produced on the surface of the coralline alga by the boring activities of barnacles. Only after several months of experience was the senior author able to distinguish with the naked eye between juvenile isopods from phoronid and barnacle borings.

If the coloration patterns of juvenile isopods do mimic phoronid and barnacle markings, one would expect a close correspondence between the size of the bore holes and the size of the patch of coloration. Figures 11A and B present the frequency of color patch sizes and phoronid bore hole sizes, respectively. Figures 11C, D, and E present the same information for color patterns D and E and barnacle slits. In each of these comparisons (Fig. 11, A vs B, C vs E, D vs E) the distributions are quite similar, with no significant differences found between the mean sizes of coloration patches and barnacle/phoronid markings (t-test).

These data suggest that coloration Patterns C, D and E (Fig. 10) are adapted for concealment of juveniles inhabiting coralline alga from visually-oriented, water-column-dwelling predators. The tidal channels in which *P. glynni* are found also support several planktivorous fish species, many of which will consume isopods if offered in the laboratory. Some of these species, primarily chaetodonts, guard schools of planktivorous fry by backing them up against pieces of cobble. We suggest that these fry may represent a selection pressure for cryptic coloration in juvenile *P. glynni*.

Color Patterns A, B, and F (Fig. 10) are not obviously related to any surface features of the coralline alga pavement. The beach at Punta Paitilla, where these organisms were collected, has suffered over the past ten years from increasing levels of pollution from Panama City. The resident fish population has declined substantially in both diversity and abundance over this period (R. Rubinoff, personal communication). It is unknown whether the increased pollution levels have relaxed selection for cryptic coloration, but the matter clearly merits further attention.

The color patterns noted for *P. glynni* are similar to those recognized in several other species. The possibility that these polymorphs may be adapted to conceal isopods from water-column-dwelling predators also merits consideration. This possibility, of course, is not mutually exclusive with the apparent pleiotrophic link between coloration and physiological tolerances.

Summary

Paraleptosphaeroma glynni inhabits the surfaces of cobble, to which it appears to be limited by its poor swimming ability and potentially intense fish predation. Upon these cobbles occur two species of anascan bryozoans and a coralline alga. *Paraleptosphaeroma glynni* feeds upon the bryozoans and apparently utilizes markings on the surface of the coralline alga as a refuge from water-column-dwelling predators. These observations imply some degree of functional dependence between *P. glynni* and the sessile encrusting fauna of the cobbles they inhabit. The nature of this dependence and its relation to the evolution of sequential hermaphroditism in *P. glynni* will be explored in further communications.

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