

of the Amargosa Mountains, and in a course of about two hundred miles, sometimes on the surface and then disappearing beneath the sands, making a circuit of the southern portion of the range, turns north-westerly and disappears in Death Valley, a depression reported, (though doubtful) to be near four hundred feet below the level of the sea.

Owens River is another of the basin east of the Sierra, but from the fertile valley through which it flows cannot be called a river of the desert. Rising in the Sierra Nevada, in latitude $37^{\circ} 40'$, it flows south into Owens Lake, running a course of about one hundred and fifty miles in length. This river and valley has attained increased importance in late years from the discovery and development of rich lead and silver mines in the vicinity. Owens Lake, which receives the water of the river and all drainage of the surrounding country, is a body of water eighteen miles in length by twelve in width, and is intensely impregnated with salt, alkali and other substances. A small steambot is employed on the lake in transporting ores and merchandise between the mines of Cerro Gordo and the road leading to Los Angeles; also to the town of Swansea, on the shore of the Lake, where reduction works are established, convenient to the forests of the Sierra Nevada.

Along the southern coast are a large number of unnavigable streams, flowing to the ocean, which furnish water for a few mills and for irrigation. The principal of these are the San Diego, Santa Ana, San Gabriel, Los Angeles, Santa Clara, Santa Inoz and Santa Maria. Some of these sink before reaching the sea during the Summer, but are rapid torrents in the rainy season. The Santa Ana is the largest of these, rising in Mount San Bernardino; it, with its numerous branches, drains the southern and western slopes of that peak. In the early part of its course this is a large and rapid stream, but dwindles in size as it approaches the ocean. San Bernardino, Riverside, Anaheim and other towns are on its banks. The general course of the stream is westerly, and its total length about one hundred and forty miles.

The San Gabriel rises in the mountains of the same name, and flowing southwesterly a distance of fifty miles, enters the sea near Wilmington, into the roadstead of San Pedro.

The Santa Clara rises in Soledad Pass, Los Angeles County, and flows westerly one hundred and twenty miles, entering the ocean near San Buenaventura, in Ventura County. The valley is generally broad and inviting, and with proper irrigation and cultivation would be productive. Upon the head-waters of this stream gold was discovered in 1830, and mining is still carried on in a simple and indifferent manner. The precious metal is found in nearly all the streams flowing from the San Bernardino and San Gabriel Mountains, and energetic mining is carried on in several localities.

The Salinas is a river of considerable magnitude, rising in the southern part of San Luis Obispo County, its principal branch being the Rio San Juan, and has a total length of more than two hundred miles, emptying into the Bay of Monterey. But even this stream does not always reach the sea, as, during periods of drought, the thirsty sand of the valley absorbs the water. The river, in a great part of its course, flows over a sandy bed half a mile to a mile and a half in width, and a hundred or more feet below the general plain of the valley. The tide rises for several miles from the mouth of the river, and for that distance is navigable, affording a good harbor. The valley of the Salinas extends in an unbroken plain for eighty miles up the river, and with a width of from six to fifteen miles, comprising a half million acres of arable land, of great fertility when watered by rains or irrigation.

The Pajaro is a river of about fifty miles in length, receiving the San Benito from the valley of the same name, and flowing into the Bay of Monterey a few miles north of the mouth of the Salinas. It is navigable to the town of Watsonville, six miles from the bay, and is important from the commerce carried on and the great productions of the adjacent country.

The San Lorenzo is a small stream running through the town of Santa Cruz, and entering the northern side of Monterey Bay. Flowing to the ocean from the same vicinity are the San Gregorio and Pescadero, from the latter of which it is proposed to conduct water for an additional supply of the City of San Francisco. On the eastern summit of the Santa Cruz Range rise the San Francisquito, Redwood and Pillar-citos Creeks, the latter furnishing the principal part of the water now used in San Francisco.

North of the Golden Gate, the mountains approach near the coast, but are much broken, and permit the passage of many small streams and some rivers of large size. The principal are Russian River, Wall-halla, Garcia, Navarra, Albion, Big River, Noyo, Matole, Eel River, Mad River, Redwood, Klamath and Smith's River.

Russian River is one of the most important of the northern coast streams, from the fact of its long course through a succession of some of the finest valleys of the State. Rising from several branches in the mountainous region of Mendocino County, in latitude $39^{\circ} 30'$, it flows southerly for about seventy-five miles to the middle of Sonoma County, thence westerly to the ocean in latitude $38^{\circ} 30'$, having a total course of about one hundred and twenty-five miles. In its course it receives the Mark West, Santa Rosa, and Green River creeks, which flow through the center of Sonoma County, and water some of its most lovely valleys.

Eel River has its source in the immediate vicinity of Russian River, but runs northerly and empties into the ocean in latitude $40^{\circ} 40'$, a few miles south of Humboldt Bay. This stream receives several large tributaries from a wild and sparsely populated region. The valleys are comparatively small, but of great beauty and fertility, and are rapidly filling up with settlers. The river is navigable for several miles from its mouth, but its entrance is obstructed by a bar, preventing its becoming valuable as a harbor. Its length is about one hundred and fifty miles. At some seasons the river is thronged with salmon, and extensive fishing and curing establishments are carried on near its mouth.

Mad River enters the ocean a few miles north of Humboldt Bay. It has an average width of about one hundred yards, but a bar at the mouth prevents its being used as a harbor or for navigation. The ancient name, given it by the old navigators, Husta and Bodega, was the Rio de los Tortolas.

The Klamath is the largest river entering the ocean south of the Columbia. It has its source in the lake country of eastern Oregon, and flowing through the high plateau which forms the connection—or the division—between the Sierra Nevada and the Cascade ranges, past Shasta and Scott's valleys, it breaks through the coast mountains in deep and rugged cañons. The total length is about three hundred miles, and it bears a large body of water to the sea. The mouth is obstructed by a dangerous bar of shifting sand, but the river may be navigated for some forty or fifty miles by light-draft steamers with power to stem its strong current. During freshets, the Klamath rises to extraordinary heights, reaching at times over one hundred feet above its ordinary level. The mouth of this river is in latitude $41^{\circ} 33'$ north and longitude $124^{\circ} 05'$ west. The other streams of the coast are short and rapid, affording fine water-power for mills, and several have good harbors at their mouths.

Several small streams empty into the Bay of San Francisco and its contiguous waters. Entering the southern extremity are the Guadalupe and Coyote, running through the large and fertile valley of Santa Clara, and holding between them the beautiful city of San José. The northern part, or San Pablo Bay, receives the Petaluma, Sonoma and Napa creeks, which water valleys of the same names, remarkable for their fertility of soil, loveliness of climate, and quiet beauty of scenery. The tide rises in those streams, rendering them navigable for several miles from their mouths. These constitute convenient little harbors for vessels of light draught, and beautiful and prosperous villages are built upon their banks.

The Sacramento and the San Joaquin, with their tributaries, constitute the great fluvial feature of the State, as the Sierra Nevada, which they drain, is distinctive among mountains, and as the great valley through which they flow is conspicuous for its exhaustless resource of agricultural wealth. The Sacramento, the larger of the two, has its source at the western base of Mount Shasta, and running almost di-