ON SOME CASES OF MORPHOLOGICAL ANOMALIES IN THE SPINY LOBSTERS, *PANULIRUS ARGUS* (LATREILLE) AND *PANULIRUS LAEVICAUDA* (LATREILLE) (DECAPODA PALINURIDAE)

BY

JOSÉ FAUSTO-FILHO and RAIMUNDO SARAIVA DA COSTA

Laboratório de Ciências do Mar, Universidade Federal do Ceará, Fortaleza, Ceará, Brazil

INTRODUCTION

Cases of morphological anomalies in the spiny lobsters *Panulirus argus* (Latreille) and *P. laevicauda* (Latreille), have been rarely reported upon in scientific literature.

Costa (1966; 1967) recorded two types of anomaly in these species. The first is a case of an atrophied pereiopod implanted on the abdomen (fig. 3B) and the second a case of fusion of the rostral spines (fig. 1B).

The purpose of the present paper is to record nine more cases of abnormalities registered during ten years of observations on spiny lobsters landed principally at Mucuripe Beach, Fortaleza, Ceará, northeastern Brazil. All specimens are preserved in the Laboratório de Ciências do Mar (Labomar) and indicated here by their catalogue numbers.

*Panulirus laevicauda* (Latreille, 1817)

Case 1. 1 male (cat. n° 271), 150 mm, off Mucuripe, June 1965, having the rostral spines fused (fig. 1B) Costa (1967).

Case 2. 1 female (cat. n° 272), 192 mm off Mucuripe, August 1968, showing a fusion of the rostral spines. This case is almost similar to the first one, but the tips of the rostral spines are separated (fig. 1A).

Case 3. 1 female (cat. n° 273), 182 mm, off Mucuripe, February 1966, having a bifurcation of the left rostral spine; the right one seems to be normal, but its tip appears to be regenerated after it had been broken (fig. 1C).

*Panulirus argus* (Latreille, 1804)

Case 4. 1 male (cat. n° 274), 219 mm, off Mucuripe, March 1968, with a bifurcation of both left and right rostral spines; a case similar to the first one, but involving both rostral spines (fig. 1D).

Case 5. 1 male (cat. n° 275), 188 mm, off Mucuripe, October 1967, with a bifurcation of the right rostral spine. As in the preceding cases the tips of the rostral spines seem to be broken and regenerated (fig. 2A).

Case 6. A specimen, sex unknown (cat. n° 276), off Mucuripe, date unknown, with one trifurcated antenna. The antenna having its extremity broken. The basal fork presents a strong callosity, possibly indicating the area where the antenna was damaged (fig. 2B).

Case 7. 1 male (cat. n° 277), 86 mm of carapace, off Mucuripe, September 1967, with a bifurcation of the base of the right antenna. This case differs from the previous because the anomaly occurs on the antennal segment and the shape of this segment is similar to that of the first, second, or third segment. The extremity of the apparently normal antenna presents a callosity, as if it was broken (fig. 2C).

Case 8. 1 male (cat. n° 218), 96 mm of carapace, off Mucuripe, November 1967, with a bifurcation of the fifth left pereiopod. On the inner margin of the base of the propodus there is a second abnormal propodus; the two propodi are fused at the base and together articulate with the carpus. On the tip of the abnormal propodus there is a short prominent structure similar to an atrophied...
Fig. 1. A-C, *Panulirus laevicauda* (Latreille), A, B, fusion of the rostral spines (B, after Costa, 1967); C, bifurcation of the left rostral spine. D, bifurcation of the rostral spines in *P. argus* (Latreille).

dactylus (fig. 3A). This anomaly reminds those formities recorded by Shuster, et al. (1963) and Nickerson & Gray (1967) for Blue crabs and King crabs.

Case 9. 1 female (cat. n° 279), 174 mm of abdomen, off Sabiaguaba, Ceará, February 1966, with an atrophied pereiopod replacing the endopod of the fourth pleopod. This case is discussed by Costa (1966): “The atrophied pereiopod substitutes the endopodite of the pleopod of fourth abdominal segment on the left side, the dactylodote and propodus being quite evident. Also, partial deformations in the shape of the pleopod under reference are noticed, as well as in the exopodite of the pleopod of the third abdominal segment of the right side” (fig. 3B).

Case 10. 1 female (cat. n° 280), 182 mm, Mucuripe, March 1968, with an atrophied pleopod in which the endopod is replaced by a structure resembling an antennula. This case resembles one