

The Morphology of Gnathostoma doloresi Advanced Third—stage Larvae

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OBJECTIVE: This study was initiated to determine the numbers of hooklets in the cephalic area of the larvae of G. doloresi to allow, if feasible, differentiation from other species of gnathostomes already studied.

DESCRIPTION: Additional numbers of G. doloresi advanced third—stage larvae were obtained from 12 experimentally infected white mice. Measurements were made using the ocular micrometer; a microscopic study of the numbers and distribution of hooklets on each cephalic hooklet row after separating the head of each larva from the body was performed.

PROGRESS: The study was made on the number and distribution of cephalic hooklets in each row of 23 G. doloresi advanced third—stage 120—225 day old larvae from white mice. The size of each larva was also measured.

The results are shown in Table 1; the average body size of 23 larvae were 2.96×0.41 mm (range $1.83-3.99 \times 0.34-0.49$ mm). Two larvae were discovered to have developed a fifth row of hooklets (row V) on the cephalic bulb with a total of 37 and 19 cephalic hooklets respectively (Figure 1). This is the first observation of a fifth cephalic hooklet row in this organism. Including the present results, the body size and hooklet distribution of 38 larvae have been studied (Annual Progress Reports of 1968 and 1969). Twelve more larvae of this stage will be investigated to complete the study of the body size and of the distribution of the hooklets in 50 worms.

SUMMARY: Study of body size and cephalic hooklet distribution in 23 G. doloresi advanced third—stage larvae showed an average body measurement 2.96×0.41 mm; each row of cephalic hooklets had on average of 36.7 to 38.0 hooklets. Every cephalic bulb studied showed 4 cephalic hooklet rows with the exception of two larvae which had 5 hooklet rows on each cephalic bulb. Twelve more larvae will be studied before completion of the project.

REFERENCE:

- Miyazaki, Ichiro. 1954. Studies on Gnathostoma occurring in Japan. (Nematoda: Gnathostomidae). II. Life history of Gnathostoma and morphological comparison of its larval forms. Kyushu Memoirs of Med. Sci. 5: 123—139.

* Retroactive in previous reports.

1 Worked for some months during the year before resignation for further education.

2 Replacement for 1.

Table 1. Distribution of cephalic hooklets of 23 advanced third-stage larvae of *G. doloresi*: discovered in 12 experimentally infected white mice during the reporting period 1 April 1969–31 March 1970

Row No. Larva No.	I	II	III	IV	IV-I	Age (Days)	Size (m.m.)
1	36	37	31	34	-2	127	2.16×0.42
2	30	38	36	36	6	140	2.64×0.41
3	34	39	32	36	2	140	2.50×0.40
4	35	37	40	38	3	140	3.08×0.40
5	39	39	40	38	-1	140	3.14×0.42
6	36	38	35	36	0	119	2.68×0.37
7	40	39	37	39	-1	119	2.15×0.43
8	39	35	35	40	1	120	3.83×0.37
9	41	39	39	38	-3	120	2.07×0.36
*10	39	39	37	41	2	120	3.36×0.34
11	42	35	36	36	-6	120	2.85×0.36
12	38	39	39	38	0	120	2.89×0.36
13	42	40	39	40	-2	120	2.17×0.37
14	39	37	37	39	0	120	1.83×0.34
15	39	36	37	38	-1	218	3.16×0.46
16	37	36	37	33	-4	218	3.56×0.46
17	36	37	35	34	-2	218	3.49×0.49
*18	33	38	38	45	12	218	3.16×0.46
19	39	41	38	37	-2	225	3.56×0.46
20	35	34	35	32	-3	224	3.99×0.39
21	41	43	41	31	-10	224	3.16×0.46
22	39	41	36	35	-4	224	3.06×0.43
23	33	36	34	38	5	168	3.66×0.40
Average	37.1	38.0	36.7	36.8	-0.43	160.95	2.96×0.41

* Each larva has row V on its cephalic bulb showing 37 and 19 cephalic hooklets.

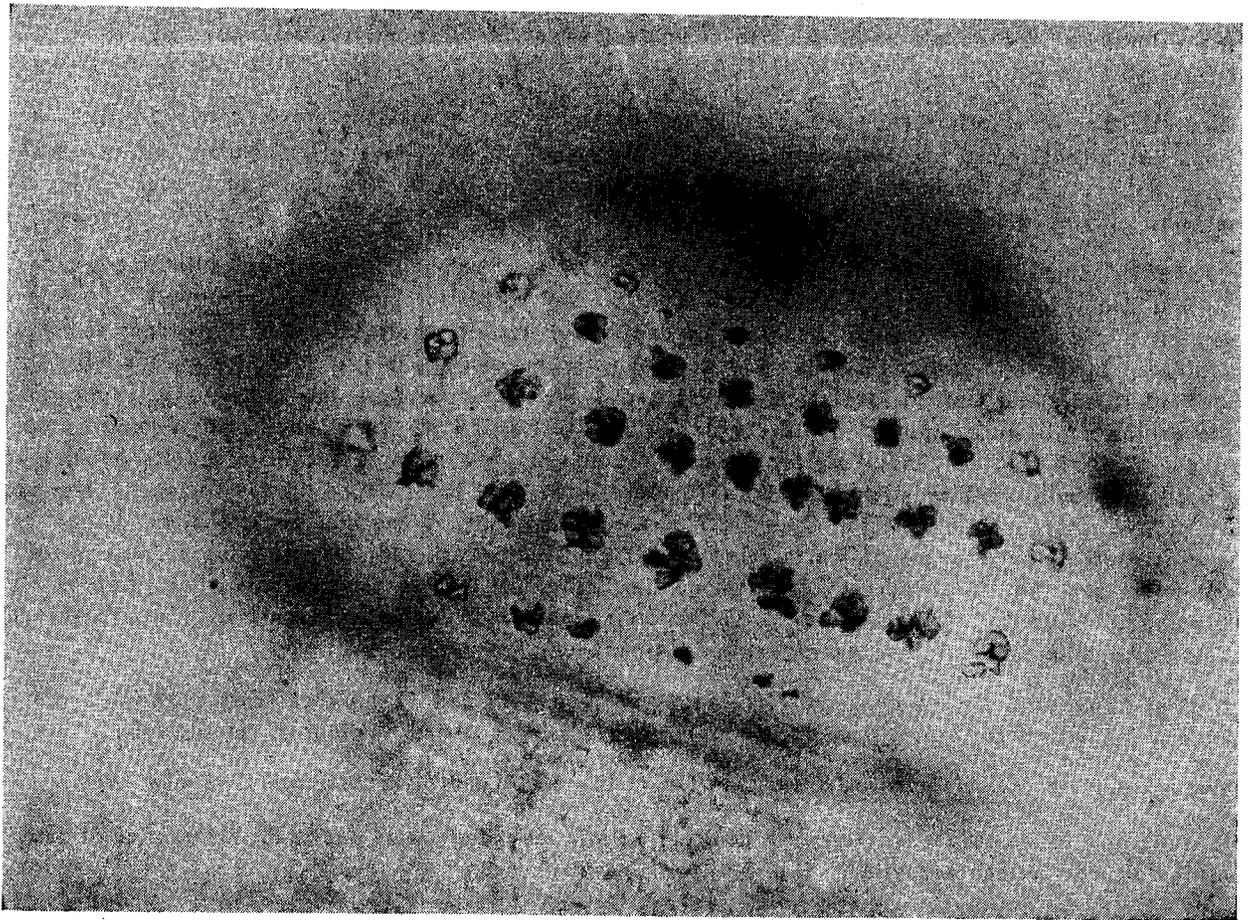


Figure 1. Photomicrograph of a cephalic bulb of G. doloresi advanced third-stage larva obtained from an experimentally infected white mouse developing 5 cephalic hooklet rows.