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Title of article Late Cenozoic landscape evolution on lava flow surfaces of the Cima volcanic field, Mojave Desert, California

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Contents 3 pages

Tables A and B

Table A.--Accretionary mantle stratigraphy as exposed in the flow-r$_2$trench; see Figure 10 for stratigraphic relationships and Figure 1 for trench location. Trench log by S. G. Wells and S. Orbock.

Unit 1: Total thickness - 0.40 m; less than 1 cm thick pavement of tephra fragments (less than 2 cm in diameter); 7-to-12 cm thick vesicular A horizon of silty coarse sands; 28 cm of very angular, unstratified tephra (mostly less than 2 cm in diameter); tephra in the upper 16 to 17 cm of this layer is coated with silt; these silts are calcareous throughout with the upper 12 to 14 cm are most effervescent in HCl; silts are 10YR 6/4 (dry); a 2 to 5 cm thick zone of secondary carbonate accumulation occurs at contact between units 1 and 2

Unit 2: Total thickness - 45 cm; mixture of stratified grus and tephra with oxidized silt coatings (7.5YR 7/4 dry); primarily an upward-fining sequence with parallel bedding near the top and faint cross-stratification near the base; tephra clasts are subangular and grus is subangular to subrounded; tephra clasts commonly less than 2 cm with occasional clasts up to 5 cm in diameter; discontinuous carbonate cementation along root zones and most clasts show stage 1 carbonate accumulation; contact with unit 3 is abrupt

Unit 3: Total thickness - 25 cm; uppermost 5 cm comprised of equal amounts of subangular to subrounded tephra and grus; underlain by 18 cm of subrounded to subangular tephra with occasional stratified mixture of approximately equal amounts of grus and tephra with very coarse sand; a thin laminar layer of calcium carbonate occurs at the top of this lowermost layer; abrupt contact with unit 4 at a buried stone pavement

Unit 4: Minimum thickness - 100+ cm; buried accretionary mantle with a stage 3 soil:

Horizon	Depth (cm)	Description
Ab	0-2 cm	10 YR 6/4 dry; 10YR 5/3 wet, slightly sticky, nonplastic; loose, massive; few roots; abrupt, wavy boundary
Avb	2-4	10YR 7/2 dry, 10YR 5/3 wet ped faces, 10YR 6/3 ped interiors; slightly sticky, slightly plastic, sandy loam; medium, platy; vesicles commonly less than 1 mm, occasionally to 5 mm; abrupt, wavy boundary
ABb	4-7	7.5YR 6/3 dry, 7.5YR 4.5/4 wet; slightly sticky, plastic clay loam; fine-medium granular; many films on ped faces; clear, wavy boundary
Btkb1	7-13	7.5YR 5/4 dry, 10YR 5/4 wet; slightly sticky, plastic slightly plastic silty loam; medium, granular; greater than 90% continuous clay films; manganese(?) coatings on clay films; weak effervescent, disseminated carbonate; few fine root pores; clear, wavy boundary
Btkb2	13-19	7.5YR 5.5/4 dry, 10YR 4.5/4 wet; slightly sticky, slightly plastic silty loam; fine-medium granular to fine subangular blocky; continuous clay films;

		manganese(?) coatings on clay films and root pores; weakly effervescent, disseminated carbonate; few fine root pores; gradual, wavy boundary
Btkb3	19-27	7.5YR 6/4 dry, 10YR 6/3 wet; slightly sticky, slightly plastic silty loam; medium, angular blocky; many clay coatings; carbonate occurs as nodules and as filaments along root pores; strongly effervescent, carbonate appears to coat manganese coatings; few very fine root pores, gradual, wavy boundary
K	27-33	mottled colors: 7.5YR 7/4 to 10YR 8/3 dry on ped faces and interiors; sticky plastic clay loam; medium-coarse, angular blocky; stage III carbonate engulfing Bt horizon; clear, wavy boundary
Btkb1	33-48	mottled colors: 10YR 7/3.5, 10YR 6/6, 10YR 3/2 dry; sticky, plastic clay loam; fine, prismatic; carbonate occurs as nodules; manganese coatings(?) on root pores; 5%, 1 to 5 cm basalt clasts; gradual, wavy boundary
Btkb2	48-60	mottled colors: 10YR 6.5/3.5 dry, 10YR 6/4 wet; sticky plastic clay loam; medium to fine subangular blocky; continuous clay films coat ped faces; strongly effervescent; very few fine root pores; 5% basalt clasts; discontinuous carbonate coatings on clast undersides; manganese(?) coatings on root pores; gradual, wavy boundary
Btkb3	60-69	mottled colors: 10YR 6/3 to 10YR 5/4 dry, 10YR 6/4 wet; sticky, plastic clay loam; granular-subangular blocky; many clay films; strongly effervescent, carbonate occurs discontinuously as nodules, filaments, and coatings on clast undersides and clay films; manganese(?) coatings on root pores; few, fine root pores; 5%, 2-to-12 cm diameter basalt clasts; gradual, wavy boundary
Btkb4	69-80	mottled colors: 7.5YR 6.5/4 dry, 10YR 6/4 wet; slightly sticky, slightly plastic, silt clay loam; coarse, angular blocky; few to numerous clay films; violently effervescent; few carbonate nodules; few fine to very fine root pores; few manganese(?) coatings; 5% basalt clast to 10 cm in diameter; clear, wavy boundary
Bctkb	80-118	10YR 7/3 dry; 10YR 6/4 wet; slightly sticky, slightly plastic silt clay loam; subangular blocky; strongly effervescent; carbonate nodules; few clay films; few manganese(?) coatings; 10% basalt clasts up to 10 cm diameter; gradual, smooth boundary; rubble zone
Bkb	118+	mottled colors: 10YR 7/3 to 7.5YR 5/6 dry, 10YR 6/3 wet; sticky, very plastic loamy clay; granular; no clay films; violently effervescent; carbonate coatings over entire clast surfaces; few, fine root pores; more than 30% basalt clasts; clasts 5 to 10 cm in diameter, angular to subangular; rubble zone

Table B.--Profile description of soils forming in the eolian materials of a flow e_3, a 0.56±0.08 m.y. flow; see Figure 1 for location of flow and soil pit. Note buried profile below 29 cm depth. Profile description by L. D. McFadden, S. G. Wells, J. C. Dohrenwend, and J. Miller.

Horizon	Depth	Description
A	0-1	Light yellowish brown to dark brown (10YR 6/4; 4/3) fine sandy loam; massive; loose, nonsticky and nonplastic; noneffervescent; smooth, abrupt boundary.
Avk/Bvk	1-10	Very pale brown to dark yellowish brown (10YR 7/4; 4/4) and light brown to strong brown (7.5YR 6/4; 4/6) silt loam; strong coarse and very coarse platy to columnar; slightly hard, slightly sticky and slightly plastic; few fine roots; many inped very fine and fine vesicular and interconnected vesicular pores; continuous thin clay films in pores; disseminated carbonate, increasing carbonate content with depth; exterior of ped (sides and tops) are noncalcareous; abrupt wavy boundary.
Coxky	10-20	Light yellowish brown to dark yellowish brown (10YR 6/4; 7.5YR 4/4) sandy loam; massive to weakly granular; loose to slightly hard; nonsticky and slightly plastic; disseminated carbonate; gypsum, as clusters of needles (<0.1 to 1 cm in length) and as clusters of needles on pebble bottoms.
Coxy	20-29	Light yellowish brown to brown (10YR 6/4; 7.5YR 4/4) loamy fine sand; massive; loose, nonsticky and nonplastic; noneffervescent; gypsum as granular aggregates (<0.1 to 0.5 cm length); abrupt, discontinuous boundary.
Avyb	29-38	Light yellowish to brown (10YR 6/4; 7.5YR 4/4) silt loam; granular to fine platy; slightly hard, slightly sticky and slightly plastic; many fine and very fine locally interconnected inped vesicular pores; pores aligned in subparallel orientation; continuous thin clay films line pores; noneffervescent; gypsum as fine needles primarily in upper few cm of horizon; smooth, abrupt boundary.
Btyb1	38-52	Brown to strong brown (7.5YR 5/4 4/6) to brown (7.5YR 4/4m) sandy clay loam; strong medium angular blocky; hard, slightly sticky and slightly plastic; few subangular to subrounded basaltic pebbles; many thin clay films on ped faces and some skeletal grains; noneffervescent; gypsum as needles (up to 0.5 cm in length) and as aggregates; abrupt, smooth boundary.
Btyb2	52-64	Dark brown to yellowish red (7.5YR 4/4; 6.25YR 4/4) gravelly clay loam; strong medium and coarse angular blocky; hard, sticky and plastic; concentration of pebbles in upper few cm of horizon; continuous thin clay films on ped faces and skeletal grains; noneffervescent; gypsum as needles (up to 1.0 cm in length) and clusters; abrupt, smooth boundary.
Btkyb	64-86	Strong brown to brown (7.5YR 4/6; 4/4) locally pebbly sandy clay loam; coarse and medium prismatic structure; hard, sticky and plastic; continuous thin clay films on ped faces and common thin skeletal grains; carbonate is segregated as ped coatings and thin discontinuous coatings on stones; gypsum as fine needles at tops and between peds.
Btkb	89-96	Yellowish red (6.25YR 5/6; 4/6) sandy loam; strong coarse granular; hard, slightly sticky and plastic, continuous thick clay films on ped faces, common thin clay films on skeletal grains; carbonate is segrated as coatings on the bottoms of stones; transitional smooth boundary.
II Btkyb	96-111+	Yellowish red (6.25YR 5/6; 4/4) gravelly sandy loam; strong coarse granular; hard, slightly sticky and plastic; carbonate segrated as nodules, filaments, and continuous coatings on ped faces and stones; gypsum as fine needles.