

TABLE I
Effect of pelleting on plant characters of soybean

Sl. No.	Treatment (pelleted with)	At the 8th week*			At the time of harvest**			
		No. of nodules (per pot)	Wt. of noudles (g/pot)	Dry wt. of top (g/pot)	Dry wt. of root (g/pot)	Grain yield (g/pot)	Top yield (g/pot)	Nitrogen uptakes (mg/pot)
1.	Control (No inoculation, no pelleting)	8.00	0.284	3.239	1.644	5.21	7.64	337.80
2.	Inoculated	15.00	0.617	4.863	1.732	6.32	11.82	458.51
3.	Calcium carbonate	10.00	0.492	4.415	1.695	5.66	10.21	399.81
4.	(3) + (2)	17.66	0.797	5.082	2.156	7.47	11.80	539.20
5.	Dicalcium phosphate	10.00	0.375	3.309	1.530	5.33	9.75	371.33
6.	(5) + (2)	19.33	0.835	5.305	1.893	7.51	11.99	549.54
7.	Calcium sulphate	5.00	0.385	4.055	1.660	5.66	10.10	399.43
8.	(7) + (2)	21.66	0.774	5.538	2.068	7.54	12.19	579.41
9.	Rock phosphate	6.66	0.363	3.580	1.581	5.35	10.69	374.03
10.	(9) + (2)	18.66	0.731	5.465	1.863	7.49	12.31	553.79
11.	Talc	9.00	0.575	4.228	1.674	5.82	10.54	424.53
12.	(11) + (2)	30.00	1.075	7.210	2.790	9.19	13.26	719.40
13.	Charcoal	9.33	0.416	3.394	1.674	6.10	11.52	444.72
14.	(13) + (2)	24.66	0.899	5.181	1.951	8.35	12.78	639.03
	C.D. at 5%	8.65	0.379	0.794	0.632	1.30	0.75	

* Values average of 3 replications.

** Values average of 4 replications.

about 10% in the grain yield was obtained with talc pelleting over charcoal pelleting along with inoculation. The total nitrogen uptake followed the same trend as that of the total crop yield. Our studies point out that the treatment of inoculation and pelleting was better over the simple inoculation.

The results obtained here are in conformity with the observations made by Hastings and Drake⁴, and Iswaran and Jauhri⁵. The materials like talc and charcoal used by us have excelled in the performance over lime and rock-phosphate used by them. The talc in the native form is hydrous magnesium silicate. Though its superiority over other materials is intriguing, one possible explanation could be its hydrous nature thereby making more moisture available to the *Rhizobium* in the micro environment of pellet. The other reason could be the availability of magnesium in the vicinity, if it can be somehow rendered in the available form. Norris⁶ has suggested that magnesium is more important divalent cation and is needed in enzymic mechanisms of phosphorylation and degradation of glyceric acid.

Division of Microbiology,
I.A.R.I., Delhi 110 012,
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M. K. JAIN,*
R. B. REWARI.

* Present Address : Department of Microbiology,
Haryana Agricultural University, Hissar 125 004,
India.

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TELSON SETAE AND SEXUAL DIMORPHISM OF THE SAND LOBSTER, *THENUS ORIENTALIS* (LUND)

KNOWLEDGE on secondary sexual characters and sexual maturity of the commercially important lobster, *Thenus orientalis*^{1,2} is essential for tactful management of fisheries in various ways. Telson is used for propulsion along with other appendages like uropod. The telson of *T. orientalis* is a dorsoventrally depressed and

more or less rectangular structure. On its ventral side there is an annal opening on an elevated region encircled by a circular groove.

Totally 1006 specimens (501 males and 505 females) were collected from off-shore waters of Waltair, Bay of Bengal. In immature male or female the end of the telson bears plumose setae. The mature female *T. orientalis* can be identified from the mature male by the presence of large plumose setae on the telson (Figs. 1 and 2). At a certain stage of maturation in

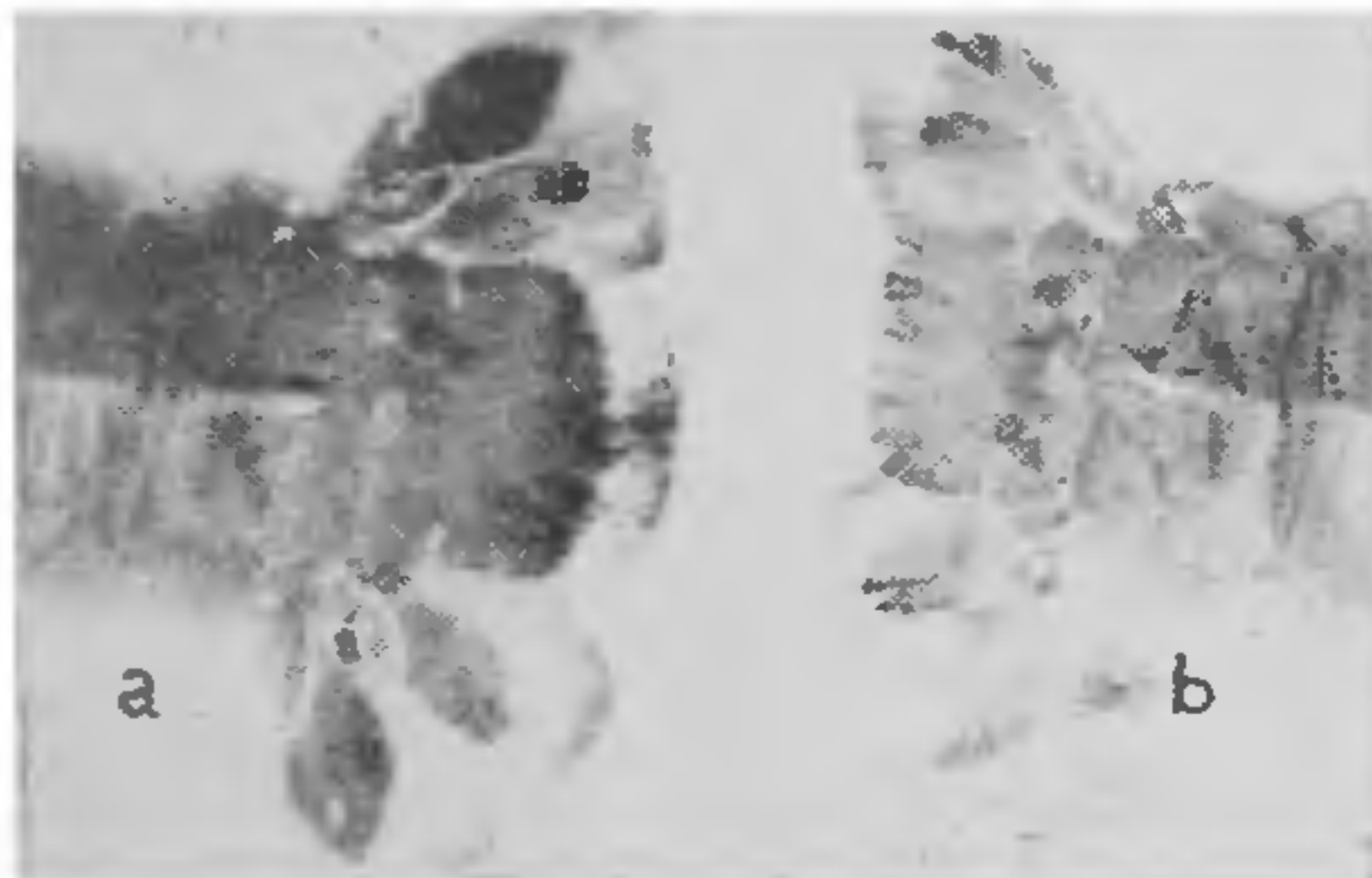


FIG. 1. *T. orientalis* (Dorsal). (a) Abdomen of female with telson and elongated plumose setae at the end. (b) Abdomen of the male with telson and small plumose setae at the end.

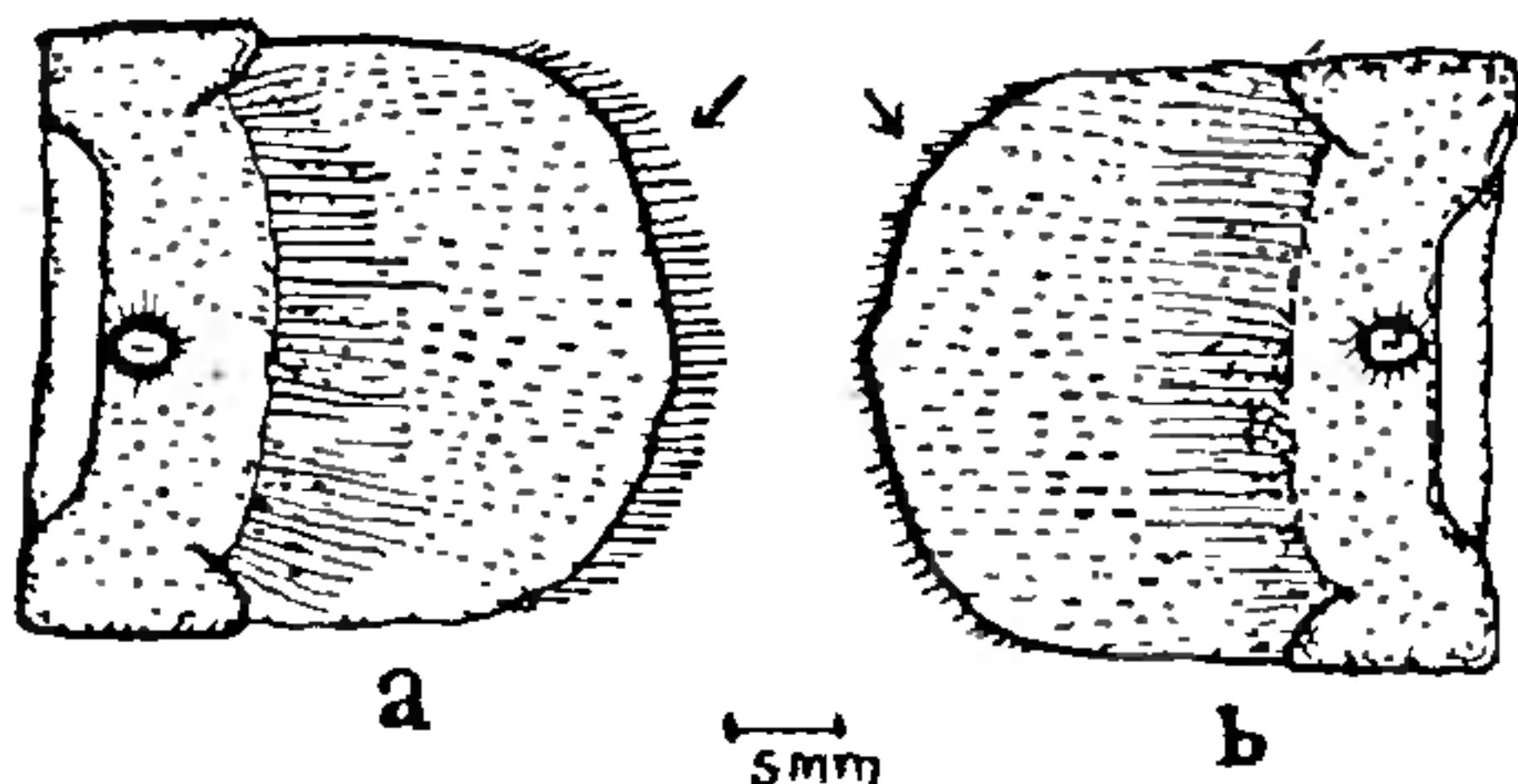


FIG. 2. *T. orientalis* (Ventral). (a) Telson of female. (b) Telson of male.

the female the setae in the telson increase rather rapidly in size. The plotted value of carapace length against total length in males and females of the same size range, reveal cross-over region which coincides with the first maturation stage of the female³. At first the maturation of the female is detected by the record of the smallest berried female (size 153 mm in total length)³. The function of these elongated setae of female presumably is to protect the berried eggs and also to enable circulation of water among the berried eggs by forward and downward beating movement of the telson.

Sexual dimorphism in spiny lobsters was reported by Kubo (1938)⁴, Creaser (1952)⁵, and Paiva (1960)⁶. But most of them considered the sexual dimorphism in the length-weight relationship. Kamiguchi (1972)⁷

reported sexual dimorphism in the antennule in the prawn, *Palaemon paucidens*. On the basis of telson and its setae it is possible to identify the sexually mature male and female of *T. orientalis*.

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Fishery Research Lab.,
Rajshahi University,
Bangladesh.

M. A. HOSSAIN.

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ON THE UNUSUAL OCCURRENCE OF ZYMOGEN BEARING CELLS IN THE LIVER OF *LEPIDOCEPHALICHTHYS GUNTEA* (HAM.)

The liver in *Lepidocephalichthys guntea* is bilobed and the pancreas is diffuse. The structure of the liver is typically teleostean^{3, 6}. The hepatocyte is packed with neutral mucopolysaccharides (Fig. 1). However, their distribution is not uniform and they are restricted to one part of the hepatocyte.



FIG. 1. L.S. liver of *L. guntea* showing glycogen deposition in the hepatocytes, 450 (PAS).