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**SCANNING ELECTRON MICROSCOPE
OBSERVATIONS ON THE COPULATORY
AND PENIAL SETAE OF THE EARTHWORM
OCTOCHAETONA PATTONI (MICHAELSEN)**

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COPULATORY and penial setae in earthworms are of significance as characters of taxonomic importance offering good means of identification. *Octochaetona pattoni* has four pairs of penial setae, a pair in each of the four male openings in segments 17 and 19; and copulatory setae on 8 and 9. But for the ultrastructure of the penial setae of *Lampito mauritii*¹ there is no available detailed description of the setal structures of tropical earthworms.

Penial and copulatory setae were processed as described earlier for *L. mauritii*¹. The setae were scanned in a JEOL 100S transmission-cum-scanning electron microscope, at the Tata Institute of Fundamental Research, Bombay.

The penial setae of *O. pattoni* were earlier described by Stephenson² as 1.7 to 2 mm long, 17 μ thick, slightly but regularly curved the distal fourth having sharp lateral edges, which become expanded at the tip forming a sort of shovel, the shaft being ornamented with rings of teeth.

The tip of the seta under SEM reveals the shovel to have distinct extensions (figure 1). The curvature of the shovel is 25 μ and the distance across the tips of the lateral edges is about 17.5 μ . That the shovel is medial in origin is evident from the broken tip in figure 2. The presence of pores at the base of the shovel cannot be overlooked, but this needs confirmation through ultrasectioning of the penial setae.

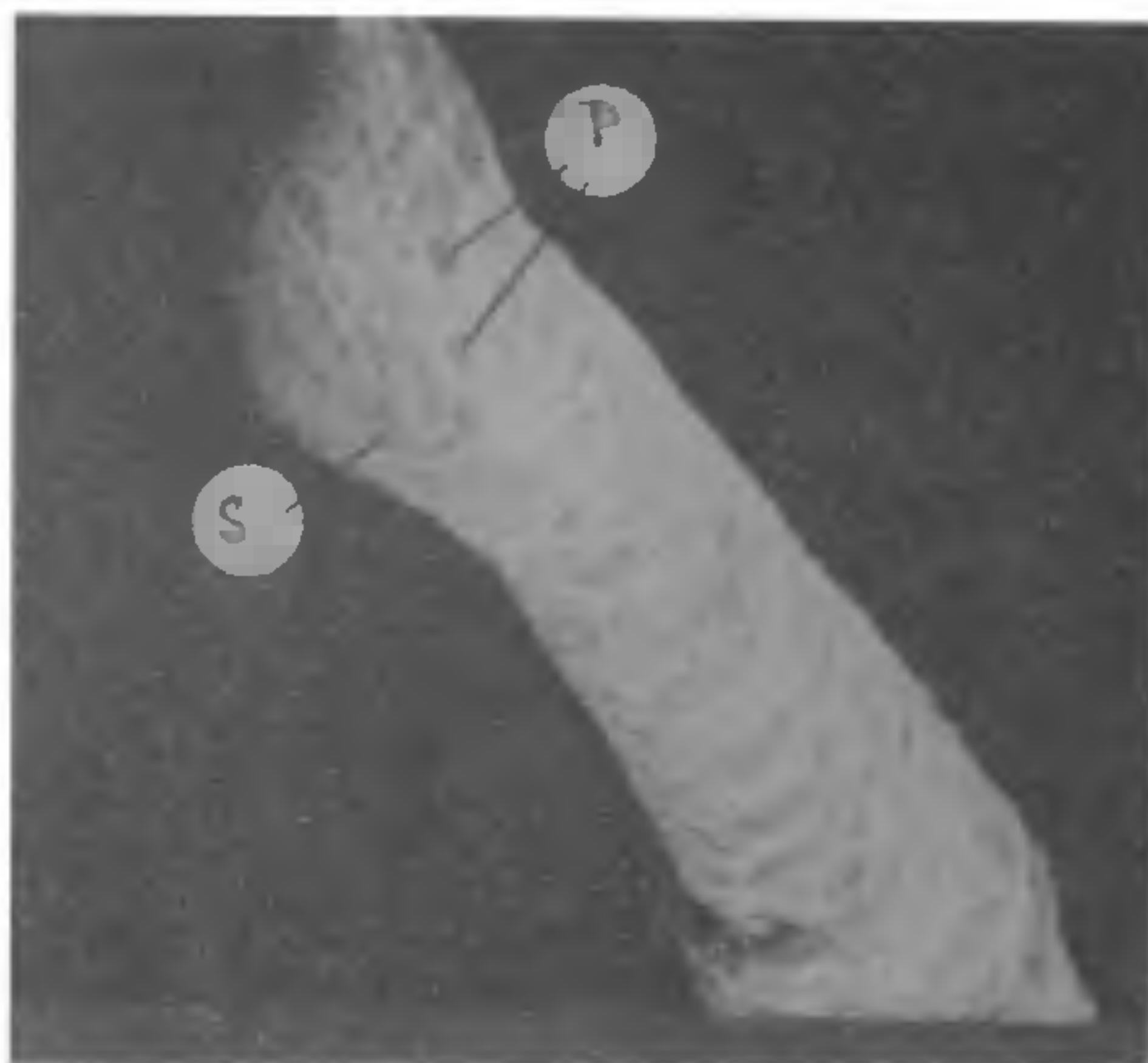


Figure 1. Distal end of penial seta. P—pores, S—shovel ($\times 2000$)



Figure 2. Medial origin of the shovel in a penial seta. MO—medial origin ($\times 2500$)



Figure 3. Copulatory seta. CP—copulatory pad ($\times 900$)

Copulatory setae have been described by Stephenson² to be 0.8 to 1 mm long and *ca* 20 μ thick, bluntly pointed with fine-ringed markings. The copulatory seta reveals the presence of ridges on the shaft of the seta. The ridges are crescentic in shape and are arranged in rows (figure 3). The tip of the copulatory

seta has a pad of about 10 μ diameter and probably functions as a 'copulatory pad' for attachment during mating.

As an argument in support of functional mechanism to the structural modifications of the genital setae, it seems that after attachment by 'copulatory pads', the penial setae may cover the openings of the spermathecae by their shovels and pass the seminal fluid through their pores (?) into the spermathecae of their partner, the shovels preventing spill of the seminal fluid; the ridges of the penial and copulatory setae probably providing physical stimuli to the partner as described by Feldkamp³.

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NEWS

VITAMIN C AND CISPLATIN FIGHT CANCER TOGETHER

... "While recent tests show that large doses of vitamin C cannot cure cancer, a new anti-cancer compound based on vitamin C linked to platinum has been made. . . . This is a new variety of the drug cisplatin [that] is stirring the interest of chemists and pharmacists. Research also shows how cisplatin destroys cancer cells. Cisplatin (real name cisdiamminedichloroplatinum II) is a platinum (Pt) complex. . . . Cisplatin therapy, though effective against cancer, has severe side effects. In early clinical trials one patient in five died of kidney failure. The cause was the heavy metal, platinum, at the heart of the drug. Consequently, much research has gone into producing alternative complexes in which the platinum atom is

chemically bonded to more stable compounds, and this is where vitamin C re-enters the picture. Steven Hollis, Alan Amundsen and Eric Stern [Englehard Corp., Edison, N.J.] have produced a complex in which vitamin C is attached to platinum. . . . The new drug has already been successfully tested against mouse tumours."

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