FOUR NEW GASTROPODS FROM THE UPPER PLEISTOCENE OF NEWPORT BAY MESA, ORANGE COUNTY, CALIFORNIA

By George Willett*

Introduction.—Previously reported from the Newport Bay Mesa locality[1] were two pelecypods new to the upper Pleistocene marine fauna of southern California. In addition are four new gastropods from the same locality. These are described below.

Turbonilla (Turbonilla) grouardi sp. nov.

(Plate 4, fig. 1)

Description.—Shell white, slender with sides convergent, the diameter increasing very gradually. Whorls slightly rounded, shouldered; shell constricted at the sutures; ribs vertical or nearly so. Early whorls (about 5) missing from the type. Ribs 12 to 13 on first three of remaining turns, 16 on the next, and 21 on the penultimate. These ribs extend from the summit almost to the succeeding suture, the smooth band at their termination being narrow. Intercostal spaces on penultimate whorl about as wide as on earlier whorls. Base rounded, aperture oval, somewhat extended anteriorly; columella nearly straight.

Type, No. 1069 Los Angeles County Museum, collected by George P. Kanakoff in lower north exposure of upper Pleistocene deposits of Newport Bay Mesa, Orange County, California (L.A.C.M. Invert, Paleo. Loc. 68-B.) An additional example (younger individual), also without nuclear whorls, taken at the same locality. Measurements of the type (exclusive of missing early whorls) : length 5.2 mm.; transverse diameter 1.6 mm.

Discussion.—The shape of the whorls in this species is much as in *Turbonilla calvini* Dall and Bartsch, their diameter posteriorly being as great as it is anteriorly. However, *T. grouardi* is much larger than *T. calvini,* and differs further in the abrupt increase in number of ribs on the last whorl. This species is named for Mr. and Mrs. F. L. Grouard, who first reported these deposits to the Museum.

*Manuscript prepared by Mr. Willett shortly before his death.

[1]Willett, George, Two New West American Pelecypods, So. Calif. Acad. Sci., vol. XLIII, pt. 1, pp. 19-22, pl. 7, 8, 1944.

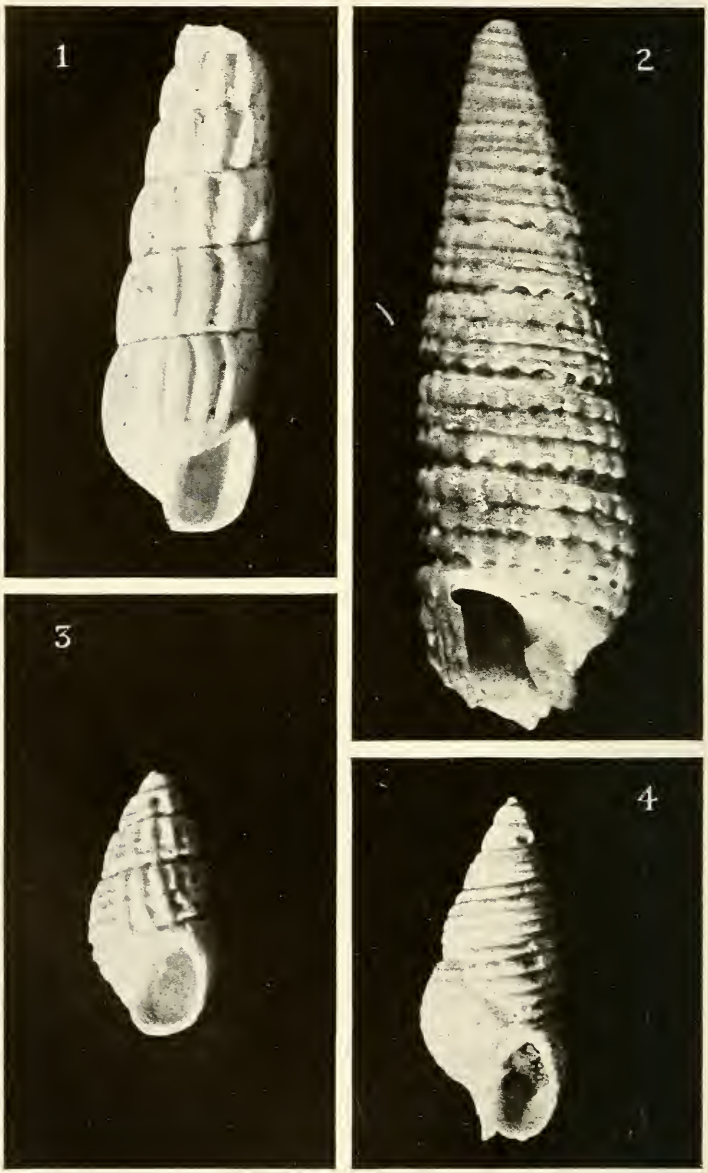

PLATE 4

1. Turbonilla grouardi Willett
2. Triphora kanakoffi Willett
3. Odostomia elsiæ Willett
4. Odostomia effiæ Willett

Odostomia (Menestho) effiæ sp. nov.

(Plate 4, fig. 4)

Description.—Shell imperforate, elongate-conic. Nucleus small, tilted, partly immersed obliquely in succeeding turn. Post-nuclear whorls slightly rounded, ornamented with four heavy, spiral cords, which are more than twice as wide as the grooves separating them. On the last whorl the peripheral arc emerges to form a fifth cord almost as heavy as the four preceding it. Sutures weakly channeled. Base rounded; aperature rounded below, acutely angled above; columella with distinct fold at its insertion. Base with about 8 ribs which grow gradually weaker as they approach the columellar region.

Type, No. 1070 Los Angeles County Museum, collected by George P. Kanakoff at upper north location of upper Pleistocene deposits of Newport Bay Mesa (LACMIP Loc. 63-A). Two additional specimens collected at the same location, and one at Los Angeles County Museum locality 66.

There are also at hand four examples of this species collected by Effie M. Clark and Edna T. Cook at an upper Pleistocene deposit on Vermont Avenue near Sepulveda Blvd. just beyond the city limits of Los Angeles. The type has 6 whorls and measures: length 3.5 mm.; transverse diameter 1.3 mm. A paratype in Mrs. Clark's collection measures 4.0 by 1.6 mm.

This small species is similar in appearance to *Odostomia grammatospira* Dall and Bartsch, from which it differs in smaller size and heavier spirals, with correspondingly much narrower interspaces. It is named for Mrs. Effie M. Clark, who has many interesting species of mollusks in the fossil beds of this region.

Odostomia (Chrysallida) elsiæ sp. nov.

(Plate 4, fig. 3)

Description.—Shell small, elongate-ovate; sutures channeled. Nucleus tilted, partly immersed in succeeding turn. Post-nuclear whorls ornamented with slightly retractive axial ribs running from suture to suture; on the first post-nuclear whorl of the type these ribs are obliterated, the second has 14, the third 16, and the last whorl 20. Spiral sculpture inferior to axial, consisting of three thin, equally spaced threads on the anterior two thirds of the whorl, there being no spiral thread at the summit. Base rounded, marked with four strong, evenly-spaced cords of about equal strength. Aperture oval, angulated above, rounded below, with little, if any, anterior projection; inner lip expanded, covering the umbilicus; columellar fold inconspicuous and only visible well within the aperture.

Type, No. 1071 Los Angeles County Museum, collected with one additional specimen, by George P. Kanakoff, at the upper north location of upper Pleistocene deposits of Newport Bay Mesa, Orange County, California (LACMIP Loc. 68-A). The type has five post-nuclear whorls. Measurements: length 2.7 mm.; transverse diameter 1.3 mm. The paratype is approximately of same length, but shell more slender, probably due to wear.

Although this is a very small species, the writer does not know any other which it resembles closely. It shows some similarity to *Odostomia talama* Dall and Bartsch, but differs markedly from that species in smaller sizes, absence of spiral at the shoulder, and fewer basal cords. This shell is named for Elsie M. (Mrs. T. P.) Chace, whose work on California mullusca is well known.

Triphora kanakoffi sp. nov.

(Plate 4, lg. 2)

Description.—Shell large for genus, sinistral, elongate-conic, brown. Nucleus and first two post-nuclear whorls missing. First two of remaining turns with two spiral rows of nodes, one at the top, the other at the bottom of the whorl; on the next whorl (the 5th) a slender, tuberculated, spiral keel appears about midway between the two marginal rows of tubercles; this keel increases in strength until, on the ninth turn, it is about as strong as the other two; on the last whorl there are four rows of tubercles, the anterior of these being somewhat weaker than the others; also, on the latter part of the last whorl is a median intercalated riblet. On all the turns the anterior row of tubercles, on its anterior side, slopes gently into the suture. Tubercles rounded, connected between the rows, but axial sculpture hardly apparent, always inferior to spiral sculpture. Tubercles numbering 16 on first two remaining turns, increasing to 22 on the penultimate whorl and 25 on the last. Base short, bounded posteriorly by a prominent, smooth cord, followed by two, more obscure ones which are somewhat roughened and broken by lines of growth. Aperture diagonal, oval, extended at both ends, deeply channeled anteriorly; outer lip thin, inner lip expanded over the stout, twisted columella.

The unique type, No. 1072 Los Angeles County Museum, was collected by George P. Kanakoff in the upper Pleistocene deposits on the south side of Newport Bay Mesa, Orange County, California (LACMIP Loc. 66-1). The type has ten remaining whorls. Measurements: length 9.0 mm.; transverse diameter 3.0 mm. A complete specimen of comparable size would measure approximately 9.5 millimeters in length.

In shape and sculpture this shell is similar to *Triphora pedroana* Bartsch, which occurs in the same deposit. It differs from

that species in much larger size, wider sutures, and earlier appearance of the median row of tubercles. In diameter, this is the largest of our known local Triphoras; in length, it is exceeded only by the more slender and very differently ornamented *Triphora callipyrga* Bartsch, which sometimes attains a length of 11 millimeters. The writer takes pleasure in naming this interesting species for George P. Kanakoff, through whose efforts these collections were obtained.

Los Angeles County Museum.

FOSSIL ARTHROPODS OF CALIFORNIA

15. SOME HEMIPTERA FROM THE McKITTRICK ASPHALT FIELD

By W. Dwight Pierce

The great abundance of aquatic Hemiptera in the McKittrick deposit is of interest, especially because many of the insect bodies are more or less intact. These will assist in the determination of the fragments found in the Rancho La Brea Asphalt. As was stated in the preceding article, the writer has dropped the idea of an ancient lake, and is inclined to the theory that these insects were either trapped by alighting on active flowing sheets of shining tar, or by swimming in pools of water lying on top of active liquid tar. That there were at least temporary pools is attested by damsel fly larval remains.

In this and all other studies of tar field insects, it is the writer's purpose to give a new and modern interpretation of the anatomy, using as far as possible the Snodgrass nomenclature. In many ways this will differ from the classical terminology used in the Hemiptera. In this order it has been difficult to find articles dealing with the morphology of parts other than head, wings and genitalia. The paleoentomologist is not always privileged to have these parts. He must classify his fragments, no matter to what part of the skeleton they belong. The heads and thoraces of the water Hemiptera are very interesting, and illustrate great modifications for the purpose of water navigation.

Paleontological research in entomology has only one counterpart, and that is the study of fragments found in bird stomachs,