

Grant, U.S. & Stevenson, R.E.,
1948

UCLA Type Collection
REPRINT
Do Not Remove From This Room

A NEW *PECTEN* FROM THE UPPER MIOCENE
OF CALIFORNIA

QE
701
82
V. 22
WITHDRAWN
no. 6
804-805

BY

U. S. GRANT AND ROBERT E. STEVENSON

The RALPH D. REED LIBRARY
DEPARTMENT OF GEOLOGY
UNIVERSITY of CALIFORNIA
LOS ANGELES, CALIF.

Reprinted from the
JOURNAL OF PALEONTOLOGY
Vol. 22, No. 6, November, 1948

A NEW *PECTEN* FROM THE UPPER MIOCENE OF CALIFORNIA

U. S. GRANT AND ROBERT E. STEVENSON

ABSTRACT—A new species of *Pecten* from the Neroly formation of the Upper Miocene of California, *Pecten (Pecten) juanensis*, is illustrated and described. The similarities between the new species and *Pecten coalingaensis* and *P. vogdesi* suggest a genetic relationship between the three forms with *P. juanensis* apparently being ancestral to the latter two species.

A number of years ago Mr. E. H. Quayle and the senior author made a collection of upper Miocene Mollusca and Echinoidea in the San Juan River area of eastern San Luis Obispo County, California. The collections consisted largely of *Pectens* and specimens of *Astrodapsis*, the latter being a common scutellid echinoid of the upper half of the Miocene and lower half of the Pliocene of California. The *Pectens* include *Lyropecten estrellanus* (Conrad) and a new species of typical *Pecten* belonging to the *Pecten coalingaensis* clan. A description of this new species follows, together with a discussion of its probable relationships.

PECTEN (PECTEN) JUANENSIS Grant and Stevenson, n. sp.

Shell of moderate size; right valve highly ventricose; left valve flattish (none well preserved); right valve sculptured with 18 to 21 rounded ribs which are less convex near their medial portions though not flat, with evenly rounded interspaces which are somewhat narrower than the ribs; no inter-ribs nor radial striations present on type material; ears of right valve about equal in length, smooth, with occasional subdued growth lines; byssal notch under right ante-

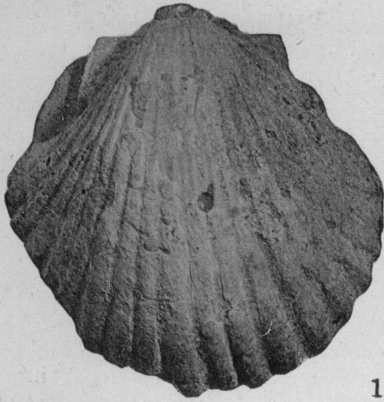
rior ear slightly developed; hinge apparently similar or identical to that of *Pecten coalingaensis*. Dimensions of type: Height, $2\frac{1}{8}$ inches (54 mm.); width, $2\frac{1}{4}$ inches (57 mm.) ventricosity of right valve, 15/16 inch (24 mm.); length of hinge, 13/32 inch (27 mm.)

Holotype.—Catalogue No. 10441 in the collection at the University of California at Los Angeles; a large right valve adherent to an echinoid, from UCLA Locality 435, sandstone fossil reef on east side of valley of San Juan Creek, at elevation of about 1500 feet above sea level, in west middle half of section 32, Township 28 south, Range 16 East (Mount Diablo Base and Meridian), eastern San Luis Obispo County, California. Stratigraphic position: approximately at conformable contact between lower and upper Neroly, in lower half of the upper third of the Miocene. U. S. Grant and E. H. Quayle, collectors, July 1933. Associated fauna: *Lyropecten estrellanus*, *Astrodapsis* sp. (at Locality 437, same horizon NW across valley) and *Ostra panzana* Conrad, etc.

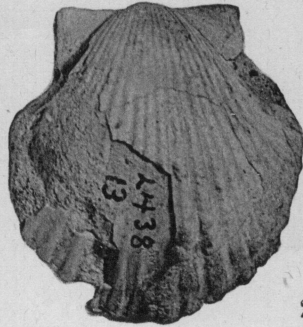
Paratype.—California Academy of Sciences, No. 7729, from UCLA Locality 438

EXPLANATION OF PLATE 124

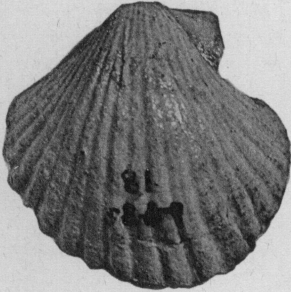
- FIGS. 1-4**—*Pecten (Pecten) juanensis*, new species, Grant and Stevenson, from the Upper Miocene of eastern San Luis Obispo County, California. All figures approximately natural size. 1, right valve of Holotype. Note the smooth ears. 2, right valve of Paratype, California Academy of Sciences Collection. 3, right valve of Paratype in U. S. National Museum. 4, side view of the Holotype of *Pecten juanensis*, showing the ventricosity of the right valve.
- 5, 6—*Pecten coalingaensis* Arnold, from Pliocene of Kettleman Hills, California. Right valve of hypotype, catalogue number 3445, Univ. of Calif. at Los Angeles, for comparison; 6, side view of right valve of *P. coalingaensis* for comparison of ventricosity with that of *P. juanensis* shown in fig. 4.



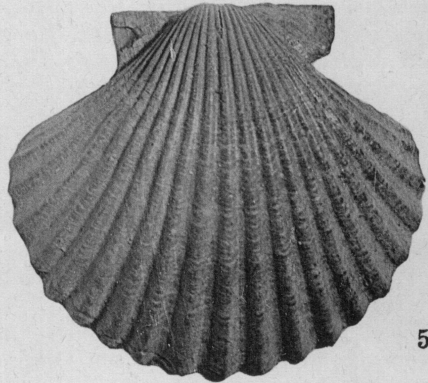
1



2



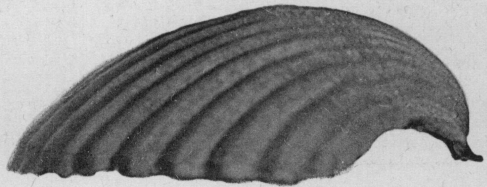
3



5



4



6

Grant and Stevenson, Upper Miocene *Pecten*

in the same fossil reef about 3.6 miles North 29° West of UCLA Locality 435, sandstone, strike N29W, 85° northeasterly.

Paratype.—U. S. National Museum, from UCLA Locality 435.

This new species differs from *Pecten coalingaensis* Arnold of the upper Pliocene in its lack of ribs on the ears of the right valve, in its lower, broader, less convex ribs with narrower interspaces, and in its greater ventricosity. Both species appear to have the same average number of ribs, which is about 20 on the right valve.

From *Pecten vogdesi* Arnold, the new Miocene species differs in its smaller size, less ventricosity and smooth ears. *P. vogdesi* has 3 or 4 strong ribs on the right anterior ear with more, slightly less prominent ribs on the posterior ear. Both ears of the new Miocene species are smooth.

The similarities between the new species and *P. coalingaensis* Arnold (Arnold in Anderson 1905, p. 197; Arnold 1906, p. 97) is greater than the similarities between the new species and *Pecten bellus* Conrad (Proc. A. N. Sci. Phila. 1856, p. 312; Arnold 1906, p. 95). We believe that *P. juanensis*, *P. coalingaensis* and *P. vogdesi* are genetically related and form a clan to which *P. bellus* is only related as a possible off-shoot from the upper Miocene species here described, or from an earlier common ancestor. The matrix of the surrounding sediment and the

associated fauna indicate that *P. juanensis* probably was a dweller in shallow, warm water of normal salinity. The chief interest in this new upper Miocene species is that it appears to be ancestral to *P. coalingaensis* and *P. vogdesi*.

Types of this new species were examined by Dr. Leo G. Hertlein of the California Academy of Sciences, an authority on Pectens, who concurs with us in its distinctness from the other species mentioned above. Dr. Hertlein called our attention to the apical angle of the umbones, which in the new species is about 90 degrees, but in *P. vogdesi* is about 95 to 100 degrees. He also mentioned that *Pecten heimi* Hertlein (Proc. Calif. Acad. Sci. 1925, pp. 9-10) of the lower Pliocene(?) of Lower California, Mexico has but weakly sculptured ears. In general appearance it closely resembles the new Miocene species which, however, has unsculptured ears. Possibly the relationship of the new species is closer to *P. heimi* than to *P. vogdesi*.

REFERENCES

- ARNOLD, RALPH, 1905, in F. M. Anderson, Proc. Calif. Acad. Sci., Ser. 3, Vol. 2, p. 197, pl. 18 figs. 94-98.
—, 1906, U. S. Geol. Surv. Prof. Paper 47, p. 97, pl. 4, figs. 4, 4a, 5.
Proc. Acad. Nat. Sci. Phila. for 1856, p. 312, (1857)
Proc. Calif. Acad. Sci., Ser. 4, Vol. 14, No. 1, pp. 9-10, pl. 1, fig. 3, pl. 3, fig. 3, July 1925.

OCIA Type Collection

REPRINT

Do Not Remove From This Room