

# Observations of the Feeding Habits of *Tochuina tetraquetra* (Pallas)

(Gastropoda : Tritoniidae)

BY

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BOTH THE LARGE nudibranch *Tochuina tetraquetra* (Pallas, 1788) and the alcyonacean *Gersemia rubiformis* (Pallas, 1788) are found subtidally to depths of at least 50 feet (15 m) in Trinidad Bay, Humboldt County, California (41°03'N, 124°08'W). In the field, *T. tetraquetra* was observed grazing solely on *G. rubiformis*, although other cnidarians were common in the area. Casual observations on specimens kept at the Marine Laboratory, Trinidad, California, suggested that the nudibranch would starve to death in the absence of *G. rubiformis*.

In an effort to determine whether the nudibranch was restricted to *Gersemia rubiformis* as a food source, we obtained 2 healthy specimens of *Tochuina tetraquetra* at a depth of 50 feet (15 m) on Prisoner's Rock, Trinidad Bay, California, during October, 1971. These animals were kept in a refrigerated aquarium at the Marine Laboratory, Trinidad.

The specimens were offered a variety of cnidarians as food, but only *Gersemia rubiformis* was accepted. *Tochuina tetraquetra* retracted violently upon contact with the tentacles of both *Corynactis californica* Carlgren, 1936, and *Anthopleura xanthogrammica* (Brandt, 1835). They ignored the coral *Paracyathus* sp.

Upon finding a colony of *Gersemia rubiformis*, *Tochuina tetraquetra* spread its oral veil over a portion of the colony. It then settled down for hours, slowly rasping a large groove into the colony. Colonies an average of 4 cm in diameter were eaten and totally digested within 1½ days. When disturbed during feeding, the nudibranch might move for a while, but soon returned to its rasping. This feeding pattern is similar to that of *Tritonia hombergi*, as described by THOMPSON, 1958 (in HYMAN, 1967: 535).

Feces of *Tochuina tetraquetra* consisted almost entirely of spicules of *Gersemia rubiformis*. On occasion, the feces contained pieces of substrate to which the alcyonacean

had been attached, indicating that the nudibranch had eaten the colony to the very base.

Following feeding, *Tochuina tetraquetra* often assumed a resting position. It contracted itself tightly into a hump. The rhinophores were retracted. It would stay motionless in this position for up to a day at a time. This posture seemed to have no relationship to the availability of food. Such a resting position has previously been reported for *Dendronotus iris* Cooper, 1863, by WOBBER (1970: 383), but that animal's posture is different from that of *T. tetraquetra*.

We have found a few colonies of *Gersemia rubiformis* at a depth of 50 feet (15 m) at Point Cabrillo, Mendocino County, California (39°21'N, 123°49'W). Although we did not find *Tochuina tetraquetra* there, it seems likely that the ranges of both animals follow the same patterns. *Tochuina tetraquetra* has been reported from northern Japan (THOMPSON, 1971: 335) to Santa Barbara (ROLLER & LONG, 1969: 429), while RICKETTS *et al.* (1969: 202) described *Gersemia rubiformis* as "boreal-arctic, reported as far south as Trinidad Head in Humboldt County, California." It seems likely that the scarcity of *T. tetraquetra* south of Trinidad Bay is directly related to the lack of abundant colonies of *G. rubiformis*.

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