

AN OCCURRENCE OF *ARCHIMEDES* IN SOUTHERN NEVADA

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The genus *Archimedes* is reported here for the first time from the state of Nevada, occurring in rocks judged to be late Mississippian in age. A single screw without attached frond has been found recently in basal beds of the Bird Spring Formation (Indian Springs Member) in Clark County, Nevada. This represents an extension of the known geographic range of the genus in the United States south from northern Utah and west from southeastern Arizona.

The specimen (Univ. Calif., Los Angeles, Dept. Geology No. 32560) was found approximately 80 feet above the Indian Springs-Monte Cristo contact in a coarse-grained ferruginous shaly limestone that weathers dark red. The locality is as follows:

SE $\frac{1}{4}$  NE $\frac{1}{4}$  Sec. 5, T.19S., R.63E., Dry Lake Quadrangle, Clark County, Nevada. The bed is exposed a few feet below the top of the red-weathering Indian Springs Member on either side of major northwest trending gully that is interrupted upstream by a 100-foot high cliff of dark gray limestone.

The specimen was collected by Terry Cadi, a graduate student in the U.C.L.A. geology department.

*ARCHIMEDES* cf. *A. SWALLOWANUS* Elias, 1957  
Text-fig. 1

*Archimedes swallowanus* ELIAS, 1957, Jour. Paleontology, v. 31, no. 2, p. 415, pl. 47, figs. 11,12.

*Description.*—The screw consists of 17 volutions and is 68 mm. long. The flange is mechanical or V-shaped, with upper slope more steeply inclined to the axis than lower slope. Average height of volution is 4.0 mm. with a range of about 3.5 to 4.3 mm. The flange diameter averages 7 mm. with a range of 6.2 to 7.3 mm. and shaft diameter is approximately 2 mm. with a range of 1.4 to 2.3 mm. The volution height and shaft and flange diameters remain essentially constant through the 17 preserved volutions, and the range of measurements is at least partly due to indifferent preservation.

The three lower volutions were carefully ground down in the hope of establishing the

meshwork formula within the flange. Because of poor preservation no meshwork could be seen in polished or thin sections of the lower volutions. The outer surface of the screw is preserved as a dark brown iron oxide coating and the interior is largely recrystallized.

*Discussion.*—The dimensions of the screw of *Archimedes pseudoswallovanus* given by Elias (1957, p. 415) are 3 $\frac{1}{2}$  to 5 mm. for height of volution with an average of 4 $\frac{1}{2}$  mm., flange diameter of 7 mm., and shaft diameter of 2 mm. These measurements agree closely with the dimensions cited above. In shape and size of screw *A. pseudoswallovanus* is similar to *A. swallowanus* Hall and the two species are distinguished by different kinds of fronds. Because the frond is not known for the specimen under discussion it can be only tentatively assigned to *A. pseudoswallovanus*, although it



TEXT-FIG. 1—*Archimedes* cf. *A. pseudoswallovanus* Elias. Univ. Calif. Los Angeles Dept. Geology No. 32560. Specimen prior to grinding down lower three volutions. XI.