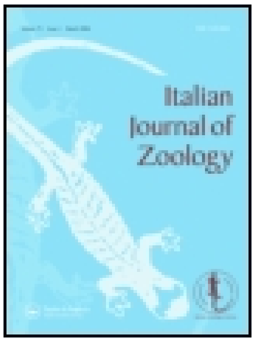

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The use of transparent shells for the study of the biology of hermit crabs and of their commensals

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Using trasparent glass shells, observations were made on the use of thoracic and abdominal limbs by hermit crabs and on the behaviour of a hermit shell commensal.

Use of Limbs. In *Dardanus calidus*, the fourth pereiopod is fully specialised in strongly anchoring the hermit within the shell (together with the uropods). The fifth pereiopod, being extremely mobile and with a subchela looking like a brush, is mostly specialised in different cleaning activities of the gill chamber, carapace, abdomen, pleopods and telson. The fifth pereiopod is periodically rubbed against the 3rd maxillipeds, and part of the particulate matter collected in this way is introduced within the mouth. Pleopods are acrively involved in water circulation within the shell for both cleaning and respiratory ventilation. The presence of faeces and detritus (coal dust) within the shell induces strong beating movements. By varying the CO_2 content of a water flow passing through the shell (through a hole at the shell tip), a strong pleopod beating reaction was induced (295 mg/l Co_2) or stopped (10 mg/l CO_2).

Commensals. Observations were made in Kenya on a mysid (*Heteromysis harpax*) living within the shells of several *Dardanus* species. Usually a pair of adult mysids is found within the last two coils of the shell (Vannini *et al.*, 1993) but large families (up to 75 young), due to the coexistence of broods of different generations, are not rare. The mysids acrively capture plankton carried by the water current within the shell, follow the hermit when it changes its shell and do not appear to interact with the hermit itself. However when the hermit retreats deeply and plugs the last shell coils, the mysids can be seen to use their large gnathopods to pinch the soft abdomen of the hermit several times as if «asking» for more room and restoration of the water current.

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Short-term behavioural effects of radio collar wearing in mice prenatally treated with oxazepam

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Laboratory investigations were carried out to determine the short-term behavioural effects of a radio collar on CD-1 adult male mice (*Mus musculus*). Animals prenatally exposed to anti-anxiety benzodiazepine oxazepam (OX, 15mg/kg *per os*, twice daily, ED12-16) or the vehicle, were fitted with radio collars (a radio transmitter, weight 1.5-1.7 g, Biotrack, Wareham-Dorset, UK) and their behaviour was assessed immediately during a 30 min session. Three hours later, the behaviour of the same collared mice was observed in a second 30 min test. Both OX and control mice were disturbed by the radio collars, and a higher number of attempts to remove the radio collar was observed in the first session as compared to the second one. The progressive habituation to the radio collar was more pronounced in controls than in OX animals. In terms of the habituation period, it has been previously suggested that collared mice should be released quickly at the site of capture, allowing at most half an hour to an hour for adjustment (Pouliquen *et al.*, 1990). On the contrary, our data are in agreement with other reports on *Microtus* sp. (Hamley & Falls, 1975; Madison, 1978; Webster & Brooks, 1980), showing that at least a few hours are needed to allow habituation to the radio collars. In fact, the physical disturbance due to the radio collars was still evident during the second behavioural assessment 3 hours after the radio collar placement.

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