

valleys as long as the main stream was actively engaged in deepening its channel.

Opposite the mouth of Indian River the Yukon River has not deepened its channel as far below the level of the channel of the second cycle of erosion as it has at the mouth of the Klondike River, and the Indian River itself, being a smaller stream, has not cut back its valley as fast as the Klondike River, so that Dominion, Gold Run, Sulphur, and the other tributaries of Indian River have not had the same opportunity to deepen their channels as the tributaries of the Klondike River.

During the third cycle of erosion the smaller streams, and especially those flowing into the Klondike River, have cut down their channels to grade in narrow valleys, and have widened the bottom of those valleys by lateral planation and the formation of flood plains, giving them a U-shaped profile. Terraces have been formed on the sides of the valleys, indicating halts in the progress of downward erosion, and narrow V-shaped gulches still carry small, or intermittent, streams into the sides of the main valleys.

Pay-streaks, which have now been almost entirely mined out, ran beneath the flood plains down the bottoms of these valleys, or crossed the terraces on their sides, and other pay-streaks were in process of formation in the gulches until that process was arrested by the work of the miner.

It is not necessary for our present purpose to follow the growth of these younger valleys in detail, or to trace the formation of the pay-streak in them, for that was clearly governed by the laws which we have already enunciated, but it will be interesting to indicate a few of the eccentricities which may have been introduced in the pay-streak by irregularities in the growth of the valleys in which they were formed.

We have already seen that difference in the character of the bed-rock will produce a marked difference in the quantity of the gold in the pay-streak.

A variation in the supply will also influence the richness of the deposit, as may be clearly seen in many of the small lateral streams which flow into the main creeks. Some of these cut across the old pay-streak of the second cycle erosion, and where this occurs the gravels in the bottoms of these streams are enormously enriched.

Temporary cessation of downward erosion, with the corresponding formation of flood-plains at successive levels, would appear, however, to exert the most powerful influence in affecting the nature of the pay-streak and introducing irregularities into it.

Let us suppose that a valley has been eroded down to the first