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Susceptibility of Portuguese *Bulinus contortus* to Iranian Strains of *Schistosoma haematobium* and *S. bovis**

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The snail host of urinary schistosomiasis in Portugal has always been considered to be *Planorbarius metidgensis*.[a,b] The snail has been variously referred to as *Planorbis corneus* var. *metidjensis*, and *P. metidgensis* var. *dufouri*. *P. metidgensis* also occurs in the northwestern part of North Africa, but there is no evidence that this snail is naturally infected in regions where *Bulinus truncatus* is the known host of *Schistosoma haematobium*.

There have been some records of the occurrence of a species of *Bulinus*, *B. truncatus*, in Portugal. It was first recorded there by Morelet in 1845. Both Morelet and Nobre (both cited by Mandahl-Barth [c]) found this species to be fairly common in

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[a] Bettencourt, A., Borges, I. & Seaba, Z. de (1921) *C. R. Soc. Biol. (Paris)*, **85**, 1169.

[b] Azevedo, F. J. de & Colaco, A. F. T. (1950) *An. Inst. Med. trop., (Lisboa)*, **7**, 7.

[c] Mandahl-Barth, G. (1965) *Bull. Wld Hlth Org.*, **33**, 33.

the central province. Moreover, reports in recent years indicate that this bulinid snail is still encountered alive in Portugal. Mandahl-Barth [c] identified it as *Bulinus contortus*, and its radula differs slightly from that of the *Bulinus truncatus* found in the Nile Delta and North Africa.

Material and methods

The Iranian strain of *S. haematobium* was used in this study and the miracidia were obtained from the pooled urine of patients in Dezful, Iran. Eggs of *S. bovis* were obtained from the livers of laboratory-infected *Tatera indica*, a rodent species. Laboratory-reared progeny of *Bulinus truncatus* from Dezful, and *Bulinus contortus* from Portugal were used. The exposure method of the snail to the miracidia followed that of Chu et al [d] but with 6 to 8 miracidia per snail. After exposure, the snails were maintained at a water temperature of 26°C-28°C. Three weeks after exposure the snails were examined separately in test-tubes for cercarial shedding.

Results

Fifty laboratory-reared *Bulinus contortus* and 50 *Bulinus truncatus* aged about 3 to 4 weeks, and of about equal size were exposed to miracidia of *S. haematobium*. Of the surviving 45 *B. contortus* and 50 *B. truncatus*, 38 (84.4%) and 47 (94%) respectively shed cercariae.

Meanwhile, 30 laboratory-bred *B. contortus* and 50 *B. truncatus* of similar age and size were exposed to miracidia of *S. bovis* in a similar way but with 2 to 4 miracidia per snail. Of the 20 surviving *B. contortus* and of the 30 surviving *B. truncatus*, 12 (60%) and 16 (53.3%) respectively shed cercariae of *S. bovis*.

Discussion

No significant differences were observed between the susceptibility of the two species of snails to the two schistosome species, *S. haematobium* and *S. bovis*. The results show that *B. contortus* from Portugal is as highly susceptible to the Iranian strains of *S. haematobium* and *S. bovis* as the Iranian snail intermediate host *B. truncatus*. It is also evident that *B. contortus* in Portugal could be an effective host for *S. haematobium* in the same country. Unfortunately, as the Portuguese strain of *S. heamatobium* is not available, the validity of this statement cannot be verified.

Ther are other reports in the literature indicating the transmission potentials of Portuguese *B. contortus* to certain strains of *S. haematobium*. De Azevedo & Xavier [e] showed that the bulinid snails from Portugal which they identified as *B. truncatus* are susceptible to a strain of *S. haematobium* from Portuguese Guinea.

To study the possible parasite-snail relationships of the Portuguese urinary schistosomiasis further, more investigations are projected at Dezful on the susceptibility of *Planorbarius metidgensis* to the Iranian strain of *S. haematobium*. If the Portuguese strain of *S. haematobium* becomes available, infection of *B. truncatus* with it in Iran will be attempted.

[d] Chu, K. Y., Massoud, J. & Sabbaghian, H. (1966) *Bull. Wld Hlth Org.*, **34**, 113.

[e] Azevedo, F. J. de & Xavier, M. L. (1966) *Rev. ibér. Parasit.*, **26**, 3.