Annales de Parasitologie (Paris)
1980, t. 55, n° 6, pp. 665-669.

Chaetotaxy of *Psilotrema spiculigerum* (Mühling, 1898) Odhner, 1913 (Trematoda : Psilostomatidae) cercariae

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SUMMARY. The chaetotaxy of *P. spiculigerum* mature cercariae was studied. Unlike from the known in the literature up to now, the chaetotaxy of the cercariae was complemented as follows :

a - the number and arrangement of the papillae on the dorsal, ventral and lateral surface of the body were first described ;

b - the arrangement of the papillae on the cephalic region and tail was corrected.

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RESUME. L'étude de la chétotaxie de la cercaire mûre de P. spiculigerum *permet de décrire pour la première fois la disposition des papilles corporelles dorsales, ventrales, et latérales, et de modifier les données existantes concernant la répartition des papilles de la région céphalique et de la queue.*

Introduction

The studies on the chaetotaxy of the cercariae are of fundamental and applied importance. On one hand, the investigations have shown that through the chaetotaxy could be differentiated closely related species, some of which having cercariae of identical morphology, and that it contributed for the fuller characterization of the larger

Accepté le 29 février 1980.

taxa-the establishment of the taxonomic position and phylogenetic connections between them (Ginetzinskaya and Dobrovolskyi, 1963 ; Shigin, 1973 ; Richard, 1971 ; Wagner, 1961 ; Bayssade-Dufour and Jourdane, 1976 *a*, 1976 *b* ; Bayssade-Dufour *et al.*, 1978, and others). On the other hand, the studies on the chaetotaxy helped for the determination of the strains' differences and evaluation of the epidemiological, respectively epizootological situation namely, the way of realization of the helminths' life cycles in the nature (Bayssade-Dufour, 1977, 1977 *a*).

In our recent publication (Samnaliev, Kanev and Vassilev, 1977) we described the morphology of *P. spiculigerum* mature cercariae, established in naturally invaded *Bithynia tentaculata* from Bulgaria. Bearing in mind the aforementioned, for the fuller characterization of the mature cercaria of this species of trematodes, with the present paper we set ourselves the task to study its chaetotaxy.

Material and Methods

The cercariae used in our present investigations originated from naturally invaded *Bithynia tentaculata.* The snails were collected from the irrigation chanels near the village of Orssoya, district of Michailovgrad.

To obtain cercariae the snails were placed individually in petri dishes filled with tap water and stimulated under artificial source of light-electric bulb 75 W. The species of the cercariae was determined on the basis of the data from a previous publication of ours (Samnaliev, Kanev and Vassilev, 1977).

The chaetotaxy of the cercariae was studied on temporary and permanent slides. The temporary slides were prepared as follows (Krasnolobova, personal communication) : immediately after releasing form the snails the cercariae were placed in 0.5-1 % solution of silver nitrate in distilled water, left in a dark chamber for 5-7 min, and subsequently washed several times with distilled water ; after that the cercariae in a small drop of water were placed under artificial light-75 W electric bulb for 15 min, and mounted in a mixture I : I of glycerol and lactic acid. The permanent slides were prepared according to the modified by Shigin (1973) method of Ginetzinskaya and Dobrovolskyi (1963).

The papillae were described according to the nomenclature of Richard (1971).

Results

1. — Cephalic region :

a - Papillae around the buccal orifice (*fig. I-A*),

$C_I = 3C_IL$

$C_{II} = 1C_{II}1,\ 2C_{II}2,\ 3C_{II}3$

$C_{III} = 1C_{III}1,\ 1C_{III}2,\ 4\text{-}8C_{III}3,\ 2\text{-}8C_{III}4$

$C_{IV} = 5C_{IV}2$

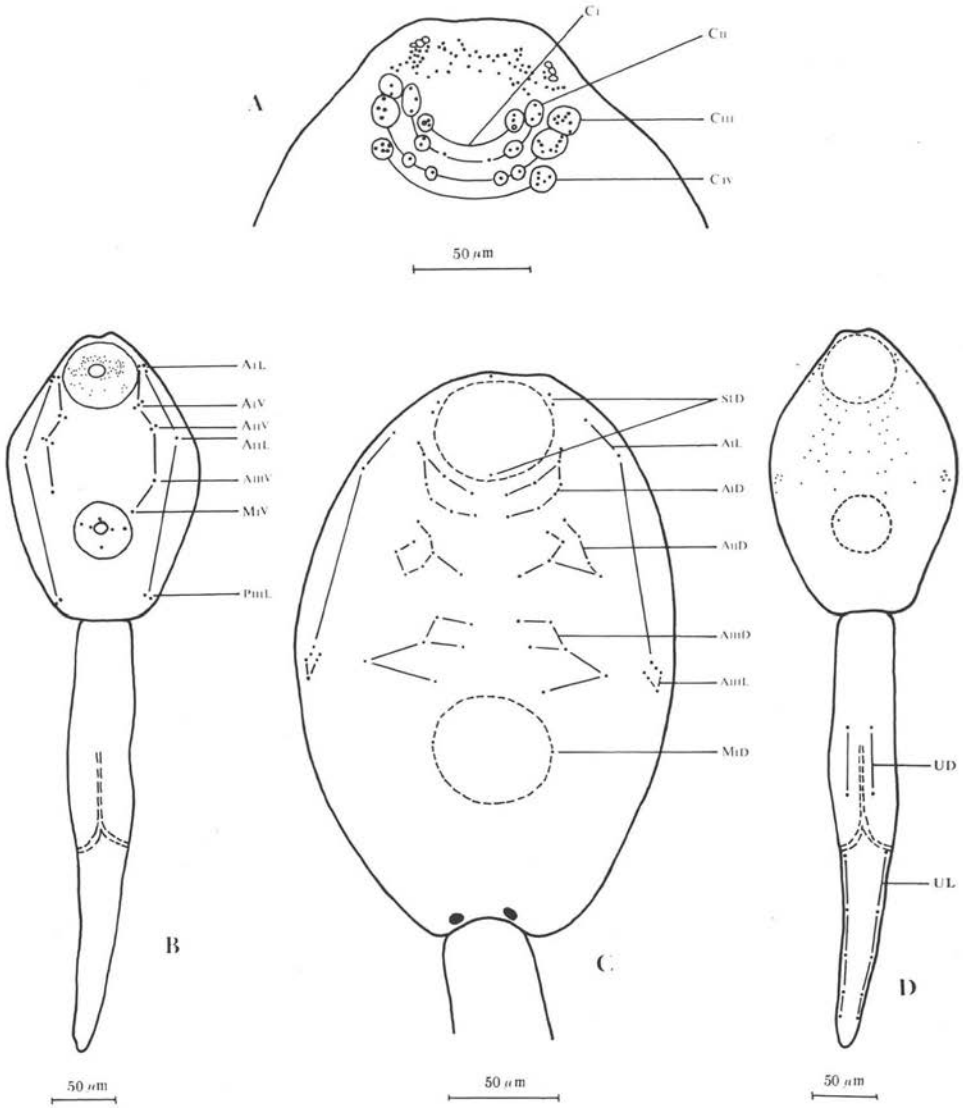

Fig. I. A - Papillae on the cephalic region. B - Ventral, acetabular and part of lateral papillae. C - Dorsal and part of lateral papillae. D - Tail's papillae.

b - « Stylet » papillae (*fig. I-A*),
6StV
about 25 $St_1 + St_2$

2. — *Body :*

a - Ventral papillae (*fig. I-B*),
3-4A_IV, 2-3A_{II}V, 1A_{III}V
1M_IV

b - Dorsal papillae (*fig. I-C*),
3StD
8A_ID, 8A_{II}D, 6A_{III}D
1M_ID

c - Acetabular papillae (*fig. I-B*),
3S_I, 1-3S_{II}

d - Lateral papillae (*fig. I-B and C*),
4A_IL, 1A_{II}L, 6A_{III}L
2P_{III}L

3. — *Tail's papillae* (fig. I-D),

2 pairs UD situated before the excretory pores, and
5 pairs UL situated after the excretory pores.

Discussion

The arrangement of the papillae on the cercarial body and tail is shown on *figure 1* from which could be seen that they are situated as follows :

Richard (1971) who has studied the chaetotaxy of *P. spiculigerum* mature cercariae described papillae around the buccal orifice, on the acetabulum and tail. According to her, papillae could be clearly seen only on the already mentioned sites of the cercaria, and stressed : « Partout ailleurs, il est difficile de les distinguer des taches ovoïdes non constantes, observables à la surface de tégument ».

Unlike Richard (1971) we have observed papillae on the body of *P. spiculigerum* cercariae in all cases both on temporary and permanent slides, and they were of comparatively constant number and arrangement.

Also, there exist differences between the data of our present investigations and those of Richard (1971) concerning the arrangement of the papillae in the cephalic region, namely, the circles C_{III} and C_{IV}, « stylet » and tail's papillae. According to Richard (1971) the circle C_{III} consists of 1C_{III}1, 1C_{III}2, and two lateral groups. We consider that a part of the lateral papillae belongs to C_{III}3 and C_{III}4, and another part-to C_{IV}, which circle was not described by the mentioned author. However, on page 66, Plate 33-A and C in Richard's (1971) publication the position of the papillae belonging to C_{III}3, C_{III}4 and C_{IV} topographicly is shown, and their nimber coincides with

that established by us. The same holds true in respect to the papillae belonging to the group StV, which the aforementioned author has shown on Plate 33-A, but did not described in the text and ignored their number mentioning only that St1 + St2 are about 20-25. But, if we count the papillae on the same drawing it will come out that they are considerably more. In regard to the tail's papillae Richard (1971) described them as 7 pairs UD. Our observations showed that the two pairs situated before the excretory pores are UD, but the remaining 5 pairs, situated after the excretory pores should be considered as UL.

Except Richard (1971) only Belyakova (1978) gave drawings of the position of the papillae, without describing their number and arrangement, of cercariae belonging to species of fam. Psilostomatidae, namely *Psilotrema simillimum.* In spite of the fact that it is not possible a conclusion for the exact number of the papillae from the paper of Belyakova (1978) to be drawn, from the drawings could be suggested that there exist differences in the chaetotaxic pattern between *P. spiculigerum* and *P. simillimum* cercariae.

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