

**Geographic distribution.**—Redding Formation, Hooten Gulch Mudstone Member (Haggart, 1986), Swede basin, Redding area, Shasta County, California.

**Etymology.**—For W. P. Popeno, who collected the holotype, in recognition of his study of aporrhaides of the Redding area.

#### ACKNOWLEDGMENTS

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ACCEPTED 23 OCTOBER 1995

## CITED LOCALITIES

- 92 CIT (=LACMIP 10100): Concretions in shale 100' above stream and near fence on N side of Harding Canyon, about 0.25 mi N of road fork in Santiago Canyon at Harding/Modjeska Canyon junction, near section line NW 1/4, NW 1/4 sec. 28, T5S, R7W, Santiago Peak quadrangle, Santa Ana Mountains, Orange County, California. Collected by: B. N. Moore, 1928. Ladd Formation, basal Holz Shale Member; late Turonian.
- 974 CIT (=LACMIP 10105): SW slope of Aliso-Santiago Creek divide, 475'N, 1200'W of SE corner of sec. 29 and edge of topo sheet, El Toro quadrangle, Santa Ana Mountains, Orange County, California. Collected by: W. P. Popenoe, 1/14/33. Williams Formation, Pleasants Sandstone Member; late middle to early late Campanian, *Metaplacenticeras pacificum* Zone (Matsumoto, 1960, p. 99; Popenoe and Saul, 1987, p. 34; Saul and Popenoe, 1992, p. 60).
- 1018 CIT (=LACMIP 10833): Fossiliferous layers cropping out in beds of small gullies in field along Durham-Pentz Rd., approximately 0.75 mi W of Pentz, approximately 950'S, 350'E of NW corner sec. 25, T1N, R3E, W side Messila Valley, Cherokee quadrangle, Butte County, California. Collected by: W. P. Popenoe and D. Scharf, 8/19/1931. Chico Formation; late early Campanian.
- 1053 CIT (=LACMIP 10093): First prominent NE-SW spur north of Santiago Creek near junction with Modjeska Creek, 200'N, 2850'E of SW corner sec. 20, T5S, R7W, El Toro quadrangle, Santa Ana Mountains, Orange County, California. Collected by: W. P. Popenoe, 4/9/34. Ladd Formation, upper part of Holz Shale Member; late early Campanian (Matsumoto, 1960, p. 102).
- 1054 CIT (=LACMIP 10793): Shale beds above conglomerate, near head of Aliso Creek, 1725'N, 1575'W of SE corner sec. 33, T5S, R7W, Santiago Peak quadrangle, Santa Ana Mountains, Orange County, California. Collected by: W. P. Popenoe, 10/14/34. Ladd Formation, upper part of Holz Shale Member; late early Campanian.
- 1057 CIT (=LACMIP 10794): Shale beds overlying conglomerate lens, about 250' NW of CIT 1054, 1925'N, 1725'W of SE corner sec. 33, T5S, R7W, Santiago Peak quadrangle, Santa Ana Mountains, Orange County, California. Collected by: W. P. Popenoe, 10/26/34. Ladd Formation, upper part of Holz Shale Member; late early Campanian.
- 1060 CIT (=LACMIP 8196): Crest of high NE-SW trending ridge between Santiago and Williams Canyons, 1900'N, 1650'E of SW corner sec. 20, T5S, R7W, El Toro quadrangle, Santa Ana Mountains, Orange County, California. Collected by: W. P. Popenoe, 10/14/35. Ladd Formation, uppermost part of Holz Shale Member; late early Campanian.
- 1158 CIT (=LACMIP 10710): SE slope of Simi Hills, north bank Bell Canyon, 1.15 mi due west of Los Angeles-Ventura County line on boundary (extended) between T1 and 2N, 500'S, 9000'W of NE corner sec. 4, T1N, R17W. Calabasas quadrangle, Ventura County, California. Collected by: W. P. Popenoe, 6/18/35. Chatsworth Formation; middle Campanian.
- 1159 CIT (=LACMIP 10715): Prominent fossil bed on crest of spur between forks of Dayton Canyon, about 400'E of Los Angeles-Ventura County line, 400'N, 2350'W of SE corner sec. 28, T2N, R17W, Calabasas quadrangle, Los Angeles County, California. Collected by: W. P. Popenoe, H. L. Popenoe, and R. Durbin, 6/21/35. Chatsworth Formation; late middle Campanian (Matsumoto, 1960, p. 103; Popenoe, Saul, and Susuki, 1987, p. 99; Saul and Popenoe, 1992, p. 60).
- 1527 UCLA: South of Santiago Creek, along Santiago Truck Trail, SW 1/4, SW 1/4 sec. 28, T5S, R7W, Santiago Peak quadrangle, Santa Ana Mountains, Orange County, California. Collected by: T. Bear, 1940. Ladd Formation, Holz Shale Member; probably late early Campanian.
- 1545 CIT (=LACMIP 8147): Laguna Seca Section, 2500'S, 1300'E of sec. 13, T12S, R10E, on cliff in pebbly bed approximately 50' above contact with silty clay-stone, Los Baños quadrangle, Merced County, California. Collected by: B. Adams. Moreno Formation, Tierra Loma Shale Member; early late Maastrichtian.
- 2858 LACMIP: (Webster locality 25) Top of S slope, elevation 272', N fork of Ammonite Ravine, about 1125 m E of mouth of Ammonite Ravine, E side Arroyo Santa Catarina, about 6.4 km inland from Pacific Ocean, Baja California, Mexico. Collected by: M. Webster, 1966. Rosario Formation; late Campanian-early Maastrichtian.
- 3632 UCLA: West side Chico Creek about 1/3 mi up deep ravine, 2/3 mi S of Mickey's Place, 1750'S, 25'W of NE corner sec. 11, T23N, R2E, Paradise quadrangle, Butte County, California. Collected by: L. R. and R. B. Saul, 1952. Chico Formation, basal part of Tenmile Member, late Santonian or early Campanian.
- 3635 UCLA: On E bank of Chico Creek W from HB House and approximately 400' S of twin meadows, 1800'S, 400'E of NW corner sec. 13, T23N, R2E, Paradise quadrangle, Butte County, California. Collected by: L. R. and R. B. Saul, 8/17/1952. Chico Formation, Tenmile Member, early Campanian.
- 3637 UCLA: East bank Chico Creek, 1250'N of SE corner sec. 14, T23N, R2E, Paradise quadrangle, Butte County, California.

- Collected by: L. R. and R. B. Saul, 8/18/1952. Chico Formation, Tenmile Member, early Campanian.
- 3643 UCLA: W bank Chico Creek, 1500'S, 2500'W of NE corner sec. 26, T23N, R2E, Paradise quadrangle, Butte County, California. Collected by: L. R. and R. B. Saul, 8/22/1952. Chico Formation, Tenmile Member; early Campanian.
- 3648 UCLA = LACMIP 10861, 23648: Fossil Bluff, W side Chico Creek, 1750'S, 1800'E of NW corner sec. 35, T23N, R2E, Paradise quadrangle, Butte County, California. Collected by: L. R. and R. B. Saul, 8/21/1952. Chico Formation, Tenmile Member; early middle Campanian.
- 4082 UCLA: Tuscan Springs, on Little Salt Creek, about 10 mi NE of Red Bluff, near center NE 1/4 sec. 32, T28N, R2W, Tuscan Springs quadrangle, Tehama County, California. Collected by: W. P. Popenoe et al. Chico Formation; early middle Campanian.
- 4192 UCLA: Hills N of Santiago Canyon on crest of long NE trending ridge, 200'N, 2600'E of SW corner sec. 20, T5S, R7W, El Toro quadrangle, Santa Ana Mountains, Orange County, California. Collected by: M. A. Murphy, W. P. Popenoe and T. Susuki, 2/4/59. Ladd Formation, Holz Shale Member, about 105' below top; late early Campanian, *Submortoniceras chicoense* Zone.
- 4224 UCLA: From nodules in mine tunnel on E bank of Butte Creek, about 10' above water's edge, 2.8 mi by road NW of Honey Run Road covered bridge, approximately 2000'S, 250'E of NW corner sec. 17, T22N, R3E, Paradise quadrangle, Butte County, California. Collected by: W. P. Popenoe, Aug. 29, 1952. Chico Formation, Ten Mile Member; middle Campanian.
- 4662 UCLA: N side Mill Creek, approximately 1700'S, 2250'W of NE corner sec. 19, T27N, R2E, Panther Spring quadrangle, Tehama County, California. Collected by: P. U. Rodda, 1954. Chico Formation; late(?) Santonian.
- 4664 UCLA: Just below contact of volcanics and Cretaceous, mouth of Rancheria Creek, 1700'S, 1550'E of NW corner sec. 19, T27N, R2E, Mill Creek Canyon, Panther Spring quadrangle, Tehama County, California. Collected by: P. U. Rodda, 1954. Chico Formation, Kingsley Cave Member (Haggart and Ward, 1984); late Santonian.
- 4878 UCLA: Sucia Island from bluffs on S side of Fossil Bay about 1/4 mile E of W (closed) end of the bay, sec. 26, T38N, R2W, San Juan County, Washington. Collected by: W. P. Popenoe, 8/23/1952. Cedar District Formation; middle Campanian.
- M5906 USGS: On E side of Dip Creek, 2300'S, 1000'W of NE corner sec. 30, T25S, R10E, Lime Mountain quadrangle, San Luis Obispo County, Santa Lucia Mountains, California. Collected by: D. L. Durham and R. J. McLaughlin, 1969; W. O. Addicott, Koichiro Masuda, D. L. Durham, and T. W. Dibblee, Jr., 1970. Asuncion Formation (Taliaferro, 1944); late late Maastrichtian.
- 5990 UCLA: Sandstone cropping out in bed of small northwestward-flowing gully tributary to French Creek, near S end of Swede Basin, 300'S, 1800'E of NW corner sec. 9, T33N, R2W, Millville quadrangle, Shasta County, California. Collected by: W. P. Popenoe, 1/1/1959. Redding Formation, Hooten Gulch Mudstone Member; Coniacian.
- 6044 UCLA: (P 1-72) Soft massive sandstone cropping out on left (east) bank of Butte Creek, just downstream from high bluff at water's edge, and across stream from A-frame house. About 1000'N and 2800'W of SE corner sec. 8, T22N, R3E, Paradise 15 minute (1953) quadrangle, Butte County, California. Collected by: W. P. Popenoe, 6/21/72. Chico Formation, Ten-mile Member; late early Campanian.
- 6950 UCLA: Roadcut N side Silverado Truck Trail, very fossiliferous bed (1'+ thick) immediately below Schultz Conglomerate Member of the Williams Formation, 950'S, 125'W of NE corner sec. 18, T5S, R7W, El Toro quadrangle, Santa Ana Mountains, Orange County, California. Collected by: L. R. Saul, 12/4/81. Ladd Formation, uppermost part of Holz Shale Member; early middle Campanian.
- 6965 LACMIP: Prominent fossil bed on crest of spur between forks of Dayton Canyon, about 400'E of Los Angeles-Ventura County line, 400'N, 2350'W of SE corner Sec. 33, T2N, R17W, Calabasas quadrangle, Simi Hills, Los Angeles County, California. Collected by: J. Alderson, 1974. Chatsworth Formation; middle Campanian, *Hoplitoplacenticeras bowersi* Zone.
- 6996 UCLA: N bank of Bell Canyon about 1 mi W of Los Angeles-Ventura County line on the boundary (extended) between T1N and T2N, R17W, Calabasas quadrangle, Simi Hills, Ventura County, California. Collected by: W. P. Popenoe, 3/27/46. Chatsworth Formation; middle Campanian.
- 7135 UCLA: Fossils collected within 3 m of section in highly fossiliferous zone, W side Horse Canyon near 1800' contour, 1,125 km N, 1.2 km E of SW corner of topo, T9N, R30W, Bates Canyon quadrangle, Sierra Madre Mountains, Santa Barbara County, California. Collected by: Greg Smith, January, 1984. Unnamed formation; late middle or late Campanian.
- 7235 UCLA: Carlsbad Research Park, N side of Faraday Street from cut slope destined to be used for filling Letterbox Canyon, approximately 0.7 mi N, 1.55 mi W of SE corner of San Luis Rey quadrangle, San Diego County, California. Collected by: L. R. Saul, A. R. Loeblich, and J. Loch, 6/21/1984. Point Loma Formation; late Campanian or earliest Maastrichtian.
- 8068 LACMIP: Punta San Jose, Baja California, Mexico. Collected by: unknown. Rosario Formation; late Campanian or early Maastrichtian.
- M8591 USGS Mesozoic: (J 979-199-11) Manzanita Mountain, Santa Barbara County, California. Approximately 11,400'N and 17,025'W of SE corner Manzanita Mountain quadrangle (1964), altitude approximately 1560' in South Fork La Brea Creek near mouth of Lion Canyon, approximately 1.5 miles NE of Manzanita Mountain. Collected by: J. Joyce and J. Vedder, 1979. Unnamed unit; middle or early late Campanian.
- M8611 USGS Mesozoic: Pebby sandstone just S of head 0.7 mi E of Pigeon Point, latitude 37° 10.86'N, longitude 122° 22.79'W, Pigeon Point 1:24000 quadrangle, San Mateo County, California. Collected by: W. P. Elder, 1990. Pigeon Point Formation; middle to early late Campanian.
- M8756 USGS Mesozoic: (91E-16) Sandstone turbidite 100 m NW of small creek, 1 km SE of Pigeon Point, Pigeon Point 1:24000 quadrangle, San Mateo County, California. Collected by: W. P. Elder, 1991. Pigeon Point Formation; middle or early late Campanian.
- M8759 USGS Mesozoic: (PPLH-A) W end of beach 200 m NE of Pigeon Point Lighthouse, Pigeon Point 1:24000 quadrangle, San Mateo County, California. Collected by: W. P. Elder, 1991. Pigeon Point Formation; middle or early late Campanian.
- A9254 UWBM: Sucia Island, San Juan County, Washington. Latitude 48°46', Longitude 122°52'. Collected by: Peter Ward?, 1972. Cedar District Formation; middle(?) Campanian.
- 10934 LACMIP: Fossils collected along 1450' outcrop of sandstone bed on N-facing slope of canyon N of Modjeska Canyon, 150'S, 1250'E of SW corner sec. 20, to 600'N, 2600'E of SW corner sec. 20, T5S, R7W, El Toro quadrangle, Santa Ana Mountains, Orange County, California. Collected by: L. J. Czel, 1957. Ladd Formation, Holz Shale Member, uppermost sandstone bed; early middle Campanian.
- 11950 LACMIP: Approximately 6.4 km inland from Pacific Ocean, on NW wall of Arroyo Santa Catarina near base (approximately 100 m), Baja California, Mexico. Collected by: R. Demetrio, January 1987. Rosario Formation; late Campanian and early Maastrichtian.
- 14313 LACMIP (=CSUN 1447P): About 450 meters north by northwest of lookout on Warm Springs Mountain, elevation 3460', 47 meters above basement complex—San Francisquito Formation contact in Kirby's measured section number 2 (Kirby, 1991, p. 119), Los Angeles County, California. Collected by: M. X. Kirby, 1990. San Francisquito Formation; late Maastrichtian.
- 14314 LACMIP (=CSUN 1447G): 460 meters north by northwest