

REPORT OF *BALANORCHIS ANASTROPHUS* IN PARÁ STATE WITH SURFACE TOPOGRAPHY BY SCANNING ELECTRON MICROSCOPY

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Balanorchis anastrophus Fischoeder, 1901 from the reticulum from *Bos taurus* is reported for the first time in State of Pará, Brazil. The surface topography as revealed by scanning electron microscopy is presented.

Key words: *Balanorchis anastrophus* – Trematoda – scanning electron microscopy

Balanorchis anastrophus Fischoeder, 1901 a South American parasite of ruminant was referred in Argentina, Brazil, Uruguai and Venezuela.

In Brazil it was reported only in the States of Mato Grosso (Travassos, 1922; Travassos et al., 1927) and Rio Grande do Sul (Amato & Gutierrez, 1974; Amato et al., 1982; Costa et al., 1986).

In this paper the presence of *B. anastrophus* in "Ilha de Marajó", State of Pará, is referred for the first time and its surface topography revealed by scanning electron microscopy, is presented.

MATERIALS AND METHODS

About 1300 worms were collected from the reticulum of *Bos taurus* and fixed in 5% formaldehyde, post-fixed for 1 h with 1% osmium tetroxide in 0.1M phosphate buffer, dehydrated in graded ethanol, critical point dried using CO₂ and coated with gold. The observations were made in a Jeol 25 SII scanning electron microscope.

RESULTS AND DISCUSSION

Helminthological research in cattle from State of Pará have been conducted by Travassos & Freitas in 1964 and by Freitas & Costa in

1967. Only the last authors referred to the presence of a Paramphistomid: an undetermined species of the genus *Cotylophoron*. In this paper the presence of *B. anastrophus* is reported for the first time in this region.

The morphology of *B. anastrophus* from Brazilian bovines had been studied by several authors (Fischoeder, 1903; Amato & Gutierrez, 1974; Maldonado, 1976; Amato et al., 1982; Eduardo, 1986). Photomicrographies by SEM were presented by Eduardo (1986).

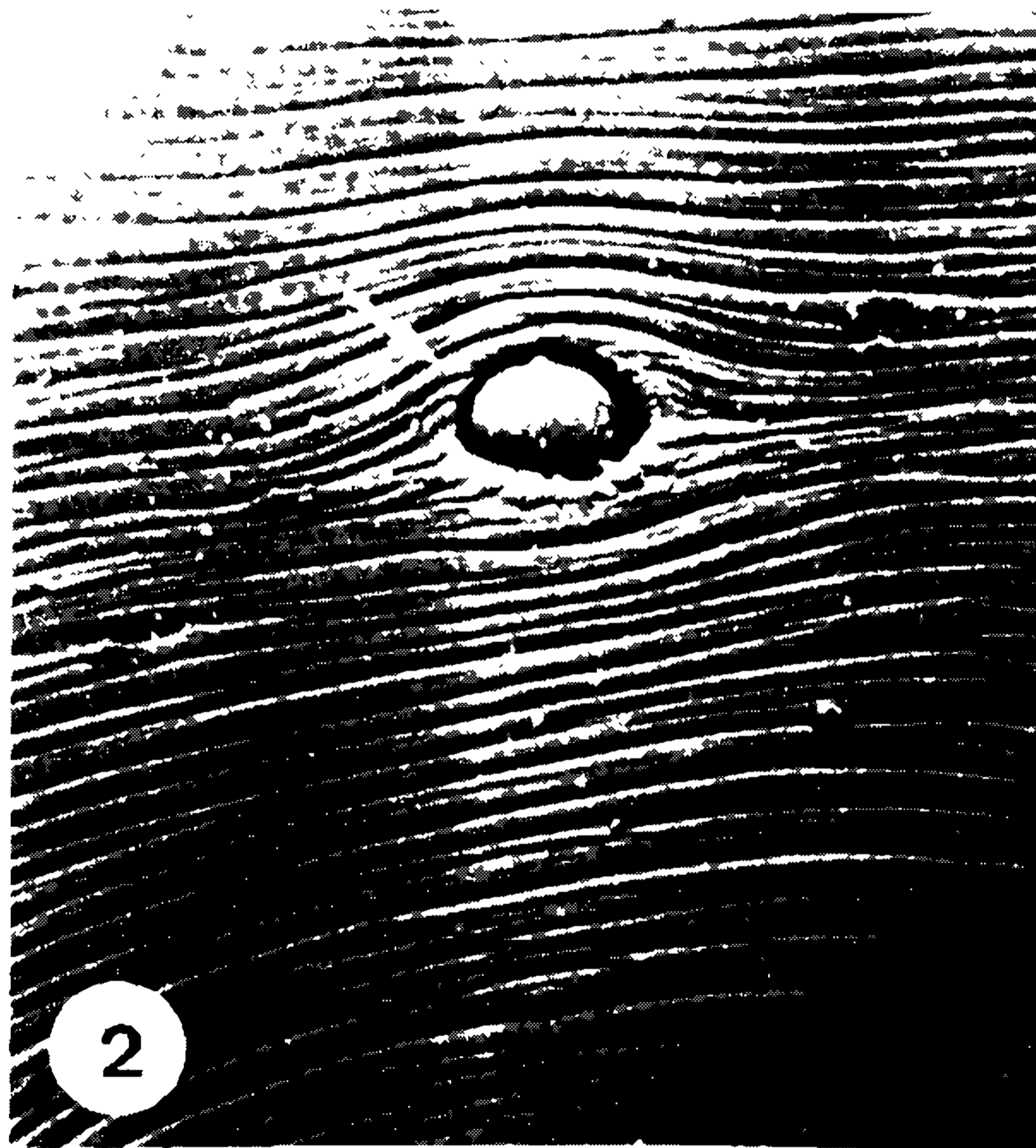
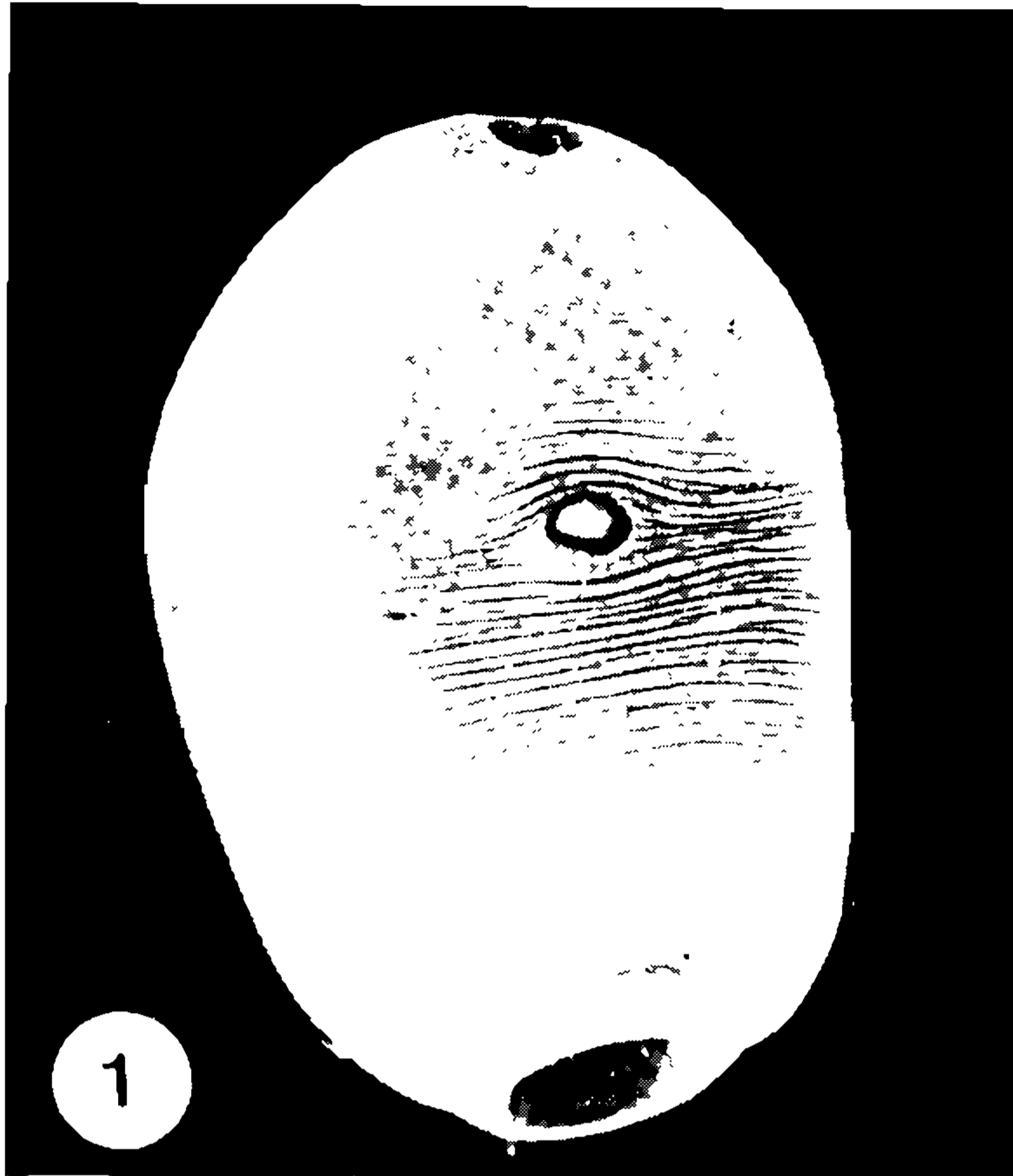
Our specimens measure 1.1-2.5 mm in length by 0.7-1.5 mm in width. The outline and location of the suckers are shown on Fig. 1. The surface is constricted forming numerous ridges encircling the body, which probably depends on the degree of body flexure as observed by Bakke (1976) in *Leucochloridium* sp. This is better illustrated in an enlarged portion of the body tegument (Fig. 2).

The mouth opens apically in a small oral sucker surrounded by three crowns of 14 finger-like tentacles (Fig. 3). The tegument of this region, including the tentacles, is covered with diminute unciliated structures (Fig. 4, arrow), considered by Szidat & Nunes (1962) as sensitive papillae.

Higher magnifications of the anterior end (apical view), demonstrated the presence of dome-shaped multiciliated papillae surrounding the oral sucker (Figs 3-4). These papillae were not referred by Eduardo (1986) in his SEM studies of this species.

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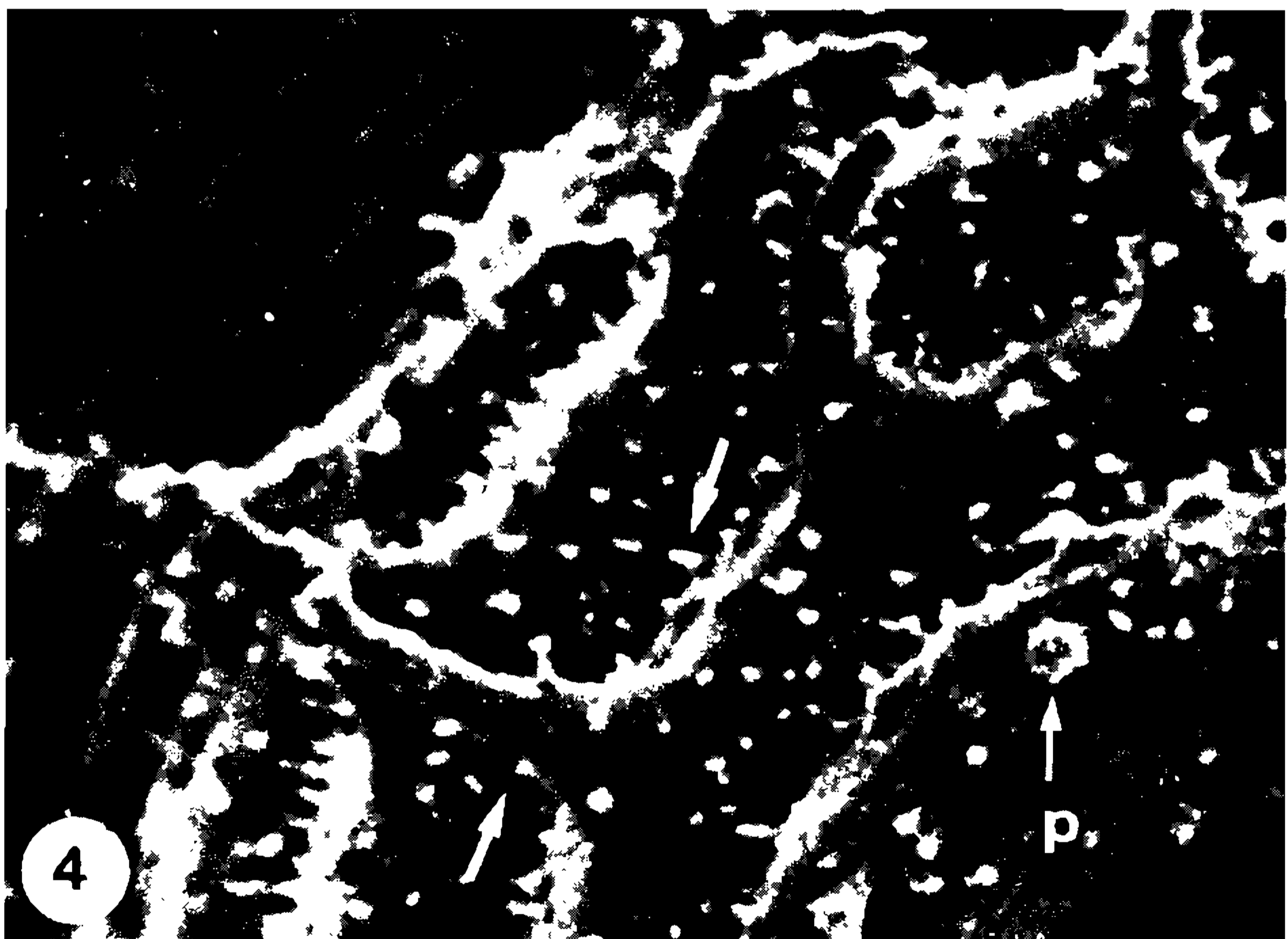
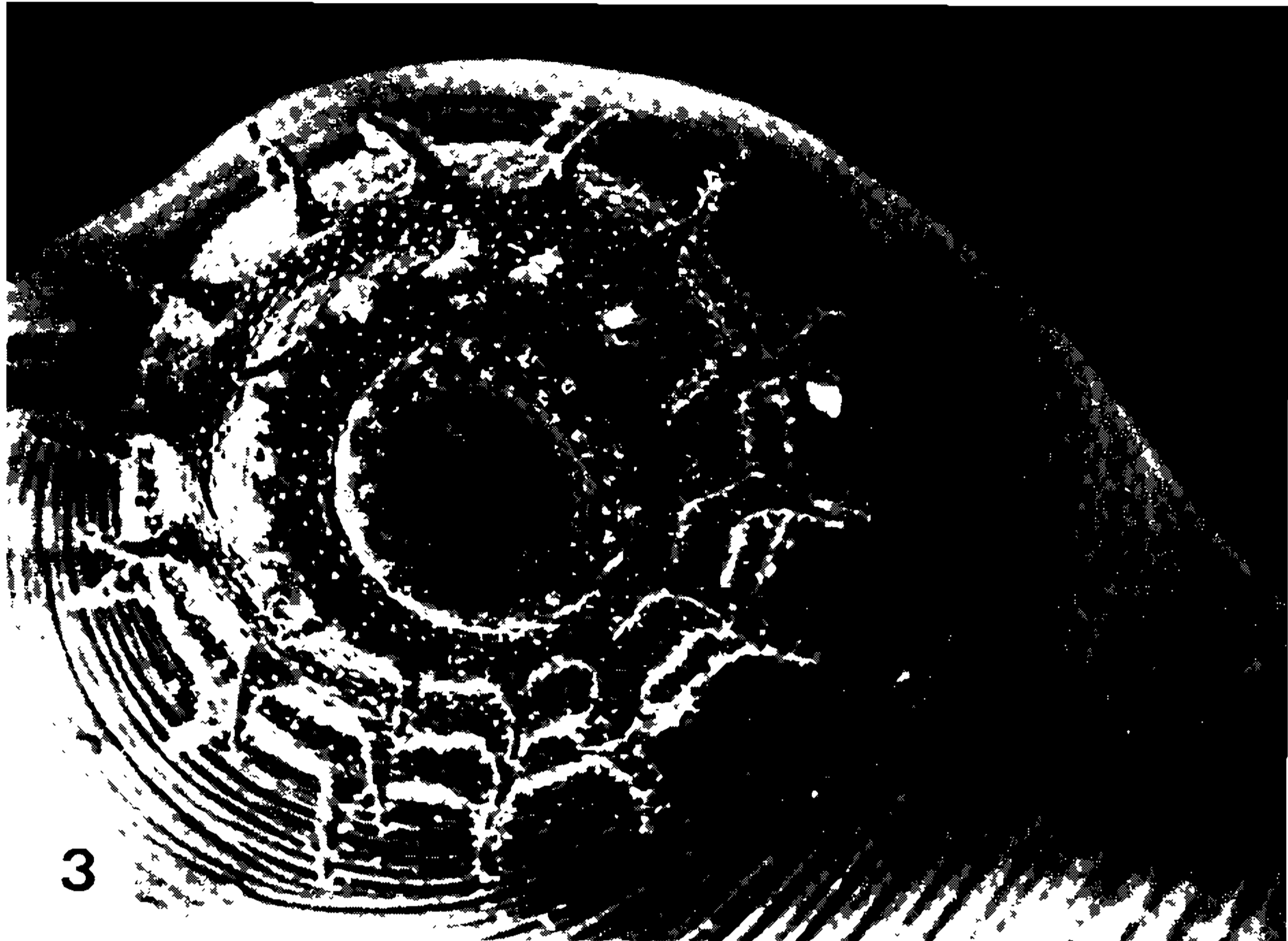
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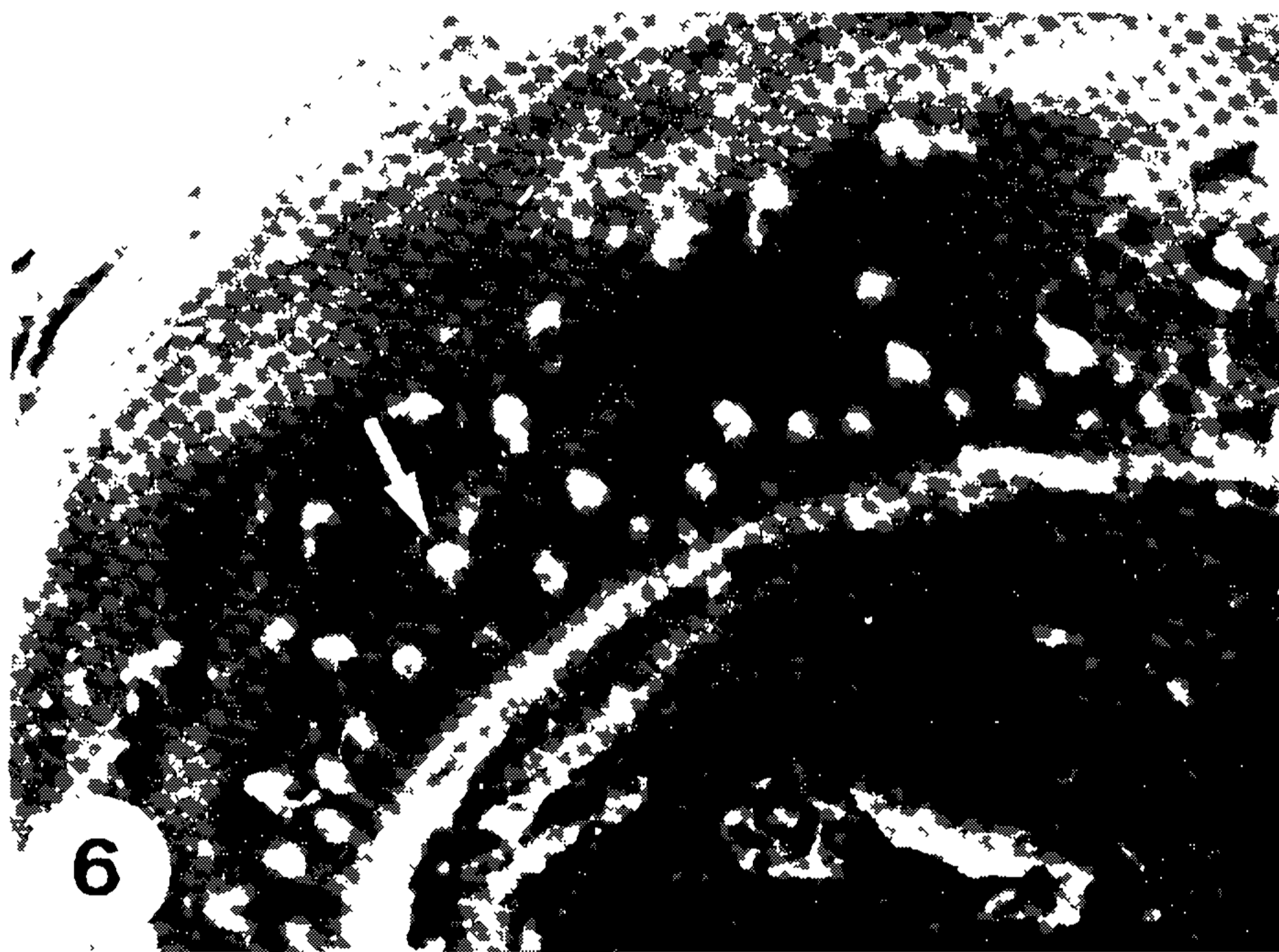
Scanning electron micrograph of *Balanorchis anastrophus*. Fig. 1: whole mount (ventral view). X 44. Fig. 2: ventral surface of middle region of body, showing the extremity of the cirrus-pouch inside the genital pore (arrow) and the tegumental ridges. X 87.

Different morphological types of tegumental papillae on the anterior extremity have been demonstrated in paramphistomids by Eduardo (1982) and in other trematodes by several au-

thors (Nollen & Nadakavukaren, 1974; Bennett, 1975; Nadakavukaren & Nollen, 1975; Bakke, 1976; Bakke & Lien, 1978). These papillae are believed to have a sensorial function.



SEM of *Balanorchis anastrophus* - Fig. 3: oral sucker surrounded by three crowns of tentacles. X 150. Fig. 4: an enlargement of a portion of Fig. 3 showing unicellular structures (arrows) on the tegument and on tentacles and the dome-shaped papillae (p) surrounding the oral sucker. X 583.



SEM of *Balanorchis anastrophus* – Fig. 5: ventral sucker. X 155. Fig. 6: an enlargement of portion of Fig. 5 showing verrucous papillae (arrow). X 416.

The large ventral sucker is subterminal or nearly terminal with numerous small verrucous non-ciliated papillae (Figs 5-6) which differ in size and shape from the domed-papillae described on the oral sucker.

The genital pore opens ventrally on the middle third of the body (Fig. 1). The strong muscular genital sucker, described by Velasquez-Maldonado (1976) in *B. anastrophus* from Rio Grande do Sul, was not observed in our specimens.

Less than 10% out of the 1300 worms collected, presented the cirrus pouch protruded and in Fig. 2 its distal extremity is observed inside the genital pore (arrow).

Eduardo (1976) and Amato et al. (1982) report that all the studied specimens showed the cirrus pouch protruding outside the body surface, and this characteristic together with body size was used by Amato et al. (1982) to separate macroscopically *B. anastrophus* from *Paramphistomum* sp. in associated infections.

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