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## SHORT SCIENTIFIC NOTES

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### Haemosiderosis in a Moscovy Duck (*Cairina moschata*)

A female Moscovy duck dead at Nandan Kanan Zoo on June 22, 1970 revealed diffuse chocolate-brown areas of discoloration and multiple white circumscribed pinhead sized foci over the surface and substance of both the liver lobes. In addition, two non-parasitic cysts measuring 4.5 cm × 4.0 cm and 2 cm × 1.5 cm were noticed in the mediolateral aspect of the enlarged right lobe.

The haematoxylin and eosin stained sections of liver revealed that most of the hepatic cells particularly around the central vein and Von Kupffer cells in majority of lobules were overloaded with an amorphous yellow granular pigment masking the morphology of the cells. Perl's prussian blue stained sections confirmed that they were haemosiderin pigments. The hepatic cells which were free from the pigment revealed necrobiotic changes. In the periportal areas, there was extensive hyperplasia of bile ducts associated with proliferation of fibroblasts and infiltration of lymphocytes, plasma cells and macrophages. The capsule of the liver was markedly thickened and pigmented. Haemosiderin pigments were also noticed in the cytoplasm of epithelial cells lining the proximal convoluted tubules of the kidney.

Extensive biliary hyperplasia and hepatitis noticed in the present case indicate the possibility of some toxins circulating in liver originating from feed, like fungus contaminated nut meal which might be responsible for haemolysis of erythrocytes and consequent haemosiderosis in various organs.

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### *Polygonum plebejum* R. Br., A New Host of *Melonopsichium nepalense* (Liro) Zundel

In course of survey work during July 1971, the authors noticed several plants of *Polygonum plebejum* manifesting enlargement of stems and tumor-like spindle-shaped hard bodies. Microscopic examination revealed presence of smut spores inside hard bodies. There are several reports of *Melonopsichium nepalense* infecting *Polygonum* species<sup>1</sup>. Germination of spores together with other characters led to the diagnosis of the fungus as *Melonopsichium nepalense* (Liro) Zundel. So far there are no reports of this fungus species parasitising *P. plebejum*. Hence a brief description of symptoms and the causal agent is presented herewith.

Smut galls on infected plants formed primarily on the young stems and in leaf axils, but not on inflorescence. Immature galls were reddish purple in colour, irregular in shape, and soft in consistency. Such galls, at maturity, turned to carbonaceous, hard and spindle-shaped with many lobes. Size of galls varied from 1-30 mm long and 1-7 mm wide. Agglutinated black mass of smut spores was observed in locules of galls. Teliospores were dark in colour, minutely echinulated with epispore 1 μ thick, with spore size ranging from 10 μ to 15 μ.

Sincere thanks are due to Mrs. A. S. Nalini for identifying the host and to Dr. N. B. Kajjari, Chief Scientific Officer, Regional Research Station, Dharwar, for encouragement.  
Regional Research Station,      S. B. PURANIK.  
Dharwar-5, March 2, 1972.      D. M. KULKARNI.

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### Mango as a New Host of *Heliothis armigera* Hb. (Noctuidae—Lepidoptera) in Mysore

*Heliothis armigera* Hb. is a polyphagous insect, widely distributed with propensities on a variety of hosts. There is no record of this insect on mango (*Mangifera indica* L.).

During the months of January and February 1972, the caterpillars of *H. armigera* were noticed damaging the mango inflorescence at the Regional Research Station, Mudigere. The young caterpillars bore the floral buds and feed on the content. The caterpillars feed on the swollen disc and ovary of flowers thereby leading to drying up of the parts which look scorched and later on shed. The infected panicles become gappy. The larvae feed and develop on the blossom and migrate. Drop-pings, such as faecal pellets of the larva and floral parts, are seen on the stratum directly below the infested parts. The caterpillar develops different colour patterns after each moult. Artificial infestations were successful in producing natural symptoms.

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#### *Curvularia* Leaf Spot of Cotton in Maharashtra State

During routine survey for plant pathogens attacking cotton, the senior author observed during monsoon of 1971, some plants of Laxmi cotton (*Gossypium hirsutum*) grown in the field near Malinagar (M.S.) affected with a leaf disease. Individual spots were oval to oblong, benzo to wooden brown and surrounded by a typical yellow halo, initially measuring about 10-15 mm, later becoming irregular when coalesced with each other. Repeated isolations made from such spots yielded a pure-culture of a species of *Curvularia* which on the basis of gross morphological characters, dimensions of conidia and conidiophores agreed with a typical strain of *Curvularia lunata* (Wakker) Boedijn. Pathogenicity tests were successful with the pure culture of the isolate on the healthy leaves of Laxmi cotton, resulting within 72 hours after inoculation, the appearance of spots similar to those produced in nature. Reisolations from such spots always yielded a culture identical to that originally isolated. Review of literature<sup>1-9</sup> showed that the present report of the occurrence of *C. lunata* (Wakk.) Boed. on cotton plant constitutes the first record of the

disease from India. The authors are grateful to Dr. V. G. Rao of M.A.C.S., Poona-4, for help rendered in identification of the fungus.

Plant Pathological  
Laboratory,  
College of Agriculture,  
Poona-5, March 27, 1972.

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N. B. GADAGE.

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#### *Macrophomina* Stem Rot of Grapevine in Tamil Nadu

During January 1972, large scale drying of nine month old grapevine plants (*Vitis vinifera* L.) var. Muscat was noticed in many vineyards of Palladam Puliampatti, Coimbatore District. The infection is confined to the main stem below point of branching on the 'pandal' and it starts as a brown discolouration in the internodes above the soil and extends along the stem. The bark becomes hard, grey to greyish brown and numerous black irregular sclerotia are found embedded in the cortical tissue which peels off and gets shredded. Subsequently the entire vine gets dried up. The causal organism was identified as *Macrophomina phaseoli* (Maubl.) Ashby [Syn. *Rhizoctonia bataticola* (Taub.) Butl. *Sclerotium bataticola* Taub.]. The pathogenicity was proved by placing fungus culture on wounded and unwounded stems of young grapevine cuttings.

Grapevine has not been recorded as a host of this pathogen in India. Gagnotto<sup>1</sup> from Italy and Westcott<sup>2</sup> from U.S.A. have reported *M. phaseoli* as inciting grapevine.

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### Compatibility of Certain Seed Dressing Chemicals with Rhizobium

Legume seeds treated with rhizobia to get increased yields of crops are simultaneously treated with fungicides to eliminate seed borne pathogens. Present study has been taken up to find out whether the fungicides are detrimental to rhizobia or not. TMV-2 groundnut seeds treated with *Rhizobium* sp. and recommended doses of 0.1% wet cerasan (1 lit./kg), captan (2 g/kg) and thiram (2 g/455 g) were sown in pots having unsterilized soil. The seed surface and rhizosphere population or rhizobia were estimated (Table I).

TABLE I

Treatment	Initial population $10^5$ / seed	Seed surface population of rhizobium $10^5$ /seed 5th day	Rhizosphere population of rhizobium $10^5$ /g soil 10th day
Untreated	1.34	20.33	18.35
Rhizobium	1.34	45.00	27.16
Rhizobium + Wet cerasan	1.34	42.00	26.63
Rhizobium + Captan	1.34	26.00	25.99
Rhizobium + Thiram	1.34	31.33	26.01
C D.	..	15.90*	2.06†

\* Significant at 5% level.

† Significant at 1% level.

The results show that all the three fungicides did not affect the establishment and multiplication of rhizobia significantly on the seed surface

during germination and in the rhizosphere of young plants.

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### On Two Large Specimens of Saw Fish '*Pristis microdon*' Latham Captured off Crangannore

Landings of medium sized and large specimens of saw fishes are not uncommon along the Kerala coast. However, the specimens under report seemed to be worth mentioning due to their notable size and weight. They were caught off Crangannore by 'Blue Fin', training-cum-fishing vessel of the Central Institute of Fisheries Operatives, Cochin, during regular fishing cruises on 16-2-1972 and 21-2-1972 respectively.

The 93' training-cum-fishing vessel is fitted with modern sophisticated electronic navigational, communication and fish finding equipment. Fitted up with 600 BHP Alpha engine, the vessel is usually engaged in bottom trawling. The refrigerated fish hold has a capacity of about 48 tons. The vessel which is used for imparting the necessary sea training for the trainees of the institute can remain out in the sea for a period of 7 days at a time.

The specimen number 1 was caught at a depth of 15 fathoms between 0630 and 0830 hrs on 16-2-1972 and the specimen number 2 was caught at a depth of 14 fathoms between 1230 to 1700 hrs, on 21-2-1972. Both these specimens got trapped in the 450 meshes trawl net (garfil). It was reported that both the saw fishes were hauled on board the vessel with considerable difficulty and they were found struggling for a few hours by striking sideways with their formidable snouts. Immediately after the capture they attained a pale red colour which gradually faded. The colour on the back of the specimens was greenish grey. The specimens which were brought ashore intact were later identified as females of *Pristis microdon*. The authors were able to collect the following morphometric characteristics pertaining to individual specimen,

TABLE I

	Specimen No. 1	Specimen No. 2
Total length	538 cm	543 cm
Basal length of pectoral	62 "	54 "
Basal length of first dorsal	46 "	51 "
Basal length of second dorsal	30 "	32 "
Height of first dorsal	62 "	69 "
Height of second dorsal	59 "	63 "
Height of caudal (upper lobe)	86 "	91 "
Height of caudal (lower lobe)	49 "	54 "
Distance between first dorsal and second dorsal	61 "	64 "
Distance between eyes	29 "	31 "
Distance between nostrils	23 "	28 "
Length of Rostrum	115 "	114 "
Width of base of Rostrum	23 "	27 "
No. of teeth on Rostrum on each side	17	17
Wt. of Rostrum	6 kg	7 kg

The specimens were reported to have estimated weights of 434 kg and 442 kg respectively for specimens No. 1 and 2 as estimated and recorded at the Indo-Norwegian Project, Ernakulam.

It was observed that numerous spots were pronounced on the rostrum and formed a mosaic-like structure in both the specimens.

The authors express their deep gratitude to Shri M. C. Perumal, Director, for his valuable suggestions and permission to publish this note. We also express our appreciation to the skippers S/Shri K. V. Krishnan Nair and the crew for their active interest and team spirit in catching the specimens and bringing them ashore intact.

Central Institute of Fisheries Operatives, V. NARAYANA PILLAI.  
Cochin, March 25, 1972. V. S. RAMACHANDRAN.

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### Thermal Cyanophyceae from South Orissa

The occurrence of some of the members of Cyanophyceae in hot springs has received much attention. Prasad and Srivastava<sup>1</sup>, and Thomas and Gonzalves<sup>2</sup> have studied the blue-green algal vegetation in the hot springs of Himachal Pradesh. Recently Vasishta<sup>3</sup> reported the presence of blue-green algae from more than one hundred hot springs in different places of

our country. The present paper deals with the thermal Cyanophyceae of South Orissa.

The hot spring is located nearly 35 miles from Berhampur (Orissa) in a small village Taptapani. Algal samples were collected from the hot spring and its overflow on 14-11-1971. The hot spring at Taptapani is a natural spring, emitting an odour of sulphur with clear water. The algal samples collected, temperature and pH of both hot spring reservoir and its overflow are indicated in Table I.

TABLE I

Places of collection	Temperature of water °C	pH value of water	Blue-green algae found
1. From the hot spring reservoir	42-43	8.3	<i>Phormidium</i> sp., <i>Oscillatoria scanta</i> , <i>Aulosira bombayensis</i> , <i>Anabaena fertilissima</i>
2. From the overflow of the reservoir	41-42	8.3	<i>Phormidium</i> sp., <i>Oscillatoria scanta</i> , <i>Aulosira bombayensis</i> , <i>Anabaena fertilissima</i>

It has been reported that blue-green algae can withstand temperatures upto 35° C. In the present condition it has been found that the blue-green algae growing in Taptapani hot spring can grow luxuriantly at a temperature range of 41-43° C. This corroborates the fact that blue-green algae can grow in a high temperature where bacteria cannot grow easily.

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