accumulations of auriferous detritus which may be disintegrated and washed down by the force of streams of water issuing from contracted orifices under a very high hydraulic pressure. This species of washing is chiefly used for working the hills and deep placers, or cement diggings. The quantity of water requisite for the purposes of hydraulics could not be supplied at all points, either by damming the streams or forming reservoirs by collecting the winter's rains; and hence, in order to work large fields of auriferous earth distant from a water supply, there was built an intricate and extensive system of canals, flumes, and ditches. Large capitals were embarked in these enterprises, and water was brought from the High Sierra to wash the earth of the foot-hills. Costly excavations, lofty flumes, and many miles of ditches attest the giant energy of the early gold-seekers. The water thus turned to economic uses, was made to perform, under the guidance of man, precisely the same kind of labor as the streams of ages had performed in the vast laboratory of nature. The heavier particles of gold dust, obedient to the laws of gravity, settled themselves on the bottoms of the sluice-boxes, which were fitted with blocks of wood, rounded stones, riffles, quicksilver, etc., to detain the precious dust, while the lighter and less valuable particles were borne down by the current.

Various ingenious contrivances, undercurrents, etc., etc., were adopted, all having in view a more thorough saving of the gold.

In many of the central counties, the bare and unsightly hills which disfigure the landscape bear witness to the prodigious wearing power of these artificial water-courses impinging against the hill-sides with the terrific force due to a head of two or three hundred feet. Frequent accidents have arisen from the unexpected detaching of large masses from the higher portions of the hills; and in some instances the ground has been so cut away as to give rise to very extensive land slides, as lately happened at Deadwood, in Siskiyou County—the mountains above that place, for a distance of one hundred and twenty yards in length, and nearly as many in breadth, slid downwards into the bed of the creek, completely blocking it up, and forming a dam which filled with water to a depth of sixty feet, and temporarily covered up a large number of claims.

A very interesting center of hydraulic diggings is at Ma nita Hill, near North San Juan, Nevada County. Here, perhaps the heaviest blast for mining purposes, of which we have any record, was discharged during the present year, with the object of loosening the hard ground before hydraulicing. A drift was run into the hill a distance of ninety feet, from the ends of which wings were extended at right angles some sixty feet; five hundred and ten kegs of powder were placed in the tunnel, the entrance closely tamped, and the charge fired. A dull report broke upon the ear, and a mass of earth, one hundred and fifty feet deep, two hundred feet wide, and three hundred feet long, rose a short distance into the air, and fell back thoroughly disintegrated and in a fit condition for washing.

Still another species of hydraulic working consists in running long drifts under the hills, in order to tap the very extensive accumulations of auriferous gravel in the beds of ancient lakes and water-courses, which have been covered by volcanic matter and alluvium. These drifts vary in length, from a few hundreds to several thousands of feet, and have been driven, many of them, at a cost of thousands of dollars, and four, five, and even six years' continuous labor. They must frequently be blasted the entire distance, through hard bed-rock; they rise from the mouth inwardly, with a grade of one in twelve to one in twenty, and, in coming in under the gravel, are intended to be from fifty to one hundred feet below the lowest point of the deposit. Very frequently the work of years is rendered abortive from a miscalculation as to the exact locality of the gravel, and a lower gallery must be driven in before the work of hydraulicing can begin. In cases where a connection cannot be made with a neighboring claim, it is frequently necessary to run a supplementary tunnel for ventilation, or for the purpose of not interrupting work while cleaning up the sluices; it being necessary during this operation merely to turn the current from one tunnel into the other. From the end of the gallery a shaft is driven upwards to the deposit.