HALIOTIS

1980 - VOL 10
N°2

SEPTIÈME CONGRÈS INTERNATIONAL DE MALACOLOGIE

PERPIGNAN-BANYULS (FRANCE)
31 AOUT - 7 SEPTEMBRE 1980
UNITAS MALACOLOGICA

SOCIÉTÉ FRANÇAISE DE MALACOLOGIE

n° ISSN 0397.765 X
Etude experimentale de la susceptibilité de 5 espèces de Helicidae aux larves de Protostrongylinae).

Experimental study on the susceptibility of five Helicidae species to larvae of Protostrongylinae

by

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This is a summary of the experimental infection and the subsequent development of two species of ovine Protostrongylinae (Muellerius capillaris (MÜLLER, 1889) and Neostongylus linearis (MAROTEIL, 1913) in the species Candidula intersecta (POINTET, 1801), Cernueila (Microxeromagna) vestita (RAMBUR, 1868), Cochlicella barbarica (L., 1958), Helicella jamuzensis GITTENBERGER & MANGA, 1977, and Monacha (Ashfordia) granulata (ALDER, 1830) (Mollusca, Helicidae), intermediate host of these parasites.

The 325 infected molluscs, divided into batches of approximately 40 specimens - were killed in series between the 6th and 40th or 49th days p.i., depending on the circumstances. In each experiment both the infestation temperature and the temperature at which - the specimens were maintained in the laboratory were noted, as well as the day on which the different larval stages appeared. Both the developmental and final percentages were based, in each case, on the number of larvae which penetrated (the host).

The following results were obtained for N. linearis: In the 19°C C. barbarica batch the degree of larvae penetration reached 51.6%, 29% developed and 22% completed the cycle - in the H.I.. In the 20°C M. (A.) granulata batch, penetration reached 83.5%, with development of 16.9%, 6.8% reached the third larval stage. With the 19°C C. (M.) vestita experiment 86.7% penetrated, 2.5% developed and only 1% completed the cycle. With the 22°C C. intersecta batch, penetration reached a level of 68.1%, 3.3% developed and only 0.9% reached the final stage as infecting larva. Finally, in the 22°C H. jamuzensis specimens 76% penetrated, 2% developed and only 0.2% completed the cycle.

For M. capillaris the results were the following: In the 20°C M. (A.) granulata - batch, 57.5% penetrated, 32.4% developed and 37.5% reached the larva III stage. In C. barbarica two infections were carried out and the molluscs were kept at different temperatures. This altered the days when the different larval stages appeared but it did not greatly affect the degree of larval penetration. In the 19°C batch, 38% penetrated, 37.9% developed and 26.2% reached the larva III stage. In the 22°C batch, penetration reached 40.5%, 25.4% developed - and 20.9% completed the cycle. In the 19°C C. (M.) vestita specimens, 86.7% penetrated, 2.5% developed and 1% reached the final stage.

Based on the above facts, it can be deduced that for N. linearis the most suitable species was C. barbarica, followed in decreasing order by M. (A.) granulata, C. (M.) vestita, C. intersecta and H. jamuzensis, whilst for M. capillaris the most suitable was M. (A.) granulata, closely followed by C. barbarica and a long way behind, C. (M.) vestita.

According to the information which we possess this is the first time that C. intersecta, C. (M.) vestita, H. jamuzensis and M. (A.) granulata have been mentioned as being — used in the experimental infestation of N. linearis and M. capillaris. For this latter parasite, C. barbarica is also mentioned.