RESEARCH NOTE

Inexpensive Alternative Material for the Isolation of Larvae with the Baermann Method

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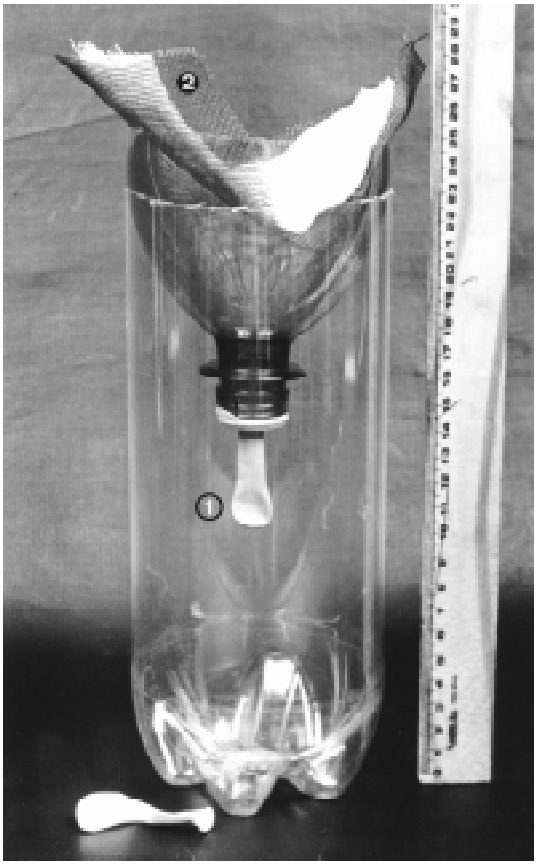
Strongyloidosis is an important health hazard, even in developed countries due to the possibility of autoinfection leading to hyperinfection and disseminated infection (DT Purtilo et al. 1974 *Am J Med 56*: 488-493). Coproparasitological studies of strongyloidosis in large populations are not easily perfomed, because the isolation of larvae is better obtained with great amounts of fresh stools, based on the hydrothropism of live larvae. Since the original description of the Baermann method in 1917, several adaptations have been reported (GA De Carli 1994 *Diagnóstico Laboratorial das Parasitoses Humanas*, Medsi, RJ, 315 pp.). HP Willcox and JR Coura (1989 *Mem Inst Oswaldo Cruz 84*: 563-565) proposed a simplified procedure (WC) for larvae isolation in stools or soil, both under laboratory and field conditions. Other methods, like the agar plate culture, have shown better performance in isolation of *Strongyloides stercoralis* larvae, but are more complex and more expensive (RG Kaminsky 1993 *J Parasitol 79*: 277-280).

The need of a great number of glass funnels, the difficulties for their transportation and cleaning (HA Whitlaw & MW Lankester 1995 *J Willd Life Dis 31*: 93-95) have hampered the use of the Baermann method under field conditions, especially in developing countries. Besides these problems, sensitivity of several procedures has not been adequately evaluated (AA Gajadhar et al. 1994 *Can Vet J 35*: 433-437). A preliminar evaluation of the Baermann original method by employing recycled plastic material, is reported herein.

A coproparasitological survey was performed as part of a longitudinal study of abdominal angiostrongylosis in southern Brazil (Guaporé, RS). Sixty-three fresh stool samples were simultaneously processed by the traditional Baermann method (B) and the WC adaptation.

For the B method, the funnels were built from 2 liter disposable plastic bottles as follows (Fig.): the upper third was cut off and inverted to fit in the lower two-thirds of the bottle, working as a funnel. A small latex baloon was used to occlude the orifice. Approximately 5g of feces were placed on cotton surgical gauze (four layers), sustained by plastic gauze and immersed in water filling the plastic funnel. Sedimentation was performed overnight, at room temperature, in December 1995 (summer) with air temperatures ranging from 25 to 30ºC. After cutting the latex baloon, 1 to 2 ml were collected in a small Petri dish (3



Recycled 2 liter plastic bottle for larvae isolation (Baermann method). Note the small latex baloon (1) occluding the funnel or resting next to the bottle and the plastic mesh (2) holding the gauze.

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cm), for examination under the estereo-microscope.

For the WC procedure, approximately 1g of feces was placed on surgical cotton gauze and immersed in 2x17cm centrifuge plastic tubes containing tap water. The tubes were placed in water bath (38-40ºC) for 2 hr and centrifuged at 300xg for 5 min.

Eleven out of 63 samples were positive for larvae of *S. stercoralis* resulting in a prevalence of 17%. The B procedure detected 10 out of the 11 positive samples (relative sensitivity = 90%) and 6 were detected with WC (relative sensitivity = 54%). A lower sensitivity was expected, since a smaller amount of feces is examined with WC. Five positive samples were detected by both methods and a positive association was expressed by the Yule coeficient of +0.96.

Temperature of the water may not be a critical condition if the funnels are left for an extended period of time, as observed by GD Wallace and L Rosen (1969 *Malacologia 7*: 427-438) and also suggested by our results.

The use of the funnel is still the simplest procedure to isolate larvae, especially with the employment of disposable plastic material as presently reported. Low cost and easier transportation (unbreakable and low weight) are the main advantages of the recycled plastic bottles for preparing Baermann funnels.