

**PART II; EXPLORATIONS AND
SURVEYS FOR A RAILROAD ROUTE
FROM THE MISSISSIPPI RIVER TO THE
PACIFIC OCEAN. WAR DEPARTMENT.
GEOLOGICAL REPORT. NO. 1-4**

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PART II.

EXPLORATIONS AND SURVEYS FOR A RAILROAD ROUTE FROM THE MISSISSIPPI RIVER TO THE PACIFIC OCEAN.
WAR DEPARTMENT.

ROUTES IN CALIFORNIA AND OREGON EXPLORED BY LIEUT. H. S. WILLIAMSON, CORPS OF TOPOGRAPHICAL
ENGINEERS, AND LIEUT. HENRY L. ABBOT, CORPS OF TOPOGRAPHICAL ENGINEERS, IN 1855.

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BY J. S. NEWBERRY, M. D.,
GEOLOGIST AND BOTANIST OF THE EXPEDITION.

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No. 1.

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GEOLOGIST OF THE EXPEDITION.

CHAPTER I.

GEOLOGY OF THE VICINITY OF SAN FRANCISCO.

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GENERAL FEATURES.

The configuration of the country in the vicinity of San Francisco has been given by two principal, and nearly parallel lines of upheaval, one passing between the city and the Pacific, forming the barrier through which the Golden Gate has been cut, the other that of the Contra Costa mountains. These, with several subordinate axes, which exert a local influence on its structure, properly belong to the compound chain of the coast mountains, have the same geological structure, and are doubtless of the same age. They are composed of serpentine or trap at centre, flanked by heavy beds of shales and sandstones of the tertiary period.

The general trend of these ranges is northwest and southeast, and they belong to the same system of elevation with that which has given the general outline and direction of the coast from Cape St. Lucas to Cape Mendocino. The islands which are scattered along the coast of California within the limits specified apparently lie in the lines of some of the axes of this system.

The Bay of San Francisco and the valley south of it occupy the syndinal trough which lies between the two axes I have mentioned. This depression, geologically considered, forms but a single area, which should be viewed as a whole, and which may properly be termed the valley of San Francisco bay. Of this area the valley of San Juan forms the southern, San Francisco