ALTERNARIA MACROSPORA ZIMM. A NEW RECORD ON PASSION FRUIT (*PASSIFLORA EDULIS* SIMS.) FROM INDIA

DURING December 1975 a leaf spot was observed to be severe on purple variety of passion fruit at Horticultural Experiment Station, Chethalli. The disease symptoms were observed on the leaves and branches (Fig. 1). The disease appears on the leaves as small dark brown concentric spots which later enlarge and become irregular. In the later stages of the disease, yellowing of the leaves was also observed which resulted in premature drop. The disease symptoms on the branches are characterized by the production of dark brown lesions which result into the girdling effect and eventually death of the branches.

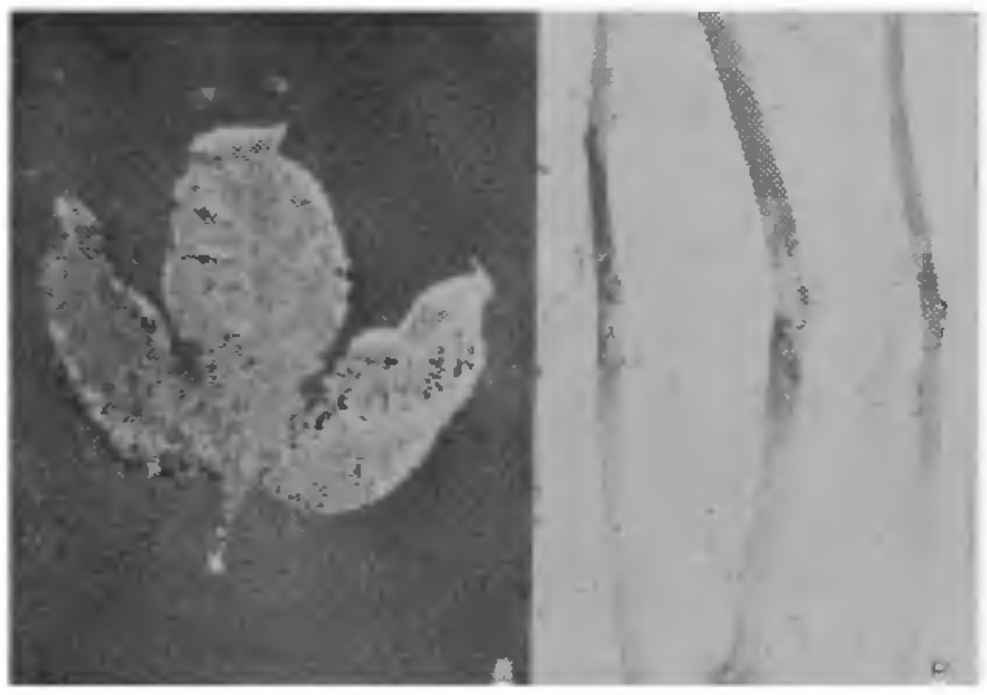

FIG. 1. Symptoms of *A. macrospora* on passion fruit, *a.* Leaf ; *b.* Branch.

The leaf spots and lesions on branches resulted in isolation of *A. macrospora.* The pathogenicity of the fungus wsa confirmed by spraying conidial suspension on two month old seedlings of purple passion fruit. The inoculated seedlings were kept in moisture chamber for 48 hours. Small flecks appeared on the fourth day. The larger dark brown lesions developed in 10 days and caused yellowing and defoliation of inoculated leaves in about two weeks. The branches were inoculated be syringe method using the conidial suspension. The characteristic lesion developed in 10–15 days resulting in girdling and finally death of the branches. Reisolation from the artificially inoculated plants yielded *A. macrospora.*

A similar disease of passion fruit called 'brown spot' has earlier been reported from Australia[1] and New Zealand[2] and caused by *Alternaria passiflorae* Simmonds. The disease caused by *A. macrospora*[3] on passion fruit reported in this communication is the first report from India. The culture has been deposited in the Commonwealth Mycological In titute, Kew, as IMI 196477.

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IN VITRO FLOWERING OF SHORT APICES OF *BOUGAINVILLEA* × *BUTTIANA* CV. 'LOUISE WATHEN'

IN contrast to several reports of shoot apices growing *in vitro* as single vegetative shoots or proliferating into several shoots or callusing and giving rise to vegetative organs/plantlets[1], there are only a few instances of their flowering, *viz., Cuscuta*[2,3], *Perilla*[4,5], *Pharbitis* and *Chrysanthemum*[6] and *Chenopodium*[7–9]. The shoot apex culture has been recommended[6,10], for better analysis of the biochemical nature of flower initiating/inhibiting substances, which is not yet fully understood. In the present communication are reported some preliminary results on *in vitro* flowering of shoot apices of *Bougainvillea* × *Buttiana* cv. 'Louise Wathen'.

Experimental

About 2 cm long shoot tips were taken from non-induced (vegetative) plants of *B.* × *Buttiana* cv. 'Louise Wathen', sterilized by treating with 0·1% $HgCl_2$ solution for 10–15 min. and thoroughly washed with sterile distilled water. From such surface-sterilized shoots, explants of about 2 mm long apices were excised and cultured in Murashige and Skoog's[11] nutrient agar medium supplemented with 0·8 mg/l kinetin and 0·5 mg/l IAA. The medium was adjusted to pH 5·8 and sterilized by autoclaving at 1·08 kg/cm² for 15 min. The cultures were incubated under 3000 lux fluorescent light for 15 hr. daily and at a regulated temperature of 27° ± 1° C.

The explants grew to rooted leafy shoots, which were maintained in aseptic culture by repeated subculture of their 2 cm long apices at 30-day intervals. After an incubation of 18 months, 20% of the cultures showed differentiation of bunches of flowers having good sized bracts of apricot-orange colour similar to that found in nature (Fig. 1).

However, the shoots resulting from the cultures of nodal stem segments of the flowered shoots, produced flowers after only 2 months' incubation. The difference in time taken to flower by the two types of explants is noteworthy. Although it is not possible to give an exact explanation to this fact, it appears that some metabolic changes took place in the tissue of shoot during subcultures, and the initial period of 18 months might have been necessary for the accumulation of some flower inducing substance/substances to threshold level.

FIG. 1. An *in vitro* flowering shoot of *B.* × *Buttiana* cv. 'Louise Wathen'. × 0·6 approx.

The presence of such substance/substances in the subsequent explants taken from the *in vitro* flowered shoots facilitated flowering, hence the resulting shoots flowered in just 2 months. Such assumptions find support from the work reported by Chauard and Aghion[12] on tobacco, where explants of stem taken from a young plant or from the basal region of the flower bearing plant and cultured *in vitro* formed vegetative buds, but those excised from inflorescence stalk formed flower buds. Proximity of the explant to the inflorescence decided the ratio of flower buds to vegetative buds. Thus, they contemplated the existence of a gradient of some "floriginic factor" in a decreasing order from apex to base in a flowering tobacco plant.

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SHORT SCIENTIFIC NOTES

On a Smooth Hammerhead Shark, *Sphyrna zygaena* (Linnaeus, 1758) New to Indian Waters

A mature female smooth hammerhead shark, *Sphyrna zygaena* (Linnaeus), 214 cm TL (Table I), was collected on 6-10-1975 from the hook and line fishing operated from the mechanised vessels off Porto Novo at a depth of 80–90 meters. Since hammerheads are identified from the shape of head and teeth structures only, the head has been preserved in the museum of the Marine Research Laboratory of Annamalai University, Porto Novo. No previous record of this species in Indian waters is available and so the present observation is of interest.

Range.—*S. zygaena* has been observed only in cooler waters of northern and southern Hemispheres (Gilbert[1], Map 2) being reported to occur in the U.S., Europe, Japan and Red Sea in the northern hemisphere and South America, South Africa, Australia and New Zealand in the southern Hemisphere. The present observation extends its distributional record to Indian waters.

Remarks: No previous record of *Sphyrna zygaena* has been made in Indian waters so far. Day[2] described *Cestracion zygaena* from the Malabar coast which he[3] later named as a junior synonym of *Zygaena malleus*. Fowler[4] and Misra[5] synonymised *Z. malleus* under