At Willow Creek (the Rock-ape) the artemisia disappears, that river forming its western boundary to the south of the Columbia. Below the Deschutes the hills are freckled over with mounds not only on the summits, but the sides also, and it would seem that the forest once extended to this limit, and has probably been driven back by fire. These mounds differ in character entirely from those mentioned as occurring on the plains, and from those covering the gravelly prairie near the head of Puget Sound, the origin of which is clearly due to water.

At the Dalles the basalt is overlaid with coarse conglomerate, chiefly formed of masses of ~~porphyritic~~ rocks embedded in sandstone. This occasionally stands up in needles, which have been protected from the weather by boulder caps.

The hill sides would seem to indicate that the barrier at the entrance of the river ~~had been suddenly broken~~ into the mountains, had been suddenly broken, and the superficial earth and strata swept away. Traces of terraces remain upon the north side of this entrance at a considerable elevation.

The basalt, associated occasionally with conglomerate, lines the river to within twenty five or thirty miles of the Cascades. The origin of the Cascades has already been referred to. There seems to be no question that a slide from the

0509