A BIBLIOGRAPHY

RELATING TO THE

GEOLOGY, PALÆONTOLOGY,

AND

MINERAL RESOURCES

OF

CALIFORNIA

ANTHONY W. VOGDES

THE LIBRARY
OF
THE UNIVERSITY
OF CALIFORNIA
DAVIS

CALIFORNIA STATE MINING BUREAU.

J. J. CRAWFORD, State Mineralogist.

BULLETIN No. 10. SAN FRANCISCO, SEPTEMBER, 1896.

A BIBLIOGRAPHY

RELATING TO THE

GEOLOGY, PALÆONTOLOGY, AND MINERAL RESOURCES

OF

CALIFORNIA.

By **ANTHONY W. VOGDES**, *Captain Fifth Artillery, U. S. A.*,

Fellow American Geological Society, American Association for the Advancement of Science; Member of the New York Academy of Sciences; also of the Georgia, Philadelphia, Chicago, and California Academies of Natural Sciences.

SACRAMENTO:

A. J. JOHNSTON, : : : : : : SUPT. STATE PRINTING.

1896.

LIBRARY
UNIVERSITY OF CALIFORNIA
DAVIS

TN24
C2 A3
no. 10
Copy 2
MINING DEPT.

CONTENTS.

Page.

INTRODUCTION, WITH LETTER OF TRANSMITTAL TO STATE MINERALOGIST vii

PART I.

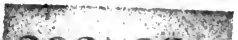
Publications of the State of California.

PUBLICATIONS OF THE FIRST GEOLOGICAL SURVEY OF CALIFORNIA (JOHN B. TRASK, STATE GEOLOGIST) 1
SURVEYOR-GENERAL'S REPORTS 3
PUBLICATIONS OF THE SECOND GEOLOGICAL SURVEY OF CALIFORNIA (J. D. WHITNEY, STATE GEOLOGIST) 3
PUBLICATIONS OF CALIFORNIA STATE MINING BUREAU 13
CALIFORNIA SENATE AND ASSEMBLY DOCUMENTS 18
CALIFORNIA STATE UNIVERSITY PUBLICATIONS 19

PART II.

Publications of the United States Government.

REPORTS OF THE SECRETARY OF WAR 26
U. S. NAVY DEPARTMENT 29
REPORTS OF EXPLORATIONS AND SURVEYS 29
REPORTS OF MINERAL RESOURCES OF THE STATES AND TERRITORIES WEST OF THE MISSISSIPPI 33
REPORTS TO UNITED STATES MINT 36
UNITED STATES CENSUS REPORTS—10TH AND 11TH 37
UNITED STATES GEOGRAPHICAL AND GEOLOGICAL SURVEYS WEST OF THE 100TH MERIDIAN 38
UNITED STATES GEOLOGICAL AND GEOGRAPHICAL SURVEYS OF THE TERRITORIES 39
UNITED STATES GEOLOGICAL SURVEY 39



PART III.

Publications of Scientific Societies, and Periodicals.

Page.
AMERICAN ASSOCIATIONS FOR THE ADVANCEMENT OF SCIENCE 45
AMERICAN JOURNAL OF CONCHOLOGY 46
AMERICAN NATURALIST 47
INTERNATIONAL CONGRESS OF GEOLOGISTS, AMERICAN COMMITTEE REPORTS, 1888 48
AMERICAN GEOLOGIST 48
AMERICAN JOURNAL OF SCIENCE AND ARTS 50
AMERICAN MINING GAZETTE 57
ANNALS OF THE NEW YORK LYCEUM OF NATURAL HISTORY .. 58
ARCH. DES SCIENCES 67
BRITISH ASSOCIATIONS REPORTS 68
BULLETINS OF THE GEOLOGICAL SOCIETY OF AMERICA 58
BULLETINS GEOLOGICAL SOCIETY DE FRANCE 68
CALIFORNIA ACADEMY OF SCIENCES 61
COMPTES RENDUS DE L'ACADÉMIE DES SCIENCES 67
FOREIGN SOCIETIES 67
FRANKLIN INSTITUTE JOURNAL AND AMERICAN MECHANICS MAGAZINE 69
GEOLOGICAL MAGAZINE 67
HUTCHINGS'S ILLUSTRATED CALIFORNIA MAGAZINE 69
HUNT'S MERCHANTS' MAGAZINE 69
JOURNAL OF GEOLOGY 69
JOURNAL OF GEOLOGICAL SOCIETY OF LONDON 67
MINING MAGAZINE 70
MINING AND SCIENTIFIC PRESS 71
MONATSBER K. PREUSS. AKAD. WISS. BERLIN 67
NATURE 71
NEWPORT NATURAL HISTORY SOCIETY 73
NEW YORK ACADEMY OF SCIENCE 71
NEUES JAHRBUCH MINERALOGIE GEOL. PALÆONTOLOGIE .. 67–68
OVERLAND MONTHLY 72
PHARMACEUTICAL JOURNAL 72
PHILOSOPHICAL SOCIETY OF WASHINGTON 72

Page.
PHILADELPHIA ACADEMY OF NATURAL SCIENCES 73
PUBLICATIONS OF UNITED STATES NATIONAL MUSEUM..... 75
SANTA BARBARA SOCIETY OF NATURAL HISTORY 76
ST. LOUIS ACADEMY OF SCIENCES 76
SCIENCE 77
SCHOOL OF MINES, COLUMBIA COLLEGE 78
WEST AMERICAN SCIENTIST 78
TRANSACTIONS ALBANY INSTITUTE..... 79
TRANSACTIONS EDINBURGH GEOLOGICAL SOCIETY 68
TRANSACTIONS AMERICAN INSTITUTE OF MINING ENGINEERS 79
VERHANDL K. K. GEOL. REICHSANSTALT..... 68
VERHANDL. DER RUSSICH KAISERLICHEN MINERALOGISCHEN GESELLSCHAFT ZU ST. PETERSBURG 69
ZOE..... 80

PART IV.

Publications of State Geological Surveys other than that of California.

REPORTS MISSOURI GEOLOGICAL SURVEY 81

PART V.

Miscellaneous Publications.

ALPHABETICAL LIST 82

LETTER OF TRANSMITTAL.

Hon. J. J. Crawford, *State Mineralogist:*

I have the honor to submit this bibliography for publication by the State Mining Bureau, with the following brief remarks:

The literature relating to the natural resources of California is widely scattered, and, to a great extent, inaccessible to any one but the specialist.

The few descriptions of fossils printed in the State Geological Reports were issued nearly thirty years ago. Since that date a large number of papers on geology, palæontology, and descriptions of local mining regions have appeared, either in the transactions of learned societies or in special publications with but a limited distribution. In many cases these descriptions have been brief, and those of fossils without illustrations.

Besides these, there are many articles incorporated in the official publications of the United States, and in volumes whose very existence is almost unknown to the general reader.

I have labored to bring this mass of literature together and make it accessible to the student and general reader. Some may ask, What is the advantage of such a catalogue? But let them take up any special line of investigation, and the first thing wanted will be a list of books of reference to know what has been published on the subject.

To the compiler such compilations are dry and laborious, and many think afterward I could do better; but let all those who think so, labor to improve this catalogue.

The palæontologist has to deal with the different species under each genus. I have, therefore, included a full list of fossils under each reference, which will save the student many a weary

hour of laborious research through many volumes and transactions of learned societies.

The catalogue has been arranged under different heads, such as State geological reports, transactions of learned societies, etc., which will give the student a direct reference to the contents of different publications.

The palæontology of California differs greatly from that of the Atlantic States in the existence of an extensive bed of the Tertiary formation, with but few of the older formations, indicating that the elevation of the Pacific Coast was chiefly made since the Mesozoic age, and a great part of it as late as the Quaternary. Nearly all the coast ranges and the low foothills of the Sierra Nevada are covered with thick beds which contain fossils identical with living species, with others extinct along the Californian shores, but living farther to the north or south.

To make a complete catalogue, works on recent conchology of the Pacific Coast should be included, but the author has deemed it best to omit the most of them.

Part IV of the catalogue contains an alphabetical list of miscellaneous publications. Many of them are references to early reports on gold and other minerals, including trips to the gold fields of California. All of these are not strictly geological reports, but now and then they contain valuable references to local geology. The author regrets that he has been unable to give many notes in this part, most of the works being inaccessible.

ANTHONY W. VOGDES.

Fort Mason, San Francisco, Cal., September 1, 1896.

A BIBLIOGRAPHY

RELATING TO THE

GEOLOGY, PALÆONTOLOGY, AND MINERAL RESOURCES

OF CALIFORNIA.

PART I.

Publications of the State of California.

FIRST GEOLOGICAL SURVEY OF CALIFORNIA.

DR. JOHN B. TRASK, State Geologist.

Report of the Special Committee in favor of a Geological Survey of California. Submitted by Mr. Randall, April 24, 1851. 19 pp.

Report of 1853, Geology of the Sierra Nevada or California Range; by John B. Trask. Sacramento, 1853. 31 pp. (2,000 copies printed.)

Report on the Geology of the Coast Mountains, embracing their agricultural resources and mineral productions, also portions of the Middle and Northern Mining Districts; by Dr. John B. Trask, State Geologist. Senate Doc. No. 14. Sacramento, 1855. 95 pp.

This report contains a description of the physical geography of the coast mountains; geology of the coast mountains; Tertiary rocks of the coast mountains; primitive rocks of the coast mountains; volcanic rocks of the coast mountains; geology of the San Bernardino Mountains; stratified rocks of the San Bernardino chain and plains of Los Angeles; extent of the infusorial group; plains of Los Angeles; artesian borings; soils and productions of Los Angeles; mineral pro-

ductions of Los Angeles; country north of the American River; mineral district of the upper Sacramento Valley; geology of the northern coast mountains; local geology of the northern coast mountains; Carboniferous limestone of the eastern part of Shasta County; Trinity County; structure of the Sacramento Valley; Tertiary rocks and other deposits of the Sierra Nevada; placer mining; quartz veins; quartz mines, with descriptions of mines, and statistics.

Report on the Geology of the Coast Mountains and part of the Sierra Nevada, embracing their industrial resources in agriculture and mining; by Dr. John B. Trask, State Geologist. Assembly Doc. No. 9, Session of 1854. 92 pp.

This report contains a description of the geology of the Monte Diablo range, Salinas Valley, from Point Pinos to the Nacimiento River, Santa Cruz Mountains; structure of the valleys of Sacramento and San Joaquin; review of the geological changes in the coast mountains and Monte Diablo range; classification of the rocks of the coast mountains and Monte Diablo range; position and relation of the volcanic rocks to the Tertiaries; volcanic rocks preceding the Tertiary era; most recent volcanic rocks of the coast mountains; changes of level and river terraces; soils of the valley Santa Clara and shores of the Bay of San Francisco; valley of the Salinas; soils of the Salinas; Pajaro Valley; Livermore Valley; mineral resources of the coast mountains; mineral districts, embracing parts of the counties of Nevada, Placer, El Dorado, and Calaveras; quartz veins, and their relative age in California; character and position of the older veins below the surface; present government of metallic veins; descriptions of mines, with list of gold mines.

Report on the Geology of Northern and Southern California, embracing the mineral and agricultural resources of those sections; with statistics of the Northern, Southern, and Middle mines; by Dr. John B. Trask. Assembly Doc. No. 14, Session of 1856. 66 pp.

This report contains a description of the physical geography lying in the coast mountains north of the Bay of San Francisco; geological structure of the coast mountains; mineral character of the primitive rocks of the coast mountains; soils of Petaluma County; plains west of the Sacramento River; San Bernardino; geology of Table Mountain, Tuolumne County; Carboniferous rocks of the Northern district; salines of the upper Sacramento Valley; Mammoth Mines Seventy-six, Jamison Creek; descriptions of mines, etc.; analysis of saline waters from Lick Springs, Shasta County; gold mines in operation in 1855; table of altitudes.

SURVEYOR-GENERAL REPORTS.

Geology of a part of Calaveras County. December, 1854. By William Patton. In Report to the Surveyor-General of California; Document No. 5, Appendix F, pp. 86–88. Sacramento, 1855.

The tract noticed embraces an extent of the county between the Moquelumne River and Middle Fork, and the Stanislaus and North Fork, longitudinally; and latitudinally, the space between the foothills and the headwaters of the San Antonio branch of the Calaveras.

Report of a survey of a portion of the eastern boundary of California, and a reconnoissance of the old Carson and Johnson immigrant roads over the Sierra Nevada. In Annual Report of the Surveyor-General, 1856; Assembly Document No. 5, Session of 1856, pp. 91–186.

This report, by George H. Goddard, contains a few geological notes on rocks along the route.

SECOND GEOLOGICAL SURVEY OF CALIFORNIA.

J. D. WHITNEY, State Geologist.

The Geological Survey of California. An address delivered before the Legislature of California, at Sacramento, Tuesday evening, March 12, 1861, by J. D. Whitney, State Geologist. To which is appended a copy of the Act authorizing the survey. San Francisco, 1861. 50 pp.

Letter of the State Geologist relative to the progress of the State Geological Survey, by J. D. Whitney. San Francisco, 1862. 7 pp.

Lecture on Geology, delivered before the Legislature of California, at San Francisco, Tuesday evening, February 27, 1862, by J. D. Whitney. San Francisco, 1862. 33 pp.

Lecture on Geology, delivered before the Legislature of California, at Sacramento, Tuesday evening, March 19, 1863, by J. D. Whitney. Sacramento, 1863. 17 pp.

Annual Report of the State Geologist of California for the year 1862. Sacramento, 1862. 12 pp.

Annual Report of the State Geologist for the year 1863. Sacramento, 1864. 7 pp.

Letter of the State Geologist, relative to the progress of the State Geological Survey during the years 1864–65, by J. D. Whitney. Sacramento, 1866. 14 pp.

Letter of the State Geologist, relative to the progress of the State Geological Survey during the years 1866–67, by J. D. Whitney. Sacramento, 1867. 15 pp.

An Address on the propriety of continuing the State Geological Survey of California, delivered before the Legislature, January, 1868, by J. D. Whitney. San Francisco, 1868. 23 pp.

Report of the State Geologist on the condition of the Geological Survey of California, by J. D. Whitney. Sacramento, 1869. 7 pp.

Letter of the State Geologist relative to the progress of the Geological Survey during the years 1870–71. Sacramento, 1871. 13 pp.

Statement of the progress of the State Geological Survey of California during the years 1872–73, by J. D. Whitney. Sacramento, 1873. 14 pp.

Report of the Joint Committee on the Geological Survey of the State, made to the Legislature in 1874.

Report of sub-committee of the Committee on Mines and Mining Interests of the Senate, concerning the State Geological Survey. Sacramento, 1866. 5 pp.

Mining Statistics, No. 1. Tabular statement of the condition of the auriferous quartz mines and mills in that part of Mariposa and Tuolumne Counties lying between the Merced and Stanislaus Rivers; by A. Rémond. April, 1866. 16 pp.

The Yosemite Book. A description of the Yosemite Valley and the adjacent regions of the Sierra Nevada and Big Trees of California. New York, 1868. pp. 4 to 116. 2 maps and 28 photographs. 4to. (250 copies printed.)

Another edition. Cambridge, 1870. viii and 155 pp., and 2 maps.

Another edition. Cambridge, 1871. vii and 133 pp., and 2 maps.

Another edition, revised and corrected. Cambridge, 1874. viii and 186 pp., and 4 maps.

Geographical catalogue of the Mollusca found west of the Rocky Mountains, between latitudes 33° and 49°; by J. G. Cooper. San Francisco, 1867. 40 pp.

This catalogue was based on that published by P. P. Carpenter, Brit. Assoc. Adv. Sci., 1863, with the addition of about 130 species.

Catalogue of the Invertebrate Fossils of the Western Slope of the United States, Part II; by J. G. Cooper. San Francisco, 1871. 39 pp.

This catalogue was intended merely as a check-list and for labels; supplementing the catalogue published in 1867.

The author gives a list of the Post Pliocene, Pliocene, and Miocene fossils described in detail in "Palæontology of California."

Palæontology, Vol. 1. Carboniferous and Jurassic fossils, by F. B. Meek. Triassic and Cretaceous fossils; by W. M. Gabb. Philadelphia, 1864. xx and 243 pp. 32 plates.

The following fossils are described and illustrated in this volume:

CARBONIFEROUS—

FORAMINIFERA—*Fusulina robusta*, Meek; *F. gracilis*, Meek; *F. cylindrica*, Fischer?

ZOÖPHYTA—*Lithostrotion mamillare?*, Castlenau; *L.? Californiense*, Meek; *L.* sp.?; *Clisiophyllum Gabbi*, Meek.

BRACHIOPODA—*Orthis* (sp. undt.); *Productus semireticulatus*, Martin; *Rhynchonella* (sp. undt.); *Spirifer lineatus*, Martin?; *Spiriferina* (sp. undt.); *Retzia compressa*, Meek.

GASTEROPODA—*Euomphalus Whitneyi*, Meek.

Triassic fossils of California and adjacent Territories; by W. M. Gabb.

Orthoceratites Blakei, n.sp.; *Nautilus Whitneyi*, n.sp.; *N. multicameratus*, n.sp.; *Goniatites lævidorsatus*, Hauer; *Ceratites Haidingeri*, Hauer; *C. Whitneyi*, n.sp.; *Ammonites Blakei*, n.sp.; *A. ausseanus*, Hauer; *A. Homfrayi*, n.sp.; *A. Billingsianus*, n.sp.; *A. Ramsaueri?*,

Quenst; *Myacites* (*Panopœa?*) *Humboldtensis*, n.sp.; *Panopœa? Rémondi; Corbula Blakei*, n.sp.; *Mytilus Homfrayi*, n.sp.; *Avicula Homfrayi*, n.sp.; *A. macronata*, n.sp.; *Halobia? dubia*, n.sp.; *Monotis subcircularis*, n.sp.; *Rhynchopterus*, n.gen.; *R. obesus*, n.sp.; *Posidonomya stella*, n.sp.; *P. Daytonensis*, n.sp.; *Myophoria alta*, n.sp.; *Pecten deformis*, n.sp.; *Terebratula Humboldtensis*, n.sp.; *Rhynchonella lingulata*, n.sp.; *R. æquiplicata*, n.sp.; *Spirifer Homfrayi*, n.sp.

Jurassic fossils; by F. B. Meek.

Rhynchonella gnathophora, Meek; *Terebratula* sp.?; *Gryphœa* sp.?; *Lima? sinuata*, Meek; *L. recticostata*, Meek; *L.? cuneata*, Meek; *Pecten acutiplicatus*, Meek; *Inoceramus? obliquus*, Meek; *I.? rectangulus*, Meek; *Trigonia pandicosta*, Meek; *Mytilus multistriatus*, Meek; *Astarte ventricosa*, Meek; *Unicardium? gibbosum*, Meek; *Myacites depressus*, Meek; *Belemnites* sp.?

Cretaceous fossils, by W. M. Gabb.

Crustacea—*Callianassa Stimpsoni*, n.sp.

Cephalopoda—*Belemnites impressus*, n.sp.; *Nautilus Texanus?*, Shum.; *Aturia Mathewsoni*, n.sp.; *Ammonites subtricarinatus*, D'Orb; *A. Newberryanus*, Meek; *A. Breweri*, n.sp.; *A. Haydeni*, n.sp.; *A. Peruvianus*, DeBuch?; *A. Traski*, n.sp.; *A. ramosus*, Meek; *A. Hoffmani*, n.sp.; *A. Rémondi*, n.sp.; *A. Batesi*, Trask; *A. Chicoensis*, Trask; *A. complexus*, H. & M.?; *? A. Cooperi*, n.sp.; *Hamites Vancouverensis*, n.sp.?; *Helicoceras vermicularis*, n.sp.; *H. Breweri*, n.sp.; *H. declive*, n.sp.; *Turrilites* (sp. undt.); *Ptychoceras æquicostatus*, n.sp.; *P.* (*? Hamites*) *quadratus*, n.sp.; *Crioceras* (*Ancyloceras?*) *Rémondi*, n.sp.; *C. latus*, n.sp.; *C. percostatus*, n.sp.; *Ancyloceras* (sp. undt.); *Baculites Chicoenis*, Trask; *B.* (sp. undt.).

Gasteropoda—*Typhis antiquus*, n.sp.; *Fusus Martinez*, n.sp.; *F. Matthewsoni*, n.sp.; *F. Averilli*, n.sp.; *F. diaboli*, n.sp.; *F. aratus*, n.sp.; *F. flexuosus*, n.sp.; *F. Kingi*, n.sp.; *F. Californicus*, Conrad; subgen. *Hemifusus; Fusus* (*Hemifusus*) *Horni; F.* (*H.*) *Cooperi*, n.sp.; *F.* (*H.*) *Rémondi*, n.sp.; cf. *Pyrula penita*, Conrad; *Neptunea curvirostris*, n.sp.; *N. ponderosa*, n.sp.; *N. perforata; ? N. supraplicata*, n.sp.; *N. Hoffmani*, n.sp.; *N. gracilis*, n.sp.; *Perissolax brevirostris*, n.sp.; *P. Blakei*, Conrad; *Turris Claytonensis*, n.sp.; *T.* (sub.gen. *Drillia*) *varicostata*, n.sp.; *Cordiera microptygma*, n.sp.; *Tritonium Horni*, n.sp.; *T. Diegoensis*, n.sp.; *T. paucivaricatum*, n.sp.; *Cancellaria* (Heilprin, Ter. Geol., p. 113; badly figured); *T. Whitneyi*, n.sp.; *Buccinum liratum*, n.sp.; *Nassa cretacea*, n.sp.; *N. antiquata*, n.sp.; *Haydenia*, n.gen.; *H. impressa*, n.sp.; *Pseudoliva lineata*, n.sp.; *P. volutæformis*, n.sp.; *Olivella Mathewsoni*, n.sp.; *Ancillaria elongata*, n.sp.; *? Fasciolaria lævuscula*, n.sp.; *F. sinuata*, n.sp.; *? F. Io.*, n.sp.; *Volutilithes Navarroensis*, Shum.; *Mitra cretacea*, n.sp.; *Whitneya*, n.gen.; *W. ficus*, n.sp.; *Morio* (sub.gen. *Sconsia*); *M. tuberculatus*, n.sp.; *Ficus?; F. cypræoides*, n.sp.; *Lunatia avellana*, n.sp.; *L. Shumardiana*, n.sp.; *L. Horni*, n.sp.; *L. nuciformis*, n.sp.?; *L.* (*Gyrodes?*) *Conradiana*, n.sp.; *Gyrodes expansa*, n.sp.; *Neverita secta*, n.sp.; *Naticina obliqua*, n.sp.; (*Sigaretus*, Heilprin Ter. Geol., p. 113); *Amauropsis oviformis*, n.sp.; *A. alveata*, n.sp.; *Cinulia obliqua*, n.sp.; *C. Mathewsoni*, n.sp.; *C. pinguis*, n.sp.; *Ringicula varia*, n.sp.; *Nerinea dispar*, n.sp.; *Acteonina? pupoides*, n.sp.; *A. Californica*, n.sp.; *Globi-*

concha (*Phasianella?*) *Rémondi*, n.sp.; *Cylindrites brevis*, n.sp.; *Chemnitzia Spillmani*, Conrad; *Niso polita*, n.sp.; *Cerithiopsis alternata*; *Architectonica Veatchi*, n.sp.; *A. cognata*, n.sp.; *A. Horni*, n.sp.; *A. inornata*, n.sp.; *Margaritella crenulata*, n.sp.; *M. globosa*, n.sp.; *Discohelix leana*, n.sp.; *Straparollus paucivolus*, n.sp.; *S. lens*, n.sp.; *Angaria ornatissima*, n.sp.; *Conus Rémondi* (*Volutilithes Californica*, Conrad); *C. Horni*, n.sp.; *C. sinuatus*, n.sp.; *Rostellaria* (sub.gen. *Rimella*); *R. canalifera*, n.sp.; *R.* (*Rimella*) *simplex*, n.sp.; *Pugnellus hamulus*, n.sp.; *P. manubriatus*, n.sp.; *Tessarolax*, n.gen.; *T. distorta*, n.sp.; *Aporrhais falciformis*, n.sp.; *A. angulata*, n.sp.; *A. Californica*, n.sp.; *A. exilis*, n.sp.; *Cypræa? Bayerquei*, n.sp.; *Potamides diadema*, n.sp.; *P. tenuis*, n.sp.; *Littorina? compacta*, n.sp.; *Turritella infralineata*, n.sp.; *T. seriatim-granulata*, Rœmer; *T. Veatchi*, n.sp.; *T. Chicoensis*, n.sp.; *T. Uvasana*, Conrad; *T. Saffordi*, Gabb; *T. robusta*, n.sp.; *Galerus excentricus*, n.sp.; *Crypta* (sub.gen. *Spirocrypta*); *C. pileum*, n.sp.; *Nerita deformis*, n.sp.; *N. cuneata*, n.sp.; *Lysis*, n.gen.; *L. duplicosta*, n.sp.; *Dentalium* (*Ditrupa?*) *pusillum*, n.sp.; *D. Cooperi*, n.sp.; *D. stramineum*, n.sp; *Emarginula radiata*, n.sp.; *Patella Traski*, n.sp.; *Helcion? circularis*, n.sp.; *H. dichotoma*, n.sp.; *Anisomyon Meeki*, n.sp.; *Actæon impressus*, n.sp.; *Bulla Horni*, n.sp.; *Cylichna costata*, n.sp.; *Megistostoma*, n.gen.; *M. striata*, n.sp. (Heilprin, Ter. Geol., p. 113, refers this to *Bullæa* cf. *Bullæa expansa*, Dixson).

Conchifera—*Martesia clausa*, n.sp.; *Turnus*, n.gen.; *T. plenus*, n.sp.; *Solen parallelus*, n.sp.; *Pharella alta*, n.sp.; *Siliqua Oregonensis*, n.sp.; *Panopæa concentrica*, n.sp.; *Corbula? primorsa*, n.sp.; *C. Traski*, n.sp.; *C. cultriformis*, n.sp.; *C. Horni*, n.sp.; *C. parilis*, n.sp.; *Anatina Tryoniana*, n.sp.; *A. inæquilateralis*, n.sp.; *A.? lata*, n.sp.; *Pholadomya Breweri*, n.sp.; *P. nasuta*, n.sp.; *Neæra dolabræformis*, n.sp.; *Mactra Ashburneri*, n.sp.; *Lutraria truncata*, n.sp.; *Asaphis undulata*, n.sp.; *Gari? texta*, n.sp.; *Tellina longa*, n.sp.; *T. Rémondi*, n.sp.; *T. Hoffmanniana*, n.sp.; *T. monilifera*, n.sp.; *T. ooides*, n.sp.; *T. Mathewsoni*, n.sp.; *T. decurtata*, n.sp.; *T.? quadrata*, n.sp.; *T. Ashburneri*, n.sp.; *T.* (*? Sanguinolaria*) *Whitneyi*, n.sp.; *T. parilis*, n.sp.; *T. Horni*, n.sp.; *T. Californica*, n.sp.; *Venus* (*Mercenaria?*) *varians*, n.sp.; *V. Veatchi*, n.sp.; *V. lenticularis*, n.sp.; *V. tetrahedra*, n.sp.; *Meretrix Uvasana*, Conrad; *M. lens*, n.sp.; *M. Horni*, n.sp.; *M. nitida*, n.sp.; *M. longa*, n.sp.; *M. arata*, n.sp.; *M. ovalis*, n.sp.; *M. Californica*, Conrad; *Dosinia elevata*, Gabb (Heilprin, Ter. Geol., p. 115, refers this to *Disiniopsis Meeki*, Conrad); *D. pertenuis*, n.sp.; *D. gyrata*, n.sp.; *D. inflata*, n.sp.; *Tapes Conradiana*, n.sp.; *T.? quadrata*, n.sp.; *Trapezium carinatum*, n.sp.; *Cyprinella*, n.gen.; *C. tenuis*, n.sp.; *Cardium* (*Lævicardium*) *annulatum*, n.sp.; *C. Rémondianum*, n.sp.; *C. Cooperi*, n.sp.; *C. Breweri*, n.sp.; *C.* (*Protocardium*) *Placerensis*, n.sp.; *Cardita Horni*, n.sp.; *Lucina nasuta*, n.sp.; *L. postradiata*, n.sp.; *L. subcircularis*, n.sp.; *L. cumulata*, n.sp.; *L.? cretacea*, n.sp.; *Loripes? dubia*, n.sp.; *Mysia? polita*, n.sp.; *Astarte Conradiana*, n.sp.; *A. Mathewsoni*, n.sp.; *A. Tuscana*, n.sp.; *Eriphyla*, n.gen.; *E. umbonata*, n.sp.; *Crassatella grandis*, n.sp.; *Anthonya*, n.gen.; *A. cultriformis*, n.sp.; *Unio penultimus*, n.sp.; *Mytilus pauperculus*, n.sp.; *M. ascia*, n.sp.; *M. humerus*, Conrad; *Modiola Siskiyouensis*, n.sp.; *M. ornata*, n.sp.; *M. cylindrica*, n.sp.; *Lithophagus oviformis*, n.sp.; *Septifer dichotomus*, n.sp.; *Crenella concentrica*, n.sp.; *Avicula pellucida*, n.sp.; *Inoceramus Piochi*, n.sp.; *Pinna Breweri*, n.sp.; *Trigonia Tryoniana*,

n.sp.; *T. Evansi*, Meek; *T. Gibboniana*, Lea?; *Meekia*, n.gen.; *M. Sella*, n.sp. (there is already a genus named *Meekella*, after Meek, so this will not stand); *M. radiata*, n.sp.; *M. navis*, n.sp.; *Arca Breweriana*, n.sp.; *A. Horni*, n.sp.; *A. gravida*, n.sp.; *A. decurtata*, n.sp.; *Cucullæa Mathewsoni*, n.sp.; *C. truncata*, n.sp.; *Axinæa Veatchi*, n.sp.; *A.* (*Limopsis?*) *sagittata*, n.sp.; *A. cor*, n.sp.; *Nucula truncata*, n.sp.; *Leda protexta?*, Gabb; *L. translucida*, n.sp.; *Limopsis transversa*, n.sp.; *Pecten Traski*, n.sp.; *P. operculiformis*, n.sp.; *P. Californicus*, n.sp.; *Lima microtis*, n.sp.; *L. appressa*, n.sp.; *Plicatula variata*, n.sp.; *Anomia lineata*, n.sp.; *Ostrea Breweri*, n.sp.; *O. malleiformis*, n.sp.; *Gryphæa vesicularis*, Lam.; *Exogyra parasitica*, n.sp.; *Terebratella obesa*, n.sp.

ZOÖPHYTA—*Flabellum Rémondianum*, n.sp.; *Trochosmilia* (subgen. *Acrosmilia*); *T. striata*, n.sp.; subgen. *Ellipsosmilia? granulifera*, n.sp.; *Astrocœnia? petrosa*, n.sp.

The Appendix contains descriptions of the following fossils:

Fusus mamillatus, n.sp.; *Natica Uvasana*, n.sp.; *Scalaria Mathewsoni*, n.sp.; *Turritella infra-granulata*, n.sp.; *Solen Diegoensis*, n.sp.; *Chione? angulata*, n.sp.; *Tapes? cretacea*, n.sp.; *Crassatella Uvasana*, Conrad; *Cardita veneriformis*, n.sp.; *Barbatia Morsei*, n.sp.; *Yoldia nasuta*, n.sp.; *Placunanomia inornata*, n.sp.

Palæontology, Vol. 2. Cretaceous and Tertiary fossils, by W. M. Gabb. Philadelphia, 1869. xiv and 299 pp., with 36 plates.

Section I. Tertiary invertebrate fossils:

Cancer Breweri, n.sp.; *Triptera clavata*, n.sp.; *Trophon ponderosum*, n.sp.; *Neptunea recurva*, n.sp.; *Metula? Rémondi*, n.sp.; *Clavella gravida;* n.sp.; *C. sinuata*, n.sp.; *Pleurotoma* (*Surcula*) *Carpenteriana*, Gabb; *P.* (*S.*) *Tryoniana*, n.sp.; *P.* (*S.*) *perversa*, Gabb; *P. Voyi*, n.sp.; *Clathurella Conradiana*, n.sp.; *Ranella Mathewsoni*, n.sp.; *Cuma biplicata*, n.sp.; *Ancillaria Fishi*, n.sp.; *Columbella* (subgen. *Alia*) *Richthofeni*, n.sp.; *Neverita callosa*, n.sp.; *Cancellaria* (subgen. *Euclia*) *Tritonidea*, n.sp.; *C.* (*E.*) *vetusta*, n.sp.; *Bittium asperum*, Gabb; *Melania Taylori*, n.sp.; *Lithasia antiqua*, n.sp; *Littorina Rémondi*, n.sp.; *Turritella Hoffmanni*, n.sp.; *Trochita filosa*, n.sp.; *Pachypoma? biangulata*, n.sp.; *Turcica* (subgen. *Ptychostylis*) *coffea*, Gabb; *Calliostoma tricolor*, Gabb; *Zirphæa dentata*, n.sp.; *Pandora scapha*, n.sp.; *Hemimactra lenticularis*, n.sp.; *Mulinia? densata*, Conrad pars.; *Schizodesma abscissa*, n.sp.; *Pseudocardium*, n.gen.; *P. Gabbi*, Rémond; *Gari* (subgen. *Psammocola*) *alata*, n.sp.; *Venus Kennerlyi*, Rve.? *Mercenaria perlaminosa*, Conrad; *Chione Mathewsoni*, n.sp.; *C. Whitneyi*, n.sp.; *Callista Voyi*, n.sp.; *Dosinia Staleyi*, n.sp.; *D. Conradi*, n.sp.; *Tapes? truncata*, n.sp.; *Cyrena Californica*, n.sp.; *Cardium Meekianum*, n.sp.; *Conchocele*, n.gen.; *C. disjuncta*, n.sp.; *Lucina* (subgen. *Here*); *L.* (*H.*) *Richthofeni*, n.sp.; *Crassatella Collina*, Conrad; *Mytilus Mathewsoni*, n.sp.; *Modiola multiradiata*, n.sp.; *Arca sulcicosta*, n.sp.; *Yoldia Cooperi*, Gabb; *Pecten Cerrosensis*, n.sp.; *P. Veatchi*, n.sp.; *Ostrea Bourgeoisi*, Rémond; *O. Atwoodi*, n.sp.; *O. Tayloriana*,

n.sp.; *O. Veatchi*, n.sp.; *O. Cerrosensis*, n.sp.; *Terebratella Whitneyi*, n.sp.; *Morrisia Horni*, Gabb.

ECHINODERMATA — *Clypeaster Gabbi*, Rémond; *Echinarachinus Brewerianus*, Rémond; *Scutella Gibbsi*, Rémond; *Astrodapsis Whitneyi*, Rémond; *A. tumidus*, Rémond.

ASTERIADÆ—*Asterias Rémondi*, n.sp.

Part 2.

Muricidea (? *Phyllonotus*) *paucivaricata*, n.sp.; *Trophon squamulifer*, Cpr. (in lit.), n.sp.; *Neptunea allispira*, n.sp.; *N. humerosa*, n.sp.; *Agasoma*, n.gen.; *A. gravida*, Gabb; *A. sinuata*, Gabb; *Surcula Tryoniana*, Gabb; *Nassa* (sub.gen. *Cæsia*); *Ficus pyriformis*, n.sp.; *F. nodiferus*, n.sp.; *Sinum planicostum*, n.sp.; *Cancellaria gracilior*, Cpr. (in lit.), n.sp.; *C. altispira*, n.sp.; *Trochita inornarta*, n.sp.; *Acmæa rudis*, n.sp.; *Zirphæa Gabbi*, Tryon; *Siliquaria? Edentula*, n.sp.; *Clidophora punctata*, Conrad; *Hemimactra? occidentalis*, n.sp.; *Pseudocardium* (remarks on the genus); *Venus pertenuis*, Gabb; *Caryatis Barbarensis*, n.sp.; *Meretrix Traski*, Conrad; *Dosinia Mathewsoni*, n.sp.; *Tapes Staleyi*, Gabb; *Saxidomus gibbosus*, n.sp.; *Yoldia nasuta*, Gabb; *Y. impressa*, Conrad; *Pecten Peckhami*, n.sp.; *P. Pedroanus*, Trask; *Ostrea Veatchi*, Gabb; *Tamiosoma gregaria*, Conrad.

Part 3 contains a synopsis of the Tertiary invertebrate fossils of California.

Section II. Cretaceous fossils, Part 1, continued from Vol. 1.

CRUSTACEA—*Callianassa Stimpsoni*, Gabb.

MOLLUSCA—*Ptiloteuthis*, n.gen.; *P. foliatus*, n.sp.; *Belemnites impressus*, Gabb; *Ammonites Breweri*, Gabb; *A. Traski*, Gabb; *A. Hoffmanni*, Gabb; *A. Batesi*, Trask; *A. Tehamaensis*, Gabb; *A. Suciaensis*, Meek; *A. Jugalis*, n.sp.; *A. Whitneyi*, n.sp.; *A. Stoliczkanus*, n.sp.; *A. fraternus*, n.sp.; *Turrilites Oregonensis*, Gabb; *Ancyloceras Rémondi*, Gabb; *A. percostatus*, Gabb; *A.? lineatus*, n.sp.; *Helicancylus*, n.gen.; *H. æquicostatus*, Gabb; *Diptychoceras*, n.gen.; *D. lævis*, n.sp.; *Baculites occidentalis*, Meek.

GASTEROPODA—*Fusus tumidus*, n.sp.; *F. occidentalis*, n.sp.; *Neptunea* (*Tritonofusus*) *cretacea*, n.sp.; *N. mucronata*, n.sp.; *Palæa tractus*, n.gen.; *P. crassus*, n.sp.; *Eripachya*, n.gen.; *E. ponderosa*, Gabb; *E. perforata*, Gabb; *E. Hoffmanni*, Gabb; *? Neptunea gracilis*, Gabb; *Perissolax Blakei*, Conrad; *Surcula præattenuata* n.sp.; *S.* (*Surculites*) *sinuata*, Gabb; *S.* (*Surculites*) *inconspicus*, n.sp.; *Heteroterma*, n.gen.; *H. trochoidea*, n.sp.; *Bela clathrata*, n.sp.; *Cordiera mitræformis*, n.sp.; *Tritonium Californicum*, n.sp.; *T.* (subgen. *Trachytriton*) *Tejonensis*, n.sp.; *T.* (*T.*) *fusiformis*, n.sp.; *Brachysphingus*, n.gen.; *B. liratus*, Gabb; *Bulla* (*Molopophorus*) *striata*, n.sp.; *Turbinella crassitesta*, n.sp.; *Mitra cretacea*, Gabb; *Ficopsis Rémondi*, Gabb; *F. Horni*, Gabb; *F. Cooperi*, Gabb; *Urosyca*, n.gen.; *U. caudata*, n.sp.; *Sycodes*, n.gen.; *S. cypræoides*, Gabb; *Euspira alveata*, Conrad; *Neverita globosa*, n.sp.; *Ampullina striata*, n.sp.; *Terebra Californica*, n.sp.; *Chemnitzia planulata*, Gabb; *Pugnellus hamulus*, Gabb; *P.* (*Gymnarus*) *manubriatus*, Gabb; *Cypræa* (*Luponia*) *Bayerquei*, Gabb; *C.* (*Epona*) *Mathewsonia*, n.sp.; *Anchura*

falciformis, Gabb; *A. transversa*, n.sp.; *?A. carinifera*, n.sp.; *Helicaulax bicarinata*, n.sp.; *H. costata*, n.sp.; *Loxotrema turrita*, n.sp.; *Atresius*, n.gen.; *A. liratus*, n.sp.; *Turritella Martinezensis*, n.sp.; *Nerita* (*Theliostyla*) *triangulata*, n.sp.; *Calliostoma radiatum*, n.sp.; *Ataphrus*, n.gen.; *A. crassus*, n.sp.; *Margaritella angulata*, n.sp.; *Acmæa Tejonensis*, n.sp.; *Actæonina pupoides*, Gabb; *Actæonella oviformis*, n.sp.; *Liocium*, n.gen.; *L. punctatum*, n.sp.; *Ringinella polita*, n.sp.; *R. pinguis*, Gabb.

ACEPHALA—*Martesia clausa*, Gabb; *Solen* (*Hypogella*) *cuneatus*, n.sp.; *S.* (*H.*) *Diegoensis*, Gabb; *Corbula Horni*, Gabb; *C. alæformis*, n.sp.; *Anatina quadrata*, n.sp.; *Pholadomya Oregonensis*, n.sp.; *Pleuromya papyracea*, n.sp.; *Arcomya undulata*, n.sp.; *Homomya concentrica*, Gabb; *Mactra? tenuissima*, n.sp.; *Cymbophora*, n.gen.; *C. Ashburneri*, Gabb; *Asaphis multicostata*, n.sp.; *Tellina Rémondi*, Gabb; *T. Hoffmanni*, Gabb; *T. æqualis*, n.sp.; *T. undulifera*, n.sp.; *Donax latus*, n.sp.; *Venus æquilateralis*, n.sp.; *Meretrix? fragilis*, n.sp.; *M. Horni*, Gabb; *Caryatis nitida*, Gabb; *Thetis? elongata*, n.sp.; *Cardium* (*Lævicardium*) *annulatum*, Gabb; *C.* (*Protocardium*) *translucidum*, n.sp.; *Cardita Horni*, Gabb; *Clisocolus*, n.gen.; *C. dubius*, Gabb; *Lucina nasuta* and *L. postice-radiata; Crassatella grandis*, Gabb; *C. compacta*, n.sp.; *Unio Hubbardi*, n.sp.; *Mytilus quadratus*, n.sp.; *Modiola major*, n.sp.; *Meleagrina antiqua*, n.sp.; *Inoceramus Elliotti*, n.sp.; *I. Whitneyi*, n.sp.; *Aucella Piochi*, Gabb; *Pinna Breweri*, Gabb; *Trigonia æquicostata*, n.sp.; *Axinæa sagittata*, Gabb; *Nucula* (*Acila*) *truncata*, Gabb; *N. solitaria*, n.sp.; *Leda Gabbi*, Conrad; *Pecten Traski*, Gabb; *P. Martinezensis*, n.sp.; *P. complexicosta*, n.sp.; *P. interradiatus*, n.sp.; *Neithea grandicosta*, n.sp.; *Lima Shastaensis*, n.sp.; *L. multiradiata*, n.sp.; *Anomia Vancouverensis*, n.sp.; *Ostrea Idriaensis*, n.sp.; *O. appressa* n.sp.; (*O. Idriaensis* (Gabb), White, 4th Ann. Rep. U. S. Geol. Sur., p. 291.)

BRACHIOPODA—*Rynchonella Whitneyi*, Gabb.

RADIATA—*Smilotrochus? curtus*, n.sp.

Part 2 contains a synopsis of the Cretaceous invertebrate fossils of California.

Section III contains description of the Cretaceous fossils from Mexico; by W. M. Gabb.

Geology, Vol. 1. Report of progress and synopsis of the field-work from 1860 to 1864. Philadelphia, 1865. xxxii and 498 pp., and plate.

Part 1 of this report contains: Geology of the Coast Range, Contra Costa hills, Monte Diablo group, Mount Hamilton group, Monte Diablo group, south of Pacheco's Pass; the Peninsula of San Francisco; the coast ranges north of the Bay of San Francisco; the coast ranges south of the Bay of Monterey; the coast ranges from the vicinity of Los Angeles south; the region between the Cañada de las Uvas and Soledad Pass.

Part 2. The geology of the Sierra Nevada; the undisturbed marine sedimentary rocks along the foothills of the Sierra; the mining regions of California, embracing the great auriferous belt along the

western slope of the Sierra Nevada; the high Sierra region about the head of Kern, Kings, San Joaquin, Merced, Tuolumne, and Mokelumne rivers; the eastern slope—Mono Lake and its vicinity, Owen's Valley, the Great Basin, etc.

Appendix A. Tabular statement of the operations of the principal quartz mills; by W. Ashburner.

Appendix B. Description of fossils from the auriferious slates of California; by F. B. Meek.

The following fossils are described and illustrated in this report: *Amussium aurarium*, Meek; *Aucella Erringtoni*, Gabb; *A. Erringtoni* var. *lingulifromis; Pholadomya? orbiculata*, Gabb; and *Belemnites Pacificus*, Gabb.

Contributions to barometric hypsometry, with tables for use in California. Cambridge, 1874. 88 pp. (Supplementary chapter added in 1878; pp. 89–112.)

Supplementary chapter, and practical application of the tables to the observations of the year 1870–71, and a discussion of the results obtained; by J. D. Whitney. Cambridge, 1878. 24 pp.

Botany, Vol. 1. Polypetalæ, by W. H. Brewer and Sereno Watson. Gamopetalæ, by Asa Gray. Cambridge, 1876. xx and 628 pp.

Ornithology, Vol. 1. Land-birds; edited by S. F. Baird from the manuscript and notes of J. G. Cooper. Cambridge, 1870. xi and 592 pp.

Map of region adjacent to the Bay of San Francisco. 2 miles to 1 inch. New York, 1873.

Map of California and Nevada. 1873. State Geological Survey of California; J. D. Whitney, State Geologist. Drawn by F. von Leicht and A. Craven. Scale, 18 miles to 1 inch.

Same, 2d edition. Revised by Hoffmann & Crane, and issued by authority of the Regents of the University of California, May 12, 1874. Same scale.

Same, 3d edition. Published by W. D. Walkup & Co. San Francisco, 1878. Same scale.

A new edition by W. D. Walkup & Co. 1887.

The following volumes and memoirs are to be credited to the Geological Survey of California, J. D. Whitney, Director, as a

continuation, in part, of the work stopped by the Legislature in 1874; permission having been given to the late State Geologist, by the Board of Regents of the University of California, in whose hands the matter was left, to continue the publications:

Geology, Vol. 2. The Coast Ranges. Appendix. Cambridge, 1882. 148 pp. 5 plates. (Uniform with publications of the Geological Survey of California, J. D. Whitney, State Geologist.)

This report contains—

A. Detailed description of the Monte Diablo coal fields; by W. A. Goodyear. April, 1870.

B. Additional notes on the Monte Diablo coal mines; by W. A. Goodyear. June, 1873.

C. Statistics of the Monte Diablo coal mines; by W. A. Goodyear. January, 1874.

D. Notes descriptive of the condition of the Corral Hollow coal mines; by W. A. Goodyear. August, 1870.

E. Chemical examination of the Pacific coals; by S. F. Peckham. I, July, 1872; II, September, 1872.

F. Examination of the Bituminous Substances in Southern California; by S. F. Peckham. Part I, Geological and Historical (June, 1866). Part II, Chemical Investigations: Section 1, February, 1867; Section 2, January, 1871.

G. Report on an examination of the Quicksilver Mines of California; by W. A. Goodyear. May, 1871.

H. Notes on the Geology of Lower California; by W. M. Gabb.

Botany, Vol. 2; by Sereno Watson. Cambridge, 1880. xv and 559 pp.

The water-birds of North America; by S. F. Baird, T. M. Brewer, and R. Ridgeway. Issued in continuation of the publications of the Geological Survey of California. Boston, 1884. Vol. 1, xi and 537 pp.; Vol. 2, 552 pp.

Report on the fossil plants of the auriferous gravel deposits of the Sierra Nevada; by Leo Lesquereux. Cambridge, 1878. viii and 62 pp., with 10 double plates.

Memoirs of the Museum of Comparative Zoölogy. Vol. VI, No. 2.

This report contains descriptions of the following fossil plants: *Acer æquidentatum*, n.sp.; *A. Bolanderi*, n.sp.; *Aralia angustiloba*, n.sp.; *A. Whitneyi*, n.sp.; *A. Zaddachi?* Heer; *Betula æqualis*, n.sp.; *Cercocarpus antiquus*, n.sp.; *Castaneopsis chrysophylloides*, n.sp.; *Cornus Kelloggi*, n.sp.; *C. ovalis*, n.sp.; *Fagus antipofi*, n.sp.; *F. pseudo-ferruginea*,

n.sp.; *Ficus microphylla*, n.sp.; *F. sordida*, n.sp.; *F. tiliæfolia*, Al. Br.; *Ilex prunifolia*, n.sp.; *Juglans Californica*, n.sp.; *J. Oregoniana*, n.sp.; *J. laurinea*, n.sp.; *Liquidambar Californicum*, n.sp.; *Magnolia Californica*, n.sp.; *M. lanceolata*, n.sp.; *Platanus appendiculata*, n.sp.; *P. dissecta*, n.sp.; *Populus Zaddachi*, Heer; *Persea pseudo-carolinensis*, n.sp. *Quercus Boweniana*, n.sp.; *Q. chrysophylloides*, n.sp.; *Q. convexa*, n.sp., *Q. distincta*, n.sp.; *Q. elænoides*, n.sp.; *Q. Goepperti*, n.sp.; *Q. Nevadensis*, n.sp.; *Q. pseudo-lyrata*, n.sp.; *Q. Voyana*, n.sp.; *Rhus Boweniana*, n.sp.; *R. dispersa*, n.sp.; *R. metopioides*, n.sp.; *R. mixta*, n.sp.; *R. myricæfolia*, n.sp.; *R. typhinoides*, n.sp.; *Sabalites Californicus*, n.sp.; *Salix Californica*, n.sp.; *S. elliptica*, n.sp.; *Ulmus affinis*, n.sp.; *U. Californica*, n.sp.; *U. pseudo-fulva*, n.sp.; *Zanthoxylon diversifolium*, n.sp.; *Zizyphus microphyllus*, n.sp.; *Z. piperoides*, n.sp.

The auriferous gravels of the Sierra Nevada of California; by J. D. Whitney. Cambridge, 1879–80, pp. 1–288; pp. 289–569, 1880. 24 plates and 2 geological maps.

The climatic changes of later geological times. A discussion based on observations made in the Cordilleras of North America. By J. D. Whitney. Cambridge, 1880–82. 394 pp.

CALIFORNIA STATE MINING BUREAU.

HENRY G. HANKS, State Mineralogist.

Annual Report of the State Mineralogist, from June 1, 1880, to December 1, 1880. Sacramento, 1880. 43 pp.

This report contains analysis of clay from a deposit at Lincoln, Placer County.

Second Report of the State Mineralogist, from December 1, 1880, to October 1, 1882. Sacramento, 1882. 288 pp., map and 4 photographs, with appendix. (The index to this report was published separately.)

The report contains articles on placer, hydraulic, and drift mining; general geology; iron ores and iron industries of California; lumber and fuel; the occurrence of salt in California, and its manufacture; mud volcanoes; the Colorado Desert; diamonds in California; notes on mica; diatoms and diatomaceous earths; contribution to ethnology and geology of the Pacific Slope, by Philip Harvey.

The appendix contains the following papers: 1. Forest trees of California, by A. Kellogg; 2. Notes on hydraulic mining, by F. W. Robinson; 3. Hydraulic and drift mining, by H. Degroot; 4. On the milling of gold quartz, by M. Attwood; 5. Rare minerals recently found in the State, by William P. Blake.

Contributions to the Geology and Mineralogy of California; by William P. Blake. Sacramento, 1881. 15 pp.

This report contains a description of new mineral localities.
No. 2. Section from Merced to Coulterville and Big Oak Flat.
No. 3. Coulterville to Chinese Camp.
No. 4. Chinese Camp to Sonora.
No. 5. Occurrence of vanadates of lead at the Castle Dome mines.

Contributions to the Geology and Mineralogy of California: On the milling of gold quartz; by Melville Attwood. Sacramento, 1882. 20 pp.

First Annual Catalogue of the State Museum of California, being the collection made by the State Mining Bureau during the year ending April 16, 1881. Sacramento, 1882. 350 pages.

Third Annual Report of the State Mineralogist, for the year ending June, 1883. Sacramento, 1883. 111 pp. and 1 map.

Part 2 contains a report on the borax deposits of California and Nevada, by Henry G. Hanks.

Fourth Annual Report of the State Mineralogist, for the year ending May 15, 1884. Sacramento, 1884. 410 pp. and 2 plates.

This volume contains a general account of the agricultural, commercial, manufacturing, and other resources, interests, and industries of California, by Henry Degroot.

Also, a catalogue and description of the minerals of California as far as known, with special reference to those having an economic value. Alphabetically arranged.

Fifth Annual Report of the State Mineralogist, for the year ending May 15, 1885. Sacramento, 1885. 235 pp., 1 plate and 4 sections.

Sixth Annual Report of the State Mineralogist, for the year ending June 1, 1886. Part I. Sacramento, 1886. 145 pp. and 1 map.

This report contains an article on building-stones and building-materials in California; table of altitudes; record of strata in artesian well, Kern County; mineral springs in California; Calistoga silver mines; a general account of San Diego County, with map of Julian District. The report closes with a list of California minerals.

Catalogue of books, maps, lithographs, photographs, etc., in the library of the State Mining Bureau at San Francisco, May 15, 1884. Sacramento, 1884. 19 pp.

Catalogue of the State Museum of California, Vol. 2, being the collection made by the State Mining Bureau from April 16, 1881, to May 15, 1884. Sacramento, 1885. 220 pp.

WILLIAM IRELAN, JR., State Mineralogist.

Sixth Annual Report of the State Mineralogist, for the year ending June 1, 1886. Part II. Sacramento, 1887. 222 pp. Illustrated.

Contains reports on the mines of Amador, Butte, Calaveras, El Dorado, Fresno, Nevada, Sierra, and Tuolumne Counties.

Catalogue of the State Museum of California, Vol. 3, being the collection made by the State Mining Bureau from May 15, 1884, to March 31, 1887. Sacramento, 1887. 195 pp.

Seventh Annual Report of the State Mineralogist, for the year ending October 1, 1887. Sacramento, 1888. 315 pp.

This report contains an article on petroleum, asphaltum, and natural gas of California, by W. A. Goodyear; also, a report on coal, with reports on natural gas and coal in California, by A. H. Weber; petroleum and asphaltum in portions of Northern California, by A. H. Weber; building-stones of California, by Prof. A. Wendell Jackson; production of precious metals, report of Wells, Fargo & Co.; with a catalogue of fossils, by J. G. Cooper.

Eighth Annual Report of the State Mineralogist, for the year ending October 1, 1888. Sacramento, 1888. 948 pp. Illustrated.

This report contains the mineral resources of the State, considered by counties, with reports on natural and artificial cement, building-stones, etc.; reports on Inyo, Kern, Los Angeles, San Bernardino, San Diego, and Tulare Counties, by W. A. Goodyear; Mono County, by H. A. Whiting; Ventura County, by S. Bowers; drift mining in California, by R. L. Dunn; lithology of wall rocks, by M. Attwood.

Bulletin No. 1. A description of the desiccated human remains in the California State Mining Bureau; by Winslow Anderson, M.D. Sacramento, 1888. 41 pp. and 6 plates.

Ninth Annual Report of the State Mineralogist, for the year ending December 1, 1889. Sacramento, 1890. 352 pp. and 34 plates.

This report contains an article on Santa Clara County, by A. H. Weber; the geology of San Nicolas Island, by Dr. Stephen Bowers; the auriferous gravels of California, geology of their occurrence and methods of their exploitation, by John Hays Hammond; San Diego County, by W. A. Goodyear; Santa Cruz Island, by W. A. Goodyear; stray notes on the geology of the channel islands, by Dr. L. G. Yates; the mollusca of the channel islands of California, by Dr. L. G. Yates; with reports on Los Angeles County, by E. B. Preston, and San Bernardino County, by James H. Crossman; the value of fossils as indications of important mineral products, by Dr. J. G. Cooper; with report on clays, by W. D. Johnston; etc.

Tenth Annual Report of the State Mineralogist, for the year ending December 1, 1890. Sacramento, 1890. 981 pp. Maps and plates.

This report contains a geological map of the State, with the following special reports relating to geology, viz.:
Geology of the Mother Lode region; by H. W. Fairbanks.
Geological features of Placer County. pp. 414–418.
Geology of Nevada County. p. 368.
Geology of the Colorado Desert. pp. 907–919.
Geology of Trinity County. p. 695.
Geology of Orange County. pp. 399–409.
Fossils of the Carboniferous period. p. 917.
Fossils of Orange County. pp. 407–408.
List of Cretaceous fossils in Santa Ana Mountains, Orange County. p. 400.
Fossils of Ventura County. p. 762.
With other reports containing geological information.

Catalogue of the State Museum of California, Vol. 4, being the collection made by the State Mining Bureau from March 31, 1887, to August 20, 1890. Sacramento, 1890. 261 pp.

Catalogue of the Library of the California State Mining Bureau, San Francisco, September 1, 1892. Sacramento, 1892. 149 pp.

Eleventh Report (First Biennial) of the State Mineralogist, for the two years ending September 15, 1892. Sacramento, 1893. 612 pp.

This report contains the following special articles on geology, viz.:
Geology and mineralogy of Shasta County; by H. W. Fairbanks. pp. 24–53.

Notes on the geology and mineralogy of portions of Tehama, Colusa, Lake, and Napa Counties; by H. W. Fairbanks. pp. 54–75.

Geology of San Diego County, also of portions of Orange and San Bernardino Counties; by H. W. Fairbanks. pp. 76–120.

Geology of Calico District, San Bernardino County. pp. 337, 338, 339, 340, 343.

Geology of the Lava Bed District, San Bernardino County. pp. 349 and 350.

Geology in the region of Mineral Spring, Siskiyou County. pp. 451, 452; etc., etc.

J. J. CRAWFORD, State Mineralogist.

Twelfth Report (Second Biennial) of the State Mineralogist, for the two years ending September 15, 1894. Sacramento, 1894. 541 pp. Maps and illustrations.

This report contains an article on—

The auriferous conglomerate in California; by R. L. Dunn.

Preliminary report on the mineral deposits of Inyo, Mono, and Alpine Counties; by H. W. Fairbanks.

Ancient channel system of Calaveras County; by W. H. Storms.

Geology of northern Ventura, Santa Barbara, San Luis Obispo, Monterey, and San Benito Counties; by H. W. Fairbanks.

Bulletin No. 2. San Francisco, June, 1894. Methods of mine-timbering; by W. H. Storms. Sacramento, 1894. 58 pp., with illustrations. (A second edition was issued in 1896.)

Bulletin No. 3. San Francisco, August, 1894. The gas and petroleum yielding formations of the Central Valley of California; by W. L. Watts. Sacramento, 1894. 100 pp. Maps and illustrations.

Bulletin No. 4. San Francisco, September, 1894. Catalogue of California fossils, Parts II, III, IV, and V; by Dr. J. G. Cooper. Sacramento, 1894. 6 plates. (Part I was published in the Seventh Annual Report of the State Mineralogist for 1887.)

The following new species are described and figured:

CRETACEOUS AND EOCENE FOSSILS—*Teretra Wattsiana, Surcula crenatospira, S. monilifera, S. inconstans, Pleurotoma Perkinsiana, P. decipiens, Drillia ullreyana, Mangilia suturalis, Cordiera gracillima, Cancellaria Irelaniana, Ancilla (Oliverato) Californica, Bittium longissimum, Cerithium Fairbanksi, Potamides carbonicola, P. Davisiana, Fusus supraplanus, Mitra simplicissima, Stomatia intermedia, Calliostoma Kempiana, Tornatella normalis, Bulla assimilata, Tornatina erratica, Siphonaria capuloides, Astarto semidentata, Crassatella lomana, Cucul-*

læa Bowersiana, Corbula triangulata, Mytilus dichotomus, Crenella Santana, Megerlia dubitanda, Waldheimia imbricata.

TERTIARY-MIOCENE AND PLIOCENE—*Agasoma Barkerianum, Trophosycon* (n.subgen.), *Agasoma? (Trophosycon) Kernianum.*

FRESH-WATER FOSSILS—*Limnea Contracosta; Planorbis Pabloanus; Anodonta (Nuttalliana) lignitica; Amnicola Yatesiana; Pinna Alamedensis*, Yates; *P. Venturensis*, Yates; *Pecten discus*, Conrad; *Liropecten estrellanus*, Conrad.

Bulletin No. 5. San Francisco, October, 1894. The cyanide process, its practical application and economical results; by Dr. A. Scheidel. Sacramento, 1894. 140 pp.

Catalogue of West North American and many foreign shells, with their geographical ranges. For labels, exchange, and check-lists, with a supplement. By J. G. Cooper. Printed for the State Mining Bureau, April, 1894. Sacramento, 1894.

Bulletin No. 6. California gold mill practices; by Ed. B. Preston. Sacramento, 1895. 85 pp.

Bulletin No. 7. Showing, by counties, the mineral productions of California for the year 1894; by Charles G. Yale. Sacramento, 1895. Tabular sheet.

Bulletin No. 8. Showing, by counties, the mineral productions of California for the year 1895; by Charles G. Yale. Sacramento, 1896. Tabular sheet.

Bulletin No. 9. Mine drainage, pumps, etc.; by Hans C. Behr. Sacramento, 1896. 200 pp. 206 illustrations.

CALIFORNIA SENATE AND ASSEMBLY DOCUMENTS.

California Senate and Assembly Journal, 15th Session.

Transactions California State Agricultural Society during the year 1863. Gives a list of gold mines. pp. 101–118.

Mining Review for 1863. Contains an article on placer gold mining; also a notice of silver mining, of quartz gold and silver mining, and of copper, coal, iron, petroleum and asphaltum, quicksilver mines, etc. pp. 176–193.

California Senate and Assembly Journal, 16th Session, 1866. Vol. 3, pp. 314–356.

Gives an account of California marble, p. 314.

Mining Review for 1865. Gives the extent of the mining field, variety of ore, mineral products, placer and surface diggings, quartz mining, silver mines, coal, quicksilver, petroleum, etc. pp. 315–334.

Annotated catalogue of the principal mineral species hitherto recognized in California and adjoining States and Territories; by W. P. Blake. March, 1866. pp. 335–356.

Notes on the geographical distribution and geology of the precious metals and valuable minerals of the Pacific Slope. pp. 359–364. [Prof. W. P. Blake was appointed the Geologist of the State Board of Agriculture in 1866, and made a report on the minerals of California under the above title. The report was also published in pamphlet form, with the same title. Reviewed Amer. Jour. Sci., Vol. 42, 1866, pp. 114–118.]

The same volume also contains a Report of Assembly Committee on Mines and Mining Interests, concerning the State Geological Survey; also, the Report of the State Geologist for 1863–64.

California Senate and Assembly Journal, 17th Session. No. 3.

Gold, silver, platinum, and rare metals. Sacramento. 1867.

CALIFORNIA STATE UNIVERSITY.

Report on Mount Diablo coals; by S. B. Christy. In reports to the President of the University, from the Colleges of Agriculture and the Mechanic Arts, pp. 70–74. Sacramento, 1877.

Report on the genesis of cinnabar deposits; by S. B. Christy. Berkeley, 1878.

Report of Professor J. D. Whitney to the honorable the Board of Regents of the University of California. In Biennial Report of the Regents of the University of California for the years 1877–79, pp. 82–85. Sacramento, 1879.

List of recorded earthquakes in California, Lower California, Oregon, and Washington Territory. Compiled from published works and from private information, by Edward S. Holden. Printed by direction of the Regents of the University of California. Sacramento, 1887. 78 pp.

Bulletin of the building-stones of California; by A. Wendell Jackson. California University, Berkeley, 1888. Supplement to Secretary's report.

This paper gives notes and microscopic examinations of Santa Susanna sandstones, Henly sandstones, Campo Seco tufa, Colton marbles, etc.

List of printed maps of California; by J. C. Rowell. Univ. of Cal., Library Bull. No. 9. Berkeley, 1887.

The geology of Carmelo Bay, by Andrew C. Lawson; with chemical analysis and coöperation in the field, by Juan de la C. Posada. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, pp. 1–59, pls. 1–4. Berkeley, 1893.

This report contains a general statement of the geology of the district survey, with special chapters on the granites and eruptive rocks.

The soda-rhyolite north of Berkeley; by Charles Palache. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, No. 2, pp. 61–72, pl. 5. Berkeley, 1893.

The eruptive rocks of Point Bonita; by F. Leslie Ransome. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, No. 3, pp. 71–114, pls. 6–7. Berkeley, 1893.

The Post Pliocene diastrophism of the coast of Southern California; by Andrew C. Lawson. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, No. 4, pp. 115–160, pls. 8–9. Berkeley, 1893.

The lherzolite-serpentine and associated rocks of the Potrero, San Francisco. On a rock from the vicinity of Berkeley, containing a new soda Amphibole; by Charles Palache. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, Nos. 5–6, pp. 161–192, pls. 10–11. Berkeley, 1894.

The geology of Angel Island, by F. Leslie Ransome; with a note on the Radiolarian chert from Angel Island and from Buri-buri Ridge, San Mateo County, California. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, No. 7, pp. 193–240, pls. 12–14. Berkeley, 1894.

The Radiolaria (suborder *Sphæroidea*) described in this report are of the genera *Cenosphæra*, *Carposphæra*, *Cenellipsis*, *Ellipsidium*, *Lithapium;* suborder *Discoidea*, genera *Tripocyclia*, *Hagiastrum;* suborder *Cyrtoidea*, genera *Dictyomitra*, *Lithocampe*, and *Sethocapsa*.

The geomorphogeny on the coast of Northern California; by Andrew C. Lawson. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, No. 8, pp. 241–272. Berkeley, 1894.

On analcite diabase from San Luis Obispo County, California; by Harold W. Fairbanks. Univ. of Cal., Bull. of Geology, Vol. 1, No. 9, pp. 273–300, pls. 15–16. Berkeley, 1895.

On Lawsonite, a new rock-forming mineral from the Tiburon Peninsula, Marin County, California; by F. Leslie Ransome. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, No. 10, pp. 301–312, pl. 17. Berkeley, 1895.

Critical periods in the history of the earth; by Joseph Le Conte. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, No. 11, pp. 313–336. Berkeley, 1895.

A list of type specimens in the Geological Museum of the University of California, which have served as originals for figures and descriptions in the palæontology of the State Geological Survey of California under J. D. Whitney. Compiled for the use of workers in California geology, by John C. Merriam. Univ. of Cal., Bull. Dept. of Geology. Berkeley, 1895. 3 pp.

In a few cases the supposed type differed slightly, but unessentially, from the figure. Names of such species are followed in the list by an interrogation point.

CRETACEOUS.

Callianassa Stimpsoni, Gabb; Vol. I, pl. 9, fig. 1*a*, 1*b*.

Amm. (*Haploceras*) *Breweri*, Gabb; Vol. I, pl. 10, fig. 7.
Amm. Cooperi, Gabb; Vol. I, pl. 14, fig. 23, 23*a*.
Amm. Haydeni, Gabb; Vol. I, pl. 10, fig. 8.
Amm. jugalis, Gabb; Vol. I, pl. 10, fig. 5.
Amm. Peruvianus, Von Buch; Vol. I, pl. 10, fig. 9.
Amm. (*Hoplites*) *Rémondi*, Gabb; Vol. I, pl. 12, fig. 14.
Amm. (*Phylloceras*) *ramosus*, Gabb; Vol. I, pl. 11, fig. 12, pl. 12, fig. 12*b*.
Amm. suciaensis, Meek; Vol. I, pl. 21, fig. 11.
Amm. Tehamaensis, Gabb; Vol. I, pl. 10, fig. 4.
Baculites Chicoensis, Trask; Vol. I, pl. 14, fig. 29.
Belemintes impressus, Gabb; Vol. I, pl. 9, fig. 2.
Crioceras latus, Gabb; Vol. I, pl. 15, fig. 25.
Helicancyclus æquicostatus, Gabb; Vol. I, pl. 13, fig. 20.
Helicoceras declive, Gabb; Vol. I, pl. 28, fig. 200, 200*a*.
Helioceras Breweri, Gabb (?); Vol. I, pl. 14, fig. 22.

Actæonina Californica, Gabb; Vol. I, pl. 19, fig. 68 (fragments).
Actæonina pupoides, Gabb; Vol. I, pl. 19, fig. 67.
Chemintzia planulata, Gabb; Vol. I, pl. 19, fig. 70.
Cylindrites brevis, Gabb; Vol. I, pl. 29, fig. 223.
Eripachya Hoffmanni, Gabb; Vol. I, pl. 18, fig. 41.
Fusis Averilli, Gabb; Vol. I, pl. 18, fig. 34.
Fusus Kingi, Gabb; Vol. I, pl. 28, fig. 204.
Globiochonca Rémondi, Gabb; Vol. I, pl. 19, fig. 69.
Lunatia Conradiana, Gabb; Vol. I, pl. 29, fig. 219.
Lysis duplicostata, Gabb; Vol. I, pl. 21, fig. 98.
Pugnellus manubriatus, Gabb (?); Vol. I, pl. 29, fig. 229, 229*a*.
Ringinella pinguis, Gabb; Vol. I, pl. 29, fig. 221*a*.
Tessarolax distorta, Gabb (?); Vol. I, pl. 20, fig. 82, 82*b*.
Turritella Chicoensis, Gabb; Vol. I, pl. 21, fig. 91.
Turritella seriatim-granulata, Gabb; Vol. I, pl. 20, fig. 88.
Turritella Veatchi, Gabb (?); Vol. I, pl. 20, fig. 90.

Anatina lata, Gabb; Vol. I, pl. 22, fig. 126.
Anomia lineata, Gabb; Vol. I, pl. 26, fig. 193.
Arca decurtata, Gabb; Vol. I, pl. 31, fig. 265, 265*a*.
Arca gravida, Gabb; Vol. I, pl. 30, fig. 264.
Astarte tuscana, Gabb; Vol. I, pl. 30, fig. 257.
Aucella Piochi, Gabb; Vol. I, pl. 25, fig. 173, 174.
Corbula cultriformis, Gabb; Vol. I, pl. 22, fig. 122.
Cyprinella (*Diodus*) *tenuis*, Gabb; Vol. I, pl. 23, fig. 151*a*.
Dosinia inflata, Gabb; Vol. I, pl. 23, fig. 149.
Homomya (*Panopea*) *concentrica*, Gabb; Vol. I, pl. 22, fig. 119.
Lithophagus oviformis, Gabb; Vol. I, pl. 25, fig. 168.
Martesia clausa, Gabb; Vol. I, pl. 22, fig. 115.
Meekia navis, Gabb; Vol. I, pl. 25, fig. 180.
Meekia radiata, Gabb; Vol. I, pl. 25, fig. 179*a*.
Meretrix longa, Gabb; Vol. I, pl. 23, fig. 147.
Meretrix ovalis, Gabb; Vol. I, pl. 30, fig. 251.
Modiola cylindrica, Gabb; Vol. I, pl. 25, fig. 167.
Mytilus pauperculus, Gabb; Vol. I, pl. 25, fig. 165.
Ostrea Breweri, Gabb; Vol. I, pl. 26, fig. 191.
Pholadomya Breweri, Gabb; Vol. I, pl. 22, fig. 123.
Pholadomya nasuta, Gabb; Vol. I, pl. 30, fig. 124.
Pinna Breweri, Gabb; Vol. I, pl. 25, fig. 175.
Tellina decurta, Gabb; Vol. I, pl. 23, fig. 137.
Tellina monilifera, Gabb (?); Vol. I, pl. 22, fig. 134, 134*a*.
Tellina ooides, Gabb; Vol. I, pl. 22, fig. 135, 135*a*.
Terebratella obesa, Gabb (?); Vol. I, pl. 26, fig. 194.
Trigonia Gibboniana, Gabb; Vol. I, pl. 25, fig. 178.
Trigonia Tryoniana, Gabb; Vol. I, pl. 25, fig. 176.
Venus (*Chione*) *varians*, Gabb; Vol. I, pl. 23, fig. 140.

Flabellum Rémondianum, Gabb; Vol. I, pl. 26, fig. 199.

Astrocœnia (*?*) *petrosa*, Gabb (?); Vol. I, pl. 31, fig. 274, 274*a*.

EOCENE (TEJON).

Fusus martinez, Gabb; Vol. I, pl. 18, fig. 32.
Margaritella crenulata, Gabb; Vol. I, pl. 20, fig. 74.
Neptunea supraplicata, Gabb; Vol. I, pl. 18, fig. 40.

Neptunea gracilis, Gabb; Vol. I, pl. 18, fig. 42.
Trachytriton (*Tritonium*) *Dieyoensis*, Gabb; Vol. I, pl. 18, fig. 44.
Crypta (*spirocrypta*) *pileum*, Gabb (?); Vol. I, pl. 29, fig. 233, 243*b*.

Arca Horni, Gabb; Vol. I, pl. 30, fig. 263.
Avicula pellucida, Gabb; Vol. I, pl. 25, fig. 172.
Barbatia Morsei, Gabb (?); Vol. I, pl. 32, fig. 286.
Dosinia gyrata, Gabb; Vol. I, pl. 23, fig. 148.
Lucina cumulata, Gabb; Vol. I, pl. 24, fig. 254.
Mysia polita, Gabb; Vol. I, pl. 30, fig. 256.
Mytilus ascia, Gabb; Vol. I, pl. 30, fig. 259.
Nexra dolabræformis, Gabb (?); Vol. I, pl. 22, fig. 125.
Pectunculus (*Axnixa*) *cor*, Gabb; Vol. I, pl. 31, fig. 268, 268*a*.
Stalagmium (*Crenella*) *concentricum*, Gabb; Vol. I, pl. 24, fig. 169.
Unio penultimus, Gabb (?); Vol. I, pl. 24, fig. 164.

MIOCENE.

Cancer Breweri, Gabb; Vol. II, pl. 1, fig. 1.

Scutella Gibbsi, Gabb; Vol. II, pl. 13, fig. 66.

Echinarachinus Brewerianus, Gabb; Vol. II, pl. 12, fig. 64.

Ancillaria Fishi, Gabb (?); Vol. II, pl. 2, fig. 15.
Indet; Vol. II, pl. 3, fig. 29.
Indet; Vol. II, pl. 3, fig. 30.
Triptera clavata, Gabb; Vol. II, pl. 1, fig. 2.
Trochita inornata, Gabb (?); Vol. II, pl. 14, fig. 8.

Conchocele disjuncta, Gabb; Vol. II, pl. 7, fig. 48.
Modiola multiradiata, Gabb (?); Vol. II, pl. 8, fig. 52.
Ostrea Attwoodi. Gabb (?); Vol. II, pl. 11, fig. 58*b*.
Ostrea Tayloriana, Gabb; Vol. II, pl. 12, fig. 60.
Tapes truncata, Gabb; Vol. II, pl. 7, fig. 44.
Venus (*Chione*) *pertenuis*, Gabb; Vol. II, pl. 5, fig. 37.
Venus (*Chione*) *Whitneyi*, Gabb; Vol. II, pl. 5, fig. 40.

PLIOCENE.

Arca sulcicosta, Gabb; Vol. II, pl. 9, fig. 53.
Callista (*Standella*) *Voyi*, Gabb; Vol. II, pl. 5, fig. 41.
Gari (*Psammocola*) *alata*, Gabb; Vol. II, pl. 5, fig. 36.
Lucina (*Here*) *Richthofeni*, Gabb; Vol. II, pl. 8, fig. 49.
Zirphæa dentata, Gabb; Vol. II, pl. 3, fig. 31, 31*a*.

QUATERNARY.

Cancellaria (*Euclia*) *tritonidea*, Gabb; Vol. II, pl. 2, fig. 18.
Clathurella Conradiana, Gabb (?); Vol. II, pl. 1, fig. 12.
Muricidea paucivaricata, Gabb; Vol. II, pl. 14, fig. 1.
Surcula (*Pleurotoma*) *Carpenteriana*, Gabb; Vol. II, pl. 1, fig 8.
Surcula (*Pleurotoma*) *Tryoniana*, Gabb; Vol. II, pl. 1, fig. 9.

Mercenaria perlaminosa, Gabb; Vol. II, pl. 5, fig. 38.
Pecten Cerroensis, Gabb; Vol. II, pl. 9, fig. 55.

On Malignite, a family of basic, plutonic, orthoclase rocks, etc.; by Andrew C. Lawson. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, No. 12, pp. 371–428. Berkeley, 1896.

Sigmogomphius Le Contéi, a new castoroid rodent from the Pliocene, near Berkeley, Cal.; by John C. Merriam. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, No. 13, pp. 363–370. Berkeley, 1896.

The Great Valley of California: a criticism of the theory of isostasy; by F. Leslie Ransome. Univ. of Cal., Bull. Dept. of Geology, Vol. 1, No. 14, pp. 371–428. Berkeley, 1896.

The geology of Point Sal; by H. W. Fairbanks. Univ. of Cal., Bull. Dept. of Geology, Vol. 2, No. 1, pp. 1–92, pls. 1–2. Berkeley, 1896.

On some Pliocene Ostracoda from near Berkeley; by Frederick Chapman. Univ. of Cal., Bull. Dept. of Geology, Vol. 2, No. 2, pp. 93–100, plate 3.

PART II.

Publications of the United States Government.

SENATE AND HOUSE DOCUMENTS.

Report of the Exploring Expedition to the Rocky Mountains in 1842, and in Oregon and North California in the years 1843–44; by Bvt. Capt. J. C. Fremont, U. S. Army. Washington, 1845. 693 pp., 24 plates, and 3 maps. 28th Cong., 2d sess., Senate Doc. 174.

The first part of this report was a reprint of the expedition of 1842. (Senate Doc. 243, 27th Cong., 3d sess., 1842.)

The report contains a few geological notes of California, and a description of the fossils, by James Hall. The specimens described are all from Muddy Creek, Wyoming.

Geographical memoir upon Upper California in illustration of his map of Oregon and California; by John Charles Frémont. Addressed to the Senate of the United States. Washington, 1848. 67 pp. map. (30th Cong., 1st sess., Senate Misc. Doc. 148.)

Map of Oregon and Upper California, from the surveys of John C. Frémont and other authorities. Drawn by C. Preuss under the order of the Senate of the United States. Washington, 1848. Scale, 1:3,000,000.

Notes of a military reconnoissance from Fort Leavenworth, in Missouri, to San Diego, in California; including parts of the Arkansas, Del Norte, and Gila Rivers; by Maj. W. H. Emory, U. S. Army. Washington, 1848. 416 pp. 41 plates and map. (30th Cong., 1st sess., Ex. Doc. 41.)

Report of Lieut.-Col. P. St. George Cooke of his march from Santa Fé, New Mexico, to San Diego, Upper California. Washington, 1848. 13 pp. and map. (30th Cong., 1st sess., Ex. Doc. 41, pp. 551–563.)

Journal of Capt. A. R. Johnson, U. S. Army. (Expedition from Santa Fé to San Diego.) Washington, 1848. 48 pp. (30th Cong., 1st sess., Ex. Doc. 41, pp. 567–614.)

Journal of the march of the Mormon Battalion of Infantry Volunteers, under the command of Lieut.-Col. P. St. George Cooke, from Santa Fé, New Mexico, to San Diego, California. Washington, 1849. 85 pp. (30th Cong., spec. sess., Senate Doc. 2.)

United States Exploring Expedition, under the command of Charles Wilkes, U. S. Navy. Vol. X, Geology, by James D. Dana. Philadelphia, 1849. pp. xii, 9, and 756. 5 maps and folio atlas of 21 plates.

Only two hundred copies of this report were published. (Letter of J. D. Dana, September 2, 1890.)

The author gives an account of the geology of Shasta Mountains, also that of San Francisco Bay, with a description of the fossils of Astoria, Oregon.

A synopsis of this report was published in Wilkes's Western America, including California and Oregon, with maps of those regions and of "The Sacramento Valley," from actual surveys. Philadelphia, 1849.

REPORTS OF THE SECRETARY OF WAR.

Information in relation to the geology of California:

Report of P. T. Tyson upon the geology of California. 31st Cong., 1st sess., Senate Ex. Doc. 47. Washington, 1850. 74 pp. 9 sections and 1 map.

This report contains articles on the geology of part of the Sierra Nevada; geology of the Coast Range; geological structure of Sacramento Valley; review of the geological changes in California; gold regions of the Sierra Nevada; the quicksilver mines; other mineral resources, and their industrial applications.

Report by General Smith, dated October 7, 1849. pp. 75–108.

Report of Lieutenant Talbot to General Smith, dated October 5, 1849. pp. 108–116.

Report of Professor Frazer on minerals forwarded by General Smith; dated March 21, 1850. pp. 116–117.

Report of General Riley, dated January 1, 1850. pp. 118–119.

Report of Lieutenant Ord to General Riley, dated October 31, 1849. pp. 119–127.

Part 2. Report of the Secretary of War in further compliance with the resolution of the Senate, calling for copies of Report on the Geology and Topography of California. Washington, 1850. 37 pp., and 3 maps. (31st Cong., 1st sess., Senate Ex. Doc. 47.)

This report contains: A topographical memoir accompanying maps of the Sacramento Valley, etc.; by Lieut. G. H. Derby. pp. 2–16.

Reconnoissance made by Capt. W. H. Warner of a route through the Sierra Nevada by the upper Sacramento. pp. 16–34.

Exploration of Monte Diablo, and the valley lying between this mountain and the southern shore of Suisun Bay; by Lieut. R. S. Williamson. pp. 34–37.

Geology and industrial resources of California; by Philip T. Tyson. Baltimore, 1851. xxxiv, 127, and 37 pp. 9 sections and three maps.

A republication of the above report, with an introduction and an index.

The Report of Secretary of War. 1850. (31st Cong., 2d sess., Senate Ex. Doc. 1.)

The report of Major D. H. Vinton contains an account of borings near Benicia. pp. 278–279.

T. Butler King's report on California. 1850. (31st Cong., 1st sess., Ho. of Rep. Ex. Doc. 59.)

This document was published in Washington in another form by Gideon & Co., 1850. 72 pp. 8vo.

The author gives an account of the geology of the Gold Regions.

Letter from Col. Richard B. Mason. (31st Cong., 1st sess., Ho. of Rep. Doc. 17, 1850, pp. 528–536.)

This letter is the first official report on the discovery of gold in California. Colonel Mason states that on the 12th of June, 1848, in company with Lieut. W. T. Sherman, he started on a tour through the northern part of California to visit the newly discovered gold placer region in the valley of the Sacramento. He gives a description of the country along the American River and an historical account of the mining regions. He also gives a description of the quicksilver mines near San José.

Tour of the gold regions; by Bvt. Brig.-Gen. Bennett Riley. (31st. Cong., 1st sess., Ho. of Rep. Doc. 17, 1850, pp. 785–792.)

United States and Mexican Boundary Survey, under the orders of Lieut.-Col. W. H. Emory. Geology and Palæontology of the Boundary, by James Hall; pp. 103–140, Part 2. Description of Cretaceous and Tertiary Fossils, by T. A. Conrad; pp. 141–165. (34th Cong., 1st sess., Senate Ex. Doc. 108. Washington, 1857.)

Chapter V contains description of the geology of Southern California, with a section of lignite bluff near San Diego.

Notes on route from near the Tejon Pass, through western New Mexico and the Colorado to Santa Fé in the fall of 1853; by Capt. F. C. Aubrey. 12 pp. [Published by Congress in 1854 and in the California journals.]

This was the route through the gold country on the head (southern) waters of the San Juan and the upper branches of the Rio Salodo, or Salinas, of the Gila River.

Report upon Pacific wagon roads. Washington, 1858. (35th Cong., 2d sess., Ho. of Rep. Ex. Doc. 108, Senate Doc. 36.)

Report of Survey on the Union and Central Pacific Railways; by W. T. Twining. Washington, 1875. (44th Cong., 2d sess., Ho. of Rep. Doc. 38.)

Mining débris in California. Preliminary report; by Col. Geo. H. Mendell. Submitted January 31, 1881.

Mining débris in California rivers. Letter of the Secretary of War. A final report upon the system to prevent further injury to the navigable waters of California from mining débris. 1882. 110 pp. 2 maps. (47th Cong., 1st sess., Ho. of Rep. Ex. Doc. 98.)

Mining débris in California. Letter of the Secretary of War. Report of Board of Government Engineers respecting the adjustment of the conflict between the mining and farming sections, and the rehabilitation of the mining industry in California. 1891. 124 pp. 2 maps. (Ex. Doc. 267, H. R., 51st Cong., 2d sess.)

The future of silver, by Suess Edward; translated by Robert Stein, U. S. Geol. Survey. Washington, 1893. 101 pp. (53d Cong., 1st sess., Senate Misc. Doc. 95.)

The author gives a sketch of the California gold fields.

U. S. NAVY DEPARTMENT.

Letter from the Secretary of the Navy, inclosing report of experiments on the coal of the Pacific Coast, in compliance with a resolution of the House of March 22, 1872. (42d Cong., 2d sess., Ho. of Rep. Ex. Doc. 206.)

This report of Chief Engineer B. F. Isherwood, U. S. Navy, contains a report on the brown coal from Mount Diablo coal mines of California.

REPORTS OF EXPLORATIONS AND SURVEYS

For a Railroad from the Mississippi River to the Pacific Ocean.

Pacific Railroad Reports, Vol. III. Résumé of a geological reconnoissance, extending from Napoleon, at the junction of the Arkansas with the Mississippi, to the Pueblo de los Angeles, in California; by Jules Marcou. pp. 165–175.

This résumé was reprinted from the preliminary report of Lieutenant Whipple. Chap. VI, p. 40, House Doc. 129. Washington, 1855.

The report has a geological map of the route explored near the parallel of 35° north latitude, from the Mississippi River to the Pacific Ocean.

—— Vol. V. Routes in California to connect with the routes near the 35th parallel and 32d parallel explored by Lieut. R. S. Williamson in 1853. Geological report by William P. Blake. Washington, 1856. (33d Cong., 2d sess., Senate Ex. Doc. 78.)

This report contains general observations upon the geology of the route:

Chapter I. San Francisco to the San Joaquin River.
II. Grayson's Ferry, on the San Joaquin, to Fort Miller.
III. Fort Miller and the vicinity; Fort Miller to Ocoya Creek.

IV. Ocoya Creek to the Tejon.
V. Tejon to San Amedio; Cañada de las Uvas.
VI. Tejon to the Great Basin and Pass of San Francisquito; Pass of San Francisquito to the Mojave River.
VII. Mojave River, by Williamson's Pass, to San Fernando and Los Angeles; Los Angeles to San Bernardino; Cajon Pass.
VIII. San Bernardino to the Colorado Desert; Colorado Desert to Carrizo Creek and Warner's Valley.
IX. Warner's to the Colorado Desert; Colorado Desert to the mouth of the Gila; Camp Yuma and the vicinity.
X. Fort Yuma to Carrizo Creek; Carrizo Creek to San Diego.
XI. Observations on the orography and general features of relief of the middle and southern portions of California.
XII. Geology of the vicinity of San Francisco.
XIII. Tertiary formations of Ocoya Creek, Monterey, and other localities.
XIV. Observations on the Tulare Valley.
XV. Geology of the Tejon Pass and Cañada de las Uvas; section of the Sierra Nevada.
XVI. Observations on the southern part of the Great Basin.
XVII. The Colorado Desert.
XVIII. Notes on the Gold Region.
XIX. Building materials; coal; lignite; bitumen.
XX. Metals, ores, and minerals.

Appendix, Article I. Notice of the fossil fish; by Louis Agassiz. pp. 313-316. plate 1.

The following species from Ocoya Creek are described and figured: *Echinorhinus Blakei*, n.sp.; *Scymnus occidentalis*, n.sp; *Galeocerdo productus*, n.sp.; *Prionodon antiquus*, n.sp.; *Hemipristic heteropleurus*, n.sp.; *Carcharodon rectus*, n.sp.; *Oxyrhina plana*, n.sp.; *O. tumula*, n.sp.; *Lamna clavata*, n.sp.; *L. ornata*, n.sp.; *Zygobates* sp.?

Appendix, Article II. Descriptions of the fossil shells; by T. A. Conrad. pp. 317-329. plates 2-9.

From Cañada de las Uvas: *Cardium linteum*, n.sp.; *Dosinia alta*, n.sp.; *Meretrix Uvasana*, n.sp.; *M. Californiana*, n.sp.; *Crassatella Uvasana*, n.sp.; *C. alta*, Conrad; *Mytilus humerus*, n.sp.; *Cardita planicosta; Natica ætites*, Conrad; *N. gibbosa*, Lea; *N. alveata; Turritella Uvasana*, n.sp.; *Volutatithes Californiana*, n.sp.; *Busycon? Blakei*, n.sp.; *Clavatula Californica*, n.sp.

From Ocoya Creek: *Meretrix decisa*, n.sp.; *Natica Ocoyana*, n.sp.; *N. geniculata*, n.sp.; *Bulla jugularis*, n.sp.; *Pleurotoma transmontana*, n.sp.; *P. Ocoyana*, n.sp.; *Syctopus Ocoyana*, n.sp.; *Turritella Ocoyana*, n.sp.; *Colus arctatus*, n.sp.; *Tellina Ocoyana*, n.sp.; *Pecten Nevadanus*, n.sp.; *P. catilliformis*, n.sp.; *Cardium* sp.?; *Arca* sp.?; *Solen* sp.?; *Dosinia* sp.?; *Venus* sp.?; *Cytherea decisa*, Conrad.

From San Diego: *Cardium modestum*, n.sp.; *Nucula decisa*, n.sp.; *Corbula Diegoana*, n.sp.; *Tellina Diegoana*, n.sp.; *Mactra Diegoana*, n.sp.; *Narica Diegoana*, n.sp.; *Trochita Diegoana*, n.sp.; *Crucibulum spinosum*, n.sp.

From Monterey County: *Meretrix uniomeris*, n.sp.; *Tellina congesta*, n.sp.; *Modiola contracta*, n.sp.

From Tulare Valley: *Meretrix Tularena*, n.sp.; *Arca microdonta*, n.sp.; *Stramonita petrosa*, n.sp.

From San Pedro: *Tellina Pedroana*, n.sp.; *Tapes diversum*, n.sp.; *Saxicava abrupta*, n.sp.; *Petricola Pedroana*, n.sp.; *Schizothærus Nuttalli*, n.sp.; *Mytilus Pedroana*, n.sp.; *Penitella spelæa*, n.sp. (Recent); *Fissurella crenulata*, Sow.; *Buccinum interstriatum?*

From Carmello: *Lutraria Traskei*, n.sp.

From Colorado Desert: *Pecten deserti*, n.sp.; *Anomia subcostata*, n sp.; *Ostrea vespertina*, n.sp.; *O. Heermanni*, n.sp.; *Anodonta Californiensis*, Lea.

From San Fernando: *Ostrea* sp.? *Pecten* sp.?

From Benicia: *Turritella biseriata*, n.sp.; *Trochus* sp.?

Appendix, Article IV. Letter from Prof. J. W. Bailey, describing the structure of the fossil plant from Posuncula River. p. 337. (This plant was from a bowlder in the bed of Kern River, west slope of the Sierra Nevada.)

PACIFIC RAILROAD REPORTS, Vol. VI. Geological report of routes in California and Oregon explored by Lieuts. R. S. Williamson and H. L. Abbott; by John S. Newberry. (33d Cong., 2d sess., Senate Ex. Doc. 78. 1857.)

This report contains the following:

Chapter I. Geology of the vicinity of San Francisco.
II. Geology of the Sacramento Valley.
III. Geology of the Western range, Sierra Nevada.
IV. Geology of Pit River and Klamath Basin.

—— Vol. VI, No. 2. Description of the Tertiary fossils collected on the survey; by T. A. Conrad.

The following species are described and figured in this report:

Schizopyga Californiana, n.sp., Santa Clara, Cal.
Cryptomya ovalis, n.sp., Monterey County.
Thracia mactropsis, n.sp., Monterey County.
Mya Montereyana, n.sp., Monterey County.
M.? subsinuata, n.sp., Monterey County.
Arcopagia medialis, n.sp., Monterey County.
Tapes linteatum, n.sp., California.
Arca canalis, n.sp., Santa Barbara.
A. trilineata, n.sp., Santa Barbara.
A. congesta, California.
Axinæa Barbarensis, n.sp., Santa Barbara.
Mulinia densata, n.sp., Santa Barbara.
Dosinia longula, n.sp., Monterey.
D. alta, n.sp., Monterey.
Pecten Pabloensis, n.sp., San Pablo Bay.
Pallium estrellanum, n.sp., Estrella Valley.
Janira bella, n.sp., Santa Barbara.
Ostrea titan, n.sp., San Luis Obispo.
Malea ringens; Dolium ringens (Cassis), Swainson.
Turritella altilira, n.sp., Gatun, Isthmus of Darien.
T. Gatunensis, n.sp., Gatun.

Triton, sp.?; *Cytherea* (*Meretrix*) *Dariena*; *Tamiosoma gregaria*, n.sp., Monterey County.

Pandora bilirata, n.sp., Santa Barbara.

Cardita occidentalis, n.sp., Santa Barbara.

Diadora crucibuliformis, n.sp., Santa Barbara.

The author discusses the age of the formation afterward called by the California geologists the Chico group. Newberry admits the Tertiary character of a part of the fossils, but is inclined to refer the formation to the Cretaceous, because of the presence in it of *Ammonites*, etc.

Pacific Railroad Reports, Vol. VII. Routes in California to connect with the routes near the 35th and 32d parallel and routes near the 32d parallel, between the Rio Grande and Pimas villages, explored by John G. Parke in 1854–55. Geological report by Thomas Antisell. (33d Cong., 2d sess., Senate Ex. Doc. 78. 1857.)

This report contains chapters on the physical geography of the Pacific Coast; geology of the Coast Ranges; Santa Clara Valley and Pajaro River Valley; Salinas River Valley; Santa Margarita Valley; Point Pinos Mountains and Sierra San José; Santa Maria River and Cuyama Valley; Santa Lucia Mountains; Valley of San Luis Obispo, Santa Barbara Mountains; geology of the Sierra Susanna and Monica; Plains of San Fernando; Los Angeles and San Bernardino; with the geology of the Cordilleras, etc.; Estrella River; Panza and Carrizo; Mojave River Valley; bituminous effusions; Quaternary period in California; geology of the district from San Diego to Fort Yuma, and from Fort Yuma to the Pimas villages; etc., etc.

—— Report on the Palæontology of the survey; by T. A. Conrad. Chapter XXIX, pp. 189–196, with 10 plates.

The author remarks that the Miocene of Santa Barbara contains a group of shells more analogous to the fossils of the Atlantic slope than to the existing shells of California; but it is evident that there must be subdivisions in the Tertiary deposits of California, which range between the Eocene and Pliocene periods, for the group of the Estrella Valley and Santa Ynez (Barbara) Mountains does not appear to contain one species, even, analogous to any in the Santa Barbara beds, and, on the contrary, some of them remind us of the existing Pacific fauna.

The author describes and figures the following new species:

From Santa Margarita, Salinas Valley: *Hinnetes crassa*.

From San Rafael Hills and Santa Barbara County: *Pecten Meeki*; *P. altiplicatus*; *Arcopagia unda*.

From Carrizo Creek, Colorado Desert, and Estrella River Valley: *Pecten deserti*, Conrad; *Pallium Estrellanum*; *Spondylus Estrellanus*; *Arcopagia unda*; *Cyclas Estrellana*; *Ostrea panzana*; *Glycimeris Estrellanus*; *Balanus Estrellanus*; *Astrodapsis Antiselli*.

From Santa Ynez and Santa Ynez Mountains: *Pecten discus*; *Pachydesma Inezana*; *Pecten magnolia*; *Crassatella collina*; *Mytilus*

Inezensis; Turritella Inezana; T. variata; Natica Inezana; Tapes Inezensis.

From San Buenaventura: *Tapes montana.*

From Pajaro River: *Venus Pajaroana.*

From Sierra Monica: *Cyclas permacra; Ostrea subjecta.*

From San Luis Obispo Valley: *Arca Obispoana.*

From Gaviota Pass: *Ostrea panzano; Mactra? Gaviotensis; Trochita costellata.*

From Salinas River, Monterey County: *Dosinia alta; D. longula; D Montana; D. subobliqua.*

From Ranch Triumpho, Los Angeles: *Lutraria transmontana; Axinea Barbarensis.*

Report of Mr. T. A. Conrad on the fossil shells collected in California by Wm. P. Blake, Geologist of the Expedition under the command of Lieut. R. S. Williamson, etc. Washington, 1855. 34 pp. (House Doc. 129.)

The fossils described in this report were afterward republished, with figures, in the fifth volume of Explorations and Surveys for a Railroad Route from the Mississippi River to the Pacific Ocean.

REPORTS ON MINERAL RESOURCES OF THE STATES AND TERRITORIES WEST OF THE MISSISSIPPI.

Report of 1867; by J. Ross Browne and James W. Taylor, U. S. Mining Commissioners. Washington, 1867. 360 pp.

Historical sketch of gold and silver mining on the Pacific Slope: by J. Ross Browne and J. W. Taylor. pp. 13–36.

Geological formation, etc., of Pacific Slope; by William Ashburner. pp. 37–49. (Contains articles on the gold-mining interest of California; characteristics of the gold belt; northern mining district; mining in the Sierras.)

Condition of gold and silver mining on the Pacific Coast; by J. Ross Browne and James W. Taylor. pp. 49–85.

The copper resources of the Pacific Slope; geological formation in which copper is found; by J. Ross Browne and James W. Taylor. Section V, pp. 138–169.

Quicksilver mines in California; New Almaden mines, products and exports. Section VI, pp. 170–178. (This article contains a description of the New Almaden mines, with extracts of a report by Prof. B. Silliman, Jr., from the Am. Jour. Sci. for September, 1864.)

Borax, sulphur, tin, and coal. Section VII, pp. 178–193. (Contains articles on the discovery of borax in California, etc.; reports on tin, from the Geological Survey of California, Vol. 1, p. 180; with report on

the coal mines of the West Coast of North America, by W. M. Gabb.)

Annotated catalogue of the principal mineral species hitherto recognized in California and adjoining States and Territories; by William P. Blake. Section IX, pp. 200–215. (This article also contains notes on the geological distribution and geology of the precious metals and valuable minerals on the Pacific Slope of the United States, with a section across the Mariposas.)

History of California; by E. Randolph. pp. 268–305.

Acquisition of California; by John W. Dwinelle. pp. 306–320.

Report of 1868; by J. Ross Browne, U. S. Mining Commissioner. Washington, 1868. 674 pp.

General condition of the mining interest; by J. Ross Browne. pp. 12–298.

Lower California geographical and physical features; by W. M. Gabb. pp. 630–639.

So little is accurately known in regard to the geology of Lower California, that it seems desirable to include this notice and a list of the works on Lower California in this bibliography. The most important publications with regard to the geology of Lower California are:

1. Notes on the geology of Baja California, Mexico; by W. Lindgren. Proc. Cal. Acad. Sci., 2d series, Vol. 1, 1888, p. 173; Vol. 2, 1889, p. 1; Vol. 3, 1890, p. 26.

2. Some geological notes are also found in the reports of the Mexican boundary and Pacific Railway surveys.

3. Geological sketch of Lower California; by S. I. Emmons and G. P. Merrill. Bull. Geol. Soc. Am., Vol. 5, 1894, pp. 489–514, with map.

4. Explorations in the Cape Region of Baja California; by Gustav Eisen. Proc. Cal. Acad. Sci., Vol. 5, 1895, p. 733; map.

The Mother Lode of California. pp. 14–19.

Miscellaneous minerals of Pacific Coast. pp. 207–266.

Agricultural resources of California. pp. 266–281.

Treasure shipments; precious metals, etc. pp. 289–298.

Report of 1869; by R. W. Raymond, U. S. Mining Commissioner. Washington, 1870. 256 pp.

This includes notes on the Almaden mines and a chapter on the Mother Lode of California.

Report of 1870; by R. W. Raymond, U. S. Mining Commissioner. Washington, 1870. 805 pp.

California mines; by W. A. Skidmore. pp. 13–87.

Dead rivers of California; by J. S. Hittell. pp. 63–67.

Report of 1870; by R. W. Raymond, U. S. Mining Commissioner. Washington, 1872. 566 pp.

Chapter on California mines; by W. A. Skidmore. pp. 11–92.

Deep placer mining in California; by W. A. Skidmore. pp. 52–90.

List of stamp-mills in California. Chapter 16.

Report of 1871; by R. W. Raymond. Washington, 1873. 566 pp.

Chapter on California; by W. A. Skidmore. pp. 13–140.
Diamonds in El Dorado County; by W. A. Goodyear. p. 27.

Report of 1872; by R. W. Raymond. Washington, 1873. 550 pp.

Chapter on California; by W. A. Skidmore. pp. 7–107.
List of mining claims in California. pp. 102–107.
Treatment of gold-bearing ores in California; by G. F. Deetken. Chapter 11.
Pliocene rivers of California; by A. W. Bowman. Chapter 16.
Hydraulic mining in California; by Chas. Waldeyer. Chapter 17.
This report also contains a geological map of the United States, by C. H. Hitchcock and W. P. Blake; also, a map showing a portion of the mining region in Placer and El Dorado Counties, and maps of Slate Creek Basin, Sierra County.

Report of 1873; by R. W. Raymond. Washington, 1874. 585 pp.

Chapter on California; by W. A. Skidmore. pp. 13–154.
Quicksilver in California; by Chas. G. Yale. pp. 27–29.
Beach sands of Gold Bluff; by A. W. Chase. pp. 145–147.
Mining and metallurgy of quicksilver in California; by Louis Janin, Jr. Chapter 11.
The geological formation of iron deposits in California is given on p. 44, extract from James D. Hague and Clarence King's report of the Sierra Iron and Mining Company.

Report of 1874; by R. W. Raymond. Washington, 1875. 540 pp.

Chapter on California; by W. A. Skidmore. pp. 11–194.
Seam mining. p. 81.
Geology of the Sierra Nevada in its relations to vein mining, with map and tabular exhibit of results of mining; by Amos Bowman. Chapter 18.
History of relative values of gold and silver. Chapter 19.
An abstract of Dr. J. G. Cooper's paper on the discovery of lignites in Amador County and other counties in the foothills of the Sierra Nevada is given on p. 75.

Report of 1875; by R. W. Raymond. Washington, 1877. 519 pp.

Chapter on California; by W. A. Skidmore. pp. 3–131.
Quicksilver in California; by J. B. Randol. pp. 4–21.
Extinct rivers of the auriferous belt of California; by C. J. Brown. pp. 65–68.
Geology of Plumas County, with map; by J. A. Edman. pp. 109–128.
Petroleum in California; by F. A. Clarke. pp. 21–22.

Report of 1880. Statistics of production of the precious metals in the United States for 1880; by H. C. Burchard, Director of U. S. Mint. Washington, 1881. 443 pp.

Contains chapter on California mines, by W. A. Skidmore and Chas. G. Yale; Contributions to California geology, by Melville Attwood; Auriferous gravels, by Chas. G. Yale.

Report of 1881; by H. C. Burchard, Director of U. S. Mint. Washington, 1882. 765 pp.

Contains chapter on California mines, by A. M. Lawver; Milling of gold quartz, by Melville Attwood; Mining machinery in California, by Chas. G. Yale; Gold from sulphurets, by Melville Atwood; Auriferous gravels of California, by John Hays Hammond; Old river-beds of the Sierra Nevada of California, by Jas. J. McGillivray.

Report of 1882; by H. C. Burchard, Director of U. S. Mint. Washington, 1883. 873 pp.

Contains chapter on California mines, by J. R. Hardenburg; Placer gold in California, by Henry G. Hanks.

Report of 1883; by H. C. Burchard, Director of U. S. Mint. Washington, 1884. 858 pp.

Contains chapter on California mines, by J. R. Hardenburg; Condition of mining in California, by W. A. Skidmore; Drift mining in California, by R. L. Dunn.

Report of 1884; by H. C. Burchard, Director of U. S. Mint. Washington, 1885. 644 pp.

Contains a chapter on California mining, by A. M. Lawver; Gold and silver mining in California, past, present, and prospective, by W. A. Skidmore; Forms in which gold occurs in nature, by W. P. Blake.

Reports of 1885, 1886, 1887, 1888; by Jos. P. Kimball, Director of U. S. Mint.

In each of these reports the chapter on California mining is by Israel Lawton.

Reports of 1889, 1890, 1891, 1892; by E. O. Leech, Director of U. S. Mint.

In each of these reports the chapter on California mining is by Chas. G. Yale, except in 1892, when it was by W. H. Dimond.

Reports of 1893, 1894, 1895; by R. E. Preston, Director of U. S. Mint.

In each of these reports the chapter on California mining is by Chas. G. Yale.

UNITED STATES COAST SURVEY.

Report of 1855. Observations on the physical geography and geology of the coast of California from Bodega Bay to San Diego; by W. P. Blake. pp. 376–398. 4 plates.

Part 2. Geology of the principal bays and ports from Point Reyes to San Diego:

1. Punta de los Reyes. The end of the point composed of granite; form of the point; Tertiary strata; etc.

2. San Francisco. Golden Gate; character of the shores; rocks forming the points of the peninsula of San Francisco; sandstone strata uplifted; quarries; probable age; metamorphosed rock; erupted rocks and serpentine alluvial deposits; sand dunes; etc.

3. Monterey. Point Pinos; Cypress Point; San Carlos; Point Pinos of granite; Tertiary strata; fossils and infusoria; rocks of Cypress Point; granite and conglomerate; rock formation of San Carlos Bay; Point Lobos.

4. San Luis Obispo and Santa Barbara. Recent Tertiary strata; mountains, probably of sandstone; resemblance to volcanic rocks.

5. San Pedro and vicinity. Absence of mountain ridges; banks of Tertiary strata; sandstone with sun-cracks; disturbance of the strata; fossils; bitumen.

6. San Diego. Tertiary strata forming rounded hills; Tertiary strata of the slope; fossils; trappean rock.

7. Islands near the coast. Probably composed of sandstone and shale; flexures of the strata of Santa Catalina; etc.

Notice of earthquake waves, etc.; by A. D. Bache. *Idem*, p. 342; also, in Report of 1862, p. 238.

U. S. CENSUS REPORTS.

Report on the physical and agricultural features of the State of California, with a discussion of the present and future of cotton production in the State; also, remarks on cotton culture in New Mexico, Utah, Arizona, and Mexico; by E. W. Hilgard. 10th U. S. Census Report, Vol. VI, part 2, 1884.

A general description of the geology of the State is given on page 8. The outlines of the physical geography of the State, pp. 7, 83.

Report of mineral industries of the United States. 11th U. S. Census Report, 1890.

Contains special reports as follows: Gold and silver, by R. P. Rothwell; Quicksilver, by James B. Randol; Coal, by John H. Jones; Petroleum, by J. D. Weeks; Natural gas, by J. D. Weeks; Asphaltum, by E. W. Parker; Stone, by W. C. Day; Precious stones, by G. F. Kunz; Infusorial earth, by E. W. Parker; Chapter on California mines, by Chas. G. Yale.

U. S. GEOGRAPHICAL AND GEOLOGICAL SURVEYS WEST OF THE 100TH MERIDIAN.

Lieut. GEO. M. WHEELER, U. S. Corps of Engineers, in charge.

Vol. III, Part 1. Report on the geology of portions of Nevada, Utah, California, and Arizona, examined in the years 1871–72; by G. K. Gilbert. Washington, 1875.

Annual report of Lieut. George M. Wheeler, for the fiscal year ending June 30, 1876.

Annual report of Chief of Engineers. 1876. Appendix JJ.

Report on the geology of a portion of Southern California; by Jules Marcou. *Idem*, Appendix H_1, pp. 378–392.

This report contains articles on the Pliocene rocks of Los Angeles; the sierra of Santa Monica; Sierra Madre; Pacoña or Pacoima Cañon; geology of the vicinity of the San Fernando Mission; the San Fernando sierra; asphaltum and mineral oil near San Francisquito Ranch; Sierra Liebre and California desert; Tertiary rocks, Cañada de las Uvas, Fort Tejon, and of California; glacial rocks of Southern California and Pike's Peak; mountain chains and their ages; Coast Range; sierras of San Fernando and Santa Monica; hills of Los Angeles, etc.

Report on the geological and mineralogical character of Southern California and adjacent regions; by Oscar Loew. *Idem*, Appendix H_2, pp. 393–419.

Report on the geology of the mountain ranges from La Veta Pass to the head of the Pecos; by A. R. Conkling. *Idem*, Appendix H_4, pp. 419–422.

Report of 1877. Geological report on the portions of Western Nevada and Eastern California between the parallels 30° 30′ and 38° 30′; by A. R. Conkling. Report of Chief of Engineers, 1877, Appendix H, pp. 1285–1295.

The area examined is bounded on the north by a line drawn through Truckee, Cal., and Washoe City, Nev.; on the east by the Mount Davidson range and the Como Mountains; on the south by Job's Peak and Pyramid Peak; and on the west by the Western summit and the Truckee Rivers. Nearly all this region is covered by granites, with occasional outbursts of basaltic rocks. No fossils were found, except at Carson City, at the State Prison quarries.

U. S. GEOLOGICAL AND GEOGRAPHICAL SURVEYS OF THE TERRITORIES.

F. V. HAYDEN, U. S. Geologist, in charge.

Twelfth Annual Report of the U. S. Geological and Geographical Survey of the Territories. A report of progress of the exploration in Wyoming and Idaho for the year 1878. In two parts. Part I. Washington, 1883.

On page 132, Dr. White describes *Productus giganteus*, Martin, from McCloud River, Shasta County, California.

UNITED STATES GEOLOGICAL SURVEY.

J. W. POWELL, Director.

Report for 1883–84; by Albert Williams.

Contains: Report on coal fields of United States, pp. 14-143; Iron on the Pacific Coast, by C. G. Yale, pp. 286–290; Quicksilver reduction at New Almaden, by S. B. Christy, pp. 503–534; The asphaltum deposits of California, by E. W. Hilgard, pp. 938–948; with reports on other minerals.

Sixth Annual Report, 1884–85. Division of Mesozoic Invertebrates, by Charles A. White. pp. 72–74. 1885.

The author states his conclusions in regard to the Chico and Tejon groups, and the auriferous slate series of California. He gives the name of *Wallala* group to a Cretaceous formation in Mendocino County.

Sixth Annual Report, 1884–85. Administrative report, by George F. Becker. pp. 67–70.

The author discusses the age and time of uplift of the Coast Range formations and the equivalency of different *Aucella*-bearing beds.

Report for 1885; by David T. Day.

Contains: Reports on coal of California, pp. 15–16; Petroleum, pp. 148–152; Iron on the Pacific Coast, by C. G. Yale, pp. 196–199; Quicksilver, pp. 284–296; with reports on other minerals.

Seventh Annual Report, 1885–86. Report on California division of geology, by George F. Becker. pp. 93–97. 1888.

References to the diabase pebbles, etc., at Steamboat Springs, Nev.; the relations of the early and the late Cretaceous of the Coast Ranges; the identity of the older strata of the Coast Ranges with the fossiliferous rocks at the southern end of the gold belt in the Sierra Nevada, and the age and history of the Chico and Tejon series, etc.

Report for 1886; by David T. Day.

Contains: Quicksilver, pp. 160–168; with reports on other minerals.

Report for 1887; by David T. Day.

Contains: Quicksilver, pp. 118–125; with reports on other minerals.

Report for 1888; by David T. Day.

Contains: Iron ores of Rocky Mountain division, by F. F. Chisolm, pp. 35–39; Quicksilver, pp. 97–107; with reports on other minerals.

Eighth Annual Report, 1889. Quaternary history of Mono Valley, California; by Israel C. Russell. pp. 261–394. 24 plates and 5 maps.

—— Geology of Lassen Peak District; by J. S. Diller. pp. 395–432. 7 plates.

This report contains an account of the geologic formations in the Lassen Peak district; auriferous slates series; carboniferous limestone; serpentine; age of the auriferous slate district. Cretaceous—Chico beds, composition, distribution, age of the fossils, upper and lower limits. Miocene—Composition of the Miocene strata, distribution and relations, fossils found in the Miocene strata, hypsographic and climatic conditions during the Miocene. Pliocene—Upheaval of the Piedmont region, structure of the Sierras, etc.

—— Summary of the quicksilver deposits of the Pacific Slope; by George F. Becker. pp. 961–985. 3 plates.

For list of contents, see Monograph XIII.

Report for 1889–90; by David T. Day.

Contains: Quicksilver, pp. 94–109; Petroleum, by Joseph D. Weeks, pp. 287–365; Borax, by Charles G. Yale, pp. 494–506; with reports on other minerals.

Report for 1891; by David T. Day.

Contains: Quicksilver, pp. 117–125; with reports on other minerals.

Report for 1892; by David T. Day.

Contains: Quicksilver ore deposits, by George F. Becker, pp. 139–168; with reports on other minerals.

Report for 1893; by David T. Day.

Contains: Quicksilver, pp. 111–118; with reports on other minerals.

Report for 1894; by David T. Day.

The report forms Parts III and IV of the Sixteenth Annual Report of the Survey.

Fourteenth Annual Report, 1895. The rocks of the Sierra Nevada; by H. W. Turner. Washington, 1895. pp. 441–495. pls. 48–59.

—— The gold-silver veins of Ophir, California; by Waldemar Lindgren. pp. 249–284.

—— Tertiary revolution in the topography of the Pacific Coast; by J. S. Diller. pp. 403–433.

Fifteenth Annual Report, 1893–94.

Sketch of the geology of the San Francisco peninsula; by Andrew C. Lawson. pp. 399–476, pl. v–xii.

Sixteenth Annual Report, 1894–95.

Parts III and IV contain reports on mineral resources. Part IV contains reports on the production of coal in 1894, by F. W. Parker, pp. 1–217; Petroleum, by Joseph D. Weeks, pp. 315–404; Asphaltum, by E. W. Parker, pp. 430–435; Stone, by William C. Day, pp. 436–510; with reports on other minerals.

On the Quaternary and Recent mollusca of the Great Basin, with descriptions of new forms; by R. Ellsworth Call. Introduction is a sketch of the Quaternary lakes of the Great Basin, by G. K. Gilbert. Bulletin No. 11, Vol. 2. Washington, 1885. 56 pp. 6 plates.

On the Mesozoic and Cenozoic palæontology of California; by C. A. White. Bulletin No. 15, Vol. 3. Washington, 1885. 33 pp.

This report contains general remarks on the geology of the coast; the Shasta group; relations of the fauna of the auriferous slates to that of the Shasta group; the geological age of the *Aucella*-bearing strata of California; remarks on certain Californian fossils which have been identified with Eastern species; etc., etc.

Notes on the stratigraphy of California; by George F. Becker. Bulletin No. 19, Vol. 3. Washington, 1885. 28 pp.

This report treats of the metamorphic rocks of the Coast Ranges; the non-conformity between the Knoxville beds and the Chico; identity of the Mariposa and Knoxville beds; relation of the Cascades to the Sierra and the Coast Ranges of California; Mesozoic beds; Palæozoic rocks of California; etc.

On new Cretaceous fossils from California; by C. A. White. Bulletin No. 22, Vol. 3. Washington, 1885. 25 pp. 5 plates.

The following species are described in this bulletin: *Coralliochama*, n.gen; *C. Orcutti; Trochus (Oxystele) euryostomus; Nerita*, sp.?; *Cerithium Pillingi; C. totium; Sanctorum; Solarium Wallalensis.*

Notes on the geology of California; by J. S. Diller. Bulletin No. 33, Vol. 5. Washington, 1886. 23 pp.

This bulletin contains articles on the character and distribution of the Carboniferous limestones; structure of the Sierra Nevada range; age of the faulting of the Sierra Nevada range; age of the auriferous slates; general distribution of the metamorphic, volcanic, and Cretaceous rocks; relations of the Sierra, Coast, and Cascade ranges.

On invertebrate fossils from the Pacific Coast; by Charles A. White. Bulletin No. 51, Vol. 8, 1889, pp. 433–532, pls. 1–14. (Abstract Am. Geologist, Vol. 5, 1890, pp. 109–110.)

This paper contains: 1. New fossil mollusca from the Chico-Tejon series of California; 2. Equivalents of the Chico-Tejon series in Oregon and Washington; 3. Cretaceous fossils from Vancouver Island region; 4. Molluscan fauna of the Puget group; 5. Mesozoic mollusca from the southern coast of the Alaskan peninsula.

The earthquakes in California; by James E. Keeler. Bulletin No. 68. Washington, 1890. 25 pp.

Dictionary of altitudes in the United States (second edition); compiled by Henry Gannett. Bulletin No. 76. Washington, 1891. 393 pp.

A late volcanic eruption in Northern California, and its peculiar lava; by J. S. Diller. Bulletin No. 79. Washington, 1891. 33 pp. 17 plates.

Correlation Papers: Cretaceous; by Charles A. White. Bulletin No. 82. Washington, 1891. 273 pp. 3 plates.

Correlation Papers: Eocene; by W. B. Clark. Bulletin No. 83. Washington, 1891. 173 pp. 2 plates.

Earthquakes in California in 1890–91; by E. S. Holden. Bulletin No. 95. Washington, 1892.

Earthquakes in California in 1892; by C. D. Perrine. Bulletin No. 112. Washington, 1893.

Earthquakes in California in 1893; by C. D. Perrine. Bulletin No. 114. Washington, 1894.

Earthquakes in California in 1894; by C. D. Perrine. Bulletin No. 129. Washington, 1895.

Contributions to the Cretaceous palæontology of the Pacific Coast. The fauna of the Knoxville beds; by Timothy W. Stanton. Bulletin No. 133. Washington, 1895. 85 pp., 20 plates.

This bulletin contains a definition of the Knoxville beds, geographic distribution, local developments in Tehama, Colusa, Lake, and Napa Counties, Mount Diablo, and other localities southward, etc., with descriptions of the following species:

BRACHIOPODA—*Rhynchonella Schucherti*, n.sp.; *R. Whitneyi*, Gabb; *Terebratella Californica*, n.sp.; *Terebratula*, sp.?

MOLLUSCA—*Ostrea*, sp.; *Anomia senescens*, n.sp.; *Spondylus fragilis*, n.sp.; *Lima multilineata*, n.sp.; *Pecten Californicus*, Gabb?; *P. complexicosta*, Gabb; *Avicula* (*Oxytoma*) *Whiteavesi*, n.sp.; *Aucella Piochi*, Gabb; *A. crassicollis*, Keyserl; *Inoceramus ovatus*, n.sp.; *Modiola major*, Gabb; *Myoconcha Americana*, n.sp.; *Pinna*, sp.?; *Arca Tehamaensis*, n.sp; *A. textrina*, n.sp.; *Pectunculus? ovatus*, n.sp.; *Nucula Gabbi*, n.sp.; *N. Storrsi*, n.sp.; *Leda glabra*, n.sp.; *Cardiniopsis*, n.gen; *C. unioides*, n.sp.; *Solemya occidentalis*, n.sp.; *Astarte corrugata*, n.sp.; *A. Californica*, n.sp.; *A. trapezoidalis*, n.sp.; *Opis Californica*, n.sp.; *Lucina ovalis*, n.sp.; *L. Colusaensis*, n.sp.; *Cyprina occidentalis*, Whiteaves; *Solecurtus? dubius*, n.sp.; *Corbula? persulcata*, n.sp.; *C. filosa*, n.sp.; *Dentalium Californicum*, n.sp.; *Helcion granulatus*, n.sp.; *Fissurella bipunctata*, n.sp.; *Pleurotomaria*, sp.?; *Turbo Paskentaensis*, n.sp.; *T. Wilburensis*, n.sp.; *T. trilineatus*, n.sp.; *T. Colusaenis*, n.sp.; *T. Morganensis*, n.sp.; *T.? humerosus*, n.sp.; *Amberleya Dilleri*, n.sp.; *Atresius liratus*, Gabb; *Turritella*, sp.?; *Hypsipleura? occidentalis*, n.sp.; *H. gregaria*, n.sp.;

Cerithium Paskentaensis, n.sp.; *C. strigosum*, n.sp.; *C.*, sp.? *Aporrhais*, sp.; *Phylloceras Knoxvillensis*, n.sp.; *Lytoceras Batesi*, Trask; *Desmoceras Californicum*, n.sp.; *Olcostephanus* (*Simbirskites*) *mutabilis*, n.sp.; *O.* (*Polyptychites*) *trichotomus*, n. sp.; *Hoplites Hyatti*, n.sp.; *H. Storrsi*, n.sp.; *H. angulatus*, n.sp.; *H. crassiplicatus*, n.sp.; *H. Dilleri*, n.sp.; *Perisphinctes*, sp.; *Diptychoceras?*, sp.; *Crioceras latus*, Gabb; *Aptychus? Knoxvillensis*, n.sp.; *Belemnites impressus*, Gabb; *B. Tehamaensis*, n.sp.; *Belemnites*, sp.

Monographs, Vol. XIII. Geology of the quicksilver deposits of the Pacific Slope, with atlas; by George F. Becker. Washington, 1888. xix and 486 pp. 7 plates, with atlas of 14 sheets.

The general heading of the chapters of this work are as follows:

Chapter I. Statistics and history.
II. Notes on foreign occurrence of quicksilver.
III. Sedimentary rocks.
IV. The massive rocks.
V. Structural and historical geology of the quicksilver belt.
Appendix to Chap. V, Remarks on the genus *Aucella*, by C. A. White.
VI. Descriptive geology of the Clear Lake region.
VII. Descriptive geology of Sulphur Bank.
VIII. Descriptive geology of the Knoxville district.
IX. Descriptive geology of the New Idria district.
X. Descriptive geology of the New Almaden district.
XI. Descriptive geology of the Steamboat Springs district.
XII. Descriptive geology of the Oathill, Great Western, and Eastern districts.
XIII. Other deposits of the Pacific Coast.
XIV. Discussion of the ore deposits.
XV. On the solution and precipitation of cinnabar and other ores.
XVI. The origin of the ore.
XVII. Summary of results.

The report contains geological maps of the Oathill, Great Western, and Eastern districts; geological map of the Mayacmas range, with figures of foreign and American species of the genus *Aucella*.

Geological atlas of the United States.

The following atlas sheets of California have been issued:

Jackson, folio 11. Washington, 1894. 4 sheets, with text.
Lassen Peak, folio 15. Washington, 1895. 3 sheets, with text.
Marysville, folio 17. Washington, 1895. 4 sheets, with text.
Smartsville, folio 18. Washington, 1895. 4 sheets, with text.
Placerville, folio 3. Washington, 1894. 4 sheets, with text.
Sacramento sheet. Washington, 1892. 4 sheets, with text.

Statistical Papers: Mineral resources of the United States; by Albert Williams. Report for 1883.

Contains: Iron on the Pacific Coast, p. 148; Quicksilver, pp. 387–398; Clays of the Pacific Coast, p. 475; with reports on borax, coal, copper, iron, lead, nickel, salt, tin, and other minerals.

PART III.

Publications of Scientific Societies, and Periodicals.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Published at Salem, Massachusetts.

Vol. 1, 1849—Vol. 43, 1896.

On the characters and probable geological age of the sandstone formation of San Francisco; by W. P. Blake. Proc. Amer. Assoc. Adv. Sci., 9th Meeting, August, 1855, pp. 220–222.

On the grooving and polishing of hard rocks and minerals by dry sand; by W. P. Blake. Proc. Amer. Assoc. Adv. Sci., 9th Meeting, August, 1855, pp. 216–220.

Remarks upon the geology of California from observations in connection with the U. S. survey and explorations for a railroad route to the Pacific; by W. P. Blake. Proc. Amer. Assoc. Adv. Sci., 9th Meeting, August, 1855, pp. 222–225.

Studies in the formation of mountains in the Sierra Nevada, California; by John Muir. Proc. Amer. Assoc. Adv. Sci., 33d Meeting, at Hartford, 1874, pp. 49–64.

Address by Prof. Joseph LeConte, the retiring president of the Association. Theories of the origin of mountain ranges. Proc. Amer. Assoc. Adv. Sci., 42d Meeting, August, 1893.

Supplementary notes on the metamorphic series of the Shasta region of California; by J. P. Smith. Proc. Amer. Assoc. Adv. Sci., 44th Meeting, August, 1896, pp. 137–138.

AMERICAN JOURNAL OF CONCHOLOGY.

Published at Philadelphia.

Vol. 1, 1865—Vol. 7, 1871.

Observations on certain Eocene fossils described as Cretaceous by Mr. W. M. Gabb in his report published in the Palæontology of California; by T. A. Conrad. Am. Jour. Conch., Vol. 1, 1865, pp. 362–365.

The author remarks that Mr. Gabb makes two divisions of his Cretaceous strata, A and B. The former is, doubtless, Cretaceous; and the latter, I am sure, will prove to be older Eocene. *Fusus Californicus*, Gabb, the author does not recognize as "my ? *Clavatula Californica*." *Volutilithes Navarroensis* belongs to "my genus *Rostellites*." *Fusus Rémondi* is a species of *Perissolax* allied to *P. penita*. *Amauropsis alveata* is a species of *Globularia*. *Fiscus mamillatus* is probably *Sycotypus modestus*, Conrad. *Perissolax* is a genus nearly related to *Sycotypus*. *Chemnitzia Spillmani* is very distinct from any species I described under that name. *Aturia Mathewsoni* is *Atuira zic-zac*. *Dosinia elevata* is *Dosineopsis alta*. *D. Uvasana* is *Dione ovata*, Rogers. *Meekia sella* is probably *Cyprina bisecta*. *M. navis* is a species of *Yoldia*. *Mactra Asburneri* is propbably *M. albaria*, Conrad. *Nucula truncata*—two species are evidently confounded under this name. *Leda protexta ?*—there are two species here united, neither of which is the *protexta*—one Eocene, the other Cretaceous.

A reply to these criticisms of Mr. Conrad is given by Mr. W. M. Gabb in the second volume, pp. 87–92.

Reply to Mr. Conrad's criticism on Mr. Gabb's report on the Palæontology of California; by W. M. Gabb. Am. Jour. Conch., Vol. 2, 1866, pp. 87–92.

Further observations on Mr. Gabb's Palæontology of California; by T. A. Conrad. Am. Jour. Conch., Vol. 2, 1866, pp. 97–100.

The author remarks that *Volutilithes Navarroensis* has the external sculpture and form of a species of *Rostellites* found in New Jersey. *Perissolax*, Gabb, is limited to one species, but it is very different from *Busycon Blakei*, Conrad. *Hemifusus Horni*, *H. Cooperi*, and *H. Rémondi*, Gabb, and *Fusus mamillatus*, Gabb, are members of my proposed genus *Ficopsis*. *Amauropsis alveata*, Gabb, is a member of Lamarck's genus *Ampullina*. *Venericardia Horni*, Gabb, is a very different variety from the *V. planicosta*. *Hamites Vancouverensis* I believe to be an *Ancyloceras*. *Ptycoceras æquicostatus* is more likely to be *Hamites*. *Neptunea curvirostris* I believe to represent an undescribed genus.

The controversy which, for a long time, was maintained between Conrad and Gabb as to the age of the Tejon rocks of California,

referred by Conrad to the Eocene and by Gabb to represent the uppermost member of the Cretaceous (Division B of the California Reports), can be found in the following papers:

Conrad. Am. Jour. of Conchology, Vol. I (1865), pp. 362-5; Vol. II (1866), pp. 97-100; Am. Jour. Sci., Vol. XLIV (1867), pp. 376-7.

Gabb. Am. Jour. of Conchology, Vol. II (1866), pp. 87-92; Am. Jour. Sci., Vol. XLIV (1867), pp. 266-9; Proc. Cal. Acad. Nat. Sciences, Vol. III (1867), pp. 301-306.

Heilprin, in his article on the age of the Tejon rocks, etc., Proc. Acad. Nat. Sci., Phila., 1882, p. 196, remarks, in a footnote, "that Conrad finally yielded his position, but he has been unable to discover the evidence of such a change of opinion in any of that author's writings."

Descriptions of some secondary fossils from the Pacific States; by W. M. Gabb. Amer. Jour. Conch., Vol. 5, 1870, pp. 5–18, pls. 3–7.

Orthoceras Blakei, Gabb; *Ammonites Nevadanus*, Gabb; *A. Colfaxi*, Gabb; *A. Billingsianus*, Gabb?; *Turbo regius*, Gabb?; *T. elevatus*, Gabb; *Pholadomya multilineata*, Gabb; *P. Nevadana*, Gabb; *Goniomya aperta*, Gabb; *Myacites depressus*, Meek; *Cardium arcæformis*, Gabb; *Astarte appressa*, Gabb; *Cardinia ponderosa*, Gabb; *Posidonomya Blatchleyi*, Gabb; *Pinna*, sp.; *Crassianella lingulata*, Gabb; *Lima* (*Plagiostoma*), sp. undt.; *Monotis circularis*, Gabb; *Pecten acutiplicatus*, Meek; *Plicatula perembricata*, Gabb; *Spirifer obtusus*, Gabb.

The author publishes the opinion that all the Jurassic deposits of the Sierra Nevada and their vicinity were probably of Triassic age. (page 5.)

THE AMERICAN NATURALIST.

Published in Philadelphia.

Remarks on fossil shells from the Colorado Desert; by Robert E. C. Stearns. Am. Nat., Vol. 13, No. 3, March, 1879.

The author illustrates *Physa humerosa*, Gould; *Tryonia protea*, and varieties semi-fossil from Colorado Desert, California; *Anodonta Californiensis*, Lea; *Amnicola longinqua*, Gould; *Anondonta*, Owens River, Cal.; *Anodonta*, Bear River, Utah.

Mountain upthrusts; by C. A. White. Am. Nat., Vol. 22, 1888, pp. 399–408.

Notes on the glaciation of Pacific Coast; by G. F. Wright. Am. Nat., Vol. 21, 1887, pp. 250–256.

Mesozoic and Cenozoic realms in North America; by E. D. Cope. Am. Nat., Vol. 21, 1887, pp. 445–462.

Across the Santa Barbara Channel; by J. Walter Fewkes. Am. Nat., Vol. 33, 1889, pp. 211–217, 387–394.

Includes references to some geologic features and history of Santa Cruz Island, and the origin of some sandstone bowlders near Santa Barbara.

INTERNATIONAL CONGRESS OF GEOLOGISTS, AMERICAN COMMITTEE REPORTS, 1888.

On nomenclature of Cenozoic formations; by Joseph LeConte. International Congress of Geologists, American Committee Reports, 1888, pp. 17–18; American Geologist, Vol. 2, 1888, pp. 283–284.

Reference to the nomenclature of the Tertiary and the position of Cenozoic unconformity in California.

THE AMERICAN GEOLOGIST.

Published at Minneapolis, Minn.

Vol. 1, 1888—Vol. 17, 1896.

Flora of coast islands of California, in relation to recent changes of physical geography; by Joseph LeConte. Am. Geol., Vol. 1, 1888, pp. 76–81.

Lavas of Northern California; by J. S. Diller. Am. Geol., Vol. 1, 1888, pp. 125–126. (From Am. Jour. Sci., Jan., 1887, Vol. 33, pp. 45–50.)

Describes beds of volcanic ash in place, inclosing the stumps of more or less decayed trees, the nature, origin, and occurrence of which is discussed at length.

Effects of pressure of a continental glacier; by A. Winchell. Am. Geol., Vol. 1, 1888, pp. 139–143.

The views here enunciated were published in the University *Argonaut*, in March, 1886.

Glacial action on flanks of higher Sierra Nevada. Am. Geol., Vol. 3, 1889, pp. 340–341.

This is an editorial note of the glacial planing on Upper and Lower Sardine Lakes, near Young America Mine.

Notes on the geology and scenery of the islands forming the southern line of the Santa Barbara Channel; by Dr. L. G. Yates. Am. Geol., Vol. 5, 1890, pp. 43–52.

Geology of the Mother Lode gold belt; by H. W. Fairbanks. Am. Geol., Vol. 7, 1891, pp. 209–222.

The pre-Cretaceous age of the metamorphic rocks of the California Coast Range; by H. W. Fairbanks. Am. Geol., Vol. 9, 1892, pp. 153–166.

Notes on a further study of the pre-Cretaceous rocks of the California Coast Ranges; by H. W. Fairbanks. Am. Geol., Vol. 11, 1893, pp. 69–84. plate.

Some recent contributions to the geology of California; by H. W. Turner. Am. Geol., Vol. 11, 1893, pp. 307–324.

Geological notes on the Sierra Nevada, Part 1; by H. W. Turner. Am. Geol., Vol. 13, 1894, pp. 228–249.

Geological notes on the Sierra Nevada, Part 2; by H. W. Turner. Am. Geol., Vol. 13, 1894, pp. 297–316.

Notes on some localities of Mesozoic and Palæozoic, in Shasta County, California; by H. W. Fairbanks. Am. Geol., Vol. 14, 1894, pp. 25–31.

This report contains notes on the Trias of Squaw Creek, the Carboniferous of the McCloud River, and the Devonian of the Sacramento River, near Kennett Station.

Notes on the geology of the Coast Ranges of California; by H. W. Turner and T. W. Stanton. Am. Geol., Vol. 14, 1894, pp. 92–98.

A contribution to the geology of the Coast Ranges; by Andrew C. Lawson. Am. Geol., Vol. 15, 1895, pp. 342–356.

Auriferous gravels of the Sierra Nevada; by H. W. Turner. Am. Geol., Vol. 15, 1895, pp. 371–379.

Notes on the geology of Eastern California; by Harold W. Fairbanks. Am. Geol., Vol. 17, 1896, pp. 63–74.

The mineral deposits of Eastern California; by Harold W. Fairbanks. Am. Geol., Vol. 17, 1896, pp. 144–158.

AMERICAN JOURNAL OF SCIENCE AND ARTS.

Published at New Haven, Conn.

1st series: Vol. 1, 1819—Vol. 50, 1845.
2d series: Vol. 1, 1846—Vol. 50, 1870.
3d series: Vol. 1, 1871—Vol. 50, 1896.

California, elevation of, during the Tertiary epoch; by T. A. Conrad. Am. Jour. Sci., 1st ser., Vol. 35, 1839, p. 245.

In the author's article, "Notes on American Geology," in this journal, the author remarks: "On the coast of California Mr. Nuttall found shells of recent species two hundred feet above the sea. These are so much more remote from the axis of elevation than the Tertiary shell of New York that the uplift of the Rocky Mountains must have been far greater during the upper Tertiary period than was any part of the Atlantic chain."

Fossil shells from the Tertiary deposits on the Columbia River, near Astoria; by T. A. Conrad. Am. Jour. Sci., 2d ser., Vol. 5, 1848, pp. 432–433. 14 woodcuts.

The author describes and figures the following fossils, principally from cement-stone bowlders at Astoria, Oregon: *Nucula devaricata*, n.sp.; *N. cuneiformis*, n.sp.; *N. abrupta*, n.sp.; *Mactra albaria*, n.sp.; *Tellina Oregonensis*, n.sp.; *T. obruta*, n.sp.; *Loripes parilis*, n.sp.; *Cytherea Oregonensis*, n.sp.; *C. vespertina*, n.sp.; *Nucula penita*, n.sp.; *Bullina petrosa*, n.sp.; *Pyrula modesta*, n.sp.; *Fusus Oregonensis*, n.sp.; *Solen curtus*, n.sp.

The following species were collected by the writer at Astoria, and sent to the American Museum at New York. As the list is unpublished, it may be well to include it as a note to Mr. Conrad's paper: *Nucula devaricata*, Con.; *N. impressa*, Con.; *Tellina albaria*, Con.; *Solemya ventricosa*, Con.; *Pecten propatulus*, Con.; *Area devincta*, Con.; *Venus bisecta*, Con.; *Pectunculus nitens*, Con.; *Venus angustifrons*, Con.; *Tellina emacerata*, Con.; *T. arctata*, Con.; *Lucina aculitmeata*, Con.; *Cardita sublenta*, Con.; *Terebratula nitens*, Con.; *Dolium petrosium*, Con.; *Rostellaria indurata*, Con.; *Fusus geniculus; Sigeretus* (*Lunatia*) *scopulosa; Teredo substriatus; A dentalium; Naulitus angulatus*, Con. Besides these there are three or four species of bivalves and four of Gasteropods, undetermined, and one Brachipod. These fossils were collected from the cement stones and argillaceous shales; all belong to one geological period, as the same species are found in each to some extent, though most are different.

Mines of cinnabar in Upper California; by C. S. Lyman. Am. Jour. Sci., 2d ser., Vol. 6, 1848, pp. 270–271.

Gold in California. Amer. Jour. Sci., 2d ser., Vol 7, 1848, pp. 125 and 262.

Notes on Upper California, by James D. Dana, from observations made during the cruise of the U. S. exploring expedition, under Capt. Charles Wilkes, U. S. N. Am. Jour. Sci., 2d ser., Vol. 7, 1848, pp. 247–264.

Observations on California; by Rev. C. S. Lyman. Am. Jour. Sci., 2d ser., 1848, p. 291, also 305 and 307.

Platinum and diamonds in California. Am. Jour. of Sci., 2d ser., Vol. 7, 1848, p. 294.

California gold region; by Rev. C. S. Lyman. Am. Jour. Sci., 2d ser., Vol. 8, 1849, p. 415.

Gold of California; by Rev. C. S. Lyman. Am. Jour. Sci., 2d ser., Vol. 9, 1849, p. 126.

Observations on the Pluton geysers of California; by Forest Shepherd. Am. Jour. Sci., 2d ser., Vol. 12, 1851, pp. 153–158.

On the Diluvial or Quaternary deposits in California; by James Blake. Am. Jour. Sci., 2d ser., Vol. 13, 1852, pp. 385–391.

Notes on the Almaden mine, California; by T. S. Hart. Am. Jour. Sci., 2d ser., Vol. 16, 1853, pp. 137–139.

Infusoria of California. Ehrenberg (Monatsb. d. k. Pr. Akad. Wiss., Berlin, Aug., 1852, p. 528) gives the list published in Am. Jour. Sci., 2d ser., Vol. 16, 1853, p. 134.

On some new localities of fossil Diatomaceæ in California; by J. W. Bailey. Am. Jour. Sci., 2d ser., Vol. 17, 1854, pp. 179–180.

Quicksilver mines of Almaden, California; by W. P. Blake. Am. Jour. Sci., 2d ser., Vol. 17, 1854, pp. 438–440.

Recent earthquake shocks in California. Letter of W. P. Blake, in Am. Jour. Sci., 2d ser., Vol. 17, 1854, p. 151.

Account of some volcanic springs in the Desert of the Colorado, in Southern California; by John L. Le Conte. Am. Jour. Sci., 2d ser., Vol. 18, 1855, pp. 1–6.

Observations on the extent of the gold regions of California and Oregon, with notices of mineral localities in California and some remarkable specimens of crystalline gold; by W. P. Blake. Am. Jour. Sci., 2d ser., Vol. 20, 1855, pp. 72–85.

Earthquakes in California during the year 1856; by Dr. J. B. Trask. Am. Jour. Sci., 2d ser., Vol. 23, 1857, pp. 341–346.

Fossil plants of recent formations; by Leo Lesquereux. Am. Jour. Sci., 2d ser., Vol. 27, 1859, pp. 359–363.

On the direction and velocity of the earthquake, in California, of January 9, 1857; by John B. Trask. Am. Jour. Sci., 2d ser., Vol. 25, 1858, pp. 146–148.

Progress of the Geological Survey of California; by J. D. Whitney. Am. Jour. Sci., 2d ser., Vol. 38, 1864, pp. 256–264.

Notes on the New Almaden quicksilver mines; by B. Silliman, Jr. Am. Jour. Sci., 2d ser., Vol. 38, 1864, pp. 190–194.

Notice of the explorations of the Geological Survey of California, in the Sierra Nevada, during the summer of 1864; by J. D. Whitney. Am. Jour. Sci., 2d ser., Vol. 39, 1865, pp. 10–13.

Petroleum in California; by B. Silliman, Jr. Am. Jour. Sci., 2d ser., Vol. 39, 1865, p. 101, also p. 341.

On the deep placers of the South and Middle Yuba, Nevada County, California, in connection with the Middle Yuba and Eureka Lake Canal Companies; by B. Silliman, Jr. Am. Jour. Sci., 2d ser., Vol. 40, 1865, pp. 1–19.

On the borax in California; by J. D. Whitney. Am. Jour. Sci., 2d ser., Vol. 41, 1866, pp. 255–258.

Alleged discovery of an ancient skull in California; by W. H. B. Am. Jour. Sci., 2d ser., Vol. 42, 1866, p. 424.

On the naphtha and illuminating oil from heavy California tar (maltha); by B. Silliman, Jr. Am. Jour. Sci., 2d ser., Vol. 43, 1867, pp. 242–246.

Note upon the occurrence of fossil remains of the tapir in California; by W. P. Blake. Am. Jour. Sci., 2d ser., Vol. 45, 1868, p. 381.

The remains of a tapir occur in the auriferous gravel of Wood's Creek, near Sonora, Tuolumne County.

Reply to Mr. Gabb on the Cretaceous rocks of California; by T. A. Conrad. Am. Jour. Sci., 2d ser., Vol. 44, 1867, pp. 376–377.

On the subdivisions of the Cretaceous rocks of California; by W. M. Gabb. Am. Jour. Sci., 2d ser., Vol. 44, 1867, pp. 226–229.

On human remains along with those of the mastodon in the drift of California; by Dr. C. F. Winslow. Am. Jour. Sci., 2d ser., Vol. 46, 1868, p. 407.

Notes on the chemical geology of the gold fields of California; by J. Arthur Phillips. (Proc. Roy. Soc., Vol. XVI, p. 294.) Am. Jour. Sci., 2d ser., Vol. 47, 1869, pp. 134–139.

On the supposed absence of northern drift from the Pacific Slope of the Rocky Mountains; by Dr. Robert Brown. Am. Jour. Sci., 2d ser., Vol. 50, 1870, pp. 318–324.

On the discovery of actual glaciers on the mountains of the Pacific Slope; by Clarence King. Am. Jour. Sci., 3d ser., Vol. 1, 1871, pp. 157–167.

Notice of a fossil forest in the Tertiary of California; by O. C. Marsh. Am. Jour. Sci., 3d ser., Vol. 1, 1871, pp. 266–268.

On the Owen's Valley earthquake; by J. W. Whitney. Am. Jour. Sci., 3d ser., Vol. 4, 1872, pp. 316–318. (From the Overland Monthly, August and September numbers, 1872.)

Le Conte, Joseph. Theory of formation of great features of the earth's surface. Am. Jour. Sci., 3d ser., Vol. 4, 1872, pp. 345–460.

—— Note in Vol. 5, 1873, p. 156.

—— Reply to Prof. T. Sterny Hunt. Vol. 5, 1873, p. 448.

On some of the ancient glaciers of the Sierras; by Joseph Le Conte. Am. Jour. Sci., 3d ser., Vol. 5, 1873, pp. 325–342. map.

On the Klamath River mines: remarkable gravel deposits of the Lower Klamath—a sketch of their geology; by A. W. Chase. Am. Jour. Sci., 3d ser., Vol. 6, 1873, pp. 56–59.

On the great lava-flood of the West, and on the structure and age of the Cascade Mountains; by Joseph Le Conte. Am. Jour. Sci., 3d ser., Vol. 7, 1874, pp. 167–180; also pp. 259–267. See also Proc. Cal. Acad. Sci., Vol. 5, 1873, p. 214.

On the auriferous gravel deposits of Gold Bluff; by A. W. Chase. Am. Jour. Sci., 3d ser., Vol. 7, 1874, pp. 379–384.

On the probable existence of microscopic diamonds, with zircons and topaz, in the sands of hydraulic washings in California; by B. Silliman. Am. Jour. Sci., 3d ser., Vol. 5, 1873, pp. 384–385; see also p. 133 of Vol. 6.

On actual glaciers in California; by John Muir. Am. Jour. Sci., 3d ser., Vol. 5, 1873, pp. 69–71. (From the Overland Monthly for December, 1872.)

On mountain sculpture in the Sierra Nevada, and the method of glacial erosion; by E. S. Carr. Am. Jour. Sci., 3d ser., Vol. 7, 1874, pp. 515–516. (From the Overland Monthly for May, 1874.)

Ancient glaciers of Sierra Nevada in Lake Valley; by J. Le Conte. Am. Jour. Sci., 3d ser., Vol. 10, 1875, p. 126. See also Proc. Cal. Acad Sci., Vol. 5, 1873.

On the evidence of horizontal crushing in the formation of the Coast Range of California; by Joseph Le Conte. Am. Jour. Sci., 3d ser., Vol. 11, 1876, pp. 297–304.

Formation of Coast Ranges; by J. Le Conte. Am. Jour. Sci., 3d ser., Vol. 11, 1876, p. 297.

The age of the Tejon group, California; by Dr. J. G. Cooper. Am. Jour. Sci., 3d ser., Vol. 14, 1877, p. 321. (From Proc. Cal. Acad. Sci., Nov. 16, 1874.)

On the structure and origin of mountains, with special reference to recent objections to the contraction theory; by Joseph Le Conte. Read before the National Academy of Science. Am. Jour. Sci., 3d ser., Vol. 16, 1878, pp. 95–112.

Volcanoes about Lake Mono, and their relation to the glacier drifts; by Joseph Le Conte. Am. Jour. Sci., 3d ser., Vol. 18, 1879, pp. 35–44.

The relation of secular rock disintegration to Lœss glacial drift and rock basins; by Raphael Pumpelly. Am. Jour. Sci., 3d ser., Vol. 17, 1879, pp. 138–144.

See note on p. 139, regarding California rocks.

Mono volcanoes, and relation to glacial epoch; by Joseph Le Conte. Am. Jour. Sci., 3d ser., Vol. 18, 1879, p. 79.

The old river-beds of California; by Joseph Le Conte. Am. Jour. Sci., 3d ser., Vol. 19, 1880, pp. 176–190.

Origin of jointed structure in undisturbed clay and marl deposits; by John Le Conte. Am. Jour. Sci., 3d ser., Vol. 23, 1882, pp. 233–234.

The phenomena of metalliferous vein formation now in progress at Sulphur Bank, California; by Joseph Le Conte and W. B. Rising. Am. Jour. Sci., 3d ser., Vol. 24, 1882, pp. 23–33.

The relations of the mineral belts of the Pacific Slope to the great upheavals; by George F. Becker. Am. Jour. Sci., 3d ser., Vol. 28, 1884, pp. 209–212.

The geometrical form of volcanic cones and elastic limit of lava; by George F. Becker. Am. Jour. Sci., 3d ser., Vol. 30, 1885, pp. 283–293.

On mineral vein formation now in progress at Steamboat Springs, compared with some at Sulphur Bank; by Joseph Le Conte. Am. Jour. Sci., 3d ser., Vol. 25, 1883, pp. 424–428.

On the genesis of metalliferous veins; by Joseph Le Conte. Am. Jour. Sci., 3d ser., Vol. 26, 1883, pp. 1–19.

On origin of bitumen; by S. F. Peckham. Am. Jour. Sci., 3d ser., Vol. 28, 1884, pp. 105–117.

Cretaceous metamorphic rocks of California; by George F. Becker. Am. Jour. Sci., 3d ser., Vol. 31, 1886, pp. 348–357.

A Post Tertiary elevation of the Sierra Nevada, shown by the river-beds; by Joseph Le Conte. Am. Jour. Sci., 3d ser., Vol. 32, 1886, pp. 167–181.

Notes on the geology of Northern California; by J. S. Diller. (Abstract of paper from the Proc. Phil. Soc. of Washington.) Am. Jour. Sci., 3d ser., Vol. 33, 1887, pp. 152–153.

The latest volcanic eruption in Northern California, and its peculiar lava; by J. S. Diller. Am. Jour. Sci., 3d ser., Vol. 33, 1887, pp. 45–50.

The texture of massive rocks; by George F. Becker. Am. Jour. Sci., 3d ser., Vol. 33, 1887, pp. 50–58. (Abstract from Popular Science Monthly, Vol. 31, 1887, pp. 425–426.)

Discusses the relation of texture in igneous rocks to the conditions under which they were cooled, etc. The author also restates his conclusions in regard to the disputed age and relations of the Washoe rocks.

The flora of the coast islands of California, in relation to recent changes of physical geography; by Joseph Le Conte. Am. Jour. Sci., 3d ser., Vol. 34, 1887, pp. 457–460. See also, Cal. Acad. Sci. Bull., Vol. 2, 1887, pp. 515–520; Am. Geol., Vol. 1, 1888, pp. 76–81; Nature, Vol. 37, 1887, p. 358.

A discussion of the Post Tertiary physical changes of the coast region of California, as indicated by the flora and fauna of the coast islands.

On the occurrence of Hanksite in California; by Henry G. Hanks. Am. Jour. Sci., 3d ser., Vol. 37, 1889, pp. 63–66.

On the origin of normal faults and the structure of the basin region; by Joseph Le Conte. Am. Jour. Sci., 3d ser., Vol. 38, 1889, pp. 257–263.

Origin and mechanism of faults, especially those of the Great Basin.

Notes on the Cretaceous rocks of Northern California; by J. S. Diller. Am. Jour. Sci., 3d ser., Vol. 40, 1890, pp. 476–478.

The validity of the so-called Wallala beds as a division of the California Cretaceous; by H. W. Fairbanks. Am. Jour. Sci., 3d ser., Vol. 45, 1893, pp. 473–478.

Discovery of Devonian rocks in California; by J. S. Diller and Charles Schuchert. Am. Jour. Sci., 3d ser., Vol. 47, 1894, pp. 416–422.

An auriferous conglomerate of Jurassic age from the Sierra Nevada; by W. Lindgren. Am. Jour. Sci., 3d ser., Vol. 48, 1894, pp. 275–280.

Lower Cambrian rocks in Eastern California; by Chas. D. Walcott. Am. Jour. Sci., 3d ser., Vol. 49, 1895, pp. 141–144.

Some reptilian remains from the Triassic of Northern California; by J. C. Merriam. Am. Jour. Sci., 3d ser., Vol. 50, 1895, pp. 55–57.

The author describes the saurian remains of two individuals from black Triassic limestone of Shasta County under the name of *Shastasaurus pacificus*, n. gen. et sp. nov.

THE AMERICAN MINING GAZETTE.

Published at New York City.

Gold; its discovery and progressive development in the United States. Am. Min. Gazette, Vol 1, 1864, pp. 221–235.

The Mariposa estate. Am. Min. Gazette, Vol. 1, 1864, p. 431.

ANNALS OF THE NEW YORK LYCEUM OF NATURAL HISTORY.

Published at New York City.

1st Series: Vol. 1, 1824—Vol. 11, 1876.

Catalogue of shells collected at Panama, with notes on synonymy, station, and habitat; by C. B. Adams. Ann. N. Y. Lyceum of Nat. Hist., Vol. V, 1852, pp. 229–548. (Also published separately.)

The author gives full notes and descriptions, but no illustrations. Out of nearly 500 species, over 100 were new; but few of them extend to California, though many of the species are found living or fossil farther north.

BULLETINS OF THE GEOLOGICAL SOCIETY OF AMERICA.

Vol. 1, 1890—Vol. 6, 1894.

Orographic movements of the Rocky Mountains; by S. F. Emmons. Bull. Geol. Soc. of America, Vol. 1, pp. 245–286. April 7, 1890.

Sandstone dikes; by J. S. Diller. Bull. Geol. Soc. of America, Vol. 1, pp. 411–442, pls. 6–8. April 21, 1889.

The structure of a portion of the Sierra Nevada of California; by George F. Becker. Bull. Geol. Soc. of America, Vol. 2, pp. 49–74. January 10, 1891.

Antiquities from under Tuolumne Table Mountain in California; by George F. Becker. Bull. Geol. Soc. of America, Vol. 2, pp. 189–200, pl. 7. February 20, 1891.

Notes on the Early Cretaceous of California and Oregon; by George F. Becker. Bull. Geol. Soc. of America, Vol. 2, pp. 201–208. February 20, 1891.

Tertiary and Post Tertiary changes of the Atlantic and Pacific Coasts, with a note on the mutual relations of land elevation and ice accumulation during the Quaternary

period; by Joseph Le Conte. Bull. Geol. Soc. of America, Vol. 2, pp. 323–330. March 16, 1891.

The geology of Mount Diablo, California; by H. W. Turner. With a supplement on the chemistry of the Mount Diablo rocks; by W. H. Melville. Bull. Geol. Soc. of America, Vol. 2, pp. 383–414, pl. 15. March 30, 1891.

Geology of the Taylorville region of California; by J. S. Diller. Bull. Geol. Soc. of America, Vol. 3, pp. 369–394. July 15, 1892.

Jura and Trias at Taylorville, California; by Alpheus Hyatt. Bull. Geol. Soc. of America, Vol. 3, pp. 395–412. July 15, 1892.

Stratigraphy and succession of the rocks of the Sierra Nevada of California; by James E. Mills. Bull. Geol. Soc. of America, Vol. 3, pp. 413–444, pl. 13. August 8, 1892.

Cretaceous and Early Tertiary of Northern California and Oregon; by J. S. Diller. Bull. Geol. Soc. of America, Vol. 4, pp. 205–224, pl. 4. April 14, 1893.

The faunas of the Shasta and Chico formations; by T. W. Stanton. Bull. Geol. Soc. of America, Vol. 4, pp. 245–266. June 8, 1893.

Two Neocene rivers of California; by W. Lindgren. Bull. Geol. Soc. of America, Vol. 4, pp. 257–298, pl. 5–9. June 19, 1893.

Age of the auriferous slates of the Sierra Nevada; by James P. Smith. Bull. Geol. Soc. of America, Vol. 5, pp. 243–258. February 27, 1894.

Trias and Jura in the Western States; by Alpheus Hyatt. Bull. Geol. Soc. of America, Vol. 5, 1894, pp. 395–434.

The author places the relative age of the rocks of California, in different localities, as follows:

Trias—American and Sailor's Cañons.

Lower Jura—Inyo County, Cal.; Taylorville, Cal.

Middle Jura—Taylorville, Cal.

Upper Jura—Taylorville, Cal.; Mariposa Basin, Cal.; Colfax Basin, Cal.

The following new species of fossils are described, but not figured:
From American Cañon: *Monotis semplicata; M. symmetrica.*
From Sailor's Cañon: *Daonella? subjecta; D. böchiformis; D. cardinoides; Hemientolium?* sp.?; *Panopea?* sp.?; *Entolium* sp.?; *Gryphæa* sp.?
Upper Jura fossils of the gold belt slates: *Cardioceras dubium*, Texas Ranch, Calaveras County; *Perisphinctes virgulatiformis*, near Reynolds Ferry; *Perisphinctes* sp.?, the same; *P. filiplex?*, Quenstedt, Tuolumne River, etc.; *P. Colfaxi*, Gabb, one mile west of Colfax; *P. Mühbachi*, El Dorado County; *Olcostephanus Lindgreni*, near Colfax; *Oecotrautes denticulata*, Stanislaus River; *Belemnites Pacificus*, Gabb, Mariposa County, American Cañon; *Avicula* sp.?, Stanislaus River; *Amusium aurarium*, Meek, six miles from Copperopolis; *Aucella Erringtoni*, Meek, var. *arcuata*, Tuolumne River, etc.; *A. elongata*, Stanislaus River; var. *Elongata orbicularis*, *A. aviculæformis*, near Reynolds Ferry; var. *acuta*, six miles from Copperopolis; *A. orbicularis*, Calaveras County.

The Shasta-Chico series; by J. S. Diller and T. W. Stanton. Bull. Geol. Sci. of America, Vol. 5, pp. 435–464. April 12, 1894.

The authors give the following conclusions: That the discovery of *Coralliochama Orcutti*, in the basal portion of the Chico beds, in the Sacramento Valley, demonstrates that the Wallala beds are only a phase of the Chico. The Shasta-Chico series is composed of the Knoxville, Horsetown, and Chico beds, which are each characterized by its own fauna. The fauna of adjacent beds, however, are so bound together by many common species that there is no palæontologic break. The Mariposa and Knoxville beds are faunally distinct and unconformable; the former Jurassic, and the latter Cretaceous.

Geological sketch of Lower California; by S. F. Emmons and G. P. Merrill. Bull. Geol. Soc. of America, Vol. 5, pp. 489–514, pl. 19. April 21, 1894.

Review of our knowledge on the geology of the California coast ranges; by H. W. Fairbanks. Bull. Geol. Soc. of America, Vol. 6, pp. 71–102. December 24, 1894.

Characteristic features of California gold-quartz veins; by W. Lindgren. Bull. Geol. Soc. of America, Vol. 6, pp. 221–240, pl. 11. March 5, 1895.

CALIFORNIA ACADEMY OF SCIENCES.

Published at San Francisco, Cal.

Memoirs: Vol. 1, 1868—Vol. 2, 1895.
Bulletins: Vol. 1, 1884—Vol. 2, 1886–87.
Occasional Papers: Nos. 1–4, 1890–95.
Proceedings, 1st series: Vol. 1, 1854—Vol. 7, 1876.
Proceedings, 2d series: Vol. 1, 1888—Vol. 6, 1896.

The natural system of volcanic rocks; by F. Baron Richthofen. Memoirs Cal. Acad. Sci., Vol. 1, Part 2. San Francisco, 1868. 95 pp.

The following is the classification of volcanic rocks:

Order First: Rhyolite—
- Family 1. Nevadite, or granitic rhyolite.
- 2. Liparite, or porphyritic rhyolite.
- 3. Rhyolite proper, or lithoidic and hyaline rhyolite.

Order Second: Trachyte—
- Family 1. Sanidin trachyte.
- 2. Oligoclase trachyte.

Order Third: Propylite—
- Family 1. Quartzose propylite.
- 2. Hornblendic propylite.
- 3. Augitic propylite.

Order Fourth: Andesite—
- Family 1. Hornblendic andesite.
- 2. Augitic andesite.

Order Fifth: Basalt—
- Family 1. Dolerite.
- 2. Basalt.
- 3. Leucitophyre.

On certain fossils from San Luis Obispo County; by Dr. Antisell. Proc. Cal. Acad. Sci., Vol. 1, 1854–57, pp. 34–35.

Description of *Ammonites Batesi;* by Dr. J. B. Trask. Proc. Cal. Acad. Sci., Vol. 1, 1854–57, p. 39.

Descriptions of fossil shells; by Dr. J. B. Trask. Proc. Cal. Acad. Sci., Vol. 1, 1854–57, pp. 40–42.

Chemnitzia papillosa, n.sp.; *Tornatella elliptica*, n.sp.; *Murex fragilis*, n.sp.; *Fusus Barbarensis*, n.sp.; *F. robustus*, n.sp.; *F. rugosus*, n.sp.

On the cause of tides, earthquakes, rising of continents, etc.; by Dr. C. F. Winslow. Proc. Cal. Acad. Sci., Vol. 1, 1854–57, pp. 48–51.

Remarks on certain geological specimens; by Horace Davis. Proc. Cal. Acad. Sci., Vol. 1, 1854–57, p. 62.

Report on mineral waters from Red Bluff; by Dr. Lanszweert. Proc. Cal. Acad. Sci., Vol. 1, 1854–57, pp. 72–74.

On earthquakes in California from 1812–1857; by Dr. J. B. Trask. Proc. Cal. Acad. Sci., Vol. 1, 1854–57, pp. 85, 102, 109, and 121.

Republished Am. Jour. Sci, 2d ser., Vol. 22, 1856, pp. 110–116.

Description of new species of Ammonite and Baculite; by Dr. J. B. Trask. Proc. Cal. Acad. Sci., Vol. 1, 1854–57, p. 92.

Ammonite Chicoensis, n.sp.; *Baculite Chicoensis*, n.sp.

Description of three new species of the genus Plagiostoma from the Cretaceous rocks of Los Angeles; by Dr. J. B. Trask. Proc. Cal. Acad. Sci., Vol. 1, 1854–57, pp. 93–94, pl. 3.

Plagiostoma Pedroana, n.sp.; *P. annulatus*, n.sp.; *P. truncata*, n.sp.

On the mud volcanoes in the Colorado Desert; by Dr. John A. Veatch. Proc. Cal. Acad. Sci., Vol. 1, 1854–57, pp. 116–120.

Republished Am. Jour Sci., 2d ser., Vol. 26, 1858, p. 288.

The Proceedings of the California Academy of Sciences included in Vol. 1 were originally printed in "The Pacific," a newspaper published in San Francisco. This volume was afterward published by the Academy in two editions.

Earthquakes in California in 1858–59; by Dr. J. B. Trask. Proc. Cal. Acad. Sci., Vol. 2, 1858–62, pp. 38–39.

Description of two new species of bivalved shell from the Tertiaries of Contra Costa County; by A. Rémond. Proc. Cal. Acad. Sci., Vol. 3, 1863–68, p. 13.

Cardium Gabbi, n.sp.; *Ostrea Bourgeoisi*, n.sp.

Description of four new species of Echinodermata from the Tertiaries of Contra Costa County; by A. Rémond. Proc. Cal. Acad. Sci., Vol. 3, 1863, pp. 52–53.

Astrodapsis Whitneyi, n.sp.; *A. tumidus*, n.sp.; *Echinarachnius Brewerianus*, n.sp.; *Clypeaster Gabbi*, n.sp.

Earthquakes in California from 1800–1864; by John B. Trask. Proc. Cal. Acad. Sci., Vol. 3, 1863–68, pp. 130–144.

For articles on same subject, see p. 190; also, p. 239.

Notes on some fossils from the gold-bearing slates of Mariposa, with description of some new species; by W. M. Gabb. Proc. Cal. Acad. Sci., Vol. 3, 1863–68, pp. 172–173.

Lima Erringtoni; Pholadomya orbiculata; Belemnites Pacificus.

Communication on the San Luis Obispo quicksilver fossils; by W. M. Gabb. Proc. Cal. Acad. Sci., Vol. 3, 1863–68, p. 173.

New mineral oil regions in the Tulare Valley; by William P. Blake. Proc. Cal. Acad. Sci., Vol. 3, 1863–68, p. 193.

Notice of a human skull recently taken from a shaft near Angels, Calaveras County; by J. D. Whitney. Proc. Cal. Acad. Sci., Vol. 3, 1863–68, pp. 277–279.

See also "The Pacific," Vol. XVIII, No. 48; Congregationalist, September 27, 1876, and Rev. des Deux Mondes, Vol. XII, 3d ser., p. 288.

Miscellaneous notices; by William P. Blake. Proc. Cal. Acad. Sci., Vol. 3, 1863–68, pp. 289–291.

1. New locality of fossils, in the gold-bearing rocks of California.
2. Tooth of the extinct elephant, Placer County.
3. Shark teeth and other remains, Tulare County.
4. Quarry of gold-bearing rocks.

This volume contains also other short notices on fossils from Mare Island, Oregon Bar, Mariposa, etc., with mineralogical notices.

On the subdivisions of the Cretaceous formation in California; by W. M. Gabb. Proc. Cal. Acad. Sci., Vol. 3, 1863–68, pp. 301–306.

On the fresh-water infusorial deposits of the Pacific Coast, and their connection with the volcanic rocks; by J. D. Whitney. Proc. Cal. Acad. Sci., Vol. 3, 1863–68, pp. 319–324.

Notice of new localities of diamonds in California; by B. Silliman. Proc. Cal. Acad. Sci., Vol. 3, 1863–68, pp. 354–357.

Earthquakes on Kern River, in the central portion of the Sierra Nevada; by J. E. Clayton. Proc. Cal. Acad. Sci., Vol. 4, 1868–72, pp. 38–40.

Remarks on the first discoverer of glaciers in the United States; by George Davidson. Proc. Cal. Acad. Sci., Vol. 4, 1868–1872, p. 162.

Remarks on surface geology as affected by upheavals; by George Davidson. Proc. Cal. Acad. Sci., Vol. 4, 1868–72, p. 179.

On the coast surface and scenic geology; by Amos Bowman. Proc. Cal. Acad. Sci., Vol. 4, 1868–72, pp. 244–245, with plates.

On some of the ancient glaciers of the Sierras; by Joseph Le Conte. Proc. Cal. Acad. Sci., Vol. 4, 1868–72, pp. 259–262.

Remarks on recent earthquake waves; by George Davidson. Proc. Cal. Acad. Sci., Vol. 4, 1868–72, p. 268.

Notes on the geology of the coast of Oregon; by W. A. Goodyear. Proc. Cal. Acad. Sci., Vol. 4, 1868–72, pp. 295–298.

Remarks on the auriferous gravel deposits in Placer County; by J. M. Wiley. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 14–16.

The abrasions of the continental shores of Northwest America, and the supposed ancient sea-levels; by George Davidson. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 90–96.

On the artesian wells of Los Angeles County; by A. W. Chase. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 104–107.

On the auriferous gravel deposits of California; by George Davidson. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 145–146.

Notes on the high Sierra south of Mount Whitney; by W. A. Goodyear. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 180–183.

On the great lava flood of the Northwest, and on the structure and age of the Cascade Mountains; by Joseph Le Conte. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 214–220.

On the auriferous sands of Gold Bluff; by Mr. Chase. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 246–247, with illustrations.

Notes on some Tertiary fossils from the California coast, with a list of the species obtained from a well at San Diego, California, with a description of two new species; by W. H. Dall. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 296–299.

The new species described are: *Chrysodomus Diegoensis, Waldheimia Kennedyi.*

Remarks on California coal; by Dr. J. G. Cooper. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 384–386.

California during the Pliocene epoch; by Dr. J. G. Cooper. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 389–392.

California in the Miocene epoch; by Dr. J. G. Cooper. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 401–404.

The Eocene epoch in California: Are there really no Eocene strata? by Dr. J. G. Cooper. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, pp. 419–421.

Note on the Tertiary formation of California; by Dr. J. G. Cooper. Proc. Cal. Acad. Sci., Vol. 5, 1873–74, p. 422.

Cinder cone age of eruption; by H. A. Harkness. Proc. Cal. Acad. Sci., Vol. 5, 1874, p. 408.

On some of the ancient glaciers of the Sierra; by Joseph Le Conte. Proc. Cal. Acad. Sci., Vol. 6, 1875, pp. 38–48, with plate.

The glacial period, its origin and development; by J. E. Clayton. Proc. Cal. Acad. Sci., Vol. 6, 1875, pp. 123–131.

On the result of the glacial action at the head of Johnson's Pass in the Sierras; by James Blake. Proc. Cal. Acad. Sci., Vol. 6, 1875, pp. 170–175.

There were no geological reports in Vol. 7 of the Proceedings of the California Academy of Sciences, published in 1876.

West Coast Pulmonata: fossil and living; by Dr. J. G. Cooper. Proc. Cal. Acad. Sci., 2d ser., Vol. 1, 1888, pp. 11–24. (Continued from Bulletin No. 8, p. 514.)

Notes on the geology of Baja California, Mexico; by W. Lindgren, U. S. Geological Survey. Proc. Cal. Acad. Sci., 2d ser., Vol. 1, 1888, pp. 173–196, with 5 plates.

Description of Pleistocene, Tertiary, Cretaceous, Eruptive, basal granites, and structural features. The author gives a geological profile from San Diego to the Colorado Desert, pl. III.

There were no geological reports in Vol. 2, second series, of the Proceedings of the California Academy of Sciences, published in 1889.

An illustration of the flexure of rock; by George H. Ashley. Proc. Cal. Acad. Sci., 2d ser., Vol. 3, 1890–92, pp. 319–324.

Geological surveys in the State of California; by Anthony W. Vogdes. Proc. Cal. Acad. Sci., 2d ser., Vol. 3, 1890–92, pp. 325–337.

On the discovery of *Proetus ellipticus*, Meek, in the Carboniferous limestone of Shasta County; by A. W. Vogdes. Proc. Cal. Acad. Sci., 2d ser., Vol. 3, 1890–92, p. 376.

On some Pliocene fresh-water fossils of California; by Dr. J. G. Cooper. Proc. Cal. Acad. Sci., 2d ser., Vol. 4, 1894, pp. 166–172, Pl. XIV.

Margaritana subangulata, n.sp.

The Neocene stratigraphy of the Santa Cruz Mountains of California; by George H. Ashley. Proc. Cal. Acad. Sci., 2d ser., Vol. 5, 1895, pp. 273–365, Pls. XXII–XXV.

On fossil and sub-fossil land shells of the United States, with notes on living species; by Dr. J. G. Cooper. Bull. Cal. Acad. Sci., No. 4, 1886, p. 235; No. 7, 1887, p. 355; No. 8, 1887, p. 497.

The Washoe rocks; by George F. Becker. Bull. Cal. Acad. Sci., No. 6, 1887, pp. 93–120.

See also American Naturalist, Vol. 22, 1888, pp. 639–640.

FOREIGN SOCIETIES.

Origin of continents; by W. O. Crosby. Geol. Mag., Vol. 10, June, 1883, pp. 241–252.

Lower Californian eruptive rocks; by E. Ritter. Arch. des Sci., Vol. 33, 1895, p. 330.

Die Californischen Bacillarien-Gebirge; by J. D. Whitney. Monatsber. K. preuss. Akad. Wiss., Berlin, 1872, pp. 124–139.

Zwei profile durch die Sierra Nevada; von E. Reger. Neues jahrbuch IV, Beilage Band 1886, pp. 291–326, plates XVII, with 24 illustrations.

Ueber die wachsende kenntniss des unsichtbaren Lebens als felsbildende Bacillarien in Californien; von Ehrenberg. Berlin Akad. Abhandl., 1870, pp. 126–132; Berlin Monatsber. Akad., 1870, pp. 259–264.

On the gold regions of California; by J. S. Wilson. Jour. Geol. Soc. of London, Vol. 10, 1854, pp. 308–321.

The author gives a geological sketch-map of part of Upper California, comprising the southern mines; section across Upper California from the Pacific to the Sierra Nevada, length 70 miles; Fig. 3, section of auriferous detritus at Sullivan's Gulch; Fig. 4, section of quartz vein in Carson's Hill; Fig. 5, section at Murphy's Deep Diggings.

A contribution to the history of mineral veins; by J. Arthur Phillips. Jour. Geol. Soc. of London, Vol. 35, 1879, pp. 390–396.

On the hot springs of California.

Geologie—Observations sur les gesements aurifères de la Californie; par M. L. Simonin. Comptes Rendus de l'Académie des Sciences, 20 Février, 1860. t. 50, p. 389. Paris.

Sur l'action des anciens glaciers dans la Sierra Nevada de Californie et sur l'origine de la vallée de Yo Semite; par W. P. Blake. Comptes Rendus, Paris, 22 July, 1867. 3 pp.

On the geographical distribution and physical characteristics of the coal fields of the North Pacific Coast; by Robert Brown. Trans. Edinburgh Geol. Soc., 1868–69. 23 pp.

Contains Tertiary coals of the North Pacific: 1. Monte Diablo, California; 2. Coos Bay, Oregon; with analysis of native and imported coals.

Note sur le géologie de la Californie; par Jules Marcou. Bull. Soc. Geol. of France, 1883, pp. 407–435; with geological map of California.

Catalogue of recorded earthquakes from 1606 B. C. to A. D. 1850; by Robert Mallet. Report British Assoc. Adv. Sci., 1854.

Report on the present state of our knowledge with regard to the mollusca of the west coast of North America; by Philip P. Carpenter. Report British Assoc. Adv. of Science, 1856, pp. 159–368.

Supplementary report on the present state of our knowledge with regard to the mollusca of the west coast of North America; by Philip P. Carpenter. Report British Assoc. Adv. of Science, 1864, pp. 517–686.

See also Smithsonian Miscellaneous Collections No. 252. Washington, 1872.

Untersuchungen in Californien; von Jules Marcou. Verhandl. d. K. K. Geol. Reichsanstalt, 1875, pp. 215–216, No. 12.

Sur le gisement de l'or en Californie; par Jules Marcou. Bibliothèque Universalle de Genève, Février, 1854. Genève.

Mikroskopische beobachtungen an Californischen gesteinen; von M. Schuster. Neues Jahrb. 1887, V. Beil. Bd. ss. 451–578, tafel 17–20. (Abstract from American Naturalist, Vol. 22, 1887, p. 452.)

Detailed description of the micro-petrography of eighty rock specimens from the Sierra Nevada, and a discussion of the mineralogic constituents.

Mittheilungen über die Geologie Californiens; von Jules Marcou. Neues Jahrbuch für Mineralogie, Geologie, und Palæontologie, Jahrgang 1883, Bd. II, pp. 52–58.

Beitrag zur Kenntniss der geognostischen Beschaffenheit Californiens; von Dr. G. Grewingk. Verhandlungen der Russisch-Kaiserlichen Mineralogischen-Gesellschaft. zu St. Petersburg. Jahr. 1847, pp. 142–162.

FRANKLIN INSTITUTE JOURNAL AND AMERICAN MECHANICS' MAGAZINE.

Published at Philadelphia.

Experiments on various coals of the Carboniferous and Cretaceous periods, to ascertain their relative potential and economic vaporizations; made by Chief Engineer B. F. Isherwood, U. S. Navy, at the Mare Island Navy Yard, California, in 1871. Journal of Franklin Institute, Vol. 27, 3d ser., No. 6, June, 1872, pp. 392–402.

See Report U. S. Navy Department. House Doc. 42d Cong., 2d session, Ex. Doc. 206, 1872.

HUTCHINGS'S ILLUSTRATED CALIFORNIA MAGAZINE.

A mammoth tusk. Hutchings's Illustrated California Magazine, Vol. 2, 1857–58, pp. 15–16.

HUNT'S MERCHANTS' MAGAZINE.

A history of the discovery of gold in California; by Geo. M. Evans. Hunt's Merchants' Magazine, Vol. 31, p. 385.

JOURNAL OF GEOLOGY.

Published at Chicago, Ill.

Vol. 1, 1893—Vol. 3, 1895.

Revolution in the topography of the Pacific Coast since the Auriferous period; by J. S. Diller. Jour. Geol., Vol. 2, 1894, pp. 32–54.

The Arkansas coal measures in their relation to the Pacific Carboniferous province; by James Perrin Smith. Jour. Geol., Vol. 2, No. 2, February–March, 1894.

The author refers to the Pacific Carboniferous sea under the following headings: Revolution in Devonian time; the Carboniferous sea; Upper Carboniferous in the West; the Pawhuski limestone; interchange of life between East and West; replacement of limestone by the coal-bearing formation in Western Europe; land areas in the West; the Permian Pacific Ocean; Triassic Pacific Ocean.

The Metamorphic Series of Shasta County, California; by James Perrin Smith. Jour. Geol., Vol. 2, No. 6, September–October, 1894.

The author, under "Stratigraphy," gives the following general heading to his article:

Columnar section of the metamorphic series: *Sacramento formation*—Kennett limestones and shales. *McCloud formation*—occurrence and character. *Baird shales*—distribution and fossils; affinities of the fauna. *McCloud limestone*—occurrence and character; fauna of the McCloud limestone. *Pitt formation*—general character of the rocks; the Carboniferous argillites; the Triassic shales and conglomerates. *Cedar formation*—distribution and character; Swearinger slates; Hosselkus limestone; Atractites beds; Spiriferina beds; etc. *Bend formation*—Jura-Trias uncomformity.

Mesozoic changes in the faunal geography of California; by J. P. Smith. Jour. Geol., Vol. 3, No. 4, 1895, pp. 369–384.

The age and succession of the igneous rocks of the Sierra Nevada; by W. H. Turner. Jour. Geol., Vol. 3, No. 4, 1895, pp. 385–414.

The stratigraphy of the California coast ranges; by H. W. Fairbanks. Jour. Geol., Vol. 3, No. 4, 1895, pp. 415–433.

Studies in the Miocene of California; by Geo. H. Ashley. Jour. Geol., Vol. 3, No. 4, 1895, pp. 434–454.

THE MINING MAGAZINE.

Published at New York.

Geology of the Sierra Nevada, or California, range; by Prof. John B. Trask. Mining Mag., Vol. 1, 1853, pp. 6–23.

Mineral districts of Central California; by Prof. John B. Trask. Mining Mag., Vol. 3, 1854, pp. 121–136; continued on pp. 239–250.

Geology of the gold region of California; by Mr. Wilson. Mining Mag., Vol. 3, 1854, pp. 63–64.

Observations on the extent of the gold region of California and Oregon; by William P. Blake. Mining Mag., Vol. 5, 1855, pp. 32–45.

MINING AND SCIENTIFIC PRESS.

Published at San Francisco.

Earthquakes in San Francisco, and specially on their direction; by J. A. Veatch. Mining and Scientific Press, March 31, 1868.

Cinnabar at Point Reyes. Mining and Scientific Press, February 27, 1875.

See also Vol. 27, 1873, p. 166; Vol. 29, Aug. 15, 1874; Vol. 31, 1875, p. 118, for articles and references to the Cinnabar of California.

NATURE.

Prairie mounds of California and Oregon; by Joseph Le Conte. Nature, Vol. 15, 1877, p. 530.

NEW YORK ACADEMY OF SCIENCES.

Silicified wood from California; by James J. Friedrich. Trans. New York Acad. Sci., Vol. 8, 1889, pp. 29–30.

Includes reference to the relations and age of the associated deposits in Lake and Napa Counties.

OVERLAND MONTHLY.

Published at San Francisco, Cal.

On actual glaciers in California; by John Muir. Overland Monthly, December, 1872.

On the earthquake of March 26, 1872; by J. D. Whitney. Overland Monthly, Vol. 9, 1872.

On mountain sculpture in the Sierra Nevada, and the method of glacial erosion; by E. S. Carr. Overland Monthly, May, 1874.

PHARMACEUTICAL JOURNAL.

Report on the geology of the Sierra Nevada, or Californian, range; by John B. Trask. Pharmaceutical Journal, Vol. 14, 1855, pp. 20–24.

PHILOSOPHICAL SOCIETY OF WASHINGTON.

Bulletins: 1880–1895.

Notes on the faults of the Great Basin and of the eastern base of the Sierra Nevada; by J. C. Russell. Washington Philos. Soc. Bull., Vol. 9, 1887, pp. 5–6.

See also Neuer Jahrb., Band 2, 1887, pp. 317–318.

Notes on the geology of Northern California; by J. S. Diller. Washington Philos. Soc. Bull., Vol. 9, 1887, pp. 4–5; additional note on p. 8.

See Am. Jour. Sci. and Arts, 3d ser., Vol. 33, 1887, pp. 152–153; Am. Geologist, Vol. 1, 1888, pp. 125–126; and Popular Sci. Monthly, Vol. 32, 1888, p. 419.

This paper is an abstract of Bull. U. S. Geol. Sur., No. 33.

Stages of geologic history of Sierra Nevada; by G. K. Gilbert. Washington Philos. Soc. Bull., Vol. 9, 1887, p. 7.

Remarks following paper, by J. S. Diller, on geology of Northern California.

NEWPORT NATURAL HISTORY SOCIETY.

A sketch of the geological development of the Pacific Slope; by Geo. F. Becker. Proceedings Newport Natural History Society, 1886–87, Document 5. Newport, 1887. pp. 1–12.

PHILADELPHIA ACADEMY OF NATURAL SCIENCES.

Journal, 1st series: Vol. 1, 1817—Vol. 8, 1842.
Journal, 2d series: Vol. 1, 1847—Vol. 10, 1895.
Proceedings, 1st series: Vol. 1, 1841—Vol. 8, 1856.
Proceedings, 2d series: Vol. 1, 1857—Vol. 14, 1870.
Proceedings, 3d series: Vol. 1, 1871—Vol. 24, 1894.

Descriptions of new marine shells from Upper California, collected by Thomas Nuttall, Esq.; by T. A. Conrad. Journal Phila. Acad. Nat. Sci., 1st ser., Vol. 7, 1837, pp. 227–268, pl. 17–20.

Several of the species appear in the Tertiary formation of California. A list can be found in Dr. Cooper's catalogues.

Notes on the Miocene and Post Pliocene deposits of California, with descriptions of two new fossil corals; by T. A. Conrad. Proc. Phila. Acad. Nat. Sci., Vol. 7, 1855, p. 441.

Ostrea Titan; Pandora bilirata; Cardita occidentalis; Diadora cruciburiformis.

These fossils were afterward described and figured in Pacific Railroad Reports, Vol. VI, 1857.

Descriptions of three new genera and twenty-three new species of Middle Tertiary fossils from California and one from Texas; by T. A. Conrad. Proc. Phila. Acad. Nat. Sci., Vol. 8, 1856, pp. 312–316.

Schizopyga Californiana; Cryptomya ovalis; Thracia mactropsis; Mya Montereyana; M. subsinuata; Arcopagia medialis; Tapes lineatumo; Arca canalis; A. trileneata; A. congesta; Axinœa Barbarensis; Mulinia densata; Dosinia longula; D. alta; Pecten Pabloensis; Pallium Estrellanum; Janira bella.

These fossils were afterward described and figured in Pacific Railroad Reports, Vol. VI, 1857, pp. 69–73.

Descriptions of new Cretaceous fossils collected by the Northwestern Boundary Commission on Vancouver's and Sucia Islands; by F. B. Meek. Proc. Phila. Acad. Nat. Sci., 2d ser., Vol. 5, 1861, pp. 314–318.

See also Bull. U. S. Geol. Sur. of the Territories, Vol. 2, 1876.

Descriptions of new species of American Tertiary fossils and a new Carboniferous Cephalopod from Texas; by W. M. Gabb. Proc. Phila. Acad. Nat. Sci., 1861, pp. 367–372.

The following California species are described in this paper:
Turbonilla aspera, n.sp., Miocene, from Santa Barbara.
Modelia striata, n.sp., Miocene, from Santa Barbara.
Sphenia bilirata, n.sp., Miocene, from Santa Barbara.
Venus rhysomia, n.sp., Miocene, from Santa Barbara.
Cardita monilicosta, n.sp., Miocene, from Santa Barbara.
Morrissia Horni, n.sp., Miocene, from Santa Barbara.

Indication of an Elotherium in California; by Joseph Leidy. Proc. Phila. Acad. Nat. Sci., 1868, p. 177.

Elotherium superbus, n.sp., from Calaveras County.

On mastodon remains; by Joseph Leidy. Proc. Phila. Acad. Nat. Sci., 1870, pp. 96–97.

On a mastodon discovered in Contra Costa, California.

Vertebrate fossils from auriferous gravels; by Joseph Leidy. Proc. Phila. Acad. Nat. Sci., 1870, p. 125.

On an extinct whale from California; by E. D. Cope. Proc. Phila. Acad. Nat. Sci., 1871, pp. 29–30.

Remarks on extinct mammals from California; by Joseph Leidy. Proc. Phila. Acad. Nat. Sci., 1872, p. 259.

Extract of a letter relating to mammalian fossils in California; by Dr. L. G. Yates. Proc. Phila. Acad. Nat. Sci., 1874, pp. 18–21.

This paper gives a list of localities—fossil elephas, and fossil mastodon.

The blue gravel of California; by E. Goldsmith. Proc. Phila. Acad. Nat. Sci., 1874, pp. 73–74.

Descriptions of new fossil shells from the Tertiary of California; by R. E. C. Stearns. Proc. Phila. Acad. Nat. Sci., 1875, pp. 463–464, pl. 27.

Opalia varicostata, n.sp.; *O. anomala*, n.sp.

Note on a Cerripede of the California Miocene, with remarks on fossil shell; by R. E. C. Stearns. Proc. Phila. Acad. Nat. Sci., 1876, pp. 273–275.

The author refers *Tamiosma gregaria*, Conrad, to the genus *Balanus*.

On the occurrence of Ammonites in deposits of the Tertiary age; by A. Heilprin. Proc. Phila. Acad. Nat. Sci., 1882, p. 94.

On the age of the Tejon rocks of California and the occurrence of Ammonitic remains in Tertiary deposits; by A. Heilprin. Proc. Phila. Acad. Nat. Sci., Vol. 34, 1882, pp. 196–214.

The author remarks (p. 213) that the rocks of the Tejon group (Cretaceous, Div. B, of the California Survey), despite their comprising, in their contained faunas, a limited number of forms from the subjacent (Cretaceous) deposits, and a few undoubted representatives of the *Ammonitidæ*, are of Tertiary (Eocene) age.

The Eocene age of the Tejon rocks is also maintained by Prof. Jules Marcou, who made a personal examination of the region. (Rept. Chief Engineers, 1876, p. 387.)

On supposed Tertiary Ammonites; by J. S. Newberry. Proc. Phila. Acad. Nat. Sci., 1882, pp. 194–195.

Age of Tejon rocks of California and the occurrence of Ammonitic remains in Tertiary deposits; by A. Heilprin. Proc. Phila. Acad. Sci., 1890, pp. 445–489.

Extinct mammalian fauna of Dakota and Nebraska, including an account of some allied forms from other localities; by J. Leidy. Jour. Phila. Acad. Nat. Sci., Vol. 7, 1869.

PUBLICATIONS OF U. S. NATIONAL MUSEUM.

Post Pliocene fossils in the Coast Range of California; by W. H. Dall. Proc. U. S. Natl. Mus., Vol. 1, 1878, p. 3.

Specimens of *Donax Californicus*, *Chione succincta*, *Olivella biplicata*, and *Certhidea sacrata* in a semi-fossilized condition from San Luis Rey, Cal.

Fossil mollusca from later Tertiary of California; by W. H. Dall. Proc. U. S. Natl. Mus., Vol. 1, 1878, pp. 10–16.

The author gives a table of one hundred and seven species, ten of which are extinct and ninety-seven still found recent, with a description of the following new species: *Axinea profunda, Pecten expansus, P. Stearnsi, P. Hemphilli, Anomia limatula, Socalaria Hemphilli.*

Distribution of Californian Tertiary fossils; by W. H. Dall. Proc. U. S. Natl. Mus., Vol. 1, 1878, pp. 26–30.

The author notes those of the strata of the San Diego Peninsula and those of the mainland, near the town of San Diego, etc.

Jurassic or Cretaceous beds appear to exist at Todos Santos Bay, Lower California, not far from San Diego.

Note on the occurrence of *Productus giganteus* in California; by C. A. White. Proc. U. S. Natl. Mus., Vol. 3, 1880, pp. 46–47, pl. 1.

From the Carboniferous of McCloud River, Shasta County, California.

Directions for collecting and preparing fossils; by Charles Schuchert. Bull. U. S. Natl. Mus., No. 39. Washington, 1895.

Contains California localities of fossils.

SANTA BARBARA SOCIETY OF NATURAL HISTORY.

Infusorial earth at Santa Barbara, California; by W. W. Finch. Santa Barbara Soc. Nat. Hist., Bull. No. 1, 1887, pp. 8–11.

ST. LOUIS ACADEMY OF SCIENCES.

Descriptions of new fossils from the Tertiary formation of Oregon and Washington Territories, and the Cretaceous of Vancouver's Island, collected by Dr. John Evans, U. S. Geologist, under instructions from the Department of the

Interior; by B. F. Shumard. Trans. St. Louis Acad. Sci., Vol. 1, 1858, pp. 120–125.

These fossils were obtained from Port Orford, Willamette Valley, Coos Bay, and Vancouver's Island. The following are described but not figured: *Lucina fibrosa*, n.sp.; *Corbula Evansana*, n.sp.; *Leda Willamettensis*, n.sp.; *L. Oregona*, n.sp.; *Pecten Coosensis*, n.sp.; *Venus securis*, n.sp. From the Cretaceous of Vancouver's Island: *Inoceramus Vancouverensis*, n.sp.; *Pinna calamitoides*, n.sp.; and *Pyrula glabra*, n.sp.

SCIENCE.

Sierra structure; by G. K. Gilbert. Science, March 23, 1883, p. 195.

Coal in the Chico group of California; by J. S. Diller. Science, Vol. 5, 1885, p. 43.

This announcement shows that the Chico group, like its equivalent, the Nanaimo group, is a coal-bearing bed.

The author states that a number of fossils were collected from the coal-bearing strata in Northern California, eight miles northeast of Yreka, on the road to Linkville, Oregon. He does not give a list, which is given in Dr. White's report on the Chico group.

The latest volcanic eruption in the United States; by C. E. Dutton. Science, Vol. 6, 1885, p. 46.

Agriculture and late Quaternary geology; by E. W. Hilgard. Science, Vol. 11, 1888, pp. 241–242.

Descriptions of evidence of an ancient drainage system in the Upper San Joaquin Valley, California.

North American Mesozoic; by Charles A. White. Science, Vol. 14, 1889, pp. 160–166.

Correlations of Tejon deposits with Atlantic stages of the Gulf slope; by G. D. Harris. Science, Vol. 22, 1893, p. 97.

Petroleum in Southern California; by S. F. Peckham. Science, Vol. 23, 1894, pp. 74–78.

SCHOOL OF MINES QUARTERLY.

The genesis and distribution of gold; by J. S. Newberry. School of Mines Quarterly, Nov., 1881.

Notes on the dry lakes of Southern Nevada and California, with relation to the Lœss; by Walter P. Jenney. School of Mines Quarterly, Vol. 10, 1889, pp. 316–318.

Description of the lakes, their deposits and history.

WEST AMERICAN SCIENTIST.

Published at San Diego, Cal.

(C. R. Orcutt, Editor.)

New Cretaceous fossils. West American Scientist, Vol. 3, pp. 28–31.

Trochus (*Oxystele*) *euryostomus*, White; *Cerithium Pillingsi*, White; *C. totium sanctorum*, White; *Solarium Wallalensis*, White; *Nerita Californiensis*, White.

All these fossils were described in U. S. Geol. Sur. Bull. No. 22, 1885, except *Nerita Californiensis.*

Minerals and mines of San Diego; by C. R. Orcutt. West American Scientist, Vol. 3, p. 69.

Gypsum on the coast of Lower California; by M. Lopateck. West American Scientist, Vol. 3, p. 117.

Fossil botany; by Dr. L. G. Yates. West American Scientist, Vol. 3, p. 180.

Fossil botany, No. 2; by Dr. L. G. Yates. West American Scientist, Vol. 3, p. 201.

Fossil botany, No. 3; by Dr. L. G. Yates. West American Scientist, Vol. 3, p. 213.

Fossil botany, No. 4; by Dr. L. G. Yates. West American Scientist, Vol. 4, p. 20.

Fossil botany, No. 5; by Dr. L. G. Yates. West American Scientist, Vol. 5, p. 39.

Fossil ferns; by O. D. Walbridge. West American Scientist, Vol. 3, p. 217.

A study of river geology; by W. R. Lighton. West American Scientist, Vol. 4, p. 24.

The gold fields of Lower California; by C. R. Orcutt. West American Scientist, Vol. 6, p. 4.

Some notes on Tertiary fossils of California; by C. R. Orcutt. West American Scientist, Vol. 6, p. 70.

Gives list of fossils at Pacific Beach, San Diego.

Some notes on Tertiary fossils of California; by C. R. Orcutt. West American Scientist, Vol. 6, p. 84.

List of fossils in a San Diego well.

The California geysers; by Joseph Keep. West American Scientist, Vol. 6, p. 99.

TRANSACTIONS ALBANY INSTITUTE.

Description of new organic remains from the Cretaceous rocks of Vancouver's Island; by F. B. Meek. Trans. Albany Inst., Vol. 4, 1857, pp. 37–49. See also Bull. U. S. Geol. Sur., Vol. 2, No. 4, 1876.

Gabb, in the Palæontology of California, refers to the following species in this article: *Pholadomya subelongata*, Meek; *Ammonites (Scaphites?) ramosus*, Meek; *A. Newberryanus*, Meek; *Baculites ovatus*, Say?, for which Meek suggests the name of *B. occidentalis.*

TRANSACTIONS AMERICAN INSTITUTE OF MINING ENGINEERS.

Published at New York City.

The production of gold and silver in the United States; by R. W. Raymond. Trans. Amer. Inst. Mining Engineers, Vol. 3, p. 202; see also Vol. 5, p. 175.

Mercury associated with bitumen; by T. Egleston. Trans. Amer. Inst. Mining Engineers, Vol. 3, p. 273.

Geology of American Valley. Trans. Am. Inst. Mining Engineers, Vol. 13; p. 217.

The silver mines of Calico, California; by W. Lindgren. Trans. Amer. Inst. Mining Engineers, Vol. 15, p. 717–734.

Description and sections of the region, and discussion of the lithological, stratigraphic, and structural features of the Tertiary sandstones, tuff deposits, liparite, and andesite, and their relations to the ore deposits.

Hydraulic mining in California; by A. J. Bowie, Jr. Trans. Amer. Inst. Mining Engineers, Vol. 6, 1879, p. 27.

Contains map of river tunnel on Mariposa Estate.

Mining developments on the northwestern Pacific Coast, and their wider bearing; by Amos Bowman. Trans. Amer. Inst. Mining Engineers, Vol. 15, 1887, pp. 707–717.

ZOE.

Published at San Francisco, Cal.

On the discovery of *Proetus ellipticus*, Meek, in Shasta County, California, which is referred to the Waverly group; by A. W. Vogdes. Zoe, Proceedings of Societies, Vol. 3, 1892, p. 274.

Notes on the geology of the Farallones; by J. W. Blankinship. Zoe, Vol. 3, 1892, pp. 145–146.

PART IV.

Publications of State Geological Surveys other than that of California.

MISSOURI GEOLOGICAL SURVEY.

(Volume VI.)

Lead and zinc deposits; by Arthur Winslow, assisted by James D. Robertson. Jefferson City, 1894. 2 vols.

On page 187 the author states that although California is not classed as a lead- and zinc-producing State, it contains extensive deposits of lead-producing ores. These occur principally in Inyo and San Bernardino Counties, in the southwestern portion of the State. He gives the localities of the lead deposits of San Bernardino County, near Kingston Mountain, in dolomitic limestone; near Denby, in the Old Woman Mountains. He mentions a large and extensive ledge of carbonate and galena in granite and slate formations. Other localities are mentioned, both in Inyo and San Bernardino Counties, on the authority of the Ninth Annual Report of the State Mineralogist; 10th and 11th Census Reports.

PART V.

Miscellaneous Publications.

(*Alphabetical List.*)

AARON, C. H. Practical treatise on testing and working silver ore. San Francisco, 1876. 114 pp.

—— Assaying. In three parts; in two volumes. San Francisco, 1885.

—— Leaching gold and silver ores. San Francisco, 1880.

AIMARD, GUSTAVE. The goldseekers. Philadelphia, 1863. 12mo.

ALLEN, W. W., *and* AVERY, R. B. California gold book. First nugget; its discovery and discoverers, and some of the results proceeding therefrom. San Francisco and Chicago, 1893. 439 pp.

There are some geological notes given in Chapter XII, under the heading of Gold.

ALLSOPP, ROBERT. California and its gold mines. Being a series of recent communications from the mining district upon the present condition and future prospects of quartz mining. London, 1853. 149 pp.

This work contains a letter on the advantages of California, and also an article entitled, Why quartz companies are failures.

ANDERSON, ALEXANDER D. The silver and gold of the Southwest. St. Louis, 1877.

ANDERSON, C. L. The natural history of Santa Cruz County, comprised in chapters on Geology, Marine and Land Botany, Fishes and Birds, for the use of students of all ages, in or out of schools, and the public generally. Oakland, 1894. 67 pp.

ANDERSON, WINSLOW. Mineral springs and health resorts of California, with a complete chemical analysis of every important mineral water in the world. San Francisco, 1890. 384 pp. illustrated.

This book contains brief geological descriptions on the formation of mineral springs, causes of subterranean heat, with notes on the mineral springs of the Coast Range, etc.

ANSTED, DAVID THOMAS. The goldseeker's manual. London, 1849. 96 pp.

ASHBURNER, WILLIAM. Report of California Water Company. 1880. San Francisco, 1880.

Contains report upon the property of the California Water Company, by W. Ashburner; with report on gold mines, by E. P. Hutchins, and report of Amos Bowman.

—— Report of the Sulphur Bank Quicksilver Mining Company, Lake County, California. 1876.

Contains reports by William Ashburner, James D. Hague, Thomas Price, and M. C. Vincent. A general description of Clear Lake region is given on page 5.

—— Report upon Approach Gold Quartz mine. San Francisco, 1866.

ATTWOOD, MELVILLE. On the milling of gold quartz—amalgamation. In Mining and Scientific Press, August 20, 1881. tract of 5 pages.

—— Paper on the microscopical examination of rocks. San Francisco, 1888.

BARRY, JOHN D. Report on the proposed Eocene tunnel at Big Bend, on the North Fork of the Feather River, Butte County, California.

Contains map and section of rocks.

BECKER, GEORGE F. The structure of a portion of the Sierra Nevada in California. 1891. tract.

BEECHEY, CAPT. F. W. Narrative of a voyage to the Pacific and Behring's Strait, to coöperate with the Polar expedition

performed in his Majesty's ship Blossom, under the command of Capt. F. W. Beechey. London, 1831. 2 vols.

In the volume on the zoölogy of Captain Beechey's voyage (London, 1839, 4to), by Prof. Buckland, there are several references to the geology of the vicinity of San Francisco, prepared from the notes and collections of Lieutenant Belcher.

A map of the headland, embracing San Francisco Bay, accompanies this report. This is colored around the shores so as to indicate the several formations; serpentine, sandstone, and jasper rock are represented. Lieutenant Belcher collected specimens of serpentine on the west side of Angel Island. The occurrence of jasper rock is also noted.

The author, on page 174, gives the following account of the geology of California, which was the first ever published; it is given in full, on account of its value:

GEOLOGY, BAY OF SAN FRANCISCO.

"The specimens collected in and near the Bay of San Francisco consist of many varieties of common serpentine, bronzite, and asbestos; clay-slate and mica slate, chlorite slate, horn-stone, brown, green, and red jasper, and rolled blocks of glassy actynolite; grey sandstone, and imperfect wood-coal. The country near the port of San Francisco is composed chiefly of sandstone, jasper, and serpentine. Wood-coal is found in slight seams on the north side of the entrance of the bay, and native salt near Santa Clara. Many of the summits of the hills are composed of jasper, forming enlongated ridges, of which the general direction is north and south. This jasper is succeeded by sandstone, of a loose texture, not effervescing with acids, and disposed in every angle of stratification, occasionally it is hard and of a blue cast; it is frequently interrupted by abrupt masses of laminated jasper in wavy stratification. The appearance of the jasper, at its contact with the sandstone, is often very remarkable. The jasper appears not to have acted on or displaced the sandstone; its exterior, for eighteen inches or two feet, is usually rugged, and mixed with carbonate of lime, quartz, and indurated clay; its interior, however, presents a very beautiful wavy disposition of the component laminæ, a remarkable example of which occurs at the Needle Rock, nearly opposite the fort. A view of it is engraved at Pl. III, Geology. It resembles an immense mass of sheets of paper, or bands of list, crumpled and contorted by lateral pressure. This contortion only occurs in the red jasper, the yellow being seldom (if at all) stratified, but generally separated by cracks into rhomboidal pieces. A mass of at least one hundred feet in thickness is beautifully stratified in short, wavy lines, opposite the fort near Punta Diavolo, and rests on sandstone.

"Between Punta Boneta and Punta Diavolo the sandstone is of a bluish-grey colour, containing particles of coal.

"The Island of Los Angelos is of very confused formation. Its eastern side is sandstone, with occasional jasper rocks; its western side exhibits sandstone, conglomerate, clay-slate, and serpentine; its south side, bluish earth, (apparently decomposed serpentine), and jasper beds containing red siliceous nodules, and much iron pyrites.

The superstratum of this island is almost entirely composed of the débris of sandstone and jasper rocks, a little slate and bluish earth, and betrays appearances of violence. It is about 900 feet above the level of the sea.—B.

"The cliffs of the main land, opposite the northwest shore of the Island of Los Angelos afford masses of actynolite and beds of mica slate and talc slate.

"The Island of Molate, about four miles north of Los Angelos, appears at a distance to be of a red colour, and contains much red jasper, and in a small portion of the cliff black ferruginous slate.—C.

"In the Island of Yerba Buena, the perpendicular cliffs west of the bay are formed of clay-slate at their base, whilst the superincumbent rock is sandstone, for the most part in angular masses, and without distinct stratification. The clay-slate is much contorted, arched, and wavy, assuming an east and west direction, and dipping chiefly to the south at a considerable angle. The sandstone shows itself in the point that forms the eastern part of the bay.

"The rounded hills of the peninsula on which the Presidio of San Francisco is placed, are variously formed of sandstone, loose sand, serpentine, flinty slate, and jasper. The westernmost hill, which rises from the sea between the fort and the Punta di los Lobos, is serpentine. The north declivity, on which the quadrangle of the Presidio is built, is sandstone. To the eastward of this the serpentine again forms a hill of equal if not greater height. The hill to the westward of the Mission is serpentine. That which rises to the south of it exposes a bare and scarped brow of flinty slate and jasper. Rocks of a similar nature protrude through the surface of the soil of the hills which separate San Francisco from the extensive valley of Santa Clara (Las Salinas), about six leagues to the southward. These hills are called Sierras di los Samburnos, and terminate on the north in a rocky prominence, in the harbour east of the inlet of the Mission.

"The range of mountains, Las Sierras del Sur, which bound the above valley to the south, expose flinty slate approaching to jasper, a little northwest of Las Pulgas, and about eighteen miles east-south-east of the Mission of San Francisco. Between the Missions of Santa Clara and Santa Cruz, these mountains form four parallel ranges, the two middle ones highest (about 1,500 feet), with steep declivities; the first two valleys are narrow; the third is more extensive, leading to the fourth range, which is considerably lower than the others. The first two ridges are composed of serpentine and a jaspery rock, the third principally of sandstone and occasionally jasper, and the fourth, that nearest Santa Cruz, entirely of sandstone, the upper part being mostly decomposed into loose sand. Petrified bones of a cylindrical form were found in this cliff of sand or loose sandstone in 1827.

"Where this range approaches the road from Santa Clara to San Juan, nearly half-way, the northern declivity is covered with fragments of serpentine, and a little farther on is sandstone and flinty slate.

"In the neighbourhood of the Mission of San Juan is a sandstone conglomerate, and on the road crossing from San Juan to the plain of Monterey, is sandstone. From the interior of the range between San Juan and Monterey, the inhabitants of Las Animas had brought compact basalt, containing particles of magnetic iron ore, which

encouraged the delusive hope of rich mines. A few miles down the river Paxaros, from where the road to San Juan crosses it, there are thermal springs, and sulphur in their neighbourhood. On the Santa Cruz side, near the Mission, there is said to be coal, but it has never been mined. Along the east shore of the Bay of San Francisco, for thirty-five miles east-southeast, from beyond the Island of Molate, towards San Josef and Santa Clara, the harbour is bounded generally by low alluvial soil, and only in a few places do low and rocky cliffs protrude. Near the Mission of San Josef there are some hot springs in the plain, surrounded by a verdant covering. Earthquakes are rather common, and one in 1806 so shook the building of the Mission of Santa Clara, that a new one was obliged to be erected. A few years ago, a boat belonging to a whale ship, when lying in several feet water, was suddenly thrown on the beach and left dry, and a vessel in the Bay of Monterey was suddenly and severely tossed about by the sea, and the shock was felt on the shore at the same time. At ten o'clock on the 26th December, 1827, a slight shock was felt at San Josef. The shocks are said to come along the coast from the northward, and when they are also felt at Monterey it is some minutes later.

"One was perceived at the Presidio of San Francisco in the month of April, 1827. It continued a short time, but the shaking was so slight that it injured nothing.—C."

BELL, WILLIAM A. New tracks in North America. London, 1870. 564 pp.

Gives history of mining under the Spaniards, mines along the Colorado, etc. pp. 426 *et seq.*

BERRY, GEORGE. The gold of California. London, 1849.

BLAKE, W. P. Notice of remarkable strata containing the remains of Infusoria and Polythalamia in the Tertiary formation of Monterey, California. Philadelphia, 1855. tract.

—— Observations on the characters and probable geological age of the sandstone formation of San Francisco. Washington, 1855. tract.

—— Observations on the extent of the gold region of California and Oregon, etc. New Haven, 1855. tract. (In Am. Jour. Sci., Vol. 20, pp. 72–85.)

—— Remarks upon the geology of California. Washington, 1855. tract.

—— Sur l'action des anciens glaciers dans la Siérra Nevada de California, et sur l'orgine de la Vallée de Yo-Semite. Paris, 1867. tract. 4to.

BLAKE, W. P. Note upon the occurrence of fossil remains of the tapir in California. New Haven, 1868. tract.

—— Geological reconnoissance in California. New York, 1858.

—— The production of precious metals. New York, 1869.

BORTHWICK, J. D. Three years in California. Edinburgh, 1857. 384 pp. illustrated.

Chapter XIX treats of the northern and southern mines.

BOUND HOME, or the Gold-Hunter's Manual. New York, 1852.

BOUCHACOURT, C. Notice industrielle sur la Californie. Lyons, 1849.

BOURNE, B. F. Captive in Patagonia. Boston, 1853.

Contains much about California.

BOWIE, AUG. J. Hydraulic mining in California. San Francisco, 1878.

—— Practical treatise on hydraulic mining in California. New York, 1885. 313 pp. 72 plates and illustrations.

—— *Same.* New York, 1887. 313 pp. maps, plates, and sections.

—— Mining débris in California rivers. 80 pp. 5 plates.

BOWMAN, AMOS. Coast surface and scenic geology of California, 1873. 8 plates.

—— Report on the properties and domain of the California Water Company, situated on Georgetown Divide; embracing the mining, water, and landed resources of the country between the South and Middle Forks of the American River, in El Dorado County, California. San Francisco, 1874. 225 pp. maps, plates, and illustrations.

The report contains a section on vein systems, their origin and relations.

BROOKS, J. T. Four months among the gold-finders in Alta California. London, 1849. 207 pp.

BROWNE, J. Ross. The Coast Ranges; a chronicle of events in California. A series of articles in Harper's Magazine for 1861–62.

June number, 1861, Vol. XXIII, No. 1, pp. 1–14.
August number, 1861, Vol. XXIII, No. 2, pp. 306–316.
September number, 1861, Vol. XXIII, No. 3, pp. 593–606.
December number, 1861, Vol. XXIV, No. 4, pp. 1–16.
February number, 1862, Vol. XXIV, No. 5, pp. 289–301.

BRYANT, EDWIN. What I saw in California. Being a journal of a tour by the emigrant route and South Pass of the Rocky Mountains across the continent of North America, the Great Basin, and through California, in the years 1846 and 1847. London, 1849. 412 pp.

The appendix gives an account of the discovery of gold mines in California.

BUFFUM, E. GOULD. Six months in the gold diggings, and scenes in Upper and Lower California, from 1847 to 1850. Philadelphia, 1850. 172 pp.

Chapter VIII treats of the extent and richness of the California gold fields.

BURNETT, PETER H. Recollections and opinions of an old pioneer. New York, 1880. 448 pp.

Chapter VI treats of the gold discovery in California.

BUTLER, A. W. Resources of Monterey County. San Francisco, 1875.

CALIFORNIA GOLD REGIONS, with a full account of the mineral resources, etc. New York, 1849. 48 pp.

CALIFORNIA; its gold and its inhabitants. London, 1856. 2 vols.

—— Description of the recently discovered petroleum region in California. New York, 1865. tract.

—— Its past history; its present position; its future prospects, etc., with an appendix containing the official reports made to the Government of the United States. London, 1850. 270 pp.

CALIFORNIA, Life in; by an American. New York, 1846. 341 pp.

On page 90 the author speaks of visiting a spot on the Alisal, near Monterey, from which considerable quantities of silver ore had been obtained. It was the first mine discovered in California, from this author's account.

—— California as it is. Being a concise description of the State by counties, with memoranda of the progress of each agricultural, horticultural, mining, and other industries up to the year 1887–88, etc. San Francisco, 1888. 257 pp. map.

There are five editions of this work. The first one was published by the Daily and Weekly Call in 1882.

CARPENTER, PHILIP P. Lectures on the shells of the Gulf of California. Washington. 25 pp. 6 illustrations.

This aticle appeared in the Annual Report of Smithsonian Institution, 1859.

CARSON, J. H. Early recollections of the mines. Stockton, 1852.

CASTANARES, MANUEL. Letters from California addressed to the President of the Republic of Mexico. City of Mexico, 1845.

Manuel Castanares was a Representative in the National Congress, from the Department of California, in 1845. In his first letter, under date of March 2, 1844, the author states that gold placers were discovered in California last year, extending some thirty leagues. In his second letter, under date of September 1, 1844, the writer states: "The mining interest in California is of great importance, and I have the satisfaction of assuring your Excellency that it forms one of the most valuable resources of this Department. Besides the silver mines which are found, there are various other mines which have actually yielded metals; the gold placer especially is worthy of great attention, which extends nearly thirty leagues, was discovered lately, together with mines of mineral coal."

CLAUDET, F. G. Gold. New Westminster, 1871.

COIGNET, M. Rapport sur les mines de New Almaden. Paris, 1866.

COLTON, WALTER. The Land of Gold, or three years in California: a diary from 1846 to 1849. New York, 1860. 456 pp.

Chapter XXVII treats of the gold region, its locality, nature, and extent. Chapter XXX treats of the gold-bearing quartz, their locality, richness, and extent.

COOPER, A. S. The genesis of petroleum and asphalt in California. Scientific American Supplement, September 2, 1893, and December 30, 1893.

Red shales, as connected with the genesis of bitumen in California. The most important asphalt deposits in California are in Tertiary rocks. In Kern County they occur in veins and superficial beds; in Santa Cruz County, bituminous beds are mined; in San Luis Obispo County, in strata and as superficial deposits from springs; in Santa Barbara County, mixed with sand and other substances found in veins and beds, and in sandstone and shale; in Ventura County, in irregular veins and impregnating sandstone.

COOPER, DR. J. G. Resources of San Luis Obispo County. San Francisco, 1875.

CORY, THOMAS G. Gold from California. Lecture, March 25, 1856.

COULTER, THOMAS. Notes on Upper California. In Geog. Soc. Journal, Vol. 5, 1835, pp. 59–69.

CRONISE, TITUS F. The natural wealth of California. San Francisco, 1868. 696 pp.

Comprising early history; geography, topography, and scenery; climate; agriculture and commercial products; geology, zoölogy, and botany; mineralogy, mines, and mining processes; manufactures; steamship lines, railroads, and commerce; immigration, population, and society; educational institutions and literature; together with a detailed description of each county, its topography, scenery, cities and towns, agricultural advantages, mineral resources, and varied productions.

Chapter VI treats of geology of the State; principally taken from Professor Whitney's reports, Pacific Railroad Reports, and Blake's Geological Reconnaissance in California, etc.

DANA, JAMES D. Manual of Geology, treating of the principles of the science, with special reference to American geological history. 2d edition. New York, 1874. 828 pp. (Third edition, New York, 1895.)

This work contains special articles on California artesian wells, p. 654; also, notes on the Carboniferous, Cretaceous, Jurassic, Quaternary, sub-Carboniferous, Tertiary, and Triassic formations; with references to geysers, hot springs, human relics, and terraces in California.

DAVIES, WILLIAM O. Report of the Pacific Coal Company. New York, 1865. 10 pp.

Contains report of borings by W. O. Davies; coal fields on the Marsh ranch, in Contra Costa County, with section showing the dip of veins.

DAVISON, SIMPSON. The discovery and geognosy of the gold deposits in Australia, with comparisons and accounts of the gold regions of California, etc. London, 1860. 36 pp.

Devoted to personal experience in the gold mines of California.

DELANO, A. Life on the plains and among the diggings. Being scenes and adventures of an overland journey to California, with particular incidents of the route, etc. Auburn and Buffalo, 1854. 384 pp.

Chapter XXVII treats of the resources of California, mineral wealth, etc.

DELESSERT, B. Les mines d'or de la Californie. 17 pp. tract. (Rev. d. Deux Mondes, Vol. 5, 1849, p. 468.)

DELMAR, ALEXANDER. A history of the precious metals. London, 1880.

DENIS, FERD. Les Californiens. Paris, 1849. pamphlet. 45 pp.

This is an historical account of the settlement of California.

DUNBAR, E. E. Romance of the age, or discovery of gold in California. New York, 1867. 134 pp.

The author gives an account of the discovery of gold in California, with a brief history of previous accounts of gold mentioned by writers before 1848.

ELMORE, M. G. Esmeralda mining map. New map of the Esmeralda mining district to December, 1862. San Francisco, 1862.

These mines are south of Washoe, on the eastern slope of the Sierra Nevada, and partly in California.

EVANS, ALBERT S. A la California. Sketches of life in the Gold State. San Francisco, 1873.

The author gives passing references to mining, with illustrations.

FARNHAM, T. J. Life and adventures and travels in California. New York, 1852. 514 pp.

—— *Same.* New York, 1857. 468 pp. illustrated.

FEDIX, ——. Les côtes des Pacifique. Paris, 1846. 258 pp. maps.

FERRY, HYPOLITE. Description de la nouvelle Californie, geographique, politique, et morale. Paris, 1850. 386 pp.

Chapter III treats of the climate and mountain chains.
Chapter IV treats of the auriferous regions of California.

FEUCHTWANGER, DR. LOUIS. Valuable mining tables for ascertaining the weight of a cubic foot of any ore, metal., etc. (In California Farmer, Vol. 29, No. 14, April 9, 1868. Also published as broadside.)

FORTUNE, H. W. Report of the property of Trinidad Copper Mining Company, Lower California. San Francisco, 1879. 11 pp. sections.

FOSTER, G. G. The gold regions of California. Being a succinct description of the geography, history, topography, and general features of California: including a carefully prepared account of the gold regions of that fortunate country, prepared from official documents and other authentic sources. New York, 1848. 80 pp. and map.

FRIGNET, ERNEST. La Californie Histoire—organisation, politique et administrative, Législation, Description, Physique et Géologique, Agriculture, Industrie, Commerce. Paris, 1866. 471 pp.

Livre 3, Chap. I, treats of the geology.

FRÉMONT *and* EMORY. Notes of travel in California, comprising the prominent geographical, agricultural, geological, and mineralogical features of the country; also the route to San Diego, in California, including parts of the Arkansas, Del Norte, and Gila Rivers. Dublin, 1849. 311 pp.

FROST, JOHN. History of the State of California. Auburn, 1850. 508 pp.

Chapter XIII treats of the mineralogical and other characteristics of gold, etc.

GEOLOGY of California, the supply of silver and gold. tract. 19 pp. (N. Amer. Rev., Vol. 75, 1852, p. 277.)

GILPIN, WILLIAM. The central gold region; the grain, pastoral, and gold regions of North America, with some new views of its physical geography; and observations on the Pacific Railroad. Philadelphia, 1860. 194 pp. maps.

GOLD mines and mining in California. A new gold era dawning on the State; progress and improvements made in the business; perfected methods; progress and machinery; vast extent of auriferous territory; rich and varied character of deposit; a country abounding with elements of success; grand field for the profitable investment of the world's surplus capital. San Francisco, 1885.

Under the general heading of Hydraulic Mining, pp. 63–82, the author gives a few geological notes on the Pliocene rivers. On p. 333, a short account of the auriferous deposits peculiar to California. The Gold Bluffs and beaches is given, with a description of those of Humboldt County.

GOODYEAR, W. A. The coal mines of the western coast of the United States. San Francisco, 1877. 153 pp.

The part relating to California was republished, with additional notes and corrections, in the Seventh Annual Report of the State Mineralogist.

GREGORY, J. G. Guide to California and the Isthmus of Panama. New York, 1850.

HANKS, HENRY G. Address of the President of the California State Geological Society. Daily Alta, January 8, 1877.

—— Geological Society. Celebration of the first anniversary of the organization. Daily Alta, December 6, 1877.

These two papers were issued in pamphlet. They contain a list of private owners of mineral collections; also, notes on diatomaceous earth of the Pacific Coast.

—— Catalogue of the minerals, ores, rocks, and fossils of the Pacific Coast exhibition at the Paris Exposition of 1878. pp. i–xxiv and 1–99.

—— Coal and iron interest of the Pacific Coast. San Francisco, 1888. tract.

—— Notes on mica. San Francisco, 1882. tract.

—— The deep placers of California. In Mining and Scientific Press, 1890.

—— Magnesia and its base and compounds, with particular reference to magnesite. San Francisco, 1895. 27 pp.

HART, ALBERT. Mining statutes of the United States, California, and Nevada. San Francisco, 1877. 183 pp.

HASTINGS, L. W. A new description of Oregon and California, containing complete descriptions of those countries, together with the Oregon treaty and correspondence, and a vast amount of information relating to the soil, climate, productions, rivers and lakes, and the various routes over the Rocky Mountains; also an account, by Col. R. B. Mason, of the gold region, and a new route to California. Cincinnati, 1849. 168 pp.

HELPER, H. R. Land of gold: reality vs. fiction. Baltimore, 1855. 300 pp.

HITTELL, JOHN S. The resources of California, comprising agriculture, mining, geography, climate, commerce, etc., and the past and future development of the State. 5th edition, with an appendix on Oregon, Nevada, and Washington Territory. San Francisco, 1869. 504 pp.

The first edition of this work was published in 1862. Chapter III treats of geology. There is also a chapter on mining.

Edition published in San Francisco, 1863, 1 vol., large 12mo, contains 464 pp.; another edition in 1866, 1 vol., large 12mo.

HOLLAND, CHARLES. Mines and mining. In the Coast Review, 1873, p. 73.

HUSE, CHARLES E. Sketch of the history and resources of Santa Barbara city and county. Santa Barbara, 1876.

HUTCHINGS, J. M. Scenes of wonder and curiosity in California. 1860. 236 pp. 92 illustrations.

—— Another edition. London, 1865. 267 pp. 100 illustrations.

—— Another edition, to which is added a tourist guide to the Yosemite Valley. New York, 1876. 292 pp. 100 illustrations.

HUNTLEY, SIR HENRY. California; its gold and its inhabitants. London, 1856. 2 vols.

JACKSON, ——. Map of the mining districts of California. 1851. Colored map, 18 x 22 inches.

The appendix to this map contains 16 pages.

JACKSON, C. T. The oil interest of southern coast of California. San Francisco Bulletin, July, 1865.

JOHNSON, T. T. Oregon and California, or sights in the gold region and scenes by the way. New York, 1849. 290 pp. (Also published New York, 1850. 324 pp.)

Chapters XXVII and XXVIII treat of the gold regions, volcanic formations of California, etc.

The first edition was published in 1849. A second edition was published in April, 1850, with the addition of eight new chapters, viz., Chapters VI, XXV, XXVI, XXVII, XXVIII, XXIX, XXXI. There were no illustrations in the first edition.

KELLY, WILLIAM. Excursion to California over the prairie, Rocky Mountains, and Great Sierra Nevada, with a stroll through the diggings and ranches of that country. London, 1851. Vol. 1, 342 pp.; Vol. 2, 334 pp.

KING, CLARENCE. Mountaineering in the Sierra Nevada. Boston, 1872. 292 pp.

KING, T. BUTLER. Report on the metallic and mineral wealth of California. Appendix to Taylor's El Dorado. New York, 1850.

KNEELAND, S. Wonders of the Yosemite Valley and of California. 97 pp. 2 maps. 10 photos.

KUSTEL, GUIDO. Concentration and chlorination of gold-bearing sulphurets, etc. San Francisco, 1868. 259 pp.

—— Roasting of gold and silver ores. New edition. San Francisco, 1880. 156 pp.

—— Nevada and California processes of gold and silver extraction.

LAUR, P. De la production des Metaux precieux en Californie. Paris, 1862. 132 pp.

—— Du gisement et de l'exploitation de l'or en Californie. In Ann. des Mines, Vol. 6, ser. 3, pp. 347–435.

LAUR, P. Terrains aurifères de la Californie. 20 pp. In Rev. d. Deux Mondes, Vol. 5, 1863, p. 453.

LE CONTE, JOSEPH. Elements of geology; a text-book for college and general readers. 2d edition. New York, 1878. 588 pp.

This work is of special interest to the student of California geology, containing many references to the geology of the State. We note an article on auriferous veins, given on p. 237; also, Quaternary period on the western side of the continent, p. 526.

LEVASSEUR, R. La question d'or, les mines de Californie et d'Australie, les anciennes mines d'or et d'argent. Paris, 1858.

LEVY, DANIEL. Les Français en Californie. San Francisco, 1884. 366 pp.

The second part of this book treats rather extensively of the placer mines, where they were located, how worked, etc. pp. 80 *et seq.*

LOCK, ALFRED G. Gold; its occurrence and extraction, etc. London, 1882. 1229 pp.

The description of the California gold fields is given on pp. 129–154.

MACFARLANE, JAMES. The coal regions of America; their topography, geology, and development; with a colored geological map of Pennsylvania, a railroad map of all the coal regions, and numerous other maps and illustrations. Third edition, with a supplement for the year 1875. New York, 1877. 697 pp., with maps, etc.

Chapter XXX treats of the Pacific Coast region. A description of the Mount Diablo coal field is given on pp. 563–567, with analyses of the coal.

MARCOU, JULES. American geological classification and nomenclature. Cambridge, 1888. 75 pp.

The author remarks on p. 44: "In California, the Cretaceous is limited to the northwest corner of the State, and occupies a small area west of Mount Shasta. The Geological Survey of California, directed by Mr. J. D. Whitney, has called Cretaceous all the Eocene of Fort Tejon and Chico Creek."

—— Geology of North America; with two reports on the prairies of Arkansas and Texas, the Rocky Mountains of New Mexico, and the Sierra Nevada of California, originally

made for the United States Government. Zurich, 1858. 144 pp. 7 plates and 2 geological maps.

This work contains:

Chapter I. Résumé of a geological reconnoissance extending from Napoleon, at the junction of the Arkansas with the Mississippi, to the Pueblo de los Angeles, in California. The following Californian fossils are described: Fossils of the Tertiary rocks—*Ostria Virginica*, var. *Californica*, Colorado Desert; *Spirifer striatus*, Mart., Shasta County, California.

Chapter V. On the geology of the United States and British Provinces of North America. Geological map of North America. (Extract from Dr. Petermann's Geographischen Mittheilungen, Heft. 6, in 4to. Gotha, 1855.) Contains a notice of the California Desert, or Great Basin, the Cascade Range, the Coast Range.

Chapter VI. Sketch of a geological classification of the mountains of a part of North America. (Extract from Annales des Mines, 5 ser., tome vii, p. 329. Paris, 1855.) Contains description of Coast Range and Sierra Nevada system.

Chapter VII. On the gold of California. (Extract from Bibliothéque Universelle de Genève. Février, 1855.)

MARIPOSA GOLD COMPANY REPORTS, by Garnet and Wakeley. 1863. 81 pp. col. map.

MARIPOSA ESTATE. London, 1861. 63 pp. map.

MARIPOSA ESTATE (THE), its past, present, and future. Comprising the official report of J. Ross Browne upon its mineral resources. Transmitted to Congress, March 5, 1868. New York, 1868. 62 pp.

MARRYAT, FRANK. Mountains and mole hills. New York, 1855. 393 pp.

This is an account of three years in California. Refers to the gold diggings on American River and other places, on p. 210 *et seq.*

MANLY, W. L. Death Valley in 1847. San José, 1894. 498 pp.

MANSON, MARSDEN. Geological and solar climates: their causes and variations. A thesis, University of California, May, 1893. San Francisco, 1894. 49 pp.

MCGARRAHAN, WILLIAM. The quicksilver mines of Panoche Grande. Washington, 1860.

MEMORIAL of the New Idria Mining Company, in the matter of the Panoche Grande Rancho. 1867. 16 pp.

Mines and Mining in El Dorado County. The mineral belt, its slates and ores; deep mining, principal mines, etc. San Francisco, 1882. 14 pp.

Mofras, Duflot De. Exploration des Territoire de l'Orégon, des Californies et de la Mer Vermeillo, exécutée pendant les années 1840, 1841, et 1842. 2 vol. 8°, avec un Atlas in folio. Paris, 1844. Published by order of the King, under the auspices of the President of the Council and Minister of Foreign Affairs. Vol. I, 521 pp., 4 plates; Vol. II, 387 pp., 4 plates. Atlas of 26 sheets, maps, and plans.

This author states (Vol. 1, p. 489) that a vein of gold-bearing quartz was worked near the Mission of San Fernando by M. Baric in 1843.

According to De Mofras, the gold of the San Francisquito Rancho was first explored by M. Charles Baric. He gives its distance in the mountains as six leagues to the northward of the Mission of San Fernando, and fifteen leagues from Los Angeles. He further states: "This vein has an extent of six leagues, following the direction of the ravine where it is situated. The gold is found near the surface of the soil, and some pieces weighed two or three drachms." This description would lead one to the opinion that the deposit was a placer one and not a vein, although he uses the word *filon*.

According to De Mofras, silver ores occur about two leagues northwest of Cahuenga Rancho, and were not worked for want of mercury. He further observes that the Indians often bring in from the mountains, grains of copper, fragments of opal, and pieces of galena. Mines of gold and silver are also said to have been found about fourteen leagues from San Diego. They were once worked by a man from Guanajuata.

There is a notice of the bitumen near Los Angeles on p. 337, vol. 2. The author states: "Two leagues to the southeast of Los Angeles there are four great sources of asphaltum, situated on a level with the earth in a vast prairie. These springs open in the middle of little pools of cold water, while the bitumen possesses a higher temperature. This water has a mineral taste, which, however, does not prevent animals from drinking it. At sunrise the orifices of these springs are covered by enormous bubbles of asphaltum, often being more than a yard high, and looking like soap bubbles."

Molitor, A. P. Essay on California gold. San Francisco, 1860.

This work is said to be a very valuable essay on this subject.

Mowry, Sylvester. The mines of the West. New York, 1864.

Muir, J. Living glaciers of California. In Harper's Mag., Vol. 51, 1875, pp. 769–777.

MURCHISON, SIR R. Siluria: A history of the oldest rocks in the British Isles and other countries; with sketches of the origin and distribution of native gold, the general succession of geological formations, and changes of the earth's surface. 1st edition, London, 1854; geological map and 37 plates of fossils. 2d edition, London, ——. 3d edition, London, 1859; geological map and 41 plates of fossils. 4th edition, London, 1867; geological map and 42 plates. 5th edition, London, 1872; with geological map and atlas of 42 plates.

The author notes the California gold field on p. 470. He remarks in conclusion: "1. That, looking to the world at large, the auriferous veinstones in the lower Silurian rocks contain the greatest quantity of gold; 2. That where certain igneous eruptions penetrated the Secondary deposits, the latter have been rendered auriferous for a limited distance only beyond the junction of the two rocks; 3. That the general axiom before insisted upon remains: that all Secondary and Tertiary deposits (except the auriferous detritus in the latter) not so specially affected never contain gold."

NORDHOFF, CHARLES. California for health, pleasure, and residence: a book for travelers and settlers. New York, 1873. 255 pp.

Contains notice of gold mining, with a few geological notes.

OLD RIVER-BED GOLD MINING COMPANY. Report, 1879. New York. 18 pp.

The mines of this company are situated in Butte County, on the west branch of the Feather River. The report contains reports and sections, by J. H. L. Tuck and R. H. Stretch, on the old Pliocene river-beds of California, with sections of the west branch of Feather River, Butte County, California.

OREGON AND CALIFORNIA: Account of gold regions, methods of testing gold, etc. 1849. 76 pp. col. map.

PACIFIC COAST PETROLEUM COMPANY lands in San Luis Obispo County. 1865. 15 pp.

PALMER, GEN. WM. J. Report of surveys across the continent in 1867–68, on the 35th and 32d parallels, for a route extending the Kansas Pacific Railway to the Pacific Ocean at San Francisco and San Diego. Philadelphia, 1869. 250 pp. maps.

Contains a report by Dr. C. C. Parry, geologist and naturalist to the Survey, on the mineral districts of Central and Western Arizona and Southern California.

Pfeiffer, E. J. Sketch-map of the Forest Home and Willow Springs Copper Mining District, Amador County. San Francisco, 1864.

Phillips, John Arthur. Notes on the chemical geology of the gold fields of California. London, 1868. tract.

—— Gold mining and gold discoveries made since 1851. London, 1862. tract.

—— The mining and metallurgy of gold and silver. London, 1867. tract.

Phillips, John S. Explorers and assayers' companion; rocks, veins, testing, and assaying. 2 vols. San Francisco, 1879.

Player-Frowd, J. G. Six months in California. London, 1872. 164 pp.

A sketch of the general geological features of California is given on pp. 48–57; of mines and mining, on pp. 85–108.

Quicksilver: Facts concerning mines in Santa Clara County, California. New York, 1859.

Ramos, J. M. Informe relativo à los Trabajos ejecutados por la comision exploradora de la Baja California. Mexico, 1886. 222 pp. maps and geological sections.

Raven, Ralph. Golden dreams and leaden realities; with introduction by F. Fogie. New York, 1853. 344 pp.

Rémond, A. Report of an exploration and survey of the coal mines of Monte Diablo district. San Francisco, 1861.

Contains small sketch-map in black, showing Tertiary hills.

Revere, J. W. (Lieut. U. S. Navy). A tour in California, including a description of the gold region and an account of the voyage around Cape Horn, etc. New York, 1849. 305 pp. maps and illustrations.

Chapter XIX treats of the gold regions. It also contains the official report of Colonel Mason, etc.

Robinson, Fayett. California and the gold regions, with a geographical and topographical view of the country, its

mineral and agricultural resources, prepared from official and other authentic documents; with a map of the United States and California, showing the routes of the U. S. mail packets to California; also the various overland routes. New York, 1849. 137 pp.

Chapters I and II contain reports of the gold mines, with early accounts of the existence of gold in California.

This book also contains a synopsis of Mr. Larkin's and Colonel Mason's reports.

RUXTON, C. F. Life in the far West. New York, 1859. 235 pp.

SILVERSMITH, J. Metallic and agricultural wealth of the Pacific States. 1863. 150 pp. illustrated.

SEYD, ERNEST. California and its resources. London, 1858. 168 pp. maps.

Contains a chapter on gold mining, and references to other minerals; etc.

SEYMOUR, E. S. Emigrants' guide to the gold mines. Chicago, 1849.

SHALER, N. S. California earthquakes. In Atlantic Monthly, Vol. 25, 1870, p. 351.

SHAW, WILLIAM. Golden dreams and waking realities. Being the adventures of a goldseeker in California and the Pacific Islands. London, 1851. 316 pp.

SHINN, CHARLES H. Mining camps: a study on American frontier government. New York, 1885. 316 pp.

SILLIMAN, B. Petroleum region in California. 1864. 21 pp., with one plate.

—— Report upon the oil property of the Philadelphia and California Petroleum Company. Philadelphia, 1865. 36 pp.

—— On petroleum in California. National Intelligence, February 7, 1866.

SIMONIN, LOUIS. La vie Souterraine, ou les mines et les mineurs. Paris, 1867.

Contains Cartes des gîtes miniers des États de la Californie et Nevada.

Simpson, Henry J. The emigrant's guide to the gold mines. New York, 1848.

Soligнac, Armond de. Les Mines de la California. Limoges, 1852. 98 pp.

This book is a narrative of the author's trip to California. There is very little about the mines, except on page 53, where he gives a short description of the placers on the American River.

Stetefeldt, C. A. The lixiviation of silver ores with hyposulphite solutions, with special reference to the Runell process. New York, 1888. 223 pp.

Stewart, W. M. Lecture on the mineral resources of the Pacific States. New York, 1865.

Stillman, J. D. B. Seeking the Golden Fleece. San Francisco, 1877. 352 pp. illustrated.

This work is in the shape of a journal. On page 157 the author gives an account of mines, etc.

Stone, R. C. Gold and silver mines of America. New York.

Taylor, Bayard. El Dorado: Adventures in the path of empire. New York, 1850.

In the appendix there is a report of Hon. T. Butler King, on the metallic and mineral wealth of the State. pp. 201–247.

Taylor, R. C. Statistics of coal. The geographical and geological distribution of mineral combustibles or fossil fuel; including, also, notices and localities of the various mineral bituminous substances employed in arts and manufactures. Illustrated by maps and diagrams, etc. Philadelphia, 1848.

Under the heading of Upper California, the author states: "In the spring of 1847, a new coal mine was discovered near San Luis Obispo, N. Lat. 35°. There are now three mines within three hundred miles of Monterey. Asphaltum and petroleum occur abundantly in Western California."

—— *Same.* Second edition, revised and brought down to 1854, by S. S. Haldeman. Philadelphia, 1855.

Notes a report of Dr. Le Conte on the discovery of coal, 12 miles north of San Diego, in 1851.

TEGOBORSKI, M. L. DE. Essai sur les conséquences éventuelle de la déconverte des gites aurifères en Californie et en Australie. Paris, 1853. 199 pp.

THE PIUTE COMPANY OF CALIFORNIA AND NEVADA; organized April 13, 1869, incorporated June 30, 1870. San Francisco, 1870. 23 pp. 21 plates, and map.

This report contains excellent maps of the mining region, in San Bernardino County, California, and the adjoining Yellow Pine District, in Nevada. A few geological notes are given in the descriptions of the different mines.

THE NEW ALMADEN MINES. Letters from the San Francisco "Daily Herald," as published on the mornings of the 15th, 17th, and 18th of December, 1858. San Francisco, 1858. pamphlet.

THORNTON, J. QUINN. Oregon and California in 1848, with an appendix including recent and authentic information on the subject of the gold mines of California and other valuable matter of interest to the emigrant, etc. New York, 1849. 2 vols.

The appendix to Vol. 2, pp. 267-379, contains an account of the gold region of California, which is principally a copy of the official reports made in 1848.

TRASK, DR. JOHN B. Earthquakes in California from 1800 to 1863. San Francisco, 1864. 26 pp.

Dr. Trask also published several articles on the same subject in the Proceedings of the California Academy of Sciences.

—— Topographical map of the mineral districts of California, being the first map ever published from actual survey. San Francisco, 1853.

TRÉNY. La Californie dévoilée du vérités irrécusable appuyées sur le nombreux témoignages sur cette partie du globe. Paris, 1850. 60 pp.

This pamphlet was issued in three editions.

TRIPP, D. K. Report of the examination and survey of the Sonoma Pacific coal mines. Report 1888. San Francisco, 1888.

These mines are located about two and one half miles from Santa Rosa. The report gives several analyses of the coal, by D. K. Tripp.

TURRILL, CHARLES B. First volume—California Notes. San Francisco, 1876. 232 pp.

This book contains a chapter on the topography of California, with notes on the gold mines and geology of gold section.

TYSON, J. L. Diary in California. Baltimore (?), 1850. 92 pp.

UPHAM, SAMUEL G. Notes of a voyage to California via Cape Horn; also, scenes in El Dorado, 1849 and 1850. Philadelphia, 1878. 594 pp.

VEATCH, JOHN A. Letter from Dr. John A. Veatch to the Borax Company of California, June 28, 1857. San Francisco, 1857. 16 pp.

Dr. Veatch discovered borax at Borax Lake, Lake County, in 1856.

WALTON, DANIEL. Facts from the gold region. Boston, 1849.

WASSON, JOS. Bodie and Esmeralda. Being an account of the revival of affairs in two singularly interesting and important mining districts, including something of their past history, and the gist of the reports of Profs. Benj. Silliman and W. P. Blake, the late J. Ross Browne, R. H. Stretch, State Mineralogist, and H. R. Whitehill; also, detailed descriptions of mines most developed, tunnels, mills, etc. San Francisco, 1878. 60 pp.

WELLS, W. V. How we get gold in California. In Harper's Mag., Vol. 20, 1860, p. 598. 19 pp.

WERTH, JOHN J. A dissertation on the resources and policy of California: minerals, agriculture, and commerce, including a plan for the disposal of the mineral lands. Benicia, 1851. 87 pp.

WESTON, S. Four months in the mines of California. Providence, 1854.

WHITNEY, J. D. The metallic wealth of the United States described and compared with that of other countries. Philadelphia, 1854. 510 pp.

An account of the gold, with the geology of this region, in California, is given on pp. 134–149.

WHITNEY, J. D. Letter of Professor Whitney, State Geologist of California. In the Mariposa Estate, London, 1861, pp. 5–7.

WOODS, DANIEL B. Sixteen months at the gold diggings. New York, 1851. 199 pp.

The appendix contains a letter from Prof. Edward Hitchcock on the gold mines of California.

WRIGHT, G. F. The Ice Age in North America, and its bearings upon the antiquity of man, by G. Frederick Wright; with an appendix on the probable cause of glaciation, by Warren Upham. New York, 1889. 622 pp. maps and many illustrations.

The author notices the existing glaciers of California, ancient glaciers, the terminal moraines of California, the pre-historic man in California, ancient river-beds, etc.

WYLD, J. Guide to California. London, 1849.

—— Notes on the distribution of gold throughout the world, including Australia, California, and Russia. London, 2d edition, 1851; 3d edition, 1853.

—— Geographical and mineralogical notes to accompany Wyld's map of the gold regions. London, 1849.

YALE, GREGORY. Legal titles to mining claims and water rights in California. San Francisco, 1867. 452 pp.

This report gives the history of early mining legislation in the United States, and especially that of California.

INDEX.

Page.

Aaron, Leaching gold and silver ores ... 82
—— Treatise on testing and working ores ... 82
—— Assaying; in three parts ... 82
Adams, Catalogue of Panama shells ... 58
Agassiz, Notice of fossil fish ... 30
Aimard, The goldseekers ... 82
Allen and Avery, California gold book ... 82
Allsop, California and its gold mines ... 82
Anderson, A. D., The silver and gold of the Southwest ... 82
Anderson, C. L., The natural history of Santa Cruz County ... 82
Anderson, W., Desiccated human remains in California ... 15
Anonymous, Gold in California ... 18, 88, 92
—— Platinum and diamonds in California ... 51
—— Gold, its discovery and progressive development in the United States ... 57
—— The Mariposa estate ... 57, 97
—— A mammoth tusk ... 63
—— Cinnabar at Point Reyes ... 71
—— Geology of American Valley ... 26
—— Bound home, or gold-hunters' manual ... 87
Ansted, The goldseeker's manual ... 83
Antisell, Geology of Captain Parke's exploration ... 32
—— Fossils from San Luis Obispo County ... 61
Ashburner, Geological formation of Pacific Slope ... 33
—— Report of California Water Company ... 83
—— Report of the Sulphur Bank Quicksilver Mining Company ... 83
—— Report on gold quartz mine ... 83
Ashley, An illustration of the flexure of rocks ... 66
—— Studies in the Miocene of California ... 70
—— Neocene stratigraphy of the Santa Cruz Mountains ... 66
Attwood, Milling of gold quartz ... 13, 14, 36, 83
—— Papers on microscopical examination of rocks ... 83
Aubrey, Notes on routes from Tejon Pass to Santa Fé ... 28
Bache, Notice of earthquake waves, 1862 ... 37
Bailey, Fossil plants from Posumcula River ... 31
—— Fossil diatomaceæ in California ... 51
Baird, Ornithology of California ... 11
—— The water-birds of North America ... 12
Barry, Report on proposed Eocene tunnel at Big Bend of Feather River ... 83
Becker, Report on uplift of the Coast Range ... 40
—— Report on California division of geology ... 40
—— Notes on the stratigraphy of California ... 42
—— Geology of the quicksilver deposits of the Pacific Coast ... 44
—— Summary of the quicksilver deposits of the Pacific Coast ... 40
—— Relations of mineral belt of Pacific Slope to the great upheavals ... 55

Page.
Becker, Texture of mineral rocks 56
—— The Washoe rocks 66
—— Sketch of geological development of Pacific Coast 73
—— Geometrical form of volcanic cones 55
—— Cretaceous metamorphic rocks of California 56
—— Structure of a portion of the Sierra Nevada 58, 83
—— Antiquities from under Tuolumne Table Mountain 58
—— Notes on early Cretaceous of California 58
Beechey, Narrative of a voyage to the Pacific and Behring Strait 83
Behr, Mine drainage, pumps, etc 18
Bell, New tracks in North America 86
Berry, The gold of California 86
Blake, Rare minerals of California 13
—— Contributions to the geology and mineralogy of California 14
—— Annotated catalogue of California minerals 19, 34
—— Geographical distribution and geology of precious metals and minerals of Pacific Coast 19
—— Geological report of routes in California in 1856 45
—— Physical geography and geology of coast of California from Bodega Bay to San Diego 37
—— Geological age of the sandstone formation of San Francisco 45, 86
—— Grooving and polishing of hard rocks and minerals by dry sand 45
—— Geological reconnoissance in California, 1858 87
—— The production of precious metals 87
—— Forms in which gold occurs in nature 36
—— Miscellaneous notices of 63
—— Sur l'action des anciens glaciers dans la Sierra Nevada 67, 86
—— Observation on the extent of the gold region of California 71, 86
—— Notice of strata containing infusoria, etc., at Monterey 86
—— Remarks on geology of California, 1855 86
—— Quaternary deposits in California 51
—— Quicksilver mines of Almaden, California 51
—— Recent earthquake shocks in California 51
—— Extent of gold regions of California and Oregon 52
—— On fossil tapir of California 53, 87
—— New mineral oil region in Tulare Valley 63
Blake, James, Glacial action at Johnson's Pass 65
Blankinship, Notes on the geology of the Farallones 80
Borthwick, Three years in California 87
Bouchacourt, Notice industrielle sur la Californie 87
Bourne, Captive in Patagonia 87
Bowers, Report on Ventura County 15
—— Geology of San Nicolas Island 16
Bowie, Hydraulic mining in California 80, 87
—— Practical treatise on hydraulic mining in California 87
—— Mining débris in California rivers 87
Bowman, Coast surface and scenic geology 64, 87
—— Pliocene rivers of California 35
—— Mining development of the northwest Pacific Coast 80
—— Geology of the Sierra Nevada in its relation to vein mining 35
—— Report on California Water Company 87
Brewer, Reports on botany 11
Brooks, Four months among the gold fields 87

Page.
Brown, C. J., Extinct rivers of the auriferous belt of California 35
Brown, Robert, On coal fields of north Pacific Coast 68
—— Supposed absence of northern drift from Pacific Coast 53
Browne, J. Ross, Historical sketch of gold and silver mining on the Pacific Coast 33
—— Condition of gold and silver mining on Pacific Coast 33
—— Copper resources of Pacific Coast 33
—— General condition of mining interest in 1868 34
—— The Coast Range, a chronicle of events in California 88
Bryant, What I saw in California 88
Buffum, Six months in the gold diggings 88
Burchard, Reports to United States Mint 36
Burnett, Recollections of an old pioneer 88
Butler, Resources of Monterey County 88
California, Its gold and its inhabitants 88
—— Description of petroleum regions 88
—— Its past history and present position 88
—— Life in, by an American 89
—— As it is 89
Call, Quaternary and recent mollusca of the Great Basin 41
Carpenter, Mollusca of the west coast of North America 68, 89
—— Supplement to mollusca of west coast of North America 68
—— Lectures on shells of the Gulf of California 89
Carr, On mountain sculpture in the Sierra Nevada, and method of glacial erosion 54
—— Mountain sculpture in the Sierra Nevada 72
Carson, Early recollections of the mines 89
Castanares, Letters from California 89
Census, Tenth and Eleventh Census Reports 37, 38
Chapman, Pliocene Ostracoda 24
Chase, Klamath River mines 54
—— On auriferous gravel deposits of Gold Bluff 64
—— On auriferous sands of Gold Bluff 35, 54
—— Artesian wells of Los Angeles 64
Christy, Report on Mount Diablo coals 19
—— The genesis of cinnabar 19
Clark, Correlation papers, Eocene 43
Clarke, Petroleum in California 35
Clayton, Earthquakes on Kern River 63
—— The glacial period; its origin and development 65
Coignes, Rapport sur les mines de New Almaden 89
Colton, The land of gold 89
Conkling, Geology of mountain ranges from La Veta Pass to headwaters of Pecos 38
—— Geological report of western Nevada and eastern California, between parallels 30° 30′ and 38° 30′ 39
Conrad, Marine shells from Upper California 73
—— Notes on Miocene and Post Pliocene deposits of California 73
—— Description of fossils from California and one from Texas 73
—— Description of Cretaceous and Tertiary fossils, Mexican Boundary Survey 28
—— Description of fossil shells; P. R. Report, Vol. V 30
—— Description of Tertiary fossils; P. R. Report, Vol. VI 31

Page.
Conrad, Palæontology of Captain Parke's Report; P. R. Report, Vol. VII. 32
—— Report on fossil shells collected in California by W. P. Blake 33
—— Observation on certain Eocene fossils, described as Cretaceous by W. M. Gabb 46
—— Observations on Mr. Gabb's palæontology of California 46
—— California, elevation of, during the Tertiary epoch 50
—— Fossils from Tertiary deposits on Columbia River 50
—— Reply to Mr. Gabb, on Cretaceous rocks of California 53
Cooke, March from Santa Fé to San Diego, 1848 25
—— Journal of march of Mormon battalion from Santa Fé to San Diego, 1849 26
Cooper, A. S., The genesis of petroleum 90
Cooper, J. G., Catalogue of mollusca from west of the Rocky Mountains.. 5
—— On some Pliocene fresh-water fossils of California 66
—— Catalogue of invertebrate fossils 5
—— On fossil and sub-fossil land-shells of the United States 66
—— Catalogue of fossils, 1888 15
—— The value of fossils as indications of important mineral productions.. 16
—— Catalogue of California fossils; parts 2-5 17
—— Catalogue of West North American shells 18
—— On the discovery of lignites in Amador County 35
—— Age of the Tejon group 54
—— Remarks on California coal 65
—— California during Pliocene epoch 65
—— California during Miocene epoch 65
—— The Eocene epoch in California 65
—— Notes on Tertiary formation of California 65
—— West Coast pulmonata, fossil and living 66
—— Resources of San Luis Obispo County 90
Cope, Mesozoic and Cenozoic realms in North America 41
—— Extinct whale from California 74
Cory, Gold from California 90
Coulter, Notes on Upper California 90
Crawford, Reports of State Mineralogist 17
Cronise, Natural wealth of California 90
Crosby, Origin of continents 67
Crossman, Report on San Bernardino County 16
Dall, Tertiary fossils from San Diego 65
—— Post Pliocene fossils of Coast Range of California 75
—— Distribution of California Tertiary fossils 76
Dana, Geology, United States Exploring Expedition 26
—— Notes on Upper California 51
—— Manual of geology 90
Davies, Report of Pacific Coal Company 90
Davis, Remarks on certain geological specimens 62
Davison, H., Remarks on surface geology, as affected by upheavals 64
—— Remarks on the first discovery of glaciers 64
—— Remarks on recent earthquake wave 64
—— Abrasions of the continental shores of northwest America 64
Davison, Simpson, The discovery and geognosy of the gold deposits in Australia, etc. 91
Day, Reports on mineral resources of United States 40, 41
Deetken, Treatment of gold ores 35

Page.
Degroot, Hydraulic and drift mining 13
Delano, Life on the plains and among the diggings 91
Delessert, Les mines d'or de la Californie 91
Delmar, History of precious metals 91
Denis, Les Californiens 91
Derby, Topographical memoir, with map of the Sacramento Valley 27
Diller, Coal in the Chico group of California 77
—— Notes on geology of California 56
—— Geology of Lassen Peak District 40
—— Volcanic eruption in Northern California 56
—— Tertiary revolution in the topography of Pacific Coast 41
—— Lavas of Northern California 48
—— Notes on geology of Northern California 42, 72
—— Latest volcanic eruption in Northern California 43
—— Notes on Cretaceous rocks in Northern California 57
—— Discovery of Devonian rocks in California 57
—— Sandstone dykes 58
—— Geology of the Taylorville region 59
—— Cretaceous and early Tertiary of Northern California 59
—— Shasta-Chico series 60
—— Revolution in the topography of the Pacific Coast since the auriferous period 69
Dunbar, Romance of the age, etc. 91
Dunn, Drift mining in California 15, 36
—— The auriferous conglomerates in California 17
Dutton, Latest volcanic eruptions in United States 77
Dwinelle, Acquisition of California 34
Earthquakes, Recent shocks in California—Blake 51
—— On Kern River—Clayton 63
—— Remarks on recent earthquake wave—Davidson 64
—— Recorded earthquakes in California—Holden 19
—— In California—Keeler 42
—— California earthquakes—Shaler 101
—— In California from 1800–63—Trask 103
—— In California, 1858–59—Trask 62
—— In California from 1800 to 1864—Trask 63
—— In California during 1856—Trask 52
—— Direction and velocity of, in 1858—Trask 52
—— In Owen's Valley—Whitney 61
—— On tides and earthquakes, etc.—Winslow 61
—— In California, 1864—Trask 63
—— In California, 1865—Trask 63
—— In California during 1863–64—Trask 63
Edman, Geological account of Plumas County 35
Egleston, Mercury associated with bitumen 80
Ehrenberg, Infusoria in California 51, 67
Eisen, Explorations in the cape region of Baja California 34
Elmore, Esmeralda mining map 91
Emmons, Orographic movements of the Rocky Mountains 58
—— Geological sketch of Lower California 34, 60
Emory, Reconnoissance from Santa Fé to San Diego 25
—— United States and Mexican Boundary Survey 28
Evans, Geo. M., History of the discovery of gold in California 69

Page.
Evans, A. S., A la California sketch of life in the Gold State 91
Fairbanks, Geology of the Mother Lode region 16
—— Stratigraphy of the California Coast Ranges 70
—— Geology and mineralogy of Shasta County 16
—— Notes on geology and mineralogy of Tehama, Colusa, Lake, and Napa Counties 17
—— Report on San Bernardino County 17
—— Mineral deposits of Inyo, Mono, and Alpine Counties 17
—— Geology of Ventura, Santa Barbara, San Luis Obispo, Monterey, and San Benito Counties 17
—— Analcite diabase from San Luis Obispo County 17
—— Geology of the Mother Lode gold belt 49
—— Pre-Cretaceous age of the metamorphic rocks of Coast Range 49
—— Notes on Mesozoic and Palæozoic of Shasta County 49
—— Notes on geology of eastern California 49
—— Mineral deposits of eastern California 49
—— Validity of the so-called Wallala beds 57
—— Review of our knowledge of the geology of the California coast 60
—— The geology of Point Sal 24
Farnhan, Life and adventures and travels in California 91
Fedix, Les côtes des Pacifique 91
Ferry, Description de la nouvelle Californie 92
Feuchtwanger, Mining table 92
Fewkes, Santa Barbara Channel 48
Finch, Infusorial earth at Santa Barbara 76
Fortune, Report of Trinidad Copper Mining Company 92
Foster, Gold region of California 92
Frazer, Report on minerals to General Smith 26
Fremont, Report of exploring expedition to the Rocky Mountains, 1842-44 25
—— Map of Oregon and California, 1848 25
—— Notes of travels in California 92
—— Memoir of Upper California 25
Friedrich, Silicified wood from California 71
Frignet, La Californie histoire 92
Frost, History of California 92
Frowd-Player, Six months in California 100
Gabb, Triassic fossils of California 5
—— Report on coal mines of the West Coast 33
—— American Tertiary fossils and new carboniferous cephalopod from Texas 74
—— Cretaceous fossils from California 6, 9, 10
—— Cretaceous and Tertiary fossils 8
—— Notes on the geology of Lower California 12
—— Geographical and physical features of Lower California 34
—— Reply to Mr. Conrad's criticism, 1860 46
—— Description of some Secondary fossils from the Pacific 47
—— Subdivisions of the Cretaceous rocks in California 53, 63
—— Notes on some fossils from gold-bearing slates 63
—— San Luis Obispo quicksilver fossils 63
Gannet, Dictionary of altitudes in United States 42
Geology of California, the supply of silver and gold 92
Gilbert, Report on geology of portions of Nevada, Utah, California, and Arizona 38

Page.
Gilbert, Sketch of the Quaternary lakes of Great Basin 41
—— Stages of geologic history of Sierra Nevada 72
—— Sierra structure 77
Gilpin, The central gold region 92
Goddard, Report on the old Carson and Johnson immigrant roads 3
Goldsmith, Blue gravel of California 74
Gold mines and mining in California 93
Goodyear, Description of Monte Diablo coal field 12
—— Diamonds in El Dorado County 35
—— Coal mines of the western coast of United States 93
—— Note on Corral Hollow coal field 12
—— Report on quicksilver mines 12
—— On petroleum, asphaltum, and natural gas of California 15
—— Report on counties in California, 1888 15
—— Report on San Diego County 16
—— Notes on the geology of the coast of Oregon 64
—— Notes on the high Sierra south of Mount Whitney 64
Gray, Gamopetalæ, Botany, Vol. I 11
Gregory, Guide to California 93
Grewingk, Beitrag zur kenntniss geognostischen Beschaffenheit Californiens 69
Hague, Iron deposits of California 35
Hall, Report on geology and palæontology of Mexican boundary 28
Hammond, Auriferous gravels of California 16, 36
Hanks, Reports of State Mineralogist 13
—— Placer gold in California 36
—— Borax deposits of California 14
—— Address before California Geological Society 93
—— Catalogue of minerals, ores, rocks, and fossils of Pacific Coast 93
—— On the occurrence of Hanksite in California 56
—— Coal and iron interest of the Pacific Coast 93
—— Notes on mica 93
—— Deep placers of California 93
—— Magnesia and its base and compounds 93
Hardenburg, California gold mines 36
Harkness, Cinder cone age of eruption 65
Harris, Correlations of Tejon deposits with Atlantic stages of Gulf slope 77
Hart, T. S., Notes on Almaden mine 51
Hart, A., Mining statutes of United States and California 94
Harvey, Contribution to ethnology and geology of the Pacific Slope 13
Hastings, Descriptions of Oregon and California 94
Hayden, Twelfth Annual Report of the Geological Survey of Territories 39
Heilprin, Occurrence of ammonites in the Tertiary 75
—— Age of the Tejon rocks of California 75
—— Age of the Tejon rocks of California, and occurrence of ammonitic remains in Tertiary 75
Helper, Land of gold 94
Hilgard, Report on agricultural features of California 37
—— Agriculture and late Quaternary geology 77
Hittell, Resources of California 94
—— Dead rivers of California 34
Holden, Recorded earthquakes in California 43
Holland, Mines and mining 94

Page.
Huntley, California, its gold and its inhabitants 94
Huse, Resources of Santa Barbara City and County 94
Hutchings, Scenes of wonder in California 94
Hyatt, Jura and Trias at Taylorville 59
—— Trias and Jura in the Western States 59
Irelan, Reports of State Mineralogist 15
Isherwood, Report on brown coal from Mount Diablo 29
—— Experiments on various coals to ascertain their potential and economic vaporizations 69
Jackson, A. W., Building-stones of California 15, 20
Jackson, C. T., Oil interest of Southern California 95
Jackson, ——, Map of mining districts of California 95
Janin, Mining and metallurgy of quicksilver 35
Jenney, Notes on dry lakes of Nevada and California 78
Johnson, A. R., Expedition from Santa Fé to San Diego, 1848 26
Johnson, W. D., Report on clays 16
Johnson, T. T., Oregon and California 95
Jones, Coal of Pacific Slope 38
Keeler, Earthquakes in California, 1890 42
Keep, California geysers 79
Kellogg, Forest trees of California 13
Kelly, Excursion to California, etc. 95
Kimball, Reports to United States Mint 36
King, Clarence, Mountaineering in the Sierra Nevada 95
—— Report of Sierra Iron and Mining Company 35
—— Discovery of actual glaciers on the mountains of the Pacific Slope .. 53
King, T. Butler, Report on California, 1850 27
—— Metallic and mineral wealth of California 95
Kneeland, Wonders of the Yosemite Valley 95
Kustel, Concentration of all kinds of ores 95
—— Roasting of gold and silver ores 95
—— Nevada and California processes of gold and silver extraction 95
Lansweert, Mineral waters from Red Bluff 62
Laur, Production des metaux precieux en Californie 95
—— Du gisement et l'exploitation de l'or en Californie 95
—— Terrains auriferous de la Californie 96
Lawson, Geology of Carmelo Bay 20
—— Post Pliocene diastrophism of the coast of Southern California 20
—— Geomorphogeny of the coast of Northern California 21
—— Contribution to the geology of Coast Ranges 41, 49
—— Malignite 24
Lawton, California mining 36
Lawver, California mines 36
Le Conte, Critical periods in the history of the earth 21
—— Flora of coast islands of California 48, 56
—— Elements of geology 96
—— Address before American Association for the Advancement of Science 45
—— On nomenclature of Cenozoic formations 48
—— Volcanic springs in desert of Colorado 51
—— On some ancient glaciers of the Sierra 65
—— Great lava flood of the northwest 54, 64
—— Ancient glaciers of the Sierra 54, 65

Page.
Le Conte, Prairie mounds of California and Oregon 71
—— Theory of formation of great features of the earth's surface 53
—— Reply to Prof. T. Sterry Hunt 53
—— On lava flood of the west, and structure of the Cascade Mountains .. 64
—— Ancient glaciers of Sierra Nevada in Lake Valley 54
—— Formation of coast ranges 54
—— Structure and origin of mountains 55
—— Volcanoes about Lake Mono 55
—— Mono volcanoes are relation to glacial epoch 55
—— Evidence of horizontal crushing in formation of Coast Range of California 54
—— Old river-beds of California 55
—— Clay and marl deposits 55
—— Metalliferous vein formation at Sulphur Bank 55
—— Mineral vein formation at Steamboat Springs 55
—— Genesis of metalliferous veins 55
—— Tertiary elevation of the Sierra Nevada 56
—— On the original of normal faults 57
—— Tertiary and Post Tertiary changes in the Atlantic and Pacific coasts. 58
Leech, Reports to United States Mint 36
Leidy, Elotherium in California 74
—— Vertebrate fossils from auriferous gravels 74
—— On mastodon remains 74
—— Extinct mammals from California 74
—— Extinct mammalian fauna of Dakota and Nebraska 75
Lesquereux, Report on fossil plants of the auriferous gravels 12
—— Fossil plants of Recent formations 52
Levassur, Les mines de Californie et d'Australie 96
Levy, Les français en Californie 96
Lighton, Study of river geology 79
Lindgren, Notes on geology of Baja California 34, 66
—— Gold and silver veins of Ophir 41
—— Auriferous conglomerate of Jurassic age 57
—— Two Neocene rivers of California 59
—— Characteristic features of California gold quartz veins 60
—— Silver mines of Calico, California 80
Lock, Gold, its occurrence 96
Loew, Geology and mineralogical character of Southern California 38
Lopateck, Gypsum of the coast of Lower California 78
Lower California, Notes on the geology of Baja California, by W. Lindgren. 34, 66
—— Geological sketch of Lower California, by S. I. Emmons 34, 60
—— Geographical and physical features, by W. M. Gabb 34
—— Explorations in the cape region of Baja California, by Gustav Eisen 34
—— Some geological notes in Emory's Mexican Boundary Survey 28
—— Notes on the geology of Lower California, by W. M. Gabb 12
—— Geological sketches of Lower California, by Merrill 60
—— Gold field of, by Orcutt 79
—— Eruptive rocks of, by Ritter 67
Lyman, Mines of cinnabar in Upper California 50
—— Observations on California, 1848 50
—— California gold region, 1849 51
McFarlane, The coal regions of America 96

Page.
McGarrahan, The quicksilver mines of Pinoche 79
McGillivray, Old river-beds of the Sierra Nevada 36
Mallet, Catalogue of earthquakes 68
Manley, Death Valley in 1847 97
Manson, Geological and solar climates 97
Map of region adjacent to the Bay of San Francisco 11
—— American River 27
—— California and Nevada 11
—— Geological map of United States 35
—— Sacramento district 44
—— Topographical map of the mineral districts of California 103
—— Smartsville 44
—— Marysville 44
—— Lassen Peak 44
—— Jackson 44
Marcou, Geological reconnoissance from Napoleon to Los Angeles, 1855 29
—— Report on geology of Southern California, 1876 38
—— Note sur les geologie de la Californie 68
—— Untersuchungen in Californien 68
—— Gisements de l'or en Californie 68
—— Mittheilungen über die geol. Californiens 68
—— American geological classification and nomenclature 96
—— Geology of North America 96
Marsh, Notice of fossil forest in Tertiary of California 53
Maryat, Mountain and mole hills 97
Mason, Letter on the discovery of gold in California 27
Meek, Carboniferous and Jurassic fossils 5
—— Jurassic fossils of California 6, 10
—— Cretaceous fossils from Vancouver and Sucia Islands 74
—— Description of fossils from Cretaceous of Vancouver Island 79
Memorial of the New Idria Mining Company 97
Merriam, List of type specimens of fossils in State University Museum 21
—— Sigmogomphius LeContei 24
—— Reptilian remains from Triassic of Northern California 57
Merrill, Geological sketch of Lower California 60
Mills, Stratigraphy and succession of rocks of the Sierra Nevada 59
Mines and mining in El Dorado County 98
Mining debris in California, reports on 28
—— In California rivers 28
Mofras, Exploration des Territorie de l'Oregon, etc 98
Moltior, Essay on California gold 98
Mowry, The mines of the west 98
Muir, Studies in formation of mountains in the Sierra Nevada 45
—— On actual glaciers in California 54, 72
—— Living glaciers of California 98
Murchison, Siluria 99
Newberry, Reports on geology of California. P. R. Reports, Vol. VI 31
—— Supposed Tertiary ammonites 75
—— Genesis and distribution of gold 78
Nordhoff, California for health, pleasure, residence, etc 99
Old River-Bed Gold Mining Company, Report, 1879 99
Orcutt, Minerals and mines of San Diego 78
—— Gold fields of Lower California 79

Page.
Orcutt, Notes on Tertiary fossils from San Diego 79
—— Notes on Tertiary fossils from wells at San Diego 79
Ord, Lieutenant, Report to General Riley 27
Oregon and California, Account of gold regions, method of testing gold. 99
Pacific Coast mines 99
—— Petroleum Company lands, San Luis Obispo 99
Palache, Soda rhyolite of Berkeley 20
—— Lherzolite-serpentine of Potrero 20
Palmer, Report of surveys across the continent 99
Parke, Captain, Explorations in California. P. R. Report, Vol. VII 32
Parker, Asphaltum 38, 41
—— Infusorial earth of California 38
Patton, Geology of Calaveras County 3
Peckman, Chemical examination of Pacific coal 12
—— Origin of bitumen 56
—— Examination of bituminous substances of Southern California 12
—— Petroleum in Southern California 77
Perrine, Earthquakes in California 43
Pfeiffer, Sketch map of Forest Home and Willow Spring Copper Mining District 100
Phillips, J. A., Chemical geology of gold field of California 100
—— Contribution to the history of mineral veins 53, 67
—— Mining and metallurgy of gold and silver 100
—— Gold mining and gold discovery since 1851 100
Phillips, J. S., Explorers' and assayers' companion 100
Piute Mining Company, Report, 1869 103
Preston, E. B., Report on Los Angeles County 16
—— Gold mill practices 18
Preston, R. E., Reports as Director of United States Mint 36
Pumpelly, Relation of secular rock disintegration to Loess glacial drift .. 55
Quicksilver, Cinnabar at Point Reyes 71
—— Report of Sulphur Bank Mining Company 83
—— Geology of, Becker 40, 44
—— Summary of Pacific Coast deposits 40
—— Sur les mines de New Almaden 103
—— San Luis Obispo quicksilver fossils 63
—— Report on quicksilver mines—Goodyear 12
—— Mines of Panoche 97
—— Facts concerning mines in Santa Clara 100
—— Deposits of the Pacific Coast 44
—— Memorial of New Idria Mining Company 97
—— Report on New Almaden Mines—Silliman 33, 52
—— Randol, report on quicksilver 35
Ramos, Exploradora de la Baja California 100
Randall, Report of special committee in favor of geological survey of the State 1
Randol, Report on quicksilver 38
—— Quicksilver in California 35
Randolph, History of California 34
Ransome, Eruptive rocks at Point Bonita 20
—— Geology of Angel Island 20
—— Lawsonite from Tiburon Peninsula 21
—— Great Valley of California; a criticism of the theory of isostasy 24

Page.
Raven, Golden dreams and leaden realities, etc. 100
Raymond, Notes on California, 1869 34
—— Production of gold and silver in United States 79
Reger, Zwei profile durch die Sierra Nevada 67
Remond, Quartz mines and mills of Mariposa and Tuolumne Counties 4
—— Description of two new species of bivalved shells from Tertiary of Contra Costa County 62
—— Description of four new species of Echinodermata from Contra Costa 62
—— Report of an exploration and survey of the coal mines of Monte Diablo 100
Report on Pacific wagon roads, 1858 3
—— Of the Director of the Mint upon the product of the precious metals in United States 36
Revere, A tour in California, including a description of the gold region, etc. 100
Richthofen, Natural system of volcanic rocks 61
Ridgeway, The water-birds of North America 12
Riley, Report of General Riley, 1850 27
—— Tour of the gold region, 1850 28
Ritter, Lower California eruptive rocks 67
Robinson, Fayett, California and the gold regions, etc. 100
Robinson, F. W., Notes on hydraulic mining 13
Rowell, List of printed maps of California 20
Russell, Quaternary history of Mono Valley 40
—— Notes on faults of the Great Basin 72
Ruxton, Life in the far west, 1859 101
Scheidel, Cyanide process 18
Schuchert, Directions for collecting and preparing fossils 76
Schuster, Mikroskopische beobachtungen an Californischen gesteinen 68
Seyd, California and its resources 101
Seymour, Emigrant's guide to the gold mines 101
Shaler, California earthquakes 101
Shaw, Golden dreams and waking realities, etc. 101
Shepherd, Geysers of California 51
Shinn, C. H., Mining camps 101
Shumard, Description of Tertiary fossils from Oregon and Washington, and Cretaceous of Vancouver Island 77
Silliman, On naphtha and illuminating oil from California 52
—— On probable existence of microscopic diamonds in sands of hydraulic washings 54
—— New diamond localities in California 63
—— Report on New Almaden quicksilver mines 33, 52
—— Petroleum in California 52, 101
—— On placers of Nevada County 52
—— Petroleum regions in California 52
—— Report on oil property of Philadelphia and California Petroleum Company, 1865 101
—— On petroleum in California 101
Silversmith, Metallic wealth of Pacific States 101
Simonin, Aurifères de la Mariposa 67
—— La vie Souterrain, ou les mines et les mineurs 101
—— Geologie, observation sur les gesements aurifères 67

Page.
Simpson, Emigrant's guide to the gold mines 102
Skidmore, Reports on California mines 34, 35
—— Deep placer mining in California 34
Smith, ——, Report of General Smith on California, 1849 26
Smith, James P., Age of auriferous slates of the Sierra Nevada 59
—— Metamorphic series of Shasta County 45, 70
—— The Arkansas coal measures, in their relation to the Pacific carboniferous province 70
—— Supplementary notes on the metamorphic series of the Shasta region . 45
—— Mesozoic changes in the faunal geography of California 70
Solignac, Les mines de la California 102
Stanton, Notes on geology of coast ranges 49
—— Fauna of the Shasta-Chico formations 59
—— Shasta-Chico series 60
—— Cretaceous palæontology, Knoxville beds 43
Stearns, Fossils from the Colorado Desert 47
—— Fossils from the Tertiary of California 74
—— Cerripide of California 75
Stein, Translation of the future of silver, by Edward Suess 29
Stetefeldt, Lixiviation of silver ores 102
Stewart, Lecture on mineral resources of the Pacific States 102
Stillman, Seeking the Golden Fleece 102
Stone, Gold and silver mines of America 102
Storms, Ancient channel system of Calaveras County 17
—— Methods of mine-timbering 17
Talbot, Report of Lieutenant Talbot to General Smith, 1849 26
Taylor, Bayard, El Dorado, etc 102
Taylor, J. W., Condition of gold and silver mining on Pacific Slope, 1867 .. 33
—— Copper resources of Pacific Slope, 1867 33
Taylor, R. C., Statistics of coal 102
Tegoborski, Essay on the effect of the discovery of gold in California and Australia 103
Thornton, Oregon and California in 1848 103
Trask, Earthquakes in California, from 1800 to 1863 103
—— Geology of the Sierra Nevada or California Range 1, 70
—— Mineral districts of Central California 71
—— Report on State Geological Survey 1
—— Description of three new species of the genus Plagiostoma from the Cretaceous 62
—— Geology of the Sierra Nevada 2, 72
—— Earthquakes in California in 1858–59 62
—— Geology of coast mountains 2
—— Earthquakes in California, from 1800 to 1864 63
—— Geology of Northern and Southern California 2
—— Earthquakes in California during 1856 52
—— Direction and velocity of earthquakes in California, 1857 52
—— Description of Ammonites Batesi 61
—— Description of fossil shells 61
—— On earthquakes in California, from 1812 to 1857 62
—— Two new species of Ammonites and Baculite 62
—— Topographical map of the mineral districts of California 103
Treny, La Californie 103
Trip, Report on Sonoma-Pacific coal mines 103

Page.
Turner, Rocks of the Sierra Nevada 41
—— Contribution to the geology of California 49
—— Geological notes on the Sierra Nevada, parts 1 and 2 49
—— Notes on geology of the coast ranges 49
—— Auriferous gravels of the Sierra Nevada 49
—— Geology of Mount Diablo 59
—— The age and succession of the igneous rocks of the Sierra Nevada 70
Turrill, California notes 104
Twining, Report on Union and Central Pacific Railways 28
Tyson, P. T., Geology of California 26
—— Geology and industrial resources of California 27
Tyson, J. L., Diary in California 104
Veatch, On mud volcanoes in Colorado Desert 62, 104
—— On earthquakes in San Francisco 71
—— On the discovery of borax 104
Vinton, Report on artesian well near Benicia 27
Vogdes, Geological survey in the State of California 66
—— On the discovery of *Proetus ellipticus* in Shasta County 66, 80
Walbridge, Fossil ferns 79
Walcott, Lower Cambrian rocks in eastern California 57
Waldeyer, Hydraulic mining in California 35
Walton, Facts from the gold region 104
Warner, Reconnoissance of a route through the Sierra Nevada, by the Upper Sacramento 27
Wasson, Bodie and Esmeralda, etc. 104
Watson, Report on botany 11, 12
Watts, The gas and petroleum-yielding formation of the central valley of California 17
Weber, Petroleum and asphaltum of Northern California 15
—— Report on Santa Clara County 16
Weeks, Petroleum 38, 41
—— Natural gas 38
Wells, How we get gold in California 104
Werth, Dissertation on the resources and policy of California 104
Weston, Four months in the mines of California 104
Wheeler, Report of surveys west of the 100th meridian 38
White, Description of *Productus giganteus* 39
—— Report on Mesozoic invertebrates 39
—— Mesozoic and Cenozoic palæontology of California 41
—— On new Cretaceous fossils from California 42
—— Remarks on the genus *Aucella* 44
—— Fossils from the Pacific Coast 42
—— Correlation papers: Cretaceous 43
—— Mountain upthrust 47
—— Notes on occurrence of *Productus giganteus* in California 76
—— North American Mesozoic 77
Whiting, Report on Mono County 15
Whitney, Metallic wealth of the United States 104
—— Letter of Professor Whitney on the Mariposa estate 105
—— Address delivered before Legislature 3, 4
—— Notice of a human skull from a shaft near Angels 63
—— Letter of State Geologist 3, 4
—— Fresh-water infusorial deposits of the Pacific Coast 63

Page.
Whitney, Lecture on geology 3
—— Die Californischen Bacillarien Gebirge 67
—— Annual reports of State Geologist 4
—— Yosemite guide-books 5
—— Report of progress and synopsis of field-work from 1860–64. Geology, Vol. I. 10
—— Contributions to barometric hypsometry 11
—— Geology of California, Vol. II 12
—— Climatic changes of later geological times 13
—— Report to Board of Regents, 1877 19
—— Progress of Geological Survey in California 52
—— On earthquake wave of 1872 72
—— Notice of explorations of Geological Survey of California in the Sierra Nevada, 1864 52
—— On the borax in California 52
—— On the Owen's Valley earthquake 53
—— Auriferous gravels of the Sierra Nevada 13
Wiley, Remarks on auriferous gravel deposits of Placer County 64
Williams, Reports of mineral resources of United States 39, 44
Williamson, Reports on Pacific Railroad Surveys, Vol. V and Vol. VI 29, 31
—— Exploration of Monte Diablo and valley 27
Wilson, On the gold regions of California 67
—— Geology of the gold region of California 71
Winchell, Effects of pressure of a continental glacier 48
—— Glacial action in flanks of higher Sierra Nevada 48
Winslow, On human remains with those of the mastodon 53
—— On tides, earthquakes, rising of continents, etc. 61
—— Lead and zinc deposits of Missouri 81
Wood, Sixteen months at the gold diggings 105
Wright, The ice age in North America 105
—— Note on glaciation of Pacific Coast 47
Wyld, Guide to California 105
—— Notes on distribution of gold throughout the world 105
—— Geographical and mineralogical notes to accompany Wyld's map of the gold regions 105
Yale, C. G., Bulletin No. 7, showing the mineral productions of California 18
—— Bulletin No. 8, showing by counties the mineral productions of California 18
—— Quicksilver in California 35
—— Auriferous gravels of California 36
—— Reports on California mining 36
—— Chapter on California mines, in Eleventh Census Report 38
—— Iron ores of Pacific Coast 39
Yale, G., Legal titles to mining claims 105
Yates, Notes on the geology of the Channel Islands 16
—— The mollusca of the Channel Islands 16
—— Notes on the geology and scenery of the islands of Santa Barbara Channel 16, 49
—— Mammalian fossils in California 74
—— Fossil botany 78

THIS BOOK IS DUE ON THE LAST DATE STAMPED BELOW

AN INITIAL FINE OF 25 CENTS

WILL BE ASSESSED FOR FAILURE TO RETURN THIS BOOK ON THE DATE DUE. THE PENALTY WILL INCREASE TO 50 CENTS ON THE FOURTH DAY AND TO $1.00 ON THE SEVENTH DAY OVERDUE.

APR 8 1959
JAN 5 1972
DEC 10 REC'D
JAN 7 1976
NOV 3 REC'D
SEP 27 1993
JAN 05 1994
RECEIVED
JUN 30 1994
PHYSICAL SCS. LIBRARY

FEB 02 1995
RECEIVED
JAN 24 1995
PHYSICAL SCS. LIBRARY

FEB 20 '83
AUG 24 '84
JUL 1 '85

Book Slip—30m-8,'54(6210s4)458

124932
Calif. Dept. of natural resources. Div. of mines.

TN24
C3
A3
no.10

Calif.

PHYSICAL
SCIENCES
LIBRARY

TN24
C3
A3
no.10

LIBRARY
UNIVERSITY OF CALIFORNIA
DAVIS
124932

3 1175 00670 1810