

## Helminths of birds and mammals of Israel

### VII. - *Pneumospirura rodentium* n. sp.

#### (Pneumospiruridae - Thelazioidea)

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#### Résumé.

Helminthes d'Oiseaux et de Mammifères en Israël. VII. *Pneumospirura rodentium* n. sp. (Pneumospiruridae - Thelazioidea).

Description de *Pneumospirura rodentium* n. sp., parasite des poumons de *Gerbillus dasyurus* et de *Meriones crassus*. *P. hainanensis* Wu et Hu, 1938 et *Metathelazia servalis* Chabaud et Biocca, 1950, ont des structures céphaliques assez semblables à celles de *P. rodentium*; mais les trois espèces se différencient par la dimension des spicules, ainsi que par la localisation histologique, l'hôte et la distribution géographique; *P. hainanensis* vit dans les poumons de *Lutra lutra chinensis* à Hainan (Chine); *M. servalis* a été trouvé dans les bronches de *Felis servalis* en Somalie et *P. rodentium* dans les poumons de *G. dasyurus* et de *M. crassus* en Israël.

#### Summary.

*Pneumospirura rodentium* a lung parasite of *Gerbillus dasyurus* and *Meriones crassus* is described. *P. hainanensis* Wu and Hu, 1938 and *Metathelazia servalis* Chabaud and Biocca, 1950, have cephalic structures resembling those of *P. rodentium*. But the three species can be differentiated by the size of spicules, their localization, hosts and geographical distribution.

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Reçu le 8 novembre 1976.

Over twenty species of *Pneumospiruridae* have been described, most of them from mammals: Carnivora, Insectivora and Primates (3, 6). Only one species, *Meta-thelazia acomysi* has been found in rodents (2). A second species from rodents is described here parasitizing the lung parenchyma of a gerbil and a jird.

## Material and methods

The methods of trapping and dissecting of rodents was described previously (4). The nematodes were dissected out, fixed in warm AFA (alcohol, formalin, acetic acid) and stored in this solution. Lactophenol was used for clearing. Drawings were made with a camera lucida.

The description is based on 7 males and 10 females from *Gerbillus dasyurus* (cotypes) and 2 males and 3 females from *Meriones crassus*. All measurements are in microns unless otherwise stated.

### *Pneumospirura rodentium* n. sp.

Body cylindrical, anterior end rounded, posterior end tapering, covered with a « tegumental sheath ». Cuticle thick and smooth. Mouth formed by two lateral lips each with 3 toothlike, triangular lobes. One papilla on each submedian lobe. Amphids large posterior to lateral lobes. Four cephalic papillae posterior to the submedian lobes (*fig. 1*). Buccal capsule absent. Oesophagus slightly club-shaped, with a short muscular and a longer glandular part (*fig. 2*). Intestine straight and smooth. Nerve ring situated in middle of muscular part of oesophagus. The excretory system consists of two long ducts which begin near the posterior end and unite anteriorly in a large triangular cell to form a short duct that opens into the excretory pore (*fig. 3*). Excretory ducts not visible in some specimens. Cervical papillae small, situated slightly before the excretory pore.

**MALE:** Length 7.5 mm (7.4-7.6), maximum width 228 (214-243); posterior end curved ventrally. Oesophagus: length 414 (385-440); maximum width 81 (76-86). Distance of excretory pore from anterior end 153 (151-155). Spicules equal 180 (172-198) long; 178-218 in specimens from *Meriones*; gubernaculum double, each part boat-shaped 48 (43-53) long. Six pairs of sessile caudal papillae: 2 pairs preanal, one pair of small papillae and one pair of large papillae adanal, two pairs postanal near end of tail (*fig. 5 and 6*).

**FEMALE:** Length 12.5 mm (10.3-14.7), maximum width 365 (240-490). Oesophagus: length 490 (410-570), maximum width 105 (80-130); distance of excretory pore from anterior end 167 (158-172). Tail 75 (56-99) long. Distance of vulva from posterior end 230 (200-260). Distance of vulva from anus 155 (144-161, *fig. 4*); eggs with thick shell, oval 43-46 × 30-33; eggs in uterus close to the vagina containing fully formed embryos.

**HOSTS:** *Gerbillus dasyurus*, *Meriones crassus*.

**LOCALIZATION:** Lung parenchyma.

LOCALITIES: Ein Yahav, Negev (Israel); St. Catherine Monastery and Vadi Achdav (Southern Sinai).

TYPES (from *G. dasyurus*: St. Catherine Monastery): Laboratory of Helminthology, Institute of Microbiology, The Hebrew University, Jerusalem, Israel.

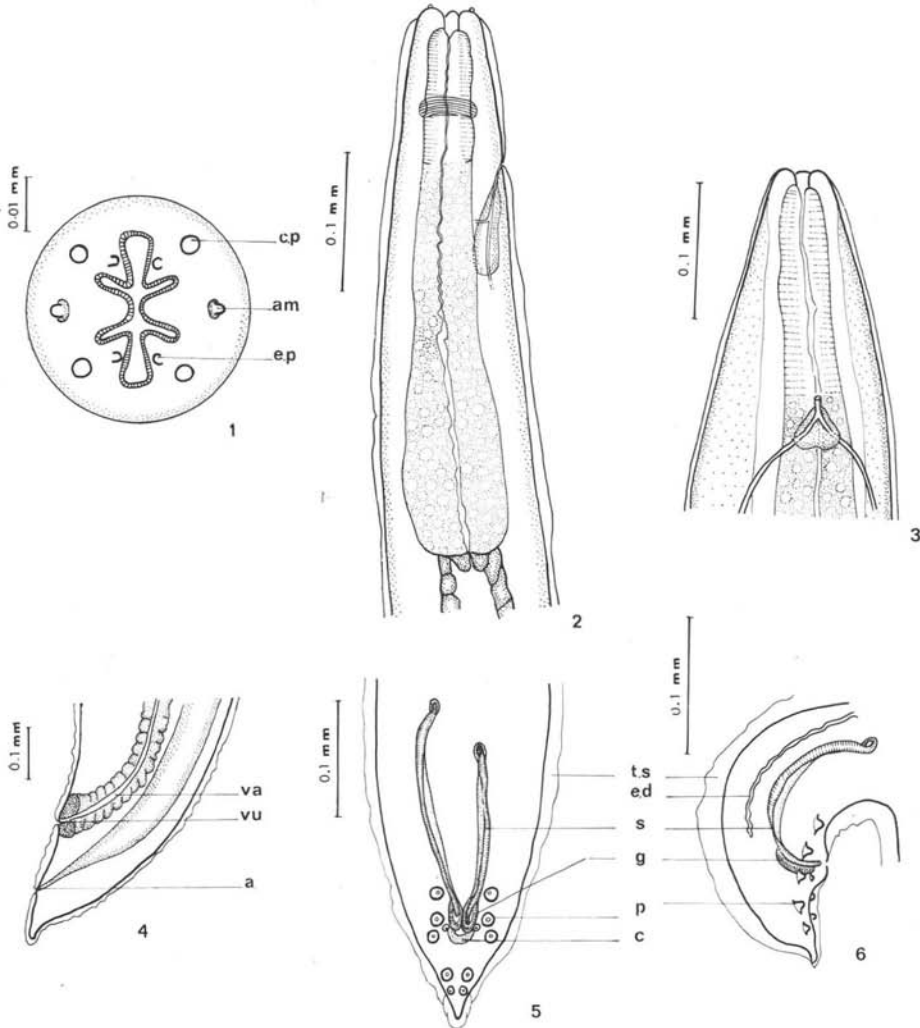


PLANCHE I. — *Pneumospirura rodentium* n. sp.: 1) *En face*, view of head. 2) Female, lateral view of anterior end. 3) Female, ventral view of anterior end. 4) Female, lateral view of posterior end. 5) Male, *en face* view of posterior end. 6) Male, lateral view of posterior end.

a: anus; am: amphid; c: cloaca; cp: cephalic papilla; ed: excretory duct; ep: papilla of labial external circle; g: gubernaculum; p: genital papilla; s: spicula; ts: teguminal sheath; va: vagina; vu: vulva.

## Discussion

Only two other species of Pneumospiruridae have cephalic structures resembling those of *P. rodentium*: *P. hainanensis* Wu and Hu, 1938 (5), and *Metathelazia servalis* Chabaud and Biocca, 1950 (1). The three species are similar in size, and in most anatomical characters. *M. servalis* differs from *P. rodentium* and *P. hainanensis* in the structure of the intestinal tract in which a buccal capsule is present and the intestinal wall forms rugosities.

The three species can be differentiated by the size of the spicules: 236-246 in *P. hainanensis*, 375 in *M. servalis* and 180 (172-198) in *P. rodentium*, as well as by their localization, hosts and geographical distribution. *P. hainanensis* was found in the lungs of *Lutra lutra chinensis* in Hainan, China. *M. servalis* was found in the bronchi of *Felis servalis* caught in Somalia and *P. rodentium* in the lungs of *G. dasyurus* in the region of St. Catherine Monastery (Southern Sinai) and in *M. crassus* from Ein Yahav (Negev, Southern Israel) and Vadi Achdar (Southern Sinai).

### ACKNOWLEDGEMENT

We are grateful to Dr. Z. Greenberg, Central Laboratories, Ministry of Health, Jerusalem, Israel, for his help in trapping the rodents.

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