

It is dawn on a high ridge in a place that in later eons will be called Oregon. The rising sun paints the sky crimson and orange as the ragged clouds of yesterday's violent storm pass to the east between towering volcanic peaks. Thunder echoes down the valleys as rain falls in the distance and the smell of wet humus rises from the saturated forest floor. Night hunters find a place to hide; day creatures are emerging from their burrows. An owl calls before finding a roosting place in a hollowed conifer snag.

To the west, the flat coastal plain stretches to a distant and invisible shoreline pounded by storms blowing in from the sea. A fog rises from the dense lowland forest as warm moist air from the ocean greets cool air flowing westward down through the foothills and shallow valleys. Muddy rivers meander across the plain, their paths marked by a narrow, sinuous break in the forest cover. The rivers are swelling as rains from seasonal monsoons find their way into the valleys; eventually the forest floor will be covered in shallow muddy water, adding a new fertile layer of sediment to the floodplain.

Rocky cliffs on the valley walls are gray and crumbling in the moist tropical climate. Debris from countless cycles of weathering covers the slopes and mixes with the decaying needles and branches of uncountable seasons of forest growth, creating a soil of brownish clay and sand mixed with jagged fragments of the local volcanic rock. Suddenly, the ground begins to tremble, gently at first, then building to a violent shaking crescendo. Trees begin to sway; old snags topple and slide toward the valley floor. Boulders tumble and bounce to the river below. The saturated soil begins to liquefy as water filling the pore spaces begins to move. What was solid ground a few minutes ago has become a thick soup of coarse and fine debris; the entire slope seems to be in motion downward. Gravity is having its way with the soil.

A distant rumble comes down the valley. At first dim and barely perceptible, it builds to a roar as a wall of mud, water and rocky debris 20 meters high appears where 15 minutes ago there was a clear mountain stream. Entire trees are caught in the violence, their broken trunks rolling and tumbling in the muddy mixture. Huge boulders can be seen bobbing in suspension on the surface of the viscous matrix. Nothing can withstand its onslaught. The valley bottom, once a picturesque riparian setting with a clear stream chattering over volcanic stones has become a chaotic scene of

destruction. Mature trees are felled as if they are match sticks. A band of grazing mammals freezes on a point bar and looks up valley; this is an enemy they do not understand and cannot defend themselves against. They are swept away like so many stuffed animals, to become entombed in the mass of rock and mud.

As quickly as it began, the flow ebbs; the shaking has stopped. Up valley, the forest soils have been stripped to bare bedrock. The viscous mass slows and stops; tree trunks protrude from the flow-surface. Water slowly drains from the base of the flow, leaving behind a solid chaotic mass of clay, sand, gravel and boulders. Upstream a lake begins to back up behind the dam produced as the flow came to rest. Eventually, water will overtop the flow surface and, first as a trickle, then increasing to a stream and eventually to a river, it will begin to rework the surface sediment, transporting the clay and silt away and leaving behind a thin covering of clean sandy sediment. The stream begins the labor of cutting down through the thick debris flow and regaining its canyon. The cycle begins anew.