

**Scanning electron microscopic observations  
on the so-called "male genital pore"  
in the pycnogonid, *Rhynchothorax mediterraneus*  
(Pycnogonida: Rhynchothoracidae)**

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The male genital pores in pycnogonids are usually situated in the second coxae of the last two (the third and fourth) pairs of walking legs (Arnaud and Bamber, 1987). Marked deviations are, however, reported in some species of the Rhynchothoracidae. Among the 15 species known in the family, the male genital pores are described in six species; in three species, they are reported to be situated in the second coxae of only the third pair of walking legs, whereas in two species, *Rhynchothorax mediterraneus* and *R. percivali*, they are in the "third coxae" of the same pair (Table 1). In these species, the spur or swelling on the coxa is presumed to bear the genital pore, but there are few direct observations on the pore itself. Clark (1976) made a scanning electron microscopic observation on a male specimen of *R. percivali*. The author wrote, "This (= the spur in the second coxa of the third walking leg) is presumed to bear a genital aperture", but no openings were shown in the figures.

Recently, some specimens of *R. mediterraneus* were collected from Tanabe Bay located in the southwestern area of the Kii Peninsula (Miyazaki and Stock, 1995). I observed the so-called "male genital pore" in this species by scanning electron microscopy (SEM).

Table 1 Position of "male genital pores" in *Rhynchothorax* species.

	1c	2c	3c
<i>R. alpicornis</i>		4	
<i>R. architectus</i>		3	
<i>R. articulatus</i>	?	?	?
<i>R. australis</i>	?	?	?
<i>R. barnardi</i>	?	?	?
<i>R. malaccensis</i>	—	—	—
<i>R. mediterraneus</i>			3
<i>R. monnioti</i>	—	—	—
<i>R. orientalis</i>	?	?	?
<i>R. percivali</i>			3
<i>R. philopsammum</i>		3	
<i>R. tiahurensis</i>	?	?	?
<i>R. unicornis</i>	—	—	—
<i>R. vallatus</i>	—	—	—
<i>R. voxorinum</i>		3	

1c-3c: first to third coxae, 3: present in third walking legs, 4: present in fourth walking legs, ?: male genital pores undescribed, —: male specimens unknown.

A male specimen preserved in 70% ethanol was separated into the third left walking leg and the remaining part with a razor blade. Each part was processed into the gold-coated SEM preparation through a conventional procedure, and was observed under a JEOL JSM-T220 at 10–20 kV.

In a ventro-lateral region in the third coxa of each third walking leg, there is a spur where male genital pore has been presumed to be present (Fig. 1). SEM revealed about 13 small pores on a spur (Fig. 2). Because such multiple openings have not been reported in any pycnogonid genital pores, it is improbable that these pores here observed are the real male genital pores. Dohrn (1881) described similar pores in the identical position of the leg, and regarded them as the openings of a cement gland.

On the ventral side in the second coxa of each fourth walking leg, where male genital pore is present in almost all pycnogonids, a crescent slit was observed (Figs. 3, 4). The shape and the position of the slit strongly suggest that it is the real male genital pore in *R. mediterraneus*.

Histological studies are needed for conclusive remarks on the nature of the pores and the slits observed in the present study. Reexamination using SEM on the so-called “male genital pores” in other *Rhynchothorax* species is also necessary, as the reality of the “pores” becomes doubtful through the present study.

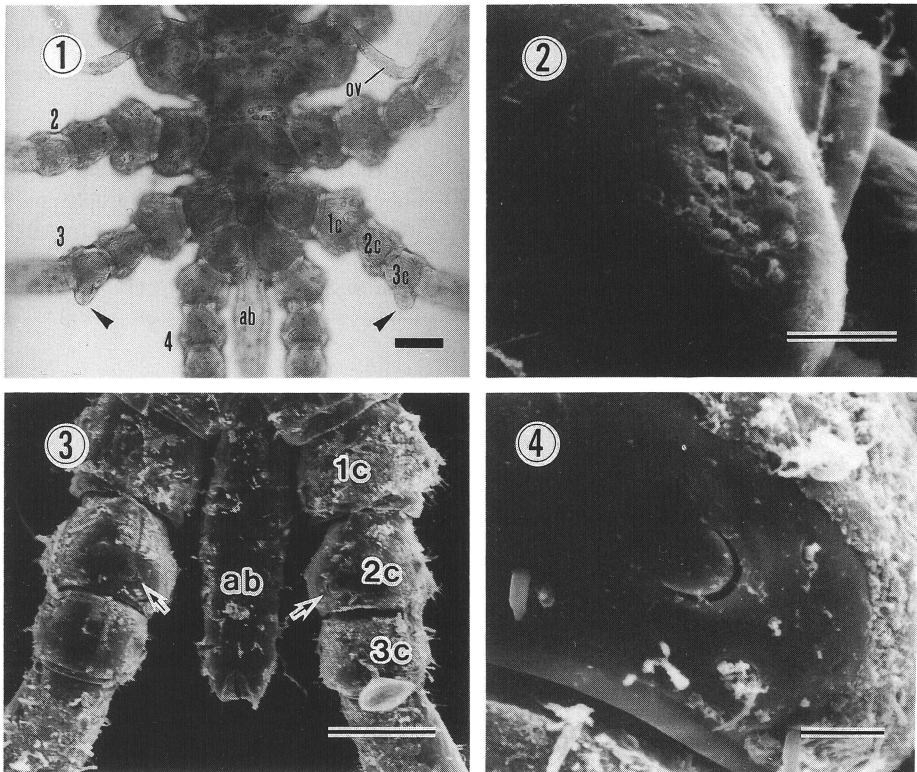


Fig. 1 Ventral view of a male *Rhynchothorax mediterraneus*. Arrowheads showing spurs where “male genital pores” are presumed to be present. Bar = 0.1 mm.

Fig. 2 Multiple pores on spur in third coxa of third left walking leg. SEM. Bar = 10  $\mu\text{m}$ .

Fig. 3 Ventral view of fourth walking legs. Arrows showing crescent slits. SEM. Bar = 100  $\mu\text{m}$ .

Fig. 4 Crescent slit on ventral side in second coxa of fourth right walking leg. SEM. Bar = 10  $\mu\text{m}$ .

ab: abdomen, ov: oviger, 1c–3c: first to third coxae, 2–4: second to fourth walking legs.

*Acknowledgements:* I thank Professor E. Harada, Seto Marine Biological Laboratory (S.M.B.L.), for his invaluable comments on the manuscript. Thanks are also due to Mr. A. Mori, S.M.B.L., whose collection of materials enables me to carry out the present study.

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