

DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

CHECKLIST OF MESOZOIC MACROFOSSIL LOCALITIES
IN THE SANTA CRUZ MOUNTAINS AND VICINITY

by

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INTRODUCTION

This report is a compilation of Mesozoic macrofossil data from an area just east of the San Andreas fault in the southern Santa Cruz Mountains of Santa Clara and Santa Cruz Counties, from several localities on the Stanford University campus in northernmost Santa Clara County, and from the Pigeon Point Formation, which is located west of the San Andreas and San Gregorio faults in San Mateo County. These fossils are found in turbidite deposits resembling the widely developed Great Valley sequence of central California. The age of the rocks on the Stanford campus is late Campanian to early Maastrichtian (Graham and Church, 1963). The rocks at Pigeon Point are of a similar age (Hall *et al.*, 1959); recently discovered fossils from this area and listed in this report suggest that the entire Pigeon Point Formation straddles the Campanian-Maastrichtian boundary and does not range into the lower Campanian as suggested by Saul (1978). The Mesozoic Great Valley-like strata of the Santa Cruz Mountains have a lower interval of Tithonian to Valanginian age which is separated from an upper interval of late Campanian to early Maastrichtian age by a low angle normal fault (McLaughlin *et al.*, 1988).

This report comprises the first of several that will document the Mesozoic macrofossil assemblages in the San Jose 1:100,000 quadrangle and adjoining areas. The data are compiled from unpublished fossil reports of USGS paleontologists and from the following publications: Crandall (1907), Arnold (1908), Rathbun (1908), Hall *et al.* (1959), Saul and Popenoe (1962), and Saul (1978, 1989). Most of the USGS collections have been studied by the authors, but the other collections have not been checked to verify identifications and consistency of taxonomic nomenclature.

The Mesozoic macrofossil localities are plotted on a map of the Santa Cruz Mountains and vicinity (Plate 1), and a checklist of taxa found at these localities is found on Table 1. The quadrangle names and ages corresponding to the abbreviations used on the fossil checklist are shown on Tables 2 and 3, respectively. Exact locality information is listed in the appendix.

Table 2. Quadrangle abbreviations used in Table 1.

| Abbreviation | Quadrangle Name (1:24,000) |
|--------------|----------------------------|
| FP | Franklin Point |
| LG | Los Gatos |
| LL | Laurel |
| LP | Loma Prieta |
| MM | Mount Madonna |
| PA | Palo Alto |
| PP | Pigeon Point |
| SG | San Gregorio |

Table 3. Age abbreviations used in Table 1.

| Abbreviation | Age |
|--------------|---------------|
| J | Jurassic |
| Tith | Tithonian |
| K | Cretaceous |
| Berr | Berriasian |
| Val | Valanginian |
| Camp | Campanian |
| Maas | Maastrichtian |
| E | Early |
| M | Middle |
| L | Late |

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- Saul, L.R., 1978, The North Pacific Cretaceous trigoniid genus Yaadia: University of California Publications in Geological Sciences, v. 119, 65 p., pls. 1-12.
- Saul, L.R., 1989, California Late Cretaceous donaciform bivalves: The Veliger, v. 32, p. 188-208.
- Saul, L.R., and Popenoe, W.P., 1962, Meekia, Enigmatic Cretaceous pelecypod genus: University of California Publications in Geological Sciences, v. 40, p. 289-344, pls. 1-6.

APPENDIX

Map Locality Number: 1; University of California at Berkley Locality: A-7601
Field Identifier: -?-; Collector: J. W. Durham
1.6 km (1 mile) north of Pescadero Point along beach at small point.
Elevation: 20 ft, 6 m;
San Mateo County, California, San Gregorio 1:24000 quadrangle

Map Locality Number: 2; Table 1 Locality: 10
Field Identifier: -?-; Collector: Unknown
1.6 km (1 mile) south of Arroyo de los Frijoles.
San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 2; UCLA Locality: 4347
Field Identifier: -?-; Collector: L. R. & R. B. Saul
Sandstone reef below high tide line just S of Spring Bridge Gulch.
Latitude: 37° 12.27' N; Longitude: 122° 24.27' W;
Elevation: 0 ft, 0 m;
San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 3; Table 1 Locality: 7
Field Identifier: -?-; Collector: Unknown
0.8 km (1/2 mile) north of Bolsa Point on coast.
San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 3; California Academy of Science Locality: 31334
Field Identifier: -?-; Collector: Unknown
0.8 km (1/2 mile) north of Bolsa Point on the north side of a small anticline.
San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 4; Table 1 Locality: 6
Field Identifier: -?-; Collector: Unknown
Bolsa Point. 1.6 km (1 mile) north of Pigeon Point on coast.
San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 4; USGS Mesozoic Locality: M8599
Field Identifier: 89-E-42; Collector: W. P. Elder
In lens in sandstone reef 0.2 km (1/8 mile) southeast of Bolsa Point.
Latitude: 37° 11.70' N; Longitude: 122° 24.16' W;
Elevation: 0 ft, 0 m;
San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 4; USGS Mesozoic Locality: M8600
Field Identifier: 89-E-42 float; Collector: W. P. Elder
In sandstone float on beach 0.2 km (1/8 mile) southeast of Bolsa Point.
Latitude: 37° 11.71' N; Longitude: 122° 24.16' W;
Elevation: 0 ft, 0 m;
San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 4; USGS Mesozoic Locality: M8603
Field Identifier: 89-E-42A; Collector: W. P. Elder
In lens in sandstone at high tide line 0.2 km (1/8 mile) southeast of Bolsa Point.
Latitude: 37° 11.70' N; Longitude: 122° 24.16' W;
Elevation: 0 ft, 0 m;

San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 5; USGS Mesozoic Locality: M8596
Field Identifier: 89-E-40; Collector: W. P. Elder
In calcareous nodules at high tide line 0.4 km (1/4 mile) southeast of Bolsa Point.
Latitude: 37° 11.64' N; Longitude: 122° 24.02' W;
Elevation: 0 ft, 0 m;
San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 5; USGS Mesozoic Locality: M8597
Field Identifier: 89-E-40 float; Collector: W. P. Elder
In float on beach at high tide line 0.4 km (1/4 mile) southeast of Bolsa Point.
Latitude: 37° 11.64' N; Longitude: 122° 24.02' W;
Elevation: 0 ft, 0 m;
San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 5; USGS Mesozoic Locality: M8598
Field Identifier: 89-E-41; Collector: W. P. Elder
In large fallen block on cliff face 0.4 km (1/4 mile) southeast of Bolsa Point.
Latitude: 37° 11.64' N; Longitude: 122° 24.02' W;
Elevation: 10 ft, 3 m;
San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 5; USGS Mesozoic Locality: M8601
Field Identifier: 89-E-43; Collector: W. P. Elder
In lens in sandstone on beach 0.5 km (0.3) mile southeast of Bolsa Point.
Latitude: 37° 11.61' N; Longitude: 122° 23.94' W;
Elevation: 0 ft, 0 m;
San Mateo County, California, Pigeon Point 1:24000 quadrangle

Map Locality Number: 6; Table 1 Locality: 8
Field Identifier: -?-; Collector: Unknown
2 km (1 1/4 miles) east-southeast of Pigeon Point.
San Mateo County, California, Franklin Point 1:24000 quadrangle

Map Locality Number: 6; USGS Mesozoic Locality: M8602
Field Identifier: 89-E-44; Collector: W. P. Elder
In conglomerate block on beach 2 km (1 1/4 mile) east-southeast of Pigeon Point.
Latitude: 37° 10.44' N; Longitude: 122° 22.14' W;
Elevation: 0 ft, 0 m;
San Mateo County, California, Franklin Point 1:24000 quadrangle

Map Locality Number: 6; Table 1 Locality: 15
Field Identifier: -?-; Collector: R. Crandall?
2.4 km (1.5 mile) east-southeast of Pigeon Point on coast.
San Mateo County, California, Franklin Point 1:24000 quadrangle

Map Locality Number: 7; Table 1 Locality: 20
Field Identifier: -?-; Collector: Unknown
Not far south of Stanford University buildings.
Santa Clara County, California, Palo Alto 1:24000 quadrangle

Map Locality Number: 7; Table 1 Locality: 23
Field Identifier: -?-; Collector: Unknown
Beneath bridge across San Francisquito Creek on Willow Road.
Latitude: 37° 25.75' N; Longitude: 122° 11.33' W; Elevation: 100 ft, 30 m;
Santa Clara County, California, Palo Alto 1:24000 quadrangle

Map Locality Number: 9; USGS Mesozoic Locality: M5364
Field Identifier: 69-B-595; Collector: E. Brabb
Head of tributary to Austrian Gulch.
Latitude: 37° 9.24' N; Longitude: 121° 54.92' W; Elevation: 2760 ft, 841 m;
Township: 9S; Range: 1W; Section: 13; NW/NE/NE quarter
Santa Clara County, California, Los Gatos 1:24000 quadrangle

Map Locality Number: 10; USGS Mesozoic Locality: M5365
Field Identifier: 69-JLG-1; Collector: D. L. Jones
Austrian Gulch.
Latitude: 37° 8.74' N; Longitude: 121° 54.58' W; Elevation: 1640 ft, 500 m;
Township: 9S; Range: 1E; Section: 18; NW/SW/SW quarter
Santa Clara County, California, Los Gatos 1:24000 quadrangle

Map Locality Number: 11; USGS Mesozoic Locality: M5366
Field Identifier: 69-JLG-2; Collector: D. L. Jones
Austrian Gulch.
Latitude: 37° 8.72' N; Longitude: 121° 54.22' W; Elevation: 2000 ft, 610 m;
Township: 9S; Range: 1E; Section: 18; NW/SE/SW quarter
Santa Clara County, California, Los Gatos 1:24000 quadrangle

Map Locality Number: 12; USGS Mesozoic Locality: M8575
Field Identifier: 88-E-28; Collector: W. P. ELder
South bank of Lake Elsmen east of dam.
Latitude: 37° 07.79' N; Longitude: 121° 55.73' W; Elevation: 1200 ft, 366 m;
Township: 9; Range: 1W; Section: 24; SW/SW/SW quarter
Santa Clara County, California, Los Gatos 1:24000 quadrangle

Map Locality Number: 13; USGS Mesozoic Locality: M8576
Field Identifier: 88-E-None; Collector: W. P. ELder
South side of Williams Reservoir.
Latitude: 37° 07.17' N; Longitude: 121° 54.22' W; Elevation: 1400 ft, 427 m;
Santa Clara County, California, Laurel 1:24000 quadrangle

Map Locality Number: 14; USGS Mesozoic Locality: M8536
Field Identifier: 88-MSJ-30; Collector: R. J. McLaughlin
On ridge top near juncture of 2 dirt roads.
Latitude: 37° 07.34' N; Longitude: 121° 49.74' W; Elevation: 3200 ft, 976 m;
Township: 9S; Range: 1E; Section: 26; SW/SW/NE quarter
Santa Clara County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 15; USGS Mesozoic Locality: M8528
Field Identifier: 88-E-4; Collector: W. P. ELder
Ridge east of Loma Prieta.
Latitude: 37° 06.72' N; Longitude: 121° 50.06' W; Elevation: 3400 ft, 1037 m;
Township: 9S; Range: 1E; Section: 35; NW quarter
Santa Clara County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 16; USGS Mesozoic Locality: M8529
Field Identifier: 88-E-5; Collector: W. P. ELder
Steep bank east of Loma Prieta.
Latitude: 37° 06.68' N; Longitude: 121° 50.04' W; Elevation: 3200 ft, 976 m;
Township: 9S; Range: 1E; Section: 35; NW quarter
Santa Clara County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 16; USGS Mesozoic Locality: M8539
Field Identifier: 88-MSJ-220; Collector: R. J. McLaughlin
Concretion on southwest side of road on ridgetop.
Latitude: 37° 06.66' N; Longitude: 121° 49.99' W; Elevation: 3240 ft, 988 m;
Township: 9S; Range: 1E; Section: 35; SE/NW/NW quarter
Santa Clara County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 17; USGS Mesozoic Locality: M8535
Field Identifier: 88-E-6; Collector: W. P. ELder
Concretions in talus on northeast side of road.
Latitude: 37° 06.58' N; Longitude: 121° 50.04' W; Elevation: 2940 ft, 896 m;
Township: 9S; Range: 1E; Section: 35; NW quarter
Santa Clara County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 18; USGS Mesozoic Locality: M8554
Field Identifier: 88-E-None; Collector: W. P. ELder
Intermittent Creek crossing Loma Chiquita Road.
Latitude: 37° 06.65' N; Longitude: 121° 50.10' W; Elevation: 3000 ft, 915 m;
Township: 9S; Range: 1E; Section: 35; SE/NW/NW quarter
Santa Clara County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 19; USGS Mesozoic Locality: M5367
Field Identifier: 69-CB-564; Collector: M. C. Blake
Loma Prieta Road.
Latitude: 37° 5.96' N; Longitude: 121° 51.52' W; Elevation: 2850 ft, 869 m;
Township: 10S; Range: 1E; Section: =4; NE/NE quarter
Santa Cruz County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 19; USGS Mesozoic Locality: M5368
Field Identifier: 69-JLP-1; Collector: D. L. Jones
Loma Prieta Road.
Latitude: 37° 5.95' N; Longitude: 121° 51.44' W; Elevation: 2950 ft, 899 m;
Township: 10S; Range: 1E; Section: =4; NE/NE quarter
Santa Cruz County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 19; USGS Mesozoic Locality: M8524
Field Identifier: 88-E-1; Collector: W. P. ELder
North side of Loma Prieta Road.
Latitude: 37° 05.95' N; Longitude: 121° 51.45' W; Elevation: 2950 ft, 899 m;
Santa Cruz County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 20; USGS Mesozoic Locality: M8525
Field Identifier: 88-E-2; Collector: W. P. ELder
North side of Loma Prieta Road.
Latitude: 37° 05.91' N; Longitude: 121° 51.20' W; Elevation: 2950 ft, 899 m;
Santa Clara County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 21; USGS Mesozoic Locality: M8527
Field Identifier: 88-MSJ-75; Collector: R. J. McLaughlin
Gully southwest of Loma Prieta Road.
Latitude: 37° 06.16' N; Longitude: 121° 50.56' W; Elevation: 3200 ft, 976 m;
Santa Clara County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 22; USGS Mesozoic Locality: M8526
Field Identifier: 88-E-3; Collector: W. P. ELder
Southwest side of Loma Prieta Road.
Latitude: 37° 06.10' N; Longitude: 121° 50.56' W; Elevation: 3000 ft, 915 m;
Santa Clara County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 23; USGS Mesozoic Locality: M8538
Field Identifier: 88-MSJ-220; Collector: R. J. McLaughlin
Northeast side of dirt road paralleling Trout Creek.
Latitude: 37° 05.10' N; Longitude: 121° 49.19' W; Elevation: 3000 ft, 915 m;
Township: 10S; Range: 1E; Section: 2; SE/SE/SE quarter
Santa Cruz County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 24; USGS Mesozoic Locality: M5890
Field Identifier: 71-LP-597; Collector: T. Simoni
Mt Madonna Road north of Maymens Flat.
Latitude: 37° 5.15' N; Longitude: 121° 49.27' W; Elevation: 2940 ft, 896 m;
Township: 10S; Range: 1E; Section: 2; SW/SE/SE quarter
Santa Clara County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 25; USGS Mesozoic Locality: M6781
Field Identifier: 77-CB-1804; Collector: M. C. Blake
Uvas Creek at Swanson Canyon.
Latitude: 37° 05.20' N; Longitude: 121° 47.50' W; Elevation: 1000 ft, 305 m;
Township: 10S; Range: 2E; Section: 6; quarter
Santa Clara County, California, Loma Prieta 1:24000 quadrangle

Map Locality Number: 26; USGS Mesozoic Locality: M5362
Field Identifier: 69-SF-18,19; Collector: R. J. McLaughlin
Old Watsonville Road south of Sanders Road.
Latitude: 37° 1.95' N; Longitude: 121° 42.67' W; Elevation: 600 ft, 183 m;
Township: 10S; Range: 2E; Section: 25; NW/SW quarter
Santa Clara County, California, Mount Madonna 1:24000 quadrangle

Map Locality Number: 26; USGS Mesozoic Locality: M5389
Field Identifier: 69-SF-109; Collector: R. J. McLaughlin
Old Watsonville Road south of Sanders Road.
Latitude: 37° 1.96' N; Longitude: 121° 42.63' W; Elevation: 600 ft, 183 m;
Township: 10S; Range: 2E; Section: 25; NW/SW quarter
Santa Clara County, California, Mount Madonna 1:24000 quadrangle

Map Locality Number: 27; USGS Mesozoic Locality: M5358
Field Identifier: 69-SF-55; Collector: R. J. McLaughlin
Mt. Madonna Co. Park north of Sprig Lake.
Latitude: 37° 0.81' N; Longitude: 121° 41.05' W; Elevation: 800 ft, 244 m;
Township: 10S; Range: 3E; Section: =31; SE/SE/SW quarter
Santa Clara County, California, Mount Madonna 1:24000 quadrangle

Map Locality Number: 28; USGS Mesozoic Locality: M5359
Field Identifier: 69-SF-60; Collector: R. J. McLaughlin
Mt. Madonna Co. Park. north of Sprig Lake.
Latitude: 37° 0.85' N; Longitude: 121° 41.21' W; Elevation: 940 ft, 287 m;
Township: 10S; Range: 3E; Section: =31; SW/SE/SW quarter
Santa Clara County, California, Mount Madonna 1:24000 quadrangle

Map Locality Number: 29; USGS Mesozoic Locality: M6091
Field Identifier: 73-LP-118; Collector: T. Simoni
Ridge between forks of Los Gatos Creek.
Latitude: 37° 6.39' N; Longitude: 121° 51.30' W; Elevation: 3000 ft, 915 m;
Township: 9S; Range: 1E; Section: =34; NW/SW quarter
Santa Clara County, California, Loma Prieta 1:24000 quadrangle