OCCURRENCE OF CONJOINED TWINS IN AEGLA ABTAO SCHMITT, 1942 (DECAPODA, ANOMURA, AEGLIDAE)

BY CARLOS G. JARA and VÍCTOR L. PALACIOS

Instituto de Zoología, Facultad de Ciencias, Universidad Austral de Chile, Casilla 567, Valdivia, Chile

ABSTRACT

The occurrence of a pair of conjoined twins among the newly born juveniles of a female of Aegla abtao from the Cruces River (Valdivia Province, Chile) is reported. The twinned juveniles lived for 10 days in an aquarium. They were joined together by their dorsum. One of them, the carrier, was completely developed and a little larger than the other one, which had underdeveloped pereiopods. The occurrence of conjoined twins in Aegla is an unusual phenomenon, since the eggs of crustaceans have determinate cleavage, and are, therefore, currently recognized as unable to produce Siamese twins if the first blastomeres become separated and develop in isolation.

RÉSUMÉ

La présence d’une paire de jumeaux siamois parmi les juvéniles nouvellement nés d’une femelle de Aegla abtao est ici rapportée de la rivière Cruces (Province de Valdivia, Chili). Les jumeaux ont vécu dix jours dans un aquarium à l’Institut de Zoologie de l’Université Austral du Chili à Valdivia. Ils étaient unis par le dos. L’un d’eux, considéré comme le porteur, était complètement développé et un peu plus grand que l’autre dont les péréiopodes n’étaient pas complètement développés. La présence de jumeaux siamois chez les Aegla est un phénomène inhabituel car les œufs des Crustacés ont une segmentation déterminée et sont donc incapables de produire des jumeaux siamois dès lors que les premiers blastomères sont séparés.

INTRODUCTION

Teratisms and morphological abnormalities are infrequent in crustaceans, but do occur. There are reports of supernumerary appendages (Gordon, 1963; Nakatani et al., 1997); appendage deformities (Fausto-Filho & Costa, 1977; Gray, 1968; Manning, 1962; Nickerson & Gray, 1967; Ravindranath, 1978); appendage heteromorphosis (Carmona-Suarez, 1990; Nevin & Malecha, 1991); anomalous positions

1) Fax: 56.63221315; e-mail: cjara@uach.cl
of appendages (Frankenberg, 1965); intersexes (Conover, 1965); partly atrophied thoracic somites (Henry, 1966); albinism (Anderson, 1975; Hatler, 1974; López, 1959); and fusion of spines (Costa, 1967). However, no cases of conjoined twins have been reported among crustaceans, to date.

*Aegla* Leach is a genus of anomuran decapods, endemic to southern South America, and the only anomuran taxon entirely restricted to the freshwater environment (Schmitt, 1942a). It is phylogenetically related to the Galatheidae, Porcellanidae, and Chirotetidae (cf. Martin & Abele, 1986). However, aeglids depart from their marine relatives in having direct development without free larval stages (Bueno & Bond-Buckup, 1996; Bond-Buckup et al., 1996, 1999; Fernández de la Reguera, 1994; Rodrigues & Hebling, 1978). Despite the taxonomical and ecological singularity of this genus, only two papers deal with the embryonic development of *Aegla*, viz., that of *A. prado* Schmitt, 1942, from Uruguay (Verdi, 1985), and of *A. rostrata* Jara, 1977, from Chile (Fernández de la Reguera, 1994). However, neither of these reports provides clues to explain the occurrence of the conjoined twins of *Aegla abtao* Schmitt, 1942 (cf. Schmitt, 1942b), that we report here.

**MATERIALS AND METHODS**

The conjoined twins were born from a brooding *Aegla abtao* female of 17.9 mm cephalothorax length, collected alive in the River Cruces (39°29′S 72°49′W, Province of Valdivia, Chile), about five kilometres to the south of the town of Lanco, along National Highway 5, on 2 August 1996. After collection, the female was maintained in an aquarium at the Instituto de Zoología, Universidad Austral de Chile, in Valdivia, until juveniles hatched. In the river, the water temperature was 11.8°C. In the aquarium, the water temperature was 13.5°C, and dissolved oxygen was provided by an air pump connected to a bubbling device. About 35 days after the brooding female was introduced into the aquarium, the juveniles began to hatch. The conjoined twins were found wandering on the bottom of the aquarium, together with their normal, newly hatched siblings. All juveniles were collected, and transferred to a small 500 ml aquarium to be observed. Ten days after birth the conjoined twins, their normal siblings, and the female parent were immersed in Karnovsky’s glutaraldehyde-paraformaldehyde fixative (Karnovsky, 1965), and subsequently deposited in the Collection of Crustaceans of the Instituto de Zoología of the Universidad Austral de Chile (IZUA), under the number IZUA-C 562. Drawings were made with a camera lucida attached to a WILD M3Z stereomicroscope. Photographs were taken with a WILD MPS45 Photoautomat unit.