

# Recent Eastern Pacific Species of the Crassatellid Bivalve Genus *Crassinella*

BY

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(4 Plates)

MARINE DREDGING IN SHALLOW water throughout the Panamic faunal province frequently reveals large quantities of small bivalves of the genus *Crassinella*. During an attempt to determine which, if any, members of this genus are living as far north as the West Coast of the United States, I found that the nomenclature of the northwest American species of the genus was much in need of review. The following is the product of an effort to fill that need.

Members of the genus *Crassinella* are veneroid bivalves, with true hinge teeth and eulamellibranch ctenidia. Like other members of the Crassatellacea, they have no more than 2 cardinal teeth in each valve and have long, thin lateral teeth. They are similar to other members of the Crassatellidae in having an internal ligament and in lacking an outer demibranch on their ctenidia (HARRY, 1966; ALLEN, 1968). *Crassinella* and certain other genera of this family are sometimes separated off as the subfamily Scambulinae, chiefly on the basis of their opisthogyrate or orthogyrate beaks. Other members of this subfamily are extinct (CHAVAN in COX *et al.*, 1969: N-577).

Many members of the genus *Crassinella* are opisthogyrate. In some species, the beaks are strongly twisted posteriorly. However, in others, the beaks are more or less orthogyrate. Whether or not the beaks are conspicuously opisthogyrate, these small clams often appear to be "backwards" for other reasons. Their lunule is narrow, whereas their escutcheon is wide and lunule-like. This has often confused workers, who have confounded left and right valves and gotten anterior and posterior mixed up in descriptions of hinge structures. The correct orientation is suggested by the position of the ligament (as in the majority of bivalves, posterior to most hinge elements) and confirmed by the arrangement of the soft parts (siphons, palps, foot, etc.) (see HARRY, 1966: fig. 1; ALLEN, 1968: fig. 2a).

HARRY (1966) discussed Recent members of the genus *Crassinella* in the northwestern Gulf of Mexico, providing an extensive commentary on *C. lunulata* (CONRAD, 1834: 133), as well as notes on the type species of the genus, *C. martinicensis* (Orbigny, 1846). ALLEN (1968) discussed the functional morphology of *C. mactracea* (LINSLEY, 1845: 275; 2 figs.), a probable synonym of *C. lunulata*. Previous listings of members of the genus are to be found in TRYON (1872), SMITH (1881), and LAMY (1917).

HARRY (1966) outlined the nomenclatural entanglements of the generic unit now called *Crassinella*. The various questions having been resolved, the results of the unraveling can be presented as follows:

*Crassinella* GUPPY, 1874: 442

Type species by M: "*C. martinicensis* d'Orb." =

*Crassatella martinicensis* ORBIGNY, 1846: 288-289; plt. 27, figs 21-23

= *Pseuderiphyla* FISCHER, 1887: 1022

(Type species by M: *C. martinicensis* Orbigny)

= *Crassatella*, *auctt.*, non LAMARCK, 1799: 85

= *Thetis*, *auctt.*, non C. B. ADAMS, 1845: 9 (a venerid bivalve), which itself was non J. SOWERBY, 1826: 19; plt. 513 (a mactromyid bivalve)

= *Gouldia*, *auctt.*, non C. B. ADAMS, 1847: 29 (a new name for *Thetis* C. B. ADAMS, 1845, non J. SOWERBY, 1826)

= *Eriphyla*, *auctt.*, non GABB, 1864: 180 (as astartid bivalve)

Important features in the classification of members of this genus are:

- (1) Shape – general outline  
relative size of the anterior and posterior ends  
shape of the posterior end  
orientation of the beaks
- (2) Size



- (3) Surface sculpture – smooth, rounded ribs, lamellae
- (4) Hinge teeth – presence of uniquely shaped elements

One of the unique features of the shells of *Crassinella* is their unusual external texture. CARPENTER (1857b: 83) described this texture as resembling “strung figs.” HARRY (1966: 70, 73-74) described this texture in detail, terming it as being composed of “elongate, swollen polygonal units.” This pattern, which is here termed “cellular,” is of minor importance in distinguishing species from one another.

On the basis of the important features for classification given above, the eastern Pacific species may be keyed as follows:

#### KEY TO RECENT AND PLEISTOCENE WEST AMERICAN *Crassinella*

- 1. Anterior end shorter and sculpture of even, rounded ribs ..... *C. skoglundae* (spec. nov., herein)  
Beaks central, or closer to posterior end (rarely with shorter anterior end; if so, sculpture of irregular; lamellar ridges) ..... 2
- 2. Beaks central to subcentral ..... 3  
Beaks closer to posterior end ..... 6
- 3. Beaks pointed; posterior end angular, pointed, or produced; right valve without posterior cardinal; sculpture almost always present, lamellar ..... 4  
Beaks rounded; posterior end subangular to rounded; right valve with a posterior cardinal; sculpture, when present, of rounded ribs ..... 5
- 4. Posterior end pointed but not rostrate; postero-dorsal margin straight to slightly concave; shell to 10 mm or more in length ..... *C. pacifica*

Posterior end rostrate; postero-dorsal margin strongly concave; shell to only 4.6 mm in length

- ..... *C. ecuadoriana*
- 5. Shell nearly smooth, or with low concentric ribs concentrated near beaks ..... *C. varians*  
Shell with even, heavy concentric ribs ..... *C. coxa*
- 6. Sculpture of even, rounded concentric ribs; interspaces narrow; left valve with a short, peg-like posterior cardinal ..... *C. adamsi*  
Sculpture concentrated near beaks, obsolete ventrally; interspaces as wide as ribs; left valve with an elongate, ventrally directed posterior cardinal  
..... *C. nuculiformis*

In the present study, I made an attempt to locate the type material of each nominal west American taxon and to photograph the holotype or a potential lectotype of each. I also studied all the Recent material in the collections of the United States National Museum of Natural History, the California Academy of Sciences, the Los Angeles County Museum of Natural History, the American Museum of Natural History, and Stanford University (now in the California Academy of Sciences), as well as in the private collections of Mrs. Carol C. Skoglund and Mr. Bertram C. Draper.

Each species account contains a synonymy, with references listed in chronological order under each species name. Changes in generic assignment are given in brackets before the reference in which the change is first made. This is followed by information about the type material and type locality of each nominal taxon. Then I have included a detailed description of each species, and an account is given of their geographic distribution and habitat. For some species, an additional discussion is provided.

#### Explanation of Figures 1 to 6

Figure 1: *Crassinella pacifica* (C. B. Adams), lectotype (restricted herein), external and internal views (left valve); MCZ 186 297; Panama Bay, Panama; length, 4.9 mm

Figure 2: *Crassinella pacifica* (C. B. Adams). Holotype of *C. mexicana* Pilsbry & Lowe; external and internal views (left valve); ANSP 155622; Guaymas, Mexico; length, 3.4 mm

Figure 3: *Crassinella pacifica* (C. B. Adams). External view of right valve; CAS 59982; Panama Bay, Panama; length, 6.4 mm

Figure 4: *Crassinella pacifica* (C. B. Adams). External view of right valve and internal view of both valves; LACM 71-183; Bahía Magdalena, Baja California Sur; length, 7.3 mm

Figure 5: *Crassinella lunulata* (Conrad, 1834). Holotype of *C. oregonensis* Keen; external view (left valve); CAS-SUPTC 6052; Coos Bay, Oregon; length, 5.6 mm

Figure 6: *Crassinella ecuadoriana* Olsson, holotype, external and internal view of both valves; ANSP 218934; Puerto Callo, Ecuador; length, 2.9 mm



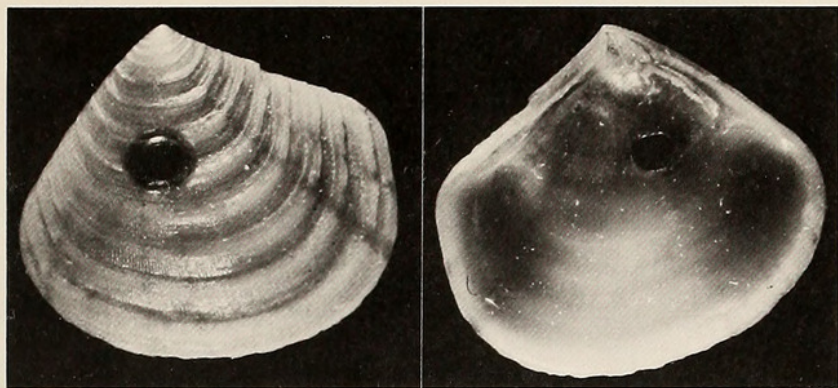


Figure 1

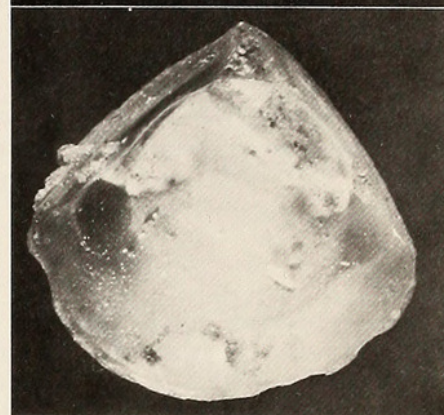
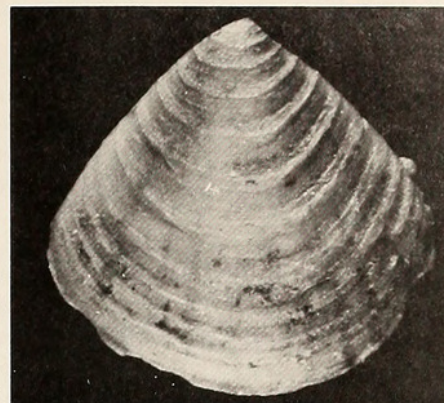


Figure 2

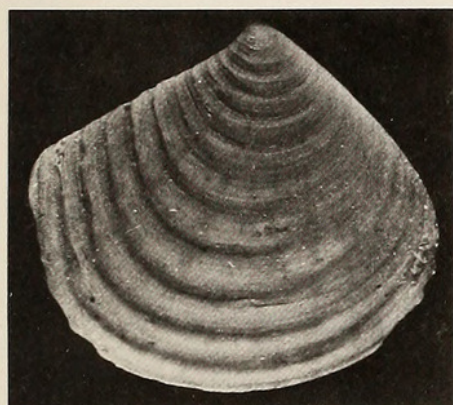


Figure 3

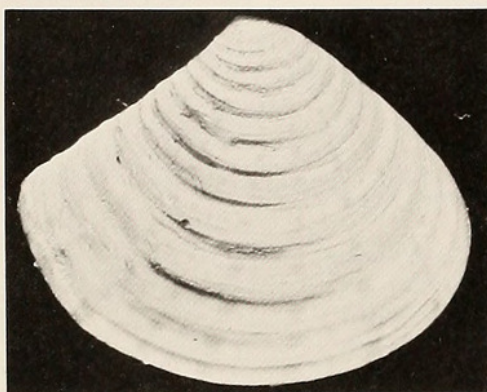


Figure 4

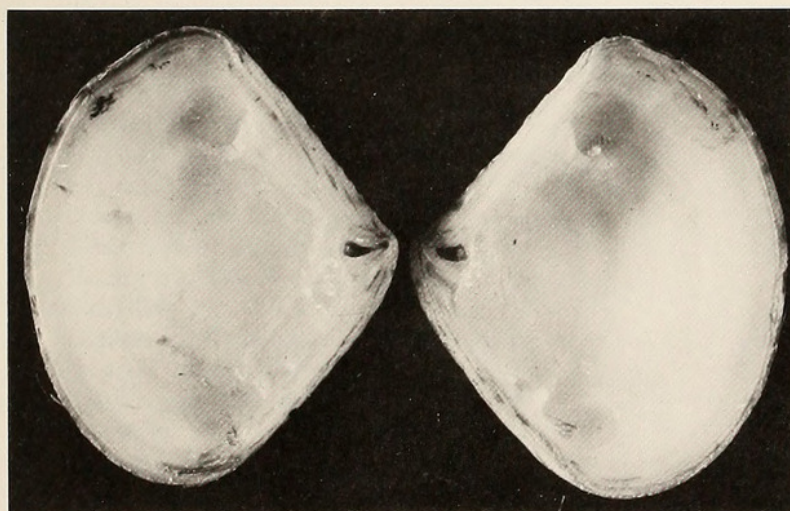


Figure 4

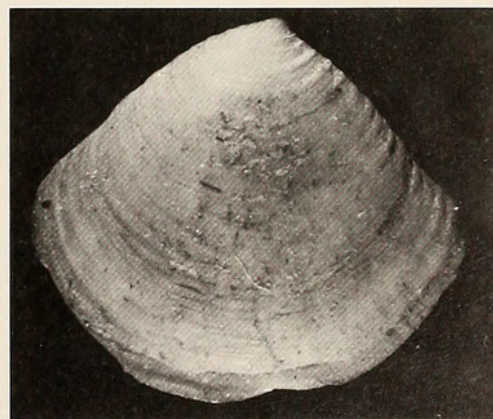


Figure 5

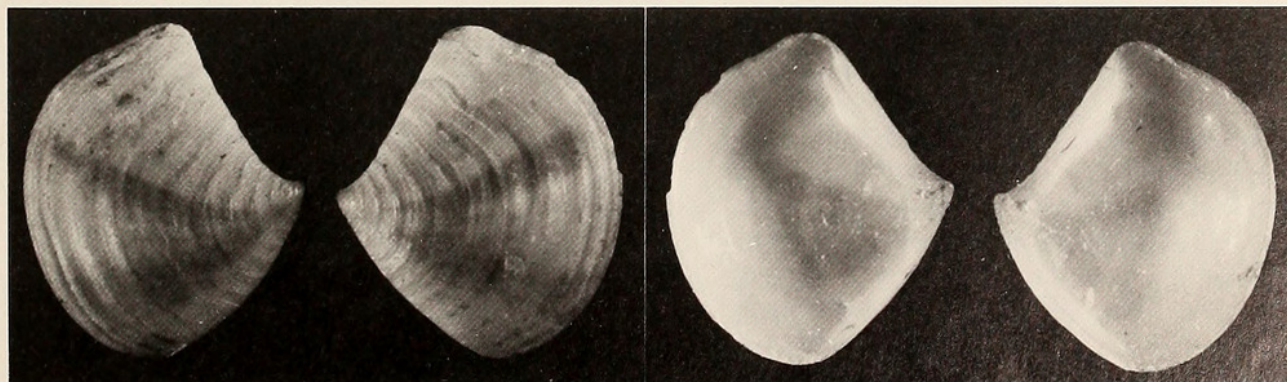


Figure 6







The following abbreviations are used in the text:

- ANSP — Academy of Natural Sciences of Philadelphia  
 AHF — Allan Hancock Foundation [material partly in the LACM]  
 BM(NH) — British Museum (Natural History)  
 CAS — California Academy of Sciences [GTC — Geology Type Collection]  
 LACM — Los Angeles County Museum of Natural History  
 MCZ — Museum of Comparative Zoology, Harvard University  
 SUPTC — Stanford University Paleontology Type Collection [now at CAS]  
 USFC — United States Fish Commission (localities)  
 USNM — United States National Museum of Natural History  
 m — meter(s)  
 km — kilometer(s)  
 SD — standard deviation

*Crassinella pacifica* (C. B. Adams, 1852)

(Figures 1 to 4)

- Gouldia pacifica* C. B. Adams, 1852  
 C. B. ADAMS, 1852a: 499, 545 [1852b: 275, 321]  
 CARPENTER, 1857a: 247, 278, 306, 364  
 CARPENTER, 1857b: 82-84, 86, 549  
 CHENU, 1862: 130; fig. 620  
 CARPENTER, 1864a: 365 [1872: 201 (= 27)]  
 [Crassatella]  
 CARPENTER, 1864b: 544, 552 [1872: 30, 38]  
 [Crassatella (Crassinella)]  
 LAMY, 1917: 248-249  
 [Crassinella]  
 PILSBRY & OLSSON, 1941: 56  
 BURCH, 1944: 9  
 HERTLEIN & STRONG, 1946: 103-104  
 TURNER, 1956: 69-70; 132 (plt. expl.); plt. 20, figs. 3, 4  
 KEEN, 1958: 84-85; figs. 159, 160  
 OLSSON, 1961: 181-182; 489 (plt. expl.); plt. 25, figs. 5-5d  
 BRANN, 1966: 34 (plt. expl.); plt. 9, fig. 116 [as *Gouldia*]  
 KEEN, 1971: 105-106; fig. 234  
*Astarte* (*Crassinella*) *branneri* Arnold, 1903  
 ARNOLD, 1903: 30, 60, 127-128; 398 (plt. expl.); plt. 18, fig. 12  
 [Crassinella]  
 DALL, 1916: 24  
 DALL, 1921: 31  
 JORDAN, 1926: 244  
 GRANT & GALE, 1931: 270  
 JORDAN, 1936: 125

BURCH, 1944: 9

WOODRING, BRAMLETTE & KEW, 1946: 82; 136 (plt. expl.); plt. 36, figs. 1-6

HERTLEIN & GRANT, 1972: 228-229; plt. 43, figs. 24, 25, 28, 29

*Crassinella mexicana* Pilsbry & Lowe, 1932

PILSBRY & LOWE, 1932: 103-104; 144 (plt. expl.); plt. 14, figs. 8, 9

HERTLEIN & STRONG, 1946: 104 [as a subspecies of *C. pacifica*]

KEEN, 1958: 84-85; fig. 160 [as a subspecies of *C. pacifica*]

OLSSON, 1961: 182; 489 (plt. expl.); plt. 25, fig. 4

KEEN, 1971: 104-105; fig. 233

*Crassinella quintinensis* Manger, 1934

MANGER, 1934: 298-299; 303 (plt. expl.); plt. 21, figs. 1, 2

HERTLEIN & GRANT, 1972: 229 [as a synonym of *C. branneri*]

Type Material and Localities:

*Gouldia pacifica* — MCZ 186297, lectotype (restricted herein), left valve; length, 4.9 mm; height, 4.2 mm; thickness, 0.9 mm (Figure 1). This is the larger of the 2 valves selected by TURNER (1956) as a "lectotype," the right valve belonging to another specimen. MCZ 186298, paralectotypes (21 valves).

Panama Bay (about 8°57'N, 79°34'W); "Station. - - Unknown."; C. B. Adams, 1850

*Astarte* (*Crassinella*) *branneri* — USNM 162527, holotype, left valve; length, 11.2 mm (ARNOLD, 1903: 398). The specimen is now missing (J. Rosewater, letters of 24 March 1977 & 3 March 1978; T. R. Waller, letter of 10 January 1978).

Los Cerritos [Signal Hill], Los Angeles County, California (33°50'N, 118°10'W); late Pleistocene, "Upper San Pedro series" [Palos Verdes Sands]; D. & R. Arnold

*Crassinella mexicana* — ANSP 155622, holotype, left valve; length, 3.4 mm; height, 3.3 mm; thickness, 1.8 mm (Figure 2)

Guaymas, Sonora, Mexico (27°50'N, 110°54'W); about 37 m; H. N. Lowe, 1930

*Crassinella quintinensis* — Holotype, right valve; length, 7.9 mm; height, 7.5 mm; thickness, 2.3 mm (MANGER, 1934). Supposedly in the USNM, but it cannot be located there (T. R. Waller, letter of 19 January 1978), nor is it in Johns Hopkins University (S. M. Stanley, letter of 6 March 1978)

Bahía San Quintín, Baja California Norte, Mexico (32°21'N, 115°59'W); Johns Hopkins University (?) Locality 11729; Pleistocene

Description:

Shell ovate-trigonal, moderately compressed to somewhat inflated (length about 2.2 times thickness of paired valves), large among living members of genus (to 8 mm in material from Bahía Magdalena, Baja California Sur, LACM 71-14; to 10 mm in material from Golfo de Papagayo, Costa Rica, LACM 72-34; to 6 mm in material from the Gulf of Panama, LACM 72-55; to 11.2 mm in material from the Pleistocene of San Pedro, California, as



holotype of *Astarte* (*Crassinella*) *branneri*). Approximately equilateral in most to longer posteriorly in some (as CAS 17869; Isla Meanguera, El Salvador); anterior end rounded, slightly produced; posterior end angular, pointed (not rostrate as in *Crassinella ecuadoriana*); antero-dorsal margin slightly convex; postero-dorsal margin straight to slightly concave; ventral edge rounded. Beaks pointed, opisthogyrate. Exterior surface with irregular, rounded concentric ribs; sculpture more irregular toward ventral margin; interspaces generally wider than ribs; ribs sharper and narrower posteriorly; ribs capped with a lamella; exterior surface with conspicuous, fine radial rays and a faint "cellular" pattern. Lunule narrow, wider in left valve; escutcheon wide, wider in right valve. Shell white to light brown externally, often with brown radial rays, which are sometimes visible only on rib tops, giving shell a spotted appearance; white to brown within.

Right valve with a narrow, poorly defined cardinal tooth on proximal end of anterior lateral ridge. Main anterior cardinal tooth large; a large, triangular ligament posterior to it. Anterior end with a lateral ridge, an elongate anterior lateral tooth about  $\frac{3}{4}$  of way to its distal end; ridge separated from sharp edge of lunule by a groove; margin of escutcheon rounded; an elongate lateral tooth present below posterior margin near posterior end of escutcheon.

Left valve with a large anterior cardinal widely separated from ligament; anterior margin of ligamental area raised, sometimes forming a low, narrow tooth; posterior cardinal present, congruent with proximal end of posterior lateral ridge; lunule with a sharp edge; a narrow, elongate lateral situated below anterior margin near anterior end of lunule; posterior edge with a lateral ridge separated from sharp edge of escutcheon by a groove and swollen into a lateral tooth near distal end.

Populations of this species differ in size and shape, but the greatest variability is in sculpture. Although most specimens have conspicuous sculpture, adults in some

areas are almost smooth. Typical specimens are shown in Figures 3 and 4.

### Geographic Distribution and Habitat:

This species occurs from Crescent Bay, Laguna Beach, Orange County, California ( $33^{\circ}32'48''\text{N}$ ,  $117^{\circ}48'06''\text{W}$ ) (LACM 11069), along the outer coast of Baja California, to and throughout the Gulf of California, and south to Zorritos, Tumbes Province, Peru ( $3^{\circ}40'\text{S}$ ,  $80^{\circ}40'\text{W}$ ) (Paleontological Research Institution 25632; figured by OLSSON, 1961: plt. 25, fig. 5d). Depth records are from the low intertidal area to 158 m, with nearly all records in less than 40 m (mean depth, 24.5 m). Most labels on which a bottom type is noted indicate a sand substrate, but a few labels record mud substrates. I have seen 238 Recent lots.

### Discussion:

The well known southern California Pleistocene *Crassinella branneri* must fall into the synonymy of *C. pacifica*. The only character that authors have noted to distinguish the two — a "narrower posterior ventral end" (HERTLEIN & GRANT, 1972: 229) — is within the range of variation of Recent material.

*Crassinella pacifica* is very similar to the Caribbean *C. lunulata* (Conrad, 1834). Both are variable in many features, and it is difficult to define the differences between them. *Crassinella lunulata* seems to average larger in size, to exhibit greater variability in sculpture, and to be smoother on an average than *C. pacifica*. In the future, workers may decide to regard the 2 as synonyms or as subspecies.

*Crassinella oregonensis* KEEN, 1938 (pp. 31-32; plt. 2, figs. 11, 12) was described from a single left valve (not right as originally supposed; KEEN, 1939: 252) obtained at Coos Bay, Oregon (CAS-SUPTC 6052) (Figure 5). It is apparently a stray valve of *C. lunulata* brought to

### Explanation of Figures 7 to 12

Figure 7: *Crassinella ecuadoriana* Olsson. External view of right valve; LACM 63-11; Mazatlán, Mexico; length, 4.4 mm

Figure 8: *Crassinella nuculiformis* Berry, holotype, external and internal views (left valve); CAS-SUPTC 6570; early Pleistocene of San Pedro, California; length, 5.3 mm

Figure 9: *Crassinella nuculiformis* Berry. Holotype of *C. clementia* Pilsbry & Olsson; external views of both valves; ANSP 13714; Pliocene of Punta Blanca, Ecuador; length, 4.0 mm

Figure 10: *Crassinella nuculiformis* Berry. External view of right valve; LACM 69-21; south of Puertecitos, Baja California Norte, Mexico; length, 2.9 mm

Figure 11: *Crassinella nuculiformis* Berry. External view of right valve and internal view of both valves; CAS 59980; Cuastecomate, Mexico; length, 4.5 mm

Figure 12: *Crassinella skoglundae* Coan, spec. nov., holotype; external and internal views of both valves; CAS 59931; La Cruz, Bahía Banderas, Mexico; length, 5.5 mm



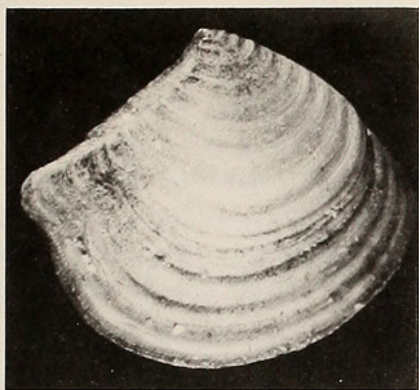


Figure 7

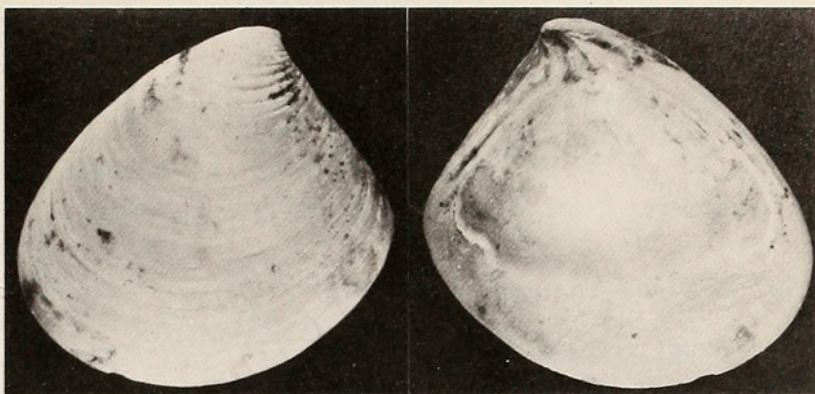


Figure 8



Figure 10

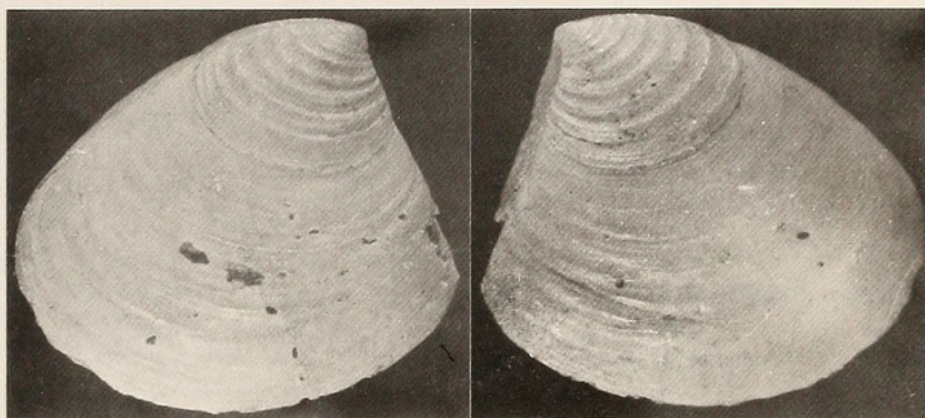


Figure 9

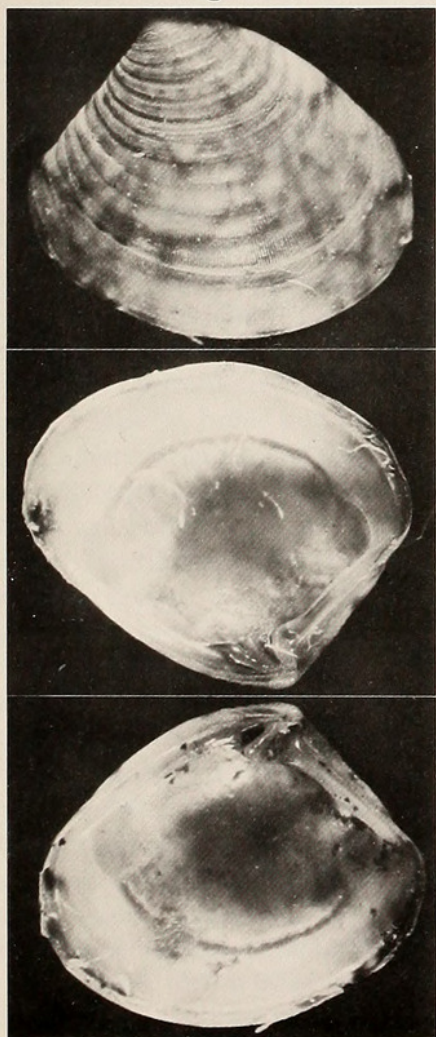


Figure 11

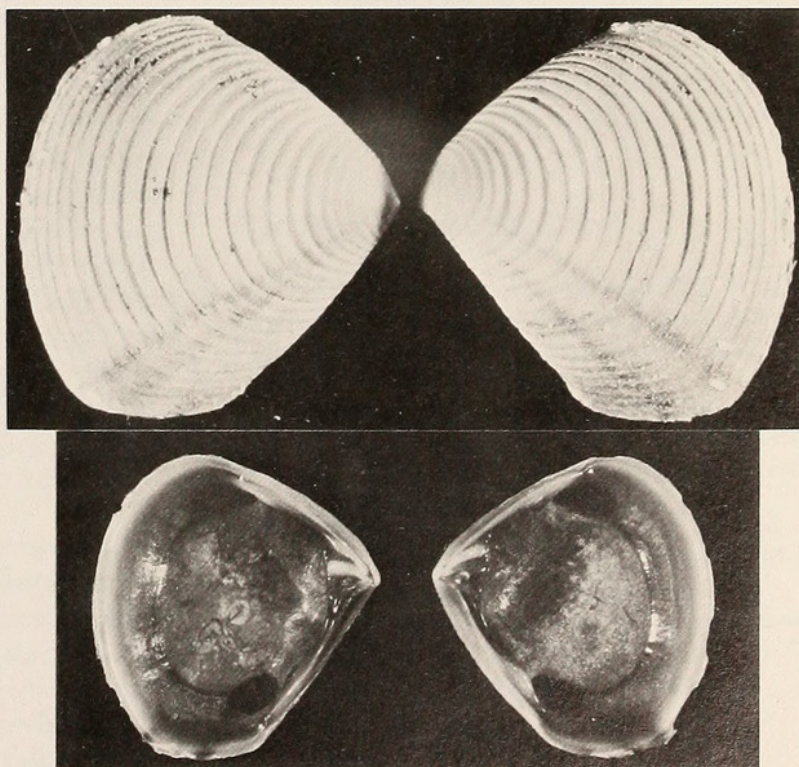


Figure 12







that locality with a shipment of oysters for mariculture (J. T. Carlton, letter to B. Roth, 12 January 1977).

What is recorded from the Miocene Altamira shale of San Pedro, California, as "*Crassinella* cf. *C. mexicana* Pilsbry and Lowe" by WOODRING, BRAMLETTE & KEW (1946: 27, 128; plt. 28, fig. 12) is uncertain.

*Crassinella ecuadoriana* Olsson, 1961

(Figures 6, 7)

*Crassinella ecuadoriana* Olsson, 1961

OLSSON, 1961: 182-183; 498 (plt. expl.); plt. 25, figs. 6-6e  
KEEN, 1971: 104-105; fig. 232

### Type Material and Locality:

ANSP 218934, holotype, pair; length, 2.9 mm; height, 2.5 mm; thickness, 1.4 mm (Figure 6). ANSP 218934a, paratypes (5)  
Puerto Callo, Manabi Province, Ecuador (1°20'30"S, 80°14'30"W); A. A. Olsson

### Description:

Shell lunate, moderately inflated (length 2.4 times thickness of paired valves), medium in size for genus (to 4.6 mm; LACM 70-9). Length about 1.2 times height. Approximately equilateral; anterior end rounded; posterior end produced, rostrate; antero-dorsal margin weakly concave; postero-dorsal margin strongly concave; ventral edge rounded. Beaks pointed, opisthogyrate. Exterior surface with conspicuous concentric ribs, narrow and widely spaced dorsally, broad and closer together ventrally; ribs with a narrow lamella on their tops; ribs sharper posteriorly. Exterior surface with fine radial rays and a minute "cellular" pattern. Lunule narrow, slightly wider in left valve; escutcheon wide, wider in right valve. Interior white to brown; exterior surface brown or purple, sometimes with brown radial rays.

Right valve with a narrow, inconspicuous cardinal on proximal end of anterior lateral ridge. A second, large, curved anterior cardinal situated close to ligament; anterior end with a lateral ridge separated from sharp border of lunule by a groove; anterior ridge with a small lateral tooth about  $\frac{2}{3}$  of way to its distal end; escutcheon with a rounded edge; a weak posterior lateral ridge with a small lateral tooth on it within postero-dorsal margin near posterior end of escutcheon.

Left valve with a large, curved anterior cardinal, with a small, thin cardinal between it and ligament; a posterior cardinal behind ligament attached to proximal end of posterior lateral ridge; posterior lateral ridge with a

large, distal tooth; weak anterior lateral ridge with a small lateral tooth on it within antero-dorsal margin near anterior end of lunule.

A typical specimen is shown in Figure 7.

### Geographic Distribution and Habitat:

La Paz, Baja California Sur (24°10'N, 110°19'W) (CAS 59413), and Mazatlán, Sinaloa, Mexico (about 23°12'N, 106°25'W) (e. g., USNM 566508), to the SE side of Punta Ancón, Guayas Province, Ecuador (2°20'S, 80°53'30"W) (LACM 70-12). Depth records are from the low intertidal area to 55 m, with most records in less than 25 m (mean depth, 13 m). The bottom types noted on some labels suggest that the species prefers a sandy or rocky substrate. I have studied 57 lots.

*Crassinella nuculiformis* Berry, 1940

(Figures 8 to 11)

*Crassinella nuculiformis* Berry, 1940

BERRY, 1940: 3-5; 16 (plt. expl.); plt. 1, figs. 1, 2

BURCH, 1944: 9

WOODRING, BRAMLETTE & KEW, 1946: 82; 136 (plt. expl.); plt. 36, figs. 7-10

*Crassinella clementia* Pilsbry & Olsson, 1941

PILSBRY & OLSSON, 1941: 56-57; 78 (plt. expl.); plt. 12, fig. 8

### Type Material and Localities:

*Crassinella nuculiformis* — CAS-SUPTC 6570, holotype, left valve [not right, as Berry supposed]; length, 5.3 mm; height, 4.4 mm; thickness, 1.3 mm (Figure 8). CAS-SUPTC 6570a, paratypes (2 valves)

San Pedro, Los Angeles County, California; west side of Gaffey Street, "in cut just below General Street" [should be General Avenue] (33°44'54"N, 118°17'30"W); early Pleistocene; San Pedro Sand; S. S. Berry & R. K. Cross

*Crassinella clementia* — ANSP 13714, holotype, paired valves (sealed); length, 4.0 mm; height, 3.6 mm; thickness, 1.6 mm (Figure 9). ANSP 13714a, paratype (1 valve)

Punta Blanca, about 8.5 km S of Cabo San Lorenzo, Manabi Province, Ecuador (1°07'30"S, 80°53'30"W); Canoa Formation; Pliocene; A. A. OLSSON, 1936-1938

### Description:

Shell ovate-cuneiform, shape reminiscent of a venerid or a nuculid, moderately inflated (length about 2.3 times thickness of paired valves), medium in size for genus (to 6.4 mm; LACM 60-20). Length about 1.25 times height. Anterior end longer, rounded; posterior end somewhat



acute; antero-dorsal margin slightly convex; postero-dorsal margin straight; ventral margin rounded. Beaks pointed, decidedly opisthogyrate. Exterior surface with concentric ribs concentrated near beaks; surface smoother ventrally; interspaces as wide or wider than ribs; ribs sharper, more raised posteriorly; exterior surface with fine radial rays and a fine "cellular" pattern. Lunule longer than escutcheon, narrow, approximately equal in the 2 valves; escutcheon wide, approximately equal in the 2 valves. Shell brownish within; externally with brown rays or mottling.

Right valve with a narrow anterior cardinal congruent with anterior lateral ridge; a large anterior cardinal posterior to narrow cardinal; triangular ligament immediately posterior to large cardinal, its posterior margin sometimes raised into a ridge. Sharp edge of lunule bordered by a groove, defining a rounded anterior lateral ridge; anterior ridge with an elongate lateral tooth distally; escutcheon bordered by a rounded ridge; a weak internal posterior lateral ridge sometimes present.

Left valve with a large anterior cardinal; ligament separated from this cardinal by a short gap; gap with a small, thin, low cardinal. A ventrally directed posterior cardinal immediately posterior to ligament. Lunule bordered by a rounded ridge. A weak internal anterior lateral ridge sometimes present. Sharp edge of escutcheon bordered by a groove, separating off a rounded internal ridge, which is swollen into a lateral tooth distally.

There is some variability in the relative height of specimens. The greatest variability is in the degree to which the concentric ribs cover the shell surface. In some individuals, they are confined to the area near the beaks; in others, they extend most of the way to the ventral margin. Color is also variable; some specimens have only traces of brown mottling; others have narrow radial bands; still others have fairly wide brown bands. Worn material is yellow, rather than brown. Material from the head of the Gulf of California referred to this species (Figure 10) is smaller in size (generally less than 3 mm

in length) and shorter posteriorly than material from further south. A typical specimen from central Mexico is shown in Figure 11.

### Geographic Distribution and Habitat:

From the northeast end of Isla Cedros, Baja California Norte, Mexico ( $28^{\circ}20'25''\text{N}$ ,  $115^{\circ}11'20''\text{W}$ ) (LACM 71-152), to and throughout the Gulf of California, south to the Gulf of Guayaquil, Guayas Province, Ecuador (SW of Playas,  $2^{\circ}49'\text{S}$ ,  $80^{\circ}31'\text{W}$ ) (LACM 66-193). This species occurs from the low intertidal area to about 62 m, with most records in less than 40 m (mean depth, 20 m). Most labels on which bottom type is recorded note a sand substrate, but some suggest that the species is also found on muddy and rocky substrates. I have examined 65 Recent lots.

*Crassinella skoglundae* Coan, spec. nov.

(Figures 12 to 15)

### Description of Holotype and Measured Paratypes:

Shell high, triangular, moderately inflated (holotype length 1.96 times thickness; mean of measured type specimens, 2.06), large among living members of genus (to 6.8 mm; CAS 59418). Length averaging 1.11 times height. Anterior end weakly acuminate; posterior end longer, somewhat truncate; antero-dorsal margin straight to slightly convex; postero-dorsal margin straight; ventral edge evenly rounded. Beaks pointed, weakly opisthogyrate. Exterior surface with even, rounded concentric ribs; ribs moderately wide, equal to or slightly wider than interspaces, narrower and raised anteriorly; exterior surface with an obscure radial pattern and a still fainter "cellular" pattern. Lunule moderate in width, wider in right valve; escutcheon as long as lunule and

### Explanation of Figures 13 to 18

Figure 13: *Crassinella skoglundae* Coan, spec. nov., paratype I; external view of right valve; CAS 59932; same locality as holotype; length, 5.9 mm

Figure 14: *Crassinella skoglundae* Coan, spec. nov., paratype II; external view of right valve; CAS 59933; same locality as holotype; length, 5.5 mm

Figure 15: *Crassinella skoglundae* Coan, spec. nov., paratype III; external view of right valve; CAS 59934; same locality as holotype; length, 5.5 mm

Figure 16: *Crassinella adamsi* Olsson, holotype; external and internal views (left valve); ANSP 218933; Punta Blanca, Ecuador; length, 3.6

Figure 17: *Crassinella adamsi* Olsson. External and internal views of both valves; CAS 59981; Bahía Audiencia, Manzanillo, Mexico; length, 2.9 mm

Figure 18: *Crassinella varians* (Carpenter), lectotype (herein); external and internal views (left valve); BM[NH] Carpenter Mazatlán Collection 1857.6.4.416; Mazatlán, Mexico; length, 2.05 mm



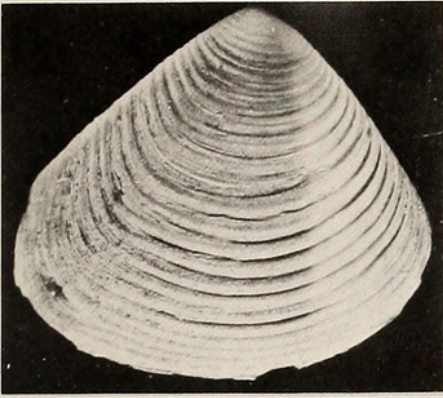


Figure 13

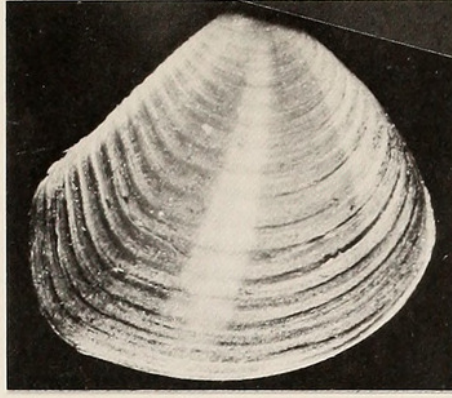


Figure 14

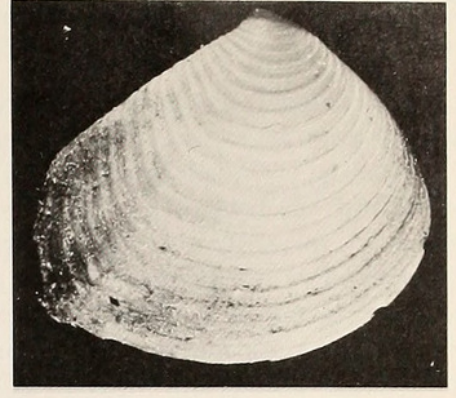


Figure 15

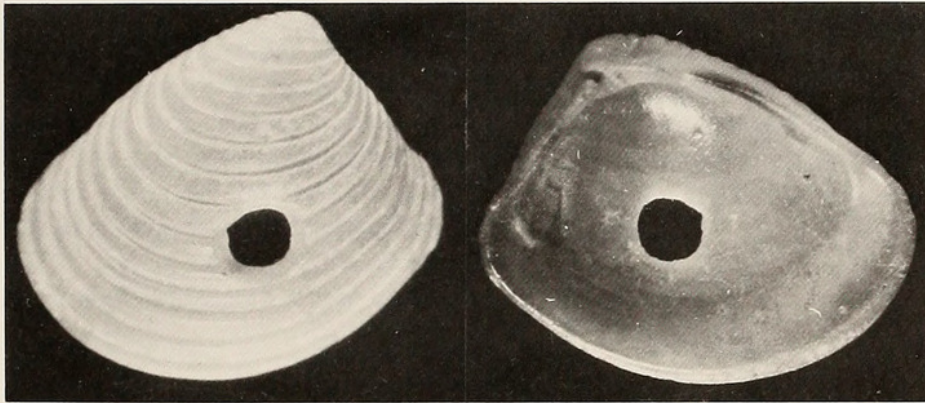


Figure 16

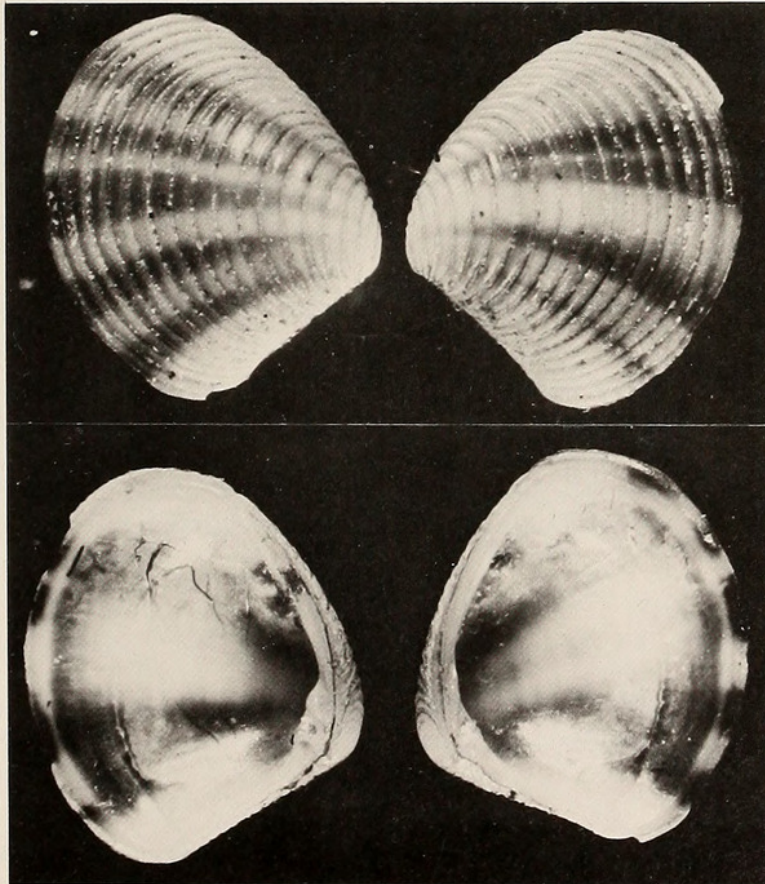


Figure 17

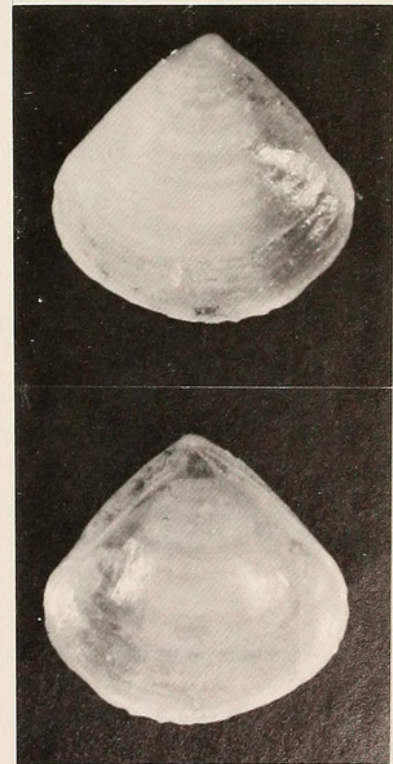


Figure 18





1979. "Recent eastern Pacific species of the crassatellid bivalve genus *Crassinella*." *The veliger* 22, 1-11.

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