

A New Opisthobranch Mollusc from Hawaii

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THE OPISTHOBRANCH genus *Arthbressa* was proposed by Evans (1950) on the basis of a revision of the genus *Volvatella* Pease 1860. Pease's genus was known only from four species, three described by Pease (1860, 1868), based on single specimens from the Pacific, and a fourth described by G. and H. Nevill (1869) from Ceylon. Evans (1950) pointed out several discrepancies in Pease's species descriptions, and, while retaining *V. fragilis* Pease, the type species, he proposed the genus *Arthbressa* to include *A. cincta* (G. and H. Nevill) from Ceylon and *A. elioti* Evans which was newly described from Zanzibar.

Four specimens of a species congeneric but distinct from *A. cincta* and *A. elioti* have been collected in the Hawaiian Islands, and are here described as a new species.

GENUS *Arthbressa* Evans 1950

SHELL: Thin, calcareous, covered by a thicker periostracum extending beyond the calcareous margin. Body whorl ovate, broadest in the middle, and contracting posteriorly to a spout. Anterior aperture as broad as shell in its anterior half. Right lip overlapping reflected left lip behind aperture; left lip depressed behind margin and passing at the junction of right and left lips under recurved left margin into a deep umbilical cleft; margin continuous with the spout. On left side of spout columella of a sunken spire of approximately three turns visible through periostracum.

ANIMAL: Tentaculate area of head rimless, frontal, and oriented ventrally. Dorsal tentacles short and smooth. Lateroventral tentacles deeply grooved laterally, slightly bilobed at tip. Eyes immediately posterior to grooves. Anal opening on dorsal surface of visceral mass beneath man-

tle. Foot small and triangular with blunt corners.

TYPE SPECIES: *A. cincta* (G. and H. Nevill). Ceylon.

Arthbressa evansi, new species

Fig. 1

HOLOTYPE: Bishop Museum, no. 8901. 11 mm. in length; 6 mm. in breadth; collected in a tidepool, Diamond Head Beach Park, Oahu, Hawaii, November, 1956. **PARATYPE:** Bishop Museum, no. 8902. 11 mm. in length; 5 mm. in breadth; collected with holotype.

Length of anterior aperture more than half that of shell. Body whorl rounded, not flattened on the left, and with the spiral curve of the shell continued into it. Length of spout less than half shell breadth. Opening of spout triangular with a ventral slit continuous with aperture. Mantle edge smooth in spout. Animal orange, freckled with a darker shade, and with a band of freckling crossing body whorl. Foot similar in coloring to that of body but freckling of a lighter shade. Foot bluntly rounded, not extending anterior to head, and with a groove separating anterior two-thirds from posterior third. Animals extruded a viscid white substance from both posterior spout and anterior aperture. Specimens collected vary from 8–11 mm. in length and from 4–6 mm. in breadth.

The species has been named for the late J. T. Evans.

The specimens were collected in a tidepool on the reef flat of Diamond Head Beach Park, Oahu. They appeared to be associated with the algae *Padina* and *Gracilaria*. The mode of progression on a hard substrate is such that the anterior end of the foot extends forward and attaches to the substrate while the posterior portions move up. The animals readily suspend themselves upside down on the surface of the water, progressing as waves of muscular contraction pass across the foot.

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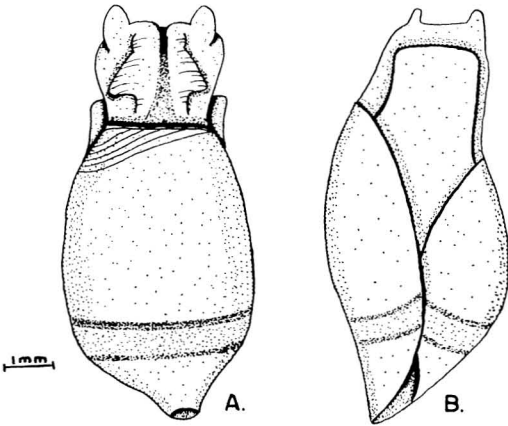


FIG. 1. *Arthressa evansi*. Drawn from the living animal. A, Dorsal view; B, ventral view.

DISCUSSION

Of the three species now included in *Arthressa*, *A. evansi* appears to be intermediate in characters between *A. cincta* and *A. elioti*. *A. evansi* resembles *A. cincta* in coloring and in the smooth mantle edge; it resembles *A. elioti* in the length of the anterior aperture and in the rounded body whorl.

Although Evans (1950) suggested that *Volvatella fragilis* Pease should be retained as it was sufficiently described, no collections of this species have been recorded in Hawaii since the original description. Pease (1860) merely described the type specimen as from the "Sandwich Islands," and the animal was illustrated as being white. Evans (1950) distinguished *Volvatella* from *Arthressa* on the basis of Pease's (1860) description of the anal opening into the posterior spout in *Volvatella*; the anus opens on the dorsal surface of the visceral mass in *Arthressa*. If specimens agreeing with Pease's (1860) description of *Volvatella*, including a posterior anus, are collected in the future, Evans' distinction between the genera will merit rec-

ognition; however, it is possible that Pease's description was misleading, and the pore which he described as the anus may have been the pore of the gland which secretes the viscid fluid which these animals emit. If this is the case, Evans could have gone further and entirely suppressed the genus *Volvatella* of Pease.

Evans (1950) described *Arthressa* as a sacoglossan genus, and it should therefore be removed from the position assigned *Volvatella* in the Akeratidae of Thiele (1931). *Arthressa* is of interest in the scheme of opisthobranch relationships in that it is a suctorial form feeding on various algae. The occurrence of a shell and a generalized mantle cavity and alimentary canal suggest that *Arthressa* holds a position in the Saccoglossa analogous to that of *Actaeon* (Fretter and Graham, 1954), which also possesses many prosobranchiate characters.

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