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Title of article Correlation and provenance of upper Mesozoic chert-rich conglomerate of California

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Contents 4 pages

Tables

Table 1 (Notes) p. 1

Table 2 (Notes) 2

Table A (Notes) 3

Table A 4

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Seiders, Victor M., Correlation and provenance of upper Mesozoic chert-rich conglomerate of California.

Table 1. Pebble counts from the central California coastal area. Except as noted, locations are indicated by 7-1/2 minute quadrangle and 1000-meter Universal Transverse Mercator grid. 1. Cape San Martin 15'. 3,966,120N X 652,730E. Pebble imbrication 125 m to N. 2. Pebblestone Shut-in. 3,949,070N X 671,890E. 3. Cypress Mountain. 3,937,970N X 689,120E. Valanginian fossils occur just above (Seiders, 1982). Pebble imbrication 1.17 km to SE. 4. Morro Bay North. 3,929,300N X 700,680E. Pebble imbrication. 5. Morro Bay North. 3,927,910N X 698,760E. Valanginian (Seiders, 1982). 6. Atascadero. 3,921,350N X 711,700E. Valanginian (Hart, 1976). Pebble imbrication. 7. Huasna Peak. 3,855,830N X 748,130E. Probably Valanginian (Hall and Corbato, 1967; J. G. Vedder, oral commun., 1981). Pebble imbrication 140 m to N. 8. Point Sal 15'. 3,867,440N X 717,290E. Pebble imbrication. 9. Figueroa Mtn. 3,847,560N X 231,190E. Valanginian (J. G. Vedder, oral commun., 1981). Pebble imbrication 430 m to E. 10. Little Pine Mountain, 3,827,700N X 250,590E. Valanginian (fossil determination by D. L. Jones and J. W. Miller, written commun., 1981). 11. Morro Bay North. 3,924,420N X 700,680E. Tithonian (Seiders, 1982). 12. Cambria. 3,939,610N X 672,530E. Most unknown and miscellaneous clasts are quartz-rich, probably recrystallized quartzite. 13. Cypress Mtn. 3,943,830N X 689,890E. 14. Cypress Mtn. 3,937,640N X 692,050E. 15. York Mtn. 3,933,750N X 694,610E. 16. Arroyo Grande NE. 3,897,070N X 725,120E.

Table 2. Pebble counts from California outside the central coastal area. Except as noted, locations are indicated by 7-1/2 minute quadrangle and 1000-meter Universal Transverse Mercator grid. 17. Elk Creek. 4,380,960N X 533,930E. Tithonian (D. L. Jones, oral commun., 1981). 18. Wilbur Springs 15'. 4,340,800N X 546,910E. Probably Tithonian based on projection of fossil localities of Rich (1971). 19. Wilbur Springs 15'. 4,335,710N X 548,400E. Berriasian (Rich, 1971). 20. Capell Valley. 4,254,720N X 571,280E. 21. Naufus Creek. 4,472,560N X 478,480E. Valanginian (Jones and Irwin, 1971). 22. Chanchelulla Peak 15'. 4,464,920N X 513,540E. Hauterivian (Murphy and others, 1969). Unknown and miscellaneous clasts are chiefly igneous and metamorphic rocks. 23. Colyear Springs 15'. 4,450,630 X 526,350E. Hauterivian or Barremian (Murphy and others, 1969; Jones and Bailey, 1973). Clasts counted as volcanic rocks may include some metamorphic rocks. 24. Llanada. 4,051,490N X 681,170E. Gravelly Flat Formation. Tithonian to Valanginian (Enos, 1965). 25. Calaveras Reservoir. 4,139,200N X 604,140E. Tithonian to Valanginian (Crittenden, 1951). 26. Niles. 4,159,430N X 589,910E. Valanginian (Hall, 1958). 27. Hayward. 4,173,760N X 579,270E. Unfossiliferous but probably correlative with Tithonian to Valanginian rocks (Case, 1968; Perkins, 1974). 28. Amador City. 4,256,960N X 687,860E. Late Oxfordian to early Kimmeridgian (Clark, 1964). 29. Chinese Camp. 4,192,280N X 728,290E. Late Oxfordian to early Kimmeridgian (Clark, 1964).

Table A. Modal analyses of sandstones. Composition of each sample is based on about 500 identified points. "Lithic, uncertain" is probably chiefly volcanic rock types but could include some sedimentary and metamorphic rocks. "Q" = quartz + chert. Location of sample is given by 7-1/2 minute quadrangle, except as noted, and 1000-meter Universal Transverse Mercator grid. AD = Adelaida 15' quadrangle, CM = Cypress Mountain, CY = Cayucos, MN = Morro Bay North, YM = York Mountain. 1. YM 3,938,520N X 693,730E. 2. YM 3,938,270N X 694,690E. 3. YM 3,938,520N X 693,730E. 4. YM 3,933,460N X 700,290E. 5. YM 3,931,250N X 701,510E. 6. YM 3,934,330N X 694,730E. 7. YM 3,934,400N X 695,890E. 8. YM 3,935,120N X 693,000E. 9. CM 3,938,200N X 691,960N. 10. AD 3,944,310N X 688,700E. 11. AD 3,944,560N X 689,630E. 12. YM 3,933,160N X 697,530E. 13. YM 3,934,070N X 696,450E. 14. YM 3,934,330N X 696,530E. 15. YM 3,935,120N X 692,050E. 16. CM 3,943,520N X 689,940E. 17. CM 3,937,730N X 695,960E. 18. CM 3,939,670N X 689,300E. 19. CY 3,929,930N X 681,340E. 20. MN 3,927,880N X 697,060E. 21. MN 3,927,850N X 697,930E. 22. MN 3,928,720N X 698,500E. 23. MN 3,929,130N X 698,580E. 24. MN 3,927,910N X 698,760 E.

Table A. Modal analyses of sandstone.

Stratigraphic unit	Sample number	Quartz	Chert	Plagioclase	K-feldspar	Lithic, mafic volcanic	Lithic, felsic volcanic	Lithic, uncertain	Lithic, sedimentary	Lithic, metamorphic	Phyllosilicates	Opaques	Other heavy minerals	Pumpellyite	Calcite	Matrix	Q	F	L	P/F
Atascadero Formation, shallow-water facies	1	40.2	0	19.5	13.1	0	7.4	10.1	.2	.4	1.8	.4	.4	0	3.5	3.1	44.3	35.9	19.7	.60
	2	31.2	0	23.1	7.9	0	4.4	2.7	0	0	3.0	1.9	0	0	23.7	1.9	45.0	44.7	10.3	.75
	3	28.6	0	16.5	6.5	2.9	8.5	11.2	0	0	6.5	1.1	0	0	1.8	16.5	38.5	31.0	30.5	.72
Atascadero Formation, deep-sea-fan facies	4	42.8	.5	17.7	18.9	0	7.0	2.5	0	0	7.7	0	0	0	.5	2.2	48.5	40.8	10.7	.48
	5	25.2	.3	15.0	8.2	.5	5.0	.8	.2	0	2.5	.2	.3	0	41.7	0	46.4	42.1	11.5	.65
	6	35.2	0	14.7	14.9	.2	19.1	5.6	.4	0	2.0	.4	.8	0	1.7	5.0	39.1	32.8	28.1	.50
	7	37.5	0	17.4	13.6	.4	10.3	3.9	1.1	1.1	8.1	.6	.7	0	2.4	3.1	44.0	36.4	19.6	.56
	8	46.0	.2	11.5	5.2	.2	13.6	10.7	.4	0	4.3	.2	0	0	0	7.9	52.6	19.0	28.4	.69
	9	29.8	0	12.0	16.5	.2	18.4	5.5	1.1	.4	8.6	1.3	.6	0	0	5.8	34.8	35.5	29.7	.42
Franciscan assemblage, Las Tablas unit	10	38.5	.4	18.3	0	3.9	1.9	20.9	.9	0	8.0	.6	.4	0	2.0	4.3	45.9	21.6	32.5	1
	11	41.3	.9	15.1	0	3.3	4.1	8.4	6.5	.7	5.7	.9	.3	5.8	.5	6.4	52.5	18.8	28.7	1
Franciscan assemblage, lithic-rich suite	12	13.6	.6	22.7	0	6.7	21.4	8.6	1.5	2.4	2.6	2.2	0	0	1.5	16.2	18.3	29.3	52.4	1
	13	20.3	.6	24.8	0	5.5	4.4	25.9	1.5	0	4.7	2.1	.8	.2	0	9.3	25.5	29.9	45.0	1
	14	14.5	.6	21.9	0	9.4	18.8	23.0	1.4	.8	2.0	.4	.2	0	0	7.0	16.7	24.2	59.1	1
	15	27.9	0	23.8	0	18.0	5.5	10.9	1.8	1.2	.4	.8	.2	0	0	9.6	31.4	26.8	41.9	1
	16	34.4	.2	15.5	0	10.3	4.9	16.8	1.5	.7	4.9	1.7	.2	.2	0	8.8	41.0	18.4	40.6	1
	17	14.9	.7	29.8	0	8.1	7.0	15.4	2.9	1.3	4.8	1.3	.4	.6	0	12.9	19.5	37.2	43.3	1
	18	9.6	.4	27.5	0	7.0	4.9	39.6	1.6	.4	1.6	.8	.6	0	0	6.0	10.9	30.3	58.8	1
	19	20.4	.2	29.2	0	6.0	3.1	22.7	.2	0	2.3	1.7	2.3	.4	.2	11.2	25.2	35.8	39.0	1
													Average				23.6	29.0	47.5	
Toro Formation	20	19.1	1.4	12.2	0	6.4	3.2	32.2	1.4	.7	4.4	2.7	.7	0	4.9	10.8	26.8	15.9	57.3	1
	21	34.0	2.1	8.9	0	.6	1.2	28.9	0	1.0	.6	3.5	.2	0	2.9	16.2	47.1	11.6	41.3	1
	22	11.8	.5	18.3	1.0	26.9	10.5	5.6	1.6	.4	2.4	5.7	3.9	0	0	11.5	16.2	25.3	58.5	.95
	23	7.1	.5	22.0	1.3	22.1	13.2	7.7	.4	0	3.3	2.6	1.4	0	0	18.3	10.3	31.3	58.4	.93
	24	15.6	4.8	8.3	0	3.7	2.0	41.4	4.8	.2	1.0	3.3	.2	0	8.0	6.7	25.3	10.3	64.4	1
													Average (including data of Gilbert and Dickinson, 1970)				22.4	17.7	59.9	