
 短 報 Short Notes

魚類と共生する後鰓類

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**The First Association of an Adult
Mollusk (Nudibranchia: Doridae)
and a Fish (Perciformes:
Gobiidae)***

Ernest H. WILLIAMS, Jr.

and

Lucy Bunkley WILLIAMS

(Sesoko Marine Science Center,
3422 Sesoko, Motobu-cho,
Okinawa 905-02 Japan**)

Besides glochidal stages of some fresh-water mollusks (Bivalvia) which develop in the gill filaments of a number of different fish species, we are unaware of any report of an association between a mollusk and a fish. We collected fishes off the Sesoko Marine Science Center during 39 scuba dives on 31 days (25 May to 28 December 1985) for a total of 94 man-hours of observations. During these dives we observed four datehaze, *Amblyeleotris japonica* Takagi (Perciformes: Gobiidae) (associated in burrows with snapping shrimp (Crustacea: Decapoda)) each with a dark mass attached to the dorsal fin (Fig. 1). We collected two of these four "masses" and found they were dorid nudibranchs.

Materials Examined or Observed:

Dive No. EHW-1264: 50 m north of

Sesoko Marine Science Center, 26° 38'N, 127° 52'E, 1 specimen of *Amblyeleotris japonica*, 52 mm Standard Length, 66 mm Total Length (deposited as "type-host" in the University of Colorado Museum UCM Fish No. 6877), with 7.8 mm long and 3.6 mm in maximum width specimen dorid nudibranch (UCM Moll. No. 32960) attached to first 2 dorsal spines of first dorsal fin (Fig. 1), on coral rubble bottom, depth 4.6 m, collected with microbarb multiprong spear and miniature Hawaiian sling speargun, 1100 hrs, 1 June 1985.

Dive No. EHW-1277: 350 m south of Sesoko Marine Science Center, 2 specimens of *Amblyeleotris japonica* (observed), approximately 65 mm TL, with 1 specimen each of a dorid nudibranch attached to anterior of first dorsal fin, 7.7 mm long and 3.8 mm in maximum width dorid (Sesoko Coll.) collected by spearing off host, coral rubble bottom around 2 large coral heads near base of reef, depth 4.5 m, 1200 hrs, 13 June 1985.

Dive No. EHW-1278: 200 m north of Sesoko Marine Science Center, 1 specimen of *Amblyeleotris japonica* (observed), approximately 70 mm TL with dorid nudibranch attached to anterior portion of first dorsal fin, on sand and coral rubble bottom with scattered coral heads and rocks, depth 4.7 m, 1100 hrs, 14 June 1985.

Discussion:

The nudibranch-*Amblyeleotris japonica* association was very rare. We only found four cases among many thousands of *A. japonica* observed around Sesoko,

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** Permanent address: Department of Marine Sciences, University of Puerto Rico, Mayaguez, Puerto Rico 00708.

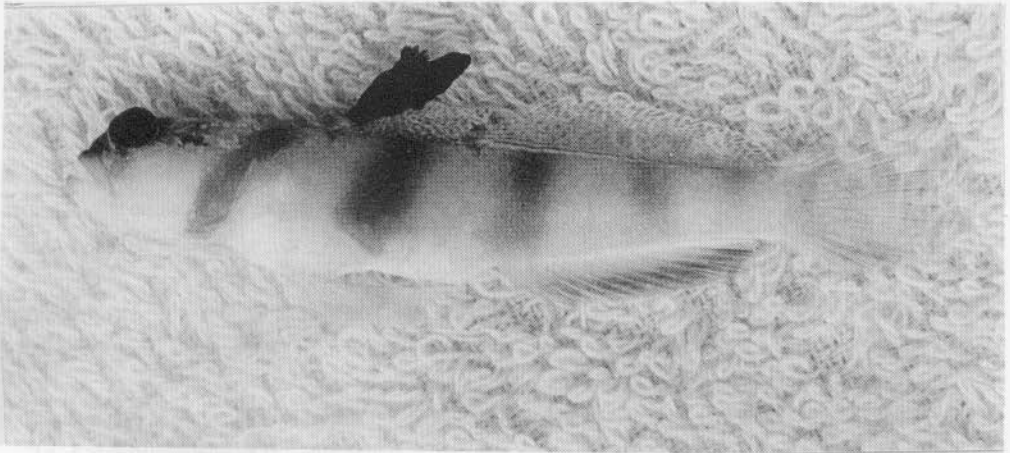


Figure 1. A dorid nudibranch attached to a specimen of *Amblyeleotris japonica* Takagi, from Sesoko Island, Okinawa. Laboratory photograph by Lucy B. Williams.

Tonaki, Kuro, Iriomote and Ishigaki Islands and Onna Point, Okinawa. Mr. Tetsuo Yoshino (Pers. comm.) also observed a single association off Sesoko Island, and one off Iriomote Island. Two of our four cases occurred on gobies in burrows approximately six meters apart. Five of the six total observed associations occurred along 550 meters of shore off Sesoko Marine Science Center.

The nudibranch does not seem to be absolutely dependant on its goby host. The detached specimen separated from the host (EHW-1277) survived for a week in an aquarium before being relaxed and preserved. Relaxation by slowly chilling the animal in seawater was more effective than magnesium chloride relaxation.

The goby association may be a seasonal occurrence. Our records are for a two week period in June. None were observed for the remainder of the year.

The presence of the nudibranch may make the goby more conspicuous, but seems little disadvantage to this already brightly colored fish. The nudibranch may gain protection from predation or

access to some food source in the goby-shrimp burrow. The famous goby-shrimp commensalism is certainly made more biologically interesting by the addition of nudibranch phoresy.

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要 約

ダテハゼの背鰭前端にウミウシ類の1種が着生共生生活している例が、1985年6月の2週間に4例発見されたが、成体の後鰓類と魚類の共生関係の最初の例である。なお、ウミウシは魚体を離れても充分生活可能で、恒常的な共生関係とは思えない。