U. S. DEPARTMENT OF THE INTERIOR

U. S. GEOLOGICAL SURVEY

Preliminary Geologic Map of the Calabasas 7.5' Quadrangle, Southern California

by

R. F. Yerkes and P. K. Showalter[1]

Open-File Report-93-205

[1]345 Middlefield Road
Menlo Park, CA.

INTRODUCTION

This map is a preliminary product of the Southern California Digital 1:100,000 Geologic Map Series (Morton and Kennedy, 1989). The 1:24,000 compilation was scanned and processed digitally using the U. S. Geological Survey Alacarte menu-driven adaptation (Wentworth and Fitzgibbon, 1991) of the ARC/INFO Geographic Information System.

This 1:24,000 quadrangle is one of eight that form the southwest quarter of the Los Angeles 1:100,000 quadrangle; the 1:24,000 maps are intended to form the basic data supporting the regional-scale quadrangles, and thus include data on exploratory wells and fossil collections.

Stratigraphic nomenclature is largely that of the source materials (see figure 1), modified where necessary to reflect that of Yerkes and Campbell (1979), particularly in regard to units of the Topanga Group. Nomenclature is subject to further modification as compilation progresses.

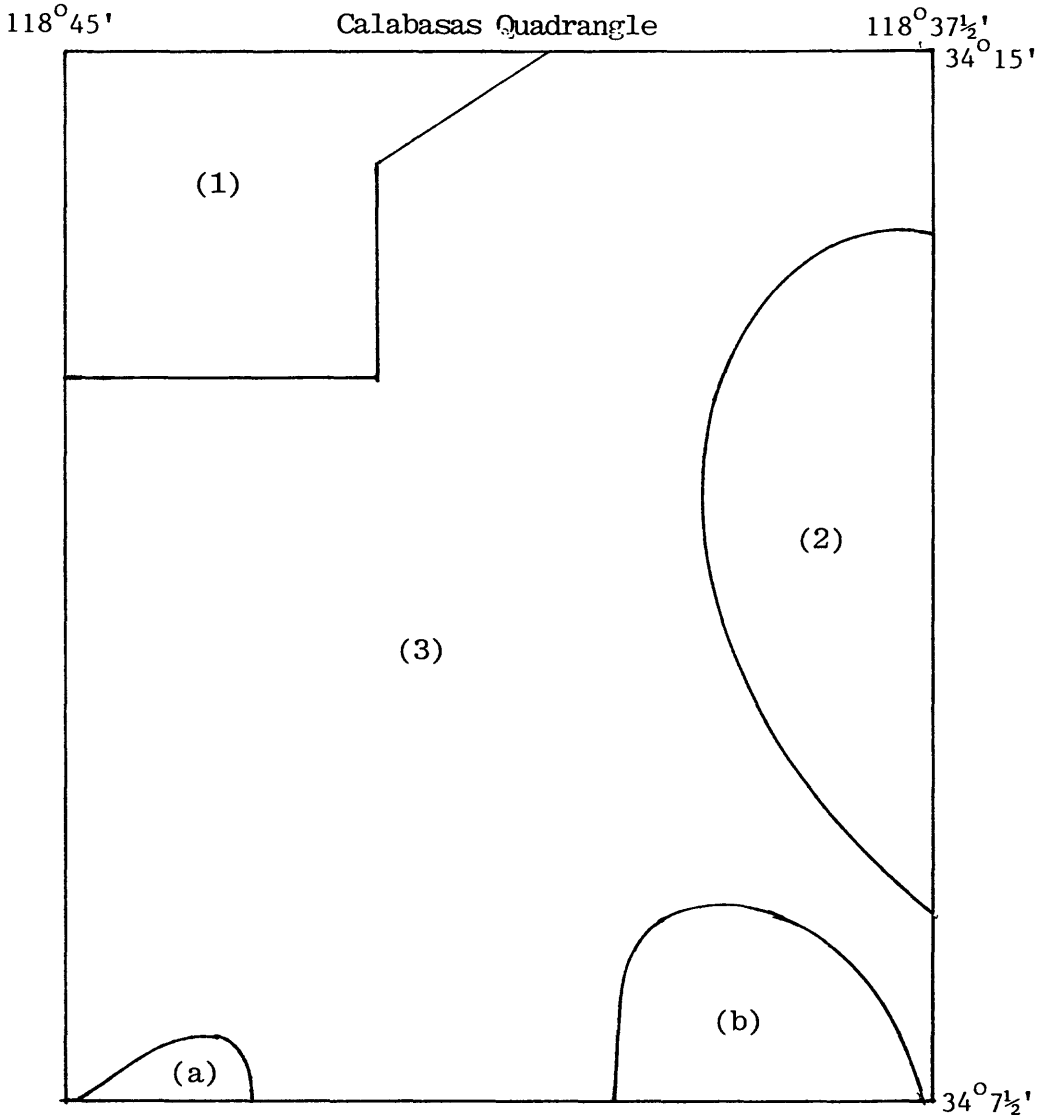
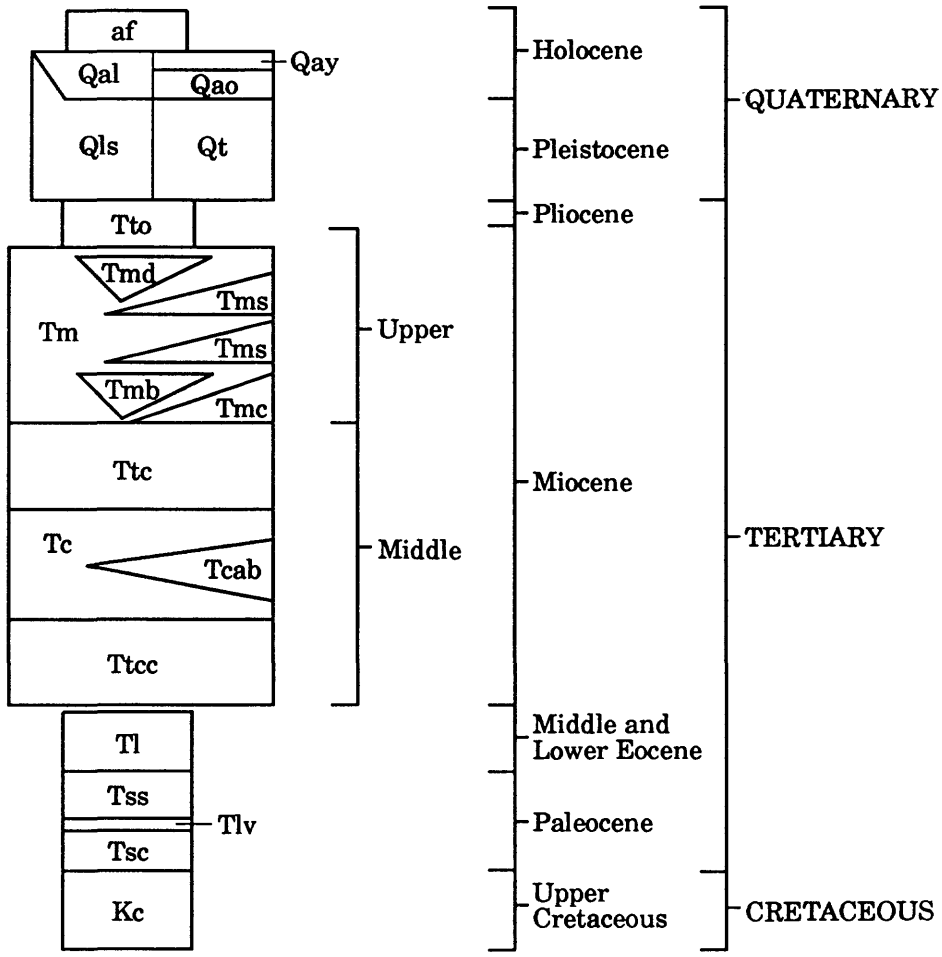


Figure 1-Sources of geology

1. Squires (1983a), with additions from Morton (1972) and Weber (1984).
2. Weber (1984), with additions from Tinsley and others (1985).
3. Weber (1984) with additions from Morton (1972):
   (a) modified by R. F. Yerkes;
   (b) modified from R. H. Campbell (unpub.).

CORRELATION OF MAP UNITS, PRELIMINARY GEOLOGIC MAP, CALABASAS QUADRANGLE



EXPLANATION, PRELIMINARY GEOLOGIC MAP, CALABASAS QUADRANGLE

DESCRIPTION OF MAP UNITS

af Artificial fill

Qay **Alluvium** (late Holocene)--Sand, gravel, silt, and clay; unconsolidated and uncemented; underlies areas flooded historically; thickness 0-3 m; less than 1000 years old

Qao **Alluvium** (Holocene)--Gravel, sand, silt, and clay; unconsolidated and uncemented; thickness 0-30 m; age 1000-10,000 years

Qal **Alluvium, undivided** (Holocene and Pleistocene)--Gravel, sand, silt, and clay; slightly to well consolidated and/or cemented

Qls/Qls? **Landslide deposits** (Holocene and Pleistocene)--Parent materials include both surficial deposits and bedrock; query (?) indicates questionable assignment

Qt **Terrace deposits** (Chiefly Pleistocene)--Nonmarine sandstone and conglomerate

Tto **Towsley Formation** (Pliocene and Miocene)--Marine sandstone, fine- to coarse-grained, minor layers siltstone and shale; thickness 258 m+

Tm **Modelo Formation** (Miocene)--Dominantly silty shale or soft earthy silstone, locally siliceous or diatomaceous shale or siltstone, interbedded coarse- to fine-grained arkosic sandstone. Thickness at least 900 m. Shales throughout the quadrangle yield chiefly Mohnian foraminifers. Divided into:

Tmd Diatomaceous shale and interlayered fine-grained sandstone;

Tms Sandstone, massive, fine- to medium-grained, thick sequences in both lower and upper parts of formation

Tmb Burnt shale, reddish, porous, low-density shale and siltstone;

Tmc Conglomerate and pebbly sandstone

Topanga Group (Middle Miocene)

Ttc **Calabasas Formation**--Marine sandstone, siltstone and shale, local pebble congomerate; thickness about 455 m

Tc **Conejo Volcanics**--chiefly basaltic flows, volcanic breccia and agglomerate, minor andesitic or dacitic units; thickness about 1400 m

Tcab **Andesitic/dacitic flow breccia and agglomerate**--in southwest corner of map; thickness about 90 m

Cold Creek member--Marine sandstone, siltstone, and pebbly sandstone; thickness about 450 m; locally abundant molluscan fauna referred to the "Temblor Stage" of Weaver and others (1944)

Tl **Llajas Formation** (early to middle Eocene)--marine sandstone, fine grained, well-laminated, generally thin bedded, silty sandstone, and siltstone; thickness as much as 150 m

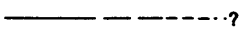
Tss **Santa Susana Formation** (late Paleocene to early Eocene)--marine sandstone, mostly thin bedded, fine to medium grained sandstone and siltstone; local beds of sandstone contain Martinez and Meganos Stage macrofossils (Squires, 1991; Zinsmeister, 1983); as thick as 1030 m

Tlv **Las Virgenes Sandstone** (Paleocene)--Nonmarine to marine sandstone and mudstone; up to 195 m thick

Tsc **Simi Congomerate** (Paleocene)--Reddish clayey conglomerate of chiefly quartzite cobbles and boulders, sandstone and mudrock; as thick as 200 m

Kc **Chatsworth Formation** of Colburn and others (1981) (Upper Cretaceous)--Marine sandstone, thick bedded, arkosic, well cemented, minor siltstone and conglomerate; diverse molluscan faunas referred to mid-Campanian to early Maestrichtian Stages (Saul and Alderson, 1981); benthic foraminfera from thin mudstones in lower-middle parts of section referred to late Campanian Stage (Almgren, 1981); thickness at least 1900 m; base not exposed or drilled

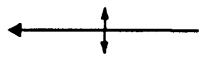
MAP SYMBOLS



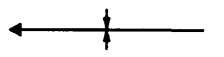
Contact or mapped horizon-long-dashed where approximately located, short-dashed where inferred, dotted where concealed, queried where doubtful

Fault-showing dip: long-dashed where approximately located, short-dashed where inferred, dotted where concealed

Thrust fault-approximately located, teeth on upper plate



Anticline-approximately located, showing crestline



Syncline-approximately located, showing troughline

Strike and dip of inclined beds

Exploratory well-number refers to table 1 below

Fossil locality-F, macrofossil collection; f, microfossil collection; number refers to table 2 below.

REFERENCES

Almgren, A. A., 1981, Foraminifera of the Chatsworth formation, in Link, M. H., editor, et al., Soc. Econ. Paleont. and Mineral. Pac. Sec., Fall Field Trip Guidebk., Oct 10, 1981, p. 43-49.

Colburn, I. P., Saul, L. R., and Almgren, A. A., 1981, The Chatsworth Formation: a new name for the Upper Cretaceous strata of the Simi Hills, California: in Link, M. H., editor, et al., Sec. Soc. Econ. Paleo. & Mineral. Pac. Sec., Fall Field Trip Guidebk., Oct. 10, 1981, p. 9-16.

Kew, W. S. W., 1924, Geology and Oil resources of a part of Los Angeles and Ventura Counties, California: U. S. Geological Survey Bull. 753, 202 p., map at 1:62,500.

Morton, D. M., 1972, Reconnaissance photo-interpretation map of major landslides , southern Ventura County, California: Calif. Div. Mines and Geology Prelim. Rpt. 14, pl. 5, scale 1:48,000.

Saul, L. R., and Alderson, J. M., 1981, Late Cretaceous Mollusca of the Simi Hills: an intoduction: in Link, M. H., Squires, R. L., and Colburn, I. P., eds., Simi Hills Cretaceous Turbidites, Southern California, Pac. Sec. Soc. Econ. Paleo. & Mineral. Fall Field Trip Guidebk., Oct. 10, 1981, p. 29-42.

Squires, R. L., 1983a, Geologic map of the Simi Valley area, southern-California: in Squires, R. L., and Filewicz, M. V., editors, Cenozoic geology of the Simi Valley area, southern California: Pac. Sec. Soc. Econ. Paleont. and Mineral. vol. and guidebk., Oct. 8-9, 1983, scale 1:24,000.

_____1983b, Eocene Llajas formation, Simi Valley, California, in Squires, R. L., and Filewicz, M. V., editors, Cenozoic geology of the Simi Valley area, southern California: Pac. Sec. Soc. Econ. Paleont. and Mineral. vol. and guidebk., Oct. 8-9, 1983, p. 81-95.

_____1991, Paleontologic investigations of the uppermost Santa Susana Formation, south side of Simi Valley, California (abs.): Amer. Assoc. Petrol. Geol. Bull. vol. 75, no. 2, p. 382.

Tinsley, J. C., Youd, T. L., Perkins, D. M., and Chen, A. T. F., 1985, Evaluating liquefaction potential: U. S. Geol. Survey Prof. Paper 1360, fig. 131, p. 278.

Turner, D. L., and Campbell, R. H., 1979, Age of the Conejo Volcanics: U. S. Geol. Survey Bull. 1457-E, p. E18-E22.

Weber, F. H. Jr., 1984, Geology of the Calabasas-Agoura-eastern Thousand Oaks area, Los Angeles and Ventura Counties, California: Calif. Div. Mines and Geol. Open File Rpt. 84-1 LA, 191 p., 4 pls.

Yerkes, R. F., and Showalter, P. K., 1990, Exploratory wells drilled in the Los Angeles, California 1:100,000 quadrangle, U. S. Geol. Survey Open File Report 90-627, 46 p., 1 map at 1:100,000.

Zinsmeister, J. W., 1983, New late Paleocene molluscs from the Simi Hills, Ventura County, California: Jour. Paleont. vol. 57, no. 6, p. 1282-1303.

Table 1--DATA ON EXPLORATORY WELLS, CALABASAS QUADRANGLE[1]

MAP NO.	T	RW	SEC	OPERATOR	NAME/NUMBER	ELEV-ATION (FT)	TOTAL DEPTH (FT)	BOT-TOM[2]
432	1N	18	3	CONOCO, Inc.	Bob Hope 1	1326	3883	K
434	1N	18	12	Getty Oil Co.	Triunfo 1	1325	3240	K
435	1N	18	14	L. C. Gould	Palo Comado 1	1220	2546	M
438	1N	18	23	F. G. Anderson	Mabel 1	950	4190	M
441	1N	18	35	A. D. Kneuper	1	1250	500	M
442	1N	18	36	W. J. Dennis	Steele 1	775	5400	M
460	2N	17	34	SCOPE Industries	Miller-Sanger 1	1015	2481	K
476	1N	17	2	SCOPE Industries	Escorpion 1	890	3436	E
477	1N	17	4	Frank Knapp	Knapp 3	1230	1450	M
478	1N	17	4	McCarthy-Dennis	Knapp 2	1000	1525	M
480	1N	17	4	Exxon, U S A	H 9R-7	1430	4023	C
481	1N	17	4	Terminal Drlg. Company	Barrett-Crummer 1	1055	1051	M
482	1N	17	4	Eagle Oil & Refining Co.	Barrett 1	1100	1882	M
483	1N	17	4	Chevron U S A	Core Hole 9R-1	1080	4674	C
484	1N	17	5	George Allen	Teddy 1	1280	3760	E
485	1N	17	9	G. H. McCarthy	Moss-LaSage 1	1127	3076	K
486	1N	17	10	W. C. Price	Hale 1	978	2905	K
487	1N	17	18	Olympic Corp.	Calabasas 1	870	5936	M
488	1N	17	18	Simi Oil Co.	1	905	4898	M
489	1N	17	19	Easton & Smith	3	1100	2984	M
490	1N	17	22	M. L. Gillespie	Simons 1	1091	3162	M
491	1N	17	22	J. W. Martin	1	965	1825	M
492	1N	17	26	L. W. Rucker	1	1100	800	M
493	1N	17	31	Ferguson-Francisco Petroleum	C1	750	800	M

[1]Data from Yerkes and Showalter, 1990.

[2]C, Confidential; E, Eocene; K, Cretaceous; M, Miocene.

Table 2--DATA ON FOSSIL LOCALITIES, CALABASAS QUADRANGLE

MAP NO[1]	T	RW	SEC	COLL-ECTOR[2]	AGE[3]	MAP UNIT	SOURCE
F2	1N	17	5	USGS	K	Kc	Kew, 1924
F824	2N	17	32	CIT	Kl	Kc	Saul & Alderson, 1981
F826	2N	17	32	CIT	Kl	Kc	Saul & Alderson, 1981
F828	2N	17	33	CIT	Kl	Kc	Saul & Alderson, 1981
F1154	2N	17	28	UCLA	Kl	Kc	Saul & Alderson, 1981
F1155	2N	17	33	CIT	Kl	Kc	Saul & Alderson, 1981
F1156	2N	17	33	CIT	Kl	Kc	Saul & Alderson, 1981
F1158	1N	17	5	CIT	Kl	Kc	Saul & Alderson, 1981
F1159	2N	17	28	UCLA	Kl	Kc	Saul & Alderson, 1981
F1534	2N	17	28	UCLA	Kl	Kc	Saul & Alderson, 1981
F1536	2N	17	28	UCLA	Kl	Kc	Saul & Alderson, 1981
F1537	2N	17	28	UCLA	Kl	Kc	Saul & Alderson, 1981
F1600	2N	18	24	UCLA	Kl	Kc	Saul & Alderson, 1981
F2675	1N	17	28	USGS	Mem	Tt	RFY*, unpub.
F2680	1N	17	28	USGS	Mem	Tt	RFY*, unpub.
F3178	2N	18	34	UCLA	Kl	Kc	Saul & Alderson, 1981
F3179	2N	18	35	UCLA	Kl	Kc	Saul & Alderson, 1981
F3501	2N	18	23	USGS	P	Tss	Kew, 1924
F3503	2N	18	23	USGS	P	Tss	Kew, 1924
F3504	2N	18	26	USGS	P	Tss	Kew, 1924
F3505	2N	18	26	USGS	P	Tss	Kew, 1924
F3507	2N	18	24	USGS	P	Tss	Kew, 1924
F3757	1N	17	34	USGS	Mem	Tt	RFY*, unpub.
F4026	1N	17	34	USGS	Mem	Tt	RHC*, unpub.
F4573	2N	18	24	UCR	Pl	Tss	Zinsmeister, 1983
F4579	2N	18	23	UCR	Pl	Tss	Zinsmeister, 1983
F5473	2N	17	33	UCLA	Kl	Kc	Saul & Alderson, 1981
F6232	1N	17	5	UCLA	Kl	Kc	Saul & Alderson, 1981
F6464	2N	17	29	UCLA	Kl	Kc	Saul & Alderson, 1981
F6668	2N	18	24	UCR	Pl	Tss	Zinsmeister, 1983
F6683	2N	18	34	UCR	Pl	Tss	Zinsmeister, 1983
F6825	2N	18	24	UCR	Pl	Tss	Zinsmeister, 1983
F6873	2N	18	24	UCR	Pl	Tss	Zinsmeister, 1983
F6899	2N	18	23	UCR	Pl	Tss	Zinsmeister, 1983
F68C32	1N	17	32	USGS	P-M	Ttc	RHC*, unpub.
F68C69	1N	17	31	USGS	P-M	Ttc	RHC*, unpub.
F68C77	1N	17	4	USGS	P-M	Ttc	RHC*, unpub.
F68C82	1N	17	28	USGS	P-M	Ttc	RHC*, unpub.
F6929	1N	17	5	UCLA	Kl	Kc	Saul & Alderson, 1981
F6931	2N	17	20	UCLA	Kl	Kc	Saul & Alderson, 1981
F6932	2N	17	20	UCLA	Kl	Kc	Saul & Alderson, 1981
F7319	2N	18	26	UCR	Pl	Tss	Zinsmeister, 1983
F8106	2N	18	23	USGS	P	Tss	Kew, 1924
F8107	2N	18	23	USGS	P	Tss	Kew, 1924
F8109	2N	18	24	USGS	P	Tss	Kew, 1924
F8112	2N	18	27	USGS	P	Tss	Kew, 1924

MAP NO[1]	T	RW	SEC.	COLL-ECTOR[2]	AGE[3]	MAP UNIT	SOURCE
F8115	2N	18	25	USGS	P	Tss	Kew, 1924
F8118	2N	18	27	USGS	P	Tss	Kew, 1924
fAA12	2N	17	21	UOC	Kl	Kc	Almgren, 1981
fAA32	2N	17	20	UOC	Kl	Kc	Almgren, 1981
fAA34	2N	17	21	UOC	Kl	Kc	Almgren, 1981
fAA50	2N	17	21	UOC	Kl	Kc	Almgren, 1981
fAA65	2N	17	22	UOC	Kl	Kc	Almgren, 1981
fAA67	2N	17	22	UOC	Kl	Kc	Almgren, 1981
fAA95	2N	17	32	UOC	Kl?	Kc	Almgren, 1981
fAA102	1N	18	3	UOC	Kl	Kc	Almgren, 1981
f68C81	1N	17	27	USGS	Mm	Tt	RHC*, unpub.
f68C83	1N	18	24	USGS	Mml	Ttc	RCH*, unpub.
f68C84	1N	18	24	USGS	Mml	Tt	RCH*, unpub.
f337G	1N	17	26	USGS	Ml	Tm	RFY*, unpub.
f390F	1N	17	26	USGS	Ml	Tm	RFY*, unpub.
f670	1N	17	32	CDMG	Ml?	Tm	Weber, 1984
f712	1N	18	26	CDMG	Me	Tt	Weber, 1984
f791	1N	18	36	CDMG	Mm	Tt	Weber, 1984
f939	1N	18	10	CDMG	Mm	Tm	Weber, 1984
f942	1N	17	7	CDMG	Ml	Tm	Weber, 1984
f944	1N	17	18	CDMG	Ml	Tm	Weber, 1984
f946	1N	18	19	CDMG	Ml	Tm	Weber, 1984
f958	1N	18	12	CDMG	Ml	Tm	Weber, 1984
f974	1N	18	26	CDMG	Mm	Tm	Weber, 1984
f978	1N	18	26	CDMG	Me	Tt	Weber, 1984
f1006	1N	18	24	CDMG	Mm	Tt	Weber, 1984
f1059a	1N	17	27	CDMG	Ml	Tm	Weber, 1984
f1059b	1N	17	27	CDMG	Ml	Tm	Weber, 1984
f1059c	1N	17	27	CDMG	Ml	Tm	Weber, 1984

[1]F, macrofossil collection; f, microfossil collection; number same as collector's number.

[2]CDMG, Calif. Div. Mines and Geology; CIT, Calif. Inst. Technology; UCLA, Univ. Calif. Los Angeles; UCR, Univ. Calif. Riverside; USGS, U. S. Geol. Survey

[3]K, Cretaceous; M, Miocene; P, Paleocene; e, early; l, late; m, middle; ?, assignment questionable. Example: Mem, Miocene, early to middle.*RHC, R. H. Campbell; *RFY, R. F. Yerkes; U. S. Geological Survey field investigations. Collections designated P-M are from breccia beds that contain many reworked fossils, including Paleocene and middle Miocene forms.