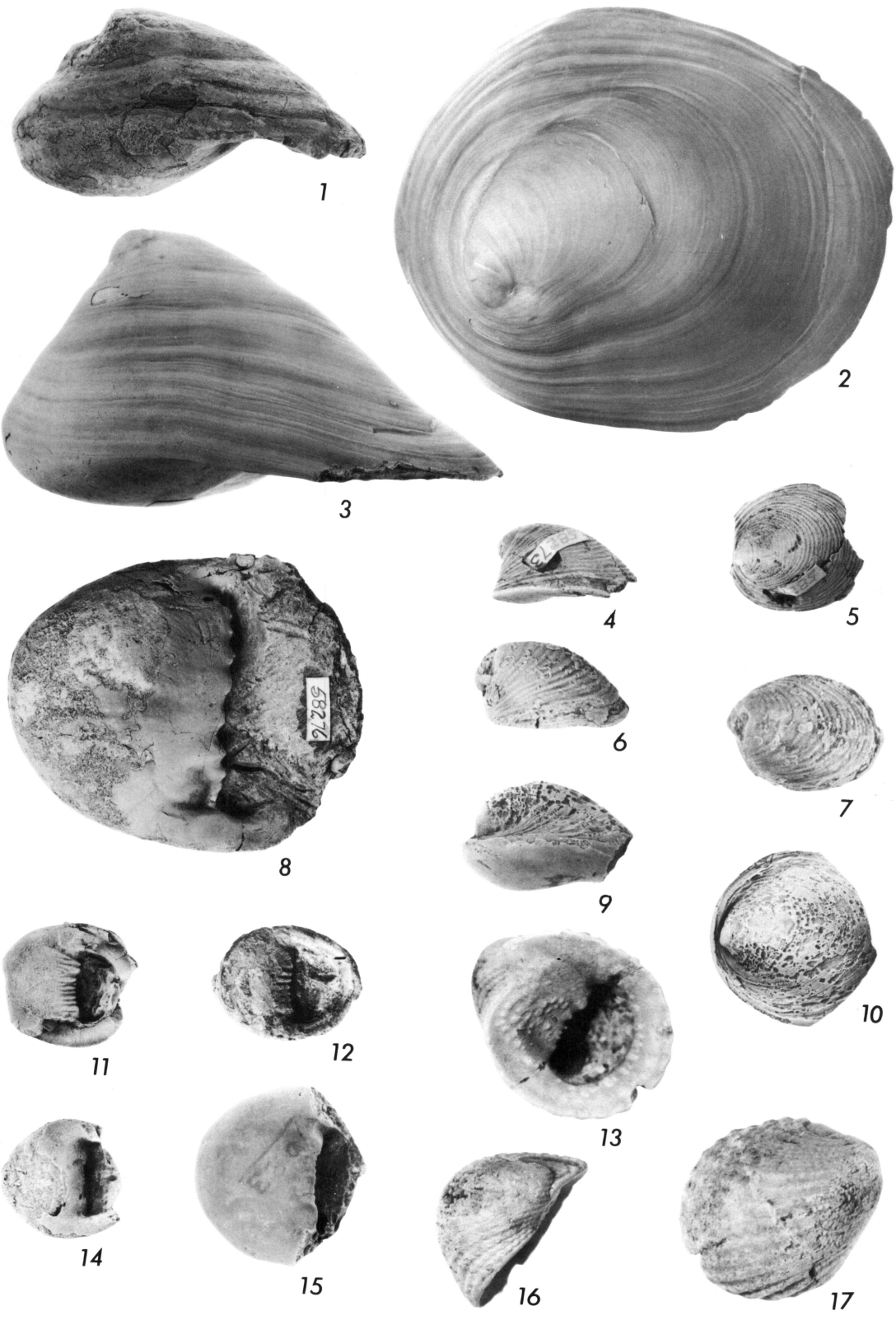
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microstructure from that of the shell and more susceptible to dissolution. Cossmann (1925, p. 200) suggested that the deck area is frequently destroyed by fossilization. The UCLA specimens do not appear to have a feathered edge where the deck is missing. Instead there is an apparently normal shell thickness, abruptly cracked off. That all specimens are broken in the same area suggests either a structural weakness in the shell or perhaps the activities of a predator. Neritids are known to resorb internal shell structures (Woodward, 1892) whose absence might promote shell failure during fossilization. In that case, broken pieces of the deck might be expected to be found adjacent to the break. Such have not been found in these specimens. Predator breakage, a likely explanation, would tend to scatter the fragments. Vermeij (1977) has indicated that increased gastropod shell sturdiness in the later Cretaceous may have been a response to increase in shell-destroying predators. If these *Otostoma* retracted well back into their shells a blow to the deck area might gain access to the animal. Addition of callus to the deck area could be a response to this weakness.

Although sharing some morphological similarities with *Otostoma, Velates* has abaperturally a patelloid shape suggestive of life upon a hard substrate. Yonge (1960, p. 116) stated that marine neritaceans are universally distributed on hard substrate between tide marks and in shallow water; they do not invade muddy areas. The thick convex callus pad of *Velates,* however, gives the apertural side a very different configuration to that of some other gastropods which are abaperturally similar. *Crepidula, Concholepas,* and limpets clamp the rim of shell down onto a hard substrate, but *Velates,* on a flat surface, rests on the convex deck and the medial area of the outer lip edge, and the shell rocks readily resting on these two convexly curved areas.

Specimens of *V. perversus* from the Paris Basin are beautifully preserved, and many specimens retain some of their color markings. The apertural face is devoid of color markings, but the abapertural surface is marked. There is even a thin color-marked layer deposited over the callus on this surface. The aperture, therefore, probably faced down upon the substrate. Furthermore the weight of the callus makes aperture down the most stable position for the shell. Despite Yonge, the topography of the apertural face of *Velates* seems ill-fit to a hard substrate. Had *Velates* lived on a firm but not hard bottom, its heavy callus would have provided stability in the presence of currents.

The association of abundant *V. perversus* at UCLA loc. 4244 with *Turritella andersoni* Dickerson and *Venericardia (Pacificor) hornii lutmani* Turner is further indication of a firm to moderately soft bottom rather than a hard substrate. This association also suggests a sublittoral rather than littoral habitat, and the large *Velates* spp. with thin outer lips may have lived in slightly deeper water than most modern neritids. The abandonment by the neritaceans of such shallow-water, level-bottom habitats may have been caused by predator pressure. In contrast to the thin lip of the typical form, the thickened outer lip of some *Velates* spp., such as *V. vizcainoensis,* would remain unbroken in a rougher water habitat.

VELATES VIZCAINOENSIS n. sp.
Figures 5.8–5.14

Description.—Shell small for the genus (Table 2), thick walled, capuliform; spire very low, enveloped by later whorls and callus; whorl very roundly inflated, enlarging rapidly; spiral surface smooth, ablabral margin overlapped by thick callus deposit; deck broad, swollen with thick callus deposit and thick-walled ablabral margins lapping onto spiral surface, slight lunate depression along the inner lip, and marked "umbilical" depression; aperture semioval; inner lip edge slightly convex to the aperture with 7 subequal strong teeth separated by interspaces almost as wide as the teeth; teeth grouped from anterior to posterior into small anterior pair, large submedian tooth, large posterior pair, and medium posterior pair, projecting as ridges onto the deck nearly halfway across lunate depression; outer lip smooth, thickened.

Type specimens.—Holotype, UCLA 59421; paratypes, UCLA 59422–59425.

Type locality.—UCLA 7083, east of Bahía Sebastian Vizcaino, Baja California, Mexico.

Age.—Late Paleocene(?).

Remarks.—The above description is based

TABLE 2—Dimensions of *Velates vizcainoensis* n. sp.

Specimens	Height	Width	Thickness	Inner lip length	Aperture width
UCLA 59421	13.8 mm	15.8 mm	10.0 mm	8.5 mm	3.0 mm
UCLA 59422	14.1 mm	15.9 mm	8.5 mm*	9.2 mm	3.8 mm
UCLA 59423	13.2 mm	14.5 mm	10.0 mm	8.4 mm	3.3 mm
UCLA 59424	12.0 mm	13.5 mm	4.0 mm*	7.7 mm	3.4 mm

* Incomplete.

upon six specimens (two complete), all from the type locality. All are small for *Velates,* but this may be characteristic of the deposit rather than of the species. *V. vizcainoensis* is most similar to *V. californicus* Vokes, 1935, which is also of Paleocene age at its type locality. It differs from *V. californicus* in its thickened outer lip, less marked lunate depression bordering the inner lip, thicker more rolled ablabral deck margins, and slightly less convexly swollen deck surface. *V. vizcainoensis* differs from *V. perversus* in its roundly inflated whorl, its thickened outer lip margin, its broader teeth on the inner lip separated by interspaces nearly as wide as the teeth that project as ridges onto the deck. The spire of *V. vizcainoensis* is also apparently lower and enveloped at an earlier growth stage than is that of *V. perversus.* The thickened outer lip is similar to that of *V. perversus* (Gmelin) subsp.(?) (Woodring, 1957, p. 66, Pl. 14, figs. 5–8) and to that of *V. balkanicus* Bontscheff, 1897, (p. 380, Pl. 6, figs. 1–6) that also has a thickened and rimmed outer lip, but *V. balkanicus* has heavier teeth than *V. perversus* subsp. from Panama, and Woodring doubted that the rimmed outer lip indicated close relationship. Because *V. perversus* (Gmelin) subspecies(?) is, except for the thickened rimmed outer lip, similar to *V. perversus,* its thickened outer lip is unlikely to indicate close relationship to *V. vizcainoensis. V. vizcainoensis* differs from *V. balkanicus* in having 7 teeth on the inner lip rather than 8, a shallower lunate depression on the inner lip, thick rolled-over callus deposit around the ablabral margin, convex rather than straight inner lip profile, and a shallower "umbilical" depression.

V. noetlingi Cossmann and Pissarro, 1909 (=*V. tibeticus* Douvillé, 1916, *fide* Cox, 1931) is more oval, has a very low spire, and slightly more conispiral coiling. It is also said (Cossmann and Pissarro, 1909, p. 76) to have 6 unequal bifid teeth rather than 7 teeth, 6 of which are paired.

V. vokesi Cooke, 1946, (=*Neretina*(?) *grandis* Cooke, 1919, *non* Sowerby, 1840) has a higher spire than *V. vizcainoensis* with an angulate shoulder similar to *V. perversus* rather than the rounded shoulder of *V. vizcainoensis.* Woodring (1957, p. 67) also suggested that *V. floridanus* Richards, 1946, may be *V. perversus.* The low rounded cords on the "columellar callus" described and figured by Richards (1946, p. 2, Text Pl. 2, fig. 1) are apparently on the internal mold and are not comparable to extensions of the teeth of *V. vizcainoensis* upon the deck. The interior of *V. vizcainoensis* (Figure 5.8) shows no trace of any similar cords. Richards' figures—in more conical shape, oval plan, and large size—are more suggestive of *V. perversus* than of *V. vizcainoensis* or *V. californicus. V. vicensis* Staid-Staadt, 1964, and *V. vicensis rotundior* Staid-Staadt, 1964, are described from Spanish localities of Ledian age (Farrés and Staid-Staadt, 1964). Unfortunately apertures were not exposed. Both, however, have a subangulate shoulder similar to that of *V. perversus* and a sulcus from spire to posterior margin that is not present on *V. vizcainoensis* or *V. perversus.* The deck callus of *V. vizcainoensis* is less swollen than that of *V. perversus,* and the periphery is rounded by the thick, rolled-over callus.

Etymology.—The species is named for the Bahía Sebastian Vizcaino, 0.9 km west of the fossil locality.

VELATES CALIFORNICUS Vokes, 1935
Figures 5.15–5.16, 5.18–5.19, 5.21

Velates californicus VOKES, 1935, p. 384, Pl. 26, figs. 3–8; SAUL, 1983a, p. 80, figs. A–C.

Hypotype.—UCLA 58275.

Locality.—UCLA loc. 3173, Simi Hills, Ventura Co., Calif.

Dimensions of UCLA 58275.—Height 23.2 mm; width 28.0 mm; thickness 15.0 mm; length of inner lip 16.3 mm; width of apertural opening 11.0 mm.

Age.—Late Paleocene through early Eocene. Vokes (1935) considered *V. californicus* to range from early middle Eocene to late middle Eocene. He placed the type locality of *V. californicus* (UCB loc. 3792) and that of his plesiotype (UCB loc. 7009) in the lower Llajas Formation, but recent mapping in the Simi Hills (Squires, 1981, 1983a, 1984; Parker, 1983, p. 4) indicates that the Martinez Marine Member of Nelson (1925) is the lower part of the Santa Susana Formation (Zinsmeister, 1974, 1975, 1983; Saul, 1983), and the conglomerate at which Nelson (1925) and subsequent workers placed the base of the Llajas is an intraformational conglomerate of the Santa Susana Formation. Vokes' (1935) Simi Hills *V. californicus* are thus from the upper Santa Susana Formation rather than the lower Llajas Formation. Mollusks from near the base of the Llajas indicate late "Capay Stage" and those from the upper Santa Susana above the "Martinez Marine Member" suggest "Meganos Stage" (Saul, 1983a). Planktic foraminifers indicative of P5 and lower P6 Zones (Heitman, 1983, p. 40) and calcareous nannofossils indicative of CP8 (*Discoaster multiradiatus*) Zone and probable CP9 (*Discoaster diastypus*) Zone (Filewicz and Hill, 1983, p. 49–51) have been found in the upper Santa Susana Formation on the north side of the Simi Valley. These zones are of late Paleocene through earliest Eocene age (Berggren et al., 1985, fig. 3). Localities yielding *V. californicus* in the Simi Hills on the south side of the Simi Valley are above the occurrence of *Turritella infragranulata pachecoensis* and early forms of *T. infragranulata* and are probably of late Thanetian age.

Vokes also mentioned specimens from UCB loc. A-976, Big Tar Canyon, Kings County, California, Domengine Formation. The locality is described as being in the "lowest layer of the Domengine." Stewart (1946) called these Eocene sandstones of the Reef Ridge area, Avenal Sandstone, and correlated the Avenal with fossiliferous Eocene sandstones at Coal Mine Creek, Fresno County, California, which, there, he considered to be below the base of the Domengine Formation (Stewart, 1946, p. 92). This suggests that the basal Avenal might not be younger than late "Capay." Keppler, Squires and Fritsche (1984), however, recognized only "Domengine Stage" mollusks from the Avenal. The "Domengine" was considered to be of middle Eocene age (Givens, 1974, p. 22), but the lower "Domengine" is now recognized as being correlative with the upper Ypresian and of early Eocene age (Saul, 1983a, fig. 1).

Remarks.—*V. californicus* differs from *V. vizcainoensis* most noticeably in its thin outer lip, sharper, more angulate deck margins, which are not rolled back onto the spiral surface, and more swollen callus on the deck. The edge of the inner lip is straighter than the convexly curved one of *V. vizcainoensis* and the slightly concave one of *V. perversus.* All available specimens are larger than those of *V. vizcainoensis*; some large specimens of *V. californicus* are nearly as large as large *V. perversus.* If *V. vizcainoensis* is not younger than the youngest turritellas (*T. infragranulata pachecoensis*) collected nearby (e.g., UCLA loc. 7084) from the Sepultura Formation, *V. vizcainoensis* is older than *V. californicus,* which at its type locality is from above the *T. i. pachecoensis* Zone.

V. californicus is very similar to *V. balkanicus* in callus, inner lip profile, and shape and position of the spire. The main difference between the two forms is the thickened outer lip of *V. balkanicus. V. balkanicus* is from beds of Priabonian age (Eames *in* Davies, 1975, p. 194).

V. californicus differs from *V. perversus* in its stronger, broader teeth on the inner lip and in its roundly inflated whorl with no trace of the shoulder angulation so characteristic of *V. perversus* (Figures 5.22–5.23). *V. californicus* and *V. perversus* are probably both, in part, of early Eocene age, but they have not yet been collected from the same locality, and in both sections—Simi Hills and Big Tar Canyon—where both species have been found, *V. californicus* occurs stratigraphically below *V. perversus.* In the Simi Hills *V. californicus* is from the upper Santa Susana Formation and *V. perversus* from the lower Llajas Formation (e.g., UCB loc. 7193 and UCLA loc. 7069). In the vicinity of Big Tar Canyon, Kings County, California, *V. californicus* at UCB loc. A-976 is below the occurrence of *V. perversus* at UCB loc. A-9727. This su-

perposition of *V. perversus* may have more ecologic than chronologic significance; *V. perversus* may have inhabited slightly deeper or quieter water than did *V. californicus.*

Genus NERITA Linnaeus, 1758

Type species.—*N. peloronta* Linnaeus, 1758, by subsequent designation of Montfort, 1810.

Subgenus THELIOSTYLA Morch, 1852

Type species.—*N. albicilla* Linnaeus, 1758, by subsequent designation of Kobelt, 1879.

NERITA (THELIOSTYLA) n. sp.(?)
Figures 6.13, 6.16, 6.17

Description.—Shell small, thick walled, capuliform; spire not elevated; whorl roundly inflated, enlarging rapidly, ornamented by about 18 granulate spiral ribs, interspaces narrower than ribs apically and abapically, wider than ribs medially; aperture large, occupying most of apertural side of shell; outer lip beveled, thickened and dentate within, denticles paired; inner lip dentate, 4 small denticles medially, a broad anterior denticle, and two stronger, subequal posterior denticles; deck broad, granulate, sloping into the aperture.

Hypotype.—UCLA 59431.

Locality.—UCLA loc. 7083, east of Bahía Sebastian Vizcaino, Baja California, Mexico.

Dimensions of UCLA 59431.—Height 9.0 mm, width 11.4 mm, thickness 5.5 mm; length of inner lip 4.9 mm; width of apertural opening 3.5 mm.

Age.—Late Paleocene(?).

Remarks.—The above description is based upon one specimen; no other fragment of this species was found in the material collected. Its aperture is similar to *N.* (*T.*) *triangulata* Gabb, 1869, of "Domengine" and "Tejon" age (Givens, 1974, p. 61). It is, however, not made angulate by three strong spiral ribs (Vokes, 1939, Pl. 22, figs. 31, 33, 34, "Domengine" age specimens) nor even subangulate (Givens, 1974, Pl. 5, fig. 4, "Tejon" age specimens). Aperture and granulate ribs of *N.* (*T.*) n. sp.(?) are similar to those of *N. granulosa* Deshayes (Cossmann and Pissarro, 1910, Pl. 5, fig. 38-3), which is very similar to Givens' (1974, Pl. 5, fig. 4) illustration of *N.* (*T.*) *triangulata* Gabb. In the Iconographie the age of *N. granulosa* is Thanetian, but Cossmann (1925, p. 210) listed it as Auversian, and Woodring (1973, p. 466) gave its age as late Eocene. It is not only more angulate than *N.* (*T.*) n. sp.(?), it also has more spiral ribs, which may be a result of the larger size of the specimen. *Nerita listrota* Woodring (1973, p. 466, Pl. 69, figs. 11, 12, 17) is another form with similar aperture and sculpture, also based upon a larger specimen, and with less uniform but more spiral ribs than *N.* (*T.*) n. sp.(?). Woodring (1957, p. 22; 1970, p. 301) considered the Gatuncillo Formation of Panama, from which *N. listrota* was collected, to be mainly of middle Eocene age, but Eames (*in* Eames et al., 1962, p. 36; *in* Eames et al., 1965, p. 162; *in* Davies, 1975, p. 293) suggested that the Gatuncillo Formation is of Aquitanian (early Miocene) age and contains reworked older fossils. Irrespective of who is correct as to age of deposition of the Gatucillo Formation, *N. listrota* may be of middle Eocene age. We have hesitated to name this probably Paleocene form because we have only the one small specimen and have not seen specimens of other named taxa which it resembles.

Genus NERITINA Lamarck, 1816

Type species.—*Nerita pulligera* Linnaeus, 1766 (ICZN Op. 119, 1931).

Subgenus DOSTIA Gray, 1842

Type species.—*Nerita crepidularia* Lamarck, 1822, by original designation = *N. violacea* Gmelin, 1791.

NERITINA (DOSTIA) CUNEATA (Gabb, 1864)
Figures 6.4–6.5, 6.11.

Nerita cuneata GABB, 1864, p. 137, Pl. 21, fig. 97.
Velates cuneatus (Gabb), STEWART, 1927, p. 318, Pl. 21, figs. 3–3a.

Description.—Shell small, patelliform abaperturally, coiling nearly planispiral, spire near and well above middle of ablabral margin; whorl steeply, but roundly inflated, enlarging very rapidly; spiral surface sculptured by low undulatory collabral ribs which increase by intercalation on anterior and posterior sides of spire; deck broad, nearly flat, with thickened rim especially along ablabral margin, sloping gently inward along inner lip; aperture semicircular; inner lip nearly straight, slightly concave with 6 or 7 small denticu-

lations medially and one or two broader ones at each end; teeth extending as ridges onto sloping portion of deck; outer lip smooth, slightly thickened.

Type specimens.—Lectotype, UCBMP 31392; lectoparatype, ANSP 4246; hypotype, UCLA 58273 from UCLA loc. 4082, Tuscan Springs, Tehama County, California.

Type locality.—Tuscan Springs, on Little Salt Creek, Tehama County, California.

Dimensions of UCLA 58273.—Height 20.0 mm; width 21.9 mm, broken; thickness 12.0 mm; length of inner lip 11.4 mm; width of aperture 7.7 mm.

Age.—Campanian, probably late early Campanian.

Remarks.—The callus on the deck is not thick; the greatest thickening is around the ablabral margin, and the callus does not extend onto the spiral surface. Recrystallization has obscured fine details on all specimens, which may have led Stewart (1927, p. 319) to suggest that the apex is completely covered by callus.

The species has thus far been certainly identified only at Tuscan Springs, but a very similar, if not conspecific, form is found in the Moreno Formation, Tierra Loma Member. All specimens of *N. (D.)* aff. *N. (D.) cuneata* are very small, and differences between *N. (D.) cuneata* and *N. (D.)* aff. *N. (D.) cuneata* may result from comparing juveniles with adults.

N. (D.) cuneata was referred to *Velates* by Stoliczka (1868, p. 338) and left there by Stewart (1927, p. 318). Vokes (1935, p. 381) considered it the geologically oldest species of *Velates.* However, *N. (D.) cuneata* differs from typical *Velates* in coiling, inner lip configuration, and callus deposition. The inner lip of *N. (D.) cuneata,* that is finely toothed and broadly sulcate medially, resembles that of *Neritina (Dostia) violacea* (Gmelin, 1791) and *Tomostoma neritoides* (Deshayes, 1824) but differs from the more evenly and coarsely toothed inner lip of *Velates perversus* (Gmelin, 1791), which is minimally sulcate anterior to the middle of the lip. The callus of *N. (D.) cuneata* is deposited thinly across the deck and is thick around the ablabral rim. The great welt of callus on the spiral surface so characteristic of *V. perversus* is lacking. The coiling of *N. (D.) cuneata* is more nearly planispiral, and the whorl enlarges very rapidly producing in abapertural view a more patelliform shape than that of *V. perversus.*

"*Nerita*" *cuneata* Gabb resembles *Tomostoma neritoides* (Deshayes) and *Neritina (Dostia) violacea* (Gmelin) in configuration of the inner lip, coiling, and callus deposition. It differs in its undulatory collabral ribbing, in the short extension of the inner lip teeth onto the deck, and in that the ablabral deck surface is more convex and not depressed or steeply sloping into the aperture. "*N.*" *cuneata* has a sturdier shell than most Recent *Neritina* spp., but *N. (D.) violacea* is also relatively thick shelled for a *Neritina.*

Deshayes is usually credited with proposing *Tomostoma* in 1824; but he did not do so. He described a new species *Pileolus neritoides* and retained this combination in later works (1824a, 1864). In 1864 (p. 25), however, he mentioned that there were two kinds of *Pileolus,* those of Mesozoic age having a circular apertural face and abaperturally a central spire, and those from early Tertiary rocks which have a more oval apertural face and the spire closer to the ablabral margin. To this latter group he considered that the name *Tomostoma,* "que nous avons proposé autrefois," could be attached. He stated that there are two early Tertiary species but mentioned only *Pileolus neritoides* Deshayes, 1824, by name. The type species is more explicitly indicated by Fischer (1885, p. 803). *Tomostoma* cannot be considered to have been validly proposed earlier than 1864, and *Culana* Gray, 1842 (type species *Pileolus altevelensis* Defrance) is thus a prior name for this group, but no subsequent author appears to have used it. Although Cossmann (1925, p. 235) suggested that *Tomostoma* was derived from *Pileolus,* the inner lip profile of *T. neritoides* is sulcate and resembles that of *Neritina* and *Dostia* rather than that of *Pileolus.* The inner lip of *T. neritoides* has a wider posterior sinus, the posterior-most tooth is not as broad, and the spire is farther from the ablabral margin than in *N. (D.) cuneata.*

NERITINA (DOSTIA) aff.
N. (D.) CUNEATA (Gabb)
Figures 6.6–6.7, 6.12.

Description.—Shell small, patelliform abaperturally, coiling nearly planispiral, spire

overhanging middle of ablabral margin; whorl very roundly inflated, enlarging extremely rapidly; spiral surface sculptured by undulatory collabral ribs that increase by intercalation on anterior and posterior side of spire; deck broad with slightly convex surface, sloping into the aperture; aperture semicircular; inner lip nearly straight, slightly concave medially with 6 or 7 small denticulations and one or two broader denticulations at each end; teeth extending as short ridges onto the deck; outer lip smooth.

Hypotypes.—UCLA 59417–59418 from CIT loc. 1551.

Dimensions of UCLA 59417.—Height 6.3 mm; width 8.8 mm; thickness 4.1 mm; length of inner lip 4.1 mm; width of apertural opening 3.0 mm.

Locality of hypotypes.—CIT 1551, Laguna Seca Hills, Ortigalita Peak Quadrangle, Merced County, California.

Age.—Mid Maastrichtian.

Remarks.—The above description is based upon four specimens from CIT 1551 and 2 from UCB D-715. The two localities are about 666 m (2,000 ft) apart and roughly along strike, south of Ortigalita Creek in the Laguna Seca Hills, Ortigalita Peak Quadrangle, Merced County, California. CIT 1551 may be stratigraphically lower than UCB D-715. CIT 1551 is at the base of the Tierra Loma Sandstone member of the Moreno Formation; and UCB D-715 is recorded as being from the underlying Panoche Formation. This recorded stratigraphic difference of these two localities results from differing placements of the Panoche–Moreno contact (Saul, 1983, p. 25), and the two localities are probably of essentially similar stratigraphic position and age.

All specimens are small; the largest, which is broken and incomplete, is 9.6 mm high and 11.4 mm wide. Differences between these specimens and *N.* (*Dostia*) *cuneata* may result from their small size. In *M.* (*D.*) aff. *N.* (*D.*) *cuneata* the spire overhangs the ablabral margin, the collabral ribbing appears to be slightly coarser, extension of the teeth onto the deck is less marked, and the large posterior and anterior teeth are not subdivided as in *N.* (*D.*) *cuneata.* The inner lip profile of *N.* (*D.*) aff. *N.* (*D.*) *cuneata* is more similar to that of *N.* (*D.*) *escondita* than to *N.* (*D.*) *cuneata.*

NERITINA (DOSTIA) ESCONDITA n. sp.
Figures 6.9, 6.10, 6.14, 6.15.

Description.—Shell small; patelliform abaperturally, coiling almost planispiral, spire near center of ablabral margin and buried in callus; whorl nearly evenly and roundly inflated, enlarging rapidly; spiral surface apparently smooth except for growth lines; deck covered with bulbous callus that forms rolled rim around ablabral margin and envelops spire; aperture apparently semicircular; inner lip nearly straight, slightly concave with 7 or 8 fine denticulations medially and a broader one at each end; outer lip unknown.

Type specimens.—Holotype, CAS Geol. 61393, paratype, CAS Geol. 61394.

Type locality.—CAS 1023, 65.7 km from Lampazos, Nuevo León, on the road to Monclova, Coahuila, Mexico.

Dimensions.—Holotype, height 19.4 mm; width 18.7 mm, broken; thickness 11.9 mm; length of inner lip 10.7 mm. Paratype, height 12.0 mm; width 12.7 mm, broken; thickness 7.4 mm; length of inner lip 7.5 mm.

Age.—Maastrichtian(?).

Remarks.—The above description is based upon two specimens from below or at the base of the Escondido Formation. The fossils were collected from limy shales above a thin lignite. The species is described despite qualified stratigraphic placement because of its similarity to *Neritina* (*Dostia*) *cuneata* Gabb, which it resembles in the placement of the teeth and shape of the inner lip. The teeth of *N.* (*D.*) *cuneata* are, however, stronger and project onto the lip as short ridges with furrows between. *N.* (*D.*) *cuneata* has a more elevated spire and less bulbous callus on the inner lip that does not extend onto the abapertural surface. *N.* (*D.*) *escondita* further differs from *N.* (*D.*) *cuneata* in lacking sculpture, whereas *N.* (*D.*) *cuneata* has low undulatory collabral ridges.

Neither *N.* (*D.*) *escondita* nor *N.* (*D.*) *cuneata* resemble *nerita umzambiensis* Woods, 1906, or *Nerita kaffraria* Woods, 1906, from the Cretaceous of Pondoland, which with *N.* (*D.*) *cuneata* were considered to be *Velates* by Cossmann (1925, p. 230). These South African neritids are less capshaped, have more convex rather than emarginate inner lip edge, and stronger, fewer denticulations on the inner lip.

N. (D.) escondita is very similar to *Neritina (Dostia) violacea* (Gmelin, 1791) in overall shape and denticulations of the inner lip. It is less inflated and has a more rapidly expanding whorl than does the Recent East Indian species. It also has a more extensive and bulbous callus on the inner lip that envelops the spire.

Etymology.—The name is derived from escondida, Spanish, hidden, out of the way.

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LOCALITIES CITED

D-715 UCB.—Sandstone bed about 8 mi S of Los Baños, exposed along a ridge about 300′ long, due N of an E–W trending creek, center N½ NE¼ sec. 33, T11S, R10E, Ortigalita Peak Quad., Laguna Seca Hills, Diablo Range, Merced Co., California. Coll. Paleo. 237 class, Sept. 21, 1963. Panoche Fm. of Payne; Moreno Formation of Anderson and Pack. Age: Cretaceous, middle Maastrichtian.

A-976 UCB.—In draw across the ridge to the S of Big Tar Canyon, SW¼ sec. 17, T23S, R17E, Garza Peak Quad., Kings Co., California. Coll.: F. E. Turner, 1931. "Lowest layer in Domengine" = Avenal Sandstone. Age: Eocene, late "Capay"? or early "Domengine."

1023 CAS.—Knob 400 m N30°E from Rancho La Navaja, SE of Aguerreverra, 65.7 km from Lampazos, Nuevo León, on the road to Monclova, Coahuila, Mexico. Coll.: T. F. Stipp, Sept. 24, 1926. Below or at base of Escondido Formation. Top of hill has thin layers of blue gray limestone, weathering yellow, fossils from limy shales above thin lignite. Age: Cretaceous, Maastrichtian or late Campanian.

1551 CIT.—On ridge just above creek bed and near base of sandstone member, lowest of 3 locs. (CIT 1551, 1553, 1567) in "Arroyo de la Primavera", 2,800'S, 4,500'E of NW cor. sec. 33, T11S, R10E, Ortigalita Peak Quad., Laguna Seca Hills, Diablo Range, Merced Co., California. Coll.: B. C. Adams, August 1941. Moreno Formation, Tierra Loma Sandstone Member. Age: Cretaceous, middle Maastrichtian.

3173 UCLA.—S side 50' from top of E–W trending ridge, SW of Runkle Canyon, approx. 2,900'N, 1,400'W of SE cor. sec. 27, T2N, R18W, Calabasas Quad., Simi Hills, Ventura Co., California. Coll.: J. H. Fantozzi, Oct. 3, 1953. Santa Susana Formation, very well-indurated bed of calcareous sandstone. Age: late Paleocene.

3791 UCB.—S side Simi Valley W of Runkle Canyon on NW trending ridge, NE¼ SE¼ sec. 22, T2N, R18W, Calabasas Quad., Simi Hills, Ventura Co., California. Santa Susana Formation. Age: late Paleocene, *Turritella infragranulata* Zone.

3792 UCB.—S side Simi Valley W of Runkle Canyon on same ridge as UCB 3791, NE¼ SE¼ sec. 22, T2N, R18W, Calabasas Quad., Simi Hills, Ventura Co., California. Santa Susana Formation. Age: late Paleocene.

4082 UCLA.—Tuscan Springs, on Little Salt Creek, about 10 mi. NE of Red Bluff, near center NE¼ sec. 32, T28N, R2W, Tuscan Springs Quad., Tehama Co., California. Coll.: W. P. Popenoe et al. Chico Formation. Age: Cretaceous, late early Campanian.

4244 UCLA.—Northeast side of Hot Springs Canyon, about 750'NW of junction of Popular Creek and Hot Springs Canyon near elev. 3,050', 2,000'N, 4,000'E of SW corner sec. 21, T6N, R20W, Topatopa Mountains Quad., Ventura Co., California. Coll.: Susuki and Jestes, 1959. Lower Juncal Formation. Age: Eocene, "Capay."

7009 UCB.—About 100 yds. N of UCB 3759 (7,000'S of BM 961 at Santa Susana well, flank of 1,500' hill) in sandy shale, 1,240' elev., Santa Susana Quad., Simi Hills, Ventura Co., California. Coll.: R. B. Stewart. Santa Susana Formation. Age: late Paleocene.

7069 UCLA.—Land slide area E of Bus Canyon rd., approx. 75'S of UCLA 7068 and 40' upslope from rd., 750'S, 1,410'W of NE corner sec. 28, T2N, R18W, Thousand Oaks Quad., Simi Hills, Ventura Co., California. Coll.: R. L. Squires and L. R. Saul, May 25, 1983. Llajas Formation, top of basal cgl. Age: Eocene, late "Capay."

7083 UCLA.—Described in text.

7084 UCLA.—SE flank of Arroyo San Javier beneath surface of Aeropuerto marine terrace, 150 m S of Rancho San Javier (Woods, 1978, figs. I-1, I-13, II-19, loc. H, Pl. II-21). 10 m high exposure of interbedded sandstone and cgl. with abundant *T. I. pachecoensis* Gabb in a 3.4-m-thick lens, SW Estado de Baja California, Mexico. Coll.: Alan J. Woods, 1976. Sepultura Formation. Age: Paleocene, Thanetian, P4 Zone.

7193 UCB.—About 200 yd E of and slightly stratigraphically beneath UCB 7194 along top of 1,400' ridge extending NW from third main ridge W of Runkles Ranch on the ridge on which there is abandoned well and road leading up to it (NE¼ NE¼ sec. 28, T2N, R18W, Thousand Oaks Quad.), Simi Hills, Ventura Co., California. Coll.: R. B. Stewart. Basal Llajas Formation. Age: Eocene, late "Capay."

A-9727 UCB.—Along and in northern area of outcrop and stratigraphically higher than UCB A-9726—E of Big Tar Canyon on N side of slope about 1,000'NE of road and in southern part of outcrop, E border of SW¼ sec. 17, T23S, R17E, Garza Peak Quad., Kings Co., California. Coll.: Paleo. 137 class, Sept. 1953. Avenal Sandstone. Age: Eocene, ?"Domengine".