completely buried in the opercular covering, and the attachment is made firmer by the dichotomously branched antlers present in the anterior side of the head. The branchial circulation of the gill filaments of *Priacanthus hamrur* can be occluded by the pressure exerted by the parasite. The presence of *L. sultanus* on the inner side of the opercular covering affects the movements of gills and reduce the efficiency of the outgoing respiratory currents. The trunk and the posterior processes, however, press against the gill filaments and lead to the eventual atrophy of many of the filaments.

The authors are grateful to Dr. N. K. Pillai, Professor, University of Kerala, for his kind assistance in the preparation of the illustration.

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GENETICS OF BOAT-LEAF, NON-SCENTED AND OPAQUE KERNEL MUTATIONS INDUCED IN RICE

In the course of an investigation on induction of mutations in different varieties of rice, three mutant characters showed segregation in M3 generation; based on segregation data, their pattern of inheritance was determined. One of the fine grain mutants, FG–14, induced in IR–8 (0·4% EMS treatment), segregated for boat-leaf plants in the proportion of 51 normal : 15 boat-leaf plants (3·4 : 1), and showed good fit to the expected ratio of 3 : 1 ($X^2 = 0\cdot185$; $P = 0\cdot5–0\cdot75$). The boat-leaf mutant showed a thicker midrib which might be responsible for providing the needed mechanical strength and holding the lamina wings at an angle of 45°. The boat-leaf phenotype along with associated complex of characters, *viz.*, lax panicle, long slender and awned grains, seems to be under the control of a recessive gene.

In the scented cultivar HR–47, a dwarf mutant (*d*2) with scented grains was recovered in M2 generation, in 0·007 M *d*ES treatment. In M3 generation, however, it segregated for plants with scented (109) and non-scented (32) grains (M3 ratio = 3·4 : 1; $X^2 = 0\cdot398$; $P = 0\cdot50–0\cdot70$) giving a good fit to monogenic ratio. The segregation pattern suggests that loss of scent is governed by a recessive mutation. This result is in agreement with those of earlier reports by Kadam and Patankar (1938)[1] and Jodan (1944)[2].

In M2 generation, the seed of a promising semi-dwarf mutant (Sd–4), induced by 0·4% EMS in the cultivar *Tellakattera* (with translucent grains), showed clear translucent grains. In M3 generation, a total of 6882 seeds from ten randomly selected Sd–4 plants were screened, out of which 5171 had translucent endosperm and the rest of 1711 had opaque endosperm; the observed ratio was 3·02 translucent : 1 opaque ($X^2 = 0\cdot059$; $P = 0\cdot75–0\cdot90$). Thus, opaqueness of the rice endosperm seems to be governed by a single recessive gene. Different workers, including Vander Stock (1910)[3], Parnell *et al.* (1922)[4], Ramiah *et al.* (1931)[5] and Nagai (1959)[6] have reported that the opaque character of endosperm is determined by a recessive factor.

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6264/75 Published by S. R. S. Sastry, Manager, Current Science Association, Bangalore-560006 and Printed at The Bangalore Press, Bangalore-560018.