

Table S1 Early Jurassic paleosols in Ya'an of Sichuan and Hechuan of Chongqing, Southwest China

Numbers	Mem- bers		Paleosols				Calcretes			(Sub-) Facies	
		Age	Depth (m)	Structure	Color	Mansell color	BK (cm)	Size (cm)	Shape		Percent (%)
1. Shaping section, Ya'an											
J1z-01-01	Zhengzhuchong	Sinemurian	4.5	Subangular and prismatic peds; slickenside; abundant rhizolith	Dusky red	5R 3/4	170	1-3	Ginger-like, unregular	<1	Overbank
J1z-02-001			6.5	Subangular peds; slickenside	Dusky red	5R 3/4	120	1-3	Ginger-like, ellipsoid	<1	Overbank
J1z-02-002			7.3	Subangular peds; slickenside	Dusky red	5R 3/4	30	1-4	Ginger-like, unregular	<1	Overbank
J1z-02-01			9.8	Angular peds; slickenside	Dusky red	5R 3/4	90	0.5-1.5	Ginger-like, subglobal	<1	Overbank
J1z-02-02			12.7	Subangular peds; slickenside	Dusky red	5R 3/4	120	1-3	Ginger-like, unregular	<1	Overbank
J1z-03-01			16.3	Angular ped, slickenside, mottles	Grayish red	5R 4/2	76	1-3	Ginger-like, unregular	<1, up to 3-5	Overbank
J1z-04-01			31.7	Subangular peds; slickenside	Dusky red	5R 3/4	70	0.5-1.5	Subglobular, ellipsoid	<1	Split fan-overbank
J1z-05-01			39.6	Subangular peds; slickenside	Dusky red	5R 3/4	45	1-3	Ginger-like, unregular	<2	Split fan-overbank
J1z-05-02			45.5	Angular peds; slickenside	Dusky red	5R 3/4	63	3-5	Ginger-like, ellipsoid	5-10	Split fan-overbank
J1z-06-01a			54.0	Subangular peds; slickenside	Dusky red	5R 4/2	90	0.5-3	Ginger-like, unregular	<0.5	Split fan-overbank
J1z-06-01b	55.3	Angular ped, slickenside, mottles	Dusky red	5R 4/2	80	0.5-3	Ginger-like, unregular	<0.5	Split fan-overbank		
J1z-06-01	56.7	Subangular peds; slickenside	Dusky red	5R 4/2	15	0.5-3	Ginger-like, ellipsoid	<0.5	Split fan-overbank		
J1z-06-01d	57.6	Subangular peds; slickenside	Dusky red	5R 4/2	40	0.5-3	Ginger-like, ellipsoid	<0.5	Split fan-overbank		
J1z-07-01a	65.4	Angular ped, slickenside, mottles	Dusky red	5R 4/2	30	1-2	Ginger-like, unregular	<0.5	Interchannel		
J1z-07-01b	66.9	Subangular peds; slickenside	Dusky red	5R 4/2	20	1-2	Ginger-like, unregular	<0.5	Interchannel		
J1z-07-01	69.8	Subangular peds; slickenside	Dusky red	5R 4/2	20	1-2	Ginger-like, unregular	<0.5	Interchannel		
J1z-08-01	84.7	Subangular ped, slickenside	Dusky red	5R 4/2	50	2-4	Unregular, ellipsoid	<1	Flooding plain		
J1z-10-01	89.5	Subangular ped, slickenside	Dusky red	5R 4/2	135	2-15	Unregular, ellipsoid,	<1	Flooding plain		
J1z-10-02	94.4	Angular ped, slickenside, mottles	Dusky red	5R 4/2	50	0.5-1.5	Ginger-like	<0.5	Flooding plain		
J1z-11-01	106.7	Subangular ped, slickenside	Blackish red	5R 2/2	70	1-5	Ginger-like	<1	Flooding plain		
J1z-11-02	111.7	Subangular ped, slickenside	Blackish red	5R 2/2	75	1-2	Ginger-like, subglobal	<1	Flooding plain		
J1z-12-01	148.9	Angular ped, slickenside, mottles	Blackish red	5R 2/2	30	2-8	Ginger-like presominant	<1	Overbank		
J1z-14-01	176.1	Angular ped, slickenside, mottles	Blackish red	5R 2/2	42	2-3	Ginger-like	<0.5	Interchannel		
J1z-14-02	187.3	Subangular ped, slickenside	Blackish red	5R 2/2	110	1-3	Ginger-like, ellipsoid	<1	Interchannel		
J1z-15-01	194.3	Angular ped, slickenside, mottles	Blackish red	5R 2/2	120	1-3	Ginger-like, ellipsoid	<1	Overbank		
J1z-16-01	213.7	Subangular ped, slickenside	Blackish red	5R 2/2	62	1-3	Ginger-like	<0.5	Flooding plain		
J1z-18-01	252.7	Subangular ped, slickenside	Blackish red	5R 2/2	66	1-3	Ginger-like	<0.5	Flooding plain		
J1z-19-01	272.3	Platy ped	Blackish red	5R 2/2	120	0.5-1.2	Ginger-like, subglobal	<0.2	Back lakeshore		
J1z-20-01	294.3	Platy ped, slickenside	Blackish red	5R 2/2	83	0.5-1.5	Ginger-like, ellipsoid	<0.2	Back lakeshore		
J1z-22-01	324.5	Platy ped	Blackish red	5R 2/2	32	1-3	Ginger-like, ellipsoid	<0.5	Back lakeshore		
J1z-23-01	334.8	Platy ped	Blackish red	5R 2/2	32	1-3	Ginger-like, ellipsoid	<0.5	Back lakeshore		
2. Tanba and Maliuping section, Hechuan											
18CH-07a	Da'an zhai	Plien	375.1	Angular ped, slickenside	Grayish red	5R 4/2	80	0.2-0.5	Subglobular, ellipsoid	<1	Split fan-overbank
18CH-07b			381.4	Subangular ped, slickenside, mottle, rootlet, leaching,	Dark reddish brown	10R 3/4	150	0.2-0.5	Ginger-like, ellipsoid	<1	Split fan-overbank
18CH-07c			384.1	Angular ped, slickenside, mottles	Pale reddish brown	10R 5/4	40	0.5-2	Ginger-like, ellipsoid	<1	Split fan-overbank
18HC-10		Toa	464.4	Subangular ped, slickenside, mottle	Moderate red and	5R 4/6	130	1-2	Ginger-like, ellipsoid	3-10	Back lakeshore
18HC-11			501.0	Subangular ped, slickenside, mottle, leaching, rootlet, burrow	Dusky red	5R 4/2	45	0.5-2	Ginger-like, subglobal	<1	Back lakeshore