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ON THE OCCURRENCE OF STYLET-BEARING NEMATODES ASSOCIATED WITH MANGROVES OF GANGETIC ESTUARY, WEST BENGAL, INDIA

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MANGROVES are very specialized forest ecosystem found at the land-see interface of the tropical and subtropical regions of the world bordering the sheltered sea coast and estuaries. The Gangetic estuary, located at the confluence of the river Ganges and Bay of Bengal, is unique in harbouring world's most luxurient mangrove swamp, the deltaic Sundarbans. This very vibrating ecosystem supports numerous benthic life forms in the form of micro, meio and macro benthos. Nematodes are found to be the predominant meiofaunal component amongst the litter soil fauna in this complex environment.

Although a good number of plant parasitic nematodes of the order Tylenchide and Dorylaimide have been reported from brackish water[1], sand dunes[2] and mangrove swamps[3] from American, Australian and European subcontinents respectively, records of stylet-bearing plant parasitic nematodes from Sundarbans mangrove swamps of the Indian territory are limited with the exception of a solitary report[4]. The present paper reports on the occurrence of some stylet-bearing nematodes encountered during the study of nematode fauna of mangrove swamp and adjoining sandy beaches of the Gangetic estuary associated with roots of various mangrove vegetations. The current monitoring may help to elucidate on the high salt tolerance of the nematode specimens of this dynamic environment.

Soil samples were collected from estuarine habitats at the following locations:

1. Habitat – a: Intertidal mudflat at Harinbari of Sagar Island (21°37 to 21°52 N and 88°03 to 88°11 E), habitat sheltered, important mangrove vegetations are *Acanthus ilicifolius* L, *Excoecaria agallochia* L and *Bruguiera gymnorhyza* (L) Lam, salinity 28‰ S.

2. Habitat – b: Intertidal sandflat at Gangasagar of Sagar Island, habitat exposed, dominant mang-

Table 1 *Stylet-bearing nematodes associated with mangrove flora of Gangetic estuary, West Bengal*

Orders	Families	Species	Habitats
Dorylaimida	Leptonchidae	*Proleptonchus paucipapillatus* (Meyl 1965; Goseco *et al* 1974)	c
		Doryllium aestuarii (Timm, 1967)	b
		Dorylaimoides sp.	a
	Dorylaimidae	*Laimydorus parabastiani* (Paetzold 1958; Siddiqui 1969)	b
		Timmus sp.	a
	Aporcilainiedae	*Thonus* sp.	a
	Nygolaimidae	*Nygolaimus* sp.	b
		Nygolaimoides sp.	a
	Longidoridae	*Paralongidorus* sp.	a
	Belondridae	*Paraoxydirus* sp.	a
	Nygellidae	*Nygellus* sp.	b
Tylenchida	Anguinidae	*Indoditylenchus sundarbanensis* (Sinha *et al* 1955)	c
	Tylenchidae	*Tylenchus* sp.	c
	Criconematidae	*Hemicriconemoides sundarbanensis* (Ganguly & Khan, 1983)	a
		Nothocriconema sp. nov.	a
	Hopelaimidae	*Helichotylenchus* sp.	b
	Pratylenchidae	*Hirschmanniella gracilis* (De Man, 1880; Luc & Goodey, 1963)	b

roves are *Phoenix peludosa* Roxb., *Suaeda maritima* Dumort and *Sonneratia apetala* Ham. salinity 32‰ S.

3. Habitat – c: Intertidal mudflat at Prentice Island (21°43 to 21°46 N and 88°18 to 88°19 E), abundant mangrove vegetations are *Avicennia officinalis* L, *Avicennia marina* Vierh and *Ceriops decandra* (Griff) Ding hon. salinity 28‰ S.

Soil samples around roots of different mangroves were collected and processed by following modified Baermann funnel method using tapwater. After extraction, the specimens were fixed in hot 4 : 1 F.A. and then mounted on anhydrous glycerine after proper dehydration in glycero-alcohol. The pH and salinity of the interstitial water were determined by standard methods. The stylet-bearing nematodes parasitizing mangrove plants comprise both dorylaimid and tylenchid groups (table 1). Dominant families were represented by Leptonchidae and Dorylaimidae of the order Dorylaimida and Tylenehidae, Anguinidae and Criconematidae of the order Tylenchida. The nematodes under consideration displayed habitat preference and some were strictly restricted to one habitat type. The genera like *Laimydorus*, *Dorylium*, *Nygolaimus*, *Hirschmannialla* and *Helichotylenchus*, etc. exhibit regional abundances only in the intertidal zones of Gangasagar mangrove swamp (habitat – b), Sagar Island and the genera like *Indoditylenchus*[5], *Proleptonchus* and *Tylenchus* were displayed in the intertidal mudflat of Prentice Island (habitat – c). On the other hand, the genera like *Timmus*, *Dorylaimoides*, *Thonus*, *Paralongidorus*, *Paraoxydirus*, *Nygolaimoides*, *Nothocriconema* and *Hemicriconemoides* were predominant in the mudflat of Harinbari mangrove swamp (habitat – b). It is to be noted that all these nematode species were recovered from midlittoral zones of different intertidal habitats in the upper 0–5 cm of the core sample.

Since there are no records of stylet-bearing nematodes parasitizing mangrove flora of the Indian part of the Sundarbans delta, all the nematodes communicated in this paper are supposed to be the first record from India. However, a new host plant *Excoecaria agallocha* has been recorded for *Hemicriconemoides sundarbanensis*[4].

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ENDOSPERM AMYLASE ACTIVITY IN PEARL MILLET SEEDLINGS IN RELATION TO DWARFISM

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It is now well-established that GA_3 stimulates the synthesis and release of α-amylase[1], ribonuclease and protease[2]. This GA has been reported to induce *de novo* synthesis of α-amylase in barley aleurone layers and this phenomenon appears to be due to an increase in α-amylase RNA. High amylase activity was reported in standard height genotypes than in short statured ones and a direct relationship between amylase activity and plant height was reported only in standard height genotypes in wheat[3]. In short statured genotype group, on the other hand, no relationship was discernible between plant height and amylase activity in endosperm during germination. Here we report some observations made on amylase activity of endosperms during germination in pearl millet seedlings in relation to dwarfism.