

**MINING IN THE PACIFIC
STATES OF NORTH
AMERICA; PP. 1-221**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649649143

Mining in the Pacific States of North America; pp. 1-221 by John S. Hittell

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

JOHN S. HITTELL

**MINING IN THE PACIFIC
STATES OF NORTH
AMERICA; PP. 1-221**

MINING
IN THE
PACIFIC STATES
OF
NORTH AMERICA.

By JOHN S. HITTELL.

Fourth Thousand.

NEW YORK:
JOHN WILEY, 56 WALKER STREET.
1862.

Entered, according to Act of Congress, A. D. 1961.

By H. H. BANCROFT & COMPANY,

In the Clerk's Office of the District Court of the United States for the
Northern District of California.

INDEX TO CHAPTERS.

CHAP.	PAGE.
I. HISTORY OF MINING IN THE PACIFIC STATES	9
II. MINERALOGY OF GOLD.....	41
III. CHEMISTRY OF GOLD.....	49
IV. GEOLOGY OF GOLD.....	54
V. THE MINING DISTRICTS.....	68
VI. PROSPECTING.....	115
VII. ASSAYING.....	121
VIII. MODES OF PLACER MINING.....	127
IX. PROCESSES OF GOLD-QUARTZ MINING.....	154
X. PROCESSES OF SILVER MINING.....	168
XI. THE LAWS OF MINING IN CALIFORNIA.....	176
XII. MISCELLANY.....	204
APPENDIX.....	214

SEE PARTICULAR INDEX ON NEXT PAGE.

CHAPTER I.

HISTORICAL SKETCH.

Discovery of Californian Gold. § 1. The existence of rich and extensive gold mines in California was discovered by James W. Marshall, an American citizen and a native of New Jersey, on the nineteenth of January, 1848. Gold had, previous to that time, been found, but in places where the mines were not extensive; their production was scarcely known to commerce, and their working, after long years, led to no important results. Marshall's discovery speedily and directly exercised an influence that was felt throughout the world, and gave a new life to trade and industry in Europe and America.

Drake's Report. § 2. The first published report of gold in California, is in Hakluyt's account of Sir Francis Drake's visit to this coast in 1579. That voyager entered a bay, about latitude thirty-eight degrees, supposed to be the one now called "Drake's Bay," twenty miles north-westward from the mouth of San Francisco Bay. If not the former, it certainly was the latter bay. The historian of the voyage says: "There is no part of the earth here to be taken up wherein there is not a reasonable quantity of gold or silver." There is no statement that any of Drake's men penetrated into the interior, or made any search for these metals, or obtained any specimens of them; and since neither gold nor silver is found in the loose earth at either Drake's Bay or San Francisco Bay, we are justified in presuming the statement to be an impudent lie, written for the purposes of making the voyage appear important, giving interest to the narrative, and imposing on the ignorant and credulous.

Spanish Reports. § 3. The Spaniards and Mexicans who visited the coast at various times, by land and sea, and who were familiar with the indications of the precious metals and knew how to search for them, undoubtedly found gold at various places, particularly near the Colorado river; but they found no placers rich enough to pay for the labor of working. The impression went abroad, however, that the country had great mineral wealth, and continued to prevail until the American conquest. It was only a vague rumor, and was published in several books, but it could not command the confidence of severe criticism.

Forbes and Maufra. § 4. It is reported that silver was discovered at Alizat, in Monterey county, as early as 1802, and gold was found at San Isidro, in San Diego county, in 1828, (*Maufra*, vol. 1, p. 335); but the former place never yielded any silver worthy of note, and the latter had not been heard of in 1835, by Alexander Forbes, the historian of California, who wrote: "No minerals of particular importance have yet been found in Upper California, nor any ores of metals." (P. 173.) In another place, (p. 143) referring to Hija's migration to California in 1833, he says: "There were goldsmiths [in the party] proceeding to a country where no gold existed." The first mine to produce any noteworthy amount of precious metal was the gold placer in the Cañon of San Francisquito, on the ranch of the same name, forty-five miles north-north-westward from Los Angeles. This placer was discovered about the year 1838, (*Maufra*, vol. 1, p. 137) and in 1842 the chief miner there was a Frenchman named Baréc. This placer was wrought continuously from 1838 till 1848, when it was deserted for the richer diggings in the Sacramento basin. The total yield in ten years was probably not over \$60,000, a yearly average of \$6,000.

Dana. § 5. In 1842, James D. Dana, the geologist and mineralogist of Wilkes' Exploring Expedition, visited California, and traveled from the northern boundary through the Sacramento basin to the Bay of San Francisco, and soon after his return to the Eastern States in 1842 or 1843, he published a work on mineralogy, in which he asserted the existence of gold in California. I have not been able to find a copy of the first edition of his book, but a newspaper which has fallen into my hands gives the following quotations, presumed to be correct.

Speaking of places where gold has been found, he mentioned—“California, between the Sierra Nevada and Sacramento and San Joaquin rivers.”—(p. 251.) On page 252 he says: “The gold rocks and veins of quartz were observed by the author in 1842, near the Umpqua river, in Southern Oregon, and pebbles from similar rocks were met with along the shores of the Sacramento, in California, and the resemblance to other gold districts was remarked, but there was no opportunity of exploring the country at the time.” Mr. Dana unquestionably discovered the existence of gold in California, either by direct vision or by inference, but it was a mere nominal discovery, creditable in a scientific point of view, but of no practical use. He did not find diggings that would pay, nor did his announcement set anybody to work to hunt for such diggings. His merit, in so far as California is concerned, may be compared to that of Murchison’s similar discovery of auriferous rock, or rock indicating auriferous wealth, in Australia. It did no good, and nobody paid any attention to it, until the paying diggings were found by Hargraves, many years later. As Hargraves is the hero of the Australian, so is Marshall of the Californian gold discovery.

Larkin. § 6. Before giving the account of his discovery, however, I will quote the following passage from a letter, written on the fourth of May, 1846, by Thomas O. Larkin, then U. S. Consul at Monterey, California, to James Buchanan, Secretary of State under President Polk:

“There is said to be black lead in the country at San Fernando, near San Pedro, [now Los Angeles county]. By washing the sand in a plate, any person can obtain from \$1 to \$5 per day of gold that brings \$17 per ounce in Boston; the gold has been gathered for two or three years, though but few have the patience to look for it. On the southeast end of the Island of Catalina, there is a silver mine from which silver has been extracted. There is no doubt but that gold, silver, quicksilver, copper, lead, sulphur and coal mines, are to be found all over California, and it is equally doubtful whether, under their present owners, they will ever be worked.”

Marshall the true Discoverer. § 7. James W. Marshall, in a letter dated January 28th, 1856, and addressed to Charles E. Pickett, gave the following account of the gold discovery:

"Towards the end of August, 1847, Capt. Sutter and I formed a copartnership to build and run a saw-mill upon a site selected by myself (since known as Coloma). We employed P. L. Weimer and family to remove from the Fort [Sutter's Fort] to the mill site, to cook and labor for us. Nearly the first work done was the building of a double log cabin, about half a mile from the mill site. We commenced the mill about Christmas. Some of the mill hands wanted a cabin near the mill. This was built, and I went to the Fort to superintend the construction of the mill irons, leaving orders to cut a narrow ditch where the race was to be made. Upon my return, in January, 1848, I found the ditch cut as directed, and those who were working on the same were doing so at a great disadvantage, expending their labor upon the head of the race instead of the foot.

"I immediately changed the course of things, and upon the nineteenth of the same month of January, discovered the gold near the lower end of the race, about two hundred yards below the mill. William Scott was the second man to see the metal. He was at work at a carpenter's bench near the mill. I showed the gold to him. Alexander Stephens, James Brown, Henry Bigler and William Johnston were likewise working in front of the mill, framing the upper story. They were called up next, and, of course, saw the precious metal. P. L. Weimer and Charles Bennett were at the old double log cabin (where Hastings & Co. afterwards kept a store) and in my opinion, at least half a mile distant.

"In the meantime we put in some wheat and peas, nearly five acres, across the river. In February the Captain [Captain Sutter] came to the mountains for the first time. Then we consummated a treaty with the Indians, which had been previously negotiated. The tenor of this was that we were to pay them \$200 yearly in goods, at Yerba Buena prices, for the joint possession and occupation of the land with them; they agreeing not to kill our stock, viz.: horses, cattle, hogs or sheep, nor burn the grass within the limits fixed by the treaty. At the same time, Capt. Sutter, myself and Isaac Humphrey entered into a copartnership to dig gold. A short time afterwards P. L. Weimer moved away from the mill, and was away two or three months, when he returned. With all the events that subsequently occurred, you and the public are well informed."