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# AN ANNOTATED BIBLIOGRAPHY OF

# PLACER GOLD MINING 1896 - 1966

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## Introduction

In the early 1980s, Historical Services, Prairie and Northern Region (PNRO) began research on the history of corporate placer mining in the Klondike to support Klondike National Historic Sites. As part of this work the author prepared this detailed annotated bibliography covering world placer gold mining during the period 1896-1966. The scope of the bibliography was broad; in addition to furnishing references on the Yukon Territory the writer was to provide sufficient references to allow a study of world placer gold mining. The source for the bibliography was *The Engineering Index*, a comprehensive annual review of engineering and technical literature.
This publication provides a machine readable copy of the complete bibliography, an evaluation of the technological history research value of *The Engineering Index*, and summarizes the findings of the bibliography.

## History

*The Engineering Index* originated in the summer of 1883 when J.B. Johnson was elected Professor of Civil Engineering at Washington University in St. Louis. Anxious to be proficient in his new position Johnson surveyed existing engineering literature and began to systematically compile information on the more important articles in a volume he called an "Index Rerum" (L. index of things). The original work covered the major American engineering periodicals: *The*

*Engineering News, Van Nostrand's Engineering Magazine, the Journal of the Franklin Institute, the Transactions of the American Engineering Societies of Civil, Mechanical and Mining Engineers* and the English journals *Engineering, The Engineer* and the *Proceedings of the Institute of Civil Engineers*.

In the fall of 1883 Johnson attended the Board meeting of the Association of Engineering Societies and described his indexing work. The Board was impressed with the work and in January 1884 Johnson began to produce a monthly index which was published in the Association's journal. Johnson expanded the scope of his index and by 1891, 100 publications were reviewed and indexed. Most of these were American magazines but there was a growing number from Great Britain and its colonies, France, Germany and Austria. At this time Johnson convinced the editors of the Association of Engineering Societies Journal that a cumulative index would be a worthwhile product. He carefully edited the monthly indexes and in 1892 the Association published the first cumulative volume entitled, "Descriptive Index of Current Engineering Literature". It contained 11,000 notes and cross-references, approximately 1375 per year, and Johnson claimed that, "It is thought to contain, ... nearly all periodical, society and fragmentary matter of permanent value not only for the period 1884 to 1891 inclusive, but a great deal which appeared earlier."[i]

In 1895, Johnson edited the second, and his last volume of the cumulative index, for the *Engineering Magazine* of New York which had taken over the preparation of the index in that year. Covering the years 1892-95, the second edition had almost the same coverage as the first edition and contained some 6000 entries, about 1500 per year. The second volume took the title, *The Engineering Index*.

*The Engineering Magazine* hired H.H. Suplee as editor to replace Johnson and over the next few years the coverage of the index significantly expanded. Five-year cumulative volumes were published in 1901 and 1906 and both of these reflected the growing scope of the work. Volume three, covering 1896-1900, contained 40,000 entries, about 8000 per year, gleaned from more than 200 technical

publications. Volume four, the last five-year cumulative index, covered 1901-1905 and included some 50,000 entries, about 10,000 per year, from 250 periodicals and journals. The preface of volume four emphasized the value of the work: "The Index is used as a guide to the vast mass of information otherwise practically buried in the numerous files of engineering publications in reference libraries in all parts of the world, and *The Engineering Index* thus becomes the master-key by which these storehouses of information may be entered."[ii]

In 1906, *The Engineering Index* became an annual publication. From this date until 1918 it provided a compilation of between 200 and 250 of the world's leading technical and engineering publications. Approximately 10,000 entries each year gave comprehensive coverage of the journals reviewed. The American Society of Mechanical Engineers purchased the publication in late 1918 and combined its work with their own more extensive "Selected Titles of Engineering Articles." The combined 1919 edition retained the title *The Engineering Index* and included some 12,000 entries from nearly 700 engineering and allied technical publications subscribed to by the Engineering Societies Library in New York. According to the 1919 editor, this library "comprise(s) perhaps the most complete collection of scientific and engineering publications in the world."[iii]

Subsequent editions grew in size; the 1927 edition had 18,000 entries. The coverage of the Index also became more comprehensive. In 1922 the publishers stated that 25 per cent of the periodicals indexed were from Great Britain and colonies and 30 per cent from other foreign countries. By 1928 the Index reviewed about 1200 journals and 500 irregular bulletins. This number remained fairly constant through the rest of the period under study.

**Coverage of Canadian Engineering**

While no Canadian journals were included in Johnson's original monthly indexing in 1884, several were indexed by the time the third cumulative volume was published in 1901, the similarity between American and Canadian engineering work and the geographic

proximity of the two countries ensured that Canadian engineering would be fully covered by *The Engineering Index*.
The Canadian publications included in the 1896-1900 edition of the index were:

1. *British Columbia Mining Record* - Victoria (monthly)
2. *Canadian Architect* - Toronto (monthly)
3. *Canadian Electrical News* - Toronto (monthly)
4. *Canadian Engineer* - Montréal (monthly)
5. *Canadian Mining Review* - Ottawa (monthly)
6. *Engineering Society of the School of Practical Science* - Toronto

Comparison of this list of Canadian journals with the Canadian mining journals noted by H.C. Bolton in his comprehensive *A Catalogue of Scientific and Technical Periodicals 1665-1895*[iv] reveals only two missing. These were *The Canadian Mining Manual*, an annual prepared in Ottawa by the editor of the *Canadian Mining Review*, and the *Canadian Colliery Guardian and Critic* published in Halifax.
By 1909, *The Engineering Index* referenced eight Canadian publications.

1. *Applied Science* - Toronto (monthly)
2. *British Columbia Mining Record* - Victoria (monthly)
3. *Bulletin of the Canadian Mining Institute* - Montréal (quarterly)
4. *Canadian Architect* - Toronto (monthly)
5. *Canadian Electrical News* - Toronto (monthly)
6. *Industrial Advocate* - Halifax (monthly)
7. *Journal of the Canadian Mining Institute* - Montréal (annual)
8. *Proceedings of the Canadian Society of Civil Engineers* - Montréal (monthly)

These represented over three per cent of the total number of journals and other published materials covered by the index.
In 1919, after the expansion of the index by the American Society of Mechanical Engineers, 23 Canadian publications were included.

1. *Association of Dominion Land Surveyors Annual Report* - Ottawa (annual)
2. *Canadian Chemical Journal* - Toronto (monthly)
3. Canadian Department of Mines, *Mines*

*Branch Bulletin* -Ottawa (irregular)
4. *Canadian Engineer* - Toronto (weekly)
5. *Canadian Foundryman and Metal Industry News* - Toronto (monthly)
6. *Canadian Machinery and Manufacturing News* - Toronto (weekly)
7. *Canadian Manufacturer* - Toronto (monthly)
8. *Canadian Mining Institute Bulletin* - Montréal (monthly)
9. *Canadian Mining Journal* - Quebec City (weekly)
10. *Canadian Railway Club Proceedings* - Montréal (9/yr)
11. *Canadian Railway and Marine World* - Toronto (monthly)
12. *Contract Record and Engineering Review* - Toronto (weekly)
13. *Electrical News* - Toronto (semi-monthly)
14. *Engineering Institute of Canada Journal* - Toronto (monthly)
15. Geological Survey of Canada Reports - Ottawa (irregular)
16. *Iron and Steel of Canada* - Toronto (monthly)
17. *Marine Engineering and Canadian Merchant Service Guild Review* - Toronto (monthly)
18. *Marine Engineering of Canada* - Toronto (monthly)
19. *Mining and Engineering Record* - Vancouver (monthly)
20. Ontario Bureau of Mines Bulletin - Toronto (irregular)
21. *Power House* - Toronto (semi-monthly)
22. *Queen's University Quarterly* - Kingston (quarterly)
23. *Revue Trimestrielle Canadienne* - Montréal (monthly)

By 1928, when *The Engineering Index* undertook a more thorough review of engineering literature, the following Canadian publications were indexed:
1. *Bus and Truck Transport* - Toronto (monthly)
2. Canada. Department of the Interior (Water Resources Papers) - Ottawa (irregular)
3. Canada. Department of Mines (Geological Survey) - Ottawa (irregular)
4. *Canadian Automotive Trade* - New York (monthly)
5. *Canadian Aviation* - Toronto (monthly)
6. *Canadian Chemistry and Metallurgy*

(Canadian Institute of Chemistry) - Toronto (monthly)

7. Canadian Dominion Bureau of Statistics - Toronto (monthly)

8. *Canadian Engineer* - Toronto (monthly)

9. *Canadian Foundryman and Electroplater* - Toronto (weekly)

10. *Canadian Machinery and Manufacturing News* - Toronto (semi-monthly)

11. *Canadian Mining and Metallurgical Bulletin* - Montréal (monthly)

12. *Canadian Mining Journal* - Gardenvale, P.Q. (weekly)

13. *Canadian Mining World* - Toronto (irregular)

14. Canadian Patent Office Record - Ottawa (weekly)

15. *Canadian Railway and Marine World* - Toronto (monthly)

16. *Canadian Railway Club, Proceedings* - Montréal (9/yr)

17. *Contract Record and Engineering Review* - Toronto (weekly)

18. *Electrical News* - Toronto (semi-monthly)

19. *Engineering Journal* (Engineering Institute of Canada) - Montréal (monthly)

20. *Engineering Times* - Toronto (monthly)

21. *Iron and Steel of Canada* - Gardenvale, P.Q. (monthly)

22. Ontario Hydro-electric Power Commission Bulletin - Toronto (monthly)

23. *Power House* - Toronto (semi-monthly)

24. *Revue Trimestrielle Canadienne* - Montréal (quarterly)

25. *Royal Society of Canada Transactions* - Ottawa (irregular)

26. *Seismological Society of America Bibliographical Bulletin* - Ottawa (quarterly)

27. *Town Planning* - Ottawa (bi-monthly)

28. University of Alberta. Science and Industrial Research Council report - Edmonton (irregular)

29. University of Toronto. School of Engineering Research Bulletin - Toronto (irregular)

It appears that every major Canadian technical publication was included by this time. In 1951 the number of Canadian journals in the index was expanded to include:

1. British Columbia. Department of Mines Bulletin - Victoria (irregular)

2. Canada. Bureau of Mines Memorandum

Series - Ottawa (irregular)
3. Canada. Bureau of Statistics - Mining, Metallurgical and Chemical Branch Annual Report - Ottawa (annual)
4. Canada. Department of Mines and Resources Reports and Publications - Ottawa (irregular)
5. Canada. Dominion Water and Power Bureau - Water Resources Papers - Ottawa (irregular)
6. Canada. Forest Service Bulletin - Ottawa (irregular)
7. Canada. Geological Survey Papers - Ottawa (irregular)
8. *Canadian Chemical Processing* - Toronto (monthly)
9. *Canadian Journal of Research* - Ottawa (semi-monthly)
10. *Canadian Machinery and Manufacturing News* - Toronto (monthly)
11. *Canadian Metals* - Toronto (monthly)
12. *Canadian Mining and Metallurgical Bulletin* - Montréal (monthly)
13. *Canadian Mining and Metallurgical Transactions* - Montréal (monthly)
14. *Canadian Mining Journal* - Toronto (monthly)
15. Canadian Patent Office Record - Ottawa (weekly)
16. *Canadian Railway Club Proceedings* - Montréal (9/yr)
17. Canadian Standards Association Standard Specifications - Ottawa (irregular)
18. *Canadian Transportation* - Toronto (monthly)
19. *Electrical News and Engineering* - Toronto (semi-monthly)
20. *Engineering and Contract Record* - Toronto (monthly)
21. *Engineering Journal of the Engineering Institute of Canada* - Montréal (monthly)
22. *Hydro News* - Toronto (monthly)
23. *Modern Power and Engineering* - Toronto (monthly)
24. *Municipal Utilities* - Toronto (monthly)
25. Newfoundland Geological Survey Bulletin - St. John's (irregular)
26. Nova Scotian Institute of Science Proceedings - Halifax (irregular)
27. Ontario Department of Mines Annual Report and Bulletins - Toronto (irregular)
28. Quebec Bureau of Mines Annual Report - Quebec City (annual)

29. *Revue Trimestrielle Canadienne* - Montréal (quarterly)
30. *Roads and Engineering Construction* - Toronto (monthly)
31. *Royal Society of Canada Proceedings and Transactions* - Ottawa (annual)
32. *Shipping Register and Shipbuilder* - Montréal (monthly)
33. *Technique* - Montréal (10/yr)
34. Toronto University. Engineering Society Transactions and Yearbook - Toronto (irregular)
35. *Western Miner* - Vancouver (monthly)

**Organization**

The organization of the index underwent several changes during the study period. Johnson arranged the first editions of the index alphabetically: "it is arranged according to the initial letters of certain 'catch-words' which have been selected as indicating most nearly the true subjects of the articles indexed." Each 'catch-word' was sub-divided with other headings more specifically describing the nature of the articles they headed.[v]
The format of *The Engineering Index* was established by J.B. Johnson at the time of his first cumulative volume.[vi] The basic tenets of the indexing format were as follows:

1. Only those articles of permanent value were to be included. As Johnson stated in the first volume; "Articles of a casual or passing interest have not often been indexed, and such matters as were thought to lead to erroneous conclusions or as were based on false assumptions or theories, have always been excluded."

2. Each entry was to provide a concise description of the contents of the article. Again, Johnson outlined his aim; "The object constantly kept in mind in the preparation of these index notes was to put, in as small a space as possible, such short descriptions of the scope and general character of the current engineering literature ...as would enable one in search of valuable information on a particular subject to decide whether or not it would be worth his while to obtain or consult the original ... paper. No abstract,

> or result, or summaries have been made and no conclusions given. In other words, these notes only serve to indicate where valuable data can be obtained."[vii]

Later editors of the index retained Johnson's guidelines to make *The Engineering Index* a consistent and useful research tool for the study of the history of technology. Each index reference is a comprehensive summary of relevant information. The exact title of the article, the authors name, the title of the periodical with volume, number and date of publication, inclusive page numbers and notes on the number of figures and illustrations provide the bibliographic data. A short description of the article is also included.

**Dredges**

See also Excavating Machinery; Motorships; Gold Dredges; Ships; Tin Dredges. Well-Designed Dredge placed in Service by Indiana Gravel Producer. *Pit and Quarry*, vol. 22, no 5, June 3 1931, pp. 57-58 and 60, 6 figs. Dredge of Connersville Gravel Co., Connersville, Ind.; hull is 24 ft. wide,48 ft. long and 4 ft. deep; built as three sections of steel pontoons, and housed with corrugated-iron sheeting.

> *The Engineering Index* entries cover a broad range of topics. While the first volume suffered somewhat from the limited manpower available for its compilation (Johnson noted that chemical and metallurgical subjects in mining engineering were left out), subsequent editions have striven to provide information on all the technical and scientific fields required by engineers. In the 1906 edition, the first annual volume, the editors changed the overall organization of the index. Abandoning the alphabetic 'catch-words' of its predecessors, the 1906 editors divided up all the entries into the "great divisions of engineering practice."
>
> i Civil Engineering
> ii Electrical Engineering
> iii Industrial Management
> iv Marine and Naval Engineering
> v Mechanical Engineering
> vi Mining and Metallurgy
> vii Railway Engineering
> viii Street and Electric Railways
>
> This practice, the editors claimed, simplified

the search for specific articles and allowed the user to peruse all the relevant contemporary literature as though he were browsing through a well-organized library.

While the system did have these advantages, it suffered a degree of inflexibility. As the field of engineering broadened and began to specialize, it became increasingly difficult to arbitrarily assign some references to any particular division of engineering practice. Therefore, when the American Society of Mechanical Engineers purchased the Index in 1918 they reviewed different methods of indexing and decided to revert to the original alphabetic, or dictionary method, of indexing. This arrangement was selected "because it is considered to be the simplest way to classify such a mass of information upon so many diversified and complexly overlapping subjects as are discussed in present-day engineering literature."[viii]

Extensive use of cross-references ensured that no related references would be missed. Further alterations were made to the indexing method during the study period.

**Using *The Engineering Index***

*The Engineering Index* is not a difficult source to use if the researcher is well organized and informed. The vast size of the index requires the researcher to define his/her topic clearly. It is also useful to have a basic familiarity with the topic under study and to be aware of the changes and modifications that the technique underwent. The two different index formats used by *The Engineering Index* - alphabetic, or dictionary style, from 1884 to 1905 and again from 1919 to 1966, and subject classification, from 1906 to 1918 - require slightly different research techniques.

The alphabetic method is especially helpful to the user who is searching for a particular reference or information on a very specific topic. By using the appropriate key word the reference can be found quickly. The system also has the advantage of providing a flexible indexing structure which encompasses the entire field of engineering practice. Balanced against these editorial and professional advantages, however, is the historians desire for a general survey of a particular technology or process. The historian must be aware of changes in the technology and conscious of any alterations or additions to that technology's set of keywords in

order to be sure to find all the relevant references. This problem is especially true for the indexes of the early 1920s. After the re-institution of the alphabetic index format in 1919 the editors took some time before they settled on a standard set of keywords.

The indexes which use subject classification greatly simplify the research task of the historian. All associated references are located together in one section of the volume and can be easily found. This, however, is only true for topics within the eight divisions of engineering practiced defined the editors. For an interdisciplinary topic, or to find the roots of a new technology that does not fit any of the major divisions, the task becomes much more difficult.

Engineering has grown from a handiman's art in the 19th century to the present highly scientific and technical profession. This change is reflected in *The Engineering Index* and requires some consideration by the researcher. References in the earlier editions can be quite general and usually provide an excellent summary of the technology in layman's terms. However, as the complexity of engineering practice rose through the 20th century the references change significantly. After the Second World War the references become more numerous and increasingly technical and more topic specific.

*The Engineering Index* is a very useful tool for the historian of technology. The brief notes describing the contents of the referenced article usually provide the researcher with enough information to decide if the article is worthy of further study. Thus the index continues to fulfil its original intent. Many times the index notes alone supply the researcher with valuable information. Very often the reference notes can provide a useful survey history of a technology, its use, and particular problems.

The researcher should be aware that the Index does not claim to cover every article in the periodicals referenced. The user is often encouraged to check the detailed indices provided by the editors of the individual journals.[ix] Short notes on specific events and material with only a local interest are not generally included, particularly in the earlier editions. An especially significant gap exists in the earlier volumes where articles based upon "false assumptions" on leading to "erroneous conclusions" have been excluded. Researchers working on the development of technology or technological research may wish to consider

additional research in the original journals. Later editors, with increased support, have expanded the number of articles noted. One of the most important aspects of *The Engineering Index* and the Engineering Societies Library in New York, the base collection for the Index, is the copying service. Even in the earliest editions, the editors offered to supply subscribers with either copies of the journals or photocopies of articles requested. In this way, for a modest fee, engineers in even the most isolated locations had access to the complete collection of the Engineering Societies Library and all of the material noted in the annual indexes. This service is currently offered by companies in both the United States and Great Britain.[x]

**Acknowledgements**

In the twelve years of manuscript development this bibliography was improved by the contributions of several people. Bill Waiser, the original project manager for Parks Canada, and Susan Buggey, Chief of Historical Services for the Parks Canada Prairie and Northern Region Office, initiated the project to support historical research work on Yukon Consolidated Gold Corporation Dredge #4 in the Klondike goldfields near Dawson City, Yukon. Edna Wilson, supervisor of the College of Engineering Library at the University of Saskatchewan, offered institutional support and professional guidance in the creation of the bibliography. Several typists valiantly interpreted the notes and transcribed the findings into the present machine readable form. Brenda Oziewicz and Donna McBee, librarians with the Department of Indian Affairs and Northern Development in Whitehorse reviewed the final draft and offered valuable suggestions on format. Without these contributions this project would have remained an unused box of rumpled index cards. Any errors or omissions remain my responsibility. I hope this information will encourage research the history of placer mining and further our understanding of its role and significance in Canadian history.

**Placer Mining Bibliography**

The placer mining bibliography was prepared as a general survey of gold placer mining operations

around the world, with a focus on the Yukon. The bibliography contains over 1800 references relating to gold placer mining geology, geography and technology.
The bibliography is not, however, a replacement for *The Engineering Index*. Any serious research may require further details on specifics of placer mining. References to gold amalgamation are one example. While a number of general references are included, it would render the tool clumsy and difficult to use if the hundreds of related references were included. The researcher is advised to identify aspects of amalgamation and then find suitable references in the index. Entries are organized generally along the same lines as in *The Engineering Index*. However, technological and bibliographic changes over the study period have required some modifications to the original organization. The basic breakdown is by technology with sub-divisions generally based on geography. The references in each entry are arranged chronologically. An index of entries is provided but key word, author, and title searches are possible with word processing software.

**Endnotes**

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# Placer Gold Bibliography

## Index of Entries

Arizona [4]
California [49]
Colorado [27]
Georgia [1]
Idaho [20]
Montana [10]
Nevada [6]
New Mexico [8]
North Carolina [2]
Oregon [13]
South Dakota [1]
Utah [3]
Washington [1]
Wyoming [7]
U.S.S.R. [41]

**GOLD PLACER**
Metallurgy [8]

**GOLD PLACER** MINING METHOD
Arid Regions [10]
Cold Regions [21]
Tropical Regions [1]
Dredging
- Geographic
Africa [7]
Asia [2]
Australasia [34]
Canada
- B.C. [11]
N.W.T. [1]
Yukon [11]
Central America [2]
Europe [1]
General [159]
New Zealand [27]
South America [20]
Southeast Asia [4]
United States
Alaska [27]
Calif. [54]
Colorado [5]
Georgia [1]
Idaho [6]
Montana [13]
Nevada [4]
Oregon [1]
S. Dakota [1]
Construction/Maintenance [30]
Land Restoration [15]
General [43]
Hydraulic
Africa [1]
Australasia [4]
Canada
B.C. [10]

**GOLD** Other

Production and Its Cause
-
Mining Industry and Review Nov. 21, 1895
An editorial stating the increased interest in gold mining and in gold production is due to the fall in prices of supplies. Twentyseven dollars will buy as much now as a hundred dollars would in 1870 though the selling price of gold has remained constant. 600 w.

Marvellous Increase in Production of Gold
ALEXANDER E. OUTERBRIDGE JR.
Ap Popular Science Monthly March, 1899
A study of the gold production of the world, the increase due to progress in mining and metallurgical arts, and facts of interest concerning this precious metal. 3200 w.

Gold Mining and Gold Production
PROF. JOHN WALTER GREGORY.(Cantor Lecture)
Journal of the Society of Arts - Sept. 13, 1907.Serial.lst part.
This first lecture considers alluvial gold mines, the source of gold, washing and sluicing, dredging, methods, etc. Ills. 6500 w.

The Bugbear of Gold
CHARLES SEWELL THOMAS, JR.
Mining and Scientific Press May 13, 1911
Discusses the properties of gold, occurrence in nature, and the future outlook. 2500 w.

The Cost of an Ounce of Gold
PERCY E. BARBOUR
Engineering and Mining Journal July 10, 1915
Compares cost of production, various conditions in different parts of the world. 1500 w.

Canadian Gold Production in 1931
L.D. HUNTOON
Mining and Metallurgy v 13 n 301 Jan 1932 p. 4750.
Statistical review of production of placer gold, gold as byproduct from base metals, and gold produced from siliceous gold ores; total production shows decided increase; highgrade found at depth permits mining lowgrade; further increase and long life assured.

Free Gold, Story of Canadian Mining
A. HOFFMAN
Rinehart and Co. New York and Toronto, 1947. 420 p.

Development of Canadian gold fields, narrative form; description of places and men of importance in development, technical aspects of mining industry, and financial operations. Maps, woodcuts, tables.

**GOLD PLACER** Amalgamation

A Study of Amalgamation Methods. Especially the Patio Process, with the Object of Avoiding the Loss of Mercury.
MIGUEL BUSTAMENTE, JR.
Transaction of the American Institute of Mining Engineers Nov., 1901.
Describes character of ore to be treated and the experimental investigations. 5400 w.

The Practice of Amalgamation.
W.H. KRITZER.
Pacific C Mining Oct. 10, 1903.
Notes on the manipulation of mercury and care of plates. 2200 w.

Amalgamating Tables.
ALGERNON DEL MAR.
Mining and Scientific Press Aug. 5, 1905.
Gives sketches of three styles of tables, discussing the important essentials. 900 w.

A New Device for Amalgamating Gold in Sands and Pulps.
-
Mining Reporter Aug. 24, 1905.
Illustrates and describes a device invented by PATRICK MCENTEE for treating goldbearing sands, stamp mill pulp, and other material. 1200 w.

The Amalgamation of Gold Ores.
THOMAS T. READ.
Bulletin of the American Institute of Mining Engineers May, 1906.
Explains the nature of an amalgam, and discusses the amalgamation process and the influence of temperature. Ills. 10000 w.

Amalgamation Methods.
H.W. MACFARREN.
Mining and Scientific Press Dec. 12, 1908.
Discusses methods of different amalgamators. 3000 w.

Electrochemical Amalgamation and Lixiviation.
ELMER ELLSWORTH CAREY.
Mining World April 17, 1909.
Calls attention to improvements that can be made by employing electrochemical action in connection with lixiviation and amalgamation of gold ores. 2200 w.

Increasing the Efficiency of Plate Amalgamation by
Electrochemical Action.
ELMER ELLSWORTH CAREY.
ElecChem and Met Ind May, 1909.
Outlines an electrochemical system of amalgamation
designed to extract from sands or pulp all
gold values not encased.2000 w.

ElectroChemical Amalgamation.
ELMER ELLSWORTH CAREY.
Mining Journal May 15, 1909.
A discussion of gold extraction by amalgamation,
especially the paper of C.G. Warnford Lock,
read before the Inst. of Min. and Met. some
sixteen years ago.2000 w.

ElectroChemical Plate Amalgamation.
ELMER ELLSWORTH CAREY.
Mining Journal June 12, 1909.
An explanation of the electrolytic system and its
claims. 3300 w.

Progress in Electrochemical Plate Amalgamation.
ELMER E. CAREY.
Mining World June 5, 1909.
General discussion of a simple method of converting the
standard plate into an electrochemical
amalgamating device of remarkable
efficiency. 3500 w.

Recovery of Values in Dredge and Place Tailings.
ELMER ELLSWORTH CAREY.
Mining Journal April 23, 1910.
Calls attention to the amount of gold lost in dredging
and indicates a method of saving by use of
electrochemical mercury riffles. 1500 w.

Principles of Electrolytic Amalgamation.
ELMER E. CAREY.
Mining World April 30, 1910.
Discusses the underlying principles of amalgamation.
2000 w.

The Relative Efficiency of Various Amalgams in the
Recovery of Gold.
FRANCIS A. THOMSON and ROBERT KEFFER.
Metallurgical and Chemical Engineering June 1915.
Report of investigations. 3500 w.

Amalgamation Tests.
W.J. SHARWOOD.
Bulletin of the American Institute of Mining Engineers
Aug. 1915.
Suggested standard test. 4500 w.

Recovery of Fine Gold by Amalgamation.
E.S. LEEAVER.
US Bureau of Mines Information Cir., no. 6081, Aug.

1928, 4 pp.; see also Min. Rev., vol. 30, no. 11. Sept. 15, 1928, pp. 2525 and Eng. and Min. Jl, vol. 126, no. 16, Oct. 20, 1928, p. 610. Written to answer requests for information on recovery, or reasons for poor recovery, of fine gold by amalga-mation process; checking gold content; nature of gold; float and rusty gold; effect of impurities; placer gold; cyanidation is usual method for recovery of gold lost in amalgamation process.

**GOLD PLACER** Assay (cf. **GOLD PLACERS** Testing and Sampling)

Assay of Auriferous Ores and Gravels by Amalgamation and the Blowpipe.
R.W. LEONARD.
Transactions of the American Institute of Mining Engineers Nov., 1895.
The method consists in amalgamating with mercury, then cupelling with lead and measuring the bead with Plattner's scale. Results are compared with parallel tests with the stamp mill and fire assay. 1200 w.

Practical Assaying at Mines and Works.
H. VAN F. FURMAN.
Engineering Magazine March, 1896.
Showing the methods of securing rapidity and accuracy in metallurgical works. 3000 w.

The Assay by Prospects of Auriferous Ores and Gravels by Means of Amalgamation and the Blowpipe.
WILLIAM HAMILTON MERRITT.
Transactions of the American Institute of Mining Engineers April, 1896.
The method of field testing of gold ores, as practiced in the Kingston School of Mining, is described, pointing out some points in which it differs from that presented in a recent paper by R.W. Leonard. 1500 w.

Anyone Can Assay.
ALEX ROY.
Canadian Engineer May, 1897.
Describes an easy method of making a test for gold. 900 w.

Liquation in Cyanide Bars.
DR. STOCKHAUSER.
Australian Mining Standard June 17, 1897.
Abstract of paper read at meeting of Chemical and

Metallurgical Society of South Africa. Discussing the fact that alloys of gold and silver with base metals do not solidify homogeneously, and that therefore errors may be made in assaying and sampling. Also discussion. 1500 w.

Gold and Silver Assaying at Guanajuato, Mexico.
W.N. CUMMINGS.
Engineering and Mining Journal Aug. 28, 1897.
Description of a crucible used, which commends itself for the large number of fusions that can be made at once, the celerity and fuel economy. Ill. 500. w.

The Scorification Assay.
JOHN DANIELL.
Chemical and Metallurgical Society of South Africa March, 1898.
Notes from the writer's experience in the estimation of gold and silver by this process. 1300 w.

Remarks on Fire Assaying of GoldBearing Materials.
WILLIAM BETTEL.
Jour of Chem and Met Soc of S Africa Nov., 1898.
Discusses the losses of gold, collection of finely divided gold, and other points which affect the accuracy of results. 4500 w.

Notes on the Assay of the Zincy Precipitates Obtained in the Cyanide Process.
CHARLES H. FULTON AND CHARLES H. CRAWFORD.
School of Mines Quarterly, New York Jan., 1901.
Describes work performed in the endeavour to evolve a short and accurate method which can be used in a custom assay office or mill. Tabulated information of assays made is given. 2700 w.

Dominion Assay Office in Vancouver.
ALFRED W. DRYER.
British Columbia Mining Record Aug., 1901.
Describes the office and the process; the operations are conducted in full view of the depositor of gold dust. 2300 w.

The United States Government Assay Office at Seattle.
A.W. DEE.
British Columbia Mining Record Nov., 1901.
Concerning the equipment of this office and its method of procedure. Ill. 1700 w.

Methods of Assaying Cyanide Solutions for Gold.
T. LANE CARTER.
Engineering and Mining Journal Nov. 15, 1902.
A compilation of methods for determining the gold contents of working cyanide solutions. 800 w.

Assaying and Gold Refining.
DONALD CLARK.
Australian Mining Standard Dec. 10, 1903.
Information on the work connected with assaying and with special auriferous material. Ill. Serial. 1st part. 30000 w.

The Assay Weight and Its Relation to the Balance of Precision.
A. WHITBY.
Journal of the Chemical Metallurgical and Mining Society of South Africa Aug., 1904.
On the difficulty of obtaining weights of sufficient accuracy for the requirements of the more sensitive balance now used. General discussion. 5500 w.

Fire Assaying.
EVANS W. BUSKETT.
Mines and Minerals Sept., 1904.
Describes the apparatus commonly used and the methods, the reagents, and some of the reactions. Ills. 2000 w.

The Testing of Gold Ores by Amalgamation.
ERNEST A. HERSAM.
Mining World Dec. 10, 1904.
Describes methods of laboratory amalgamation, discussing the effect of the size of the test portion. Serial. 1st part. 4500 w.

Routine Assaying on the Rand.
A. WHITBY.
Jour of Chemical, Metallurigical and Mining Society of South Africa March, 1906.
Remarks on the importance of the work in the mine assay office, with a sketch plan of a serviceable building for a 200stamp mill, the equipment, the actual work of assaying, etc. Short discussion. 7000 w.

The Assay of Auriferous Tinstone.
C.O. BANNISTER.
Mining Journal April 21, 1906.
Read before the Inst. of Min. and Met. Reports results obtained by the author in comparing results obtained by different methods of assaying for gold in alluvial tin deposits. 1500 w.

The Assay of Gold Bars as Conducted in the Author's Assay Office.
ARTHUR C. CLAUDET.
Institution of Mining and Metallurgy Bul No. 27 Dec. 13, 1906.
Describes the method in detail. 2200 w.

Some Notes on Assaying.
CHARLES H. FULTON.
Mining World Dec. 22,1906. Serial. 1st part.
Notes having some novel features, prepared for use at the South Dakota School of Mines. 1200 w.

The Salt Lake, Utah, Government Assay Office.
LEROY A. PALMER.
Mining World April 24, 1909.
Illustrated description of the methods and equipment. 1500 w.

A Portable AssayOutfit for Field Work.
-
Bulletin of the American Institute of Mining Engineers Jan., 1911.
Describes outfit and supplies for about 100 assays which could be carried in a 26in. valise. 2500 w.

Improvements in Assaying.
ABBOT A. HANKS.
Mining and Scientific Press May 13, 1911.
Read before the Am. Chem. Soc. Reviews the changes in the last 25 years in the apparatus and methods used in fire assaying. 3000 w.

Improvements in Assaying.
ABBOT A. HANKS.
Australian Mining Standard Aug. 24, 1911. Serial. lst part.
Read before the Calif. Sec. of the Am. Chem. Soc. Reviews the changes that have taken place in the last 25 years in the apparatus and methods used in fire assaying. 1800 w.

United States Assay Offices; Methods of Operation.
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Mining and Engineering World Feb. 24, 1912.
Describes methods used 2800 w.

How Gold is Bought.
JESSE SIMMONS.
Scientific American Nov. 16, 1912.
Illustrates and describes the methods of the United States assay office. 2000 w.

The Determination of Gold in the Presence of Iridium and Allied Metals in materials Such as Black Sand. Two prize papers by
JAMES GRAY and CHRIS TOOMBS.
Journal of the Chemical, Metallurigical and Mining Society of South Africa July, 1913.
Deals with methods, reporting research work. 5500 w.

Handling Gold Dust at Fairbanks.
HUBERT I. ELLIS.
Engineering and Mining Journal Nov. 7, 1914.

Describes methods of assay and of melting and molding.
4000 w.

Assay of Black Sands.
P. HOPKINS.
US Bureau of Mines Report Investigations n 3265 Dec. 1934 5 p; see also Mining Journal (Phoenix Ariz) v 18 n 19 Feb. 28, 1935, p. 56.
Methods described were selected from large number tried: labour of grinding may be reduced by removing metallics at two or three selected screen sizes and cutting down amount of sample at each lower size; most satisfactory method of handling metallics involves use of sulphur or sulphide, instead of acid treatment or oxidation by scorification.

**GOLD PLACER** Bibliography

Selected Bibliography on Placer Mining.
H.A. FRANKE.
Mining in California v 28 n 2 Apr 1932 p. 21924.
Bibliography from government publications, textbooks, and papers dealing with California's gold placer resources and from other subject matter, which would help in recovery of these resources.

Depression Gold Rush.
J.B. KNAEBEL and N.W. VON BERNEWITZ.
Mining and Metallurgy v 13 n 312 Dec. 1932 p. 5246.
Annotated bibliography of recently published information on prospecting and gold recovery.

**GOLD PLACER** Geology Australasia

Deep Placer Deposits of Victoria.
H.L. WILKINSON.
Engineering and Mining Journal Dec. 30, 1905.
Discusses the principles which have affected the value of the regularly defined "deep leads." Maps. 2500 w.

Victorian Auriferous Occurrences.
PROF. T.S. HART.
Australian Mining Standard July 25, Aug. 1, 1906. Serial. 2 parts.
An explanation of their mineralogical character. 4500 w.

Geological Features of Fiji.
N.D. COCHRANE.
Australian Mining Standard Aug. 3, 1910.
Information concerning the alluvial, reef, and dredging possibilities. 5000 w.

Origins and Composition of Alluvial Gold, With Special Reference to Morobe Goldfield, New Guinea,
M.S. FISHER.
Institution of Mining and Metallurgy Bul n 365, 366, 367, 369 and 370 Feb 1935, 46 p supp plates, (discussion) Mar p. 127 Apr p. 234, June p. 312 and (author's reply) July p. 514.
Specimens from various parts of world were examined; critical review of conflicting theories; evidence of derivation mechanically from denuded veins or lodes; greater purity of alluvial gold is attributed to electrolytic corrosion process, resulting in silver being removed. Bibliography.

Origin and Composition of Alluvial Gold, with Special Reference to Morobe Goldfield, New Guinea.
M.S. FISHER.
Institution of Mining and Metallurgy Bul n 378 Mar 1936 p. 2731.
Further contribution to discussion of 1935 paper.

**GOLD PLACER** GEOLOGY Canada

The Source of the Fraser River Gold.
HORACE F. EVANS.
Mining World Sept. 2, 1905.
Discusses the probable source of the gold found in the Fraser River placers. 2000 w.

British Columbia. Origin of the Placer Gold of the Barkerville Area, Cariboo District, British Columbia, Canada,
W.L. UGLOW and W.A. JOHNSTON.
Economic Geology, vol. 18, no. 8, Sept. 1923, pp. 541-561, 3 figs. Derivation of placer gold from auriferous quartz veins; character of placer gold; accretion of gold in gravels; quartz veins; relationship of placer to vein gold.

Gold Occurrences of Canada Summary Account.
H.C. COOKE and W.A. JOHNSTON.
Canadian Dept. of Mines Geological Survey Economic Geology Series n 10 n 2309 1932 6l p supp plates.
Summary designed to afford prospectors geological guidance in intelligent search for new supplies of gold and to afford general knowledge of history, present situation, and opportunities of goldmining industry in Canada; Lode gold areas; placer gold; modes of occurrence and hand method of mining. Bibliography.

Gold Mining and Milling in United States and Canada. Current Practices and Costs.
C.F. JACKSON and J.B. KNAEEBEL.
US Bureau of Mines Bul n 363 1932 151 p supp plates.
Data on prospecting, development, mining, and milling of lodegold ores, and discussion of placer mining; general information; examples; statistics and costs.

**GOLD PLACER** Geology Canada Yukon

Geology of the Yukon. Condensed from advanced sheets of work by
JOSIAH EDWARD SPURR.
Mining and Scientific Press Jan. 22, 1898.
Describes the rocks and the disturbances they have undergone, in part first.

Preliminary Notes on the Surface Geology of the Yukon Territory.
OTTO NORDENSKJOLD.
American Geologist May, 1899.
Report of observations made on a journey between the Alaska coast and Dawson City. 3500 w.

Geology of the Klondike Gold Fields.
ANGELO HELLPRIN.
Ap Popular Science Monthly July, 1899.
An interesting illustrated description of this region. 6400 w.

Concentration of Gold in the Klondike.
J.B. TYRRELL.
Economic Geology June, 1907.
Describes the conditions that prevail in Klondike district, studying the rich placers, their origin and concentration. Ills. 2000 w.

Concentration of the Klondike.
DR. WILLIS EUGENE EVERETTE.
Scientific American Sup Dec. 28, 1907. Serial, lst part.
Describes geological investigations of the rocks of the Yukon River. 4000 w.

Types of Canadian Gold Deposits.
FRANCIS CHURCH LINCOLN.
Engineering and Mining Journal March 4, 1911.
Brief descriptions of the Klondike placer deposits, the replacement
lodes of Rossland, B.C. and the saddle reefs of Nova Scotia, 4000 w.

The Law of the Pay Streak in Placer Deposits.
J.B. TYRRELL.
Institution of Mining and Metallurgy, Bul 92 May 9, 1912.
Presents results of a study of the placer deposits of the Klondike, believing the laws and principles may be applied to other alluvial deposits. 5000 w.

Scroggie, Barker, Thistle, and Kirkman Creeks, Yukon Territory (79094N).
D.D. CAIRNES.
Canadian Dept of Mines Mem. 97. Maps and Ills. 43 pp.
Preliminary examination of placer deposits and conditions.
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Wheaton District, Southern Yukon (79093 N).
D.D. CAIRNES.
Canada, Geological Survey, No. 1620, Maps. 13 pp.
Survey and geological examination of this district.

**GOLD PLACER** Geology United States

The Buried Rivers of California as a Source of Gold.
J.R. SCUPHAM.
Mines and Minerals Nov., 1898.
How these rich and peculiar formations have been preserved. Modern instances of similar volcanic action covering river beds. Some particulars in regard to the returns which have been made by drifting on the ancient bed rock. 4000 w.

Mysteries of the Ancient Rivers of the Forest Hill Divide, Placer Co., Cal.
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Mining and Scientific Press March 18, 1899.
An account of the discovery of what is presumed to be a continuation of the rich channel worked in former years in the Dix mine, with information concerning these channels. Ill. 1500 w.

Geology of the Apache Canon Placers.
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Engineering and Mining Journal Dec. 24, 1903.
In the southern part of the Sierra de los Cabalos, New Mexico. 2000 w.

The Geology of the Treadwell Ore Deposits, Douglas Island, Alaska.
ARTHUR C. SPENCER.
Transaction of the American Institute of Mining Engineers Oct., 1904.
A description of the Treadwell gold deposits in their geological aspects, with an outline of the general geological features of the region. Ills. 13000 w.

Source of the Placer Gold in Alder Gulch, Montana.
EARL DOUGLASS.
Mines and Minerals Feb, 1905.
Explains evidences indicating it was from adjacent lodes. 3500 w.

Geology of the Breckenridge Placers.
ARTHUR LAKES.
Mines and Minerals Feb, 1912.
Describes the method used in working them. Ills. 5000 w.

Third Beach Line at Nome, Alaska.
ARTHUR GIBSON.

Mining and Scientific Press April 25, 1914.
Drawings and description of pay streak of an auriferous gravel deposit and its peculiarities. 1200 w.

Ancient Auriferous Gravel Channels of Sierra County, California.
MARK N. ALLING.
Bulletin of the American Institute of Mining Engineers July, 1914.
Gives a review of the historical geology of California, the economic geology, the deposits of drift mines, etc. Also bibliography. 7500 w.

The ChisanaWhite River District, Alaska (72078 A).
STEPHEN R. CAPPS.
US Geological Survey Bul. 636.
Investigation of the gold placers, copper prospects, copper and gold lodes. Ills. and Maps. 120 pp.

Preliminary Report on the Trolovana District, Alaska (72395 N).
ALFRED H. BROOKS.
US Geological Survey Bul. 642G.
Information concerning this region where placers were recently discovered. Map. 9 pp.

Gold Mining in the Willow Creek District, Alaska (72213).
STEPHEN R. CAPPS.
US Geological Survey Bul. 642F.
Supplement of a more complete report. 2200 w.

Placer deposits of the Manhattan District, Nevada (76322 N).
HENRY G. FERGUSON.
US Geological Survey, Bul 640J Jan. 20, 1917.
Field work, history, deposits, etc. Maps, 300 p.

Topography and Geology of Dredging Areas
CHARLES JANIN.
Mining and Scientific Press, vol. 118, no. 4, Jan. 25, 1919, pp. 122123. 4 figs.
Dredging areas in Colo., Mont., Idaho and Oregon. Abstract from Bul. 127, U.S. Bur. of Mines.

Auriferous Gravels of Southwest Oregon.
A.E. KELLOGG.
Mining Journal (Phoenix, Ariz.), vol. 11, no. 20, March. 15, 1928, pp. 36 and 5455.
3 figs. Refers to placer deposits and geological history; two masses of ancient gravels northwest of Kerby; gravels of second cycle, more extensive and important, near Galice and Briggs creeks; gravels of third cycle related to modern streams; in Gold Hill district most important workings on Foots

creek; Ludlum Engineering Corp. of New York recently acquired about 2000 acres dredge ground and commenced active operations.

Geology and Ore Deposits of the Rocky Bar Quadrangle.
S.M. BALLARD.
Idaho Bureau of Mines and Geology Pamphlet, no. 26, Mar. 1928. 41 pp.
Situation and access; climate and vegetation; history; production; physiography; mines and prospects; placer mining; only metals of value mined are gold and silver; molybdenum may be added at future date; no deposits of lead, zinc or copper yet found in sufficient quantity to warrant recovery.

Origin of Flour Gold in Black Sands
A.E. KELLOGG.
Mining Journal (Phoenix, Ariz.), vol. 14, no. 20, Mar. 15, 1931, pp. 34 and 4950.
2 figs. Cause of flour gold, or very fine gold, with examples of its attrition in Southwestern Oregon and Northwestern California; Klamath mountains constituted island in ocean during cretaceous time, before Cascade mountains were uplifted; it is considered that deposits were formed along shore line of this old island, in same manner that deposits are now being formed on Pacific Ocean shore.

New Technique Applicable to Study of Placers
O.P. JENKINS.
California Journal of Mines and Geology v 31 n 2 Apr 1935 p 143210.
Placers are classified as residual, eluvial, stream, glacialstream, bajada, eolian, and beach; exploration by serial photography, geophysics, physiography, and study of desert processes and sedimentation; paper deals; primarily with California placers; largest of possible reserves probably lies in remaining buried tertiary stream channels of Sierra Nevada. Bibliography.

**GOLD PLACER** Geology World, other

Origin of the Placer Gold of Guiana.
LEE FRASER.
Mining and Scientific Press Nov. 26, 1910.
Synopsis of a chapter in "Geology of the Goldfields of British Guiana," by J.B. Harrison. A resume of the facts, hypotheses and theories. 2500 w.

The Absence of Alluvial (Placer) Gold Deposits on the Rand or in its Vicinity.
H.C. BOYDELL.
Chemical, Metallurgical and Mining Society of South Africa vol. 27, no. 7, Jan. 1927, pp. 154-158.
To account for missing gold that would reasonably be expected to be found in apparently non-existent placers, two explanations suggest themselves, enrichment of reef and removal of gold by transportation or suspension; both of these are discussed.

Geology of Gold; South Africa, Australia, New Zealand.
E.J. DUNN. Lond.
Charles Griffin and Co., 1929, 303 pp., illus. maps, tables.
Comprehensive description of principal gold occurrences in countries under consideration, with discussion of origin of lodes and lode cavities, influence of faults, igneous intrusions, and similar topics bearing upon genesis of ore deposits; work contains 172 plans and sections illustrating text and 253 photographs and photomicrographs of ores and native gold; author has been government geologist to Cape Colony and Victoria, and bases his book on his own observations.

The Blanket Reefs on the Gold Coast.
A. BRAY. S.
African Engineer., vol. 14, no. 2, Feb. 1929, pp. 3334; see also discussions and author's reply in nos. 293 and 294, Feb. and Mar. 1929, pp.29-34 and 4547. Indexed in 1928 Eng. Index
Working banket mines are all in Tarkwa district, 45 mi. from coast at Sekondi; data obtained at Abosso and AdjakBippo mines, but Taquah and Abbontiakoon show similar conditions; series is alternation of sandstones; quartizites and conglomerates; gold values average 32 to 40 shillings per ton; definite pay shoots, separated by unprofitable intervals; theories as to origin of gold, which is not ordinary placer gold.

Chemische Prozesse bei Bildung von Seifenlagerstaetten.
F.W. FREISE.
Zeitschrift für Praktische Geologie v 40 n 7 July 1932
p 99103.
Chemical process in formation of placer deposits;
results of observations of Brazilian gold,
platinum and monazite placers.

Gesetzmaessigkeiten bei der Bildung von Kuestenseifen.
H. FALKE.
Zeitschrift für Praktische Geologie v 47 n 9 Sept 1939,
p. 1615.
Laws governing formation of coastal placers; remarks
based on observations on coast of Chile at
different points; characteristics of
different placer deposits shown in table.

K voprosu o dal'nosti perenosa rossypnogo zolota ot
korennykh istochnikov.
E.Z. GORBUNOV.
Sovetskaya Geologiya v 2 n 6 June 1959 p. 98105.
Transportation of gold during formation of placers;
methods of determining distance which free
gold travelled in Recent valleys are given,
based on investigation of Kolyma River basin
placers whose original source is known;
distance between primary source and areas
containing maximum gold content averaged
from 700 to 1500 m.

K probleme zolotonosnykh konglomeratov, Yu.
P. IVENSEN, A.A. STEPANOV, V.K. CHAIKOVSKII.
Razvedka i Okhrana Nedr n 2 Feb 1963 p. 17.
Problem of goldbearing conglomerates; attention is
drawn to conglomerates as possible source of
gold and uraninite; five areas in territory
of Soviet Union are outlined where
conglomerates formed and conditions for
formation of placers could be favourable.

Osobennosti razvitiya gidroseti i voprosy rossypnoi
zolotonostnosti na SeveroVostoke SSSR. E.Z.
GORBUNOV.
Sovetskaya Geologiya n 4 Apr 1963 p 7384.
Evolution features of hydrographic network and problems
of occurrence of gold, tin, and tungsten
placers in northeast of Soviet Union; study
of problem with aim to interpret structural
control in evolution of ancient river
valleys and suggested methods of prospecting
for ancient placers.

O sootnoshenii masshtabov korennoi i rossypnoi
zolotonosnosti v razlichnykh zolotonosnykh
provintsiyakh zemnogo shara.

S.D. SHER.
Sovetskaya Geologiya n 3 Mar 1965 p. 39.
Relationship between magnitude of primary gold deposits and gold placers in various goldbearing provinces of world; gold deposits in Soviet Union and China are not covered by this article; approach is made to problem of factors controlling dispersion and concentration of gold in placer deposit.

**GOLD PLACER** Geology General

Prospecting for Gold Gold Placers; How They are Worked.
ARTHUR LAKES.
Colliery Engineer - Feb., 1896.
Theories of the origin of gold sands and the history and distribution of gold placer deposits throughout the world. Illustrated by maps showing locations of gold deposits in Europe, Asia and Africa.

The Origin of Placer Gold.
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Mining Journal - Aug. 22, 1896.
What placer gold really is, with a sketch of the more modern views of the mode of the deposits.

The Marble Belt.
A. THURSTON HEYDON.
Mining and Scientific Press - April 10, 1897.
A region of interest to miners because of the large deposits of rich gravel. Reviews the formation, character and past work. 1000 w.

The Glacial Epoch Its Relation to Alluvial Gold Deposits.
L.O. BEAL.
Australian Mining Standard - Oct. 20, 1898.
Reviews the evidence of glaciation, and gives his own opinion in explanation of the ice movement. Illustrates the means by which alluvial gold was gathered and redistributed, and other geological work. Ill.

Gold Placers in Glaciated Regions.
GEORGE H. STONE.
Mines and Minerals - June, 1900.
Why they present different conditions from those which have not been affected by glaciation. Ill. 2700 w.

The Origin and Classification of Placers.
H.L. SMYTH.
Engineering and Mining Journal - June 1, 1905.
Aims to show how the distribution and concentration of the valuable particles in placers are dependent on the conditions under which erosion, transportation and deposition takes place. Serial. lst part. 2000 w.

What Constitutes a Placer.
ARTHUR LAKES.

Mining World - Sept. 23, 1905.
Describes how placer deposits are formed, and the causes of barrenness of one gulch and the richness of another. 1500 w.

The Nomenclature of Modern Placer Mining.
J.P. HUTCHINS.
Engineering and Mining Journal - Aug. 17, 1907.
Discusses classification of placers, their origin, and methods of exploitation. Ills. 2000 w.

Some Principles of Concentration in RiverBed Gravels.
JAMES PARK.
Mining Journal - Aug. 1, 1908.
Considers progress of river erosion, river bed bottom, position of pay wash, etc. 2500 w.

Nature of Gold in Alluvials.
F. LYNWOOD GARRISON.
Mining and Scientific Press - May 29, 1909.
Gives facts observed in connection with the study of alluvial gold deposits, and discusses influences that have affected the gold accretion. 3000 w.

Some Ore Deposits Connected with Placers.
MATT. W. ALDERSON.
Mining World - July 24, 1909.
Describes peculiarities of ore deposits that are often misleading. 2500 w.

Transportation of Gold by Organic Underground Solutions.
F.W. FREISE.
Economic Geology, vol. 26, no. 4. JuneJuly, 1931, pp. 421431.
Experiences and observations at various gold placer mines in connection with popular theory that every gold placer that has been exhausted may after period of years be panned again and yield profitable amount of newly accumulated gold; data indicate that gold is attacked by humic acids, even if dilute, provided sufficient time is allowed, and oxygen is excluded; reprecipitation of gold depends upon character of mineral solutions circulating in some soils.

Geology of Placer Deposits.
W.E. COCKFIELD.
Canadian Mining and Metallurgy Bulletin n 238 and 239 Feb 1932 p. 5864 and (discussion) Mar p. 126. Origin of placer deposits; requisites for formation; examples of gold placer deposits; same principles apply to placer deposits of other metals.

Geology of Placer Deposits.

W.E. COCKFIELD.
Canadian Institute of Mining and Metallurgy and Mining Soc Nova Scotia Trans v 35 1932 p. 5864 (discussion) p.126. from various sources.

Alluvial Gold.
H.L. HOLLOWAY.
Mining Magazine v 49 n 2 Aug 1933 p. 825.
Author discusses deposition of alluvial gold and shows how examination of practical considerations may be of help in assessing potential value of placer deposit.

Desert Placers.
S. TRESKINSKY.
Mining Magazine v 49 n 4 Oct 1933 p. 21923.
Description of type of placer deposit occurring in Persia, designated by author as "proluvial" deposit, being formed by turbulent streams in mountainous dry region; sketch plans and sections illustrate distinction between alluvium and proluvium.

Do Gold Nuggets Grow or Are They Born that Way?
H.A. HEYERHOFF.
Mining and Metallurgy v 16 n 340 Apr 1935 p 195.
Theory of H.A. HEYERHOFF in University of Puerto Rico Monograph Series B No. 1, indexed under Geology Puerto Rico, is that there is no foundation for assumption that placer grains and nuggets indicate proximity of rocks that contain large gold particles: contention is that particles grow by accretion in stream; in discussion. Red Arrow mine in Colorado is cited in rebuttal.

Migration of Alluvial Gold.
F.L. GARRISON.
Mining Magazine v 52 n 4 Apr 1935 p. 2159.
High purity of alluvial gold often greater than lode gold of its source, is due to greater solubility of silver in natural waters; solubility of gold in meteoric waters is regarded as factor in migration, dispersion, and concentration of gold in alluvials; natural precipitants of gold; discussion of theories and of observed facts. Bibliography.

Do Gold Nuggets Grow or Are They Born that Way?
J.N. BUTLER.
Mining and Metallurgy v 16 n 342 June 1935 p 270.
More About Life History of Nuggets, in supplementary discussion based partly upon hearsay information.

Do Gold Nuggets Grow or Are They Born that Way?
-
Mining and Metallurgy v 16 n 344 Aug 1935 p. 344.
More on nugget birth control; in closing discussion, original author concedes that statement regarding growth of nuggets by accretion should have been less positive; specimens originally referred to are matted aggregates consisting of tightly packed and compressed particles, in which malleability of metal as factor in "coldwelding" is quite apparent.

Die sekundaeren Umlagerungen und Anreicherungen des Goldes in den Goldseifen.
G. BUERG.
Zeitschrift für Praktische Geologie v 43 n 9 Sept 1935 p. 1349.
Theoretical study of secondary changes and enrichments of gold in gold placers; conclusions regarding redeposition and migration of gold from position of its primary origin.

Occurrence of Gold in Stream Placers.
F.A. CRAMPTON.
Mining Journal (Phoenix, Ariz) v 20 n 16 Jan 15 1937 p. 34 and 334.
Comment on fallacy of generally accepted theory that greatest concentration of gold will occur close to, or in center of "trough" of stream bed; uniformity is rare in placer deposits; combinations of factors influencing gold deposition may cause series of complex conditions; each area requires special study; examples of placer gold deposits, stressing importance of local conditions.

Sur l'origine de l'or et des pepites alluvionnaires.
R. VAN AUBEL.
Chronique des Mines Coloniales v 6 n 64 July 15 1937 p. 23862.
Contribution to study of alluvial gold and nuggets; review of researches and conclusions. Bibliography.

Nekotorye zakonomernosti obrazovaniya v vodoemakh promyshlennkh kontsentratov tyazhelykh meineralov.
M.G. BARKOVSKAYA.
Geologiya Rudnykh Mestorozhdentii n 1 JanFeb 1963 p 50-64.
Some formation features of economic grade concentration of heavy minerals in basins of deposition; genetic classification of basin type placers is suggested; analysis of process of placer formation of various genetic types and evaluation of their economic value; possibility of artificial formation of

placers in areas where sediments are enriched in heavy minerals; results of study of beaches and shelf.

Formirovanie zolotonosnykh rossypei i otrazhenie ustoichivosti dolinnoi seti v mineralogicheskom sostav allyuviya.
L.V. ZORIN.
Izvestiya Vysshikh Uchebnykh Zavedenii. Geologiya i Razfedka n 7 July 1964 p. 7985.
Formation of gold placers and reflection of stability of valleys network by mineral composition of alluvium; effect of distance of transportation between source and site of deposition on size of mineral grains in alluvium.

Podvodna koncentracija zlata iz recnog zlatonosnog peska.
D. LESIC.
Rudarski Glasnik n 4 1965 p. 510.
Underwater concentration of gold from goldbearing river sands; theoretical principle of underwater gold concentration is based on fact that when goldbearing and is slightly elevated by underwater impeller pump, water or river current will transport sand l m in direction of water flow; it would be possible to get concentration of free gold, allowing gold-bearing sand to settle by putting corduroy or amalgamating table on this vibrating device.

**GOLD PLACER** LOCATION Africa

New Brighton Mines, Limited.
C.S. EDMONDSON.
Mining Journal - Feb. 2, 1907.
Report of a visit by C.S. EDMONDSON, who has specially examined the Bendigo alluvial gold field in South Africa. 3500 w.

The Gold Coast: The "Sick Man" of the Mining Industry.
JOSEPH RALPH.
Mining Journal - Oct. 22, 1910. Serial. 1st part.
Explains conditions, discussing the climate, labour, etc. 7500 w.

The Development of the Gold Deposits of Madagascar (Exploitaton des Gisements Auriferes a Madagascar).
H. PERES.
Memoires de la Société des Ingenénieurs Civils de France - April, 1902.
Discussing the geology of the Madagscar placers and the present methods by which they are worked. 8000 w.

Placer Gold in French Equatorial Africa.
J.L. MIDDLETON.
Engineering and Mining Journal v 133 n 2 Feb 1932 p 89-90.
Deposits of placer gold in paying quantities discovered during April 1929 in Baguetta Creek in Oubangui Chari district: origin of gold attributed to intrusion of sedimentary formation by granite batholith: gold is recovered by sluicing, with native labourers shovelling directly into sluices or transporting gravel by wheelbarrow.

Mining Gold Gravels in Sierra Leone.
-
Engineering and Mining Journal v 133 n 4 Apr 1932 p. 203.
Notes on two placer gold mining operations.

First Report on Kakamega Goldfield, Kenya.
A. KITSON.
Mining Journal (Lond) v 179 n 5073, 5074, 5075 and 5076 Nov 12 1932 p 7578, Nov. 19 p. 7734, Nov 26 p 794 and Dec 3 p 8078.
Field in northern Kavirondo, discovered in 1931, with area about 420 sq mi; geology; alluvial mining and prospecting of reefs; modes of gold occurrence; development activity.

Geology of Abuasi Goldfield.

N.R. JUNNER.
Gold Coast Geological Survey  Memoir n 2 1932 43 p supp plates.
Physical features; general and economic geology; mines of Ashanti Goldfields Corp. and other gold occurrences; alluvial gold.

L'or au Togo.
V. KACHINSKY.
Chronique des Mines Coloniales v 4 n 37 Apr 1 1935 p. 11423.
Gold deposits in Togo; historical review and comparison with neighbouring countries; conditions before and after European occupation; deposits in rock and alluvial deposits; conclusions.

Western Abyssinian Plateau.
G.T. EVE.
Mining Magazine v 53 n 2 Aug 1935 p 858; see also Mining and Indus Mag of S Africa v 21 n 3 Sept 13, 1935 p 912.
Notes on mineralization of plateau area lying east of Gambeila, head of navigation of Baro river, affluent of Nile; data refer chiefly to alluvial and eluvial gold and platinum deposits and outcroppings of quartz reefs and stringers.

Les gisements d'or et de platine du Ouallega (Ethiopie).
-
Génie Civil v 107 n 26 Dec 28 1935 p 620.
Gold and platinum deposits of Ouallega region in Ethiopia, adjacent to AngloEgyptian Soudan; locality map; recovery of metal from alluvial deposits; pegmatite and quartz veins were described by GEIER in Metallwirtschaft Oct 18; brief descriptions of mines and concessions.

Eastern Lupa Goldfield.
E.O. TEALE and N.W. EADES, with Petrological Notes, F. OATES.
Tanganyika Territory  Geological Survey Dept  Bul n 8 1935 61 p supp sheets.
Location, accessibility, physical features and general information; general geology similar to that of western Lupa, described by Grantham, in Bul n 3; eluvial and alluvial deposits have yielded nuggets without quartz up to 104 oz; quartz reefs, with iron pyrites and other sulphides and associated minerals. Bibliography.

Recent Developments in Gold Mining in Tanganyika

Territory.
E.O. TEALE.
Imperial Inst Bul v 34 n 1. JanMar 1936 p 4454.
Brief review of conditions during past 25 yr; gold production statistics; Musoma gold field; Mwanza gold field; Mkalama gold field, or IrambaSekenke region; Lupa gold field; geological features and principal mines of each; timber supplies; workable coal deposits near Galulu Mission offer fuel supply for Lupa field; sketch map shows location of fields.

Outline of Recent Developments on Lupa Gold Fields. Tanganyika Territory.
R.A. MACKAY.
Chemical, Metallurgical and Mining Society of South Africa J v 37 n 3 Sept 1936 p 98108.
History of development; granitic gneiss complex, intruded by later granites; quartz reefs and alluvial gold; placers worked by sluicing and in dry season by dryblower machine; dominant features of 28 reef mines of different character; 14 mills, capacity 2 to 40 tons per day; some deposits carry high proportion of sulphides, majority free from copper.

Les Gites miniers d'Eluvions et d'Alluvions au Congo Belge.
E. POLINARD.
Revue Universelle des Mines v 13 n 3 Mar 1937 p 12133.
Eluvial and alluvial deposits of Belgian Congo; their prospecting and exploitation discussed; summary description of detrital deposits; exploration and evaluation; methods of exploitation and treatment often differ for diamond and for gold as well as for cassiterite.

Gold Coast Mining.
D.D. HOWAT.
Mine and Quarry Engineering v 5 n 1 Jan 1940 p 310.
Historical, statistical and descriptive account; geology; classification of gold deposits, both vein and placer; mining camps; land belongs to native races and concessions are obtained from reigning chiefs; native labour; European staff and supervision; mining health area; power generation and fuel; transportation. Bibliography.

Die GoldLagerstaetten der Britischen Kolonie Goldkueste.
F.E. KLINGNER.
Berg und Hüttenmännisches Monatsheft v 88 n 2 Feb 15 1940 p 1722.
Gold deposits of British Gold Coast Colony in West

Africa; discussion of mining conditions and development of gold mines; geology of southern Gold Coast; description of deposits; gold placers; production data. Bibliography.

"SmallWorkers" of Southern Rhodesia's Gold Mining Industry.
R.F. MITCHELL.
South African Mining and Engineering Journal v 42 n 2519 May 10, 1941 p 287 and 289.
Brief general review of methods and procedure on small or "one man" property; deposits are alluvials, surface or eluvial and reef deposits; reef deposits are largest producers; extraction is by amalgamation and cyanidation in most cases; where pyrrhotite or arsenopyrite is present, concentrate is made either by flotation or tabling and roasted before cyanidation.

Gold Recovery at Revue.
-
South African Mining and Engineering Journal v 54 pt 1 n 2614 Mar 6 1943 p 7.
Alluvial gold deposits in valley of Revue River in Portuguese East Africa cover area about 15 mi long and width from few hundred feet to nearly one mile; gravel depth varies from few feet to 40 ft deposits were worked in ancient times; early dredging operations; notes on work done since property was taken over by Eastern Transvaal Consolidated Mines Ltd.

Crystalline Gold
Mine and Quarry Engineering v 17 n 7 July 1951 p 2237.
Study of Buhwezu Plateau. Ankole Southwest Uganda; country built up of sedimentary Karagwe-Ankolean rocks of preCambrian age; gold deposits of alluvial type have been worked out; alluvial gold has crystalline nature of metal; possible source of origin of gold particles discussed; recommendations for future explorations.

Lupa Goldfield. Tanganyika Territory.
A.M. QUENNEL.
Mining Magazine v 84 n 6 Dec 1951 p 3417.
Location and history of previous development; mineralization is of preCambrian age, subjected to erosion in end Tertiary time, forming auriferous reefs in oxidized zones which yielded material to alluvial gold deposits; data on output of alluvial and reef gold; review of areas where attention

should be directed; map.

La mécanisation de l'exploitation des gisements alluvionnaires Africains d'apres l'experience Americaine.
P. SEYER.
Echo des Mines et de la Métallurgie n 3470, 3471, 3472, 3473 July 1954 p 46974, Aug p 51724, Sept p 6024, Oct p 6812.
Mechanization and exploitation of African placers on basis of American experiences; economical study and statistics on American mines.

Geology and Gold Deposits of Ruvu River Area.
B.N. TEMPERLEY.
Tanganyika Geological Survey Short Paper n 24 1958 37 p. 4 maps, 6 plates. Stratigraphic sequence is represented by metamorphosed Basement complex and alluvium; distribution of successful gold workings in relation to valley form; character of river bed and "gold wash"; suggestions for further prospecting; occurrences of pyritic and eluvial gold.

Alluvial Goldfield in Ethiopia.
H.L. HOLLOWAY.
Mining Magazine v 107 n 2 Feb 1958 p 739.
In Kebre Mengist field, south of Addis Ababa, most prolific sources of gold have been various stream valleys; gold is water worn and usually coarse; prospecting system, dredging operation and data on gold recovery.

Alluvial Gold of Msidza River, Lundazi District.
J.G. SIMPSON, A.R. DRYSDALL.
Northern Rhodesia. Geological Survey Economic Unit Report n 5 1964 7 p.
For stretch of about 1 1/2 mi south of confluence of Mukusa and Msidza Rivers, bed of latter contains partly indurated goldbearing gravels which are largely confined to present course, only extending into banks on inside of bends; average width is estimated to be 8 ft and depth 9 in; although narrow lenticular quartz veins containing up to 10 dwt of gold outcrop in vicinity of river, no large "reefs" were indicated; 30% of gold is finegrained.

**GOLD PLACER** LOCATION Asia

The Chicksan Mines, Korea.
THOMAS T. READ.
Mining and Scientific Press - April 1, 1911.
Illustrated account of the mines owned by this company, which include both veins and placers. 2000 w.

Gold Placers in Central China.
E.G. THURSTON.
Mining and Scientific Press - Feb. 15, 1913.
Describes examples of placer mining, showing the Chinese to be industrious workers for small returns. Ills. 2500 w.

Chiksan Mines, Chosen.
CLARENCE L. LARSON.
Engineering and Mining Journal - July 25, 1914. Serial. 1st part.
Describes this Americancontrolled property in Korea. Ills 3300 w.

Gold Mining in Outer Mongolia.
E.W. MILLS.
Mining Journal (Lond.), vol. 165, no. 4891, May 18, 1929, pp. 399402.
Notes on prospecting expeditions; gold placers are known to exist on many rivers, but active mining confined to small area from DzounModo to Kudara, 10 mi. from Siberia; history, geology, accessibility, transportation, climate, labour and general notes; total production 1901 to 1919 about 320,000 troy oz.; gold quartz mining and milling since 1915; brief description of five of principal placer fields. Paper read before China Instn. of Mining and Metallurgy.

Gold Mining and its Vital Importance to Manchuria.
G.T. EVE.
Far Eastern Review v 28 n 7 July 1932 p 31314 and 329.
Broad review of gold mining industry in Manchuria and comparison with Amur region of Siberia; data on past production.

Gold in Manchuria.
G.T. EVE.
Mining Magazine v 47 n 4 Apr 1933 p 2125.
Outline of prospects for alluvial and lode gold mining, by late mining adviser to Nanking Government.

**GOLD PLACERS** LOCATION Australia

The Victorian Alluvial Gold Field.
-
Australian Mining Standard - Feb. 6, 1896.
A map of about thirty miles of alluvial district having the roads, claims, rivers and hills located with explanation in the text. 2400 w.

Victorian Gold Mining.
THOMAS CORNISH.
Mining Journal - Feb. 29, 1896.
Misleading statements in prospectuses. 1500 w.

The Auriferous Beach Sands on the North Coat (N.S.W.).
J.E. CARNE.
Australian Mining Standard - March 12, 1896.
A full description from the annual report of the New South Wales Department of Mines.

The Alluvial Leads of Victoria.
-
Australian Mining Standard - Feb. 25, 1897.
Plan of these leads from the source to the present workings, with tabulated statement giving some idea of the metal won. 500 w.

Benalla Gold Field (Vic.).
W.H. FERGUSON.
Australian Mining Standard - Oct. 21, 1897.
Report, with plan of field, describing the reefs, alluvial claims, and prospecting. 2000 w.

Revival in Victorian Alluvial Mining.
WILLIAM BRADFORD.
Australian Mining Standard - April 7, 1898.
Information concerning the plains south of Ballarat. Ill. 1700 w.

Mining in Victoria.
-
Australian Mining Standard - Nov. 10, 1898.
An interesting account of this mining region of Australia, illustrating the primitive methods of alluvial gold mining and extraction, and the progress in methods.

The Alluvial Deposits of Western Australia.
T.A. RICKARD.
Transactions of the American Institute of Mining Engineers - Dec. 1898.
Describes the geology and physiography of these gold fields, distribution, dry blowing machinery, water supply and theories of the origin of the deposits. Ill. 9900 w.

The Clermont Goldfield.
B. CUNSTAN, assistant government geologist.
Queensland Gov Mining Journal - Aug. 15, 1902.
Report describes the geological considerations, the alluvial deposits, etc. of this district in Queensland. Serial. lst part. 11,500 w.

Alluvial GoldMining Appliances.
-
Queensland Gov Mining Journal - Aug. 15, 1902. Serial. 1st part.
An illustrated description of machines and accessories which have proved to be of special importance in alluvial gold mining on the Clermont field. 3500 w.

Deep Alluvial Mining.
D.H. BROWNE.
Mines and Minerals - Jan. 1904.
An illustrated article giving practical hints and descriptions of methods which have been employed in the mines of New South Wales, Australia. 3800 w.

Deep Alluvial Mining in Victoria.
F. DANVERS POWER.
Engineering and Mining Journal - Sept. 29, 1904.
Describes the deep leads and the systems of mining. Ills. 2000 w.

Black Ridge, Clermont.
LIONEL C. BALL.
Queensland Gov Mining Journal - June 15, 1905.
Preliminary report of the geological survey, giving location, geology, deposits and general information of the auriferous ground. Serial. lst part. 10,000 w.

Charlotte Plains Deep Leads.
E.J. DUNN.
Australian Mining Standard - July 5, 1905.
Describes deep alluvial mining, showing gold wash deposits. 1200 w.

Black Ridge, Clermont.
LIONEL C. BALL.
Queensland Gov Mining Journal - Dec. 15, 1905. Serial. 1st part.
Recent note son this gold mining district given as a supplementary report to an ear lier article. Deals with the geology, mining and milling, claims, etc. Ills. 8500 w.

Deep Placer Deposits of Victoria.
H.L. WILKINSON.

Engineering and Mining Journal - Dec. 30, 1905.
Discusses the principles which have affected the value of the regularly de fined "deep leads" Maps. 2400 w.

Charlotte Plains Consolidated.
F.D. JOHNSON.
Australian Mining Standard - June 27, 1906.
An account of the drainage and final successful working of this deep alluvial gold mine in Victoria. 1500 w.

Saving Minerals from Beach Sands.
-
Mining World - Oct. 10, 1908.
Account of a novel device for recovering minerals from the beach sands of Richmond River, New South Wales. Abstracted from the Town and Country Journal. Ills. 900 w.

DeepLead Alluvial Mining in Victoria.
FRANK REED.
New Zealand Mines Record - Dec. 16, 1908.
Illustrated description of methods. Plates. 2000 w.

The Beginning of Australia's Gold Mining Industry as Recorded in 1852.
A.H. GUERNSEY.
Engineering and Mining Journal, vol. 127, no. 17, Apr. 27, 1929, pp. 668669, 4 figs.
Discovery of gold was announced by Edward Hargraves, Apr. 3, 1851; rush to diggings was well under way by middle of May; at height of activity, about two fifths of miners were making $5 per day, and other twofifths gained from fifty cents to $1.50 and remainder earned nothing. Extracts from article in Harpers New Monthly Magazine, Dec. 1852. Victorian Deep Leads, A.R.O. WILLIAMS. Mining Magazine v 52 n 3 Mar 1935 p 13748. Description of methods developed for exploitation of deepseated auriferous gravel deposit in Victoria, Australia; ancient river channels were worked to depths of over 400 ft below surface; study indicates how past practice is likely to be improved upon, as mines are being reopened; importance of draining wash gravel before driving workings in it; ventilation requirements.

DeepLead Mining in Victoria, Australia, with Note on Similar Practice at Wingdam.
B.C., D.C. MACKENZIE.
Canadian Mining and Metallurgy Bulletin n 280 Aug 1935 p 40010.
Definition of deep leads; deep leads of Victoria are of 3 types; alluviumcovered, subbasaltic, and

elevated subbasaltic; Ballarat panelling system and Chiltern blockingout system of mining; production and capital costs; essential characteristics of ideal deep-placer proposition.

Deep Lead Mining in Victoria.
G.B. O'MALLEY.
Chemical Engineering and Mining Review v 28 n 330 Mar 9 1936 p 17183.
Description of plant and operations of Talbor Alluvials Ltd; earlier work in field was discussed by A.R.O. WILLIAMS in Mining Magazine Mar 1935; thickness of wash ranges from few inches to 30 ft, values being in lower part, rarely over 12 in. deep; payable width is commonly 500 to 600 ft; depth to bedrock is from 92 to 440 ft; mining methods; flow sheet of treatment plant.

Washing Deep Lead Gravels for Gold.
L.A. CROZIER.
Chemical Engineering and Mining Review v 29 n 338 Nov 9 1936 p. 435.
Tailings retreatment plant at Allendale, Victoria, (near Ballarat) washes material from gravel dumps remaining from deep lead operations; recovery 15 oz gold per week from 3000 cu yd gravel, simply by washing and gravity collection; slackline excavator with 3/4 cu yd scoop handles material and dumps into hopper, from which material is discharged into sluice boxes.

Gulgong Gold Field.
L.J. JONES.
New South Wales Dept Mines Geological Survey Mineral Resources n 38 1940 p 7134.
History; physical geography; gold production statistics; 1870 to 1937 inclusive with total of more than 5,205 oz. general geology; detrital or placer deposits; alluvial "leads"; alluvial gold in conglomerates of Permian coal measures; description of Main or GulgongCooyal deep lead and of tributary leads; gold reefs, outcropping at surface and concealed by alluvium; clay, antimony and silica deposits. Bibliography.

Magnetic Prospecting of Gulgong Deep Leads.
J.M. RAYNER.
New South Wales Dept Mines Geological Survey Mineral Resources, n 38 1940 p 13558, maps, supp plates.

Principles of magnetic prospecting; susceptibility of common rock types; geology of Gulgong area; method used to locate position of stream channels in old land surface now covered partly by basalt and extensively by alluvial deposits; primary aim is to indicate where boreholes and shafts may be sunk to best advantage in search for goldbearing wash; 5 areas are favourable.

Deep Alluvial Gold Leads of Kalgoorlie.
C.M. HARRIS.
Chemical Engineering and Mining Review v 38 n 452 May 10 1946 p 26972.
Article does not deal with geological aspects, purpose being to place on record valuable prospecting and mapping done by professional prospector Oliver Hancock about 1900; many places in area are considered to be still worthy of further attention.

Geology of Country About Coolgardie, Coolgardie Goldfield.
W.A., J.C. MCMATH, N.M. GREY, H.J. WARD.
Western Australia Geological Survey Bul n 107 1953 365 p, 3 supp maps, 24 maps in separate atlas.
Physiography of country; older greenstones, metamorphism, granites and allied igneous rocks, and Recent deposits; structural elements; alluvial deposits of gold; quartz reefs and lodes; minerals; other than gold; details on mining groups.

Gold Recovery from Auriferous Gravel from Goulburn River, Near Seymour, Vic.
J.T. WOODCOCK.
Australia. Commonwealth Sci and Indus Research Organization Ore Dressing Investigations Commonwealth Mining Dept., Univ. of Melbourne Report 598 June 1960 6 p.
Two gravel samples containing 1 and 6 dw/ton gold respectively were tested; gold ranged in size from 16 to 200 mesh; after rejecting plus 10 mesh fraction by screening, 9699% of gold was recovered in strake concentrate; nearly all of this gold was readily amalgamated, and recovery in amalgam was about 94%.

**GOLD PLACERS** LOCATION Canada

Gold Mining Industry 1958. Canada.
-
Dominion Bureau of Statistics n 26209 Jan 1960 B39 p.
Statistics on alluvial gold mining, auriferous quartz mining, and coppergoldsilver mining production, export, import, consumption, and costs including labour, fuel, and electricity.

**GOLD PLACERS** LOCATION Canada Alberta

Alluvial Gold Mining at Edmonton, Alberta, Canada.
ISAAC COWIE.
Canadian Mining Review - May, 1898,.
An account of the mineral wealth of this region, the methods of mining employed, and general information of interest. 3400 w.

Gold on the North Saskatchewan River.
J.B. TYRRELL.
Bulletin of the Canadian Mining Institute - Feb., 1915.
The physiography, history, occurrence, production, geology, and source of the gold. 4500 w.

Gold Hunting House Boat.
G.Y. SCHIERBOLTZ.
Canadian Mining Journal v 64 n 6 June 1943 p 358.
Illustrated note on houseboat 32 ft long to be used in attempt to recover gold from potholes of North Saskatchewan River; idea is to anchor boat above pothole; current drives large water wheel on upstream end of boat; wheel actuates suction pump and suction hose is lowered into pothole; if appearance of pumped sand indicates possibility of coarse gold or nuggets, plan is to cofferdam hole with sandbags and hoist coarse gravels out.

**GOLD PLACER** LOCATION Canada B.C.

The Gold Mining Revival in British Columbia.
-
Mining Journal - Aug. 29, 1896.
Editorial review of present prospects in this field. 1700 w.

GoldBearing Reefs and Placers of Northern British Columbia.
WILLIAM HAMILTON MERRITT.
Canadian Mining Review - March, 1898.
Notes on the general character of the placers and quartz reefs, and the general character of the ores. Ill. 3800 w.

The Auriferous Alluvium of the Fraser River and Its Tributaries.
J.D. KENDALL.
British Columbia Mining Record - Feb., 1900.
Part first gives an outline of the economic history and some hydrographic data.

An Atlin Hydraulic Mine.
-
Mining and Scientific Press - May 11, 1901.
Brief Illustrated account of the mining conditions in this district of British Columbia. 800 w.

Auriferous Black Sands of Vancouver Island, B.C.
W.M. BREWER.
Engineering and Mining Journal - May 18, 1901.
An account of the difficulty met in saving the gold, and the recent success; also discusses the source. 1500 w.

Black Sand Auriferous Deposits of Wreck Bay, Jordan River, and Other Localities of Vancouver Island.
R. LIND WATSON.
Mines and Minerals - June, 1901.
Descriptive. Map. 1200 w.

Auriferous Beach Sands of British Columbia.
-
British Columbia Mining Record - Aug., 1901.
General information concerning these deposits and the attempts to work them, the machines, used, etc. Ills. 5000 w.

Mining Operations in Atlin, B.C.
R. LIND WATSON.
Mines and Minerals - Dec. 1901. Serial. 1st part.
An illustrated description of some of the placers and

the hydraulic plants which are being installed. 2200 w.

Characteristics of the Atlin Gold Field.
J.C. GUILLIM.
Canadian Mining Review - Jan. 31, 1902.
Describes the placer bearing streams, and the region through which they pass. Ill. 2700 w.

Recent Operations in the Atlin District.
MOSTYN WILLIAMS.
British Columbia Mining Record - Feb. 1902.
Brief accounts of the operations of five companies employed in construction and equipment of hydraulic plants. Ill. 2400 w.

Hydraulic Mining in Omineca District During 1901.
-
British Columbia Mining Record - Feb. 1902.
Report for the year of this placer district, especially the operations on the Vital and Town Creek section. Ill. 1800 w.

Notes from the Atlin District, British Columbia.
W.M. BROOK.
Engineering and Mining Journal - Nov. 29, 1902.
An illustrated article giving information of the progress made by the companies operating in this region. 2200 w.

Alluvial Deposits of Horsefly, B.C.
W.M. BREWER.
Mining and Scientific Press - Oct. 31, 1903. Serial. 1st part.
Illustrates, describes the placer and hydraulic mines of this portion of the Cariboo district. 1200 w.

Hydraulic Mining on the Quesnelle.
WILLIAM M. BREWER.
Engineering and Mining Journal - Oct. 31, 1903.
Describes this portion of the Cariboo mining district, giving details of operation and results obtained by hydraulic mining of these auriferous gravels. 2300 w.

Quesnelle Forks Mining Division of British Columbia.
W.M. BREWER.
Mines and Minerals - Feb. 1904.
Illustrated description of a great placer mining region and the developments. 4000 w.

Hydraulic Mining in Cariboo, BC.
J.B. HOBSON.
Mining and Scientific Press - Feb. 20, 1904.
From the annual report, showing details of large operations in progress in Cariboo. 1st part. 1200 w.

The Atlin District.
W. WALLACE GRIME.
Engineering and Mining Journal - March 31, 1904.
Information concerning the mining laws, the methods and the development. 1100 W.

Hydraulic Mining Conditions in the Atlin District of British Columbia.
-
Mining Reporter - July 27, 1905.
Extract from the report of the Provincial Mineralogist. Describes the present conditions, the progress and the character of the deposits. 1500 w.

Hydraulic Placer Mining in the Cariboo District.
B.C. ETIENNE A. RITTER.
Mining World - Dec. 8, 1906.
A report of this district and the important mines being worked. Ills. 2300 w.

Placer Mining Methods in the Atlin District.
ALFRED CARMICHAEL.
Mines and Minerals - Jan. 1907.
Illustrated description of the dams and plant for obtaining water, and the methods of mining and blasting before hydraulicking. 3000 w.

British Columbia Placers: Past and Present.
HORACE F. EVANS.
Mining World - May 4, 1907. Serial. 1st part.
Interesting information concerning the early placer mining of British Columbia. 1800 w.

Mining in Atlin, British Columbia, 18981908.
ROSALIND WATSON YOUNG.
Journal of the Canadian Mining Institute - 1909.
Reviews the history of the ten years. Ills. 4500 w.

Some Notes on the Siwash Creek Section.
B.C. NEWTON, W. EMMENS.
Mining World - May 6, 1911.
Gives the history of a district yielding exceedingly rich specimens of freemilling gold ore. The geology is described and also the placer mining. Ills. 1800 w.

Auriferous Gravels of Cariboo, B.C.
E. JACOBS.
Engineering and Mining Journal - Sept. 23, 1911.
Illustrated account of profitable quantities of placer gold. 4000 w.

Placer Gold Mining in British Columbia (70949).
E. JACOBS.
Canadian Mining Journal  June 1, 1916.

Production, with report by districts. 3000 w.

Cariboo Placers and Lodes.
J.A. MACPHERSON.
Mining and Engineering Record, vol. 24, nos. 8 and 9. May 1919, pp. 125129, 9 figs.
Concerning conditions, ore treatment and transportation costs.

Notes on the Placer Mines of Cariboo, British Columbia.
J.B. TYRRELL.
Economic Geology, vol. 14, no. 4, June 1919, pp. 335-345, 4 figs.
Historical account topography, conditions and development of drainage.

Operations in the Cariboo, British Columbia.
DONALD D. FRASER.
Engineering and Mining Journal, vol. 113, no. 12, Mar. 25, 1922, pp. 490491.
Reviews activities generally.

Placer Deposits of Cedar Creek Area, Cariboo District, British Columbia.
W.A. JOHNSTON.
Canadian Mining Journal, vol. 43, no. 45, Nov. 10, 1922, pp. 762765, 2 figs.
Results of writer's examination and mapping of area in September 1922. Notes on accessibility of area, physical features, mining operations and placer gold deposits.

Cedar Creek Placers.
W.A. JOHNSTON.
Canadian Mining Journal, vol. 46, no. 5, Jan. 30, 1925, pp. 117119, 2 figs.
New mining plant and mining conditions at Cedar Creek, Cariboo District, B.C.

Mining in Cariboo.
D.D. FRASER.
Canadian Mining Journal, vol. 48, no. 43, Oct. 28, 1927, pp. 849850.
Mining during past year continued without any noticeable change for better or worse.

Placer and Vein Gold Deposits of Barkerville, Cariboo District, British Columbia.
W.A. JOHNSTON and W.L. UGLOW.
Canada Dept. Mines, Geological Survey  Memoir, no. 130, 1927, 246 pp.
General and economic geology; origin of placer gold.

Alluvial or Placer Mining in British Columbia.
H.J. ROBERTSON.
Canadian Mining Journal, vol. 59, no. 13, Mar. 30, 1928, p. 268, 2 figs.
Many rich superficial deposits worked out; deeply

buried deposits still untouched; lowgrade deposits also still unworked; only few isolated instances of suitable conditions for dredging, as narrow, steep valleys are rule, with goldbearing gravel capped by glacial drift.

Placer Mining in the Atlin District.
C.L. MONROE.
Canadian Mining and Metallurgy Bulletin, no. 211, Nov. 1929, pp. 12721279, 3 figs.
General notes on history and future possibilities.

Gold in Northern British Columbia.
F.A. KERR.
Canadian Mining Journal, vol. 52, no. 27, Oct. 1931, pp. 761764, 3 figs.
History of placer mining in region; origin of placer gold deposits; occurrence; discovery; significance in relation to lode deposits; discoveries of lode deposits with high gold content.

Monashee Creek Placers. Osayoos District, B.C.
-
Canadian Mining Journal v 53 n 10 Oct 1932 p 43540.
History of development, dating from 1874; topography; bench deposits; bedrock geology; recent development and future possibilities.

Placer and Vein Gold Deposits of Barkerville, Cariboo District, British Columbia.
W.A. JOHNSON and W.L. UGLOW.
Canada Dept Mines, Geol Survey  Summary Report 1932 pt A 1 n 2331 1933 p 175. Summary of Memoir No. 149, published in 1926; general geology; origin of physical features; resume of lode mining, dating from 1876; general character of veins and of vein gold; description of principal mines and prospects; descriptions of placer deposits, occurring in 5 types.

Geology and Placer Deposits of Quesnel Forks Area, Cariboo District, British Columbia.
W.E. COCKFIELD and J.F. WALKER.
Canada Dept Mines, Geol Survey  Summary Report 1932 pt A1 n 2331 1933 p 76143.
Area has known production of about $6,000,000 since 1874; most parts of area are readily accessible and topography is relatively low; general geology; origin of physical features; description of placer deposits, in which pay streaks occur in many ways; notes on principal mining properties; brief descriptions of quartz veins. Bibliography.

Review of Mineral Industry of British Columbia in 1933.
H.G. NICHOLS.
Canadian Mining Journal v 55 n 2 Feb 1934 p 6873.
Statistical review; notes on activities in principal mining districts; feature was reopening and further development of isolated gold mines.

GoldBearing BlackSand Deposits of Graham Island, Queen Charlotte Islands.
J.T. MANDY.
Canadian Institute of Mining and Metallurgy and Soc of Nova Scotia Trans v 37 1934 p 56372.
Deposits of fine gold in beach sands, originating from reworking of extensive morainic deposits by wave and wind action; black sand deposits have lenticular and varying distribution along base of bluffs; extent, distribution and location of concentrates varies greatly and changes rapidly and frequently; exploitation is not recommended to "greenhorns"; recovery methods.

Willow River MapArea, Cariboo District, B.C.; General Geology and Lode Deposits.
G. HANSON.
Canada Dept Mines, Geol Survey Summary Report 1933 pt A n 2350 1934 p 3048. General description of district; geology; quartz veins, containing much pyrite and arsenopyrite, some pyrrhotite, many of veins bearing gold; description for individual deposits; note on origin of placer gold.

Willow River MapArea, Cariboo District, B.C.; Placer Deposits.
W.E. COCKFIELD.
Canada Dept Mines, Geol Survey Summary Re port 1933 pt A in 2350 1934 p 4961.
Report deals only with placers included in western part of Willow River map area; placer gold of district may occur in many different ways; description of creeks. Bibliography.

Cariboo and Bridge River Goldfields. British Columbia.
V. DOLMAGE.
Canadian Mining and Metallurgy Bulletin n 268 Aug 1934 (trans) p 40530 (discussion) 4305. These goldfields are about 300 mi apart and contain deposits of distinctly different types; location, history, geology, and ore deposits of each are described.

Manson River and Slate Creek Placer Deposits, Omineca District, British Columbia.
F.A. KERR.
Canada Dept Mines, Geol Survey Summary Report 1933, pt A n 2350 1934 p 929. General geology; notes on placer mining activity since 1861;

practically all gold placer deposits in area occur on or near bedrock; much testing of higher ground has been done, but with little or no reward; no lode gold deposit of importance has been discovered or developed to state of economic importance.

Cariboo Mining District I, II and III.
J.N. WYNNE.
Mining Magazine v 54 n 3, 4, and 5 Mar 1936 p 13743, Apr p 2128 and May p 27784.
Mar: Historical sketch, dating from gold rush of 1858. Apr.: Present activities; geology; mineralogy. May: Future possibilities.

Gold at McDame Creek, Cassiar District. B.C.
G. HANSON.
Canadian Mining Journal v 57 n 3 Mar 1936 p 1213.
Outline history of development and description of placer and vein deposits in area less than 200 mi east of Juneau, Alaska; known gold-bearing veins occur in volcanic rocks, in area 3 by 5 mi; some veins are 15 to 100 ft. wide; larger veins contain little pyrite or other sulphide and are not known to contain visible free gold; in 1877, McDame Creek produced nugget worth $1300.00.

Recovery of Alluvial Gold.
D.C. MACKENZIE.
Canadian Institute of Mining and Metallurgy Trans v 40 1937 (mtg. Oct. 1936) p 1106. Bul n 298 Feb 1937. Results of experiments carried out at Wingdam mine of Consolidated Gold Alluvials of BC, Ltd., with object of establishing reliable method of concentration of "wash" and maximum recovery of gold from concentrate; description of Lorentsen gold saving machine and its use; enumeration of important points for operation under conditions described.

Mining Deep Lead by Australian Method.
D.C. MACKENZIE.
Engineering and Mining Journal v 139 n 4 Apr 1938 p 39-41 and 545.
Deep lead (leed) is Australian term used to denote ancient river bed deposits, further classified as alluvium covered, subbasaltic, and elevated subbasaltic, and elevated sub-basaltic; last type can be mined by adits instead of shafts; paper describes and discusses application of Australian procedure to deposits in Canada, particularly in British Columbia; glossary of deep lead mining terms.

Cariboo.
C.M. CAMPBELL.
Mining and Quarry Engineering v 4 n 8 Aug 1939 p. 2713.
Historical and descriptive account; early placer operations; quartz veins; operating methods.

Fraser River Tertiary Drainage History in Relation to PlacerGold Deposits.
D. LAY.
British Columbia Dept Mines Bul n 3 1940 30 p.
Outline of present Fraser River drainage; effect of damming caused by lava flows; glacial and bed rock geology; mining operations concerned with Fraser River Tertiary drainage system; Tertiary Mine surface exposures and underground workings; Canyon mine; operations of F. Delong; possible upstream continuation of Tertiary mine channel; Golden Province Mines Co.

Placergold Deposits, Wheaton (Boulder) Creek Cassiar District, Northern British Columbia.
S.S. HOLLAND.
British Columbia Dept Mines Bul n 2 1940 44 p.
Creek lies in Arctic drainage area; accessibility; topography, benches are prominent and important feature downstream from point 1 mi south of Alice Shea Creek; tributaries; glacial features; descriptive geology; physiographic history; lode deposits,; placer deposits; history and production; origin of placer gold; working methods; prospecting possibilities; description of lenses.

Nelson MapArea, East Half, British Columbia.
H.M.A. RICE.
Canada Dept Mines and Resources Geological Survey Memoir n 228 1941, 86 p (map in pocket).
Area is bounded by longitudes 116 and 117 West and by latitudes 49 and 50 N; it includes 2100 sq mi and towns of Kalso, Creston and Yahk; general and structural geology; placer gold deposits; lodge deposits related to three rock types; nonmetallic deposits; descriptions of individual properties; mineral springs. Bibliography.

Fraser River Tertiary Drainage History in Relation to Placer Gold Deposits II.
D. LAY.
British Columbia Dept Mines Bul n 11 1941 75 p supp plates.
Report supplements Bul No 3 and continues investigation of Fraser River drainage as far as Grand Canyon, 109 mi upstream from Prince George; topography; glacial geology; bed rock

geology; Tertiary Fraser River sediments; Tertiary West Road (Black Water) River sediments; Tertiary lacustrine deposits; placer gold deposits; review of drainage history; Rocky Mountain trench; table of formations.

Mining Placer Ground With Stripping Shovel.
-
Excavating Engineer v 36 n 5 May 1942 p 24851 and 276.
Spruce Creek Placers, Ltd. solve mining problems with specially designed 2yd stripping shovel; excavation procedure; tailings removal. From Mining World Mar 1942.

Mineral Possibilities of Areas Adjacent to Alaska Highway. Pt II: British Columbia Section.
L.O. THOMAS.
Canadian Institute of Mining and Metallurgy Trans v 47 1944 p 20327 (Bul n 385 May 1944), p. 22843 (Bul n 386 June 1944).
Cordillera system of mountains; summarized descriptions of known mineral occurrences; in five areas; Rainy Hollow and Tatshenshini River; Atlin Lake; Dease Lake and River; Liard River; Peace River; copper silver, lead zinc; lode and placer gold; coal; platinum; oil and gas; other minerals. Bibliography.

Manson Creek Area.
J.E. ARMSTRONG and J.B. THURBER.
Western Miner v 18 n 6 June 1945 p 647.
Area comprises about 2760 sq mi in central British Columbia; history of mining; physical features; structural geology; economic geology; placer deposits; lode deposits. Extracts of paper 459 of GSC.

Ashcroft Area, B.C.
S. DUFFELL.
Western Miner v 20 n 8 Aug 1947 p 523.
Area described lies between latitudes 50 and 51 and longitudes 121 and 122, with town of Spences Bridge about 8 mi southeast of its geographical center; gold placers; lode mining; copper; hematite; chromite; gold; coal; saline deposits. From Paper 4710 Geol Survey of Canada.

Post War Recovery in Cariboo.
D.D. FRASER.
Western Miner v 20 n 4 Apr 1947 p 51.
Summary of activities on lode and placer mines.

Prospecting Possibilities in Cariboo District.
S.S. HOLLAND.

Western Miner v 20 n 5 May 1947 p 568, 60.
Accessibility, by motor roads and trails; history; geology; gold quartz veins and replacement deposits in limestone; minor deposits of mixed sulphide replacements in limestone; belt of quartz veins along line of occurrence of richest gold placers is considered to be most favourable prospecting ground in Cariboo; in areas of deep overburden, intensive trenching must be laid out on framework of geological knowledge. Bibliography.

Geology and Mineral Deposits of Princeton MapArea. British Columbia.
H.M.A. RICE.
Canada Geological Survey Memoir n 243 1947 136 p. supp plates; maps in pocket. Report on area of about 3100 sq mi; early discoveries were of gold placer deposits, some yielding platinum; lode mining has received most attention; area also includes Tertiary coal measures of Princeton and Coalmont, from which more than 4,000,000 tons of coal have been mined; bentonite; gypsum.

Geology and Mineral Deposits of Nicola MapArea, British Columbia.
W.E. COCKFIELD.
Canada Geological Survey Memoir n 249 1948 164 p. supp plates, maps in pocket.
Area covers about 3000 sq mi in southern interior region of British Columbia; present account, based largely on author's own field work from 1939 to 1944, is illustrated to geological map.; placer gold deposits; gold and silver vein deposits; coal.

Fort St. James MapArea. Cassiar and Coast Districts, British Columbia.
J.E. ARMSTRONG.
Canada Geological Survey Memoir n 252 1949 210 p supp plates, map in pocket.
Geology and mineral deposits of area of 11,200 sq mi in east central British Columbia; history; physiography and glaciation; general and structural geology; placer gold creeks; mercury, silver lead zinc, gold, copper, antimony, chromite, molybdenum, tungsten, tin vanadium, manganese, coal, asbestos, asphaltum phosphate and perlite deposits. Bibliography.

Placer Gold Production of British Columbia.
S.S. HOLLAND.
British Columbia. Dept Mines Bul n 28 1950 p 564, 3 separate maps.
Recorded placer production for Province and for each

stream since 1958; production of crude gold, fineness, value.

Base Metal "Jackpot" in B.C.
M.D. HEDLEY.
Western Miner v 24 n 4 Apr 1951 p 702.
Value of mineral production in 1950 estimated at $137,500,000 and comprises production of gold placer; gold lode, silver, copper and lead, zinc, coal and structural materials; miscellaneous other metals; minerals and materials; data on price of metals; existing mines reviewed.

Lode Mining Flourishes SouthCentral B.C.
H. SARGENT.
Western Miner v 24 n 10 Oct 1951 p 224.
Region Three includes Similkameen, Osoyoos, Greenwood, and Vernon Mining Divisions; area has record of mineral production that extends for many years, and includes placer and lode gold, placer platinum, silver, copper, lead, and zinc, coal, limestone and silica (used for flux), rock, gravel, and sand; statistics on output.

DeepLevel Mining on Lightning Creek.
C.W.S. TREMAINE.
Western Miner and Oil Review v 34 n 7 July 1961 p 469.
Property consists of 20 mi of placer leases on Lightning Creek in Cariboo mining district; main part will be confined to section of creek about one mile long; 35 holes give 6 cross sections of creek over one mile length; drilling shows deeplevel, gold-bearing gravels to be 6 ft deep, to vary in width from 40 ft to 140 ft and to be at very uniform depth of 165 ft below present creek bed; history of mining at Lightning Creek.

Return to Fraser.
G.C. DRAPER.
Canadian Mining Journal v 84 n 11 Nov 1963 p 5861.
Proposed method for recovering gold from bed of Fraser River contemplates sinking of shaft in solid rimrock, tunneling out under river, boring holes to surface of bedrock so that fine material can be drawn off and gold and platinum extracted; traps will be installed in most strategic locations on river and drain them as soon as they are replenished; Fraser deposits over 18 million cu yd of sand and silt at its mouth; tests were made to determine action of placer gold when sand in which it rests is drawn off from below.

Annual Report of Minister of Mines and Petroleum
Resources 1962.
BRITISH COLUMBIA.
Dept Mines and Petroleum Resources Report 1963 310 p.
4 maps.
Statistics and departmental work; data on production of lode metals; place, structural materials and industrial minerals; petroleum and natural gas, inspection of lode mines; placer mines; quarries and coal; inspection of electrical equipment and installations at mines and quarries.

**GOLD PLACER** LOCATION Canada Newfoundland and Labrador

Reported Discovery of Placer Gold in Labrador.
-
Canadian Mining Journal, vol. 44, no. 21, May 25, 1923, pp. 396397.
Official statement from Geological Survey, Ottawa.

**GOLD PLACER** LOCATION Canada Quebec

The Alluvial Gold Fields of Quebec.
ALEXANDER GRAY.
Mining World - April 16, 1910.
Gives the history of this area, and the present exploitation and development. 2500 w.

Alluvial Gold Deposits in Quebec.
FRITZ CIRKEL.
Engineering and Mining Journal - Nov. 25, 1911.
Describes deposits known since 1835, and their recent exploration. Ills. 3000 w.

Placer Mining in the Province of Quebec.
H.A. BALL.
Mining and Scientific Press - May 25, 1912.
Brief review of the history of these placers, the present condition and the outlook. 1800 w.

A Brief Historical Sketch of Gold and Copper Mining in Quebec.
DR. JAMES DOUGLAS.
Canadian Mining Journal - July 1, 1912.
A review. 1000 w.

Placer Gold on Meule Creek, Seigniory of Rigaud-Vaudreuil, Quebec.
JOSEPH KEELE
Canadian Mining Journal - Nov. 15, 1912.
Abstract of a report describing the geology, the mining methods, and discussing the origin of the gold. 3000 w.

GoldBearing Gravels of Beauce County, Quebec.
-
Bulletin of the American Institute of Mining Engineers - March, 1915.
Describes the conditions under which gold occurs in this district, and considers the causes which gave rise to them. 5000 w.

**GOLD PLACER** LOCATION Canada Yukon

Gold Mining in the Yukon District.
W.M. OGLIVIE.
Canadian Mining Review - April, 1897.
Detailed description of the different methods of gold mining used, with information to regard to the various routes by which one may arrive at these gold fields, and points of interest to miners. 4400 w

Gold Mining in Alaska; Notes from the Klondike.
-
US Consular Reports, No. 447 - June 9, 1897.
On the promising conditions of these fields, and interesting information relating to their development. 2300 w.

The Yukon Gold Fields.
-
Australian Mining Standard - July 1, 1897.
Extracts from Inspector Constantine's report to the government at Ottawa. On the richness of the deposits. 800 w.

The Gold Finds of Alaska.
-
West Mining World - July 24, 1897.
Words of caution regarding investments with some information of the country, the deposits, and the products. 2500 w.

The Alaskan Placers.
-
Mining and Scientific Press - July 24, 1897.
Brief account of the new discoveries, the routes by which to reach the Klondike fields, the mines so far discovered, and the dangers and hardships of the region. 1800 w.

In the Far Northwest.
WILLIAM OGILVIE
West Mining World - July 31, 1897.
Extracts from report of WILLIAM OGLIVIE, surveyor to the Dominion government, on the extent of the goldbearing section, its richness, etc. 2000 w.

The Yukon Gold Excitement.
-
Engineering and Mining Journal - July 31, 1897.
Presents facts leading to the belief that the Klondike is a very rich placer gold deposit, also

giving information of the country, the climate, cost of transportation, and the attitude of the Canadian government. Short editorial also given. 1800 w.

The Klondike Gold Fields.
-
Scientific American Sup - July 31, 1897.
Brief account of location, climatic conditions, ways of reaching the gold fields, method of mining,etc. 1000 w.

The Alaskan Gold Discoveries.
-
Bradstreet's - July 31, 1897.
Remarks on the effect of the recent discoveries both on the financial markets and speculation. Mention of the difficulties to be faced in reaching the region is made, and of the severe life due to the climate. 1000 w.

British Yukon Mining Regions.
-
Canadian Engineer - Aug. 1897.
An illustrated sketch of the district, its rich gold deposits, fuel supply, and other minerals; the difficulties to be met, routes, etc. 2800 w.

The Yukon District.
GEORGE M. DAWSON.
Canadian Mining Review - August, 1897.
Some account of the explorations made in this district, with information of the country and its resources. 1800 w.

The Klondike Mining Camp.
Accounts by GEORGE HAMLIN FITCH and C.A. SNOWDEN, with illustrations.
Harper's Weekly - Aug. 7, 1897.
Gives particulars of the discovery of these rich mines, the processes of mining, etc. 4800 w.

The Alaska Gold Field.
RUSSELL L. DUNN.
Mining and Scientific Press - Aug. 7, 1897.
Discussion of this field with conclusions. The placers are believed to be derived from erosion of goldbearing lodes, the richness of the Klondike placer is likely to be equalled by other discoveries, and the conditions are different from other mining regions. Also editorial. 4500 w.

The Geological Survey's Expedition to the Yukon in 1896.
HAROLD B. GOODRICH.
Harper's Weekly - Aug. 14, 1897.

An interesting account of the journey from Juneau to the interior 2400 w.

The Klondike Placers.
-
Engineering and Mining Journal - Aug. 14, 1897.
Information on the mode of laying out the claims, manner of working, with account of early explorations as published in the "Canadian Engineer." 1000 w.

The Yukon Gold Region.
CYRUS C. ADAMS.
Harper's Weekly - Aug. 14, 1897.
Valuable information gained by a Canadian surveyor, relating to important finds in the Klondike and other Yukon regions, routes, etc. Map and Ill. 1600 w.

The Klondike Gold Fields.
HARRY DE WINDT.
Contemporary Review - Sept., 1897.
Comments on the dangers and difficulties of the region, gives a brief outline of the journey, information of the deposits and manner of working, scarcity of food, etc. 2500 w.

The Canadian Yukon Gold Fields.
-
Canadian Engineer - Sept., 1897.
Review of the projected schemes for regulating the mining operations, improvement of the means of transports, etc. with other information of interest. Ill. 2500 w.

The Gold Fields of Klondike and the Yukon Valley.
HAROLD B. GOODRICH.
Engineering Magazine - Sept., 1897.
Methods of mining pursued in Alaska, and the necessity of improvement in ways of getting to the gold district. Ill. 3600 w.

The Klondike Gold Field.
H.K. CARROLL.
Scientific American Sup - Sept. 11, 1897.
Brief description of the country and account of the wonderful deposits, with outline of the two routes travelled. Ill. 2000 w.

Gold Fields of Alaska and the Yukon.
CYRUS C. ADAMS.
Chautauquan - Oct., 1897.
Discusses matters of interest in relation to this region. The routes,desolation, types of mining, and important facts. 2800 w.

Placer Mining in the Klondike Country.
-
Engineering and Mining Journal - Oct. 9, 1897.
Brief description of the region and the methods of working. 1000 w.

The Klondike Gold Fields.
H. BRATNOBER.
Engineering and Mining Journal - Oct. 23, 1897.
A description of the placers, and the conditions found, by one who has just returned from Alaska. 1200 w.

The Klondike Placers.
T.K. ROSE.
Nature - Oct. 28, 1897.
Brief history of the district, with description of the gold fields, and methods of working. 1700 w.

How Gold is Mined on the Klondike and the Chances of a Fortune There.
-
Engineering and Mining Journal - Nov. 27, 1897.
A statement of facts showing that the region is not nearly as rich as was California in 1850. 1500 w.

The Latest News from the KlondikeYukon Country.
JOHN D. MCGILLIVRAY, in the "New York Herald."
Engineering and Mining Journal - Dec. 11, 1897.
Extracts from letters sent from this region reporting the hard conditions of labour, and the doubtful prospects. 2000 w.

The Klondike Gold Fields.
-
US Consular Reports - Jan., 1898.
Gives views of two prominent men who have spent some time in this region, and also comments on the preparations being made in Victoria for the coming trade. 1500 w.

Mining Conditions in the Klondike.
-
Engineering and Mining Journal - Jan. 29, 1898.
Extracts from a letter published in the "N.Y. Times" of Jan. 23d. Discouraging the going to this new gold field, reporting disappointment and suffering of those there, and the unreliability of the claims for sale. 2500 w.

The Yukon Gold Fields.
-
US Consular Reports - Feb. 4, 1898.
Considers Vancouver as a base of supplies, the transportation enterprises, and the

situation at Dawson City. 1600 w.

The River Trip to the Klondike.
JOHN SIDNEY WEBB.
Century Magazine - March, 1898.
Interesting account of the country and life of the miners, with some information of the method of mining, etc. Ill. 12000 w.

The Rush to the Klondike.
SAM STONE BUSH.
American Review of Reviews - March, 1898.
An article on the present output and future promise of Alaska's new gold fields, by an observer. Gives characteristics of the country, methods of mining and living, etc. Ill. 12000 w.

The New Arctic El Dorado.
HENRY WYSHAM LANIER.
Chautauquan - May, 1898.
An account of the goldrush to this region, and of the routes, country, prospects, etc. Ill. 3000 w.

The GoldFields of British Columbia and the Klondike.
WILLIAM HAMILTON MERRITT.
Journal of the Society of Arts - June 10, 1898.
Deals with the immense possibilities of the mountain ranges of Western British America, giving a very interesting report of the region and the mining operations. Discussion. 8000 w.

As Seen by an Old Prospector.
"ALEX QUARTZ".
Mining and Scientific Press - Aug. 13, 1898.
An account of the promising fields near St. Michaels, with some reference to the Klondike, and to other districts. 4500 w.

Gold and Other Resources of the Far West.
J.A. LATCHA.
Forum - Sept., 1898.
A description of the rich mineral fields of the west, the steps necessary for their development and the changes of recent years. Urging specially the building of railroads through the rich mineral regions. 5000 w.

Notes from the Klondike.
A.N.C. TREADGOLD.
Canadian Mining Review - Sept., 1898.
Descriptive of the region and existing conditions. 4500 w.

The Pilgrimage to the Klondike and Its Outcome.
FREDERICK PALMER.
Forum - Sept., 1898.
Gives briefly the history of goldseeking in this region, the present conditions and future outlook. 5500 w.

A Winter's Work in the Klondike.
TAPPAN ADNEY.
Harper's Weekly - Oct. 1, 1898.
Letter and illustrations giving an idea of the conditions prevailing in this region.
5500 w.

The Country of the Klondike.
RUSSELL L. DUNN.
Mining and Scientific Press - Oct. 22, 1898. Serial.
Statements based on observations and information obtained during a recent visit to the basins of the Yukon and Alsek rivers.

The Cost of Production of Gold and the Klondike Fields.
-
Bankers' Magazine Lond - Nov., 1898.
Discussing whether the cost of obtaining the gold is not greater than the profit. 2300 w.

The Yukon Country.
P.T. ROWE.
Chautauquan - Jan., 1899.
Abstract of a lecture delivered at Sitka, Alaska. An account of the changes so rapidly wrought and of the mining conditions and general outlook. 4500 w.

The Headwaters of the Lewis River.
A. THURSTON HEYDON.
Mining and Scientific Press - Jan. 21, 1899.
A study of the country made by the writer while prospecting. 1200 w.

A Journey to the Klondike (Eine Reise nach Klondyke).
ZDENKO HOROVSKY.
Zeitschrift des Oesterreichischen Ingenieur-und Architekten Vereines - March 3, 1899.
An excellent account of the methods of mining for gold in the Klondike region, being an address by a Bohemian engineer, relating his experiences. 3500 w.

Alaska and the Klondike.
ANGELO HELLPRIN.
Ap Popular Science Monthly - May, 1899. Serial. Ill.
Part first describes the writer's journey to this region, in by the White Pass and out by the Chilkoot.

The Economics of the Klondike.
JACK LONDON.
Review of Reviews - Jan., 1900.
Considers the profits and losses of the rush to this region, and what the ultimate outcome will be. Ill. 2500 w.

A Year's Progress in the Klondike.
ANGELO HELLPRIN.
Ap Popular Science Monthly - Feb., 1900.
An interesting illustrated description of the improvements in Dawson, and in means of communication with the outside world, the mining outlook, etc. 2800 w.

The Yukon and Nome Gold Regions.
S.C. DUNHAM.
Bulletin of the US Dept of Labour - July, 1900.
A full account of these two gold fields and a comparison of the conditions and values. 20400 w.

Notes from Dawson; the Koyukuk Region.
-
US Consular Reports, No. 774 - July 7, 1900.
An estimate of the output of gold for this season, and other information. 450 w.

Mining on the Klondike.
A.J. BOWIE.
Mines and Minerals - July, 1901.
Illustrates and describes the mining methods used. 7000 w.

An English Observer on the Klondike GoldFields.
-
Engineering and Mining Journal - Nov. 23, 1901.
From the London "Economist." Extracts from a letter written by an observer of experience. Considers the alluvial gravels very rich and explains the excessive cost of treating them. 1300 w.

White Horse Mining District. Yukon Territory.
WILLIAM M. BREWER.
Engineering and Mining Journal - Feb. 1, 1902.
A description of the district with illustrations. 4000 w.

Mining Methods on the Klondike.
EUGENE HAANEL.
Engineering and Mining Journal - April 11, 1902.
An explanation of the methods, machinery and appliances used. Ill. 3900 w.

Conditions in Dawson.

-
US Consular Reports, No. 1365 - June 12, 1902.
Information concerning transportation, mining, etc.
2200 w.

Gold Mining in Klondike.
PROF. HENRY A. MIERS.
Popular Science Monthly - July, 1902.
Descriptive of the country, methods of mining, cost of
living, etc. 5000 w.

The Klondike A Four Years' Retrospect.
-
British Columbia Mining Record - Aug., 1902.
2000 w.

Methods and Values on the Yukon.
JOHN D. MCGILLIVRAY.
Engineering and Mining Journal - June 13, 1903.
An account of the improvements in methods and reduction
in cost of working, with general
information. Warns capitalists to consider
the cost of transport before investing in
this region. 2200 w.

White Horse District, in Yukon Territory.
WILLIAM M. BREWER.
Mines and Minerals - Aug., 1903.
Reviews the history, geology, present conditions, and
future prospects of the mining industry. May
and editorial. 5500 w.

Present Condition of Gold Mining in Arctic America.
R.A.F. PENROSE, JR.
Engineering and Mining Journal - Nov. 28, 1903.
Describes some of the difficulties found in the
northwestern part of North America, the
mines, and the Klondike region. Ill. Serial.
1st part. 2000 w.

The Alsek Placer District. Yukon Territory.
W.M. BREWER.
Mining and Scientific Press - Dec. 5, 1903.
Map, with information from prospectors' reports. 800 w.

The Alsek Mining District.
W.M. BROOK.
Engineering and Mining Journal - May 12, 1904.
An illustrated description of a new placer goldfield in
the Northwest Territory of Canada, near the
Alaska border, recently discovered. 800 w.

Auriferous Bench Diggings of Bonanza, Yukon Territory.
-
Mining and Scientific Press - Dec. 3, 1904.
Describes the locality, with remarks on the probable
source of the gold. 1000 w.

The Klondike.
J.P. HUTCHINS.
Engineering and Mining Journal - Jan. 5, 1905.
Reports production as amounting to $1,000,000 less than in 1903, and reviews the work done, the mining methods, etc. 1500 w.

Gravel Mining Costs in Alaska and Northwest Canada.
CHESTER W. PURINGTON.
Engineering and Mining Journal - Feb. 9, 1905.
Gives facts compiled from statistics collected during a recent inspection of the placer fields in Alaska. Yukon Territory, and Northern British Columbia. 1600 w.

Mining in the Yukon.
F.T. CONGDON.
Canadian Mining Review - July, 1905.
Excerpt from a recent address sketching the evolution in mining methods since 1896. 3300 w.

The Klondike in 1905.
J.P. HUTCHINS.
Engineering and Mining Journal - Jan. 6, 1906.
Discusses the causes of the lessened production, the mining methods, water supply, mining laws and regulations. 2500 w.

Development of Placer Gold Mining in the Klondike District, Canada.
J.B. TYRRELL.
Iron and Coal Trades Review - June 22, 1906.
Abstract of a paper read before the Inst.of Mining Engrs. Calls attention to the difficulties encountered, the plans successfully adopted to overcome them, and the constantly reduced cost of mining. The method of steamthawing is described. 2000 w.

Placer Mining Methods in the Yukon.
L.M. PRINDLE.
Mining World - Dec. 1, 1906.
Describes the conditions and the methods of working. 1200 w.

Placer Mining in the Klondike.
JOSEPH B. TYRRELL.
Engineering and Mining Journal - March 2, 1907.
An illustrated account of conditions prevailing in district, and interesting new methods developed. Extracted from a paper before the Inst. of Min. Engrs., London. 4000 w.

Recent Developments in Mining in the Southern Yukon.
D.D. CAIRNES.
Canadian Mining Journal - April 15, 1907. Serial. 1st

part.
Explains the conditions under which mining must be conducted, and the general characteristics of this district, describing claims seen, and deposits. 1600 w.

Development of the Bonanza Creek Gold Mines.
FRANCIS C. NICHOLAS.
Mining World - Jan. 8, 1908.
An illustrated description of the region, with review of the past history, and account of present conditions. 1800 w.

Mining and Mining Methods of the Yukon.
A.A. PARÉ.
Quarterly Bulletin of the Canadian Mining Institute - July, 1908.
Notes on the placer and gravel mining methods, with sketches of the geology and other details. Ills. 6500 w.

Alaska and Yukon.
T.A. RICKARD.
Mining and Scientific Press - Jan. 2, 1909. Serial.
Maps and illustrated review of the mining centers, the discoveries of gold and the future possibilities. 3300 w.

First Discovery of Gold in the Yukon, Canada.
R.B. BENNETT.
Mining and Engineering World - Aug. 26, 1911.
Gives the story told by John McDougall, of Vancouver, B.C. 1800 w.

Yukon Gold.
O.B. PERRY.
Mining and Scientific Press - May 11, 1912.
Report of operations for the year ending Feb. 1, 1912. 1200 w.

The Gold of the Klondike.
J.B. TYRRELL.
Canadian Mining Journal - May 1, 1913.
Abstract of a paper before the Roy. Soc. of Canada. Describes this region, its geology, placers, transportation of loosened rock, concentration and deposition, character of the gold, etc. Ills. 8000 w.

Placer Mining in the Klondike
D.D. CAIRNES.
Canadian Mining Journal - March 1, 1914.
Extract from guide book prepared by the Can. Geol. Survey. 2500 w.

The Klondike and Yukon Goldfield.
H.M. CADSELL.
Mining Journal - Aug. 15, 1914.

From an article in the Scottish Geog. Mag. Describes the working of these gold placers at the present time. 4000 w.

Mining in the Far North.
EMIL EDWARD HURJA.
Mining and Scientific Press - Oct. 10, 1914.
An account of operations of the Yukon Gold Co. during the season for 1914. Ills. 1500 w.

The Klondike and Yukon Goldfield in 1913.
H.M. CADELL.
Smithsonian Report - 1914.
Semipopular general description. Ills. 20 pp.

Mining in the Far North.
EMIL EDWARD HURJA.
Mining and Scientific Press - Nov. 28, 1914.
Reviews the history of the Klondike, the Treadgold placers, and outlying districts. Ills. 2200 w.

Mining in the Far North.
EMIL EDWARD HURJA.
Mining and Scientific Press - Nov. 14, 1914.
Maps and description of the operations of the Canadian-Klondyke Gold Mining Company, Ltd. Ills. 1500 w.

Dawson, Nome, and Fairbanks.
HUBERT I. ELLIS.
Engineering and Mining Journal - March 20, 1915.
Describes these placer mining camps, discussing the stages through which they passed. Ills. 3000 w.

Methods and Costs of Placer Mining in Yukon (74426).
-
Canadian Mining Journal  Nov. 1, 1916.
Prospecting, methods of thawing, sluicing, selfdumper, etc. 4000 w.

Placer Gold Deposits.
F.A. KERR.
Canadian Mining Journal v 53 n 5 May 1932 p. 2036.
Notes concerning application of scientific knowledge to search for placer gold deposits in Northern British Columbia and Southern Yukon; probable sources of gold; zones favourable for original supply of placer gold; zones favourable for preservation of placers; other sources of placer gold.

NahanniFrances River District.
F.A. KERR.
Canadian Mining Journal v 55 n 3 Mar 1934 p. 10711.

Notes on district in Yukon and Northwest Territories; one of most inaccessible in Canada, except by air; area more than 50,000 sq mi; historical and descriptive data;geology; quartz veins; placer deposits; prospecting activity; airplane is best method of transportation. Bibliography.

Operations of Yukon Consolidated Gold Corporation.
W.H.S. MCFARLAND.
Canadian Institute of Mining and Metallurgy. Trans v 42 1939 (mtg Mar 1939) p 53749 Bul n 331 Nov 1939. At end of 1938, Company held 1650 placer mining claims and 9 leases or concessions; main reason for increased prosperity are development of successful methods of stripping off layer of frozen "muck" and thawing frozen gravel by cold water instead of steam, and increased price of gold; cost data and calculations showing increase in working profit; description of operations and technique.

Klondike Gold Rush.
T.A. RICKARD.
Canadian Mining Journal v 64 n 4 Apr 1943 p 21927. Historical and descriptive account of stampede following discovery made by George Washington Carmack in 1896 on Rabbit Creek, renamed Bonanza; one pan of gravel, weighing 15 lb. yielded 40 1/4 oz. gold; dredging of 8,205,270 cu yd gravel in 1941 yielded 28.43 cents per cu yd at cost of 14.7 cents per cu yd. Bibliography.

Mineral Development in Northwest and Yukon Territories.
C. CAMSELL.
Western Miner v 17 n 12 Dec 1944 p 424.
Review of recent activities; prospecting; geological surveys; temporary suspension of gold production in Northwest Territories; milling at Labine Point on Great Bear Lake; Norman Wells and Canol project; placer and lode mining in Yukon; prospecting.

Placer Mining in SubArctic.
E.N. PATTY.
Western Miner v 18 n 4 Apr 1945 p 449.
Dealing with conditions and practice in Alaska, Yukon Territory and British Columbia, paper duplicates, to large extent, similar paper by same author, indexed from Engineering and Mining Journal Apr 1945. Before annual meeting British Columbia and Yukon Chamber of Mines at Vancouver B.C.

Placer Has Its Advantages.
G.A. COLLINS.

Western Miner v 18 n 7 July 1945 p 50.
Disrepute of placer operations is usually attributed to poorly conceived project, inadequate testing, inadequate financing; inadequate knowledge of methods; personal aspect, management; antiquated equipment and methods, or to improper gold recovery; suggestions, with special reference to British Columbia and Yukon Territory.

Some Placer Methods in SubArctic.
E.N. PATTY.
Engineering and Mining Journal v 146 n 4 Apr 1945, p 1125.
Outline of early practices in Klondike region; description of modern mechanized methods of prospecting and mining; removing surface muck; cold water thawing of gravel; natural thawing; Yukon dredging operations; small scale placer mining.

Expansion Northwestward.
W.W. FOSTER.
Western Miner v 19 n 2 Feb 1946 p 468.
Review of changes that have taken place in northern half of British Columbia, Yukon Territory and western portion of Northwest Territories, with special reference to mineral industry. Before British Columbia and Yukon Chamber Mines.

Dezadeash Area, Yukon.
E.D. KINDLE.
Western Miner v 20 n 8 Aug 1947 p 4850.
Area described occupies 4200 sq mi in southwest Yukon; many of streams in Dezadeash map area were tested for placer gold some 50 yr ago and small placer operations have been carried out since then on many of original discoveries; little prospecting for lode deposits attempted in area, and no metallic mineral deposit is yet discovered. From Paper No. 4715. Geol Survey of Canada. Bibliography.

Recent Prospecting and Exploration for Ore Deposits in British Columbia and Yukon.
A.B. IRWIN.
Western Miner v 20 n 9 Sept 1947 p 435.
List of 24 discoveries during last 15 yr, all gold discoveries unless specified otherwise; in addition to deposits discovered in virgin areas, new ore bodies found in old mines are included; notes on 10 of these properties.

Firth River, Yukon Territory.

R.W. SANDY.
Canadian Mining Journal v 69 n 7 July 1948 p 835; see also Western Miner v 21 n 6 June 1948 p 856.
Notes on area in extreme north of Yukon, bordering Arctic Ocean, adjacent to Alaska; gold recovered from gravel bars as early as 1899; gold quartz samples said to have been brought out in Dec 1946; fish and game; weather; transportation routes and facilities.

Yukon's Greatest PostWar Gold Output.
F.H. STEPHENS.
Canadian Mining Journal v 71 n 2 Feb 1950 p 801.
Descriptive review of gold dredging and other placer and lode operations.

**GOLD PLACER** LOCATION Central America

The Upland Placers of La Cienga, Sonora, Mexico.
ROBERT T. HILL.
Engineering and Mining Journal - Jan. 25, 1902.
An illustrated description of these rich placers, and the conditions and in habitant of this region. 2000 w.

Gold Mining in Santo Domingo.
F. LYNWOOD GARRISON.
Engineering and Mining Journal - Sept. 14, 1907.
An illustrated article giving information in regard to the placer gold deposits, and the probable presence of platinum. 2500 w.

Dry Placers of Northern Sonora.
F.J.H. MERRILL.
Mining and Scientific Press - Sept. 12, 1908.
Describes these formations and the methods of working. 1200 w.

The Mines of the Altar District, Sonora, Mexico.
CHARLES A. DINSMORE.
Mining World - May 28, 1910.
Describes the working of the placers, the ore treatment, and quartz mines. Ills.
2500 w.

The Altar Gold Placer Fields of Sonora, Mexico.
-
Engineering and Mining Journal - Oct. 1, 1910.
Illustrates and describes the country and mining methods employed. 2500 w.

Mining Cement Gravel at Altar, Mexico.
-
Mines and Minerals - Nov., 1910.
Illustrates and describes old and new methods of recovering gold from cemented gravel in absence of water, 1800 w.

DryWashing for PlacerGold in Sonora, Mexico.
J.V. RICHARDS.
Bulletin of the American Institute of Mining Engineers - April, 1911.
Illustrates and describes some of the more common devices. 1200 w.

The Olancho Country.
A.D. AKIN.
Mining and Scientific Press - July 12, 1913.
An account of the placers, cost of operation, working

conditions, natural advantages, etc. 3000 w.

Gold Mines and Placers in Panama (Minas y placeres de oro en Panama).
O. LETCHER.
Ingenieria Internacional, vol. 18, no. 10,Oct. 1930, pp. 510511. 4 figs.
Panama British Corporation has Darien, Veraguas, and Chiriqui mining concessions, with totalarea about 18,000 sq. km.; development work.

Panama.
V.F.S. LOW.
Mining Magazine vol. 44, nos. 4 and 5, Apr. 1931, pp. 201209, and May, pp. 273279, 6 figs. Apr.: Account of progress in concession of Panama Corp., dealing particularly with alluvial discoveries. May: Lodemining developments.

Gold Placers of Antioquia.
S. DEL RIO.
Mines Magazine v 22 n 1 Jan 1932 p. 78 and 38.
General description, with brief note on one mine.

Gold Rivers of Honduras.
A.H. BLACKISTON.
Pan-American Union Bul v 66 n 8 Aug 1932 p 55964.
General notes in popular language.

Report on Placer Gold Investigation of District of Corozal and Naranjito.
W.D. NOBLE.
Revista de Obras Publicas de Puerto Rico v 11 n 8 Aug 1934 p. 6926.
Historial and descriptive data, chiefly concerning districts on north side of island, about 24 mi west of city of San Juan; some production statistics and estimates of yardage and value of placer deposits; list of claims staked under old Spanish law.

Honduras, Pioneer Frontier.
C.S. HALEY.
Engineering and Mining Journal v 142 n 6 June 1941 p. 358.
General description of department of Olancho, in eastern Honduras; transportation; gold placer deposits; labour and supplies; favourable attitude of Government; living standards; notes on El Rusio and Vijao districts; in general conditions resemble those in California in its virgin days, with opportunities for development of placer mining.

Mexican Placer Possibilities.
A. TERRONES BENITEZ.
Mining World v 10 n 3 Mar 1948 p. 247.

Opportunities exist for developing large scale placer projects in several provinces, but heavy investments will be needed; general commentary, with notes on some specific areas.

Gold In Mosquitia.
S.M. GLASSMIRE.
Mining Journal v 255 n 6520 Aug 5 1960 p. 146.
In 1952 Honduras produced 32,000 oz of gold; stream channels contain placer deposits in upper mountainous areas meander; ruggedness of terrain, physical conditions and area's isolation, engineering and economic problems; data on sampling.

Los placeres auriferos del area de Quilali, Rio Jicaro, Departamento de Nueva Segovia.
A. BENGOECHEA G.
Nicaragua. Servicio Geologico Nacional Boletin 5 1961 p 6799, 5 maps, 9 plates. Goldbearing placers in Quilali, Jicaro River, department of Nueva Segovia; area is located at contact of granite intrusion with metamorphic schists; auriferous quartz veins are associated with this contact and supplied material to alluvial placers; data on prospecting and sampling.

**GOLD PLACER** LOCATION Europe

The Occurrence of Alluvials in Hungary and Transylvania.
LOUIS HORVATH.
Mining Journal - Sept. 7, 1907. Serial. 1st part.
Trans. from Mon. Zeit. On the prospect of working these goldbearing alluvials on a large scale by means of dredges. 3500 w.

The Gold Alluvials of the River Drau in Hungary.
A. VON GERNET.
Institution of Mining and Metallurgy Bul. 43 - April 2, 1908.
Brief note concerning these goldbearing gravels. 400 w.

GoldBearing Sediment of the Rivers Adda and Oglio (Qua e la nelle regioni minerarie d'Italia).
P. PIEPOLI.
Miniera Italiana,vol. 12, no. 9, Sept. 1928, pp. 312-314, 3 figs.
List of useful minerals; found in sediment of these rivers; description of primitive, smallscale gold washing practiced along Adda and Oglio.

Zur Freigoldfrage im Strumica and ValandovoGebiete in Suedserbien.
O. ROCHATA.
Montanistische Rundschau v 28 n 31 Nov. 1 1936 p. 16.
Problem of placer gold in Strumica and Valandovo districts of Southern Yugoslavia; account of primitive gold washing methods in different sections; geological and petrographic features and results of author's investigations.

La fréquence de d'or dans les roches.
V.A. CHARRIN.
Génie Civil v 110 n 2860 June 5, 1937 p 5068.
Occurrence of gold in stream beds of Cevennes region in France.

Das Gold der Donau.
D. PANTO.
Berg-und Hüttenmännisches Jahrbuch v 85 n 3/4 Nov 30 1937 p 3614.
Gold of Danube River valley;results of gold washing tests, carried out by author and his co-workers from 1932 to 1934 in Hungary, brought to light further knowledge of gold of Danube River valley, which is here discussed.

Les rivières aurifères des Pyrénées.
-
Génie Civil v 111 n 2887 Dec 11 1937 p 5078.
Compilation of old reports on gold bearing rivers of

Pyrennes highlands in France.

Die Dalzburger Schwemmlandlagerstaetten.
E. PREUSCHEN.
Berg-und Hüttenmännische Monatshefte v 86 n 3 Mar 1938 p 3645.
Salzburg alluvial deposits; investigation of gold enrichments in valley of Pongau Salzach stream; results show that gold content of strata near surface is too negligible to be of interest and it appears that there are no enrichments at lower depth. Bibliography.

Gold in ElsassLothringen.
E. KOHL.
Zeitschrift für Praktische Geologie v 47 n 10 Oct 1939 p 1802.
It is pointed out that only placer gold of Rhine district could be profitably mined; this was totally abandoned in 1900 due to rising costs of living;prospects of finding deposits of any economic significance are regarded as slight.

Gold Mining in Hohe Tauern.
A.P.E. HOPKINS and W.J.H. COLLINS.
Mine and Quarry Engineering v 4 n 11 Nov 1939 p 3658.
Fissure veins averaging 3 ft. wide, generally carrying gold in gneiss, barren in schist, and in places widen out in limestone, carrying ankerite, siderite, galena, chacopyrite and galena, but no gold; alluvial gold, with magnetite and garnet, in maris in valleys, but rocks and boulders make commercial dredging impracticable; mining practice; 25-ton stamp mill with amalgamation plates and concentrating tables, idle since 1927.

Alluvial Gold in Northern Spain.
R.S. BOTSFORD.
Mining Magazine v 61 n 5 Nov 1939 n 26574.
Description of area of 3500 acres held by British company on Orbigo River, 20 mi west of city of Leon: Keystone drill tests indicate average value of 2.62 grains gold per cu yd for about 30,000,000 cu yd; estimated 60,000,000 to 80,000,000 yd of dredging ground; cheap labour and electric power; geology; gold distribution; notes on conditions in Spain.

Die alten Goldwaeschereien im Gebiete der Schwarza in Ostthueringen.
D. HEYER.
Zeitschrift für das Berg- Hütten- und Salinenwesen in Deutschen Reich v 87 n 12 Mar 1940 p 3557.

Early gold placers in region of Schwarza River in East Thuringia, Germany; historical review of placer mining which probably flourished between 10th and 15th century although exact period is not known; alluvial gold is still present in region, but revival of exploitation is most improbable.

Die Goldvorkommen in GriechischMakedonien.
E. MACK.
Zeitschrift für Erzbergbau und Metallhüttenwesen v 17 n 1 Jan 1964 p 918.
Occurrences of gold in Greek Macedonia; results of prospecting in area of 16,000 sq km included sampling of placers and detritus produced by weathering, examination of ancient mining sites, and sampling of outcrops; statistics on gold dredging.

L'or en France.
P. ROUVEYROL.
Mines et Metallurgie n 3584 May 1964 p 2378.
Gold in France; Salsigne mine is only gold producer in France and has annual output 12001500 kg; main gold deposits and occurrences are located in Armorican Massif, massif Central, in Pyrenees, Alps, and Alsace; gold occurs in both hydrothermal veins and in placers.

**GOLD PLACERS** LOCATION New Guinea

The Gold Rush to British New Guinea.
THEODORE F. BEVAN.
Australian Mining Standard Feb. 18, 1897.
A lecture delivered in Melbourne is reported, with the discussion that followed. 3000 w.

Papua Mining.
J.H.P. MURRAY.
Australian Mining Standard April 1, and 8, 1908.
Serial. 2 parts.
An account of this richly mineralized region and the difficulties that confront prospectors. 6000 w.

Mining in Papua.
HUGH MAHON.
Australian Mining Standard July 13,1911.
Information concerning the goldfield at Woodlark Islands. 2500 w.

The Bulolo Goldfield, New Guinea.
-
Chemical Engineering and Mining Review vol. 20, no. 233, Feb. 6, 1928, pp. 152156, 7 figs.
Gold field in extreme southeast of mandated territory of New Guinea was discovered by Park and Mettleton in 1923; topography; geology; future work, mining methods at Edi Creek, and nature of gold; alluvial diggings and three quartz lodes located; little effective work done on latter.

Tapping a New Gold Field of Potential Importance.
L.A. DECOTO.
Engineering and Mining Journal, vol. 129, no. 5, Mar. 8, 1930, pp. 250251, 2 figs.
Account of interview with author; island lying southeast of Philippines and north of Australia; general data on climate and accessibility; gold placers and lode mines examined and reported on.

Air Transport Aids Mining in New Guinea.
-
Engineering and Mining Journal., vol. 129, no. l2, June 23, 1930, pp. 594596, 9 figs.
Property is being brought to production by use of airplanes as sole means of transporting 2500 tons of equipment and material for two large electrically operated dredge and for 1100kw. hydroelectric power plant; description of

deposits; sampling by hand drills; and shaft sinking indicates 39,000,000 cu. yd. gravel, averaging 50.5 cents per cu. yd., with dredging depth 21.9 ft; steelhulled 10cu ft. dredges to dig 3,500,000 cu. yd. per year, yielding about $1,700,000 gross return; costs estimate not over 15 cents cu. yd.

Gold Fields of Dutch West Borneo.
E.J. VALLENTINE.
Mining Magazine v 46 n 2 Feb 1932 p 869; see also Far Eastern Review v 28, n 6 June 1932 p 2923.
Historical notes, dating from year 977; diluvial and alluvial deposits; dredging ventures; origin of deposits; general conditions in Dutch Borneo.

New Guinea.
A. DICKINSON.
Mining Magazine v 48 n 5 May 1933 p. 26577.
Topographical, climatic, and historical notes; description of properties held by New Guinea Gold Fields Ltd; alluvial deposits; clayey quartzose breccia deposits, and manganese oxides, with 20 to 30 ft overburden removable by drag scraping and sluicing; vein deposits; airplane transport; 400 hp. steam electric power plant; mining law, taxes, etc.

Development of Gold Mining in Morose, New Guinea.
H. TAYLOUR and I.W. MORLEY.
Australasian Institute of Mining and Metallurgy Proc n 90 June 30, 1933 p. 24753; see also Far Eastern Rev v 29 n 12 Dec 1933 p 56570 and v 30 n 1 Jan 1934 p 337 and (author's reply to discussions) Inst Mining and Met Bul n 359 Aug 1934 p 710.
Notes under headings Introductory Remarks, Omissions and Errata and Additional Bibliography, submitted to bring up to date paper indexed in Engineering Index 1933 p 551 from various sources.

Development of Gold Mining in Morose, New Guinea.
H. TAYLOUR and I.W. MORLEY
Instution of Mining and Metallurgy Bul n 347 Aug 1933 60 p supp plates; see also Australasian Institute of Mining and Metallurgy Proc n 39 Mar 31 1933 p 181 supp plates; and Mining Journal v 182 n 5116, 5117, 5118, 5119 and 5120 Sept 9 1933 p 6246 Sept 16 p 6446 Sept 23 p 6602 Sept 30 p 6789 and Oct 7 p 693.
History of discovery and production; geography and geology; legislation; labour; alluvial, dredging, and ore mining practice; amalgamation and cyanidation practice; steam, hydroelectric, gas and oil power;

surface and aerial transportation; present status of industry. Bibliography.

HydroElectric Plants Fly into New Guinea.
F.R. SHORT and H.D. HODGINS.
Electric Journal v 31 n 9 Nov 1934 p 4324.
Goldmining plant,completely electrified is operating 50 mi. in interior of cannibalinfested New Guinea; two camps of Bulolo Gold Dredging Co. maintain about 200 white men and 600 natives; three modern gold dredges are operating, and construction of fourth is well underway; location is supplied with power from 3000kva hydroelectric station, over 11,000 v transmission system.

Gold Mining in New Guinea.
J.B. BRAITHWAITE.
Chemical Engineering and Mining Review v 30 n 353 Feb 15 1938 p 16773.
Review of recent developments in reef and alluvial mining; transportation; climate and social life; native labour; Bulolo dredging; other mines in Moroble district; Wewak field in Sepik District.

Gold Occurrences in New Guinea.
N.H. FISHER.
Chemical Engineering and Mining Review v 32 n 376 Jan 10 1940 p 2327.
Detailed description of geological features of large and small alluvial and lode deposits; Morose gold field; origin of alluvial gold; lode deposits of WauEdie Creek area; other districts.

New Guinea Gold, Epic of Industry.
-
South African Mining and Engineering Journal v 55 pt 1 n 2689 Aug 19 1944 p 579, 581.
In 1942, Japanese aggression forced closing of rich gold fields but recent developments bring renewed hope that they may again be in operation before very long; something of romance of their development, in face of incredible difficulties, is told.

Fineness of Gold, with Special Reference to Morose Goldfield, New Guinea.
H.N. FISHER.
Economic Geology v 40 n 7 Nov 1945 p. 449495.
Study represents attempt to correlate sheds of various types of gold with geological features and to discovery of determining factors

governing gold fineness; comparisons are made of goldbearing areas of various types in other parts of the world; refinement of gold by stream action or by lying long immersed in placers; effects of removal from original outcrop; variations within lodes. Bibliography.

Fineness of Gold, with Special Reference to Morose Goldfield, New Guinea.
N.H. FISHER.
Economic Geology v 40 n 8 Dec 1945 p.53763.
Comparisons with other localities; epithermal, mesothermal, and hypothermal deposits; for Morose gold field, by comparing average fineness of gold in two streams with that below their junction, it is possible to calculate relative amounts contributed by each of them, as with Bulolo and Watut Rivers, or Wau and Sandy Creeks; it gives quantitative basis for assessing importance of tributaries and serves as guide for further prospecting. Bibliography.

Bulolo Rehabilitated.
-
Mining World v 9 n 1 Jan 1947 p 334.
Notes on program for resumption of operations of Bulolo Gold Dredging Ltd; mine will be in production again as soon as necessary parts for dredges dismantled during war are delivered and installed; up to outbreak of World War II, dredges had produced approximately $50,000,000 in gold; 77 mi road built.

**GOLD PLACER** LOCATION New Zealand

The Alluvial Gold of Otago, N.Z.
-
Australian Mining Standard Oct. 8, 1896.
From the "New Zealand Mining Journal." An attempt to explain the presence of so much gold in the rich placers, rivers and creeks. 2300 w.

Gold Mining in New Zealand.
C.C. LONGRIDGE.
Mining Journal Feb. 6, 1897.
Warnings and suggestions, quoting opinions of the Government Inspecting Engineer. Also editorial. 2500 w.

Mining in New Zealand.
C.C. LONGRIDGE.
Mining Journal - Feb. 13, 1897.
Nature of the gold, power blasting, crushing and stamping, cyaniding, sluices, labour and cost are briefly noticed. 800 w.

Auriferous Beaches on the West Coast.
MR. MACFARLANE.
New Zealand Mines Record Nov. 16, 1897.
These beaches contain gold in immense quantities, intimately associated with magnetite and other minerals. Gives conclusions reached as to the source of the gold, and to the probability of good returns from the working of these beaches.
2000 w.

Notes on the Auriferous IronSands of New Zealand.
ALEXANDER MCKAY.
New Zealand Mines Record April 16, 1898.
Describes these deposits, and the manner of working the beaches. 1200 w.

Report on the Auriferous Deposits of the Copper Hinemaia River. A
ALEXANDER MCKAY.
New Zealand Mines Record April 17, 1899.
The government geologists' report of the Taupo district, Auckland, N.Z. did not find a payable prospect. 1600 w.

Beach Sands of the Pacific Coast.
W.J. ADAMS.
Modern Machine April 1900.
Discusses their origin, methods of working, devices used, etc. Ill. 4500 w.

Notes on the Auriferous Iron Sands of New Zealand.
ALEXANDER MCKAY.
New Zealand Mines Record March 16, 1901. Serial. 1st part.
Information concerning these deposits in various districts and their workings. 8200 w.

The Gold Deposits of New Zealand.
ALEXANDER MCKAY.
New Zealand Mines Record April 16, 1902. Serial. 1st part.
Considered in relation to the comparative quantities of reef and alluvial gold on the various gold fields of the colony. 3400 w.

Auriferous Iron Sands of New Zealand.
-
New Zealand Mines Record May 16, 1902.
Information concerning these deposits on the east and west coasts. 4500 w.

Hydraulic Sluicing and Alluvial Mining in New Zealand in 1901.
-
New Zealand Mines Record Sept. 16, 1902.
A review of the annual reports of the Inspectors of Mines for the Otago goldfields. New Zealand. 14,000 w.

Black Sands of New Zealand, the Pacific, and Tierra del Guego.
C.C. LONGRIDGE.
Mining Journal April 20, 1907.
An account of the auriferous sands of various sea beaches and the methods of treatment. 3500 w.

Deep Alluvial Leads in the Mount Ida District, Otago.
MOSES BROWN.
New Zealand Mines Record July 16, 1907. Serial.
From Mount Ida Chronicle. A study of the deposits of this district. 3300 w.

GoldMining in Central Otago.
-
New Zealand Mines Record Dec. 16, 1907. Serial.
Abstracts from Bul. No. 2 (new series) of the New Zealand Geol. Survey, Historical and descriptive. 4000 w.

Gold Deposits in Central Otago.
-
New Zealand Mines Record June 16, 1908. lst part.
From a Bulletin by Prof. James Park. The present number, treats of some principles of concentration in riverbed gravels. 2000 w.

The Future of New Zealand's Alluvial Goldfields.
-
Mining Journal  Nov. 21, 1908.
Considers available ground and values, methods; and machinery, and the personal factor. 4000 w.

The Geology of the Mikouni Subdivision, North Westland.
PERCY GATES MORGAN.
New Zealand Mines Record Jan. 16, 1909. Serial, lst part.
An illustrated description of the region, the alluvial mining, and the deposits of gold, silver, coal, and information concerning other industries. 6000 w.

The South Island of New Zealand.
G.W. EASTON TURNER.
Australian Mining Standard  July 3, 1913.
Deals with gold recovery from the black sand beaches lying immediately inland above the tide level. 2200 w.

Gold Mining in Otago, New Zealand.
-
Chemical Engineering and Mining Review, vol. 18, no. 211, Apr. 5, 1926, pp. 269274, 10 figs. Kawarau River schemes; Shotover Gold Dredging Co.; St. Bathan's deep lead.

Gold in New Zealand.
J. HENDERSON.
New Zealand Journal Science and Technology, vol. 12, no 3, Dec. 1930, pp. 154165, l fig. Historical outline dating from 1857; review of Hauraki, West Coat, Nelson, Otago, and Marlborough mining districts; alluvial gold field; lode mining; table and graph showing value of gold produced from each district up to end of 1928; prospecting; future prospects.

Origin of Tuapeka GoldBearing "Cement."
J. PARK.
New Zealand Journal Science and Technology v 13 n 5 Apr 1932 p 2637.
Deposit consists mainly of subangular pieces of micaschist, with waterworn boulders of greywacke and quartzite and occasional jasperoid quartzite; cementing medium is finely comminuted fresh micaschist; thickness 300 to 400 feet; alluvial gold occurs throughout cement; schist is of local origin, boulders from distance; origin of deposit is attributed to fluvioglacial action. Bibliography.

Tuapecka Conglomerates.
G.W. THOMSON.
Mining Magazine v 47 n 6 Dec 1932 p 32933.
Cemented gravel deposits in Tuapeka district of Otago, New Zealand, supplementing brief item in issue of Oct 1931; sampling and assay data; prospecting, mining and proposed milling method.

GoldBearing Conglomerates of Central Otago.
E.O. MACPHERSON.
New Zealand Journal Science and Technology v 14 n 5 Apr 1933 p 26274.
Observations made during examination of alluvial gold fields; new viewpoints which may have bearing on origin of auriferous conglomerate and future of these fields.

Mining Deep Leads.
G.S. CABOT.
Chemical Engineering and Mining Review v 28 n 325 Oct 8 1935 p 47981.
Outline of history and geology of Waikaia gold field in New Zealand; notes on operation of King Solomon mine, worked by hydraulic elevator before abandoned; mine reopened by 3 compartment shaft 200 ft. deep about 4 ft 8 in. of wash gravel mined by drifts and crosscuts; longwall retreating mining will be used when lateral and roof pressure demand it; underground work is on contract.

Emphasis on Coal Mining in New Zealand.
-
Chemical Engineering and Mining Review v 44 n 4 Jan 10 1952 p 1213.
Summary on mining production in 1950; coal is most valuable product; gold dredging static; petroleum, scheelite, manganese, arsenic, iron, copper, lead, asbestos, bentonite, serpentine, dolomite, magnesite and sulphur worked on small scale.

Geology of Tavua Goldfield, Viti Levu, Fiji.
A. BLATCHFORD.
Australasian Institute of Mining and Metallurgy  Proc n 168169. MarJune 1953 p 1331, 6 supp plates.
Stratigraphic series represented by intrusive, Vatukeula series, mudstone and basalt contact, Sambeto series, Recent Alluvium and river gravels; character of geologic structure and lodes; mineral assemblage and paragenesis; ore shoots by mines and their control; development of exploration; maps, cross sections.

**GOLD PLACER** LOCATION South America

The Placer Gold Fields of Ecuador.
-
Mining Journal May 16, 1896.
An editorial account of the region with the prediction that the country is destined to add considerably to the world's output of gold. 1200 w.

Mining and Hydraulic Engineering in Brazil.
WILLIAM MAUDE.
Engineering Magazine Feb. 1905.
Illustrated account of the novel conditions under which old placers have been reopened. 4000 w.

Placers of Northern Ecuador.
-
Mining Journal March 4, 1911.
Extract from Theodore Wolf's "Geology and Geography of Ecuador," published in 1891, describing conditions especially along the rivers. 3000 w.

Mining in the Straits of Magellan.
H.W. EDWARDS.
Engineering and Mining Journal Dec. 2, 1911.
Brief review of the history of the region, and the working of the gold placers. 2500 w.

Barbacoas Goldfields.
-
Mining Journal Feb. 14, 1914.
Map and description of the reef mines and alluvial deposits and their development. 3500 w.
Gold Deposits in Chile. (Los yacimientos auriferous de Chile. Su explotacion y el beneficio de sus minerales).
BERTHKOERTING.
Instituto de Ingenieros de Chile Anales, vol. 22, no. 12, Dec. 1922, pp. 719758, 21 figs.
Describes three kinds of deposits; veins, impregnations and placers; mining methods; amalgamation; chloridizing; cyaniding; etc.

Gold Washeries (Lavaderos de Oro).
W. STRACHE.
Revista Financiera, Salitre y Minas, vol. 5, nos. 52 and 53, Sept. 1930, pp. 765771 and Oct., pp. 785788, 7 figs.
Sept.: Gold is generally found in Coast Range in Chile, in granodiorate and its metamorphic products; washeries represent detritus of

veins and occur as talus and as alluvial deposits or placers; advantage of washeries, as contrasted with vein mines, is that little capital is required for their operation; data on prospecting and mining, with notes on construction and use of California type of cradle gold washer. Oct.: Gulch placers; benchplacer deposits; beach deposits; ancient riverchannel deposits.

"Gold Farms" of the Inambari.
C. WOODS.
Engineering and Mining Journal., vol. 131, no. 4, Feb. 23, 1931, p. 172, 1 fig.
Methods employed by Indians for recovery of gold deposited during high water in bars and on banks of Inambari River.

Gold in Ecuador.
H.L. HOLLOWAY.
Mining Magazine v 46 n 4 Apr 1932 p. 21933.
History of gold mining in Euador; origin of placer deposits.

Chilenische Goldseifen und ihre Vorrichtung fuer Baggerbetrieb.
B. GEIER.
Metall und Erz v 30 n 3 lst Feb 1933 issue p 416.
Gold placer in Chile and dredging equipment employed in mining; characteristics of Chile placer deposits and their suitability for dredging; use of exploratory boreholds and shifts; evaluation of drilling results; gold content of placers and calculation of reserves.

Die technische und wirtschaftliche Bedeutung des heutigen Goldseifenabbaus in Brasilien.
F.W. FRIESE.
Metall und Erz v 32 n 19 lst Oct 1935 issue p 4579.
Technical and economic aspects of present gold placering in Brazil; it is claimed methods being employed are very primitive; for further development, necessary capital can be secured only through formation of larger corporations, and this is made difficult by new mining law.

Los Placeres Aufiferos de Huayllaripa.
J. RASSMUSS.
Boletin Oficial de la Direccion de Minas y Petroleo Ministerio deFomento v 1314 n 46 Dec. 1935 p 718 supp plates.
Gold placers of Huayllaripa; Tertiary volcanics and Cretaceous limestones,much folded at and near contacts; goldbearing conglomerates are most recent deposits; extensive ancient workings; Huayllaripa mines shows trace to 1/2 g gold per cu m; Pucaccasa mine, trace

to 2 g; Huinchuzlia mine, up to 1/2 g; fluvial deposits; total of 15,000,000 cu m estimated, with value assumed.

Placer Mining in Rio de Canada Honda. Argentina.
D.J. SABIN.
Mining and Metallurgy v 17 n 353 May 1936 p 2389.
Mine is at altitude of 5500 ft, in San Luis Mountains of Province of San Luis; ancient hand work by Incas, operated by English company about 1885;present workings are in valley 4 or 5 km long and 300 to 500 m wide; Dieselpowered excavators equipped with dragline buckets;overburden removed and pay gravel loaded into dump wagons and treated in semi-portable screening plant; gold is coarse and is saved in ordinary riffles.

Rivers Gold Belt of Uruguay.
N.W. WILSON.
Mining Magazine v 59 n 4 Oct 1938 p 20110.
Summary of results of investigation of gold field near Brazilian frontier, in departments of Rivera and Cerrro Largo; topography; climate; history; communications; supplies; labour; geology; mineralization commonly located in zones of faulting or shearing that traverse diabase or granitized diabase; notes on one lode mine; placers; production statistics.

Informe sobre el yacimiento do aluvion de oro en al Valle de Quebrada Mocupia.
R.P. MORRISON.
Venezuela. Ministerio de Minase Hidrocarburos Revista de Minas e Hidrocarburos n 11 AprJune 1953 p 725.
Information on alluvium gold deposit in Valley of Quebrada, Mocupia; characteristics of deposit and data on sampling.

Sobre los depositos aluviales auriferos del Rio Tumbes.
G. PETERSEN G.
Sociedad Nacional de Mineria y PetroleoBoleting n 99 SeptOct 1964 p. 1113. Alluvial auriferous deposits of Rio Tumbes; thickness of auriferous sand ranges from 10 cm to 2 m; grade of this placer is low; prospectors recover 2 to 9 g gold per day.

**GOLD PLACER** Location South America Bolivia

Gold Placers in Bolivia.
MILTIADES ARMAS.
Engineering and Mining Journal Oct. 28, 1911.
Illustrates and describes auriferous deposits on the eastern slope of the Andes,giving an account of their development. 2000 w.

Gold Placer Revival in Bolivia (Resurgimiento de los placeres auriferos en Bolivia).
-
Revista Financiera Bursatil y Minera,vol. 11, no. 22, Mar. 1928, pp. 233 and 235236. Historical and descriptive notes of Tipuani River region; during past 12 years, development undertaken by New Orleans interest; much capital expended in development work, without great return; enterprise now believed to be capable of giving return on investment. Article taken from Ingenieria Internacional.

Placer Mining Venture on Rio Kaka.
-
Engineering and Mining Journal v 136 n 3 Mar 1935 p 1323.
Operations of BolInca Mining Corp. on tributary of Beni River; principal sampling confined to top 12 ft of 50 acre Sipiapo placer; Sauerman slackline excavator. Lamberthoist, and centrifugal pump being installed; company also has parts for small dredge of rated capacity 1200 cu yds per day;Sikorsky amphibian plane is used for transport between La Paz and Sipiapo; hydroelectric power sites are available.

La Mineria del oro en Bolivia.
-
Sociedad de Ingenieros de Bolivia Boletin v 20 n 25 1941 p 638.
Gold mining in Bolivia;status of registered concessions; gold deposits; considered as to quality; new legislation on gold mining price of gold and its commercial value in Bolivia; present condition of gold mining industry in Bolivia; notes on properties and activities of four gold mining enterprises; means of promoting gold mining industry; gold in national and international economics; dredges and cost of dredging gold placers.

Los Trabjos auriferos de la "Compania Armayo de Minas" en la Region de Tipuani.
F. GERBRACHT.

Mineria Boliviana v 1 n 12 Nov 1944 p 116.
Gold workings of Cia Aramayo de Minas in Tipuani region; interview with credited author; transportation problem solved by use of airplanes; local water transport; testing deposits by drilling and shafts; reserves estimated as $8,065,000 of recoverable gold in Guanay, Silicuni, Duran, Challana Grande and Unica regions; half of gravels near Tipuani showed $1,554,000 recoverable gold, with average recovery of 79c per cu yd.

Los Yacimientos Auriferos de la Prov. Nuflo de Chavez.
F. PEISER.
Mineria Boliviana v 1 n 12 Nov 1944 p 2130.
Gold deposits of Nuflo de Chavez province, in Bolivia; auriferous quartz veins, with general strike of northwest to north northwest; alluvial deposits.

Oro en el Rio Cajones.
-
Mineria Boliviana v 6 n 49 Nov 1949 p 89.
Gold in Cajones River; geology and mineralogy; mining practice is to open "callejones de ganancia" or trenches about 40 to 50 m long to reach bedrock of old riverbed, extract auriferous sand and gravel, which is later washed in small sluice boxes or in pans; work is usually on contact and about 30 men produce about 4 kg of gold per mo.

Tertiary Channel Gold Deposits at Tipuani, Bolivia.
W.C. STOLL.
Economic Geology v 56 n 7 Nov 1961 p 125864.
Course of ancient river channel in which gold occurs is marked by belt, commonly 500 to 2500 m wide, of cemented conglomerate, or cangalli, which rests on folded Devonian shale; pay streaks contain wellwashed gravel and many massive quarzite boulders, together with concentrations of gold, cassiterite, bematite, magnetite, garnet and apatite; at base of cangalli, gold lies mostly close to bedrock on bottom of main and side channels and on rock benches.

**GOLD PLACER** Location South America Columbia

The Gold Deposits of Colombia (Les Alluvions Aurifères de la Colombia).
A. HUTIN.
Revue Technique April 10, 1904.
An account of the placer workings of San Carlos, Antioquia, Colombia. 1800 w.

Placer Mining in Antioquia, Colombia.
F.F. SHARPLESS.
Engineering and Mining Journal May 25, 1905.
Description of this field, with remarks on the work done, the difficulties, etc. 2500 w.

Mining in Colombia.
HENRY G. GRANGER.
Engineering and Mining Journal Aug. 4, 1906.
Account of early work of the placers and methods used and the valuable emerald mines. 1600 w.

Placer Mining in Colombia.
F.F. SHARPLESS.
Engineering and Mining Journal Sept. 1, 1906.
An illustrated article giving information concerning the production in past and present time, and related matters of interest. 2500 w.

A Mining Enterprise in Colombia.
FRANCIS C. NICHOLAS.
Mining World Feb. 9, 1907.
Illustrated description of gold placer deposits remarkable both for their high values and for peculiarities of formation. 2000 w.

The Eocene GoldBearing Gravels of Colombia.
FRANCIS C. NICHOLAS.
Mining World April 20, 1907.
Describes the placer deposits of great wealth which have yielded millions, studying the geological conditions. 2000 w.

Mining Industry of Antioquia, Colombia.
S.A. SILAS H. WRIGHT.
Mining World March 20, 1909. Serial, lst part.
An illustrated description of this richly mineralized region,and the conditions existing there. The present number considers mainly the auriferous gravel deposits. 4500 w.

Alluvial Gold Deposits and Mining in Colombia.
P.A. ALIG.
Engineering and Mining Journal Dec. 3, 1910.
Information concerning the production, the extent of the deposits, operating facilities and general conditions. 1500 w.

Dredging Prospects on the Pacific Coast of Colombia.
-
Mining Journal Feb. 25, 1911.
Map and information concerning the country and its goldproducing prospects. 3000 w.

Placer Mining in Colombia.
R.D.O. JOHNSON.
Engineering and Mining Journal Dec. 9, 1911. Map
Account of placers worked by primitive and modern methods for many years. 4500 w.

Native Placer Mining in Columbia.
R.D.O. JOHNSON.
Engineering and Mining Journal Oct. 19, 1912.
Illustrates and describes native tools and methods used, and gives information. 3500 w.

Nechi River Placer Mining, Colombia.
WILLIAM F. WARD.
Engineering and Mining Journal Aug. 16, 1913.
Information concerning the successful dredging and hydraulic mining. Ills. 2500 w.

The Gold Placers of Antioquia, Republic of Colombia, South America.
M.H. DE HORA.
Bulletin of the American Institute of Mining Engineers July 1913.
A brief study of the location of the placers in relation to nearby ore fields. Map. 1200 w.

"Playa" Panning on the Cauca River.
WILLLIAM F. WARD.
Bulletin of the American Institute of Mining Engineers July 1914.
Gives details of conditions and workings of this river in Colombia,S.A. Ills. 1300 w.

Placers of Antioquia, Colombia.
RALPH W. PERRY.
Engineering and Mining Journal Oct. 9, 1915.
General review. Ills. 3500 w.

Pato Property of Oroville Dredging Company.
W.A. PRICHARD
Engineering and Mining Journal Jan. 30, 1915.
Report on this property in Colombia, S.A., in the Nechi River valley. 4000 w.

The Pato and Nechi Placer Properties, Colombia.
W.A. PRICHARD.
Mining and Scientific Press Feb. 6, 1915.
Information from the report to the Oroville Dredging Co., Ltd., of London. Map. 2500 w.

The Exploitation of the Gold and Platinum Fields in the Republic of Colombia (Der Abbau der Gold and Platinfelder von Kolumbien).
ADOLF VOGT.
Zeitschrift des Vereines Deutscher Ingenieure, vol. 65, no. 10, Mar. 4, 1921, pp. 241243, 2 figs.
Discusses prospects. Description of plant with cableway excavator; goldwashing plant; economic aspects of plant.

The Auriferous Alluvials of Colombia.
M.O. PÉREZ.
Engineering and Mining Journal, vol. 124, no. 20, Nov. 12, 1927, p. 772.
In author's belief rivers of department of Antioquia and of Province of Choco offer ample room for profitable operation of more than 200 monitor and hydraulic elevator installations.

Mining Gold in Colombia's Rich Alluvial Deposits.
M.O. PÉREZ.
Du Pont Magazine, vol. 22, no. 10, Oct. 1928, pp. 1719, 5 figs; see also Min. Rev., vol. 30, no. 14, Oct. 30, 1928, pp. 1315, 5 figs and Spanish translation in Ingenieria Internacional, vol. 16,no. 11, Nov. 1928, p. 527, 3 figs.
Historical and descriptive notes on gold fields in Departments of Antioquia, Tolima, Bolivar, Caldas, and Cauca; optimistic data on possibilities on Nechi River; examples of high yields on Porce and Nechi rivers; advantages of alluvial mining; use of monitors and hydraulic elevators; tabular data on yields from 16th to 19th century.

Placer Mining in Colombia.
S. DEL RIO.
Engineering and Mining Journal., vol. 129, no. 7, Apr 7, 1930, pp. 354356, 4 figs.
Mining in department of Antioquia, where conditions are exceptionally favourable to hydraulic mining; source of alluvial gold deposits is networks of quartz veins and stringers of auriferous pyrites in decomposed granite; operation of placers is usually, but not always, preceded by sampling of ground; construction work and operating practice.

Colombia Revisited.
A.J. BENSUSAN.
Mining Magazine v 51 n 4 Oct 1934 p 2139.
Notes on mining inspection trip in Southern Colombia,South America; general information on state of Narinyo, with special reference to alluvial and vein gold mines in region between Barbacoas district and vicinity of

Pasto.

Unusual Unwatering Operation.
R.F. ALLEN.
Mining Magazine v 57 n 1 July 1937 p 918.
Description of alluvial hydraulicking mine in Colombia, (exact location not specified) where extensively flooded workings were unwatered by siphoning.

In Choco Colombia.
A. MEYER.
Engineering and Mining Journal v 142 n 9 Sept 1941, p 359.
Historical outline; geology; alluvial deposits of gold and platinum worked principally by primitive methods; average earnings of native miners 20c/day; early dredging failures; two companies now operate successfully; equipment, methods, and activities of Cia Minera Choco Pacifico, center of activity at Andagoya; smaller enterprise of Minas de Negua, with camp site at La Concepcion on Negua River. Bibliography.

Colombia  Important Gold and Platinum Producer.
A. MEYER.
Mining and Metallurgy v 23 n 427 July 1942 p 3836; see also Mining Journal (Lond) v 218 n 5581 Aug 8 1942 p 3801.
Statistical and descriptive account; many small native operators, using hand methods, add to output of larger foreign directed companies; most of gold comes from alluvial mines; Department of Antioquia is most important gold producing district; Choco stands in second place for gold and first for platinum.

Contribucion al Estudio de los Placeres Auriferos del RioSucio de Uraba. Opto de Antioquia.
H.E. WHITE URIBE.
Revista Mineria v 22 n 127 AprAug 1944 p 992132.
Contribution to study of gold placers of Sucio de Uraba river, in Department of Antioquia, Colombia; seven tracts are considered; most favourable prospects are those in lower part of Sucio river and the former channels; interesting topic for future study is relationship with deposits of platinum metals; gold bars from Department of Narino have been known to carry as much as 3% iridium.

Untested Colombian Basin May Hold Large Gold Placer.
J.F. TROUTMAN.
Engineering and Mining Journal v 147 n 5 May 1946 p 82-

3.
Since completion of highway from Castilla to Ataco, all dredgeable ground on upper Saldana River (tributary of Magdalena River) has been titled; Ata River basin is also dredgeable for 12 km above confluence with Saldana; surface pannings along upper area vary from about 5c to over dollar per pan; area has not been drilled, but depth will range from about 45 ft on lower end to about 30 ft on upper end of Ata area; sketch map, indicating location of area.

Colombian Survey,
N.W. WILSON.
Mining Magazine v 75 n 5, 6 Nov 1946 p 28192, Dec p 3517.
Geography and topography; climate and vegetation; health; politics; mining law; labour; communications and transport; mineral and metal production; geology; vein and placer gold deposits; silver; platinum; other minerals; mining activity and methods. Bibliography.

Hoya inexplorada de colombia que Puede Contener un Gran Yacimiento de Oro.
J.F. TROUTMAN.
Revista Mineria (Asociacion Colombiana de Mineros) v 23 n 137 MayOct 1946 p 106379. Untested Colombian Basin may hold large gold placer. Spanish translation of article from Engineering and Mining Journal 1946.

Study of GoldBearing Placers of RioSucio de Uraba, Antioquia, Colombia.
H.E. WHITE URIBE.
Mining Journal (Lond) v 229 n 5860, 5861,5862, Dec 13 1947 p 8267, Dec 20 p 8423, Dec 27 p 8612. Drainage area of Sucio de Uraba is considered as comprising seven regions; notes on individual localities, some of which are regarded favourably.

**GOLD PLACER** Location South America Guiana British, French, Dutch

Gold Mining in British Guiana.
JOHN H. POWELL.
Australian Mining Standard June 14, 1900.
Read before the Inst. of Min. and Met. Lond. Part first describes the country and deposits and methods of mining.

Quartz and Placer Deposits in British Guiana.
CHARLES E. CLARKE.
Engineering and Mining Journal July 11, 1896.
Description of the country generally and of the Barima district in particular. 2400 w.

The Gold Industry of British Guiana.
DAVID E. HEADLEY.
Engineering and Mining Journal Aug. 22, 1896.
Historical and descriptive sketch. 3800 w.

The Gold Fields of Guiana.
H. TWEDDLE.
Engineering and Mining Journal July 23, 1898.
Historical sketch with illustrations. 6000 w.

Mining in Tropical Regions.
-
Mining World Sept. 9, 1905.
Abstract from "L'Industrie Aurifère." Describes methods of placer exploitation in French Guiana. 1500 w.

Placer Mining in French Guiana.
LEON DELVAUX.
Engineering and Mining Journal March 2, 1907.
An illustrated account of old and new methods on the Elysee placer, and the success. 2000 w.

Placer Mining Conditions in Dutch Guiana.
J.B. PERCIVAL.
Mining and Engineering World Oct. 5, 1912.
Map, illustration and description of a gold region formed from the earliest times.
1500 w.

Gold Industry in Dutch Guiana, Its Past and Present.
J.B. PERCIVAL.
Mining and Engineering World Aug. 14, 1915.
Brief review of its history. Ills. 1200 w.

Gold in Dutch and French Guiana.
GEORGE A. LAIRD.

Mining and Metallurgy, no. 190, Oct. 1922, p. 1113, 4 figs.
That systematic investigation and development of gold-bearing areas have not been accomplished is due, it is claimed, not so much to lack of gold as to geographical, physical and climatic conditions of the two colonies.

The Goldfield of Dutch Guiana.
B.W. HOLMAN.
Mining Magazine, vol. 30, no. 2, Feb. 1924, pp. 8589, 5 figs.
Description of goldfields, and method of testing deposits.

Gold in French Guiana [L'or en Guyane fran\aise et les richesses aurifères du Mataroni (Ipoucin Approuague)].
A. PERROUD.
Société des Ingénieurs Civils de France  Memoires et Compte Rendu des Travaux, vol. 78, no. 78, JulyAug. 1925, pp. 555569.
Discusses backward state of knowledge regarding geology, auriferous zones, deposits, and their characteristics, extent of placers, dredging, etc.

Gold in British Guiana.
D.R. GRANTHAM.
Mining Magazine v 50 n 5 May 1934 p 26474.
Description of types of gold deposits worked in British Guiana, with notes on geology, by Director of Geological Survey; Potaro and Kaburi districts are now accessible by motor roads from Bartica to Potaro and branch roads to Tiboku; discovery of diamonds on Kuribrong River is mentioned.

Geology and Gold Deposits of Konawaruk, 1935.
S. BRACEWELL.
(British Guiana) Geological Survey 1936 20 p. Price 12c.
Report on river basin area of about 300 sq mi; gold is produced by dredging and by hand labour; quartz vein occurrences are noted, but no workable gold quartz veins are known; general geology; descriptions of gold deposits and development work; diamonds are being recovered with gold on some claims.

Geology and Gold Deposits of Potaro.
G.J. WILLIAMS.
(British Guiana) Geological Survey 1935 Reports 1936 62 p map in pocket. Price 72c. Report on area in forest belt on tributaries entering Potaro River between escarpment and Essequibo River: physiography; formation; general geology; origin of gold, from

granitic and other sources; distribution from source; detailed descriptions of deposits. Petrological appendix,

Alluvial Gold and Diamonds in British Guiana,
G.J. WILLIAMS.
Mining Magazine v 56 n 3 Mar 1937 p 1538.
Mode of migration of detrital minerals; economic significance of float gold; physiographic development; distribution of detrital minerals; in relation to physiographic development; study is based on recent work in Potaro district.

Gold Prospects in British Guiana.
D.R. GRANTHAM.
Mining Magazine v 56 n 2 Feb 1937 p 7380.
Supplementing paper by same author from issue of May 1934, summary of situation is given; history of gold mining in British Guiana; physical features, general geology and geology of gold deposits; ideal conditions exist for formation of rich alluvials, with little chance of digging payable quartz reefs; methods of locating favourable areas; notes on principal districts.

HandWorking on British Guiana Goldfields.
C.J. WILLIAMS.
Mining Magazine v 56 n 4 Apr 1937 p 21822.
Although hand methods used in Guiana are inefficient and wasteful, few attempts to mechanize placer mining have been successful; chief obstacle to mechanization is patchy nature of deposits, which renders it impracticable to evaluate ground without working it; dredging opportunities probably exist; battel (pan) and tom work; sluice work; group sluicing; ground sluicing.

Report on Geology and Mineral Deposits of Upper Waini River, North West District, D.A. BRYAN DAVIES.
British Guiana Geological Survey  Bul n 15 1940 21 map; see also Great Britain Imperial Inst  Bul v 39 n 1 JanMar 1941 p 5162.
Metamorphosed basic and acid to intermediate volcanic rocks intruded by batholiths and stocks, all intruded by dolerite; alluvial gold has been worked in 3 small fields; no workable deposits of auriferous quartz; diamonds not in workable concentration; low grade siliceous.

British Guiana.
B.W.W. MCDOUGALL.

Western Miner v 18 n 7 July 1945 p. 408.
British Guiana is only British colony on South American Continent; general description; industries; gold placer mining; geology; bauxite, gold and diamonds are only minerals of consequence produced in colony; gold deposits, alluvial and lode; most of development work on goldbearing lodes has been in weathered zones.

Mineral Resources of British Guiana.
-
South African Mining and Engineering Journal v 58 n 2867 Jan 24 1948 p 555, 5578.
Alluvial diamonds; gold occurrences; gold washing methods, using battel (batea), "tom" or sluice, and by hand operated "dinkie" for crushing quartz stringers, hydraulicking; gold quartz mining; bauxite deposits; clay; natural gas; sand; lignite; stone for road materials;manganese; uranium occurrence, as small specimens of euxenite; iron ore reported. From handbook of Interior Development Committee of British Guiana.

La mine d'or de SaintElie et AdieuVat en Guyana Francaise.
B. CHOUBERT.
Echo des Mines et de la Métallurgie, n 3441 Feb 1952 p 99116.
Gold mine of SaintElie and AdieuVat in French Guiana; history of development; data on production and characteristics of equipment used; geologic structure of region; study of metallogenesis; composition of gold bearing rocks; gold placers, lateritized deposits, eluvium, lodes, and impregnated deposits.

British Guiana.
A.G. THOMSON.
Mining Journal (Lond) v 238 n 6081 Mar 7 1952 p 2423.
Description of mineral deposits, chiefly gold,diamonds, important occurrences of bauxite, columbite, manganese ore, and uranium containing mineral, euxenite; problem of mechanization of mining and development of systematic survey of alluvial deposits; data on output and reserves of minerals.

De goudafzettingen in het Lawagebied.
W. DE HAAN.
Geologie en Mijnbouw v 14 n 9 Sept 1952 p 3217.
Gold deposits in basin of Lawa river (Surinam); residual ore deposits in smaller tributaries of Lawa river and hypothesis about their origin; it is stated that deposits are in main alluvial; primary ore deposits are veinlets and stockwords of gold bearing

quartz at contact of schists with intrusive acid rocks; primary deposits are poor in gold; map. (In Dutch with English summary).

Diamond and Gold Deposits of Mekuru District, Cuyuni River British Guiana.
E.R. POLLARD.
British Guiana Geological Survey Bul n 24 1953 27 p. 3 supp plates.
Characteristics of volcanic series, Haimaraka shales, older basic intrusive, granitic rocks, Roraima formation, newer basic intrusive and superficial deposits; diamonds occur in old terrace deposits near Cuyuni river and around White Sand deposit; gold of coarse alluvial variety occurs in headwaters of Urluowra and Amunga; petrographic study of rocks; analysis of gabbros.

Een Surinaams exploratieprobleem.
-
Geologie en Mijnbouw v 17 n 6 June 1955 p 1656.
Problem of exploration in Surinam; constant low assays versus erratic high assays; in prospecting of eluvial containing gold nuggets, result may be disappointing notwithstanding fact that their exploitability can be proved by actual mining.

Mineral Development in British Guiana.
G.M. STOCKLEY.
Mining Magazine v 115 n 4 Oct 1956 p 20712.
Impact on placer gold, diamonds, columbite, and manganese ore on economy of colony.

Gold Deposits of Cuyuni River.
R.T. CANNON.
British Guianan Geological Survey Bul n 27 1958 69 p. 4 maps, 2 plates.
Gold is associated with granite intrusive and their late magmatic derivatives, with various members of volcanic series and metamorphic rocks which may be older, and with older basic intrusive, gabbros and diabases; deposits include gold bearing quartz veins, dissemination in bedrock and placers; details of individual deposits.

L'exploitation mécanisée du placer aurifère de Boulanger en Guyane Francaise.
P. SEYER.
Mine et Métallurgie n 3548., 3549,3550 Feb 1961 pp 837, Mar p 14550, Apr p 2214. Mechanized mining of Boulanger gold placer in French Guiana; operation and adaptation of Marion dredge and washery; exploration of placer;

statistics on placering.

L'orpaillage en Guyane francaise.
B. ESAMBERT.
Annales des Mines Jan 1964 p 526.
Gold washing in French Guiana; history of production and mining regulations since 1860; statistics of gold production between 1860 and 1962; occurrences of gold veins in Precambrian Paramaca series; prospects for discovery of high grade deposits are poor.

**GOLD PLACER** Location South America Peru

Examining a Peruvian Placer.
PIERRE BOUERY.
Mining and Scientific Press June 21, 1913.
Gives briefly the history of their discovery, origin of the placers, climatic conditions, labour, etc. Ills. 2000 w.

The Gold Placers of Maranon River, Peru.
-
Mining and Engineering World May 9,1914.
Map and description and history of these workings. 1500 w.

Mining in Pataz Province (Peru) (Mongrafja gornicza prowincji Pataz (Peru)).
B. GLINSKI.
Przeglad GorniczoHutniczy, vol.19, no. 8, Apr. 15, 1927, pp. 217223.
Geography, topography and geology of region; gold-bearing sands, mining and metallurgical methods, production statistics.

Placer Gold in Peru.
H.D. KEISER.
Engineering and Mining Journal., vol. 131, no. 6, Mar. 23, 1931, pp. 260261, 4 figs.
Concession granted to C. Woods; by Peruvian Government No. 1930; area more than 50,000 sq. mi., embracing territory drained by Inambari River and tributaries; to validate concession, serial photographic map will be prepared; plans for exploitation of concession.

Informe sobre los aventaderos de Aporoma.
C. Del SOLAR B.
(Peru) Boletin Oficial de la Direccion de Minas e Industriaus v 15 n45 Oct 1935 p 5671.
Report on Aporoma deposits in Sandia province, between three affluents of Inambari river; indications of work on large scale by early Spanish colonists; operations by Aporoma Goldfields Ltd until 1917; results of present examination indicate 21,000,000 cu m minable gravel carrying at least 0.3 g gold per cu m; estimates of new equipment required, cost of repairing existing canals, etc.

**GOLD PLACER** Location S.E. Asia

Gold Placers of Nueva Ecija, in the Philippines.
MAURICE GOODMAN
Mining Journal Oct. 26, 1907.
Gives the recent report of Mr. MAURICE GOODMAN. 1500 w.

Philippine Placers.
R.Y. HANION.
Mining and Scientific Press Aug.26, 1911.
Information concerning the known fields and their development. 1200 w.

The Black Sands of Paracale.
PAUL R. FANNING and F.T. EDDINGFIELD.
Philippine Journal of Science Aug., 1912.
Reports an investigation of the black sands of Luzon. Ills. 8700 w.

Mining in Malaya.
A.C. SPARKS.
Electrical Review (London), vol. 102, no. 2618, Jan. 27, 1928, pp. 145146. Impressions of visit to Federated Malay States, with reference to methods of applying electric power in tin mining; all larger towns in F.M.S. supplied with electricity by government or municipal authorities; dredging method; opencast mining; coal mining; plant and machinery almost entirely British made, but Chinese now making gravel pumps. Extracts from paper London Branch of Assn. Min. Elec. Engrs.

Mining in Malaya.
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Far Eastern Review, vol. 24, no. 3. Mar. 1928, pp. 140-141, 1 fig. Gold, coal and tungsten ores (wolfram and scheelite) are successfully mined in Malaya, but tin preponderates; for many years Federated Malay States have been largest producers of tin in world; they also have world's largest hydraulic tin mine and one of largest tinlode mines.

Gold in Burma and Shan States.
J.C. BROWN.
Mining Magazine v 52 n 1 and 2 Jan 1935 p 920 and Feb 8292.
Gold bearing quartz veins of Katha district; gold associated with diorite near Kalaw, Southern Shan States; alluvial deposits of Chindwin River; gold bearing terraces of Uyu River; occurrences of Hukawng Valley; gravels of Irrawaddy River; origin of Irrawaddy gold; large nuggets and gold dust obtained by

Chinese miners from eluvial deposits of slopes; occurrences in tributaries of Irrawaddy; miscellaneous occurrences.

Placers Also Yield Gold.
V.V. CLARK.
Engineering and Mining Journal v 138 n 8 Aug 1937 p 4189 and 421.
Historical outline; dredging activity;dragline excavator and floating washing plant, hydraulic mining; notes on individual placer operations; sources of placer gold in various districts; prospecting.

Beschouwingen over oorsprong en vorming van de alluviale goudafzettingen in de afdeelingen Bengkalis en Indragiri.
J.E. LOTH.
Ingenieur v 52 n 38 Sept 17 1937 p M2936.
Consideration on origin and formation of alluvial gold deposits in Bengkalis and Indragiri at East coast of Sumatra.

Prospecting in East India Jungle.
V.V. CLARK.
Mining and Metallurgy v 18 n 372 Dec 1937 p 5457.
Notes on activities of six prospecting groups in Netherland East Indies; three are searching for lode mines, studying structures, developing and diamond drilling, and three groups are searching for placer mines with pans, pits, and Empire drills; detail of experiences of one of latter groups.

Placer Operations of North Mindanao Mining Co. Surigao, Mindanno.
W.F. BOERICKE and N.N. LIM.
Philippines Bureau of Mines Information Cir n 1 1939 20 p.
Deposits appear to be remnants of ancient auriferous river channel, subjected to subsidence, upheaval and subsequent erosion; depth to bedrock 4 to 40 ft. averaging about 12 ft; boulders abundant; sampling practice; water supply system with 18,000 ft ditches and flumes and 4000 ft of 20 to 10 in. pipe; normal flow 900 miners inches, with 250 ft head; details of equipment, practice, yields and costs.

Placering in Mindanao With Dragline and Stacker Scow.
W.F. BOERICKE.
Engineering and Mining Journal v 140 n 10 Oct 1939 p 389.
Paper describes recent work on Tuba Flat area of Curuan River, 50 mi north of Zamboanga in Southern

Mindanao; gravels 6 to 30 ft deep. averaging about 15 ft not cemented and free from clay; boulders of moderate size amount to about 30% of ground; Diesel engine powered No. 55 BucyrusErie dragline, with 3 cu yd bucket; 43,500 cu yd gravel washed in one month yielded 34 1/3 cents per cu yd or 89.5% of test pit value.

Burmese Mineral Resources.
W.E. HOSKING.
Mining Journal v 22 n 5836 June 28 1947 p 3845.
Difficulty of access and lack of transportation has retarded development of many known deposits; lead silver and lead zinc deposits; native copper; gold placers; manganese and iron ores; prospecting. Before Cornish Inst Min. Mech and Met Engrs.

Economic Importance of Jointing in Limestone Bedrock of Two Alluvial Gold Mines, Pahang, Malaya.
J.A. RICHARDSON.
Institution of Mining and Metallurgy Bul n 490 Sept 1947 p 238 (discussion) n 493 Dec p 437.
Strong joint planes cutting PermoCarboniferous limestone bedrock have played important part in locating of relatively rich shoots in gold placers and residual deposits in at least two gold mines in northwest Pahang: igneous rocks intrusive into sediments; Foo Brothers hydraulic gold mine, Sungei Timah,Pahang; Tui gold mine; Padang Tungku, Pahang.

Economic Importance of Jointing in Limestone Bedrock of Two Alluvial Gold Mines, Pahang, Malaya.
J.A. RICHARDSON.
Institution of Mining and Metallurgy Bul n 522 May 1950 p. 35.
Author's reply to discussion of paper from Bul 490 Sept 1947.

**GOLD PLACER** Location U.S. Alaska

The Gold Fields of Alaska.
ROBERT STEIN.
Review of Reviews - June 1896.
Largely descriptive of the country and means of access to the gold fields. 3000 w.

Alaska and Its Mineral Resources.
ARTHUR LAKES.
Mines and Minerals March. 1898.
Abstract "Alaska Mining Record." The geographical situation of the mining districts with account of discovery, the development work, and the conditions under which the work must be done. 2500 w.
Gold Deposits, Geology and Geography of Alaska.
W.H. DALL and F.C. SCHRADER.
Mining and Scientific Press March 10, 1898.
Information from a U.S. Government pamphlet prepared by W.H. DALL and F.C.SCHRADER, and edited by S.F. EMMONS.

Gold Fields of Alaska; Rush of Prospectors.
-
US Consular Reports March 11, 1898.
Reports the large number of prospectors already on the Pacific coast en route for these gold fields, and comments on the movements of Canada aiming to securing as large benefits as possible from the discovery. 800 w.

The Alaska Gold Fields and the Opportunities They Offer for Capital and Labour. SAMUEL C. DUNHAM.
Bulletin of Dept of Labour May 1898.
Report of official investigations made under government instructions, giving information of value on all subjects relating to this region. Ills. and maps. 7200 w.

Distribution of Gold in Alaska.
R.H. STRETCH.
Mining Industry and Review May 5, 1898.
Presents views based on work extending over a period of three months. 1400 w.

The Alaskan Gold Fields and the Opportunities They Offer for Capital and Labour. SAMUEL C. DUNHAM.
Bulletin of US Dept of Labour Nov. 1898.
Report of recent investigations in these mining districts, showing what progress is being made, and the need of taking every precaution in going to this region. 23400 w.

Mining Conditions in Alaska.
"ALEX. QUARTZ."
Mining and Scientific Press Nov. 12, 1898.
Discussing the seeming decline of the mining industry and explaining some of the causes. Claims that it is not from lack of gold in its mines, but the hard conditions imposed by the government. Gives encouraging reports of some districts recently explored. 2500 w.

The Cape Nome District, Alaska.
HERBERT MURRAY.
Engineering and Mining Journal Nov. 25, 1899.
Information gleaned while prospecting, and from well-informed miners. 1200 w.

The Cape Nome Gold Fields.
-
US Consular Reports, No. 633 Jan. 20, 1900.
Concerning gold discoveries reported, tables giving market quotations, other information. 800 w.

Some Notes on Nome, Alaska.
PAUL F. TRAVERS.
Engineering and Mining Journal Jan. 27, 1900.
An account of the discovery, and of the present outlook and conditions. Ill.1200 w.

Some Notes on the Nome Gold Region of Alaska.
F.C. SCHRADER and ALFRED H. BROOKS.
Transactions of the American Institute of Mining Engineers Feb. 1900.
Describes the region, the deposits, the difficulties to be met, etc. Map. 4000 w.

The New Mining District at Cape Nome.
ENOS BROWN.
Scientific American Feb. 3, 1900.
Information concerning this region, its location, climate, deposits, etc. 900 w.

The Gold Sands of Cape Nome.
ANGELO HELLPRIN.
Ap Popular Science Monthly April 1900.
Account of this mining district, giving its history, describing the deposits and workings. Ill. 3700 w.

The Gold Deposits of Cape Nome.
CHARLES G. YALE.
Scientific American Sup May 12, 1900.
Information concerning beach deposits, and their probable origin,means of working, etc. 1700 w.

Gold Deposits and Mining Methods at Cape Nome.

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Scientific American  May 19, 1900.
Information concerning the location, devices or power machines used, etc. Ill. 1400 w.

The Auriferous Sands of Cape Nome. (Les Sables Aurifères du Cap Nome, Alaska).
R. DE BATZ.
Génie Civil  June 9, 1900.
A general description of the Cape Nome region and gold fields, with maps. 3500 w.

Cape Nome, Alaska, Gold Region.
F.C. SCHRADER and A.H. BROOKS.
Mines and Minerals  July 1900.
Epitome of report by F.C. SCHRADER and A.H. BROOKS, of the U.S. Geol. Surv. Concerning the formation of the country, and where and how the gold is found. Ill. 4300 w.

The Great Storm at Nome.
WINTHROP PACKARD.
Engineering and Mining Journal  Oct. 13, 1900.
In the N.Y. "Evening Post." An account of a storm which wrecked a large part of the city.  1700 w.

Some Notes on Alaska.
W.M. COURTIS.
Engineering and Mining Journal  Nov. 10, 1900.
Observations made on a recent trip in the Ketchikan district and as far as Bennett Lake. 1000 w.

Some Experiences in the Nome District, Alaska.
BARRY SEARLES.
Engineering and Mining Journal  Dec. 29, 1900.
Reviews the rush of the season of 1900 and the resulting conditions, giving information of the region, and the degree of success. 3200 w.

Notes on Nome, and the Outlook for Vein Mining, in that District.
FORBES RICKARD.
Engineering and Mining Journal  March 2, 1901.
The writer's opinion concerning the gold deposits, their origin, etc. 2000 w.

Gold Mining in Alaska.
H. VAN F. FURMAN.
Mines and Minerals  May 1901.
An illustrated description of the southeastern part of the country, its formations and some of the mines. 3800 w.

The Placer Gold Fields of the Nome Region.
ALFRED H. BROOKS.

Mining and Metallurgy May 1, 1901.
An illustrated account of the present condition and future possibilities of this region. 2700 w.

The Golovin Bay Region of Northwestern Alaska.
J.D. LOWNY.
Engineering and Mining Journal June 15, 1901.
Describes the characteristics of the region, its advantages over Nome, and recently organized enterprises. Gold dust assays from $17 to $19 per ounce. 1300 w.

The Season of 1901 at Nome.
HERBERT MURRAY.
Engineering and Mining Journal Nov. 23, 1901.
A review of the year and the conditions under which the work has been carried on., 1800 w.

The Story of Nome Gold Fields.
OTTO HALIA.
Mining and Scientific Press March 1, 1902.
Reviews the history of this field since its discovery in July 1898.

Mining Conditions in the Nome Region, Alaska.
ARTHUR J. COLLIER.
Engineering and Mining Journal May 21, 1902.
The decreased production and the causes are discussed. 700 w.

The Gold Sands of Cape Nome.
A.L. QUENEAU.
Engineering Magazine July 1902. Ill.
Description of beach at Cape Nome, showing the methods of working the auriferous sand. 3500 w.

Gold Mining in the Nome District.
LEWIS GARRISON.
Engineering and Mining Journal Oct. 4, 1902.
An account of the companies formed, and the need of water, showing that the district has passed largely into the hands of companies with large capital. 1200 w.

Boring the Tundra of the Nome Gold Fields in Search of Gold.
OTTO HALLA.
Mining and Scientific Press Feb. 28, 1903.
Gives an account of investigations, which have shown that the deposits between the hillsides and the Behring sea contain large amounts of auriferous gravel. 1000 w.

The GoldBearing Gravels of Alaska.
JOHN D. MCGILLIVRAY.
The Engineering Magazine July 1903.
A brief summary of their position and extent, with suggestion of means for vastly increasing

their accessibility by a logical and inexpensive policy of taxation and road building. Illustrated. 3800 w.

The Treadwell Group of Mines Douglas Island, Alaska.
ROBERT A. KINZIE.
Transaction of the American Institute of Mining Engineers Oct 1903.
History, geology, and illustrated detailed description of mines and methods of ore that does not yield an average of more than $2 per ton. 13,800 w.

Unexplored Alaska.
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Scientific American Sup May 14, 1904.
Information from a publication of the U.S. Geol. Survey, giving a story of a pioneer journey of 535 miles through Central Alaska, between the Yukon basin and the Arctic Ocean. 1100 w.

Forty Mile, Alaska.
J.S. FRENCH.
Mining and Scientific Press Dec.24, 1904.
An account of mining methods and life in the Yukon basin. Ills. 3700 w.

The Porcupine Placer District, Alaska.
CHARLES W. WRIGHT.
Mining and Scientific Press Jan. 14, 1905.
From the U.S. Geol. Survey. An illustrated description of this district in Southeastern Alaska. 2400 w.
A Growing Camp in the Tanana Gold Fields, Alaska.
SIDNEY PAIGE.
National Geographic Magazine March 1905.
An account of life and conditions at the Fairbanks camp. Ills. 2500 w.

The Placer Fields of NorthWestern America.
THOMAS TONGE.
Mining Journal March 18, 1905.
Information obtained from CHESTER WELLS PURINGTON, who recently investigated the placer mining industry of Alaska in regard to the conditions, cost of mining and best methods to employ in the different districts. 4000 w.

Gravel and Placer Mining in Alaska.
CHESTER WELLS PURINGTON.
Mining World July 29, 1905.
Explains methods of mining necessary by unusual conditions, information on cost. Map. 4000 w.

Placer Mining in Alaska.
C.W. PURINGTON.
Mining and Scientific Press Aug 12, 1905.
Abstract from Bulletin of the U.S. Geol. Survey, describing the methods of mining. Ills. 1800 w.

Gold Mining in Southeastern Alaska (Der Goldbergbau in Südost Alaska).
H. HAAGEN.
Glückauf Oct. 7, 14, 1905.
Illustrating and describing the AlaskaTreadwell plant on Douglas Island. Two articles. 8000 w.

GoldMining in Alaska.
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Engineering April 27, 1906.
Editorial, describing the deposits and giving an account of the difficulties in the different districts. 3000 w.

Cape Nome Placers.
E.B. WILSON.
Engineering and Mining Journal Oct. 13, 1906.
Describes the peculiar occurrence of the gold, and the mining conditions. Ills. 1000 w.

Alaska and Its Possibilities.
J.T. CORNFORTH.
Mining Report Jan. 10, 1907.
Read at meeting of the Am Mining Cong. Information relating to the early history, the gold production, and other metals; the transportation facilities, etc. 1400 w.

The Great Treadwell Mines on Douglas Island.
ARTHUR COE SPENCER.
Mining World Sept. 21, 1907. Serial. lst part.
Information in regard to the deposits, development, production, geology, etc., of these gold mines. Ills. 1200 w.

Mining in the Wrangell District, Alaska.
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Mining and Scientific Press Feb. 8, 1908.
An account of the development of the gold placers and the copper projects. 2500 w.

Mining the Treadwell Lode.
T.A. RICKARD.
Mining and Scientific Press July 18, 1908.
An account of the methods adopted in the mining of wide ore bodies without the aid of timbers. An unusually large lowgrade deposit of gold ore. Ills. 2000 w.

The Gold Placers of Parts of Seward Peninsula.

C.C. LONGRIDGE.
Mining Journal Aug. 29, 1908. Serial, lst part.
Compiled from the U.S. Geol. Survey reports by C.C. LONGRIDGE. An illustrated historical resume of Alaska placer fields and their development. 6000 w.

Mining Methods in the North.
T.A. RICKARD.
Mining and Scientific Press Dec. 12, 1908. Serial, lst part.
Traces the evolution of methods of mining goldbearing gravel in Alaska. Ills.3000 w.

Placer Gold Mining in Interior Alaska.
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Engineering and Mining Journal March 20, 1909.
Information concerning conditions, methods, and prospecting. 4000 w.

Haines District, Alaska.
W.A. SCOTT.
Mining and Scientific Press Aug. 7, 1909.
Brief account of this gold mining district. 1200 w.

The Fairbanks Gold Placer Region, Alaska.
L.M. PRINDLE and F.J. KATZ.
Mining World Aug. 21, 1909.
Abstracted from Bul. 379, U.S. Geol. Survey. A review of the mining development, and gives information of methods used. Map. 3500 w.

Mining in the Fairhaven Precinct, Alaska.
FRED F. HENSHAW.
Mining World Nov. 20, 1909.
Abstracted from Bul. 379, U.S. Geol. Survey. Map and account of operations and methods in this goldfield. 2200 w.

The Innoko Placer District, Alaska.
A.G. MADDERN.
Mining World April 16, 1910.
Abstract from Bul. 240, U.S. Geol. Surv. Sketch map and account of the discovery of placer gold. 2000 w.

Placer Mining Operations in Alaska in 1909.
ALFRED H. BROOKS.
Engineering and Mining Journal Aug. 27 1910.
Information concerning the last year's work, the production,etc. Maps. 3000 w.

Some Economic Gold Deposits of Alaska.
FRANCIS CHURCH LINCOLN.
Engineering and Mining Journal Sept. 17, 1910.

Brief descriptions of the more important gold deposits, with information concerning them. 5000 w.

Nome Placer Mining.
T.M. GIBSON.
Mining and Scientific Press Dec. 17, 1910.
Information concerning the work of the past season, and of a new find that may prove important. 1800 w.

The Iditarod.
E.H. THOMAS.
Mining and Scientific Press Feb. 18, 1911.
Illustrated account of Alaska's newest gold camp. 800 w.

PayStreaks at Nome.
T.M. GIBSON.
Mining and Scientific Press March 25, 1911. Serial. 1st part.
Maps, and account of the important placers found in the beach deposits. 3500 w.

The Fineness of Gold in the Fairbanks District, Alaska.
PHILIP S. SMITH.
Economic Geology Aug. 1913.
Map and statement of the fineness of the placer gold found on the creeks in the Fairbanks region, Alaska, with location of the known lode mines and prospects.
2400 w.

The Chisana Placer Gold Strike in Alaska.
Mining and Engineering World Nov.22, 1913.
An account of a strike of some promise in Alaska. 2500 w.

The Chisana (Shushanna) Gold District.
D.D. CAIRNES.
Canadian Mining Journal Jan. 1, 1914.
Information concerning these placer deposits in Alaska. 2500 w.

Chisana Goldfields.
D.D. CAIRNES.
Bulletin of the Canadian Mining Institute Feb. 1914.
Map and information concerning the location, routes, expenses, accommodations, topography,general geology, the discovery, etc. Ills. 6000 w.

Drift Mining in the Frozen Gravel Deposits of Cape Nome.
ARTHUR GIBSON.
Mining and Scientific Press March 7, 1914.
Gives data based on actual mining operations at some of the best and most successful mines on Seward Peninsula. Alaska, Ills. 2000 w.

Report of the Mine Inspector for the Territory of
Alaska to the Secretary of the Interior, for
the Fiscal Year Ending June 30,1914.
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U S Gov Printing Office 1914.
Mainly a description of the mining operations. 32 pp.

The Chisana Placer District of Alaska.
ALFRED H. BROOKS.
Mining and Engineering World Nov. 28, 1914.
Describes the gold deposits, copper deposits, and
mining methods. Maps and Ills. 2500 w.

Mining in the Far North.
EMIL EDWARD HURJA.
Mining and Scientific Press Dec. 5, 1914.
The present article deals with the upper Yukon: Circle
City, Eagle and Woodchopper. Ills. 2000 w.

Mining in the Far North.
EMIL EDWARD HURJA.
Mining and Scientific Press Dec. 19, 1914. Serial, lst
part.
An account of placer mining in the Fairbanks district.
Ills. 4000 w.

Mining in the Far North.
EMIL EDWARD HURJA.
Mining and Scientific Press Jan. 30, 1915.
Describes the dredging and placer operations in the
Iditarod district. Ills. 1500 w.

Mining in the Far North.
EMIL EDWARD HURJA.
Mining and Scientific Press March 6, 1915.
Conditions at Hot Springs, Gold Mountain, Koyukuk, and
Andreafski districts. Ills.
1500 w.

Yakataga Beach Placers.
ARTHUR G. THOMPSON.
Engineering and Mining Journal May 1, 1915.
Characteristics and methods of working. Ills. 2000 w.

Mineral Resources of the ChisanaWhite River District,
Alaska.
STEPHEN R. CAPPS.
US Geological Survey Bul 622F. (c. 1915)
General description, geology, etc. Maps. 18000 w.

Development Methods at Fairbanks.
-
Engineering and Mining Journal June 12, 1915.
Describes methods and machinery for working these
placers. Ills. 6000 w.

Bagley Scraper for Gravel Mining in Alaska.
LEWIS H. EDDY.
Engineering and Mining Journal Aug. 14, 1915.
Successful operation on Otter Creek. Ills. 1200 w.

Mining Methods at Ashanti (81890 A). Region, Alaska (82056 N).
STEPHEN R. CAPPS.
Maps. 52 pp. U S Geological Surv Bul 662E.
General features of this district; geology; placer and lode deposits. (c. 1917)

Present Status of Mining in Alaska.
HARRY J. PHILLIPS.
Engineering and Mining Journal Press, vol. 115, no. 10, Mar. 10, 1923, pp. 446448.
Development retarded by lack of transportation facilities and by restrictions of present Government policy; British Columbia's aid for prospectors contrasted; need for diverse industry.

The RubyKuskokwim Region. Alaska.
J.B. MERTIE, JR. and G.L. HARRINGTON.
US Geological Survey Bul. 754, 1924, 126 pp. 17 figs., partly on supp. plates.
Geography, geology, and mineral resources; placer gold is only mineral deposit that has been exploited on a commercial scale.

Mineral Resources of Alaska, 1922.
A.H. BROOKS and others.
US Geological Survey, Bul 755, 1924, 220 pp., 14 figs, partly on supp.plates.
Results achieved in investigation of mineral resources of Alaska and treating of mining industry of the territory, especially of statistics of mineral production.

Mineral Resources of Alaska, 1923.
A.H. BROOKS and others.
US Geological Survey, Bul 773, 1925, 280 pp. 17 figs.
Contains following articles; Preface,and Alaska's Mineral Resources and Production, A.H. BROOKS; An Early Tertiary Placer Deposit in the Yentna District, S.R.CAPPS; Mineral Investigations in Southeastern Alaska, A.F. BUDDINGTON; Occurrence of Copper on Prince William Sound, F.H.MOFFIT; Mineral Resources of Kamishak Bay Region, K.F. MATHER; Cold BayKatmai District, W.R. SMITH; Geology and Gold Placers of Chandalar District, J.B. MERTIE, Jr.; Outlook for Petroleum Near Chignik, G.C. MARTIN; Recent Survey of publications of Alaska.

PlacerMining Methods; and Costs in Alaska.
N.L. WIMMLER.

US Bureau of Mines  Bul. no 259, 1927, 224 pp. 68 figs.
Results of study of present conditions in Alaska placer mining, methods employed and costs.

The Gold Resources of Alaska.
P.S. SMITH.
Economic Geology, vol. 25, no. 2, MarApr. 1930, pp. 176196, 3 figs.
Brief historical note of gold mining in Alaska; tabular production statistics of placer gold and lode gold, 1880 to 1929, total value $380,838,000; placer gold deposits; reserves estimated as $360,000,000 or more; lode gold deposits; facts are not available for estimate of lode gold reserves, but it is considered quite possible that reserve of lode gold far exceeds that of placers;tabular summaries of principal placer and lode regions and districts of Alaska. Bibliography.

Geology of the EagleCircle District, Alaska.
J.B. MERTIE, JR.
US Geological Survey  Bul., No. 816, 1930, 166 pp. and index, 30 pp. partly on supp. plates.
Area lies between Fortymile and Circle mining districts, and embraces Seventymile district and American Creek, Fourth of July Creek, and Woodchopper Creek precincts; geographic features; descriptive geology; geologic history; distribution of gold placers; sources of gold; placer mining operations; two groups of claims, comprising 7 mi. of placer ground on Coal Creek regarded as good hydraulic venture for some company.

Past PlacerGold Production from Alaska.
P.S. SMITH.
US Geological Survey  BlU n 857B 1933 (Mineral resources of Alaska, 1932) p 938. Tabulated statistics and commentary on production, by districts, from 1880 to 1930 inclusive, showing total$258,962,000, as compiled from available official records.

Tractors Speed Placer Development in Alaska.
M.H. GUISE.
Engineering and Mining Journal v 137 n 10 Oct 1936 p 507.
Note on accomplishment of M.H. GUISE;dragline scraper and washing plant designed, shipped, and transported 35 mi overland to site on Peters Creek within 75 days after examination of property was begun; direct tractor transportation operating costs on 500 tons amounted to about $8 per ton, lower than any

contracting rate.

Recent Mineral Developments in Copper River Region.
F.H. MOFFIT.
US Geological Survey Bul 880B 1937 p 97109.
Copper mining,lode gold and gold placer mining in Chitina Valley and Bremner River districts; Nabesna gold mine in Nabesna Valley; gold placers and quartz veins in Chisana district; Chistochina district, and Ahtell Creek Valley.

Choosing Mining Method for GoldBearing Gravels.
W.W. STALEY and R.H. STORCH.
Engineering and Mining Journal v 138 n 7 and 9 July 1937 p 3426 and 359 and Sept p 434.
Study of property at source of Birch Creek and its first tributaries, between mouth of North Fork and Gold Dust creeks, 40 mi from Circle City, Alaska, to determine relative suitabilities of hydraulicking, use of power drag scraper, or dredging; comparative cost estimates; estimated operating expense favours use of power scraper, by narrow margin.

Mineral Industry of Alaska in 1935.
P.S. SMITH.
US Geological Survey Bul 880A 1937 p 135.
Production statistics, with descriptive notes on prospecting and mining activity; gold lodes, gold placers; silver, copper, lead, platinum metals, tin, coal, petroleum; miscellaneous mineral products.

Valdez Creek Mining District, Alaska, in 1936.
R. TUCK.
US Geological Survey Bul n 897 B 1938 p 10931.
Report on result of short investigation of current mining activities of district on south flank of Alaska Range, about 50 mi east of Alaska Railroad; gold was first discovered in region in 1903; summary of geology; metamorphosed sedimentary rocks; igneous intrusive, and unconsolidated glacial and stream deposits; notes on 5 lode deposits; placer deposits; placer mining on 6 creeks and gulches.

Gold Placers of Fortymile, Eagle and Circle Districts.
J.B. MERTIE, JR.
US Geological Survey Bul n 897C 1938 p 133261.
Districts in eastcentral Alaska; gold discovered in last two decades of 19th century and since that time placer mining has been continuous; salient features of geography and geology; granitic rocks are considered to be primary source of gold in deposits; description of

mining activities in districts in 1936; features of deposits; notes on mining methods.

Fineness of Gold from Alaska Placers.
P.S. SMITH.
US Geological Survey Bul n 910C 1941 p 147272.
Report analyzes records obtained from 1534 determinations of fineness of Alaska placer gold and shows that 23% of records are of gold of fineness higher than 900; 42% are between 850 and 899; 26% between 800 and 849; 9% of gold less than 800 fine; quality of gold from each of 8 major geographic regions, 41 districts, and 84 smaller areas are tabulated and discussed in some detail separately. Bibliography.

Mineral Industry of Alaska in 1939.
P.S. SMITH.
US Geological Survey Bul n 926A 1941, 106 p map in pocket.
General features; total mineral production valued about $25,296,000; gold lodes;development notes; gold placers; production by districts; dredging; silver, produced as minor constituent; platinum metals; copper; lead; tin; coal; no petroleum produced in 1939, but earlier production in Katalla district is mentioned; miscellaneous mineral products.

Mining in Northern Copper River Region, Alaska.
F.H. MOFFIT.
US Geological Survey Bul n 943B 1944 p 2546.
Mining in region in 1941 included both gold lode and gold placer operations but was conducted on modest scale; principal placer operations were on streams belonging to Chistochina River system; minor operations were in progress on tributaries of Ahtell Creek, branch of Slana River; only one lode gold mine was in operation; Nabesna mine near head of Nabesna River.

Summary of Alaskan Mining.
H.G. WILCOX.
Western Miner v 19 n 4 Apr 1946 p 557.
Termination of war has removed restrictions on man power, materials and equipment for gold mine operations; increased interest in mining is evidenced by claim staking,taking of options on gold lode and placer claims, expansion of mechanized mining, ordering of two new dredges for Seward Peninsula and application

for RFC loan for dredge in Koyukuk; cinnabar; asbestor jade; platinum; tungsten, antimony, tin and chromium, oil; coal.

Alaska's Mining Problems.
N.C. STINES.
Mining World v 8 n 12 Nov 1946 p 4952.
Price of gold; freight rates, maximum hours clause of wages and hours act; aboriginal rights and lands reserved from occupation; pollution of streams; problems are aggravated by great distances between sparse settlements in territory coupled with serious transportation problems.

Improvements at Cleary Hill Help Offset High Alaska Coals.
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Mining World v 9 n 9 Aug 1947 p 302.
Notes operations of yearround producer of both lode and placer gold. In Fairbanks district; underground mining methods are principally cut and fill stoping, supplemented by stulls and half sets; amount of timbering varies with nature of ground, more support required in faulted areas; milling by amalgamation and flotation; in placer mining, dragline with 1 1/2 cu yd bucket is used for stripping and for feeding raised sluice boxes.

Handicaps Fail to Deter Alaskan Gold Production.
H.G. WILCOX.
Western Miner v 24 n 4 Apr 1951 p 8081.
Gold value produced during 1950 was $9,900,000; placer and lode mining reviewed; Matanuska bituminous and Healy River subbituminous coal fields produced 395,000 tons in 1950; petroleum exploration by Navy Dept.; exploration of tin, tungsten, chromite, zinc, nickel, titanium bearing magnetite and iron deposits; uranium deposits found in Kuskokwim area, north of Haycock on Seward Peninsula and in dikes of Hyder area.

Geology  Placer Gold in Alaska.
J.B. MERTLE Jr.
Washington Academy of Sciences J v 30 n 3 Mar 15 1949 p 93124.
Placer golds are natural alloys principally of gold and silver; physical and chemical properties of gold silver alloys; artificial alloys;analysis of placer gold from Alaska; geographic distribution of gold placers; classification; formation; most of placers in Alaska are of fluviatile origin; fineness of placer gold; divergence between lode gold and placer gold derived from it. Bibliography.

Alaska Mining Review.
H.G. WILCOX.
Western Miner v 25 n 4 Apr 1952 p 51, 54.
IN 1951 minerals; production increased 1% over 1950; gold production decreased 29%; review of gold placer mining, platinum, tin, tungsten antimony, mercury, base metals; and petroleum development.

Placer Mining in Alaska.
B.J. THOMAS, D.J. COOKE, E. WOLFF, W.H. KERNS,.
US Bureau of Mines Information Cir n 7926 1959 34 p.
Operations classified into three categories; those having sluices at bedrock level, those having sluices above bedrock, and those having mobile nonfloating washing plants; diesel powered bulldozers and draglines are utilized for conveying; unit costs range from $2.54 to $0.16 per cu yd depending on type of operation employed.

Reconnaissance of Beach Sands, Bristol Bay, Alaska.
R.V. BERRYHILL.
US Bureau of Mines Report Investigations 6214 1963 48 p.
Reconnaissance studies of beach deposits along 220 mi of shoreline; magnetic separation tests, petrographic analyses, and determinations for radiometric equivalent uranium, gold, platinum, iron and titanium were made; spot samples from some beaches indicate small deposits containing up to 10% recoverable titaniferous magnetite; some larger deposits were indicated to contain from 1 to 2% total heavy metal, principally as titaniferous magnetite.

Placer Gold Occurrences in Alaska.
E.H. COBB.
US Geological Survey Mineral Investigations Resources Map MR38 1964 15 p. map. List of references gives data on localities of placer gold by quadrangle and are keyed by number within each quadrangle to locations shown on map.

**GOLD PLACER** Location U.S. Arizona

Gold Placers in Arizona.
T. LANE CARTER.
Engineering and Mining Journal March 18, 1911.
Gold is found in long narrow strips of wash composed of fragments of rock. Ills.
2000 w.

Gold Placers of Arizona Dry Washings of Value.
T. LANE CARTER.
Mining and Scientific Press Aug. 10, 1912. Ills.
Describes conditions and the geology of the region, and the difficulties to be overcome. 3500w.

History and Present Status of Arizona's Gold Placers.
M.A. ALLEN.
Arizona Mining Journal, vol. 7, nos. 2 and 3, June 15 and July 1, 1923, pp. 57, and 40, 67, and 25, 1 fig.
From Univ. of Ariz. Bur of Mines, Bul. no. 118.
History, production, location, development, and present status of Arizona's placer deposits.

Arizona: Gold Placers and Placering.
E.D. WILSON and J.B. TENNEY.
Arizona Bureau of Mines Mineral Technology Series n 34 Bul n 132 v 3 n 1 Jan 1932 114.
General origin and features; importance of rain; historical notes; production statistics; description of deposits, by counties; Small Scale Gold Placering, G.R. FANSETT; Suggested List of Equipment for Prospecting in Southwest, C.H. JOHNSON; Food Suggestions for Prospector, M.C. SMITH; Treatment of Sunstroke or Heat Prostration, F.P. PERKINS; Information on Poisonous Animals, C.T. VORHIES; Laws, Regulations, and Court Decisions in Relation to Location and Retention of Gold Placer Claims in Arizona, G.M. BUTLER. Bibliography.

Saving Gold in Cemented Gravels.
H.W. BERGER.
Mining Journal (Phoenix, Ariz) v 16 n 14 Dec. 15, 1932, p. 7 and 28.
Features of machine designed by author; first unit built for La Cholla Mining Co. Ltd. in Yuma County, Ariz, and test runs made in June 1932.

**GOLD PLACER** Location U.S. California

A GoldPaved Valley.
DAN DE QUILLE.
Mining and Scientific Press Aug. 8, 1896.
Some thoughts regarding the amount of gold deposited in the valleys of California by the rivers of the Sierras. The indestructibility of gold, and the strange places where it is found. 2000 w.

Gold Mining in California.
AUG. J. BOWIE.
Mining and Scientific Press Sept. 26, 1896. Serial.
The benefits to government from the gold mines of the country. Interesting information on hydraulic mining, legitimate and speculative mining, speculative mines, mining as a business proposition,with an outline of the topography and geology of California, gold quartz veins, depth of mines, etc.

The Gravel Fields of Northern California.
C.L. HALL.
Mining and Scientific Press Feb. 6, 1897.
Information of the placer mining in Trinity and Siskiyou counties. 2000 w.

GoldBearing Beach Sands of California.
ARTHUR LAKES.
Mines and Minerals March, 1898.
How they are formed, deposited, and concentrated by the waves of the ocean. 900 w.

River Mining in California.
R. DUNN.
Mining and Scientific Press March 19, 1898.
Considers the appliances for working, and the subjects generally. 4800 w.

Gold in Ancient California River Channels.
-
Mining and Scientific Press July 30, 1898.
Extracts from the account of the Forest Hill Divide by Ross E. Brown, with comments and illustrations. 3500 w.

Placer Mining in California.
ARTHUR LAKES.
Mines and Minerals Feb. 1899.
The condition of the industry at present and an account of its former greatness. 2800 w.

Forest Hill Placer Mines.

ARTHUR LAKES.
Mines and Minerals May 1899.
How ancient river beds of Placer County, California, now in the mountain tops, are worked. 1500 w.

Placer Mining and the Future Possibilities of this Branch of the Mining Industry.
JOHN W. GRAY.
Mining and Scientific Press May 6, 1899.
A discussion of the outlook in California, especially, for this system of mining. 2000 w.

Mining on the California Gold Belt.
W.H. STORMS.
Mining and Scientific Press May 26, 1900. Serial.
An account of recent workings by improved methods.

Note on Hydraulic Mining in LowGrade Gravel.
WILLIAM H. RADFORD.
Transactions of the American Institute of Mining Engineers Nov. 1901.
A report of actual figures in working property in Northern California. 700 w.

LowGrade Gravel Property.
-
Mining and Scientific Press Dec. 6, 1902.
Illustrated description of a property in California, where the supply of water is brought 30 miles,and the expense of maintenance is rather high. Gives results showing profits. 1300 w.

Rich Gold Mines of Sierra County.
GEORGE F. TAYLOR.
Pacific C Mining Dec. 19, 1903. Ill.
Account of district with recent yield of $190,000,000 from placer and quartz mines. 3500 w.

The Ancient Channel of Gibsonville, Cal.
SAMUEL C. WIEL.
Mining and Scientific Press July 29, 1905.
Describes these channels and the old methods of mining, the character of the gravels, and the general conditions. Ills. 1800 w.

Ancient Gravel Channels of Calaveras County, California.
-
Mining and Scientific Press Sept. 9, 1905.
From the 12th Annual Report of the State Mineralogist of California. Map, with outline of the processes by which these ancient goldbearing channels were formed is given in the present number. Serial. 1st part. 1700 w.

GoldMining in Siskiyou County, California.

C. GODFREY GUNTHER.
Mines and Minerals  July, 1906.
An account of methods applied in old placer fields that have worked over by the early prospectors. 2000 w.

The Auriferous Black Sands of California.
J.A. EDMAN.
Mining Reporter  May 2, 1907.
Introductory remarks, with a statement of the origin, distribution and probable values of the heavy black sands on the Pacific Coast, from the standpoint of the miner and metallurgist. 2200 w.

Placer Dredging in California.
GEORGE L. HOLMES.
Mining World  May 25, 1907. Ill.
Account of the development and success of this industry,showing types of dredges used. 1600 w.

The Auriferous Black Sands of California.
J.A. EDMAN.
Engineering and Mining Journal  June 1 1907.
A brief statement of their origin, distribution and probable value. 2000 w.

The Ancient River Channels of California.
GEORGE W. KIMBLE.
Mining and Scientific Press June 8, 1907.
A short study of this interesting subject. 700 w.

The Auriferous Black Sands of California
DR. DAVID T. DAY.
Mines and Minerals  July, 1907.
Gives the scope and results of the investigation by the United States Geological Survey. 2700 w.

Black Sands of the Pacific Coast.
DR. DAVID T. DAY.
Journal of the Franklin Institute  Aug. 1907.
An interesting account of the investigations made, with information of methods of analysis and concentration and the valuable byproducts found. 4500 w.

The Black Sand Problem.
F. POWELL.
Engineering and Mining Journal  Aug. 10, 1907.
A suggestion from personal experience for an effective method of collecting black sand. 1200 w.

The Beach Placers of the South Pacific Coast.
C.D. IRVINE.
Mining World  Aug. 29, 1908.

Describes the deposits, the difficulties in recovering the gold,etc. 2000 w.

Placer Mining Industry on the Pacific Coast.
DENNIS H. STOVALL.
Mining World April 7 1909.
Illustrated description of the district and report of output. 700 w.

Santa Clara River Placers.
CLAUDE E. JAMISON.
Mining and Scientific Press March 5, 1910.
Brief account of part of California, said to be the district where gold was first discovered. 1500 w.

Trinity River Gravels, California.
J.S. DILLER.
Engineering and Mining Journal Sept. 9, 1911.
Abstract of a paper by J.S. DILLER in Bul 470B US Geological Survey Sketch map and description of auriferous gravels worked since 1850. 3000 w.

Economic Mining of LowGrade Gravel, California.
A.H. MARTIN.
Mining and Engineering World July 13, 1912.
Describes practice in mining lowgrade auriferous gravel. 1500 w.

Black Sand of the Pacific Coast (75010).
HERBERT LANG.
Mining and Scientific Press Dec. 2, 1916.
Occurrence and treatment of these deposits. Commercial aspects. 3000 w.

TwentyOne Years' Mining at Yellow Aster (76620).
LEWIS H. EDDY.
Engineering and Mining Journal Feb. 10, 1917.
History of lowgrade gold property. Ills. 2500 w.

Gold Mining in California.
E. HIGGINS.
Mining and Metallurgy, vol. 6, no 220. Apr. 1925, pp. 192193.
Mining Costs; price of gold; new capital for development; golddredging operations; it is concluded that there appears little reason to expect boom of any proportion.

Auriferous Placer Resources of California.
A. GIBSON.
Mining Congress Journal, vol 13, no. 6, June 1927, pp. 476479.
Virgin and undeveloped placer deposits of California of amazing magnitude; California's prevolcanic gravel channels which are definitely located by means of magnetometric determinations;

development of placer resources on scientific basis urged.

The Diver Becomes A Gold Miner.
F.M. BLANCHARD.
Engineering and Mining Journal., vol. 127, no. 16, Apr. 20, 1929, pp. 628629, 3 figs.
Method of reaching gold in swift river channel beds; centrifugalpump suction hose is positioned and held under water by diver with complete equipment and air supply; pulp delivered on board dredge from which diver operates, and gold is amalgamated by standard methods; operation in Middle Fork of Feather River near Kanaka Bar, about 25 miles north of Oroville, Calif.

Drift Mining at Vallecito.
G.J. YOUNG.
Engineering and Mining Journal, vol. 128, no. 10, Sept. 1929, pp. 394397, 3 figs.
Decline in gold dredging and lode mining; opportunities in hydraulic placer mining and drift mining of tertiary river channels; discussion of types of old channel deposits; description of work done near Six Mole Creek; gravel treatment.

Recovery of Flour Gold from River Sand.
E.A. SPERRY.
Engineering and Mining Journal, vol. 128, no. 15, Oct. 12, 1929, pp. 581582, 3 figs.
Notes on works of experimental plants, in treatment of sands of Cuba and Bear Rivers in California; direct amalgamation or cyanidation was not suited for purpose; description of concentration on table with 60mesh screen section, giving ratio 40 to 1 and product carrying 20 per cent black sand; final extraction of gold from black sand by amalgamation, using small amount of potassium cyanide to clean gold; actual cost of operation was less than 3 cents per yd. of sand handled.

Placers of Southern California.
R.J. SAMPSON.
Mining in California v 28 n 2 Apr 1932 p 24555.
List of areas in which work has been done in past, with brief description of some of more important developments now under way.

Elementary Placer Mining Methods and GoldSaving Devices.
C. MCK. LAIZURE.
Mining in California v 28 n 2 Apr 1932 p 112204.

Comment on revival in smallscale placer gold mining operations in California during 1930; paper prepared primarily for novice and those with little experience or technical training; map and notes of placer mining areas in California; simple equipment; special machines and processes; summary of mining laws.

Auriferous Gravel Channels of Nevada County.
F.A. CRAMPTON.
Mining Journal (Phoenix Ariz) v 16 n 6 Aug 15 1932 p 5-7.
Reconnaissance notes, indicating existence of favourable area.

Gold Mining and Milling Methods and Costs at Valecito Western Drift Mine, Angels Camp, Calif.
D. STEFFA.
US Bureau of Mines Information Cir. n 6612 Apr 1932 13 p supp plates.
Ancient stream bed; geology; prospecting and development; cross cutting;breasting; drainage, plant capacity 15 t per hr; treatment involves washing; disintegrating, screening and sluicing, with washing of fines under 3/8 in. on Hungarian riffle and screen table; 3.7 cu ft water required per cu ft gravel; flow sheet; operating and cost data.

Renewed Activity in California Gold Mining.
W.W. BRADLEY.
Mining and Metallurgy v 13 n 309 Sept 1932 p 38490.
Historical review of Californian gold mining, with production statistics; placer mining in 1932; recent developments in lode mining; outline map showing gold producing districts.

Gold Deposits of Redding and Weaverville Quadrangles.
C. V. AVERILL.
Calif Division Mines Calif J of Mines and Geology v 29 n 12 JanApr 1933 p 373. Report on area in Shasta and Trinity Counties; geography, climate and industries; descriptions of gold lode and placer mines and prospect, listed in alphabetical order respectively.

Use of Diving Equipment in Gold Recovery.
E.F. HOUSER.
Mining Journal (Phoenix, Ariz) v 16, n 19, Feb. 28, 1933, p. 5 and 13.
Application of deepsea diving practice to recovery of gold from sand in deep hole in Tuolumme river in California; duties of diver are to direct suction hose in removal of minor gravels and sand from hole and to place

powder charges to blast large rocks which drag bucket of dredge cannot handle.

Placer Mining in San Gabriel Canyon.
S. ZADACH.
Mining Journal (Phoenix Ariz) v 17 n 3 June 30, 1933, p 3.
Notes on recent activity in mining camp worked about 60 yr ago.

Booming.
C. MCK. LAIZURE.
Calif Division of Mines  Calif J of Mines and Geology v 29 n 34 JulyOct. 1933 p 36871.
Brief description of method of placer mining used in California since 1849, and suitable where there is only small flow of water available and little capital; accumulation of water, suddenly discharged, washes away surface soil and lays bedrock bare; sketch and description of one type of "flopgate" or "selfshooter"; gate that opens automatically when water reaches desired level in reservoir.

Elementary Placer Mining in California and Notes on Milling of Gold Ores.
C. MCK. LAIZURE, H.H. SYMONS, F. SANBORN and H.A. FRANKE.
Calif J Mines and Geology v 30 n 2/3 Apr/July 1934 p 121289 supp plates.
Types of placer deposits; simple placer mining equipment; pan rocker, dip box and sluice box; special machines and processes; dry washing; black sand treatment; marketing gold, platinum and black sand; placer mining areas in California; mining laws; prospecting for vein deposits; sampling of vein deposits; milling of gold ores; hand sorting; amalgamation; arrastre construction and operation; other reduction mills; gravity concentration; flotation; cyanidation. Bibliography.

California Gold Number.
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Engineering and Mining Journal v 135 n 11 Nov 1934 p 481529.
Editorial introduction; California Gold Continues to Enrich Nation; Production Statistics; EightySix Years of Production in California; Gold Dredging Receives New Impetus, C.M.ROMANOWITZ and G.J. YOUNG; Hydraulic Mining Again Interesting to Capital, J.D. STEWART; Echo of Days of '49 Is Supplied By Smallscale Placer Mining Operations, W.W.

BRADLEY; California's Goldbearing Tertiary Channels.

Gold Drift Placer Mining.
J.F. DULING.
Western Miner and Prospector v 2 n 1 Feb 1935 p 49; see also Mining Journal (Phoenix, Ariz) v 18 n 21 Mar 30 1935 p 56.
Example of practical application of geophysics; outline of geology of tertiary gravels; extracted from U S Geological Survey Prof Paper n 73; notes on reopening of old workings in Eldorado County in 1933; geological study of surface and underground working led to belief that main tertiary river channel had not been followed; geophysical survey by electrical method aided in location of ancient river channel.

Gold Placer Mining Revived at Lincoln.
J.B. HUTTL.
Engineering and Mining Journal v 136 n 9 Sept 1935 p 4403.
General description of activities in area within radius of 10 mi of town about 29 mi northeast of Sacramento, Calif; modified dredging equipment; drag line scrapers and scow-mounted washing plants; use of Diesel engines and electric power.

Gold Mining Costs.
W.F. BOERICKE.
Canadian Mining Journal v 56 n 10 Oct 1935 p 4712.
Analysis of past and present costs in California, showing effect of higher wages in offsetting advantages gained through greater efficiency in methods and equipment.

Washing Gravel Underground at Luck John.
G.A. COLLINS.
Engineering and Mining Journal v 137 n 10 Oct 1936 p 5134.
Mining property of 320 acres in Magalia district, Butte County, Calif; gold bearing gravel channel 1000 ft. wide with slate bedrock and lava capping; gravel is mined by room and pillar system; gravel tight, but not cemented, requires blasting, done with 5 ft holes and 20% powder; gravel shot down from face is flushed into sluice; washed gravel carried in Vflume to chute and trammed through lower tunnel to waste dump.

PowerShovel Mining in Northern California.
C.V. AVERILL.
Mining Congress Journal v 22 n 11 Nov. 1936 p 43.
Notes on equipment and practice at various mines, using 3/4 cu yd up to 1 1/4 cu yd shovels,

operated by electric power, Diesel or gas engines; also dragline power shovels for placer mining.

Mineral Resources of El Dorado County.
C.A. LOGAN.
Calif J Mines and Geology v 34 n 3 July 1938 p 20680 map.
Historical outline, dating from reputed discovery of gold by James W. Marshall, Jan 24, 1848, on South Fork of American River; report deals chiefly with gold placer and quartz mines and prospects; notes on asbestos, chromite copper, ems and ornamental stones, limestone and lime.

California Gold Placering.
P. BLEWETT.
Mining and Contracting Review v 42 n 23 Dec 15, 1940 p 712.
Outline of geology of California placer deposits and of old gold recovery methods; review of modern methods and equipment, featuring "doodlebug" or dragline type of dredge as used for shallow diggings; cost data; hydraulic placering legislation; bucket dredging; resoiling.

Mines of Southern Mother Lode Region  Tuolumne and Mariposa Counties.
C.E. JULIHN and F.W. HORTON.
US Bureau of Mines  Bul n 4241940 179 p. supp plates.
General review; history; production; Mother Lode rocks; mineralization and structure; data for each country, on production, lode gold mines; placer mines; copper mines, and others, such as chromite in Tuolumne County, and silver and barite in Mariposa County.

Geology of Cat Camp Placer District.
J.F. DULING.
Mining Journal (Phoenix, Ariz) v 25 n 11 Oct 30 1941 p 23.
Area in Calaveras County, Calif, about 2 mi wide and 5 mi long; outline of geological history and formation of what is known as Tertiary river system;Tertiary Calaveras River is considered to have had stream channel measuring about 2400 ft between rims; transition to present stream system; notes on gravel deposits; sampling data; mining activity; only present operation is conducted by R.M. WATSON on Sec 14 and 23 T.4.N. R 9 E.

Increased Gold Output of California's Placers.

P. BLEWETT.
Mining Journal (Phoenix Ariz) v 24 n 19 Feb 28 1941 p 23.
General descriptive account, with statistics, typical data on cost of larger Yubatype dredge with capacity 125 cu yd per hr; production from California placers in 1939 was $22,261,575 from 162,335,000 cu yd. average recovery of 13.7c per cu yd; conclusions as to causes of increased gold production since 1933.

Mineral Resources of Trinity County.
C.V. AVERILL.
Calif J Mines and Geology v 37 n 1 Jan 1941 p 889, map in pocket.
County in northwestern part of California; general information; geology; most important mineral product is placer gold recovered by dredging; some hydraulic mining; mercury production in Altoona district; asbestos; barite; chromium; coal; copper; gold quartz mines, dredges and hydraulic operations; granite; limestone and marble; mangenese; mercury; mineral paint, mineral water;platinum; production statistics; list of mines and prospects.

Giants Work.
F.L. ELAM.
Explosives Engineer v 20 n 1 Jan 1942 p 158.
Illustrated notes on operations at Lost Camp mine near Blue Canyon, Calif, featuring use of gelatin explosive for blasting semicemented gravel; 8 holes 7 in. in diam are well drilled to depth of about 65 ft. spaced according to area to be mined; each hole is sprung with 50 lb of 40% Gelatin Extra and is then loaded with 1200 lb of 20% gelatin dynamite.

Placer Mining for Gold in California.
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Calif Dept Natural Resources  Div Mines  Bul n 135 377 p, maps in pocket.
Small scale placer mining methods, tools, and machines; dragline and bucket line dredges; jigs for gold dredges; treatment of black sand; drift mining; geology of placer deposits; prospecting and sampling; placer mines, by counties; laws affecting placer mining. Bibliography.

Marysville: Northern Diggings' Base.
B. THOMPSON.
Mining World v 11 n 1 Jan 1949 p 1920.
Narrative dating from exploration in 1828; gold discovered on Yuba River in 1848; river traffic, by canoe, scow and steamboats; Marysville itself shipped out$16,000,000;

river boat Phoenix fitted out as dredge in 1850, but was not successful; since 1900, Yuba gold dredging fields have yielded about $100,000,000.

Mines and Mineral Resources of Yuba County.
J.C. O'BRIEN.
California J Mines and Geology v 48 n 2 Apr 1952 p 143-79.
Yuba County embraces 408,320 acres; gold is chief mineral; value of gold dredged from Yuba River totals about 100 million dollars;recorded production of platinum and silver obtained during refining of gold; two small manganese deposits are located in northeastern corner of county; utilization of sand and gravel; tabulated list of mines and prospects.

**GOLD PLACERS** Location U.S. Colorado

Prospecting for Placer Gold.
ARTHUR LAKES.
Colliery Engineer Dec. 1895.
Description of Alma Placer, South Park, Colo. Method of economically handling large quantities of goldbearing soil in this typical placer is treated in a detailed manner with sketches. 5000 w.

Geology of the FourMile Placer Mining Districts, Colorado.
HERBERT C. HOOVER.
Engineering and Mining Journal May 22, 1897.
The geology, method of deposition, and origin of gravel and the gold are discussed. 1900 w.

A Mountain Placer.
ARTHUR LAKES.
Mines and Minerals Dec., 1897.
Description of a placer located high in the mountains of Colorado, near Breckenridge. Discusses the points to be considered in making an estimate of a placer's value, the natural features that bear on its value, and veins sometimes discovered in working a placer. Ill. 2000 w.

Origin of Placer Gold in the Drains of the Divide.
A.M. WELLES.
Mining Reporter Dec. 22, 1898.
Presents the writer's explanation of the occurrence of gold in Cherry Creek, its tributaries, and other waterways in Colorado. 2200 w.

Observations on Some Prospects and Mines Around Breckenridge, South Park, Colorado.
ARTHUR LAKES.
Mines and Minerals May, 1899.
Notes taken in a trip made to examine a gold placer property. Ill. 1600 w.

Exploiting a New Placer Field.
ARTHUR LAKES.
Mines and Minerals Oct., 1900. Ill.
Some considerations taken account of, as illustrated at Fairplay, near Alma. Colorado. Ill. 2200 w.

The Breckenridge, Colorado, Placer Problem.
WADE L. CROW.
Mining Reporter Jan. 9, 1902. Special number.
Abstracts from the Colorado School of Mines Bulletin No. 3. A description of the deposits of the low flats and bars, with a discussion of the different methods of exploitation attempted.

Ill. 3000 w.

Summit County Placers of Colorado.
PROF. ARTHUR LAKES.
Mines and Minerals Jan, 1903.
Illustrated description of great hydraulic works now nearing completion near Breckenridge. 2500 w.

Hydraulic Mining on Banner Placer, Colorado.
KIRBY THOMAS.
Mining World Sept. 16, 1905.Describes arrangements made to secure a sufficient supply of water for hydraulic mining, and the methods of working. Ills. 1700 w.

Breckenridge, Colorado.
JAMES W. NEILL.
Mining and Scientific Press Sept. 8, 1906.
An illustrated description of methods of placer mining. 1500 w.

The Breckenridge Gold Placers, Colorado.
ARTHUR LAKES.
Mining World Jan. 4, 1908.
Illustrates and describes this region. 1100 w.

Gulch Mining in Gilpin County.
ARTHUR J. HOSKINS
Mines and Minerals Nov., 1912.
History and description of some old Colorado placers not being reworked by hand. Ills. 2000 w.

Placer Mining in Upper Valley of Grand River, Colo.
C. HARTLEY.
Mining and Engineering World Nov. 9, 1912.
Explains conditions and causes of failure. 1500 w.

Clear Creek and Gilpin County Notes.
STEPHEN L. GOODALE.
Engineering and Mining Journal Aug. 2, 1913.
Reviews technically interesting districts. Some placer mining still conducted. Ills. 2000 w.

History and Development of Placer Mining in Colorado.
J.A. THEOBALD.
Mountain States Mineral Age, vol. 1, no. 3, Aug. 1930, pp. 46 and 20.
City of Denver founded by placer miners, June 24, 1858: lodes bearing gold discovered; more extensive placer fields discovered; methods of operating placers; hydraulic giants developed to handle low value sands; development of dredges; various placer machines developed.

Gold Placer Mining in Colorado.
E.J. GARBELLA.
Military Engineer v 24 n 138 NovDec 1932 p 55860.
Historical review; recent activities, unfortunate results of encouraging inexperienced people to migrate from cities and from other states, increasing problem of small communities in caring for destitute; placer mining machines.

Denver Mechanical Gold Pan.
J.N. CRONK.
Mining Journal (Phoenix, Ariz)v 16 n 15 Dec. 30, 1932, p 67.
Machine driven by 3/4 hp gasoline engine and utilizing same principle as handoperated gold pan.

Portable Washing Plants for Gold Placers.
R.A. MARTIN.
Mining Journal (Phoenix, Ariz) v 16, n 17, Jan. 30, 1933, p. 6 and 8.
Descriptions of equipment supplied by dealer in Denver, Colo.

Humphreys Gold Corporation Dredging Operations on Clear Creek.
R.H. FORBES.
Mining Magazine v 23 n 5 May 1933 p 910.
Character of placer deposits on Clear Creek; features of suction dredge with digging ladder, 21 ft wide and 33 ft long, requiring draft of 20 in. of water with dredge fully loaded; use of drag line equipment in digging bed rock drainage ditch; equipment, costing about $25,000 designed to handle about 2000 cu yd material per 24 hr. at cost not more than 15c per yd; first deposit to be worked has shown values 30 to 80c per cu yd.

Gold Mining in Leadville.
J.M. KLEFF.
Mines Magazine v 24 n 1 Jan 1934 p 134 and 16.
Early activity at Leadville in gold placer mining; search for gold veins led to discovery of lead and silver deposits; outline of geology; notes revival of placer and lode gold mining from 1930 to date.

Clear Creek DryReclamation Placer Gold Mining.
C. SCHLOSS.
Mining Congress Journal v 21 n 9 Sept 1935 p 5860.
Description of equipment and mining methods of Humphreys Gold Corp, modification of plant and practice described by R.H. FORBES, from Mines Mag, May 1933; 2 dragline scrapers excavate and deliver gravel to hopper of washing plant; power shovel moves boulders and digs where draglines cannot; stacker for

tailings; pit is kept substantially dry.

Mining on Continental Divide; Alma's Output Chiefly Gold. Both Lode and Placer.
H.L. TEDROW.
Engineering and Mining Journal v 136 n 8 Aug 1935 p 405.
Brief general description of district 100 mi southwest of Denver, on east side of continental divide; narrow veins worked selectively, relatively much development required; small blockedout reserves; local ores amenable to flotation, carrying also silver, lead, copper, and zinc.

Placer Operations of Humphreys Gold Corporation. Clear Creek, Colo..
E.D. GARDNER and J.R. GUITERAS.
US Bureau of Mines Information Cir n 6961 Oct 1937 16 p.
History from 1859; successful operations conducted in 1936, 2 draglines and power shovel, about 3000 cu yd daily; gravel screened in portable washing plant; trommel oversize discarded, and under-size pumped to gold saving plant; gold caught in riffles in sluice boxes; total cost about 20c /cu yd.

Placer Mining North of Craig, Colorado.
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Mines Magazine v 29 n 11 Nov 1939 p 558.
Brief illustrated item; gold is microscopic in size and difficult to save; one operator is said to be saving $5.00 per cu yd; caterpillar Diesel tractor used to operate scraper; gold saving equipment consists of mixing, screening, washing, jigging and amalgamating machinery operated as one unit.

CraigBaggs Gold Placer Region, Moffat County, Colorado Geologic and Economic Aspects.
H.W.C. PROMMEL.
Mines Magazine v 32 n 5 June 1942 p 2825.
Region includes about 900 to 1000 sq mi and is covered by "Craig" U.S. Geological Survey topographic sheet; boom followed discovery of gold in 1892, but soon subsided; gold production data; dredging activities; physiography; areal geology and structure; sand and gravel deposits; water resources; economic aspects; region offers possibilities for placer operations of large scale and merits attention.

Some unique DumpTruck Placers in Colorado.
H.W.C. PROMMEL.

Engineering and Mining Journal v 143 n 1 Jan 1942, p. 489.
Notes on operations of small operators in vicinity of Alma and Fairplay, in Park County, Colo; at several mines; small steamshovel or Diesel power shovel loads gravel into truck, which transports it to washing plant; some of latter use revolving trommel screen instead of inclined stationary screen.

Colorado Placer Mining.
H.W.C. PROMMEL.
Mining Congress Journal v 31 n 12 Dec 1945 p 2431.
Statistical and descriptive review of State's placer mining industry and its future.

Cooley's Tarryall Placer.
-
Mining World v 10 n 7 June 1948 p 168.
Operation near Como, Colo. has 3 1/2 cu yd dragline bucket feeding 200 cu yd per hr washing plant; gravel deposit varies from 8 to 30 ft in depth; washing plant is 40 by 56 by 4 ft. on seven pontoons.

Gold Placers and Their Geologic Environment in Northwestern Park County, Colorado.
Q.D. SINGLEWALD.
US Geological Survey  Buln 955D 1950 p 10372.
Placer district covers 250 sq mi; metamorphic, sedimentary and igneous rocks; stratigraphy; structure; lode deposits from which placer gold could be derived; physiography of mountain province; characteristics of glacier deposits; production and fineness of gold; distribution of placers contained in moraines.

**GOLD PLACERS** Location U.S. Georgia

Placer Mining for Gold Near Dahlonega, Ga.
G. PEYTON.
Engineering and Mining Journal v 141 n 4 Apr 1940 p 39.
Mining and washing equipment and practice of Ferey Mining Co. reworking old deposits along Dukes Creek for more than 3 yr; dragline excavator with 1 cu yd bucket; portable washing plant; 300 to 500 cu yd gravel handled in 10 hr; average gold content is 25c per cu yd; overburden is stripped and stacked, to one side of 70 by 90 ft working pit; overburden is 3 to 6 ft and gravel depth is similar; washed gravel is dumped back and top soil replaced.

**GOLD PLACERS** Location U.S. Idaho

Steam Shovel and Derrick Placer Mining in Idaho.
JOHN B. HASTINGS.
Engineering and Mining Journal Dec. 21, 1895.
Illustrated description. 800 w.

The American Hill Placer mine, Idaho.
EDMUND JUESSEN.
Engineering and Mining Journal Nov. 27, 1897.
Illustration, with description of methods of working. 800 w.

Snake River Gold Fields of Idaho.
DON MAGUIRE.
Mines and Minerals Sept., 1899.
Describes the river and its tributaries, discusses the sources of the very fine gold and the methods of obtaining it. 4000 w.

The Placer Fields of Custer County, Idaho.
C.C. CLAWSON.
Engineering and Mining Journal April 14, 1900.
History of the work in this locality, and the recent revival of mining. 1700 w.

In Boise Basin, Idaho.
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Engineering and Mining Journal Aug. 25, 1904.
Illustrated description of gold dredging, hydraulic mining and of gold mines in this district. 1500 w.

Boise Basin, Idaho.
W.A. SCOTT.
Mining and Scientific Press July 16, 1910.
Describes the locality and gives an account of placer mining in the past and present. 2000 w.

Idaho Placer Operations (75927).
JULIUS HORNBEIN.
Engineering and Mining Journall Jan. 13, 1917.
Dredging and hydraulicking operations. Ills. 1200 w.

Geology and Gold Resources of Boise Basin, Boise County, Idaho.
S.M. BALLARD.
Idaho Bureau Mines and Geology Bul., no. 9, Dec.1924, 100 pp. 28 figs. partly on supp. plates.
Early history; geography; topography; geology; gold placer mining operations; economic geology; early development of lode deposits; mines and prospects.

New Methods Recover Salmon River Gold.
-
Mining Truth, vol. 13, no. 14, Sept. 1, 1928, pp. 910 and 32, 3 figs.
Historical note of early placer mining activity on lower Salmon River in western Idaho; estimated that miners recovered only 34 per cent of gold contained in gravel and sands; description of project to recover fine gold by treatment of sands on concentrating tables and chemical treatment of black sands to render gold amenable to amalgamation.

Elementary Methods of Placer Mining.
W.W. STALEY.
Univ. Idaho Bureau of Mines and Geology Pamphlet no. 37, May 1931, 20 pp. 10 figs. on supp. plats.
History of alluvial mining; geology of alluvial deposits; sampling of placer deposits; simpler mining methods; and apparatus; recovery of gold from sands; placer mining in Idaho; list of mining districts and of placer mining districts of Idaho; State Mining laws; identification of minerals common in gold placer deposits. Bibliography.

Fine Gold and Platinum of Snake River, Idaho.
T.H. HITE.
Economic Geology v 28 n 3 and 7 May 1933 p 25665 and Nov p. 68691.
Deposits of fine gold occur over practically entire length of Snake River; history of placer operations; deposits are of bench and river bar types; gold particles are usually so fine that it takes 5000 colors to weight 1 cent in value; value estimates range from 5 cents to $2.50 per cu yd. from 50 to 90 per cent recoverable; occurrence of platinum and associated metals. Bibliography.

GoldBearing Gravel of Nezperce National Forest. Idaho County, Idaho.
J.C. REED.
Idaho Bureau of Mines and Geology Pamphlet n 40 June 1934 26 p supp plates. Clearwater Mountains have yielded nearly $50,000,000 in placer gold; outlook favourable, for largescale operation of lowgrade deposits; deposits of highlevel and recentvalley type, latter ordinarily much smaller but richer; about 23 properties in Elk City, Tenmile, and Castle Creek districts are briefly described; Florence, Dixie and other districts in general area are not included in report.

Placer Operation, Boise Basin, Idaho.
C.W. HARKINSON.
Mines Magazine v 24 n 2 Feb 1934 p 15 and 26.
Notes on work conducted by Big Creek Syndicate, since summer, of 1933; gravel is excavated with dragline excavators; details of washing plant; entire plant is electrically operated; results indicate that cost of handling material will be about 9c per cu yd.

Prospector Claims Source of Coarse Gold Along Salmon Is In Ancient Gravel Deposit.
J.F. VAN BROCKLIN.
Northwest Mining v 3 n 2 Feb 4 1937 p 4.
Brief news item, giving views of credited author as to nature and origin of placer gold found along Salmon River in Idaho, between Short Bar and point below White Bird; gold from ancient river channel deposit on Rattlesnake Creek is of same type.

Reconnaissance of Placer Mining Districts in Idaho County Idaho.
S.H. LORAIN and O.H. METZGER.
US Bureau of Mines Information Cir n 7023 June 1938 93 p. supp plates.
Description of principal known commercial and near commercial deposits of gold bearing gravel and principal placer mining operations; location; history; production; topography; climate and vegetation; transportation; power; fuel; lumber, labour and wages; general geology; nearly all dredging deposits of proved value are worked out or are in hands of strong operating companies.

Reconnaissance of Placer Mining in Boise County, Idaho.
O.H. METZGER.
US Bureau of Mines Information Cir n 7028 34 p.
Historical notes; gold production statistics; outline of available placer deposits in Boise[ County; description of current practices; recovery costs of principal producers.

Reconnaissance of PlacerMining Districts in Lemht County, Idaho.
S.H. LORAIN and O.H. METZGER.
US Bureau of Mines Information Cir n 7082 June 1939 81 p supp plates.
History; production; description of region; geology; vein sources are associated with granite; details of deposits and operations, by districts; bucket line dredging; dragline plants; hydraulicking; shovelling,ground sluicing, and small scale hydraulic

operations.

Mining Activity in North Fork of Clearwater River Area.
W.W. STALEY.
Idaho Bur Mines and Geological Pamphlet n 54 Sept 1940 6 p.map.
Working season is usually from April to November; cost of living for 2 men about $16 to $18 per mo; gravel about 12 to 15ft deep; gold particles settle rapidly and are easily saved; some small nuggets; for hand operations; gravel should run about 40c per cy yd to give wages of $1.50 to $2 per day; lease royalties usually about 10% of gross recovery; operating methods; discussion of areas; vein mine activity.

Faulting in Western Idaho and its Relation to High Placer Deposits.
S.R. CAPPS.
Idaho Bur Mines and Geology Pamphlet n 56 June 1941 20 p.
Faults have prevailing north or northwest trend, show displacement of few hundred to 3500 ft and are normal faults; fourteen of these faults are described in some detail; many of high placer areas of region lie in north trending faulted valleys; nine distinct types of gold placer deposits have been distinguished, and each of six placer districts discussed contains from three to seven types of deposits.

Fine Gold of Snake River and Lower Salmon River. Idaho.
W.W. STALEY.
Idaho Bureau of Mines and Geology Pamphlet n 72 June 1945 10 p. supp map.
Historical outline of production, extent of deposits and areas of past production; mining methods employed, and related problems; treatment and recovery operations; recommended procedure. Bibliography.

Distribution of Heavy Alluvial Minerals In Idaho.
W.W. STALEY.
Idaho Bureau of Mines and Geology Mineral Resources Report n 5 Mar 1948 12 p.
Heavy sands or black sands is term commonly applied to heavy dark minerals; which usually occur with gold in placer deposits; there is no established market for products derived from Idaho black sands; main difficulty is economic;transportation to consumers in east prohibits any attempt at making shipment;

monazite; zircon; titaniumbearing minerals;distribution of heavy sands in Idaho; assay results; estimate of resources available.

GoldBearing Gravels Near Murray, Idaho.
W. DORT JR.
Idaho Bureau of Mines and Geology  Pamphlet n 116 Aug 1958 21 p.
Geomorphology as applied to origin of river valleys and intermontane basins, essential to understanding of factors which controlled deposition and concentration of valuable minerals in placer sands and gravels of northern and central Idaho; placer operations and future outlook.

**GOLD PLACER** Location U.S. Montana

The Cedar Creek Placers, Montana.
FRED D. SMITH.
Engineering and Mining Journal Feb. 4, 1899.
The location and working of these placers. Ill. 1200 w.

A LowGrade Placer Proposition in Montana.
FRED D. SMITH.
Engineering and Mining Journal Nov. 11, 1899.
An illustrated account of placer being worked, which yields less than 2c. to the yard. 800 w.

The Bear Gulch Placers, Montana.
FRED D. SMITH.
Engineering and Mining Journal Dec. 23, 1899.
Brief account of recent working of this field. Ill. 600 w.

Placer Mining Operations in Western Montana.
J.P. ROWE.
Mining World April 29, 1911.
Reports concerning various properties. 2000 w.

Gold Placer Deposits of Northwest Montana.
F.C. GILBERT.
Mining Review v 34 n 16 Apr 19, 1932 p. 56; see also Mining Journal (Phoenix Ariz)v 16 n 1 May 30 1932 p 56.
Notes on region adjacent to Bitter Root mountains; geology similar to Coeur d'Alene district of Idaho; stream gravels were probably thoroughly prospected by early miners; bench gravels of section are believed to offer excellent opportunities.

Placer and Lode Gold Mining in Montana.
C.J. TRAUERMAN.
Mining Review v 34 n 45 Nov 8, 1932 p 58.
Notes on recent and pending developments.

Placer Mining in Montana.
O.A. DINGMAN.
Mines Magazine v 24 n 1 Jan 1934 p 178.
Notes on dredge construction in 3 localities; operation of drag line shovel on Prickly Pear Creek, near East Helena; tractor shovel and dragline shovel work in Washington Gulch; underground placer mining in Emigrant Gulch, south of Livingston; ground sluicing near Helmville; comment on activity in various localities.

Dragline and Stacker Scow.

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Engineering and Mining Journal v 135 n 8 Aug 1934 p 365.
Brief item on equipment handling 1500 cu yd per 24 hr day in Prickly Pear Creek, near East Helena, Mont; Diesel engine power on dragline; purchased electric power on stacker.

Dragline Installation for Recovering Gold at Virginia City, Mont..
A.V. CORRY.
Mining and Metallurgy v 17 n 358 Oct 1936 p 46770.
Notes on Alder Gulch; gold discovered 1863; produced nearly $50,000,000 up to 1904; dredge operations since 1896; dragline practice, developed in Colorado in 1932, applied in Montana in 1935; installations with 2 type K48 2 1/2 cu yd draglines with 50 ft. booms and 1 3/4 cu yd shovel to reach gravel inaccessible to dragline; operating procedure; power requirements; investment and cost data; operating results.

Prickly Pear Creek Dredging Project.
A. STROJAN, JR.
Mining Journal (Phoenix, Ariz.) v 22 n 13 Nov 30 1938 p 7 and 412.
Features of plant and dredging practice in Jefferson County, Montana; dredge in electrically operated, of screen stacker type, with sectionalized pontoon construction, with digging capacity of 34 ft below water level; character of deposit; description of dredge flow sheet, first in Montana to use jigs instead of riffles.

Gold Placers of Montana.
C.J. LYDEN.
Montana, Bureau of Mines and Geology  Memoir n 26 1948 152 p.
Survey of known placer areas of Montana and also of lode mines that could have produced placer gold; no recommendation in this report should be taken to mean that a property does contain gold that can be recovered at profit, but merely that author believes that systematic and thorough testing of that land is warranted; types of placer deposits; methods of mining; description by counties. Bibliography.

Gold Placer Deposits of Pioneer District Montana.
J.T. PARDEE.
US Geological Survey  Bul n 978C 1951 p 6999, map in pocket.
Character and extent of deposits; mountainous part of district is built up by Tertiary intrusive rocks and by Quaternary glacial drift and

alluvium; geologic sequence of benchlands is represented by preTertiary rocks, Tertiary volcanic rocks and lake beds, late Tertiary and Quaternary gravel; description of gold placer deposits; production and reserves; illustrations.

**GOLD PLACER** Location U.S. Nevada

A Tertiary River Channel Near Carson City, Nevada.
JOHN A. REID.
Mining and Scientific Press April 18, 1908.
Illustrated description of a large and well defined channel on the east slope of the Sierra Nevada Mts., giving such facts about it as appertain to the mining industry. 2500 w.

Notes on Manhattan Placers. Nye County, Nev.
CHARLES COLEOCK JONES.
Engineering and Mining Journal July 17, 1909.
Notes on the formation, ore deposits and related subjects. Ills. 2000 w.

The Placers of the Johnnie District, Nevada.
CHARLES LABBE.
Engineering and Mining Journal., vol. 112, no. 23, Dec. 3, 1921, pp. 895896, 1 fig.
Area recently discovered covers ten square miles; Mexican air jig being used to treat gravel, with good results; source of gold near by.

Portable Washing Plant
J.B. HUTTL.
Engineering and Mining Journal v 135 n 4 Apr 1934 p 173.
Description of gravel treating plant of Apex Mining Co. at Yerington, Nev; plant is caterpillar mounted, and is known as Massco "dry land dredge" treatment plant.

Electricity Features Modern Nevada Placer Mining Operation.
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Mines Magazine v 31 n 5 May 1941 p 205.
Operations at Dayton, Nev; recovery plant fed by walking dragline, scoop cap. of 19 tons; plant 15,000 cu yd daily; rec. plant floats on artificial pond; plant equipped with 24 Westinghouse motors and gear motors; total 555 hp; material below 1/2 in. is jigged; conveyor belt stacker dumps waste gravel/sand outside pond; concentrates amalgamated, w/ tails ground in ball mill and amalgamated.

Nevada Desert Placer Mining.
A.N. CLARK.
Mining World v 9 n 8 July 1947 p 2730.
Potentialities of "las bajadas" as sources of new wealth; descriptive definition of bajada type of deposit; operations of L.S. FISH and associates, in vicinity of Leonard Creek, in southern part of Pine Forest Range in Humboldt County, about 100 mi NW of

Winnemucca; other desert placer projects.

Round Mountain Gold.
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Mining World v 12 n 7 June 1950 p 2631.
Progress of new Round Mountain Dredging Corp in Nevada;
Round Mn mineralized by Tertiary rhyolites intruding earlier Tertiary lake beds; vein systems, occurring over great area with low grade but fairly consistent mineralization, make up "porphyry gold orebody"; ratio of recoverable gold to silver about two to one; mill now handling 2/3s of 17,000ton capacity; desc'pn. of mining system.

**GOLD PLACERS** Location U.S. New Mexico

Placer Deposits in New Mexico.
CECIL A. DEANE.
Mining Industry and Review Feb. 13, 1896.
The article describes the way in which the gold occurs in the several districts.
2700 w.

Wonderful Dry Placers.
A.W. GIFFORD.
Ores and Metals Oct., 1899.
Reports placers of the Jarilla Mountains, New Mexico, yield coarse gold worth $100 a yard. 1200 w.

Notes on a Trip to White Oaks, New Mexico.
E. PERCY SMITH and LEON DOMINIAN.
Engineering and Mining Journal May 19, 1904.
Illustrated description of this mining camp,with notes on its development and production. Gold placers and veins. 2000 w.

Placers of Sante Fé County, New Mexico.
FAYETTE A. JONES.
Mining World Oct. 6, 1906.
Briefly reviews the history of this region. 1000 w.

New Mexico Gold Gravels.
J.A. CARRUTH.
Mines and Minerals Sept., 1910.
Describes deposits of goldbearing material of great depth and extent. Ills.
3000 w.

Gold Mining In Desert.
E.R. HARRINGTON.
Mines Magazine v 29 n 10 Oct 1939 p 5089 and 512.
Historical outline, recent activity near Golden, New Mexico: flat pay streaks, called "mantas" occur irregularly at varying depths in gravel and detritus from disintegrated zones of Mesozoic and sediments intruded by masses of diorite and monzonite porphyry; practice of miners in prospecting of mantas, digging and hoisting gravel by hand labour, and recovering small amounts of gold with hand operated or gasoline powered dry washers.

Gold Mining and Gold Deposits in New Mexico.
E.H. WELLS and T.P. WOOTTON.
New Mexico State School Mines Bureau of Mines and Mineral Resources Cir n 5 Apr 1940 23 p.
Status of gold, with value fixed at $35 per ounce; some deposits, formerly valueless, can now be worked at profit; mining and treatment of placer material; mining and

milling of gold ores; history of gold mining in New Mexico; production; general features of placer and lode deposits; areas favourable for new discoveries; notes on mining districts, by counties. Bibliography.

Mobile Dry Placer Plant,.
T.E. SMITH.
Engineering and Mining Journal v 141 n 6 June 1940 p. 50.
Plant at Old Placers, in Santa Fe County, N. Mex. consists of 180 hp Diesel electric set from which ac current is transmitted at 440 v through 600 ft rubber covered cable,caterpillar bulldozer, dragline excavator, screening plant, and dry amalgamator; all units are mounted on trucks; about 1000 cu yd gravel treated per 3 shift day, with 5 men on each shift; gravel bed is 12 to 20 ft thick; yield is not stated.

**GOLD PLACER** Location U.S. North Carolina

The Placer Mining Industry of North Carolina,.
R. KEMP WELCH.
Mining World May 22, 1909.
Reviews the history of the industry and gives information in regard to mines now being worked. Ills. 2500 w.

Gold and Silver Mining in Chili, North Carolina (76668).
A.S. WHELER and S.Y. LI.
Mining and Scientific Press Feb. 10, 1917.
Methods of mining and metallurgy. Ills. 5000 w.

Wooden Rocker Recovers Fine Gold.
T.W. SWOYER.
Engineering and Mining Journal, v 134, n 1, Jan. 1933, p. 16.
Details of twinunit goldrecovery apparatus used on property of Black Ankle Mining Corp. at Seagrove, NC.

**GOLD PLACER** Location U.S. Oregon

The Auriferous Gravels of the Upper Columbia River.
FRANK L. NASON.
Engineering and Mining Journal March 21, 1896.
Describes the actual conditions under which the gold occurs and the method of working the placers and prospecting. 2400 w.

The Columbia Placer, Oregon.
JAMES W. ABBOTT.
Engineering and Mining Journal April 9, 1898.
Describes the manner of working. 2000 w.

Gold in Snake River Gravel Bars.
WILLIAM H. WASHBURN.
Mining and Scientific Press Dec. 29, 1900.
Reports investigations made from a point about 20 miles below Huntington, Ore. to 50 miles above Ontario. 1000 w.

Placer Mining in Southern Oregon.
DENNIS M. STAVEL.
Mining Reporter Sept. 26, 1901.
An account of the mining industry in this region and the working of the placers. Ill. 1600 w.

Placer Mining in Josephine County, Oregon.
A.B. COUSINS.
Engineering and Mining Journal Nov. 1, 1902.
Describes the conditions and gives an account of what has been done since the discovery of gold in 1851 in this district. Ill. 1000 w.

Hydraulic Mining in Southern Oregon.
A.B. COUSIN.
Pacific C Mining May 23, 1903.
A brief account of its history and possibilities. Ill. 2300 w.

Placer Mining in Southern Oregon.
DENNIS H. STOVALL.
Mining and Scientific Press Aug. 15, 1903.
An illustrated account of the hydraulic mines and their methods. 1000 w.

Hydraulic Mining in Southern Oregon.
DENNIS H. STOVALL.
Mining and Scientific Press Oct. 3, 1903.
An illustrated account of placer mining and the extensive placer field of this region. 1300 w.

The Distribution of Placer Gold in Oregon.
C.W. WASHBURNE.
Mining and Scientific Press April 30, 1904.
Abstracted from the Bulletin Univ. of Oregon.
Information concerning this region. 1100 w.

Placer Mining in Oregon.
A.E. KELLOGG.
Engineering and Mining Journal, vol 108, no. 3, July 19, 1919. pp. 9091, 1 fig.
Geology of Waldo district.

Llano De Oro Placers, Waldo District, Oregon,.
A.E. KELLOGG.
Mining Journal, vol. 7, no. 4, July 15, 1928, pp. 911, 4 figs.
Describes gold placer mine in southwestern Oregon, with nearly 5000 acres of auriferous gravels and equipped with ditches providing large water supply; history; geology; gravels; present operations, electric power; shops; laboratory; sawmill, etc.

Gravitational and Centrifugal Gold Saver.
D.D. BAKER.
Mining Journal (Phoenix, Ariz.) v. 16, n 23, Apr. 30, 1933, p. 5.
Features of device successfully used for recovery of placer gold on Rogue River in Southern Oregon and in other placer operations in Pacific northwest.

Beach Placers of Oregon Coast.
J.T. PARDEE.
US Geological Survey Cir n 8 1934 41 p. supp plates.
Gold and platinum bearing deposits were discovered on present beaches in 1852 and on ancient elevated beaches 18 to 20 yrs later; after most profitable stretches had been worked; mining activity decreased; activity since July 1931; climate, vegetation and accessibility; topography; development of coast line; shorezone formation; general description of deposits; incomplete production statistics of gold and platinum; mining conditions; notes on individual mines.

Placer Mining on Rouge River. Oregon, in its Relation to Fish and Fishing in that Stream.
H.B. WARD.
Oregon State Dept Geology and Mineral Industries Bul n 10 Sept 1938 31 p; see also author's summary in Science v 88 n 2289 Nov 11 1938 p 4413.
Report one cological study, in view of controversy between recreational interests and mine operators; description of Rouge River; fish and fishing; muddy water; changes in river

affecting fish life; survey of river system at low and high water; placer mining and welfare of fish; turbidity measurements; unfavourable effect of silt on spawning grounds; quantity of fish food apparently not affected unfavourably. Appendices: Turbidity. A.M. SWARTLEY; Tolerance on young fish for suspended sediment, L.E. GRIFFIN. Bibliography.

Oregon's Gold Placers.
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Oregon State Dept Geology and Mineral Industries
Miscellaneous Paper n 5 1954 14 p. 3 plates.
Placer activities, placer areas, beach placers of Oregon coast, and riverterrace placers; description of southeastern and northeastern placer mining areas; prospecting with gold pan; maps. Bibliography.

**GOLD PLACER** Location U.S. South Dakota

Black Hills Mineral Atlas, South Dakota,
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US Bureau of Mines Information Cir n 7688 pt 1 July
1954 133 p. 4 supp plates. Data available on
mines and mineral deposits in Black Hills
that have been explored, developed, mined,
or located; geology of areas;data on
production of gold, silver, base metals;
iron ore, pegmatite minerals;, tungsten,
bentonite, cement, and clay products.

**GOLD PLACER** Location U.S. Utah

Cause of Fine Gold in San Juan River, Utah.
A. LAKES.
Mining Reporter Oct. 3, 1907.
Explains the probable origin of the gold and the cause of its extreme fineness. 900 w.

Geology and Economics of Rio San Juan, Utah.
ARTHUR LAKES.
Mining World May 9, 1908.
The peculiar structure is described, and a theory of the origin of the placer gold is given. 1000 w.

Utah's Potentially Great Gold Placer Mining Fields.
H.A. STRAUSS.
Salt Lake Mining Review, vol. 25, no. 15, Nov. 15, 1923, pp. 1718.
Utah contains important placer deposits of precious metals; and rare earths; classification of placers; placer gold sources.

**GOLD PLACER** Location U.S. Washington

Effect of Placers on Northwest History.
F.A. THOMSON.
Mining Truth, no 23, Jan. 17, 1929, pp. 7 and 14; see also Min. Rev., vol. 30, no. 24, Mar. 30, 1929, pp. 911.
Gold discovery at Fort Colville, Wash., resulted in populating area previously unexplored; early trappers knew of existence of minerals, but kept quiet lest influx of settlers drive game away; roaming miners spread news and developing followed; point emphasized in that publicity regarding gold discoveries stimulates emigration. Read before Northwest Sci. Soc.

Hand Methods of Placer Mining and Placer Mining Districts of Washington and Oregon.
G.E. INGERSOLL.
State College Wash Eng Experiment Station Monthly Bul n 40 v 14 n 10 Mar 1932 45 p supp plates.
Physical properties of gold; origin of placer deposits; characteristics of placer gravels; prospecting placer deposits; placer mining methods; cleaning up; catching fine gold;amalgamation; maps and list of placer mining districts of Washington and Oregon; mining laws; list of prospector's equipment. Bibliography.

**GOLD PLACER** Location U.S. Wyoming

The Douglas Creek Placers, Albany County, Wyoming.
E.P. SNOW.
Engineering and Mining Journal Dec. 7, 1895.
Description with map and halftone illustrations. 2000 w.

Gold and Tin in the Northwestern Black Hills.
BENJAMIN SADTLER.
Mining World April 28, 1906.
Report of the gold and tin bearing district in Crook County,Wyoming and Lawrence County, South Dakota. The gold veins carry no tin, nor the tin veins any gold, but the placer regions carry both. The geology and development are described. Ills. 3500 w.

Atlantic City, South Pass Gold Mining District.
A.B. BARTLETT and J.J. RUNNER.
State of Wyoming, Geologist's Office Bul., no. 20, July 15, 1926, 23 pp. 1 fig. District is situated in southcentral part of Fremont County in central Wyoming; history of development; account of Carissa mine; placers; ores and treatment and laboratory tests; fuel and power; notes on goldquartz veins of Atlantic City South Pass District; probable extent of gold lodes.

Placer Mining.
B. BEILER, D. TOWNSEND, W.C. DRISKILL, C.W. RAY, R. LARSON, C. EVANS, C.C. O'HARRA.
Black Hills Engineer v 19 n 4 Nov. 1931 p 30961.
Placer Mining on French Creek. B. BEILER; Placer Operations Near Sheridan, D. TOWNSEND; Placer Mining in Tinton District by Driskill Company, W.C. DRISKILL and C.W. RAY; Placer Mining on Castle Creek, R. LARSON; Placer Mining on Rapid Creek, C. EVANS; Early Placer Gold Mining in Black Hill, C.C. O'HARRA; Gold Nuggets.

Bajada Placers of Arid Southwest.
B.N. WEBBER.
American Institute of Mining and Metallurgical Engineers Trans (Mining Geology) v 115 mtgs Feb. 203 1933, Feb.1922 1934, and Feb. 1821 1935. p. 37891 (discussion) 3912; see also Am Inst Mining and Met Engrs Tech Pub n 588 mtg Feb 1935, 16 p.
"Bajada placer" is proposed as designation for type of deposit accumulating on hill slope, distinct from both stream and eluvial deposits; note on climate and topography of Sonoran Desert;

erosion, transportation and deposition factors; tendency is for gold to remain erratically distributed through detritus, rather than concentration on bedrock as in running water; conditions affected prospecting and development. Bibliography.

PlacerMining Methods of E.T. Fisher Co., Atlantic City, Wyo..
C.L. ROSS and E.D. GARDNER.
US Bureau of Mines Information Cir n 6846 June 1935 10 p supp plates.
Mine on Rock Creek in South Pass mining district; about 2800 cu yds gravel is dug daily by gasoline-driven dragline shovel with 1 1/4 yd bucket and washed in movable plant with golddredge trommel and standard dredge sluice boxes; total cost is about 12 c per cu yd; details of plant construction; operating practice and costs.

Gold Mining in Western United States.
L.A. PALMER.
Mining Journal (Lond) v 204 n 5402 Mar. 4, 1939 p 2078.
General economic statistical and descriptive review; placer and lode gold production; outlook for revaluation of gold.

**GOLD PLACER** Location U.S.S.R.

The Gold Placers of Siberia.
E.D. LEVAT.
Engineering and Mining Journal Jan. 23, 1897.
Characteristics of the gold formations described, with conjecture as to their probable origin. 1500 w.

Gold Stealing in the Siberian Placers.
E.D. LEVAT.
Engineering and Mining Journal Feb. 6, 1897.
An account of the habits of theft and the system of work. 700 w.

Gold Mining in Siberia.
RUSSELL L. DUNN.
Mining and Scientific Press April 3, 1897.
Gives conclusions from a study of Siberian mines and mining conditions on the ground, explaining methods of prospecting, exploration, etc. Ill. 3000 w.

Gold Gravel Washing in Eastern Siberia.
E.D. LEVAT.
Engineering and Mining Journal April 3, 1897.
Illustrates and describes the sluices in the placers worked by the Zeya Company. 800 w.

Gold Gravel Washing in Eastern Siberia.
E.D. LEVAT.
Australian Mining Standard June 3, 1897.
Illustrates and describes the sluices in the placers worked by the Zeya Company. 900 w.

Working Frozen Alluvial Deposits in Siberia.
E.D. LEVAT.
Engineering and Mining Journal June 12, 1897.
Describes the special methods of working where the ground is always frozen.
Ill. 900 w.

The Siberian Railway and the Siberian Gold Districts (Die Sibirische Elsenbahn and die Gold-Vorkommen Siberians).
-
Glückauf April 30, 1898.
A discussion of the probable effects of the access by railway upon the gold regions of Siberia, with data as to locations and past output. 2000 w.

The Auriferous Deposits of Siberia.
RÉNÉ DE BATZ.

Transactions of the American Institute of Mining Engineers Aug., 1898.
Gives some of the reasons for the slow development of these gold fields,describes the general geology of the Siberian placers, the economic conditions, methods of working, etc. Map. 5000 w.

The Gold Placers of the Eastern Oural Mountains, Russia.
H.B.C. NITZE.
Engineering and Mining Journal Sept. 10, 1898.
A short outline of the geology, character of the beds and method of working. Ill. 1200 w.

Placer Mining in the Southern Urals.
CHARLES TAPPAN.
Engineering and Mining Journal July 14, 1900. Serial.
An account of the results of an examination of part of the South Ural Placer District.

The Gold Mining Industry of Siberia.
H.L. GEISSEL.
Mining and Metallurgy May 1, 1901.
Describes the great gold mining regions, and the machinery and tools in general use. 2000 w.

The Gold Mines of Siberia.
CHESTER WELLS PURINGTON.
Engineering Magazine Sept. 1901.
Illustrated description of the primitive methods used in what promises to be an exceedingly rich region. 2400 w.

The Gold Mining Districts of Central Siberia.
LEWIS BLANCHARD BROWN.
Transaction of the American Institute of Mining Engineers Oct. 1903.
Describes the southcentral part of Siberia, with special reference to its geology and mineral deposits. Map. 10,300 w.

Gold Placers in Bokhara.
E.D. LEVAT.
Engineering and Mining Journal Dec. 24, 1903.
Abstract from "Annales des Mines." Describes the rich gold deposits of Central Asia. 2200 w.

Gold Mining in Siberia.
J.H. CURLE, in the London "Economist."
Engineering and Mining Journal Sept. 15, 1904.
Information concerning these mines, and a discussion of racial, political and economic reasons why the writer considers them unfavourable for foreign investments. 1500 w.

Placer Mining in Siberia. Abstract translation from "l'Industrie Aurifere."

M.D. LEVAT.
Mining World Aug. 26, 1905.
Describes some of the difficulties,the methods of work and the prospecting. 1500 w.

Siberian Gold Mining.
GEORGE E. WALSH.
Mines and Minerals Sept., 1905.
Gives the location and extent of some of the gold fields discovered, and some of the conditions which retard development 2000 w.

Native Methods in Siberia.
FRED L. LOWELL.
Mining and Scientific Press Nov. 5, 1910.
Illustrates and describes working methods used by Russians, Chinese and Koreans in the placer mining regions of eastern Siberia. 1500 w.

Siberian Gold Regions.
E. DE HAUTPICK.
Mining Journal March 4, 1911. Serial. lst part.
A description of the richest gold regions. The present article describes the Olekminsk and Vitimak districts. 1500 w.

Gold and Platinum Alluvial Deposits in Russia.
LEON PERRET.
Institution of Mining and Metallurgy, Bul 92 May 9, 1912.
Gives statistics and history, methods of prospecting and working,and describes deposits and conditions. 13500 w.

A Trip to the Siberian Placers.
ALEXANDER P. ROGERS.
Engineering and Mining Journal Feb. 8, 1913.
Illustrated account of a trip made to examine placer properties. 3000 w.

Some Impressions of Gold Mining in Siberia.
H.E. SYMMONS.
Mining Journal May 23, 1914.
Considers important mining laws; future of the country; and the dredging industry. 2000 w.

Upper Yenesei Valley and Adjacent Mongolia.
-
Mining and Scientific Press Oct. 31, 1914.
Describes the region where alluvial gold has been found. Map. 1800 w.

A Trip to the SiberianMongolian Frontier.
NEWTON B. KNOX.
Engineering and Mining Journal Dec. 12, 1914.
Travel notes on an examining expedition to some new

placers in southcentral Siberia, with comments on country and people. Ills. 5000 w.

The Gold Mines of the Lena.
C.W. PURINGTON.
Mining Magazine June, 1915.
Peculiar mining conditions and methods at great placer field. Maps and Ills. 6000 w.

Drilling on the Lena Goldfield, Siberia.
W.E. THORNE.
Mining and Scientific Press March 30, 1918.
Lack of system; inefficiency of workmen; goldstealing, etc. 4000 w.

DriftGravel Mining in Eastern Siberia.
JOHN POWER HUTCHINS.
Engineering and Mining Journal May 11, 1918.
Account of these deposits and the crude methods of mining, transportation, milling, and sluicing. Ills. 7 pp.

Russian Placer Mining.
L.A. PERRET.
Mining and Scientific Press, vol. 122 nos. 12, 13 and 14, Mar. 19, 26 and Apr. 2, 1921, 12 figs.
Mar. 19; Conditions under which foreign gold mining is conducted in Russia. Mar. 26; Drifting and timbering methods. Apr. 2; Methods of prospecting and dredging.

The Gold and Platinum Mining Industry in 1922 and Views of its Future Progress.
A. KRYLOV.
Mining Journal (Russian), vol. 98, no.1012, Oct.Dec. 1922, pp. 458468. (In Russian).

American or Russian Methods of Working our Placer-Deposits?
I. ROGOVIN.
Mining Journal (Russian), vol. 99, nos. 12 and 34, Jan.Feb. and Mar.Apr. 1923, pp. 2026 and 147154. (Russian).

American or Russian Methods of Working Russian Placer Deposits
I. ROGOVIN.
Mining Journal (Russian), vol. 99, no. 7, July 1923, pp.366371. (Russian).

American or Russian Methods of Working Our Placer Deposits.
I. ROGOVIN.
Russian Mining Journal vol. 99, no. 89, Sept.Oct. 1923, pp.450455. (Russian).

Gold Mining in Eastern Siberia.

F.L. COLE.
Engineering and Mining Journal  Press, vol. 116, no. 5, Aug. 4, 1923, pp. 185190, 2 figs.
Résumé of past operations in vast territory that has produced much gold; climate; labor; transportation and political conditions.

Methods of Gold Mining in Eastern Siberia.
A.P. SVIRIDOFF.
Engineering and Mining JournalPress, vol. 118, no. 7, Aug. 16, 1924, pp. 251258, 9 figs.
Gives methods and cost of prospecting and working mines in goldmining districts of Eastern Siberia.

The Selemdja Alluvial Gold Deposits, Amur Province, Eastern Siberia.
G.T. EVE.
Mining Magazine, vol. 31, no. 4, Oct. 1924, pp.201205, 2 figs.
Account of gold deposits on Selemdja River and its tributaries, chief centre of gold mining in Amur Province with notes of past and present scales of operation.

Perspectives of Gold Mining Industry of Eastern Kazakistan.
I. YAKOVLEVSIBIRYAK.
Gorniy Journal, vol. 105, no. 1, Jan. 1929, pp. 8791.
Statistical data and general information on conditions of placer mining in province formerly known as Semipalatinsk, during period 1899 to 1914; author concludes that period of placer mining in district is over and future is with rock mining. (In Russian).

The Gold Industry in Siberia.
-
Mining Journal vol. 167, nos. 4912 and 4913, Oct. 12 and 19, 1929, pp. 817818 and 839. Oct. 12: Historical notes on discovery and working of gold deposits in Russia and Siberia; tabular data on reported gold production of Siberia; gold fields in Ural district of Russia, western Siberia, and eastern Siberia. Oct. 19; Relative production of gold from placer deposits and from veins in each region; effect of World War on gold mining industry; decline of production during Bolshevist regime; possibilities of future development, in view of recent resumption of diplomatic relation between Great Britain and Soviet Government.

Podzemnye vody i kharakter osusheniya Lenskikh priiskov.

E.V. PINNEKER.
Sovetskaya Geologiya v 3 n 11 Nov 1960 p 8593.
Ground water and methods of Lena gold fields drainage; Lena placers are confined to thick and aqueous beds of friable deposits partly bound by permafrost; water is obtained from surface waters, from alluvium, and glacial deposits; spillway adits are cut in bedrock beneath placers to drain deposits; surface runoff is regulated by enclosing rivers into gutters or draining by ditches.

Chetvertichnye otlozheniya i rossypi zolota verkhov'ev Kolymy i Indigirki.
M.D. EL'YANOV.
Sovetskaya Geologiya v 4 n 2 Feb1961 p 13344.
Quaternary deposits and gold placers in upper reaches of Kolyma and Indigirka Rivers; problems of stratigraphy of goldbearing areas of Kolyma River basin; occurrence of placers under glacial deposits.

K geomorfologicheskoi kharakteristike MaloAnyuiskoi zolotonosnoi zony SeveroVostoka SSSR.
A.I. SADOVSKII.
Akademiya Nauk,Sibirskoe Otdelenie, Geologiya i Geofizika n 11 1965 p 8091. Geomorphology of MaloAnyuiskaya goldbearing zone of North-Eastern Soviet Union; data on geological structure and geomorphologic development indicate that sectors of ancient valleys drained by Recent rivers are most favorable for prospecting for gold placers. In Russian.

Kompleksnye metody poiskov mestorozhdenii zolota v Eniseiskom kryazhe.
I.L. KOMOV.
Sovetskaya Geologiya n 11 Nov. 1965 p12531.
Methods of gold prospecting in Enisei Ridge; prospecting for new gold deposits is urged, because old rich placer deposits in Enisei Ridge are greatly exhausted; recommendations are made concerning aeromagnetic, geological, geochemical; and geophysical methods of prospecting; analysis of collected samples by spectrum analysis and chemical methods. In Russian.

**GOLD PLACER** Metallurgy

Notes on the Hydrometallurgy of Gold and Silver.
W. GEO. WARING.
Engineering and Mining Journal May 9, 1896.
Calling attention to facts in hydrometallurgy that are not well understood, and stating that the advances of the present day do not consist in the discovery of new processes, but in improvements in manipulation of the old and wellfounded methods. 2700 w.

Metallurgy of Gold.
H. VAN F. FURMAN.
Colliery Engineer Oct. 1896.
Its occurrence, its properties and metallurgical processes for extracting it from ores. Crushing and pulverizing machinery; amalgamation methods; concentration; chlorination and bromination; the cyanide process, smelting process, new methods; melting, assaying and parting gold bullion. 6000w.
Crystalline. Crystalline Structure of Nuggets.
A. LIVERIDGE.
Australian Mining Standard Sept. 12, 1901.
Extracts from an address describing some recently obtained nuggets from Victoria and the Klondike and New Zealand. Ill. 1000 w.

Crystalline Structure of Nuggets.
A. LIVERIDGE.
Australian Mining Standard Sept. 12, 1901.
Extracts from an address describing some recently obtained nuggets from Victoria and the Klondike and New Zealand. Ill. 1000 w.

The Metallurgy of Alluvial Mining.
JOHN M. NICOL.
Mining and Scientific Press May 29, 1915, Serial, 1st part.
Examination of the principles involved, with suggestions. Ills. 2800 w.

Recovery of Gold from a Magnetic Black Sand.
JOHN A. DAVIS and JOHN GROSS.
Reports of Investigations, Bureau of Mines, serial no. 2158. Aug. 1920, 5 pp.
Tests made by Alaska section of Bureau of of Mines.

Recovery of Gold from Black Sand by Classifier Concentration.
JOHN A. DAVIS and JOHN GROSS.
Reports of Investigations, Bureau of Mines, Dept. of

Interior, serial no. 2160, Sept. 1920, 3 pp.
Results of metallurgical tests conducted by Alaska section of Federal Bur. of Mines, on recovery of gold from black sands of placer cleanups.

Recovery of Gold from Black Sand Tailings.
JOHN GROSS.
Reports of Investigations, Bureau of Mines, Dept. of Interior, serial no.2170, Oct. 1920, 2 pp.
Tests conducted at Alaska station of Bur. of Mines.

Comparison of Methods of Gold Recovery from Black Sand.
JOHN GROSS.
Reports of Investigations, Bureau of Mines, Dept. of Interior, serial no. 2192, Dec. 1920, 4 pp.
Results of tests conducted by Alaska station of U.S. Bureau of Mines.

Metallurgy of Gold.
T.K. ROSE and W.A.C. NEWMAN.
7 ed. rev. Phila., J.B. Lippincott Co., 1937, 561 pp. ills. diagrs., charts, tables, $15.00. Last edition of this standard treatise appeared over 20 years ago; it has been necessary, therefore, to write what is practically a new book; obsolete methods of ore treatment deleted; new ones on flotation and ore testing added.

**GOLD PLACER** Mining Method Arid Regions

Dry Placer Machines.
-
Australian Mining Standard Oct. 5,1895.
Description of the method of working dry placers in the arid regions of Arizona. Panning is used on a small scale similar to the wet method. The machine used consists of a series of screens arranged so that a blast of air from the fan blows sand and dirt away; it resembles the fanning machine used to clean grain. 1000 w.

The Woods' Dry Placer Miner.
-
Mining and Scientific Press Feb. 8, 1896.
The device consists of a disintegrator, resembling an inclosed ore washer, which delivers its pulverized product to an inclined table having riffles at intervals and having a bottom of coarse cloth through which a bellows underneath drives the air in pulsations as in jigging. The gold settlers to the surface of the cloth and is there collected. 650 w.

A Dry Placer Machine.
-
Mining and Scientific Press March 14, 1896.
Illustrated description. 400 w.

Dry Gold Placers of the Arid Regions.
GEORGE H. STONE.
Mines and Minerals April, 1899.
The difference in the methods by which they and the wet placers were deposited and the reasons for the failure of so many dry placer machines. 3700 w.

The Problem of Dry Placers.
HENRY A. MATHER.
Engineering and Mining Journal Aug. 29, 1903.
Considers the difficulties of gold recovery and the means employed. 1200 w.

Dry Placer Mining Machines.
E.B. WILSON.
Mines and Minerals May, 1911.
Illustrates and describes some of the different methods that have been used for concentrating with little or no water. 2000 w.

A Dry Land Dredging Machine.
LEWIS H. EDDY.

Engineering and Mining Journal  Dec. 16, 1911.
Illustrated description of the HearnsMartin placer-mining machine used near Oroville, Cal., for working shallow gravel where hydraulicking is barred. 2000 w.

The Western Australian Goldfields.
L.E. SHAPCOTT.
Scientific American  Dec. 19, 1914.
Brief account of how water supplies are provided in a waterless country. Ills. 1000 w.

Dry Placer Mining on a Large Scale.
W.G. KEISER.
Mining and Engineering World  May 27, 1916.
QuennerStebbins plant, in Arizona. 1500 w.

Successful Dry Placer Operations, at Plomosa, Arizona.
WILLIAM L. PLUMMER.
Mining and Engineering World  July 1, 1916.
Experimental plant. Ills. 1200 w.

Dry Blowing.
J. MCBRIAN.
Mines Magazine v 28 n 7 July 1938 p 3178.
Example of application of successful process for separation of gold from alluvial dirt, as used in Australia for several years; construction details of dry blowing machine; operating procedure.

New DryLand Dredging Plant on Wheels Adaptable to Semi-Arid Region Places.
A.N. CLARK.
Mining and Contracting Review, v 41 n 1 Jan 15, 1939 p 67 and 21.
Narrative description of plant and its successful operation near Loomis, Calif; compare similar paper by same author, from Mining Journal (Phoenix, Ariz) Dec. 15, 1938.

DryLand Dredge Extracts Desert Gold.
-
Engineering and Mining Journal v 162 n 8 Aug 1961 p 79.
New dryland dredge is expected to demonstrate feasibility of extracting gold from vast Western goldbearing desert lands; after screening and drying; material drops onto 6 electrostatic separator tables; dry air stream passing over gold imparts electrostatic charges preferentially to gold particles which adhere to table screen, while gangue is blown off end of table by continuous stream of air; dredge capacity is 50 to 100 cu ft/hr.

**GOLD PLACER** Mining Methods Cold Regions

Frozen Gold Gravel.
J.P. HUTCHINS.
Engineering and Mining Journal Oct. 20, 1906.
Illustrated description of phenomena observed in the frozen ground of the far north, and the methods used in breaking and thawing it preparatory to recovering its gold contents, suggesting improvements. 2500 w.

Dredge Working in Severe Cold.
E.N. BARBOT DE MARNY.
Mining Journal Aug. 1,1908.
Gives experience and opinion in Russia. 2500 w.

The Use of Sectionalized Machinery.
T. LANE CARTER.
Engineering and Mining Journal July 15, 1911.
Suggestions for the manufacture and use of machinery used in outoftheway places. 2000 w.

Winter GoldMining in Siberia.
C.W. PURINGTON.
Mining Magazine Jan, 1912.
Describes the topography, climate, geology and conditions of the TransBaikal region, giving the history of gold mining. Map and Ills. 2500 w.

Electrical Installations of the Lena Gold Mining Company.
-
Mining Journal June 29, 1912.
Describes electrical installations in Siberia for generating power for the mines. Ills. 2000 w.

Thawing Frozen Ground for Placer Mining.
ARTHUR GIBSON.
Mining and Scientific Press Jan. 17, 1914.
Discusses thawing ground never thawed by nature, giving efficiency and cost data of the different methods. 1200 w.

Thawing Methods at Fairbanks.
HUBERT I. ELLIS.
Engineering and Mining Journal July 3, 1915.
Principles and practice of steampipe methods. Ills. 5000 w.

Winter Mining at Fairbanks.
HUBERT I. ELLIS.
Engineering and Mining Journal Oct. 30, 1915.

Methods. Ills. 3500 w.

Winter Sluicing at the Lenskoi Gold Mines, Siberia.
C.W. PURINGTON and R.E. SMITH.
Mining Magazine Sept., 1916.
Method and plant now in use. Ills. 5000 w.

Mining the Frozen Gravel of the Arctic.
DR. HENRY M. PAYNE.
Sibley Journal of Engineering Sept, 1916. Serial, 1st part.
Auriferous territory described and methods applied. Ills. 2500 w.

Further Notes on Yukon Mining Problems.
HENRY M. PAYNE.
Canadian Mining Institute, Transactions 1917.
Thawing methods and results. Ills. 19 pp.

Thawing Frozen Gravel with Cold Water.
WALTER S. WEEKS.
Mining and Scientific Press, vol. 120 no. 11, Mar. 13, 1920, pp. 367370, 3 figs.
Experiments at Nome, Alaska showed it is claimed that surface water could accomplish thawing effectively without addition of artificial heat.

ColdWater Thawing of Frozen Gravel.
EDWARD E. PEARCE.
Mining and Scientific Press, vol. 124, no. 5, Feb. 4, 1922, pp. 154156, 3 figs.
Describes new process, showing methods employed and results obtained by it on a piece of dredging ground in Candle Creek, Alaska.

Recent Progress in the Thawing of Frozen Gravel in Placer Mining.
CHARLES JANIN.
US Bureau of Mines, Tech. Paper, no. 309, 1922, 34 pp. 11 figs.
Methods evolved in working of frozen gravels in Alaska and Yukon Territory.

Valuation of Dredging Ground in SubArctic.
A.M. NORDALE.
Canadian Institute of Mining and Metallurgy Trans v 50 1947 p 48796 (Bul n 425 Sept. 1947); see also Western Miner v 19 n 11 Nov. 1946 p 90, 92, 94, 96, 989, 102, 104.
Accepted practice of sinking cased test holes with churn drills had not been designed to meet Arctic conditions in Alaska and Yukon; attempts to thaw ground by use of steam; development of "open hole" method, without casing; drilling technique.

Cold Water Thawing of Frozen Placer Gravel.

J. LUND.
Canadian Minining and Metallurgical Bulletin v 44 n 468 Apr 1951 p 2737.
Gold bearing placers of Alaska and Yukon Territories are buried under layer of permanently frozen alluvial overburden; frozen muck is stripped from placer by powerful jets of water from hydraulic dredges; cold water will thaw frozen ground much faster and cheaper than either steam or hot water; low grade, placer deposits, have become of great economic importance with development of cheaper cold water thawing methods.

Arctic Gold Dredging.
P.H. O'NEILL.
Mining Engineering v 6 n 11 Nov 1954 p 106871.
Features of dredge designed to operate under arctic conditions; experience in dredging permanently frozen gold bearing grave; bank stabilization by freezing; pond ice removal and steam thawing seasonal frost.

Economic Factors in Cold Weather Operation.
E.B. SPICE.
Mining Engineering v 8 n 7 July 1956 p 7127.
Ways in which cold weather can affect economics of mine development and operation, such as exploration, engineering design, construction, mine and mill operation, transportation.

Sistemy podzemnoi razrabotki mnogoletnemerzlykh rosspei.
S.V. POTEMKIN.
Gornyi Zhurnal v 136 n 7 July 1960, p 204.
Systems of underground mining of placers under conditions of permafrost; in northeastern Siberia placers are 0.4 to 2 m thick and are located below 15 to 20 m of overburden; axial height of stope is 1.3 to 1.5 m; roof is strong; length of field does not exceed 200 m.

Iglovaya ottaika rossypei s estestvennym naporom vody.
R.I. BLINNIKOV.
Gornyi Zhurnal v 136 n 7 July 1960 p 1720.
Thawing of placers by means of insert pipes to introduce water under natural head; placer is in permafrost of Magadan region; its thickness is 78 mm; insert pipes are 3/4 and 1 in. in diam; water is supplied from 18 km long canal; spacing is 3.5 by 3.5 m;cycle of inserting pipes and keeping them in frozen placer lasts 1625 days; after thawing dredging begins.

Mining in Arctic  Future Prospect Brightens.
P.E. QUENNEAU.
Mining Engineering v 13 n 7 July 1961, p 6959.
Present mining development in Arctic and factors which influence future development; principal factors responsible for greater development of Arctic in eastern hemisphere is Gulf Stream and Arctic Ocean; logistics, power supply, manpower and living conditions in Arctic.

**GOLD PLACER** Mining Method Tropical Regions

Placering in Tropical Countries.
A.D. AKIN.
Engineering and Mining JournalPress, vol. 114, no. 12,
Sept. 16, 1922, pp. 500502.
Enterprises often fall because of difficulty of
controlling water and because of
cloudbursts; dragline dredging method
promises solution.

**GOLD PLACER** Mining Method Dredging Africa

Improved English Gold Dredge in West Africa.
FRANK C. PERKINS.
Mining World Sept. 4, 1908.
Illustrates and describes construction of gold dredges,comparing advantages in operation. 1200 w.

Bucket Dredges for Nigerian Tin Deposits.
-
Engineering March, 14, 1913.
Illustrated description. 900 w.

A Pioneer Bucket Dredge in Northern Nigeria.
H.E. NICHOLLS.
Institute of Mining and Metallurgy, Bul 137 Feb. 17, 1916.
Details of dredge; work; deposits, operated by semi-Diesel engine. Ills. 3000 w.

A Pioneer Bucket Dredge in Northern Nigeria.
Institute of Mining and Metallurgy, Bul 138 March 16, 1916.
Discussion of Nicholl's paper. 2000 w.

Dredging in Mozambique.
L.C. DE LA MARLIERE.
Engineering and Mining Journal April 15, 1916.
Lowgrade gravels. Ills. 1200 w.

Dredging: South African Practice.
GEO. STEWART.
South African Engineer, vol. 32, nos. 11 and 12, Nov. 30 and Dec. 31, 1921, pp .217220 and 233237, 6 figs.
Nov. 30: Objects and developments of dredging; hopper or barge loading dredgers; ladder dredges;suction dredging. Dec. 31; Described drag, spud, dipper, grab, suction and bucket dredgers, and discusses dredger efficiency.

Nouvelle drague aurifére, cystoma de Dorlodot.
J. DUGUE.
Gènie Civil v 106 n 26 June 29 1935 p 6412.
Design, construction and operation of Dorlodot type of gold dredge especially adapted to conditions prevailing in African colonies of France.

Gold Dredging in West Africa.
F.M. BLANCHARD.
Engineering and Mining Journal v 137 n 4 Apr 1936 p 1757.
First placer gold dredger on Gold Coast started operation in 1902 on Offin river; during

1909 there were 15 operating on 5 rivers; work stopped in 1925; Tano river area being prospected; adverse digging conditions overcome by special features of dredge design; two dredges completed, 10 cu ft buckets; ladder permits digging depth 40 ft below water; swinging stacker.

Bremang.
D.D. HOWAT.
Mine and Quarry Engineering v 5 n 9 Sept 1940 p. 2438.
Alluvial dredging on Aukobra river; concessions with total area 33.47 sq mi; dredgeable widths average 800 ft; average depth 21 to 24 ft; level surface from 10 to 15 ft above low water level; two BucyrusErie dredges, combined capacity of 320,000 cu yd per 600 running hours; electric power; gold recovery flow sheet; proven reserves in three sections, total over 100,000,000 cu yd, values averaging 2.77 to 3.80 grains gold per cu yd.

Gold Dredging.
-
Electrician v 126 n 3269 Jan 24 1941 p 467.
Description of electric equipment in operation on shallows of Ankobra River, Gold Coast; dredges are electrically operated and are supplied from individual substations fed by 55 kv; overhead transmission line from power stations at Ankobra Junction, 20 mi away; power also carried to Ariston Gold Mines substation at Prestea and to Gold Coast Main Reef, Ltd., at Dondaye substation; features of main generating plan and substations.

Gold Dredge in Rhodesia.
-
Mining and Minerals Eng v 1 n 2 Oct 1964 p 723.
Hydrojet dredges with multiple pontoon hull is employed in winning goldbearing sand and gravel in depth up to 30 ft; during tests its output is reported to have been 300 cu/yd in free-running sand; 210 cu yd/hr in freegetting gravel up to stone size of 7 in. sphere and 62 cu yd/hr in gravel in crevices and between large rocks and boulders; craft is designed for dredging freegetting materials at considerably greater depths than conventional craft; 200 ft dredging depth is feasible.

**GOLD PLACER** Mining Methods Dredging Asia

Dredging Possibilities in Korea.
R.Y. HANLON.
Mining and Scientific Press June 4, 1910.
An illustrated article giving information in regard to the placers and the methods of working. 1200 w.

SteamElectricDriven Dredge for the Philippines.
-
Engineering and Mining Journal May 22, 1915.
Details of a dredge that will operate in tidal water. Ills. 1800 w.

Japanese GoldDredging Enterprise.
H.S. LITTLE.
Engineering and Mining Journal, vol. 130, no. 10, Nov. 24, 1930, pp. 513514, 3 figs.
About 6000 acres near Kintei, Province of Zenrahudo, Korea, being developed by Mitsubishi Kogyo Co. of Japan; tested by Japanese engineers with Empire hand drills; average depth 20 ft., granite bedrock and gold is usually in 3 ft. layer immediately above bedrock; 10 cu. ft. closeconnected dredge of Yuba type, with steel hull; construction notes; average yardage 7000 cu yards for 22 hr. operating times per day; application of resoiling equipment has been successful.

Coco Grove Dredges Have Interesting Features.
G.R. JOHNSON.
Engineering and Mining Journal v 143 n 4 Apr 1942 p 59-61.
Coco Grove, Inc., operates two modern 8 cuft all steel bucket line dredges in Paracale district on Luzon, in Philippines; it owns or controls about 2500 acres of placer ground and is managed by Marsman and Co. Inc. of Manila; dredge work both virgin ground and tailings; dredges are all steel boats, equipped with 8 cu ft buckets; bucket line has 106 buckets and can dig 65 ft under surface of water.

**GOLD PLACER** Mining Method Dredging Australasia

Dredging the N.S.W. Rivers.
A.O.S.M.
Australian Mining Standard March 17, 1898.
Suggests the advisability of testing the rivers known to contain auriferous gravel, and gives a brief history of this industry in New Zealand. Ill. 1300 w.

Dredging in New South Wales.
C.L. GARLAND.
Australia Mining Standard June 9, 1898.
An interview with Mr. C.L. GARLAND regarding the progress made in dredging for gold, which gives promise of satisfactory results. 2000 w.

Hydraulic Dredging.
-
Australia Mining Standard June 30, 1898.
Description, with illustrations of working of the Yackandandah leases in Australia, by dredging for gold. 2500 w.

Notes on Gold Dredging, with Reference to the Introduction of the Industry into New South Wales.
J.B. JAQUET.
New Zealand Mines Record Sept. 16, 1898.
A report upon the results obtained and the machinery used. 7500 w.

Australian Dredging Progress.
-
Australia Mining Standard (special) June 1,1899.
Explains the various operations usually confused with dredging proper, and gives an account of the work erroneously called hydraulic dredging in Victoria and New South Wales. 5500 w.

Gold Dredging in New Zealand, Victoria and New South Wales.
GEORGE ROBSON.
New Zealand Mines Record Jan. 16, 1900.
Descriptive paper read before the New South Wales Chamber of Mines, giving information concerning the process with general discussion. 2800 w.

Notes on Gold Dredging in New Zealand and New South Wales.
J.W.H. PIPER.

New Zealand Mines Record June 16, 1900.
Read at meeting of N.S.W. Chamber of Mines. Showing the immense advantage of the bucket dredge as a gold producer. 1700 w.

Dredging in the Ovens Valley.
-
Australian Mining Standard June 11, 1903.
General remarks on dredging work, with illustrated description of the plant of the Ovens Valley Gold Dredging Co., Victoria. 2200 w.

Recent Dredging Practice in Australia and New Zealand.
H.L. LEWIS.
Mining Journal April 1, 1905. Serial. 1st part.
The present article considers buckets vs. pumps in dredging, and hints on prospecting. 2800 w.

The Career of the Gold Dredge in New South Wales.
DAVID K. BLAIR.
Engineering and Mining Journal Oct. 28, 1905.
Abstract of a paper in "Trans. of the Australasian Min.Engrs." Gives a brief history of the career of the gold dredge from its introduction, March, 1899, up to the present time. 2200 w.

GoldDredging and Hydraulic Sluicing in Victoria.
D.B. SELLARS.
New Zealand Mines Record Oct. 16, 1908.
A report of the work. 2000 w.

Dredging and Hydraulic Sluicing, Victoria, 1908.
E.H. GOODENOUGH.
Australian Mining Standard May 5, 1909.
Abstract of annual report on operations in 1908. 1500 w.

Dredge Mining and Hydraulic Sluicing in 1909.
D.B. SELLARS.
Australian Mining Standard June 22, 1910.
A review of the plants in New South Wales. 2000 w.

A Large Dredger for a Siamese Tin Field.
Engineer, Lond Feb. 13, 1914.
Illustrated detailed description of the dredgers of the Siamese Tin Syndicate and their work. Plate. 2500 w.

The Victorian Dredging Industry.
-
Mining and Scientific Press March 14, 1914.
From the Aust. Min. Stand. Information from the report of the special board appointed by the government to inquire into matters connected with the sluicing of gold and other metals.

2500 w.

Bucket Dredging for Tin in Federated Malay States.
HARRY D. GRIFFITHS.
Mining Magazine Dec. 1916. Serial, 1st part.
Dredging operations, methods, conditions, etc. Ills.
6300 w.

Australian Practice in PumpDredging.
ARTHUR H.P. MOLINE.
Mining Magazine July, 1917.
Experience of a system of treating alluvial deposits containing tin or gold. Ills. 9500 w.

Air Transport of Dredges in New Guinea.
-
Engineering and Mining Journal, vol. 130, no. 8, Oct. 23, 1930, p. 379, 3 figs.
Bulolo Gold Dredging, Ltd., is developing tract; Guinea Airways, Ltd., has established direct 32 1/2 mi. airline between Salamoa, on east coast, and Wau, at gold fields; line will be used primarily for transporting heavy mining equipment and supplies; 3 special G31 Junkers airplanes ready for service before end of year, three 450 hp. aircolled BristolJupiter engines of each will produce fullload speed of 115 m.p.h.; duralumin and sheet steel used for struts and for parts not exposed to particular stress; electron and silumin for pieces of unusual shape.

Air Transportation of Gold Dredges in New Guinea,.
C.A. BANKS.
Institution of Mining and Metallurgy Bul n 334 and 335. July 1932 16 p and(discussion) Aug p. 18 supp plates; see also Engineer v 154 n 3994 July 29 1932 p 1078; Far Eastern Review v 28 n 10 Oct. 1932 p 4825 and Aircraft Eng v 4 n 44 Oct 1932 p 2613.
Data on proven dredging area of 4 1/2 mi of Bulolo riverbed and flats, 35 mi from coast; coast of 90 mi road to transport two dredges would be about $1,000,000 and construction would require 1 to 1 1/2 years; 2 Junkers G31 airplanes used; details of procedure; comparative cost data.

Bulolo Golddredging Enterprise.
F.W. GRIFFIN.
Mining and Metallurgy v 13 n 312 Dec 1932 p 528 and 530.
Description of enterprise on island of New Guinea, with data similar to that in paper by C.A.BANKS.

Transporting Gold Dredges by Aeroplane.

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Chemical Engineering and Mining Review v 25 n 294 Mar 6 1933 p 1857.
Historical outline of gold exploration and development in Mandated Territory of New Guinea; activities of Bulolo Gold Dredging Ltd., Guinea Gold N.L. and Guinea Airways, Ltd.; transportation of freight by airplane; features of dredging equipment; gold production statistics; compare paper by C.A. BANKS, covering similar ground.

Air Transport of Mine Equipment, Supplies and Personnel.
A. DRESEL.
Engineering and Mining Journal v 134 n 5 May 1933 p 2012.
Notes by engineer of Junkers Flugzeugwerke AG of Dessau, Germany, supplementing paper by C.A. BANKS.

Revival of Gold Dredging in Ovens River Valley, Victoria.
H.S. ELFORD.
Chemical Engineering and Mining Review v 26 n 304 Jan 1934 p 1538.
Objections to granting of leases, because of river pollution, destruction of valuable land, silting of river and erosion of river; growing pines on dredge tailings; modern methods of resoiling.

Adelong Dredge.
H.S. ELFORD.
Chemical Engineering and Mining Review v 27 n 318 Apr 8 1935 p 23741.
Construction features of allsteel dredge operating near Bright in Victoria, Australia, since Nov 1933; hull 111 ft long, 38 ft 9 in. wide and 7 ft deep. ladder, 76 ft between centers, designed to dig 35 ft below water line; new bucket band of 64 buckets, each 7 1/2 cu ft capacity, installed in Aug 1934; electric power; operating and cleanup practice; costs.

Tiveri Gold Dredge.
-
Chemical Engineering and Mining Review v 29 n 340 Jan 8 1937 p 1445.
Description of dredge on Lakekanu goldfield, Papua;steel pontoon 50 ft. long, 20 ft wide, 3 ft deep; bucket band of 34 buckets 1 1/4 cu ft each, capable of digging 15 ft below water level, digs 13,000 cu yd monthly; operating and financial results for 1935 and 1936; total cost of dredge £5,763.

Treatment of Low Grade GoldTin Concentrate.
G.B. O'MALLEY.
Chemical Engineering and Mining Review v 29 n 341 Feb 8 1937 p 1868.
Description of gold recovery and tin concentrate plant of Cocks Eldorado dredge, operating at Eldorado, Victoria, Australia; low grade concentrate produced on dredge and subsequently treated in "tin shed" on shore; flow sheet.

Pontoon of Australia's Largest Dredge.
-
Chemical Engineering and Mining Review v 29 n 342 Mar 8 1937 p 222.
Illustration of pontoon, with brief description of dredge of Wellington Alluvials Ltd. designed to operate in Macquarie river in New South Wales, pontoon 212 ft.long 68 ft wide and 13 ft. deep with well 9 ft. wide; band of 115 buckets; each 14 cu ft. to dig 75 ft. below paddock level and expected to dig 300,000 cu yd monthly; leaves recoverable value 7 1/2 d per cu yd with gold at L4 (Australian) per fine ounce.

Air Transportation and Operation of Gold Dredges in New Guinea.
C.A. BANKS.
Institution of Mining and Metallurgy Bul n 396 and 398 Sept. 1937 9 p and supp plates and Nov (discussion) p 212.
Object of present paper is to supplement and bring up-todate description as given in issues of July and Aug 1932, figures on materials; moved during 4 1/2 yr; data on 4 dredges operating; gold production costs.

Gold Dredging on Macquari River.
-
Industrial Australian and Mining Standard v 92 n 2251 Oct. 1 1937 p 2935.
Notes on alluvial fields near Wellington, New South Wales, and construction progress on dredge of Wellington Alluvials, Ltd., designed to dig and treat 3,000,000 cy yd of overburden and goldbearing gravel per annum; 110 buckets each of 14 cu ft capacity; bucket ladder 158 ft long; dredge will effectively dig to depth of 75 ft below paddock water level, and about 30 ft above water level; treatment plant; handling of overburden; mooring winch, ladder hoist; electrical equipment.

Application of Jigs in Placer Mining Operations.

D.N. VEDENSKY.
Mining Congress Journal v 24 n 5 May 1938 p 847 and 98.
Use of jigs,suggested by R.H. RICHARDS in 1907, was later given tryout on large scale in California; increased recoveries obtained by Bulolo Gold Dredging Co., in New Guinea in 1932 after installation of jigs, has resulted in expanded application determination of tailing losses; sampling methods; typical flow sheets.

Gold Dredging in Australia.
H.S. ELFORD.
Mining and Quarry Engineering v 3 n 10 Oct 1938 p 3738.
Causes in decline of bucket dredging for gold since World War; stimulus given by rise in gold price; details of eight gold dredging companies in New South Wales and Victoria; comment on three other properties being equipped.

Harrietville Dredge Construction Proceeds.
-
Chemical Engineering and Mining Review v 33 n 391 Apr 10 1941 p 1978.
Progress notes on building of dredge at Harrietville, near Bright, Victoria; capacity will be 350,000 cu yd per month; pontoon 300 ft long and 72 ft wide; 20 cu ft buckets; digging capacity 130 ft below water level; gold saving appliances.

Tronoh Company's New Harrietville Dredge.
F.W. VINCENT.
Mining Journal (Lond) v 219 n 5591 Oct 17 1942 p 4967.
Features of dredge described in Chemical Engineering and Mining Review Apr 10 1941, as then being under construction; work is nearing completion; data on leases, etc. From Mining and GeologicalJ (date not specified) published by Victorian Dept Mines.

Operations of Victoria Gold Dredging Co. N.L.
-
Chemical Engineering and Mining Review v 38 n 446 Nov 10 1945 p 3940.
Description of dredge in operation at Newstead, Victoria; steel pontoon 112 ft long, 52 ft wide, and 8 ft 9 in deep; girder type bucket ladder, 72 ft between tumblers, capable of digging 27 ft below water level and bank 16 ft above paddock water level; buckets 9 1/2 cu ft capacity, dumping rate 21 per min; electric power; company has treated 15,425,700 cu yd for recovery of 3.1 gr. per cu yd; resoiling; costs.

Reequipping and Repairing Bulolo's Dredges.

-
Chemical Engineering and Mining Review v 38 n 448 Jan 10 1946 p 1158.
Within period of 12 months it is hoped that Nos. 1, 2, 3 and 7 of eight dredges of Bulolo Gold Dredging in New Guinea will be in operation again; remainder will be placed in commission as soon as possible thereafter; damage by enemy action and "Scorched Earth" policy; details of dredge fleet yields and reserves; reequipment plans.

Expansion of Gold Dredging in Australia.
-
Chemical Engineering and Mining Review v 39 n 12 Sept 10, 1947 p 4516.
Editorial Staff reports three new areas to be worked; new dredge to be built; record of Victoria Gold Dredging Co; resoiling results.

Australia's Largest Mining Dredge.
C. LYNCH.
Western Miner v 21 n 2 Feb 1948 p 47; see also Mech World v 123 n 3188 Feb 20 1948 p 199200.
Descriptive and dimensional data on dredge of Tronoh Finance Co of London at Harrietville, Victoria; in 27 weeks to Guly 1947, 1,240,500 cu yd were treated for 1989 oz gold, average of 0.77 grains per cu yd; steel hull is 300 ft long; dredge was designed to dig to 130 ft and to treat 4,250,000 cu yd year; it is electrically operated.

Operations of Bulolo Gold Dredging Ltd.
H.D. DUNKIN.
Chemical Engineering and Mining Review v 42 n 5, 6, 7, 8. Feb 10 1950 p 17789, Mar 20 p 22234, Apr 10 p 26979, May 10 p 30818.
Eight dredges have recovered 1,500,000 oz gold and 680,000 oz silver from 148,000,000 cu yd of alluvium; review of early history and development; reconstruction after war damage of 1942; estimated gravel reserves include 13,500,000 cu yd that will ultimately be handled by hydraulic equipment, power supplies, workshops,transport services, and timber milling operations described; outline of organization.

Dredging Operations by Wellington Alluvials Ltd.
J.H. BURFORD.
Chemical Engineering and Mining Review v 49 n 5 Feb 15 1957 p 15760.

Dredging operations in Macquarie River valley; dredge was designed to dig and treat 3,000,000 cu yd of overburden and gold bearing gravel per annum; total digging range is 105 ft; gold treatment plant; resoiling operations restore condition of dredged land.

**GOLD PLACERS** Mining Method Dredging Canada B.C.

Gold Dredging in British Columbia.
R. LUID WATSON.
Mines and Minerals Aug., 1900.
An illustrated description of the dredging plant and methods of operation used on the Fraser River. 2500 w.

GoldDredging Possibilities on the North Thompson River Near Kamloops, B.C.
JOHN REDMOND.
British Columbia Mining Record Sept. 1901.
Discusses the possibility of profitable dredging. 2000 w.

A Few Notes Upon Gold Dredging.
F. SATCHELL CLARKE.
Canadian Mining Review Feb. 28, 1902.
Gives some account of gold dredging in British Columbia, the types of dredges used, their operation, etc. 4000 w.

Dredge Mining in British Columbia.
WILLIAM M. BREWER.
British Columbia Mining Record Aug, 1903.
Discusses briefly the causes of the unsatisfactory results obtained. 1500 w.

Dredging for Gold in British Columbia.
MINISTER OF MINES.
British Columbia Mining Record June,1905.
Notes from the annual report of the MINISTER OF MINES. 2800 w.

The Fraser as a Dredging Field.
H.G. STRINGER.
Mining Journal March 16, 1907.
An account of this river as a gold producer, and the attempts at dredging. Ills. 2200 w.

Gold Dredging in British Columbia.
ARTHUR E. HEPBURN.
Journal of the Canadian Mining Institute1909.
Compares conditions with those existing in other countries, indicating the causes for the nonsuccess. Ills. 3000 w.

Gold Dredging Possibilities in the Barkerville Area, British Columbia.
W.A. JOHNSTON.
Canadian Institute of Mining and Metallurgy Bulletin, no.118, Feb. 1922, pp. 151167.
Draws attention to possibilities of gold dredging on

Antler and Williams creeks in Barkerville area, and describes general character of placers and their associated deposits.

Dragline Gold Dredging.
G.A. COLLINS.
Western Miner v 18 n 2 Feb 1945 p 326.
History of "Doodlebug" dredge, using drag line shovel and floating washing plant; design and operating functions; operating procedure; description of experience in dragline dredging in Cariboo district of British Columbia.

Placer Mining by Dragline and Dredge.
G.A. COLLINS.
Western Miner v 18 n 10 Oct 1945 p 7881.
Dragline dredging is largely outgrowth of depression of 19291935, when necessity prompted some California contractors who had dirt moving equipment and nothing for it to do; this came at time of increased in price for gold; deposits were easily accessible to such mechanical equipment; discussion of possibilities in Cariboo region of British Columbia; conditions limiting this type of operation; advantages; general factors. Before Prospecting Session, Canadian Institute of Mining and Metallurgy.

Dredging at Similkameen  Atkinson Dredging Company.
H.R. RICE.
Canadian Mining Journal v 69 n 7 July 1948 p 6671.
Description of enterprise winning gravels of Similkameen and Tulameen Rivers in British Columbia; geology of area; history of gold placer mines; holdings of claim leases; major equipment in use is arranged on "drag-line dredging" principle, in which washing plant floats on steel pontoons and excavating is done with separate unit; flowsheet; platinum metals; are recovered from "black sands" concentrate.

Historic Cariboo.
D.D. FRASER.
Western Miner v 22 n 4 Apr 1949 p 989.
Descriptive review; dredging operators seek alluvial deposits.

**GOLD PLACER** Mining Method Dredging Canada N.W.T.

Tailing Dredge on Great Bear Lake.
H.R. RICE.
Canadian Mining Journal v 74 n 7 July 1953 p 5961.
Situated 27 mi south of Arctic Circle, and where ice forms to thicknesses of six and seven ft., dredge operates throughout year, floating in pool kept melted by waste water derived from mine and plant; pumping equipment, temperature conditions, ice inhibition, and dredging operation reviewed.

**GOLD PLACER** Mining Method Dredging Canada Yukon

Yukon Dredging.
R.H. STRETCH.
Mining Industry and Review May 19, 1898.
Considers it exceedingly questionable whether such operations in Alaska would meet with success, and gives reasons for the opinion. 1200 w.

The Stewart River Gold Dredge.
A.W. ROBINSON.
Canadian Mining Review March 31, 1903.
A brief description, with illustrations. 2800 w.

The Opportunities for Gold Dredging in the Yukon.
C.B. BOLGER.
Mining and Scientific Press May 14, 1904.
States conditions in this region and describes a dredger which worked successfully. 1000 w.

Dredging in the Yukon.
T.A. RICKARD.
Mining and Scientific Press Aug. 29, 1908.
Data gathered by personal observation. Ills. 3000 w.

New Klondike Dredges.
GUY A.R. LEWINGTON.
Mining and Scientific Press Jan. 7, 1911.
Illustrates and describes Canadian No. 2, the largest gold dredge operating in the world. 1800 w.

Gold Dredging in Alaska and the Yukon.
CHARLES JANIN.
Mining Magazine Jan. 1912.
Map and illustrated account of operations. 1600 w.

Development of Dredging in Yukon Territory.
O.B. PERRY.
Engineering and Mining Journal - Dec. 25, 1915.
Read before the Can. Min. Inst. Problems and their solution. Ills. 3500 w.

Electric Dredging on the Yukon.
ALLEN E. RANSOM.
Electrical Journal, vol. 17, no. 3, March 1920 p. 8690, 13 figs.
Dredge and characteristics and operating data.

Solving Mechanical Problems in Dredging.
L.L. ROGERS.
Western Miner v 19 n 7 July 1946 p 423.
Brief illustrated notes on problems dealt with in machine shop Yukon Consolidated Gold Corp. on Bear Creek on Klondike River between Hunker and Bonanza Creeks.

Dredging in Far North.
-
Mining World v 8 n 12 Nov 1946 p 448.
Yukon Consolidated, largest operator in Klondike region, is now working six of its ten dredges as compared with only three in 1944 when shortages of labor and materials; forced drastic curtailment; map showing dredge locations; notes on practice; dredge data.

HomeMade Dawson Dredge.
A.A. GILLESPIE.
Western Miner v 21 n 5 May 1948 p 467.
Narrative of experimental dredge built by C.RENDELL and T. RENDELL in Dawson, Yukon Territory, later towing it to Stewart River and elsewhere; description of building another dredge for working Stewart River bars.

**GOLD PLACER** Mining Method Dredging Central America

On Horseback in Western Chihuahua.
MARK R. LAMB.
Engineering and Mining Journal July 25, 1908.
An account of travels among mining camps where sectionalized machinery is the rule. Ills. 5000 w.

A Successful Gold Dredging Enterprise in Guatemala.
A.C. LUDLUM.
Engineering and Mining Journal. Press, vol. 121, no. 14, Apr. 3, 1926, pp.557559, 4 figs.
Production proves extreme reliability of drill sampling; yield 21.24 cts. per cu. yd.; operating cost 9.26 cts.

**GOLD PLACER** Mining Method Dredging Europe

Gold Dredging in Europe (Die Goldbaggerie in Europe).
L. ST. RAINER.
Oesterreichische Zeitschrift für Berg and Hüttenwesen
April 27, 1907. Serial.
Read before the Mining and Metallurgical Section of the
Austrian Society of Engineers and
Architects. Discusses the goldbearing
streams and the dredging operations. 2800 w.

Building a Placer Mining Dredge with Electric Power
Plant in Portugal.
H.G. PEAKE.
Mining and Scientific Press Oct. 3, 1914.
Describes a plant for the mining of placer tin. Ills.
1200 w.

**GOLD PLACER** Mining Method Dredging General

The Ball Gold Dredger.
-
Engineer, Lond Oct. 8, 1897.
Describes a combination dredger and gold saver in use in South Africa and in Madagascar. 2300 w.

Gold Dredging and Gold Saving.
PERRY F. NURSEY.
Industries and Iron Oct. 29,1897.
Describes the invention of Charles Ball for automatically securing the gold. Also reviews the systems of dredging which have been used from the earliest time to the present. 1800 w.

Notes on Dredging for Gold.
JOHN W. GRAY.
Mining and Scientific Press Nov. 13, 1897.
Information of dredge used and the success of the work both in America and New Zealand. 2300 w.
A New Form of Dredge for RiverBed Placers.
J.M. SWEENEY.
Engineering and Mining Journal Dec. 25, 1897.
Describes a proposed method for cleaning up the bedrock of streams containing gold deposits which claims to overcome the objections to known methods, and can also be used for any deposit of gravel or sand. Ill. 1600 w.

Electrically Operated Power Dredges.
-
Electrical World March 5, 1898.
Illustrated description of machinery for mining developed by the Bennett Amalgamator Manufacturing Co. 2000 w.

Dredging for Gold.
ROBERT NORMAN BELL.
Mines and Minerals March, 1899.
The construction of dredges which successfully work gravel which cannot be profitably handled by other means. 1600 w.

Dredging for Gold.
C.C. LONGRIDGE.
Engineering April 21, 1899. Serial.
Gives a review of the history of gold dredging, the various dredges used, etc., in part first.

Dredging for Gold.
-
Australian Mining Standard (special) June 1 1899.

Gives detailed account of the evolution of the modern dredge as used for gold recovery. Ill. 5200 w.

Gold Dredging.
JOHN M. SWEENEY.
Mines and Minerals July, 1899.
Illustrated description of devices for obtaining gold from placer deposits with a limited water supply, giving results of experiments and practical trials. 3800 w.

GoldBearing Gravels of the West.
ALEXANDER McDOUGALL.
Mining and Scientific Press July 15, 1899.
Condensed from paper by Alexander McDougall. Illustrates and describes the McDougall plant for placer mining. 1400 w.

Alexander McDougall's Dredging System.
-
Modern Machine July, 1899.
Illustrates and describes a dredging machine for use in placer mining. 2100 w.

Dredging: Its Present and Future Outlook.
J.G. HYDE.
New Zealand Mines Record Nov. 16, 1899.
On the chief difficulties yet to be overcome in gold dredging. 1000 w.

Hydraulic Dredging, or the Working of Deep Alluvial Deposits by Elevation with Centrifugal Pumps.
A.S. KENYON.
Transactions of the Australian Institute of Mining Engineers Vol. V.
Illustrates and describes the system in use. 3000 w.

Dredging for Gold.
THEO. F. VAN WAGENEN.
Mining and Scientific Press Jan. 27, 1900. Serial.
Considers the problem of gold recovery by dredging, the conditions, etc. Ill.

A Modern Dredger Mining Plant.
-
Mining and Scientific Press March 24, 1900.
Illustrates and describes dredgers the motors of which are operated by alternating current. 700 w.

Gold Dredging.
R.H. POSTLETHWAITE.
Mines and Minerals March, 1900.
Discusses conditions necessary for a dredge to fulfil in order to operate successfully. 2200 w.

Dredging for Gold.
J.W.H. PIPER.
Australian Mining Standard May 10, 1900.
On the advantage of the bucketdredge as a gold producer. 2100 w.

Spoon and Grab Dredges.
J.W. JAFFRAY.
Australian Mining Standard July 28, 1900.
Read before the N.S.W. Chamber of Mines. Discusses the efficiency and economy of these dredges. 2800 w.

Notes on Gold Dredging.
J.W.H. PIPER.
British Columbia Mining Record Aug. 1900.
Read before the N.S.W. Chamber of Mines. An illustrated article, showing the great advantage of the bucket dredge as a gold producer. 1700 w.

The Efficiency of GoldSaving Appliances on Dredges.
J.B. SMITH.
New Zealand Mines Record Nov. 16, 1900.
Discusses the losses and improvements needed, and the importance of a skillful winchman. 1000 w.

Ridland's Patent Pneumatic RockScraper.
J.A. MILLER.
New Zealand Mines Record Nov. 16, 1900.
Illustrated description of a machine designed for getting gold out of a hard crevassy rock by means of a tunnel on the diving bell principle. Its operation is also explained. 1200 w.

Suggestions on Inland Gold Dredging.
A.C. ETESON.
Mining and Scientific Press Dec. 22, 1900.
Suggestions on the practical working of a dredger. Ill. 1000 w.

Dredging Fine Gold.
FRED. SHURY.
New Zealand Mines Record Feb. 16, 1901.
Explains how the mixingtank system can be successfully worked in dredging beach gold. Ill.1700 w.

Gold Dredging.
F.C. NETTLETON.
Mines and Minerals April, 1901.
Discusses the things which should be considered in installing a plant, some of the difficulties and how they may be met. 2000 w.

Gold Dredges Their Construction and Manipulation.
DAVID K. BLAIR.
Canadian Mining Review Nov. 30, 1902. Serial. 1st part.

Read before the N.S.W. Chamber of Mines. A description of the "Bucket Gold Dredge," the general principles of construction and manipulation, the accidents liable, with their cause, effect and remedy. 9000 w.

The Development of GoldDredging in the United States.
RALPH L. MONTAGUE, in "Mining Journal," London.
New Zealand Mines Record Dec. 16, 1902.
A comparison with New Zealand methods and costs. 2800 w.

The Development of GoldDredging in the United States.
RALPH L. MONTAGUE, in London "Mining Journal."
Canadian Mining Review Feb. 28, 1903.
Describes the type of dredge used, stating its advantages, and comparing with the New Zealand type; also gives brief history of the undertakings in the United States. 3000 w.

Peck's Centrifugal Tailings Elevator.
F. DANVERS POWER.
Engineering and Mining Journal May 23,1903.
Illustrated description of a new tailings elevator designed to supersede the heavy and costly ladder type used on gold dredges. States the advantages claimed. 1000 w.

Present Practice in Gold Dredging.
R.H. POSTLETHWAITE.
Mines and Minerals May, 1903.
Describes some of the newer devices which experience has shown to be advantageous. 2200 w.

The Electrical Equipment of a Gold Dredge.
RALPH L. MONTAGUE.
Transactions of the American Institute of Electrical Engineers July 1903.
Explains use and object of these dredges and describes the electrical equipment. Ill. 3800 w.

Gold Dredging.
F. WINTER TAYLOR.
Engineering and Mining Journal Jan. 14,1904.
Describes the methods used, types of dredges, etc. Ill. 2000 w.

Gold Dredging Under Difficult Conditions.
F. WINTER TAYLOR.
Engineering and Mining Journal March 24, 1904.
Discusses the design of a dredge that is to be worked under exceptionally hard conditions. Gives plan. 2500 w.

The Gold Dredging Industry.

F.W. GRIFFIN.
Transactions Col. Mining Institute
Mining and Scientific Press April 16, 1904.
Information concerning dredges and dredging, and the rapid development of this business. 3000 w.

Gold Dredging and Prospecting.
ROBERT H. POSTLETHWAITE.
Mining Magazine Jan. 1905.
A short illustrated review of this industry under existing conditions. 4000 w.

The TwentiethCentury Gold Ships and their Cargoes.
ALEX. DEL MAR.
The Engineering Magazine July, 1905.
A graphic statement of the progress and possibilities of gold dredging, the general requirements of dredge construction and operation, and the prospective effect on the world's output of gold. Ills. 3000 w.

Dredging I. Prospecting and Historical.
J.P. HUTCHINS.
Engineering and Mining Journal July 15, 1905. Serial. 1st part.
Reviews the history of dredge mining as introductory to a discussion of present practice. 1500 w.

Application of Electric Power to Gold Dredging.
J.F. DOSTAL.
Mining and Scientific Press Oct. 7, 1905.
Read at meeting of the Colorado Elec. Lgt., Power and Ry. Assn. Describes the object and method of dredging and the schemes for regaining the gold. Also describes the dredgers and the electrical equipment of one of them. 2200 w.

An Improved Dipper Dredge.
F.F. COLEMAN.
Engineering and Mining Journal Nov. 25, 1905.
Illustrated description of a new dipper dredge made by the AllisChalmers Company.1000 w.

Gold Dredges.
F.F. COLEMAN.
Marine Engineering Jan. 1906.
Describes the general character of the dredge, and the work it is to do, illustrating types, and explaining the kind of work for which each is adapted. 2000 w.

Gold Dredging in 1905.
J.P. HUTCHINS.
Engineering and Mining Journal Jan. 20, 1906.
A review of the progress in this business, the failures and the causes, practice and dredge design, sampling, etc. 3000 w.

A New Gold Dredge.
GEORGE L. HURST.
Mining and Scientific Press Jan. 27, 1906.
Illustrated description of a new dredge recently built at El Dorado, on the American River. Dredging is possible to a total depth of 50 ft. 1500 w.

The BucketDredging Industry.
E. SEABORN MARKS and GERALD N. MARKS.
Institute of Mining and Metallurgy April 19, 1906.
Discusses bucketdredges and their construction, alluvial, deposits suited to bucketdredging, and the requisite conditions for successful operations; dredging operations and costs. Ills. 11000 w.

The BucketDredging Industry.
E. SEABORN MARKS and GERALD N. MARKS.
Institution of Mining and Metallurgy April 19, 1906.
Discussion of this paper. 6000 w.

The Robinson GoldDredger.
-
Engineering May 25, 1906.
Illustrates and describes a new golddredger of simple design, and its working. 1700 w.

Economy in Mining with Modern GoldDredges.
GEORGE E. WALSH.
Mining World May 19, 1906.
Describes the modern gold dredging plant and its working, giving information concerning the cost for the plant, the working costs, etc. Ills. 2000 w.

Gold Dredging by Electric Power.
FRANK C. PERKINS.
Electrical Engineer, London Aug. 17, 1906.
Illustrates and describes method used in the west of applying electrical energy to this work. 1200 w.

A New American Gold Dredge.
-
Engineering News Nov. 1, 1906.
Illustrates and describes details of the bucket used in a new dredge of the elevator type. 1200 w.

The Weaver Dredging System for the Recovery of Fine Gold.
-
Mining Reporter Nov. 1, 1906.
Describes this system which is meeting with marked success in Idaho. 1500 w.

Gold Dredging in 1906.

J.P. HUTCHINS.
Engineering and Mining Journal  Jan. 5, 1907.
An account of the testing of dredging ground, expansion, methods, dredge design, cost, etc. 3000 w.

Recent Applications of Gold Dredging Machinery.
FRANCIS C. NICHOLAS.
Mining World  March 23, 1907.
Illustrates and describes a special dredge designed to save both placer gold and diamonds. Suggests its application in other fields. 900 w.

Modern Gold Dredging Practice and Equipment.
HORACE J. CLARK.
Mining World  Nov. 30, 1907.
An illustrated discussion of the dredging of shallow bars and beds of rivers as a commercial possibility. 1000 w.

Gold Dredging in 1907.
JOHN POWER HUTCHINS.
Engineering and Mining Journal  Jan. 4, 1908.
Discusses the attempts made to dredge frozen ground, variation in practice,steamshovel dredging, etc. 2200 w.

Developments in Gold Dredging During 1908.
JOHN POWER HUTCHINS.
Engineering and Mining Journal  Jan. 23, 1908.
Review of the year reporting great activity in California and progress in the Klondike. 4000 w.

Recent Developments in Gold Dredging.
FRANK W. GRIFFIN.
Mining and Scientific Press  Aug. 15,1908.
An illustrated review of progress. 2500 w.

The Method and Cost of Gold Dredging by the Elevating Bucket.
-
Engineering and Contracting  Nov. 4, 1908.
Describes its use, reporting costs. Ills. 2000 w.

The Recovery of Values from River Bottoms.
W.D. EGILBERT.
Mining World  Jan. 16, 1909.
Describes the DuBois suction dredge of the latest type, and its operation. 2000 w.

Development of Dredges for Placer Deposits.
GEORGE B. MASSEY, II.
Engineering and Mining Journal  April 24, 1909.
The evolution of the dredge is reviewed. Ills. 1500 w.

Hydraulic Dredging for GoldBearing Gravels.
HENRY G. GRANGER.

Bulletin of the American Institute of Mining Engineers
April 1909.
Describes an effective suction dredge, discusses special conditions of golddredging, reviews the history, gives conclusions. Gives specifications for a hydraulic golddredge. Ills. 7000 w.

Modern Gold Placer Dredging.
GEORGE B. MASSEY, 2nd.
Cassier's Mag Aug. 1909.
An illustrated article considering details necessary to make a dredging enterprise successful, and the important points about the property. 3500 w.

Development of Modern Gold Dredgers.
-
Engineer,Lond Sept. 10, 1909.
Describes special features of a propulsion screen gold dredger for Peru. 700 w.

Future of Dredging.
CHARLES JANIN.
Mining and Scientific Press Dec. 31, 1910.
Briefly reviews dredging operations in various countries, and discusses future prospects. 3500 w.

Type No. I of the New Era Gold Dredge.
E.S. BENNETT.
Mining World Jan. 28, 1911.
Illustrated description. 1200 w.

Review of Gold Dredging in 1911.
CHARLES JANIN.
Mining and Scientific Press Jan. 13, 1912.
Reviews work in various states. Ills. 2500 w.

Gold Dredging Up to Date.
ARTHUR LAKES.
Mines and Minerals July 1912.
Reviews the history of dredging in America, giving costs and conditions in various regions. Ills. 4000 w.

Gold Dredging Up to Date.
ARTHUR LAKES.
Mines and Minerals Aug. 1912.
On the conditions to be noted in selecting a field for gold dredging and their influence on the cost of the work. Ills 3200 w.

The Evolution of Gold Dredging Machinery.
A.H. MARTIN.
Machinery, N Y Jan. 1913.

Reviews, briefly, the development of the gold dredge and its equipment. 1200 w.

Review of Gold Dredging in 1912.
CHARLES JANIN.
Mining and Scientific Press Jan. 4, 1913 (Special).
Information concerning the work in the United States outside California,Alaska and the Yukon Territory. Ills. 2500 w.

Gold Dredging in 1912.
ROBERT E. CRANSTON.
Engineering and Mining Journal Jan. 11, 1913.
Reports little advance during the past year, reviewing operations in different fields. Map. 1800 w.

Mining Gold by Proxy.
ARTHUR L. DAHL.
Scientific American Sup May 24, 1913.
Illustrated description of a gold dredge and its operation. 1000 w.

Gold Dredging in 1913.
ROBERT E. CRANSTON.
Engineering and Mining Journal Jan. 10,1914.
A report of dredge operations during the year. 2500 w.

Gold Dredging in the United States.
CHARLES JANIN.
Mining and Scientific Press Jan. 10, 1914.
Reports for past year on dredging in California, Idaho, Montana, Colorado and Seward Peninsula. Ills. 3800 w.

Placer Mining with Bucket Dredges.
W.M. HOEN.
Electric Journal March, 1914.
Illustrated description of the dredge and the application of electric power to its operation. 2000 w.

Recovery of Gold in Dredging.
CHARLES JANIN.
Mining and Scientific Press Nov. 7, 1914.
Method of estimating the goldsaving and the gold content of a property. 3500 w.

Application of Jigs to Gold Dredging.
J.W. NEIL.
Mining and Scientific Press Nov. 28, 1914.
Detailed description of experiments and the improved recovery. Ills. 2500 w.

Discussion on "Application of Electric Motors to Gold Dredges" (Rosenblatt), Spokane, Wash., Sept. 11, 1914. 4500 w.
ROSENBLATT.
Proceeding of the American Institute of Electrical

Engineers Jan. 1915.

Gold Dredging in 1914.
ROBERT E. CRANSTON.
Engineering and Mining Journal Jan. 9, 1915.
An account of work in California and other states, Alaska, the Yukon, and South America. 1500 w.

Dredging Operations at the Beginning of 1916.
-
Mining and Engineering World - Jan. 1, 1916.
Editorial review. Ills. 6500 w.

Gold Dredging in 1915.
ROBERT E. CRANSTON.
Engineering and Mining Journal Jan. 8, 1916.
Review of work and conditions. 2500 w.

GoldSaving on Dredges.
HOWARD D. SMITH.
Mining and Scientific Press Aug. 5, 1916.
Method of concentration that includes jibs and a Hardinge mill. Ills. 1200 w.

Dredging for Minerals.
F.W. PAYNE.
Mining and Engineering Review Oct. 5, 1916.
Retrospective and prospective. 1200 w.

Dredging for Minerals: Past and Present.
F.W. PAYNE.
Mining and Engineering World Dec. 16, 1916.
Historical review. 1500 w.

Mineral Dredging Operations of the World.
-
Mining and Engineering World Jan. 6, 1917.
Brief review. Ills. 6000 w.

Commonsense of Gold Dredging.
A.C. LUDLUM.
Engineering and Mining Journal March 3, 1917.
Review of the essentials preliminary to a successful golddredging operation. Ills. 2000 w.

Three Big American GoldDredges.
-
Mining Magazine, June 1917.
Details of design. Ills. 3500 w.

Recovery of Platinum in GoldDredging.
JAMES W. NEILL.
Mining and Scientific Press Dec. 8, 1917.

Methods of recovery causes of less; but improvements in concentration. Ills. 2500 w.

Gold Dredging in the United States.
CHARLES JANIN.
US Bureau of Mines Bul. 127.
Summarizes the development of the gold dredge, giving the essential features of presentday dredges and methods. Ills. 214 pp.

Use of Electricity on Gold Dredges.
-
Electrical Review (London), vol. 73 no. 23, Dec. 7. 1918, pp. 881883, 3 figs.
Description of typical dredge; value of centralstation service for work; points to observe in selecting apparatus required; description of electrical equipment used.

Largest Capacity GoldMining Dredge in the World.
H.G. PEAKE.
Engineering and Mining Journal, vol. 109, no. 20, May 15, 1920, pp. 11061109, 3 figs.
Describes the Estabrook dredge, with largest buckets built for placer mining, erected at considerable distance from railroad, necessitating heavy haulage over mountain roads; wooden hull constructed from timber sawn on ground.

The Dependence of the Loss of Gold at the Dredging on the Type and Dimension of the Dredges.
E. BARBOTDEMARNI.
Mining Journal,(Russian), vol. 98, no. 69, JuneSept 1922, pp. 244255, 1 fig. (In Russian)

A New Type of Gold Dredge.
JAMES W. NEILL.
Pacific Min. News of Engineering and Mining Journal. Press, vol. 2, no. 3, Mar. 1923, pp. 7375, 3 figs. Application of dragscraper excavator to gold dredging is suggested in new type of gold dredge, objective of design of which is to substitute dragscraper bucket for bucket line.

Electrical Equipment of Sand and Gravel Dredges.
J.E. BORLAND.
Electric Journal, vol. 20, no. 11, Nov. 1923, pp. 390-395, 14 figs.
Describes two electrically operated dredges for sand and gravel service and their operation.

Bucket Dredge for Alluvial Gold.
-
Engineering, vol. 119, no. 3101, June 5, 1925, pp. 697-699, 21 figs. partly on supp. plate.

Ladder dredge with closeconnected buckets, furnished with concentrating appliances but dependent for its small amount of locomotion on being hauled by head and side lines.

Dredge Electrification.
C.T. PEARCE.
La. Eng. Soc. Proc., vol 16, no. 6, Dec. 1930, pp. 219228 and (discussion) 228231. Advantages of electrification of different types of dredges; information concerning proper type of electrical equipment for each dredge application; outstanding advantage of electric drive as compared to steam engine is its superior economy when supplied with shore power or where utilizing steam turbine or Diesel engine as prime mover; another advantage is its unusual flexibility and ease of operation and control.

Electricity for Dredges.
H. HEINRICH.
Electrical Journal, vol. 28, no. 6, June 1931, pp. 363-366, 10 figs.
Two common classifications result from nature of work, hydraulic and bucket dredges; one uses suction pipe and rotary cutter, other employs endless bucket chain for digging; economy resulting from electrification, ease of control, and absence of mechanical strain, all combine to create growing demand for electric dredge.

DredgeSluice Efficiency.
B.W. BELLINGER.
Engineering and Mining Journal., vol. 132, no. 9, Nov. 1931, pp. 403404. 1 fig.
Dredging efficiency is percentage of recoverable metal recovered, and not of amount estimated by drilling; example of efficiency test, by weighing platinum and gold recovered from short sections of sluice; comparative results may also be had with different types of riffles, different grades, and different amounts of water.

Operation of Gold Dredges.
R.S. LEWIS.
Canadian Mining Journal v 56 n 3 Mar 1935 p 10610.
Historical outline of development of gold dredges; effect of high specific gravity of pond water, due to mineral matter in suspension; screens; gold saving tables; cleanup tailings disposal; anchoring; digging practice; auxiliary sluices, or "savealls"; cost of dredge may be anywhere from $65,000

to $1,000,000, depending upon details of design; advantages of sectionalized hull made of pontoons.

LargeGold Dredger.
-
Engineer v 160 n 4170 Dec. 13 1935 p 631.
Illustrated description of dredge constructed by Yuba Manufacturing Co. of San Francisco, believed to be world's largest dredger; hull is of allsteel construction 233 ft 9 in long by 68 ft wide and 11 ft 6 in deep; built of plates, angles, and channels; digging ladder, which supports bucket line is of plate girder type; particulars of equipment.

Continued Improvement  Trend in Dredging.
H.A. SAWIN.
Mining Congress Journal, v 23 n 8 Aug 1937 p 1921 and 43.
Discussion by sales engineer of machinery manufacturing company; larger dredges; improved bucket unit design; steel hulls; tailings stackers; gold saving equipment; summary of requisite factors for successful dredging.

Jigging Applied to Gold Dredging.
P. MALOZEMOFF.
Engineering and Mining Journal v 138 n 9 Sept 1937 p 347.
Paper defines, in general terms,some of problems involved in operating jigs on dredges; sketch showing four methods of application; possibility of using flotation to recover fine gold lost by jigs; testing of dredge tailing losses; factors affecting jig installation and jig recovery;jigging practice.

Successful Dragline Dredge.
J.F. MAGEE.
American Institute of Mining and Metallurgical Engineers  Trans v 126 1937 (Metal Min) p 18093 (discussion) 193200.
Indexed in Engineering Index 1936 p 532, from Tech Publ n 757 mtg Feb 1936.

Evolution of "Doodlebug,".
G.L. HOLMES.
Mining Journal (Phoenix, Ariz) v 21 n 11 Oct 30 1937 p 34 and 38.
Types of dredge for small, comparatively shallow and limited areas of placer ground not warranting construction of floating dredge of standard type; earliest rigs "compiled" from contractors' accumulations of used equipment; in some cases, washing apparatus, gold saving tables, and stacker are mounted

on floating hull; in other types they are mounted on skids or crawler treads.

Mining by Means of Dredges.
P.R. LAKE.
Mine and Quarry Engineering v 3 n 12 Dec 1938 p 43741.
Selection and testing of areas with alluvial deposits of gold or of tin ore.

Modern Tendencies in Alluvial Dredge Design.
S.A. WESTROP.
Mining Journal (Lond) v 204 n 5402 Mar 4 1939 p 193.
Motive power; spud or head line operation; overburden removal; buckets; lower tumbler and ladder rollers; ladder construction; upper tumbler and tumbler drive; winch room and controls; treatment plan; wearing parts.

Dragline Dredge of Lord and Bishop Near Valley Springs.
-
Mining Journal (Phoenix, Ariz) v 23 n 5 July 30 1939 p 7 and 36.
Brief description of plant combining Diesel powered, multiple flume gold panning machine or dredge, and Diesel powered 3yd dragline;operating practice; dragline works three 8 hr shifts per day and feeds dredge 1400 to 1500 cu yd of material per shift;operation represents investment of about $90,000; on day shift, 6 men operate entire plant; on night shifts, 3 men are at work.

Reducing Hydraulic Dredge Operation Cost.
B.M. MILLS.
Engineering News  Rec v 124 n 17 Apr 25, 1940 p 6871.
Saving in electric power costs on dredges through use of proper speed control system for main pump drive; comparative description of Kraemer and Scherbius systems of speed control; dredge pump speed characteristics; induction motor drives; comparative power savings; typical installations; selfpowered dredges.

Jig Versus Riffle Concentration in Gold Dredging.
T.D. GALLOWAY.
Engineering and Mining Journal v 141 n 6 June 1940 p 401.
Attention directed to comparative ratios of concentration at various stages; hypothetical case of dredge treating 45,000 cu yd per week is discussed, volumes and ratios in diagram showing approximately what is to be expected in average property in one week's operation; advantages lie with jigs, as they reduce material by stages, in manner

that permits adjustment without remodelling dredge.

Diesel Dredge for Aquatic Gold Mining,.
W. VAN DOORN.
Motorship v 25 n 9 Sept 1940 p 5267.
Dredge "Narino," operated by Compania Minera de Marino; hull measures 155 ft by 70 ft and has draft of 8 1/2 ft; propelled by three Worthington Type DS6, 6 cyl Diesel engines with bore 13 1/4 in. and stroke 17 1/2 in., each developing 500 hp at 360 rpm.

GoldDigging Giants.
O.A. FITZGERALD.
Compressed Air Magazine v 45 n 12 Dec 1940 p 62966301.
Statistical data on gold dredges and dredging operations in various localities; placer mining near Fairbanks, Alaska, where project includes 16,000,000 cu yd of goldbearing gravel; dredging operations at Sunbeam, Idaho, using 8 cu ft dredge to extract gold from 15,000,000 cu yd of gravel in valley of Yankee Fork of Salmon River.

Extending Scope of Placer Dredging.
C.M. ROMANOWITZ and H.A. SAWIN.
American Institute of Mining and Metallurigical Engineers Tech Pub n 1347 for mtg Feb 1941 6 p.
Review of dredge development for alluvial deposits, esp. for gold recovery; deep dredging at Ham-monton, Calif; removal of fines, which tend to slide forward and accumulate in dredge pond; new gold saving tables; length of hull; buckets and other improved equipment; handling large boulders.

Single Bucket Dredge for Shallow Heavy Alluvial.
-
Chemical Engineering and Mining Journal v 33 n 393 June 10, 1941 p 2612.
Brief illustrated description of Becker Hopkins dredge being manufactured in United States by Yuba Manufacturing Co; digging unit consists of 1cu yd bucket built integral with sluicetype boom, which conveys dredged material from bucket to screen; dredge will handle 2000 cy yd daily; cost records from Alaska indicate that field working costs are less than 9c per cu yd; digging depth is 15 ft below water level; 90 hp is required.

Bucket Line Dredge Methods.
N. CLEAVELAND.
Mining Congress Journal v 27 n 11 Nov 1941 p 1922.
Refinements and improvements made in design and supplemental equipment is more widely

employed; field of application of these dredges is also being widened and larger quantities of gravel are being made available; notes on some dredges and their operation in California and Nevada.

Dredging.
C.M. ROMANOWITZ.
Engineering and Mining Journal v 142 n 8 pt 1 Aug. 1941 p 115.
Historical resume of developments of mining dredges;though depths as great as 175 ft below ground level are now being dredged successfully, future will see greater depths dredged at cost comparable to present operations; buckets will reflect radical changes in size and design; material dredged will be more thoroughly sized; other changes predicted.

Dragline Gold Dredging.
G.A. COLLINS.
Canadian Institute of Mining and Metallurgy Trans v 48 1945 p 71725 (Bul n 403 Nov 1945); see also Mining Journal(Lond) v 26 n 5771 Mar 30 1946 p 24851.
Before 18th Annual Mining Inst of College of Mines, Univ Washington, Jan 24 1945; from Western Miner Feb 1945.

Bucket Dredges for Mining.
J.P. GARDEN.
New Zealand Engineering v 4 n 3, 4, Mar 10, 1949 p 152-6, Apr 10 p 2525. Illustrated description of dredge equipped with stone stacker and spud; mooring equipment; data on costs and performance; details of bottom tumbler, bearings, ladder rollers and ladder; data on bucket, drop chute, screens, winches and sources of power.

HighSpeed BucketLines.
C.M. ROMANOWITZ.
Mining World v 22 n 6 July 1960 p 3943.
Improvement and important changes on dredges have increased production, making possible continued operation despite rising costs; dredging operations are being introduced into new areas; optimum production is obtained by varying dredge bucket size and line speed; dredges have highspeed bucket-lines running up to 35 buckets/min; operations are generally continuous.

**GOLD PLACER** Mining Method Dredging New Zealand

River Dredging for Gold.
R.H. POSTLETHWAITE.
Mining and Scientific Press Sept. 4, 1897.
A resume of dredging as carried out in the river Molyneaux, in New Zealand. 1500 w.

Dredging for Gold.
J.B. JAQUET.
Australian Mining Standard Sept. 22, 1898. Serial
Official report of the industry in Otago, N.Z. Ill.

Some Notes on Alluvial Mining in New Zealand. Jno.
W. GRAY.
Mining and Scientific Press Feb. 24, 1899.
Notes taken mainly from information given in the Government report, showing unabated interest in alluvial mining. 1600 w.

Gold Dredging in New Zealand.
W.H. CUTTEN.
New Zealand Mines Record Sept. 16, 1899.
Historical sketch of the dredging industry in Otago, from a paper by W.H. CUTTEN, with tables showing dimensions and cost, operations and returns. 3700 w.

Dredging: Its Present and Future Outlook.
J.G. HYDE.
New Zealand Mines Record Nov. 16, 1899.
From the inspecting engineer's report. Considers the chief difficulties to be overcome, and improvements needed. 1000 w.

The Waiau River as a Gold Dredging Channel.
RO. CARRICK.
New Zealand Mines Record Nov. 16, 1899.
Gives a description of dredging ground peculiar to this basin. 1600 w.

Gold Dredging in New Zealand.
W.M. MACKINNON.
British Columbia Mine Record. Dec. 1899.
Illustrated description of the methods used in the district of Otago. 1500 w.

The Origin and Progress of Gold Dredging in New Zealand.
W.H. CUTTEN.
Engineering Magazine Feb. 1900.
A fully illustrated paper showing the methods of operating the gold dredging apparatus in the waters of New Zealand, and the wonderfully

rich results which have been obtained. 3000 w.

Gold Dredging in New Zealand.
-
Engineering April 13, 1900.
Illustrated description of one of the largest dredges used, and its cost and working. 1800 w.

Gold Dredging in New Zealand.
P.G. MORGAN.
Engineering and Mining Journal Aug.4, 1900. Serial.
Describes the alluvial deposits showing the conditions which led to this industry, giving the history of early attempts at dredging, and describing types of dredges used. Ill.

The Saving of Fine Gold on Dredges.
JOHN HAYES.
New Zealand Mines Record Aug. 16, 1900.
From the report of the Dept. of Mines on the Goldfields of New Zealand, for the year 18991900. Discusses the losses of gold in dredging, and means of overcoming the difficulty. 1500 w.

Gold Dredging Experience in New Zealand.
-
Mining Reporter Sept. 13, 1900.
A description of some working devices, and results of operations. 1000 w.

Notes on GoldDredging in New Zealand.
A.C. PERKINS.
New Zealand Mines Record Nov.16, 1900.
Read at meeting of the N.S.W. Chamber of Mines. The early dredges used are described and the improvements noted; also the manner of working, and the cost per cu. yd. 2800 w.

The GoldDredging Industry in Otago.
-
New Zealand Mines Record April 16, 1901.
Table showing capital, gold obtained, and dividends declared, with remarks on this industry. 2000 w.

Dredging for Gold in New Zealand.
RAYMOND PAYNE.
Engineering and Mining Journal Sept. 28, 1901.
An illustrated account of the methods and success attained. 1900 w.

Another Accident Caused by Oiling Machinery While in Motion.
-

New Zealand Mines Record  July 16, 1902.
Describes frightful accident at Beaumont, Otago, on dredge which the engineer was oiling. 1200 w.

GoldDredging in New Zealand.
C. EDWARD TURNER, in the "Mining Journal," London.
New Zealand Mines Record  Feb. 16, 1903.
An account of its inception, progress and practice. 6000 w.

The Gold Dredging Industry in New Zealand.
WILLIAM WYLIE, in "Trans. Aust. Inst. of Min. Engrs."
Canadian Mining Review  Aug. 31, 1903.
Reviews the development of this industry, methods tried, and describes present practice. 4000 w.

New Zealand Gold Dredges.
-
Engineering and Mining Journal  April 14, 1906.
Illustrated description of Watt and Nisbet's dredge-bucket system, and a dredge "Knewstubbs" system for the restoration of agricultural lands. 1000 w.

GoldDredging Practice in Central Otago.
HUGH R. MACDONALD.
New Zealand Mines Record Nov. 16, 1906. Serial. 1st part.
Briefly reviews the past history of gold dredging in this field,showing the development of this important branch of alluvial mining, and describing the practice. 8000 w.

The Dredging Industry in New Zealand.
ARTHUR C. BUCKLAND.
Mining Journal  May 1, 1909.
Describes the present condition and the outlook. 3000 w.

GoldDredging in New Zealand.
-
Times Trade and Engineering Supp., vol. 14, no. 298, Mar. 22, 1924, p. 46.
Plan for damming of Lake Wakatipu outlet.

Gold Dredging in Central Otago, New Zealand.
-
Chemical Engineering and Mining Review vol. 16, no. 192, Sept. 5, 1924, pp. 473475, 1 fig.
History of dredging in district.

Through Shotover Gorge with 8 c ft Bucket Dredge.
S. CHAPMAN.
Chemical Engineering and Mining Review v 28 n 327 Dec. 9, 1935, p. 456.
Description of dredge 106 ft deep, dredging depth 35

ft. electrically driven from 11,000 v. transmission cable, built in 1928 and in 1934 had worked out area on lower Tucker Beach; dismantling and transporting to new claims was considered impracticable; features of working upstream for 1 1/2 mi, through two steep narrow gorges and tortuous river bed.

Launching Molyneux Dredge.
-
Chemical Engineering and Mining Review v 29, n. 339, Dec. 8, 1936, p. 1013.
Principal features of dredge under construction at Clyde, Central Otago, New Zealand, designed to dig 100,000 cu yd monthly from 65 ft depth in fast flowing Molyneux River; pontoon 156 ft. long, 45 ft. beam, and 11 ft. 6 in. deep; 47 buckets, 10 cu ft capacity; electric power and 200hp Diesel-electric installation as emergency standby for mooring in event of shore power failure.

Mining by Means of Dredges.
P.R. LAKE.
Mine and Quarry Engineering v 4 n 3 Mar 1939 p 97101.
Short history of gold dredging, with special note on experience and practice in New Zealand.

Design of Gold Dredges.
W.J. SYME.
New Zealand Institution of Engineers Proc v 26, 1939-1940 p 22965 (discussion) 26578; see also Chem,Engineering and Mining Rev v 32 n 380 May 10, 1940 p 299301.
Observations on design of dredges and account of factors to be considered and methods used in designing particular dredge; based upon experience with gold dredging on west coast of South Island, New Zealand; capital cost of dredges; water supply; power supply; speeds; flotation and trim; design of hull or main pontoon; main drive; etc.

**GOLD PLACER** Mining Methods Dredging South America

Gold Dredging in Ecuador.
LEONARD L. WETMORE.
Mining Magazine May 1906.
Information concerning the placer fields and something of their history, showing the difference between modern methods of working placers and the crude methods adopted by the Spaniards. Ills. 3000 w.

Gold Dredging in Tierra del Fuego.
JUAN D. ROBERTS.
Mining Journal June 1, 1907.
An illustrated account of modern methods being introduced in this placer mining region. 800 w.

Gold Dredging Possibilities in Bolivia.
ALEXANDER BENSON.
Mining World April 30, 1910.
Brief account of rich unexplored fields in the interior, and the difficulties that must be overcome in their development. 1800 w.

Gold Dredging in the River Coxipomirim, Matto Grosso, Brazil.
LUIZ CAETANO FERRAZ.
Mining Journal March 30, 1912.
Describes the work and the dredges used. 1800 w.

Gold Dredging in Tierra Del Fuego.
LYMAN CHATFIELD.
Engineering and Mining Journal April 14, 1917.
Conditions described. Ills. 1200 w.

Gold Dredging in Chile.
J.H. IVEY.
Mining Magazine, vol. 33 n 6 Dec., 1925. pp. 338339. 1 fig.
Details of dredging operations at Las Dichas near Vaparaiso with 6ft. bucket; allsteel dredge capable of handling 100,000 cu. yd. per month; considering test case for a number of other similar deposits.

**GOLD PLACER** Mining Methods Dredging South America Columbia

Gold Dredging in Colombia.
J.P. HUTCHINS.
Engineering and Mining Journal Dec. 2, 1905.
An account of a recent examination of the deposits on the Magdalena river and its affluents, with conclusions as to dredging probabilities. 3000 w.

Gold Dredging on the Choco River, Republic of Colombia, South America.
HENRY G. GRANGER.
Bulletin of the American Institute of Mining Engineers Sept. 1908.
A descriptive record of an important golddredging field. Maps. 10500 w.

Dredging in the Nechi Valley.
-
Engineering and Mining Journal Sept. 15, 1917.
Results in Colombia are given. 2000 w.

Life for Colombia's Dredges.
G.B. WOOD.
Mining World v 11 n 7 June 1949 p 3740; Spanish version in Revista Mineria v 24 n 143 Aug 1949 p 1109911109.
Notes on practices of gold dredging companies operating along Nechi River and tributaries and in other localities in Colombia; how reconditioning of dredge parts by use of nickel manganese welding rod permits lower cost operation and prolongs life of bucket lines.

**GOLD PLACER** Mining Methods Dredging South America Guianas

Recent Developments in Gold Dredging, particularly in the Guianas (Les récents Développements des Dragages auriféres dans le monade et particularierement dans les Guyanes).
L. DELVAUX.
Memoires de la Société des Ingenénieurs Civils de France Feb. 1908.
An elaborate paper discussing gold dredging problems of all kinds and reviewing the present state of the industry. Ills. 18400 w.

Conditions for Gold Dredging in French Guiana.
ALBERT BORDEAUX.
Engineering and Mining Journal Sept. 17, 1910.
Describes the climatic and labor conditions, stating the requirements, costs, etc. 2000 w.

The Gold Fields of French Guiana and the New Method of Dredging.
ALBERT F.J. BORDEAUX.
Bulletin of the American Institute of Mining Engineers Nov. 1910.
History and illustrated description of the country and conditions, the geology, placers, dredging methods, costs, etc. 8800 w.

A Recent Dredging Enterprise in French Guiana (Note sur une récente Entreprise de Dragages auriféres en Guyane Francaise).
LEON DELVAUX.
Memoires de la Société des Ingenénieurs Civils de France Jan. 1911.
Describes the operations on Roches creek. Ills. 3600 w.

Gold Dredging in French Guiana (Le Dragage de l'Or en Guyane Francaise).
LEON DELVAUX.
Génie Civil Feb. 4, 1911.
Describes conditions, practice, and extent of the dredging operations. Ills. 2500 w.

Gold Dredging in French Guiana.
LEON DELVAUX.
Engineering and Mining Journal Feb. 11, 1911.
An illustrated account of the work of the new dredge of the Syndicate Mine. 2500 w.

GoldDredge for French Guiana.
-
Engineering March 3, 1911.
Brief illustrated description. 500 w.

Gold Dredging in French Guiana (Note sur la Récuperation de l'Or dans le Dragage des Alluvions auriféres en Guyane Fran\aise).
L.C. DE LA MARLIERE.
Memoires de la Société des Ingenénieurs Civils de France July, 1911.
Brief description of the alluvial deposits, the recovery practice, and the results. Ills. 2000 w.

Gold Mining in British Guiana.
-
Engineering and Mining Journal., vol. 110, no. 13, Sept. 25, 1920, pp. 611614, 7 figs.
Gold production has been decreasing since 1895 and is now only about oneeighth maximum recorded. Few companies are still operating, but mining is hampered by lack of transportation and high costs.

**GOLD PLACER** Mining Method Dredging S.E. Asia

Gold Dredging in Borneo.
-
Australian Mining Standard March 15, 1900.
An interesting interview with T.R. TOBY, who has been recently on an exploring and prospecting trip in West Borneo. Considers the country sure to become a great gold producer. Ill. 2400 w.

Gold Dredging at Parocale.
-
Mining and Scientific Press Feb. 12, 1910.
An account of work on the southeast coast of the Island of Luzon, Philippine Islands. 1500 w.

The Tin Dredging Mill "Diniang" for State Tin Production on the Island of Banks (De tinbaggermolen "Diniang" voor de Gouvernementstinwinning op het eiland Banka).
J.F. STREUR.
Ingenieur, vol. 41, no. 44, Oct. 30, 1926, pp. 893901, 12 figs.
Details of bucket dredge used in Diniang valley, two feet or more below sea level and having area of 1,000,000 sq. mi. with about 12,000,000 cu. mi to dredge.

Launching Sea Dredge Pontoon.
-
Tin Dec 1958 p 2778.
Note on sea dredge for Tongkah Harbour Tin Dredging Ltd., being built for mining in sea areas off coast of Thailand; hull, or pontoon of new sea dredge is 230 ft long with beam of 72 ft and depth of 11 1/2 ft; all plate work and steel fabrication was done at site.

**GOLD PLACER** Mining Method Dredging U.S. Alaska

Gold Dredging in the Nome District.
G.P. GRIMSBY.
Engineering and Mining Journal June 22, 1901.
An illustrated description of dredges used at Nome and why they were not successful; also an illustrated description of one being constructed for the work. 1000 w.

Dredging for Gold in the Nome Goldfields.
OTTO HALLA.
Mining and Scientific Press Nov. 18, 1905.
A brief account of the successful working of this field. 700 w.

Dredging Beach Gravel Deposits Near Nome.
JOHN POWER HUTCHING.
Engineering and Mining Journal Nov. 23, 1907.
Illustrates and describes methods tried and difficulties met. 4000 w.

Dredging on the Seward Peninsula.
T.A. RICKARD.
Mining and Scientific Press Nov. 28, 1908.
An account of experience with a number of dredges, discussing the probability of its being profitable. Ills. 5000 w.

Gold Dredging in Alaska.
GEORGE E. WALSH.
Scientific American Oct. 23, 1909.
An account of gold dredging in Australia, California, and Alaska, showing its success in the latter. 1200 w.

Submarine Gold Mining on the Alaskan Coast.
M.I. MACDONALD.
Mining World Nov. 20, 1909.
Brief descriptions of methods and apparatus used and proposed for submarine mining. Ills. 1000 w.

Dredging at Nome in 1909.
-
Mining and Scientific Press Jan. 1, 1910.
An illustrated description of dredges in operation and proposed, with a report of the results. 2500 w.

Dredging Nome Beach Sands.
-
Mines and Minerals March, 1910.

Illustrates and describes a type of dredge that is saving gold from underwater sands. 1800 w.

Pony Dredges in Alaska.
WILLIAM H. WASHBURN.
Mining and Scientific Press March 5, 1910.
A brief review of plans tried in adapting machinery to placer mining. Ills.2000 w.

Submarine Gold Dredging at Nome, Alaska.
ELMER E. CAREY.
Mining World March 19, 1910.
Discusses plans for dredging the rich fields of the Arctic Ocean along the Nome coast. 1500 w.

Dredging Conditions on the Seward Peninsula.
G.B. MASSEY, II.
Engineering and Mining Journal Oct. 29, 1910.
Illustrates and describes dredges and their operation in a region noted for the general distribution of gold. 6500 w.

Nome Dredges in 1910.
T.M. GIBSON.
Mining and Scientific Press Jan. 7, 1911.
Illustrates and describes dredges constructed during the past year, and the work they are expected to accomplish. 5500 w.

Gold Dredging Industry on Seward Peninsula.
T.M. GIBSON.
Mining and Scientific Press Jan. 6, 1912.
Map and report of work by the different companies. Ills. 5000 w.

(Special)Gold Dredging on the Seward Peninsula.
CHARLES JANIN.
Mining and Scientific Press Sept.28, 1912.
Map and illustrated account of the work. 3000 w.

Some New Gold Dredges in Alaska.
LEWIS H. EDDY.
Engineering and Mining Journal Jan. 25, 1913.
Gives, briefly, details of five new dredges. Ills. 100 w.

Some Notes on Gold Dredging in Alaska.
FREDERICK POWELL.
Mining and Engineering World March 7, 1914.
Describes conditions and common practice and operation. 2500 w.

The Cache Creek Dredge Alaska.
SUMNER S. SMITH.
Mining and Scientific Press Dec. 23, 1916.
Details of new dredge and its working. Ills. 1200 w.

Dredging for Gold on Seward Peninsula, Alaska  Season 1916.
COREY C. BRAYTON.
Mining and Scientific Press  Jan. 13, 1917.
Practice under various conditions. Ills. and Map. 3500 w.

DieselElectric Operation of Gold Dredges in Alaska.
H.J. GALLAGHER.
Oil Engine Power, vol. 2. no. 6, June 1924, pp. 312314, 6 figs.
1575 b. hp. power plant furnishing current to dredges was placed in service in 1923 and duplicate order followed in 1924; Diesel power enables practically allyearround work to be carried on.

Dredging Gold Deposits of Alaska  Operations of Fairbanks Exploration Company,
O.J. EGLESTON.
Mining Review vol. 33, no. 8, Apr. 30, 1931, pp. 1319, 12 figs.
Gravels buried from few feet to over 100 ft. in depth and overlain by muck from few feet to over 70 ft. in thickness; hydraulicking away muck with giants; thawing gravel and any remaining muck by cold water pipe thawing method; dredging thawed gravel.

Moving Gold Dredge Overland.
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Engineering and Mining Journal., vol. 132, no. 1, July 13, 1931, p. 11, 1 fig.
No. 2, 9cu. ft. gold dredge of Hammon Consolidated Gold Fields Co. at Nome, Alaska, pulled from Little Creek to Center Creek, distance of 8000 ft; bucket crane, ladder, spuds, stacker removed, leaving 2000 tons to be moved; average daily progress 240 ft. maximum movement 380 ft. working 16 hr. per day.

Washing Gold at Fairbanks.
G.R. PLUMB.
Mines Magazine v 22 n 6 June 1932 p 910; see also Mining Review v 34 n 26 June 28 1932 p 57.
Practice in hydraulicking away moss/muck by giants, thawing remaining muck/gravel by cold water method, and dredging thawed gravel and extracting gold, at property of Fairbanks Exploration Co.

Thawing and Dredging Gold at Fairbanks, Alaska.
R.H. OGBURN.
Mining and Metallurgy v 14 n 317 May 1933 p 2146.
Prospect drilling with Keystone drills; greatest

concentration in gold is at or near bedrock; gravel is cemented by ice and is overlain by frozen muck with ice content 20 to 80%; frozen muck stripped by hydraulic giants, sluicing muck off after thawing; thawing gravel by driving 3/4 in. pipe points at apexes of 16 ft equilateral triangles; 5 dredges handling ground up to 92 ft in depth; dredging season Apr 15 to Dec. 15; steamelectric power plant.

To Dredge Undersea Beaches of Alaska.
D.L. PRATT.
Mining Journal (Phoenix, Ariz) v 22 n 20 Mar 15, 1939 p 3 and 31.
Notes on 125 ft. Diesel powered freighter to operate on offshore placer deposits near Cordova, Alaska; is being equipped with suction pumps and dredging apparatus; tested deposits are said to have shown values of 65c to $2.25 per cu yd, with average $1.35; vessel is expected to handle 1000 to 2000 cu yd per day, with operating costs $3000 per month; diving equipment will be carried.

Alaska Plus Diesels Yields Platinum.
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Diesel Power v 22 n 5 May 1944 p 4801, 484.
Diesels used by Goodnews Bay Mining Co for power and light; mining operations are carried on by two types of units, dredge and pair of draglines; in addition, several Caterpillar Diesel bulldozers are employed as well as Caterpillar Diesel pumping unit; main power on dredge is McIntosh and Seymour 8cyl, 4 - cycle, 720 hp, 12 1/2 x 13in. 600 rpm engine, driving 625kva, 60cycle, ac Westinghouse generator equipped with 7.5 kw exciter.

Dredging for Gold in Alaska.
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Mining and Mt v 29 n 502 Oct 1948 p 57480.
In addition to its base metal and coal mining operations, United States Smelting Refining and Mining Co. has been one of few large American mining companies interested in dredging; its activities in this field are confined to gold, and to Alaska; Fairbanks operations, J.D. CRAWFORD and J.C. BOSWELL; Nome operations, C.S. and W.A. GLAVINOVICH.

Principal Alaskan Dredging Operations.
-
Mining Engineering v 13 n 12 Dec 1961 p 13356.
Recently, gold placering has weakened but platinum from placer gravels at Goodnews Bay has been relatively stable since 1935; most gold

production comes from dredges operated by 2 big companies while remainder is from sporadic mining by small groups or individuals using hydraulic monitors,draglines, and small dredges; sites of major dredging activity are Fairbanks, Nome, Nyac, Goodnews Bay, Hogatza River and Chicken; operations in permafrost area at Nome and Fairbanks platinum placering.

**GOLD PLACER** Mining Method Dredging U.S. California

Gold Dredging in California.
R.H. POSTLETHWAITE.
Mining and Scientific Press July 8, 1899.
Information of the work in the Feather River, near Oroville, Cal. 1400 w.

Gold Dredging at Oroville, Cal.
H.G. PARSONS.
Mining and Scientific Press July 7, 1900.
An account of the work, the types of dredges in use, etc. 1000 w.

A California Gold Dredger.
R.H. POSLETHWAITE.
Mining and Scientific Press Dec. 15, 1900.
Illustrated description of a dredger on the Feather River. 1200 w.

Dredging for Gold.
W.S. RUSSELL.
Mines and Minerals Dec. 1900.
Facts in regard to the operation of dredges on placers at various places in the western part of the United States. Ill. 1800 w.

Gold Dredging in California.
THOMAS J. BARBOUR.
Engineering and Mining Journal Jan. 26, 1901.
Abstract of a report made to the California State Miners' Assoc. Reviews the work in dredging of various companies with a schedule as to what may be expected, showing the possibilities of gold dredging. 3000 w.

Gold Dredging in California.
E.H. BENJAMIN.
New Zealand Mines Record April 16, 1901.
Information concerning this industry. At present there are about twenty dredges running, which are producing about $1,000,000 per year. 3000 w.

Gold Dredging Operations in California.
G.P. GRIMSLEY.
Engineering and Mining Journal June 29, 1901. Serial. 1st part.
Reviews industry in this State, and describes the Postelthwaite dredge and its operation. Ill. 1300 w.

Dredging for Gold.
ENOS BROWN.

Scientific American Nov. 8, 1902.
Illustrates and describes the work as carried on at Oroville, Butte Co., Cal., giving a brief review of earlier work, and explaining the difficulties. 1400 w.

Dredging at Oroville.
NEWTON B. KNOX.
Engineering and Mining Journal Aug. 29, 1903.
Abstract of a paper in the "Pro." of the Inst. of Min. and Met., London. Brief account of the dredgemining for gold in California. 900 w.

Dredging and Valuing Dredging Ground in Oroville, California.
NEWTON BOOTH KNOX.
Canadian Mining Review - Oct. 31, 1903.
Abstract in Engineering and Mining Journal - Aug. 29, 1903.
Paper from Inst. of Min. and Met.,London. Account of dredgemining for gold in this field. 4000 w.

Blasting Tight Placers Before Dredging.
OLIVER B. FINN.
Engineering and Mining Journal July 7, 1904.
An illustrated detailed account of the way a Keystone driller was used in California to loosen, by blasting, a very tight gravel deposit, preparatory to dredging. 900 w.

Gold Dredging at Oroville.
HOWARD D. SMITH and ELWYN W. STEBBINS.
Engineering and Mining Journal Dec. 8, 1904.
Describes the character of the ground, which is peculiarly favourable to dredge operations, and the types of dredges and methods used. Also gives a summary of the operating expenses. 4400 w.

Gold Dredging in Oroville District, Cal.
L.J. HOHL.
Abstract from the Transactions of the California Mining Association.
Mining and Scientific Press April 15, 1905. Serial. 1st part.
An account of this method of working auriferous gravel deposits, giving illustrated description of dredges and general features of different types. 3000 w.

Dredges for Working GoldBearing Gravels.
-
Engineering News April 27, 1905.
Illustrated description of a dredge recently built for use in California, with some account of this

method of working. 1700 w.

A Large Gold Dredger.
-
Mining and Scientific Press May 6, 1905.
Illustrated description of the construction and operation of a modern dredger said to be the largest placer mining dredger in the world. Also reviews the early history of dredging in California. 3800 w.

Gold Dredging in California.
A.G. HILLEN.
Mining World Aug. 5, 1905.
Illustrated article giving information in regard to the extent of this method of working, the cost, etc. Map. 2500 w.

Gold Dredging in California.
-
Mining and Scientific Press Aug.19, 1905. Serial. 1st part.
Information from the Bul. of the State Min. Bureau of Cal., giving the history of dredge mining in the state, the area of dredge gravel, etc., in the present number. Ills. 2800 w.

The Modern Gold Ship.
GEORGE ETHELBERT WALSH.
Scientific American Sup July 6, 1907.
An illustrated description of the work of the gold dredge in California. 1500 w.

Gold Dredging Practice in California.
ROBERT SIBLEY.
Engineering and Mining Journal May 30, 1908.
An illustrated description of the construction of the hull of a dredge, the machinery, the designs most in favour and the method of operation. 6000 w.

Dredging at Oroville.
DOUGLAS WATERMAN.
Mining and Scientific Press June 5, 1909.
Illustrated description of the types of dredges in use, and details of their operation. 3000 w.

Gold Placers Dredging Operations in California.
A.H. MARTIN.
Mining World Sept. 25, 1909.
Illustrates and describes dredges used and reviews the advances in construction. 3500 w.

Less Known Gold Dredges in California.
W.M. KNOX.
Mining and Scientific Press July 2, 1910.
Brief descriptions of dredges working with good results in isolated districts. Ills. 1000 w.

Gold Dredging and Rock Crushing in California.
GEORGE BOWERS.
Engineering Record July 16, 1910.
Describes dredges and methods used successfully in the Folsom Division of the Natomas Consolidated. Ills. 2500 w.

Notes on the Construction of California Dredges.
JOHN TYSSOWSKI.
Engineering and Mining Journal Oct. 15, 1910.
A report of the tendency in building, and the cost, giving tabulated data on the dredge equipment and power consumption. Plate. 3500 w.

Gold Dredging in California.
CHARLES JANIN and W.M. WINSTON.
Mining and Scientific Press Jan. 7, 1911.
Maps and review of the work during 1910. 1500 w.

Dredging for Gold in California.
LEWIS H. EDDY.
Engineering and Mining Journal July 8, 1911.
Illustrates modern dredgers and gives a report of recent work. 5500 w.

The YubaRiver Dredging Field in California.
A.H. MARTIN.
Mining and Engineering World Sept. 2, 1911.
Illustrated description of the Yuba dredges and their work. 1500 w.

Dredge Building in California.
LEWIS H. EDDY.
Engineering and Mining Journal Sept. 30, 1911.
Illustrated discussion of 24 dredges to be built in 1911, at a cost varying from $35,000 to $275,000 each. 5000 w.

Latest Gold Dredge Built in the Oroville Field.
GEORGE L. HURST.
Mining and Engineering World Oct. 2, 1911.
Illustrated description of Oroville's largest and latest dredge. 1000 w.

Giant Gold Dredges at Natoma, California.
NEWTON CLEAVELAND.
Mining and Scientific Press Oct. 7, 1911.
Illustrated description of dredges of the endlesschain type,and their operation.
1500 w.

The Design and Mechanical Features of the California Gold Dredge.
ROBERT E. CRANSTON.
Journal of the American Society of Mechanical Engineers

Feb. 1912.
Describes designs commonly used in California, discussing the mechanical features. Ills. 14500 w.

Northern California Gold Dredging.
LEWIS H. EDDY.
Engineering and Mining Journal March 23, 1912.
Describes different types of dredges used, each designed for the particular conditions. Map. 4000 w.

PresentDay Problems in California Gold Dredging.
CHARLES JANIN.
Bulletin of the American Institute of Mining Engineers March, 1912.
A review of the development and of the work of modern dredges. Ills. 5000 w.

Elevating TenCent Gravel at a Profit.
C.S. HALEY.
Mining and Scientific Press April 13, 1912.
Illustrates and describes an elevating system in use in California for handling lowgrade, poor dump bars of rivers and similar problems. 4000 w.

Dredges on Upper American River.
LEWIS H. EDDY.
Engineering and Mining Journal May 18, 1912.
An account of operations in California dredging fields. Ills. 3000 w.

Gold Dredging in the Folsom Field of California.
A.H. MARTIN.
Mining and Engineering World May 25, 1912.
Illustrates dredge used, and gives an account of one of the most important dredging fields in the State. 2500 w.

Reducing California Dredging Costs.
AL H. MARTIN.
Mines and Minerals June 1912.
Explains economies resulting from the use of dredges having buckets of larger capacity. 1500 w.

The Union Dredge at Folsom, Calif.
LEWIS H. EDDY.
Engineering and Mining Journal Aug. 10, 1912.Illustrated description of this close-connected, bucketelevator dredge,designed to dig 55 ft. below the water line. 1000 w.

Dredging on Butte Creek, California.
LEWIS H. EDDY.
Engineering and Mining Journal Nov. 16, 1912.
Describes two bucketelevator gold dredges, showing differences in constructional details. Ills. 5000 w.

Gold Dredging in California.
CHARLES JANIN.
Mining and Scientific Press Jan. 4, 1913(Special)
A review of operations during the year. 2500 w.

Natoma No. 10, an AllSteel Dredge.
LEWIS H. EDDY.
Engineering and Mining Journal May 31, 1913.
Illustrated detailed description of dredge, completed in 1912, for use in California. 3500 w.

Gold Dredging at Mammoth Bar, California.
LEWIS H. EDDY.
Engineering and Mining Journal Jan. 24, 1914.
Illustrated account of work with Pacific No. 1 dredge operating on American River. 2500 w.

The Latest and Largest ElectricallyOperated Gold Dredge.
W.H. GARDNER and W.M. SHEPARD.
General Electrical Review May, 1914.
Describes and illustrates in detail the construction, equipment and operation of the allsteel Yuba No. 14. 4000 w.

Gold Dredging Operations of the Ashburton Mining Co.
LEWIS H. EDDY.
Engineering and Mining Journal May 9, 1914.
Describes the operations of the first company in the American River district of California. 2500 w.

Jigs on a California Dredge.
LEWIS H. EDDY.
Engineering and Mining Journal Jan. 29, 1916.
Grinding mill and jib system installed on a dredge and successfully used. Ills. 1000 w.

Yuba No. 15 AllSteel Gold Dredge.
LEWIS H. EDDY.
Engineering and Mining Journal Aug. 19, 1916.
Largest placer dredge, at work in California. 1000 w.

Yuba No. 16 DoubleStacker Dredge.
LEWIS H. EDDY.
Engineering and Mining Journal Dec. 1, 1917.
Details of one of the largest gold placer dredges in the world, and the first doublestacker of its type. Ills. 1000 w.

Possibilities of Dredging in the Oroville District, California.
CHARLES H. THURMAN.
Mining and Scientific Press, vol. 118, no. 8, Feb. 22, 1919, pp. 257258.
Reasons why earlier type of dredge did not recover all

of the gold.

Features of Electrically Operated Hydraulic Dredge.
CHARLES W. GEIGER.
Cement, Mill and Quarry, vol. 15, no. 6, Sept. 20, 1919. pp. 3537, 5 figs.
Description of dredge owned and operated by City of Oakland, Cal.; advantages of electric drive and savings effected. Centralstation service is used.

Gold Mining in California.
GEORGE J. YOUNG.
Engineering and Mining Journal. vol. 109, no. 7, Feb. 14, 1920, pp. 439447, 12 figs.
Said that golddredging industry is declining, and that drift, placer, and hydraulic mining produce small amount of precious metal and future production is dependent upon deeplode mining.

ClamShell Dredges of Large Size on the Sacramento.
-
Engineering News Record, vol. 86, no. 23, June 9, 1921, pp. 978981, 3 figs.
Design and construction of clamshell dredges built in recent years for use in Sacramento Valley, Cal. Dredges with booms up to 240 ft. in length operate buckets which carry 8 cu. yd. of material.

Description of Property and Operations of Lewiston Dredge, Lewiston, Calif.
L.K. REQUA.
US Bureau of Mines  Information Cir n 6660 Nov. 1932 14 p. supp plates.
Operating history and practice of Placer Development Ltd. on Trinity River in Trinity County, Calif.

Methods and Costs of Dredging Auriferous Gravels at Lancha Piana, Amador County, Calif.
C.G. PATMON.
US Bureau of Mines  Information Cir n 6659 Nov. 1932 16 p supp plates.
Practice of Lancha Plana Gold Dredging Co. operating near Mokelumne River 12 mi west of San Adreas, Calif.

Safety Practices in California Gold Dredging.
S.H. ASH.
US Bureau of Mines  Bul n 352 1932 31 p.
Status of gold dredging in California; safety practices and conditions at properties of principal operators; accident statistics; examples of nonfatal and fatal accidents; extracts from safety rules of California Industrial Accident Commission.

$35 Gold Stimulates Dredge Designer's Ingenuity.
C.M. ROMANOWITZ and G.J. YOUNG.
Engineering and Mining Journal, v 135 n 8 Aug 1934 p 33841.
Features in redesign and enlargement of Yuba Consolidated Gold Fields. No. 17 dredge; after completion of planned work at Hammonton, Calif, dredge was shut down in 1926; change in value of gold changed status of marginal low grade deposits; new boat handles gravels to depth of 150 ft.

Dredge Yardage Improved by Adopting Automatic Control for SideLine Winch Motor.
F.L. BOISSONNAULT.
Engineering and Mining Journal, v 135 n 9 Sept 1934 p 3923.
Compares manual operation in making adjacent cuts between same points showed increase of 12 to 19% in hourly production depending on nature of ground; saving was 0.29c per cu yd. or approx-imately $10,000 per year. In operation of dredge of Natomas Company in Folsom area of California.

Natomas' Newest Dredge Has Novel Points of Design.
J.B. HUTTL.
Engineering and Mining Journal, v 136 June 1935, p. 2702.
Features of 16 cu ft of allsteel dredge completed at Salsbury, 6 mi west of Folsom, Calif; directdriven hoist; dc power for bucketline motors and bowline winches; air operated brakes on winches for stern line and ladder hoist; pushbutton starting; automatic control; electric cranes for repairs and maintenance; speed reducers on all mechanical units.

VariableVoltage Drive Boosts Gold Dredge Output.
C. STOECKLY.
Electrical World v 105 n 21 Oct 5 12 1935 p 245 and 80.
Improved pf.reduced power consumption and increased production accomplished for 500cu ydperhr riverbottom dredge by Natomas Co.operating near Folsom Calif; designed by L.S. ROSENER, fully electrified boat embodies many radical departures from established designs.

Arroyo Seco's New Dredge.
J.B. HUTTL.
Engineering and Mining Journal v 136 n 10 Oct. 1935 p 4946.
Design features of installation near One,Calif; steel hull 88 ft. long 40 ft. wide 7 ft deep;

digging depth 32 ft. 82 close connected 6 ft buckets; electric drive; with rated capacity 140,000 to 160,000 cu yd per month, has dug and treated 73,000 cu yds gravel per day.

Successful DragLine Dredge.
J.F. MAGEE.
American Institute of Mining and Metallurgical Engineers Tech Publ n 757 mtg Feb. 1936 16 p.
New plant by Wyandotte Gold Dredging Co. in Oroville area California, in 1936; tract operated from Apr 5, 1935 to Jan.1936 has gravel of two "runs" or ages overlying false bedrock of decomposed lava ash; average depth of gravel dug was 9 1/2 ft;prospecting by lines of shafts sunk by hand, 30 to 75 acres; operating data; costs; net operating profit $57,560.95 on investment of $40,000.

Dragline Dredges Used in California Gold Fields.
A.M. WILSON.
Mining Journal (Phoenix, Ariz) v 19 n 22 Apr 15 1936 p 5 and 28.
Features of equipment used in Oroville field, suitable for small tracts of land and shallow gravels; floating barge washing plant, separate from dragline boat; construction cost from $12,000 to $15,000; boat handles 3200 cu yd gravel/24 hr.,digging average of 9 ft to soft false bedrock; est. operating cost 10c per cu yd; use of portable steel boats, built in sections; advantage of Diesel engine power.

Digging Gold With Dragline and Doodlebug.
D.W. EVANS.
Excavating Engineer v 30 n 5 May 1936 p 2313, and 258.
Description of plant operating near Valley Springs, Calif; BucyrusErie 34B Diesel dragline with 1 1/2 cu yd bucket used to dig gravel and deliver to floating washing plant known as "doodlebug"; one advantage over dredge is that, without digging machinery on boat,only 30 in. draft is required; details of equipment and operation.

Novel Washing Plant Designed for Shallow Placers.
J.B. HUTTL.
Engineering and Mining Journal v 137 n 10 Oct 1936 p 4956.
Brief description of sectionalized plant used by Pioneer Dredging Co near Redding, Calif; all units are within loadcarrying capacity of large truck, heaviest piece weighing about 7 tons; digging element is No. 601 Lima dragline equipped with 1 1/4 yd Page bucket; washing plant is built entirely of steel,

including hull, which is separate unit from superstructure.

DragLine Dredging.
J.F. MAGEE.
Canadian Institute of Mining and Metallurgy Trans v 40 1937 mtg Oct 1936 p 11725 Bul n 298 Feb 1937. Partial rewrite, with data supplementing earlier paper by same author, in Am Inst Mining and Met Engrs Tech Publ n 757 mtg Feb 1936; description of properties, equipment and operations of Wyandotte Gold Dredging Co. on Farnan Ranch in Oroville district, Calif; operating accounts for three units given, showing yields, costs and profits.

Gold Dredging in California and Methods Devised to Increase Recovery.
E.S. LEAVER and J.A. WOOLF.
American Institute of Mining and Metallurigical Engineers Tech Publ n 792 (Mining Technology) Feb. 1937 18 p and July (correction) 1 p.
Description of operations, with particular reference to unusual features, including types of deposits and recent attempts to improve recovery of gold; dredging areas; types of dredges; types of deposits; experimental work by US Bureau of Mines, in development of gold recovery methods. Bibliography.

New Departure in Placer Gold Dredging.
A.N. CLARK.
Mining Journal (Phoenix, Ariz) v 22 n 14 Dec 15 1938 p 45 and 367.
Features of mobile plant, for dry land transportation from property to property, designed for Panob Gold Dredging Co. at Loomis, Calif;washing plant is fed by 1 1/4 yd dragline shovel; gravel handling capacity 100 cu yd per hr and uses only 400 gal water per min; similar plant planned, to be equipped with placertype jigs for gold recovery.

Dragline Dredges New Way to Mine Placer Gold.
C.W. MERRILL.
Mining and Metallurgy v 19 n 384 Dec 1938 p 5215.
Development of dragline excavation auriferous gravel by H. ONYETT, near Oroville, Calif. in 1933; other operations in California and elsewhere;features of equipment design, plant assembly and operating practice; statistical data on California operations.

Placer Mining Dredging Still One of California's Leading Industries.
C.M. ROMANOWITZ and H.A. SAWIN.
Western Machinery and Steel World v 31 n 1 Jan 1940 p 146; see also Pac Mar Rev v 37 n 2 Feb 1940 p 202.
Use of gold dredges in California; large gold production, development of design of dredge; power for dredging is usually electric, if available, and is delivered to dredge by submarine shore cable floated on barges; most dredges in California had ac electric equipment, but in recent years several have been equipped with dc units and variable speeds.

Some Operating Costs of Dredging on Klamath River.
V. AUSTIN.
Engineering and Mining Journal v 141 n 9 Sept 1940 p 57.
Cost sheet of Lincoln Gold Dredging Co., covering its operations on Klamath River, near Happy Camp, Cali. from March 15 to Sept. 3, 1939; also 500,000 cy yd handled by dragline and floating washer at less than 13c per cu yd.

Dragline Dredging in Siskiyou County.
C.V. AVERILL
California Journal of Mines and Geology v 37 n 2 Apr 1941 p 32831.
Special feature of two installations described; Scandia mine, on Horse Creek near Klamath River, Moccsion mine on Klamath River, about 1 1/2 mi upriver from Horse Creek; equipment and operation.

Developments in California Bucket Line Dredge Methods.
N. CLEAVELAND.
Mining Journal (Lond) v 216 n 5558 Feb 28 1942 p 98100.
Before Metal Mining Convention, Am Mining Congress, indexed in Engineering Index 1941, p 550, from Mining Congress J, Nov 1941.

Deep Gravels Dredged Successfully.
H. SAWIN.
Engineering and Mining Journal v 144 n 7 July 1943 p 9-71.
Description of principal parts of Yuba No. 20 dredge, at Hammonton, Calif. designed for digging to depth of 120 ft. below water level, at times against bank of 50 ft.above water; electric power; auxiliary features; operating time (three shifts) has averaged 21 hr 39 min per day; gravel dugh as averaged 12,260 cu yd per day, at field cost of 4.32 c per cu yd.

Operations of Golden Feather Dredging Company.
E.A. WILTSEE.

Mining Congress Journal v 30 n 8 Aug 1944 p 214, 35.
Historical and descriptive notes on combined flood control and mining project at Oroville, Calif. for many years, city had been opposed to dredging operations, fearing possible inundation from irregular distribution of dredge tailings; preliminary prospecting showed average of 25 c per cu yd; average of entire deposit removed was 26 5/8 c per cu yd.

Costs in Dragline Gold Dredging.
C.H. THURMAN.
American Institute of Mining and Metallurgical Engineers Tech Publ n 1900, 1945 6 p (Mining Technology July 1945). Dragline dredges should not be considered for mining large areas of lowgrade placer gravel; comparison with bucketline dredges; percentages of operating time are important factors; examples of cost of operation of draglines in California, prior to late 1942.

Gold Dredging in California.
H.A. SAWIN.
Mining Congress Journal v 32 n 8 Aug 1945 p 614.
Data are presented to contradict assertion that dredges are ruining farming in California; dredge tailings for many years have been principal source of California's road and building materials; arguments regarding resoiling. Refore Mining Committee of Commonwealth Club of San Francisco.

Hard Digging.
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Mining World v 8 n 2 Feb 1946 p 246.
Description of equipment and operation of Tuolumne Gold Dredging Corp about 1 1/2 mi south of La Grange, Stanislaus County, Calif; dredge was built in 1937 and later modified; hull 155 ft by 72 ft. wide. 144 ft. ladder with 100 buckets each 12 cu ft.

Placer Mining Dredges.
R.G. PAUL.
Western Machinery and Steel World v 38 n 7 July 1947 p 7881, 112.
Historical note on gold mining and use of dredges in California including information on details and principals involved in operation of modern dredge equipment employed at Yuba Mft. Co. Benicia, Calif.

"Bobtailed" Dredge on California's Clear Creek.
A.N. CLARK.

Mining World v 10 n 6 May 1948 p 30, 74.
Narrative description of dragline operation working below French Gulch in western Shasta County: 1 1/2 cu yd shovel feeds to hopper, which delivers to 48 in. trommel; operating three 8hr shifts, plant handles 2000 to 2500 cu yd per day; one 28 hr run said to have yielded 25 oz of gold.

Dredging, Evolving Art.
H.S. SAWIN.
Mining World v 11 n 1 Jan 1949 p 379.
Historical outline; first successful dredging of gold from California rivers was by W.P. HAMMON in 1898; dredging vs agriculture controversy; improvements in dredge design; summary of California dredging practice; use of amalgamation and jigs; effects of pegged gold price of $35 per ounce.

California Placer Dredging  Its Influence as Worldwide Industry.
H.A. SAWIN.
Mine and Quarry Engineering v 16 n 7 July 1950 p 205-120. from Mining World Jan 1949.

These Jigs Pay Their Own Way ... in Gold and Aggregates.
-
Rock Products v 61 n 3 Mar 1958 p 114, 116, 144.
One of largest applications of jigs for separating light and heavy material from aggregate is that of Yuba Consolidated Gold Fields near Marysville, Calif; company operates huge dredges which dig up aggregate for its gold content and process it on board with jibs;these floating processing plants each go through 650 to 800 cu yd of aggregate per hr.

**GOLD PLACER** Mining Method Dredging U.S. Colorado

Dredging Placer Gravels at Breckenridge, Colorado.
ARTHUR LAKES, SR.
Mines and Minerals July 1908.
Illustrates and describes the ground worked and the construction and operation of the dredges. 5000 w.

Dredging at Breckenridge, Colorado.
A.H. BRADFORD and ROY P. CURTIS.
Mining and Scientific Press Sept. 11, 1909.
Thesis. Describes briefly the geology of the region and the extensive placer deposits; reviews past operations and the causes of their failure; and describes present methods and results. Ills. 4400 w.

Placer Mining in Western United States.
E.E. GARDNER and C.H. JOHNSON.
US Bureau of Mines Information Cir n 6788 Feb 1935 81 p supp plates. Part III.
Dredging and other forms of mechanical handling of gravel, and drift mining.

Colorado Attracts Another Large BucketLine Dredge.
H.W.C. PROMMEL.
Engineering and Mining Journal v 142 n 10 Oct 1941 p 357.
Description of dredge built by South Platte Dredging Co., completed in June 1941 and being operated in valley of South Platte River near Fairplay, Park County, Colo: weight fully equipped is 2400 tons; hull is 54 1/2 by 158 ft; digging ladder, 139 ft. from tumbler to tumbler, has 103 11 cu ft buckets weighing 3300 lb each and can dig 70 ft below water level; rated capacity 17,000 cu yd per day; stacker 165 ft long; gold is recovered by tables and jigs.

Colorado's Largest Dredge.
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Mining World v 8 n 9 Aug 1946 p 369.
Operations of South Platte Dredging Co near Fairplay, Park County, Colo; digging ladder is equipped with 103 bolted lip buckets of 11 cu ft capacity, close connected, designed to dig 70ft below water level; electric power; gold recovery system.

Big Boulders Beaten.

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Mining World v 10 n 1 Jan 1948 p 1820.
Illustrated notes on dragline dredge operated on 2900-
acre tract between Alma and Fairplay, Colo;
character of gravel; handling boulders;
washing plant.

**GOLD PLACER** Mining Methods Dredging U.S. Georgia

Gold Dredging in North Georgia.
HENRY V. MAXWELL.
Engineering and Mining Journal Nov. 2, 1901.
Illustrations with brief descriptions of methods. 500
w.

**GOLD PLACER** Mining Methods Dredging U.S. Idaho

Gold Dredging on Snake River in Idaho.
F. POWELL.
Engineering and Mining Journal Oct. 6, 1900.
Discusses the reasons for the numerous failures, the dredger used, cost,etc. Ill.
1800 w.

Dredging for Fine Gold in Idaho.
ROBERT BELL.
Engineering and Mining Journal Feb. 15, 1902.
Describes methods of placer mining on the Snake River. Ill. 1800 w.

A Gold Mining Dredge of Recent Design.
SAMUEL S. WYER.
Engineering and Mining Journal June 9, 1904.
Illustrates and describes a dredge designed by the writer for work in Idaho, which presents unique features. 2000 w.

Dredging for Fine Gold in Idaho.
ROBERT BELL.
Mining World March 11, 1905.
Describes method employed to recover fine gold from the Snake River placer beds. 2000 w.

GoldDredging in the Boise Basin of Idaho.
JOHN H. MILES.
Mining and Scientific Press Sept. 14, 1912.
Brief review of the history of gold dredging in the Boise Basin,illustrating and describing the 15 cu. ft. Yuba dredge now at work. 1500 w.

Recent Developments in Idaho Dredging.
F.A. KENNEDY.
Mining Congress Journal v 26 n 3 Mar 1940 p 224.
Descriptive review; three bucket type dredges and one dragline dredge have changed from sluice boxes and riffles to placer jigs for improving gold recovery; details of jigging operation; flow sheet of De Lamar plant, in Silver City district; dragline boats in Idaho have not found satisfactory method to handle boulders, except to avoid getting them in boat; notes on other items of practice.

**GOLD PLACER** Mining Method Dredging U.S. Montana

Handling Refractory Placer Ground.
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Mining and Scientific Press Nov. 30, 1895.
Illustrated description of a gold dredging plant at Bannack, Mont. The bucket dredge uncovers the river bottom and then makes a dam further up stream; the water is pumped from the pit below and the rich gold gravel excavated to rock by hand. 1400 w.

PlacerMining Dredges on Grasshopper Creek, Montana.
-
Engineering News Oct. 14, 1897.
Illustrated description of the ladder dredge used for this work. 1000 w.

Gold Dredging in Montana.
EUGENE B. BRADEN.
Engineering and Mining Journal Nov. 20, 1897.
Illustrated description of dredging experiments in this state, with their results. 2500 w.

Late GoldDredging Practice.
RALPH L. MONTAGNE.
Mining and Scientific Press Nov. 2, 1901
Describes an attempt to use this method in Montana in 1894, and the difficult ties met; also discusses the economic advantages of dredging methods. Serial. 1st part. 2100 w.
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Electric Gold Dredging.
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Electric Review, Lond Jan. 18, 1907.
Description, with illustration, of an electric dredge in service in Montana. 900 w.

Gold Dredging Practice at Ruby, Montana.
J.P. HUTCHINS.
Engineering and Mining Journal June 29, 1907. Serial. 1st part.
An illustrated account of how the Conrey Placer Mining Company has met a series of difficult conditions in handling clayey gravel and boulders. 3000 w.

Dredging in Montana and Idaho.
W.A. SCOTT.
Mining and Scientific Press Jan. 1, 1910.
A report of the gold dredging operations. Ills. 1700 w.

Gold Dredging Operations in Montana.
J.P. ROWE.
Mining World Aug. 27, 1910
Describes the various properties being worked, illustrating the dredges used. 3000 w. .

Gold Dredging near Ruby, Montana.
-
Engineering and Mining Journal April 22, 1911.
Illustrated description of the improved machinery recently introduced in this field. 1800 w.

Dredging at Ruby, Montana.
FLOYD BUSHNELL.
Mining and Scientific Press Nov. 25, 1911.
Illustrated description of the Conroy dredge No. 4, and the work. 1500 w.

Gold Dredging Operations in Breckenridge District.
ARTHUR LAKES, JR.
Mining and Engineering World Dec. 2, 1911.
Illustrated description and history of this region, 9,600 ft. above the sea, and the appliances and methods used and results obtained. 4500 w.

The Magpie Dredge, Montana.
LEWIS H. EDDY.
Engineering and Mining Journal Aug. 24, 1912
Illustrated description of a 5 cu. ft. dredge of a modified California type. 3000 w.

Electric Power in Gold Dredging.
T.D. PRIER.
Electric Journal Dec. 1916.
Gold dredging in Montana. 2500 w.

Small Placers to Benefit from Dredge Improvement,
C.M. ROMANOWITZ and G.J. YOUNG.
Engineering and Mining Journal v 135 n 6 June 1934 p 2489.
General comments on tendency towards sectionalized construction, to facilite dismantling and transportation and reerection; description of dredge installed near Avon, Mont; bucket capacity 5 3/4 cu. ft., digging depth 26 ft; hull is constructed by bolting together 28 steel pontoons, each of welded watertight construction.

Gold Dredging Operations Near Helena, Montana
M. GREENFIELD.
Mining Journal (Phoenix, Ariz) v 20 n 14 Dec. 15, 1936 p 5 and 29.
Brief descriptions of 10 installations and their operation.

Dredging Washington Bar.
F.G. FRINK, JR.
Engineering and Mining Journal v 140 n 3 Mar 1939 p 41-2.
Notes on operation in locality 70 mi southeast of Butte, Mont., where placers were formerly worked by hand; ground is cemented and contains many large boulders; digging varies from 20 to 28 ft against 10 to 15 ft bank, which is carved by undermining; design features of dredge with hull built of 23 steel pontoons, handling 3600 cu yd per day with close linked chain of 4 1/2 cu ft buckets; electric power, with total of 260 hp consumed.

Running 6Cu Ft Dredge at Helena, Montana,
D.M. MANN.
Engineering and Mining Journal v 141 n 8, Aug 1940 p 64.
Brief account of equipment and operations of Porter Bros Corp at lower end of Last Chance Gulch, about 1 mi north of city of Helena, Mont; operating cost over 4
1/2 yr is $0.0491 per cu yd on gravel averaging 42 ft. deep.

Unique Bucketline Dredge Recovers Placer Scheelite.
W.A. NOON.
Engineering and Mining Journal n 151 n 5 May 1950 p 82-4.
Description of operations of H and H Mines Inc., on Henderson Creek, about 17 mi south of Drummond, Mont; gold dredge is only one in United States that was not shut down during World War II, due to production of tungsten concentrates; dredge and shore plant flow sheets; test data; operation details.

**GOLD PLACER** Mining Method Dredging U.S. Nevada

Dayton's Dragline Dredge.
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Mining Congress Journal v 27 n 7 July 1941 p 146.
Features of equipment of Dayton Dredging Co. operating at Dayton, Nev; BucyrusMonihan dragline with 15 cu yd bucket delivers gravel to hopper on floating gold recovery plant; dragline can dig to depths greater than 100 ft and can handle 15,000 cu yd gravel per day.

Nevada's Manhattan Gold Dredge.
A.N. CLARK.
Mining Journal. (Phoenix, Ariz) v 29 n 23 Apr 30 1946 p 24.
Project described is only successful bucket dredge mining enterprise in Nevada; operations began in Oct. 1938, about 4 mi west of old mining town of Manhattan; available yardage estimated as 25,000,000 cu yd; dredge boat 172 ft long, 60ft beam, draws 9 ft of water; chain of 105 buckets; each 10 cu ft, digs to 75 ft below surface of pond; daily capacity 12,000 cu yd; equipment and operating details.

New 17,000ton DryLand "Dredge" Uses Draglines, Shovel, Belts, Washing Plant,
J.B. HUTTL.
Engineering and Mining Journal v 151 n 6 June 1950 p 6870.
Round Mountain Gold Dredging Corp, Nye County, Nev, operating since Jan 1, 1950; main placer deposit is of residual type; construction program involved building large central gravel washing plant, preparation of pit, installation of portable crushing plant, and conveyor system for transporting mined and crushed gravel from pit to washing plant, and water supply system.

How Natomas Keeps Large Dredge Operating in Desert
J.B. HUTTL.
Engineering and Mining Journal v 151 n 10 Oct. 1950 p 969.
Twin stackers on bucketline dredge near mouth of Copper Canyon, handle 500 yd per hr; 9 1/2 cu ft buckets clean bedrock down to 85 ft below water line, come up with gravel at 35 buckets per min; dc motors permit high speed and flexibility of control; chief problems are power and water supply.

**GOLD PLACER** Mining Method Dredging U.S. Oregon

Gold Dredging in Southwestern Oregon.
R.C. TREASHER.
Engineering and Mining Journal v 142 n 3 Mar 1941 p 39-41.
Of 22 areas in Jackson and Josephine Counties, that had been or were being dredged in spring of 1940, 13 are active including 2 connected bucketline dredges, 5 dragline floating washing plants, and 6 power shovel excavators; notes on individual plants and operations; map indicating locations of 22 areas.

**GOLD PLACER** Mining Method Dredging U.S. South Dakota

Castle Creek Dredge at Mystic, South Dakota.
JESSE SIMMONS.
Mining and Engineering World Aug. 26, 1911.
Information concerning the first dredge installation in the Black Hills, S. Dakota. Ills. 1200 w.

**GOLD PLACER** Mining Method Dredging U.S.S.R.

The GoldDredging Fields of Eastern Russia.
C.W. PURINGTON and J.B. LANDFIELD, JR.
Engineering Magazine Dec. 1901.
A fully illustrated study of the auriferous gravels of Eastern Russia, showing the favourable conditions for electric mining. 4000 w.

Gold Dredging in the Urals, with Notes on Dredging in Siberia.
WILLIAM H. SHOCKLEY.
Bulletin of the American Institute of Mining Engineers July 1906.
An illustrated article giving data of gold dredging in the Urals, and information regarding the country, labour, etc. 2000 w.

A 5 1/2 Foot Dredger with Two Trommels.
D. ZICKS.
Mining Journal May 30, 1908.
Describes a dredge built by the Poutiloff Works Co., Russia, for gold recovery. Ills. 6000 w.

Siberian Dredging Statistics for 1908.
JEROME B. LANDFIELD.
Mining and Scientific Press Jan. 22, 1910.
Gives a resume of statistics gathered by the Gold and Platinum Miners' Assn. of Russia, showing conditions. 1000 w.

Cost of Dredging in Russia and Siberia.
W.H. SHOCKLEY.
Mining and Scientific Press May 7, 1910.
Information based on a report of the Commission of Engineers organized to consider the utility of dredges in Russia. 1500 w.

Kolchan Placer of the Orsk Goldfields, Ltd.
PURINGTON and HUTCHINS
Engineering and Mining Journal Dec. 7, 1910.
Information, reports by authors, concerning this eastern Siberian dredging field. 2500 w.

The Dredging Industry in Russia.
S.I. LITTAUER.
Mining and Scientific Press May 20, 1911.
Abstract translation of a general review of the Russian situation in the golddredging industry. Editorial. 2500 w.

GoldDredging in Russia.

CHARLES JANIN.
Mining and Scientific Press Jan. 6, 1912. (Special)
Illustrated review. 1400 w.

Loss of Gold in Dredging Operations in Russia.
THOMAS REECE.
Mining and Engineering World Oct. 5, 1912
Reviews an article by BARBOT DEMARNY, in the Gorniy Jour. 1600 w.

Dredging by Hand in Siberia.
JOHN POWER HUTCHINS.
Mining and Scientific Press Nov. 22, 1913.
Describes the conditions under which such work is performed, in the recovery of gold or platinum from the beds of streams. Ills. 1000 w.

Dredging in the Russian Empire.
JOHN POWER HUTCHINS.
Engineering and Mining Journal Nov. 14, 1914.
A brief outline of the history of dredging in Russia and the reasons for failure of most of the companies. Ills. 4800 w.

Our Dredging and Dredge Construction Problems.
E.N. BARBOT DEMARNY.
Gorniy Journal, vol. 105, no. 1, Jan. 1929, pp. 8187.
General discussion of gold mining by dredging in Siberia and other goldmining districts of Russia; prospects of mechanization of gold mining in Russia; with special reference to introduction of American methods. (In Russian).

Some Fundamentals of Dredge Design.
A.A. ROZHNOVSKY.
Tzvetniye Metalli n 8 Aug 1931 p 104858.
Principles of design of gold dredge, including ore concentration plant, especially adapted for Russian conditions experience with Bucyrus, Marion and Yuba gold dredges in Siberia. (In Russian)

**GOLD PLACER** Mining Method Dredging Construction and Repairs

The GoldDredge as a Machine.
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Engineer, Lond April 12, 1907.
Discusses defects of these dredges and the causes of breakdowns and interruption of work. 4500 w.

The Metallurgy of Gold Dredging.
-
Mining Journal Jan. 9, 1909.
Explains some of the troubles and causes of failure, showing the necessity of improving the present practice. 4000 w.

Failures in Spuds.
HOWARD D. SMITH.
Mining and Scientific Press May 22, 1909.
On the care that should be taken to provide for the strains in these long steel beams used to hold gold dredges against the bank. Ills. 500 w.

Righting the Calaveras Dredge.
LEWIS H. EDDY.
Engineering and Mining Journal Nov. 30, 1912.
Gives the history of a 6cu ft gold dredge, showing the endurance through constant operation and two serious mishaps. Ills. 2500 w.

Righting an Overturned Gold Dredge.
LEWIS H. EDDY.
Engineering and Mining Journal Oct. 25, 1913.
Illustrated account of the righting of Natomas No. 5, which sank in 49 ft. of water, starboard side down, June 8, 1913. 2000 w.

The Design of Gold Dredge Buckets.
GEORGE E. SIBBETT.
Engineering and Mining Journal Feb. 7, 1914.
Illustrates and describes new type used on the Yuba Consolidated Goldfields. 2500 w.

Construction of an AllSteel Dredge.
LEWIS H. EDDY.
Engineering and Mining Journal March 28, 1914. Serial, 1st part.
Illustrated description of the construction of Yuba No. 14 allsteel 16cu. ft. bucketelevator gold-placer dredge at Hammonton, Calif. 1800 w.

Effect of Dredge Pond Water on Steel Hulls.

W.H. WRIGHT.
Engineering and Mining Journal  Sept. 26, 1914.
Tests of paint protectives in mining operations. 1000 w.

Righting a Wrecked Gold Dredge.
LEWIS H. EDDY.
Engineering and Mining Journal  May 12, 1917.
Natomas No. 7 allsteel gold dredge capsized in April, 1916. Righted in six months, eleven days at a cost of $108,248. Ills. 2000 w.

Shop Operations and Repairs on Gold Dredges.
FRANK A. STANLEY.
Western Machinery World, vol. 12, no. 7, July 1921, pp. 290293, 13 figs.
Features of shop practice on Natomas Co. of California in connection with making new parts for dredges and repair of old parts at company's plant.

Dredge Construction at Dayton, Nev.
GEORGE J. YOUNG.
Engineering and Mining Journal., vol. 112, no. 3, July 16, 1921, pp. 9196, 12 figs.
Erection of steel hull and dredger equipment. Design made to conform to important parts obtained from dismantled dredges.

Forging Gold Dredge Bucket Pins
-
Western Machinery World, Vol. 12, no. 8, August 1921, pp. 337338, 6 figs.
Heat treatment and method of recording data of individual pins.

GoldDredge Bucket and Other Work
FRANK A. STANLEY.
American Machinist, vol. 55, no. 26, Dec. 29, 1921, pp. 10351036, 7 figs.
Manganese steel used for lips. Oxyacetylene torch cuts holes located by a jig. Repairing a large pulley.

Operations in the Construction of Gold Dredges.
FRANK A. STANLEY.
Western Machinery World, vol. 13, no. 3, Mar. 1922, pp. 7579, 10 figs.
Machining of gears, links for ladders, spiders for driving wheels, and erecting of winches.

Emergency Repairs on a Gold Dredge Gear.
FRANK C. HUDSON.
American Machinist, vol. 59 no. 11, Sept. 13, 1923, pp. 393394, 3 figs.
Saving undue delay on milliondollar dredge; reinforcing cracked hub with heavy plates shrunk and bolted into place.

Gold Dredges and Some of Their Repairs.
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American Machinist, vol. 59, no. 24, Dec. 20, 1923, pp. 913914, 6 figs.
Details of type of machine little known east of Pacific Coast; repairing manganese steel buckets and replacing them in chain.

Dismantling and Rebuilding a Gold Dredge.
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Engineering and Mining Journal, vol. 128, no. 19, Nov. 9, 1929, pp. 736737, 3 figs.
Brief note on Bucyrus dredge with 77 buckets of 6cu. ft. capacity, which excavates to depth of 30 ft.; completely equipped electrically; total cost of moving and rebuilding at point 14 mi. upstream was about $32,000.

When Gold Dredge Capsizes.
C. THOMAS.
Engineering and Mining Journal v 138 n 6 June 1937 p 27982.
Description of righting and dismantling over turned gold placer dredge near Folsom, Calif; hull 10 ft 6 in, deep 56 ft wide and 150 ft long, with displacement 2200 tons u der operating conditions; details of salvaging job with photographic illustrations and sketch plan.

Metals Used in Dredging Industry.
H.A. SAWIN and C.M. ROMANOWITZ.
Mining Journal (Phoenix, Ariz) v 22 n 4 July 15 1938 p 35.
General commentary on improvements in dredge capacities and efficiency, attributed largely to improvements in steel used in dredge construction; individual items of dredge parts discussed, as concerns most suitable alloys to meet requirements of design.

Welding Worn Dredge Equipment.
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Chemical Engineering and Mining Review 32 n 382 July 10 1940 p 36972.
Complete paper gives full details of experiences in building up worn parts on typical tin dredge; routine repairs were made to bucket pins, lips, hoods and treads, top tumbler tread plates, and at longer intervals; to top and bottom tumbler treads; welding technique, using dc welding machine and manganese steel electrodes. Extract from paper before Dredging Assn of Southern

Malaya.

Moving a 2,000 Yd. Dragline Dredge Across Paved Highway.
W.G. SWART.
Engineering and Mining Journal v 142 n 6 June 1941 p 44.
Problem in connection with operation of 60ton floating gold recovery plant; enough gravel remained below bridge to yield profit; dismantling and reassembling would require 8 days, with estimated cost of $1500; trucking bids were from $1800 to $2000; sketch shows use of "Woodsman's Luff," by which beat mounted on 50ft log runners was skidded to new pond in 6 hr at cost of $200.

HardFacing in Gold Dredge Maintenance.
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Western Machinery and Steel World v 32 n 11 Nov 1941 p 5645.
Analysis of costs of dredge maintenance made by gold dredging company operating chain bucket type dredges in California; analysis, based on records kept for one of dredges, proved savings made possible by hard facing worn bucket pins and led to adoption of this maintenance procedure as standard.

Moving 200Ton Dredge Overland to New Panama Canal Lock Site.
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Engineering News Record v 127 n 21 Nov. 20 1941 p 721.
Brief details on movement of 22in hydraulic dredge "Grand Lake" which was picked up bodily and placed on shore, then skidded 1800 ft. overland into artificial pool, to begin excavating for additional locks for Panama Canal.

Dredge Bucket Renewal Conserves Manganese Steel.
C.H. THURMAN.
Engineering and Mining Journal v 144 n 4 Apr 1943 p 68.
Utilization of scrap manganese steel to restore worn units on 8 1/2 cu ft bucketline dredge operated by Thurman Gold Dredging Co near Reading, Calif: electric welding: in addition to conservation of manganese steel, estimated saving in cost of one bucket line is $2600 over 8 months

Righting Capsized Dredge Takes 50 minutes.
W.B. MACAULAY.
Engineering and Mining Journal v 45 n 4 Apr 1944 p 801.
Illustrated account of capsizing and of rehabilitation of placer mining dredge, operated by Rand

Gold Dredging Associates for recovery of scheelite, near Randsburg, Calif; it has steel hull 75 ft long, 36 ft wide and 6 ft deep; before actual righting operations were undertaken, experiments were made with model built on scale of 3/8 in. to 1 ft.

Gold Dredge Kept Digging.
H.B. MCGUIRE.
Welding Engineer v 33 n 7 July 1948 p 4850, 645.
Maintenance of bucket line of cast manganese steel buckets; how driving tumbler is kept close to same pitch as digging buckets; building up of tumbler by welding; 2 tone process used; bucket renovation; costs and materials used are tabulated.

Aluminum Dredge Designed for Difficult Placer Job.
J.B. HUTTL.
Engineering and Mining Journal v 150 n 4 Apr 1949 p 72-4.
Construction details of dredge known as "Guayabal unit" specially designed for Pato Consolidated Gold Dredging Ltd for operation on Porce River project in Colombia; use of aluminum alloys cuts overall weight about 100 short tons and decreases mean draft 10 in.

Welding May Cut Your Dredge Maintenance Costs.
H.B. MCGUIRE.
Engineering and Mining Journal v 150 n 9 Sept 1949 p 801.
Replacement of tumbler on bucket line may mean investment of $8000 to $10,000 and much lost time, where welding may restore tumbler to operation at estimated cost of $1100; similar savings can be effected in bucket repair; how job was done on one dredge operating in California.

Giant Moving Operation at Steep Rock Lake.
S.G. HANCOCK.
Canadian Mining Journal v 76 n 5 May 1955 p 579.
Methods used in moving overland two electric dredges weighing about 900 tons, from Hogarth to "GD" ore body; hulls were moved intact for distance of about 2 mi by using crawler tracks.

Zavisimost konstruktivnykh parametrov drag i drazhnykh razrezov ot moshchnosti rosspei.
I.I. AFANAS'EV.
Gornyi Zhurnal n 10 Oct 1962 p 404.
Dependence of structural parameters of dredges and pits on thickness of placers; determination of optimum capacity of bucket on mining and

geological conditions; evaluation of depletion percent of placers during dredging of thick and medium thick placer deposits as result of depth of scooping and system of mining.

**GOLD PLACER** Mining Method Dredging Land Restoration

Tailing Disposal of Gold Dredges.
J.P. HUTCHINS.
Engineering and Mining Journal Feb. 3, 1906.
Reviews the history of tailing disposal and the methods that have been tried to restore worked out land to its original condition. Ills. 3800 w.

Restoring Dredged Ground.
D.B. Stellars
Engineering and Mining Journal May 8, 1909.
Abstract from a report concerning methods used in Victoria, Australia, to restore the dredged area to usefulness for agricultural purposes. Ills. 1200 w.

Rock Crushing Plant Reclaiming Dredge Lands.
A.H. MARTIN.
Mining World Feb. 5, 1910.
Illustrated account of methods of removing and utilizing the debris, and restoring the ground for cultivation. 1600 w.

Restoring Dredged Ground.
A.S. ATKINSON.
Mines and Minerals Feb. 1911.
Describes an Australian golddredging method which leaves the ground in condition for agriculture. 2200 w.

Methods of Restoring Soil on Dredged Areas and Costs of Gold Dredging in Australia.
-
Engineering and Contracting March 13, 1912.
Gives the stipulations of the Australia mining laws, and describes plants for resoiling dredged land. 1800 w.

A California Dredge with Two Tailings Stackers.
LEWIS H. EDDY.
Engineering and Mining Journal Jan. 22, 1916.
A dredge equipped with means for resoiling the area it dredges. Ills. 2500 w.

California Dredge with Four Tailings Conveyors.
LEWIS H. EDDY.
Engineering and Mining Journal, June 23, 1917.
System which leaves land in condition for agricultural cases. Ills. 1200 w.

Redredging  Will It Pay?
WALTER H. GARDNER.
Engineering and Mining Journal  Jan 5, 1918.
Discusses attempts to dredge soil in California. Ills.
1500 w.

Resoil Dredging Without Stream Pollution.
-
Chemical Engineering and Mining Review v 29 n 344 May
1937 p 3049.
Features of dredge plant with 9 1/2 cu ft buckets
designed to handle 175,000 cu yd of
overburden and wash gravel monthly at
Newstead, Victoria; arrangements made to
deliver heavy coarse stones at point 12 to
15 ft behind stern of dredge; sand from gold
saving boxes at point of 25 ft. behind;
overburden will be stripped by raising
bucket ladder and digging soil dry; ground
will be finally levelled off with scoops and
scrapers.

Resoiling After Dredging.
D.R. DICKINSON.
Industrial Australian and Mining Standard v 94 n 2381
Feb 15 1939 p 435.
General comments on feasibility of reconditioning
dredged land; outline of practice in Loddon
Valley, near Newstead, Victoria, Australia;
overburden to depth of about 9 ft is dredged
in semidry condition and discharged by belt
conveyor more than 100 ft behind dredge;
screen oversize material from washed gravel
is dropped 15 ft astern, and sands about 25
ft astern; notes on procedure in other
localities. Extracts from paper in Mining
and GeologicalJ.

Dredge Resoiling Highly Successful.
-
Chemical Engineering and Mining Review v 34 n 398 Nov
10 1941 p 414.
Example described and discussed; Victoria Gold Dredging
Co NL, operating at Newstand, has completed
restoration of 50 acres of ground dredged in
first year's operations; results shown in
set of photographs.

Dragline Dredging and Resoiling.
C.V. AVERILL.
Chemical Engineering and Mining Review v 34 n 404 May
11, 1942 p 239.
Extracts from paper in Calif J Mines and Geology Apr
1941.

Notes on Resoiling, with Special Reference to Dredging
and Reclaiming of Auriferous Farm Lands at
Newstead, Victoria.

J.H.W. MCGEORGE.
Institute of Mining and Metallurgy Bul n 461, 463, July 1943, 11 p. supp plate and (discussion) Nov p 14.
Goldbearing gravel is covered by overburden averaging 13 ft: upper layer of overburden is dredged off in advance of gravel face; then underlying gold bearing gravel is dredged; conveyors dump coarse gravel on bottom of pond; on this is deposited sandy undersize from screen; new surface is then formed with soil and clay overburden; cost data.

Notes on Resoiling, with Special Reference to Dredging and Reclaiming of Auriferous Farm Lands at Newstead, Victoria.
J.H.W. MCGEORGE.
Institute of Mining and Metallurgy Bul n 467 July 1944 p 58.
Author's reply to discussion of paper from issue of Nov 1943.

Progress of Resoiling by Wellington Alluvial Dredge.
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Chemical Engineering and Mining Review v 38 n 455, Aug 10 1946 p 4067.
Supplementing article from Mar 11 1940 issue, notes are given on more recent equally successful results obtained in reclamation of area of approx. 25 acres of land previously used as sludge settling area; method of cultivation; recovery of crop, particularly Wimmers rye grass, lucerne and subterranean clover during winter and spring of 1945 resulted in outstanding pasture crop.

**GOLD PLACER** Mining Method General

Placer Mining Kinks.
CHARLES P. RICHARDSON.
Mining and Scientific Press March 29, 1902.
Illustrates and describes simple devices made where materials were scarce and hard to obtain. Serial. 1st part. 2300 w.

Placer Mining.
NELSON BLOUNT.
Yale Scientific Monthly June 1902.
Describes places and methods of working. Ill. 2200 w.

Principles of Gravel Mining.
WILLIAM H. STORMS.
Mining and Scientific Press Dec. 2, 1911.
Considers the fundamental principles of placer mining. 1500 w.

Electrical Applications in the Coeur d'Alenes.
J.B. FISKEN.
Mining and Engineering World July 26, 1913.
Remarks on the general application of electricity to mining, reviewing the history of early applications, and especially developments in the district named. Ills. 3500 w.

Modern Methods in Placer Mining.
CARNEY HARTLEY.
Mining and Engineering World April 25, 1914.
A review of placer mining and methods, discussing changes needed to meet present conditions. Ills. 2500 w.

Placer Gold and Its Recovery.
HARBOURED A. MAIGRE.
Engineering Magazine June 1914.
Describes the sluicing and dredging methods. Ills. 3500 w.

Lode and Alluvial Mining.
JOAN SERVES.
Australian Mining Standard July 16, 1914. Serial, 1st part.
Gives particulars and illustrations of operations. 2500 w.

Opportunity in Placer Mining.
CARNEY HARTLEY.
Engineering and Mining Journal Jan. 23, 1915.
Discusses the slow development of placer mining methods outside of dredging and causes therefor, with special consideration of semiarid

regions, outlining methods which should be successful for such deposits. 3300 w.

The Mining of Alluvial Deposits.
NEWTON B. KNOX and CHARLES S. HALEY.
Mining Magazine Feb. 1915. Serial, 1st part.
Relative advantages of various methods. Ills. 6500 w.

Notes on Ancient and Primitive Mining and Metallurgical Methods.
T.A. RICKARD.
Engineering and Mining Journal, vol. 122, nos. 2, 12 and 17, July 10, Sept. 18 and Oct. 23, 1926, pp 4853, 451455 and 649651, July 10.
Early placers; oil on Golden Fleece; refining as described by various authors; Pliny on working alluvial deposits.

Parker Trap Catches Vermilion Gold.
J.E. PARKER
Mining Truth, vol. 13, no. 12, Aug. 2, 1928, pp. 56, 1 fig; see also Min. Rev., vol. 30, no. 9, Aug. 15, 1928, pp. 78, 2 figs.
Describes device invented by author, consisting of arrangement of riffles in center and steps along sides of fanshaped passage; water enters narrow end and slows down as trap widens; details of design undergoing revision.

A Plea for Alluvial Gold Mining.
F.H. WILLIAMS.
Mining Journal, (Lond.), vol. 170, nos. 4962, 4963 and 4964, Sept. 27, 1930, pp. 762763; Oct. 4, pp. 781782, Oct. 11, pp. 799800. Sept. 27.
Desirability of increasing gold production; lode gold mining now at peak; alluvial gold rushes have led to rapid development of countries; many known placer fields still exist; important points in prospecting and examination of areas. Oct. 4, Gold dredging. Oct. 11; Working costs; bulk treatment of alluvials; dredging working costs; dredgable areas numerous; saving and treatment of gold concentrates; outlet for dormant British Capital is foreseen.

SmallScale Placer Mining Methods.
C.F. JACKSON and J.B. KNAEBEL.
US Bureau of Mines Information Cir n 6611 Apr 1932 17 p supp plates.
Data covering questions recently referred to Bureau of Mines for answer; maps showing location of placer mining districts in several states; geology and types of placer deposits; minerals associated with placer gold;

prospecting and mining methods; portable and semiportable placer mining equipment and its operation. Bibliography.

Prospecting and Operating Small Gold Placers.
W.F. BOERICKE.
New York, John Wiley and Sons, 1933. 136 pp., illus. diagrams, tables. $1.50. Inexperienced prospector will find much wise counsel in book, which aims to teach him how to prospect intelligently and to suggest ways of equipping and operating any placers that he may find; author confines himself to methods that do not require much investment of capital but are suited to wants of small operators. (Revised 2nd edition in 1936.)

Tilling Sands for Gold.
A.S. PARK.
Compressed Air Magazine, v 38 n 3 Mar 1933 p 40758.
Comment on revival of interest in gold placer mining; training of gold seekers in Canada and in Colorado and California; equipment is of same type as used in California gold rush of 1849; procedure in use of gold pan, rocker and sluice boxes.

Where Does Mine Dollar Go!
P.M. TYLER.
Mining and Metallurgy v 15 n 328 Apr 1934 p 1835.
Most prolific source of cost data relative to mining and treatment of mineral raw materials is in reports of US Bureau of Census; graphic representation of cost distribution of expenditures by mining and quarrying industries of United States; effects of displacement of manual labour by machines; approximate rank of specified mineral industries, based upon margin above direct cost in 1929, 1919 and 1909.

What Will It Cost to Work Gold Placer of Medium Size!
H.C. CHELLSON.
Engineering and Mining Journal v 135 n 10 Oct. 1934 p 4415.
Calculations based on operation of property in Gilpin County, Colo; figures are given for 24 hr yardages of 100 up to 2000, for gravel ranging in value from 20c up to 74c per yd, and for price of both $20.67 and $35.

Placer Mining in Western United States.
E.D. GARDNER and C.H. JOHNSON.
US Bureau of Mines Information Cir n 6786 Sept 1934 73 p and n 6787 Oct. 89 p. Part I.
General information, handshoveling and groundsluicing.

Part II. Hydraulicking, treatment of placer concentrates and marketing of gold.

Wake Up, Placer Operator!
J.M. HILL.
Engineering and Mining Journal v 136 n 10 Oct 1935 p. 4967.
It is suggested that something may be learned from lode gold sampling and recovery methods; contention is that loss of fine gold by placer miners has been excessive.

Alluvial Mining Data.
H.L. HOLLWAY.
Mining Magazine v 54 n 2, 3, and 4 Feb 1936 p 857, Mar p 14653 and Apr p 20811. Compilation of formulas; on flow of water; tabulated data, for use in simplifying field calculations; pipe lines, safe working heads; horsepower required to pump water; sluice boxes; duty of water; hydraulic elevators; gravel pumps. (see follow-up art. Oct, 1937)

Prospecting and Operating Small Gold Placers.
W.F. BOERICKE.
2 ed. New York, John Wiley and Sons, 1936.
Practical guide designed to assist man without technical education to prospect intelligently and to equip and operate placer deposits on small scale; new edition has been revised to agree with current price of gold and chapter on placer mining machines rewritten. 144 pp. illus., diagrs. tables.

Prospecting for Placer Gold.
W.R. STORMS.
Mining Journal (Phoenix, Ariz) v 20 n 1 May 30, 1936 p. 34 and 301.
Suggestions as to location of gold placer deposits in western United States and best methods for prospecting them; hopeful (but unproven) theory of one author is quoted, to effect that stream action will gather fine pieces of gold and weld them together to provide new deal for prospectors of abandoned gulches.

Locating Rims of Buried Gravel Channel.
F.A. CRAMPTON.
Mining Journal (Phoenix, Ariz) v 20 n 15 Dec. 30 1936 p 7 and 34.
Description of technique developed by author, tried in California, and found satisfactory; it involves determination of course and location of ancient river, from evidence on

surface; beginning made at some point where cross section of channel is exposed by erosion; compass survey, contour sketching, and detailed notes of topographical and geological inspections are plotted on map for study and interpretation.

Advice to WouldBe Placer Operators.
R.L. KIDD.
Mining and Metallurgy v 18 n 366 June 1937 p 2834.
Comment on uncanny ability of some people to sink test pits in high grade gravel, to encourage investment in property on theory that thorough sampling is waste of time reputable owner or promoter can save embarrassment by having reliable engineer sample and report on property before trying to interest investors or operators; outline of most important factors to be considered in investigation of placer deposits.

Alluvial Mining Data.
H.L. HOLLOWAY.
Mining Magazine v 57 n 4 Oct 1937 p 2106.
Tabulated data and charts for drilling calculations that amplify those given in paper by same author from issues of Feb, Mar and Apr 1936.

Die Maschinen zum Abbau alluvialer Metallvorkommem.
F.A.M. WUELFINGHOFF.
Fördertechnik und Frachtverkehr, v 31 n 10, 11 and 12 May 11, 1938 p 1869 May 25 p 2057 and June 8 p 2227.
Mining machinery for alluvial metal deposits; general data on mining of soapy minerals; bucket chain dredges; design, dimensions and operation; preparation methods; and equipment; output and cost data. Bibliography.

Notes on Recovering Gold and Other Minerals in Placer Mining.
J.H. ROBERTSON.
Canadian Mining Journal v 62 n 4 Apr 1941 p 2235.
Operations by individual miners; effect of riffles; cleaning up to recover minerals; largescale operations; use of under currents, where water is abundant; jigs; recovering gold from concentrates; amalgamation.

Placer Mining
J.H. ROBERTSON.
Canadian Mining Journal v 63 n 1 Jan 1942 p 104.
To be remunerative, mining of low grade placer deposits has to be carried out on large scale, requiring large capital outlay; occurrence of placer deposits and mining of them;

classification of placer mining methods; function of examining and reporting engineer; preliminary inspection; water and its application; testing; shafting; drilling; sampling; records; determining methods of mining, type of installation, cost, etc; estimate of profits; capital requirements.

Safety Practices in Dredging and Hydraulic Mining.
R.W. FATZINGER.
US Bureau of Mines Bul n 470 1948 76 p.
Paper is based upon observations made and records received in Alaska during 1946 and in California during 1946 and 1947; data from 30 active dredging operations and 34 active hydraulic operations; description of placer dredges; description of hydraulic mining; employment and accidents in dredging and hydraulic mining; causes of dredging accidents and their prevention; causes of accidents in hydraulic mining and their prevention. Bibliography.

Mechanization in Canadian Gold Mines.
I.M. MARSHALL.
Canadian Mining Journal v 70 n 7 July 1949 p 625.
First step in mechanization is careful, long range planning; every machine must be worked to limit of capacity; there must be readiness to accept wide reaching changes in system of mining; attention should be directed to minor mechanical devices and innovations; care should be taken in choice and training of machine operators; safety; change in greater or less degree, is required in mental attitude of both staff and workmen; both must become more mechanically minded.

Introductory Prospecting and Mining.
L.M. ANTHONY.
Alaska Univ School Mines Bul 4 (revised) 1961 123 p.
I
Identification of minerals; general geology and map reading; rocks and rock structure; ore deposits, lode prospecting and sampling; placer prospecting and sampling; geophysical prospecting; geochemical prospecting; small scale lode mine development; small scale placer mining methods, mining law and claim staking; mine promotion and mineral markets; sight identification of minerals and field tests; glossary of mining terms.

Placer Mining.
L.G. WHITE.

Western Miner and Oil Review v 34 n 3 Mar 1961 p 2836.
Origin and types of placer deposits; general methods of prospecting and testing placers; simple recovery devices; characteristics and types of placer gold; mechanical methods of testing placer ground; mechanical mining methods; gold recoveries; cleaning gold; placer mining regulations and staking.

Belt Conveyors Speed Placer Mining.
H.H. SCHMIDT.
Engineering and Mining Journal v 162 n 11 Nov. 1961 p 1045.
Dozer belt conveyor operation is fast, lowcost method for open cut placer mining; it consists of mobile conveyors, sluice box and dozer or two; belt conveyor was first successfully used for stacking tailings and then applied to feed system; feed conveyor gives steady feed rate, lowcost elevating medium for washing, sizing and de-watering and has mobility combined with short moving and settingup time; setup and operation.

Vtoroe soveshchanie po geologii rosspynkh mestorozhdenii poleznykh iskopaemykh.
I.S. ROZHKOV, G.P. MIKHALEV.
Geologiya Rudnykh Mestorozhdenif v 6 n 3 MayJune 1964 p 11316.
Second conference on geology of placer type mineral deposits; conference took place on Feb 12 through 17 1964 in Moscow; 59 papers presented at conference were dedicated to various problems of geology of placer deposits, to methods of their prospecting, and exploration.

**GOLD PLACER** Mining Method Hydraulic Africa

Hydraulic Tin Mining in Swaziland.
J. JERVIS GARRARD.
Institution of Mining and Metallurgy Bul 149 Feb. 5,
1917. Plates and tables. 22 pp.
Methods of working.

**GOLD PLACER** Mining Method Hydraulic Australasia

Hydraulic Dredging.
F. DANVERS POWER.
Engineering and Mining Journal April 21, 1906.
Illustrates and describes this method of working alluvial ground, as practiced in Australia stating its advantages. 1800 w.

The Lisle Goldfield, Tasmania.
W.H. TWELVETREES.
Australian Mining Standard Oct. 14, 1908.
Specially considering the sources of the alluvial gold. 1600 w.

An Australian PumpDredge.
CHARLES JANIN. I
Mining and Scientific Press Nov. 11, 1911.
Illustrated description of a pump hydraulic sluicing plant for treating goldbearing alluvials. 1200 w.

The Conservation of Water for Hydraulic Sluicing.
S.R. STONE.
Mining and Engineering World June 1, 1912.
Gives particulars of difficulties overcome at the Palmer district, of Queensland. 2000 w.

**GOLD PLACER** Mining Method Hydraulic Canada B.C.

Hydraulic Gravel Elevators.
-
Australian Mining Standard Nov. 22, 1900.
Illustrated description of a complete hydraulic gravel eliminating plant at the Cariboo Gold fields, B.C. 900 w.

Hydraulic Mining in British Columbia.
HOWARD W. DUBOIS.
Columbia Engineer 1906.
Considers the conditions necessary for successful hydraulic operations, and shows what has been accomplished. 2500 w.

The Cariboo Consolidated Hydraulic Plant, Bullion, B.C.
W.J. DICK.
Journal of the Canadian Mining Institute Vol. X, 1907.
Student's prize paper. Describes this property and its development, 2500 w.

Hydraulic Mining in Cariboo.
DOUGLAS WATERMAN.
Mining and Scientific Press Sept. 7, 1907.
An illustrated description of this auriferous deposit and the method used in mining. 1800 w.

The Solution of Some Hydraulic Mining Problems on Ruby Creek, British Columbia. CHESTER F. LEE and T.M. DAULTON.
American Institute of Mechanical Engineers, Bul May 1916.
Difficulties overcome in this northern district. Ills. 1500 w.

Hydraulic Mining
J.H. ROBERTSON.
Canadian Mining Journal, vol. 49 nos. 26, 27, 29, 30 and 32, June 29, July 6, 20, 27 and Aug. 10, 1928, p. 521522, 546547, 580582, 600602 and 639641, 12 figs. June 29;
Geological outline of alluvial deposits; article chiefly reviews deposits of British Columbia; sources of gold or mineral; disintegrated stockworks; veins at or near junction of slates and granites; fallacy of belief that minerals never found further than 4 mi. away from source; preglacial deposits usually coarse gold, postglacial fine; source of "big stuff" is debatable. July 6: Possibilities of working placer

property by hydraulic mining methods. July 20; Outlines four main methods; simple hydraulicking, hydraulicking combined with hydraulic elevating, suction dredging or suction elevating, and bucket dredging. July 27; Methods of securing water under pressure. Aug. 10; Water supply; dam, ditches; flumes; penstock; pipe lines; recovery of minerals; handling boulders; cleanups.

Hydraulic Operation on Otter Creek.
J.E. MORAN.
Canadian Mining and Metallurgy Bulletin n 238 Feb 1932 p 6571.
Operating methods of La Compagnie Francaise des Mines d'Or du Canada in Atlin district.

Hydraulic Operations on Otter Creek.
J.E. MORAN.
Canadian Institute of Mining and Metallurgy and Mining Soc Nova Scotia Trans v 35 1932 p 6571, from Can Mining and Met Bul n 238 Feb. 1932.

Bullion Hydraulic Mine, Cariboo, B.C.
R.F. SHARPE.
Canadian Institute of Mining and Metallurgy Trans v 42 1939 (mtg Nov 1939) p 5938. Bul n 332 Dec 1939.
Mine is on left bank of South fork of Quesnel river; 3 mi below outlet of Quesnel Lake; historical notes; description of channel; geology; maintenance of safe face; water supply; mining methods of Bullion pit; shooting of boulders; description of sluice; cleanup; equipment and facilities.

What Does Hydraulicking Cost!
W.H. EASSIE.
Engineering and Mining Journal v 145 n 6 June 1944 p 924.
Data based upon case study of remote area in British Columbia; Venture Exploration (East Africa) Co., operated on Germansen Creek, in Omineca district, from 1937 to 1942; for 3 seasons, costs averaged 9.8c per cu yd.

**GOLD PLACER** Mining Method Hydraulic Canada Quebec

Hydraulicking in Beauce County, Que.
FRITZ CIRKEL.
Engineering and Mining Journal June 1, 1912.
An illustrated account of the hydraulic working of
alluvial gold gravels. 400 w.

**GOLD PLACER** Mining Method Hydraulic Canada Yukon

Hydraulicking in the Yukon Region.
C.R. SETTLEMEIER.
Mining and Scientific Press Nov. 19, 1904.
Describes the conditions of this region and the methods used. Ills. 2700 w.

Hydraulic Mining in a Cold Climate.
J.P. HUTCHINS.
Mining and Scientific Press June 2, 1906.
A discussion of this method of mining and its problems, especially in relation to its use in the Klondike and other northern places. Ills. 4500 w.

Notes on Hydraulic Mining.
-
Mines and Minerals Aug. 1907.
Discusses the subject of hydraulic gold mining, with special reference to the Cariboo District, British Columbia, and Yukon Territory. Ills. 4000 w.

The Hydraulic Equipment of the Old Channel Mines.
JOHN M. NICOL
Mining and Scientific Press Sept. 14, 1907.
Describes mines that have been worked for 30 years, especially the present plant and methods of working. 3000 w.

Hydraulic Mining in the Yukon.
R.E.W. HAGARTY.
Canadian Engineer Nov. 6, 1908.
Describes methods used. 4000 w.

Hydraulic Engineering in the Yukon.
E.W. HAGARTY.
Canadian Engineer Feb. 19, 1909.
An illustrated article describing the engineering development of the Yukon Gold Co. 4000 w.

Standard Sprinkler System Strips Frozen Overburden.
H.H. SCHMIDT.
Engineering and Mining Journal v 165 n 7 July 1964 p 801.
By using conventional irrigation sprinklers during 2mo period, Ballarat Mines Ltd was able to strip 165,000 yd of frozen muck from placer gold deposit on Dominion Creek, Yukon Territory, Canada; area of ground covered by sprinker setup was 200,000 sq ft, with muck total of 188,400 cu yd; system was very successful in clear frozen muck, fair in dry clay and poor

when mantle of slide collected and protected surface.

**GOLD PLACER** Mining Method Hydraulic Europe

Gold Mining in the Ancient Roman Workings in Spain.
ALEXANDER DEL MAR.
Engineering Magazine March 1905.
An account of the placers of Las Medulas describing the manner in which the ancients used advanced methods of hydraulic engineering in gold mining. 4000 w.

**GOLD PLACER** Mining Method Hydraulic General

Practical Notes on Hydraulic Mining.
GEORGE H. EVANS.
Mining and Scientific Press April 10, 1897.
Part first names points on which a mine manager should be thoroughly posted, and considers water facilities, and nature of the country for grades, etc., as the first two.

Some Notes on Hydraulic Mining.
AUGUSTUS J. BOWIE.
Engineering and Mining Journal Oct. 30, 1897.
Some of the difficulties encountered are mentioned showing how hazardous anticipated estimates of yield are. 2500 w.

Defining Hydraulic Mining.
T.L. FORD.
Mining and Scientific Press April 23, 1898.
Extracts from a letter by author, of San Francisco, to an inquiry as to what constituted hydraulic mining. 1700 w.

Centrifugal Sluicing.
A.J. BENSUSAN.
Canadian Mining Review Oct. 31, 1900.
From the "Jour. of the N.S.W. Chamber of Mines." Describes this process of mining gold from auriferous gravel, giving information concerning work done. 3300 w.

Notes on Hydraulic Mining.
GEORGE H. EVANS.
Mines and Minerals Dec. 1900.
Practical points necessary to be considered in carrying water in ditches, flumes, etc. Ill. 2200 w.

Hydraulicking LowGrade Gravel.
P. BOUERY.
Mining and Scientific Press April 18, 1903.
Gives results obtained in working placers, showing that low grades can be worked with some profit. 1400 w.

Working LowLying Gravel Deposits by the Hydraulic Elevator System.
R.H. CAMPBELL.
Mining and Scientific Press Feb. 13, 1904.
Illustrations of the latest improved Campbell hydraulic elevator, with remarks. 800 w.

Notes on Hydraulic Mining Practice.
RICHARD L. GRIDER.
Engineering News July 20, 1905.

Abstract of an article in the Colorado School of Mines "Bulletin." Jan. 1905. Illustrated description of methods of work in a hydraulic mine. 3500 w.

Conserving the Water Supply in Placer Mining.
DENNIS H. STOVALL.
Ores and Metals March 20, 1907.
Considers advantages gained by properly constructed reservoirs, to lengthen the hydraulic season, and the employment of a selfshooter. 1000 w.

Ways of Cleaning Up in Hydraulic Placer Mining.
DENNIS H. STOVALL.
Ores and Metals July 20, 1907.
Shows how gold and platinum may be lost through carelessness, and gives suggestions as to method of reducing these losses. 1000 w.

The Ruble Hydraulic Elevator.
J. MCD. PORTER.
Bulletin of the American Institute of Mining Engineers Oct. 1909.
Illustrated detailed description of this appliance and its work. 1200 w.

Notes on Placer Mining, with Special Reference to Hydraulic Sluicing.
N.A. LOGGIN.
Institution of Mining and Metallurgy, Bul 76 Jan. 18, 1911.
Discusses details of hydraulic mining and the many difficulties and problems requiring solution. Ills. 11500 w.

Losses in Hydraulic Mining.
CHARLES S. HALEY.
Mining and Scientific Press Jan. 21, 1911.
The difficulty of saving flaky gold, with suggestions. 1500 w.

Notes on Hydraulic Sluicing.
N.A. LOGGIN.
Engineering and Mining Journal April 8, 1911.
Review of placer mining with suggestions as to the design of ditches, dams, flumes and penstocks. Ills. 2000 w.

Principles of Hydraulic Mining.
H.L. MEAD.
School of Mines Quarterly April, 1913.
Outlines different types of gravel deposits and describes methods of working Ills. 4000 w.

A Study of riffles for Hydraulicking.
PIERRE BOUERY.
Engineering and Mining Journal May 24, 1913.

Gives results of experiments made to determine saving capacities. Ills. 3500 w.

Syphoning Gravel.
J. JERVIS GARRARD.
Institution of Mining and Metallurgy, Bul. 159 Dec. 13, 1917.
Method of hydraulicking and elevating by means of a syphon. Ills. 2000 w.

Some Practical Points on Hydraulic Mining.
W.A. NEWMAN.
Engineering and Mining Journal v 137 n 1 Jan 1936 p 10-2.
Study of nozzle flow; also commentary on various factors tending to improve technique in hydraulic mining practice.

Hydraulic Mining.
J.H. ROBERTSON.
Canadian Mining Journal v 62 n 11 Nov. 1941 p 7504.
Details of various principles in installation of hydraulicking plant; dams; ditches and flumes; pipe lines.

Hydraulic Mining Methods.
S.S. HOLLAND.
British Columbia Dept Mines Bul n 15 1942 76 p.
Bulletin is in large part reprint from U S Bureau of Mines Information Circular 6787, by E.D. GARDNER and C.H. JOHNSON. Bibliography.

Problems in PresentDay Hydraulicking.
J.P. HUTCHINS.
Mining Congress Journal v 28 n 3 Mar 1942 p 204.
Analysis of various questions arising in connection with resumption of hydraulic mining on large scale in Sierra Nevada mountains; principle object is to emphasize need for teamwork and cooperation; future price of gold as factor; some deposits may be dry stripped for hydraulicking; most acute problem is tailings disposal.

Notes on Hydraulic Mining.
J.H. ROBERTSON.
Canadian Mining Journal v 63 n 6 June 1942 p 36870.
Arranging mining operations; service pipes, valves, sluices, etc.

Hydraulic Mining Methods.
E.D. GARDNER AND C.H. JOHNSON.
Mine and Quarry Engineering v 8 n 4, 5, 6, 7, 8, 9, 10, Apr 1943 p 758. May p 10310, June p. 1337, July p. 15762, Aug. p. 1836, Sept. p. 2079, Oct p 2313. Reprinted from U S Bureau of

Mines Information Cir n 6787.

Hydraulic Mining Methods.
E.D. GARDNER and C.H. JOHNSON.
Mine and Quarry Engineering v 9 n 1 Jan 1944 p 189, 17.
Reprinted from U S Bureau of Mines Information Cir n 6787.

**GOLD PLACER** Mining Method Hydraulic New Zealand

Hydraulic Sluicing in the Collingwood District.
H.F. LOGAN.
New Zealand Mines Record Feb. 16, 1900.
Descriptive. 2400 w.

History of Hydraulic Mining in New Zealand.
JOHN EWING.
Mining Journal March 9, 1907.
Outlines the work of nature in the South Island of New Zealand, and the early methods of extraction of gold, describing the system of hydraulic elevating introduced in 1878. 2700 w.

Alluvial Working at Addison's Flat, New Zealand.
A. GORDON MACDONALD.
Engineering and Mining Journal Jan. 23, 1909.
Illustrates and describes a system of hydraulic sluicing, the tailings being elevated by means of a "back balance." 1000 w.

**GOLD PLACER** Mining Method Hydraulic South America

San Antonio de Poto Hydraulic Mine, Peru.
W.E. GORDON FIREBRACE.
Mining and Scientific Press Dec. 5, 1908.
An illustrated account of this famous placer mine. 1200 w.

Suchez de Bolivia Hydraulic Mine.
W.E. GORDON FIREBRACE.
Mining and Scientific Press Feb. 20, 1909.
Illustrated description of largest known auriferous gravel deposit in South America. 1000 w.

Hydraulic Mining In Colombia.
R.S. BOTSFORD.
Mining Magazine, vol 43, no. 3, Sept. 1930, pp. 137142, 7 figs.
Account of progress and of hydraulic mining activities near Medellin, in department of Antioquia.

**GOLD PLACER** Mining Method Hydraulic U.S. Alaska

Hydraulic Elevator Work on Anvil Creek, Nome, Alaska.
C.W. PURINGTON.
Mining and Scientific Press April 26, 1913.
Illustrates and describes the handling of unfrozen gravel by the hydraulic nozzle with the accompaniment of the hydraulic lift and tailing nozzle. 2000 w.

Hydraulic Placering in Alaska.
-
Mining World v 8 n 13 Dec 1946 p 367.
Notes on operations at small property on upper Fish Creek near Fairbanks; flexible water line, plus welded steel smooth plate feedbox, cut costs; sluicing practice.

Successful Handling of Bedrock.
-
Mining World v 9 n 6 June 1947 p 257.
Illustrated notes, describing operations of A. and P. MISCOVICH on Otter Creek, near town of Flat, Alaska; overburden is sluiced off with hydraulic giants; gravel overlying bedrock is easy to handle and sluice; due to cracks and crevices in bedrock, much of latter is worked to recover values; use of dragshovel.

Operating Slate Creek, Alaska, Placer Property.
-
Mining World v 10 n 8 July 1948 p 29.
Brief illustrated note on hydraulic and sluicing operation at Flat, Alaska, caterpillar-bulldozer and dragline used for stripping muck and overburden and for various other lifting and shifting jobs.

Automatic Monitors Cut Placer Mining Costs.
J. MISCOVITCH.
Mining Congress Journal v 38 n 1 Jan 1952 p 557.
Alaska mine operator reduced striping costs 96% by using monitors; characteristics of "Intelligiant"; labor cost per cu yd in 1951 was 0.4c.

Sound Planning and Hard Work Make This Alaskan Placer Pay.
H.G. GRUNDSTEDT.
Mining World v 18 n 6 May 1956 p 535.
Placer operation near Ruby comprises stripping, excavating, sluicing, pumping, and

hydraulicking; mining is done by excavating blocks of gravel 200 ft wide 300 ft long and treatment of gravel in recovery plant; cold weather problem.

**GOLD PLACER** Mining Method Hydraulic U.S. California

Amount of Loss to California Due to Closure of Hydraulic Mines.
-
Mining and Scientific Review Jan. 16, 1897.
Considers the loss under three headings; 1st, direct loss of the gold formerly produced by the mines; 2nd, depreciation in value of the property and equipment; 3rd, the loss to sympathetic industries. 1300 w.

California Hydraulic Mining Under the Caminatti Act.
-
Scientific American Sup July 21, 1900.
Explains the manner of occurrence and gives illustrated description of methods of hydraulic mining used. The difficulties which led to the passage of this act are also explained. 3400 w.

Proposed Retaining Barriers for the Débris from Hydraulic Mining in the Yuba River, Cal.
-
Engineering News Jan. 15, 1903.
Brief description of the methods adopted by the California Débris Commission. Ill. 1400 w.

Impounding Mining Débris in Yuba River, California.
FRANKLIN RIFFLE.
Engineering Record Feb. 28, 1903.
An account of the troubles arising from hydraulic mining and the dumping of tailings into the river, and the action taken by the Débris Commission for the storage of the detritus. 2300 w.

A Great Engineering Problem.
W.A. LAWSON.
Engineering and Mining Journal Oct. 13, 1904.
An account of the effort to be made to arrest the flow of mining débris in the Yuba River and to prevent its descent into the Feather River, and so on to the Sacramento, to the detriment of navigation. 2500 w.

DébrisRestraining Barriers of the Yuba River.
CAPT. WM. W. HARTS.
Scientific American Sup Nov. 19, 1904.
An illustrated article explaining the plan proposed by the California Débris Commission for the treatment of this river, which suffered from

the accumulation of mining detritus. 3000 w.

Débris Barrier No. 1, Yuba River, Calif.
-
Engineering News June 15, 1905.
Illustration, with brief description of structure now being built for holding and storing mine debris in the river. 1000 w.

Control of Hydraulic Mining Débris in California by the Federal Government.
CAPT. WM. W. HARTS.
California Journal of Technology Sept. 1905.
Read before the Mining Conference. Explains the problem, the extent of the damage, discussing the duties of the commission, and the general principles of improvement. Ills. 6000 w.

The Control of Hydraulic Mining in California by the Federal Government.
WILLIAM W. HARTS.
Proceedings of the American Society of Civil Engineers Feb. 1906.
Explains the débris problem, describing the mining region and methods, the duties of the Commission, the general principles of improvement, etc. ill. 11500 w.

Hydraulic Mining in California.
J.P. HUTCHINS.
Engineering and Mining Journal May 19, 1906.
Account of method of mining, problems and difficulties, results, and present standing. ills. 2800 w.

The Control of Hydraulic Mining in California by the Federal Government.
WILLIAM W. HARTS.
Proceedings of the American Society of Civil Engineers May 1906.
Discussion of the paper by author 4500 w.

A Hydraulic Mine in California.
D'ARCY WEATHERBE.
Mining and Scientific Press Sept. 8, 1906.
Illustrated description of the Spring Valley mine, in Butte Co. 1200 w.

The Rehabilitation of Hydraulic Mining.
J.P. HUTCHINS.
Engineering and Mining Journal Nov. 10, 1906. Serial. 1st part.
Considers the steps now in progress to restore California's gold washing industry to its former importance, without interfering with agriculture. Ills. 1500 w.

The Government and Hydraulic Mining in California.
WILLIAM W. HARTS.
Mining World April 6, 1907.
An account of the methods of solving the d1bris problem. Ills. 2000 w.

Debris from Hydraulic Mining in California.
WILLIAM W. HARTS.
Mining Reporter Sept. 19, 1907.
Some account of the work done by the California D1bris Commission. 1600 w.

La Grange Hydraulic Mine.
DONALD F. CAMPBELL.
Mining and Scientific Press Oct. 10, 1908.
Illustrated detailed account of the profitable mining of lowgrade auriferous gravel, in northern California. 1800 w.

Practical Methods of Examining and Fitting Up a Hydraulic Mine.
H.A. BRIGHAM.
Journal of the Association of Engineering Societies Oct. 1908.
A review of the methods of hydraulic mining as practiced in California. Ills. 16000 w.

Hydraulic Mining in California.
AL. H. MARTIN.
Mining World June 19, 1909.
Describes the La Grange mine, as an example of the methods of gold recovery and the extent and resources of the average California hydraulic property. Ills. 2000 w.

Stripping a Vein by Hydraulicking.
A.F. HUGHES.
Mining and Scientific Press Dec. 11, 1909.
Brief illustrated description of a method of uncovering ore, used near Carville, California. 800 w.

Hydraulic Mining on the Pacific Coast.
AL. H. MARTIN.
Mines and Minerals Dec. 1909.
Describes properties operating in California and Oregon. 3000 w.

The LongTom and Hydraulic Mining in California.
R.H. CAMPBELL.
Mining and Scientific Press June 25, 1910.
Describes this device, used in the early mining days, and gives a brief account of the hydraulic mining period. Ills. 1800 w.

Hydraulic Mining of Auriferous Gravels.
JAMES W. PHILLIPS.
Journal of the Western Society of Engineers Aug. 1910.
A description of hydraulic mining in California. Ills.
Also discussion. 15800 w.

Mining and Milling at Trinity Mine.
J.W. SWAREN.
Engineering and Mining Journal May 6, 1911.
Describes methods used at this California gold mine.
The overburden is removed by hydraulicking,
and the gold recovered by cyanidation.
Ills. 3500 w.

Hydraulicking on the Klamath River.
J.H. THELLER.
Mining and Scientific Press March 28, 1914.
Describes the character of the bedrock, the water
supply and methods. Ills. 2500 w.

HydraulicMining Debris in the Sierra Nevada.
G.K. GILBERT.
Mining and Scientific Press March 16, 1918.
Discussion on the quantity and ultimate deposition.
Ills. 2800 w.

Hydraulic Mining in California With Special Reference
to the You Bet Mine.
F.A. COODALE.
Colorado School Mines Magazine., vol. 9, no. 7, July
1919, pp. 167173, 2 figs.
Including example of calculations involved in
determining size and grade of sluice.

Inception and Development of Hydraulic Mining in
California.
J.D. STEWART.
Mining Congress Journal, vol. 12, nos. 9 and 11, Sept.
and Nov. 1926, pp. 638639, 786787, and 832,
5 figs.
Hydraulic mining first became possible in 1853, and
thrived until difficulties arose concerning
disposition of tailings; since that time
this form of mining in California has
practically been at standstill. Nov.: Points
out that rehabilitation of hydraulic mining
industry will be great benefit to California
and will greatly augment gold production.

A Proposed Plan for the Rehabilitation of Hydraulic
Mining.
R.H. ELLIOTT.
Mining Congress Journal., vol. 13, no. 11, Nov. 1927,
pp. 817819.
Plan for rehabilitation which includes government
construction of concrete dams in accordance
with provisions of Caminetti Act, and
general provisions of Cloudman Bill.

Is Agriculture to Continue to Restrict Hydraulic Mining in California?
J.D. STEWART.
Engineering and Mining Journal., vol. 125, no. 23, June 9, 1928, pp. 928931, 1 fig.
Hydraulic mining will aid flood control, storage for irrigation, lowering of salinity of delta regions, holding back natural erosion from filling up stream beds, and will release stored waters in summer months; it costs United States government 0.06 cts. per cu yd to dredge debris from navigable water; dams built to hold back hydraulic mining debris reduce cost. Paper presented before Commonwealth Club of Calif.

Present Status of Hydraulic Mine Debris Disposal in California.
W.W. BRADLEY.
American Institute of Mining and Metallurgical Engineers Tech Pub n 673 mtg Feb 1936 10 pp. see also Calif J Mines and Geology v 31 n 3 July 1935 p 34567.
Review of work of California Debris Commission, pursuant to action taken in consequence of resolution adopted Aug. 18, 1933, by Committee on Rivers and Harbors of House of Representatives; text of brief filed by State Mineralogist of California, summarizing pertinent data and figures on gold values in gravel deposits on tributaries of Sacramento River in California.

Scott River Lifts Itself for Hydraulic Mining.
R.J. BARBER.
Engineering and Mining Journal v 137 n 4 Apr 1936 p 1714.
Illustrations and text describing area in Siskiyou Country, Calif, once famous for its richness and now containing remnants of gravel channels; estimated 1,000,000 cu yd minable gravel, about two thirds above drainage grade and rest of it below present water level; water supply system; plan of operation.

Hydraulic Mining Problem In California.
F.A. CRAMPTON.
Mining Journal (Phoenix, Ariz) v 20 n 7 Aug 30 1936 p 34 and 278.
Commentary on changed conditions, contrasted with those of 1852 to 1884; effects of Sawyer decision

of 1884, and Caminett Act of 1894; salient provisions of California Placer Mining District Act of 1933; court decisions and injunction affecting hydraulic and other placer mining; with provisions made for building of retaining dams, method and machinery for resumption of hydraulic mining are in hands of mine owners.

Hydraulic Mining Looks Up in California, as Projected Governmentbuilt debris dams approach realization.
L.A. PALMER.
Engineering and Mining Journal v 138 n 10 Oct 1937 p 2933 and 52.
Historical review of events and conditions following "Sawyer decision" of 1884, which did not enjoin hydraulic mining as such but restricted dumping of tailings; licensing of storage space by California Debris Commission; outline of plans for Middle and South Yuba, American River, Bear River, and KlamathTrinity district; annual yardage and production estimates and expected profits. Bibliography.

Present Status of Hydraulicmine Debris Disposal in California.
W.W. BRADLEY.
American Institute of Mining and Metallurgical Engineers Trans v 126 1937 (Metal Min) p 2018 (discussion) 20810. from Tech Publ n 673 mtg Feb 1936.

Three Concrete Arch Dams for Mining Debris Control.
-
Western Construction News v 13 n 7 July 1938 p 2623.
Outline of $6,000,000 program to provide three reservoirs on Yuba River and American River, in California, to permit resumption of hydraulic mining; structure will provide reservoir space capable of restraining 168,000,000 cu yd of debris; characteristics of structures.

Hydraulic Miners Won Through Cooperation.
H.S. MATTHEWS.
Mining Journal (Phoenix, Ariz) v 22 n 4 July 15 1938 p 67.
Commentary on outcome of efforts of California Hydraulic Mining Association; Federal funds available and work has been started on first of 3 dams to be constructed for impounding tailings from hydraulic mines on Yuba and American rivers in northern California; outline of legislative steps making resumption of hydraulic mining possible.

Hydraulic Mining to Resume in Central California.
W.G. ALLEN.
Mining Congress Journal v 24 n 8 Aug 1938 p 125.
Historical resume of clash of interests of farmers and hydraulic miners in early days; Caminetti Act of 1893 and later legislative proposals; organization of miners; comment on 4 debris dams planned by Federal Government to impound over 200,000,000 cu yd of waste from hydraulicking operations; map showing proposed storage reservoirs for debris.

Hydraulic Mining on American River.
P. BURCH.
Mining Journal (Phoenix, Ariz) v 22 n 23 Apr 30 1939 p 46.
Comment on construction of concrete single arch debris dams of overflow type making possible resumption of hydraulic mining along American and Yuba rivers in California; North Fork Dam on American river, 5 mi from Auburn, has storage capacity of 24,000,000 cu yd debris; estimates of yardages of workable gravel.

Hydraulicking for Gold at Poverty Hill.
J.M. EHRHORN.
Engineering and Mining Journal v 141 n 8 Aug 1940 p 65-8.
Mine is in west end of Sierra County, Calif; sampling in two pits indicated recoverable values of 35c and 25c per cu yd respectively; after testing various mining methods, decision was made on all pumping and hydraulic mining procedure with operations based on eight months program; mining and washing practice; revised plan involves stripping low grade part of overburden; Diesel power.

SingleArch Dams for Debris Control.
P. BURCH.
Mining Journal (Phoenix, Ariz) v 24 n 15 Dec 30 1940 p 23.
Supplementing paper from issue of Apr 30 1939, author gives further data on progress in building of dams to permit resumption of hydraulic mining in California; Upper Narrows dam on Yuba River, near Marysville, to be completed in 1941; development of single arch type of dam; debris dams are all overflow structures with no separate spillway structure provided.

New Debris Dams Will Revive California's Hydraulic GoldMining Industry.

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Mining and Metallurgy v 22 n 411 Mar 1941 p 1723.
Note on completion, in Jan 1941, of 237 ft Upper Narrows hydraulic debris dam on main Yuba River; project is key unit in series of four similar structures; dam is single arch type, with debris storage capacity of more than 118,000,000 cu yd; cost was $4,500,000; historical summary of hydraulic mining.

Hydraulic Mining and Debris Control, Sacramento River and Tributaries, California.
F.M.S. JOHNSON.
Mines Magazine v 31 n 4 Apr 1941 p 15762 and 184.
Review of early hydraulic mining, from about 1852 until stoppage by court injunction in 1884; since passage of California Debris Act in 1893, about 1200 applications for mining were filed, of which about 1/3 were rejected; descriptions of debris dam projects and construction; design factors.

Hydraulic Mining at Lost Camp.
F.L. ELAM.
Mining Journal (Phoenix, Ariz) v 25 n 1 May 30 1941 p 34.
Notes on operations of Lost Camp Mining Company, near Blue Canyon, Calif; water brought to reservoir by 17 mi ditch; 22 in. pipe from penstock to V. from which 15 in. and 11 in. pipes feed two monitors equipped with 7 in. and 6 in. nozzles; about 1400 cu yds of gravel sluiced daily; caterpillar bulldozer used to push gravel and large rocks to sluice; will be used later in stripping bedrock; semicemented gravel is loosened by blasting.

Relief Hill Hydraulic Pit Replaces Townsite.
F.L. ELAM.
Mining Journal (Phoenix Ariz) v 25 n 4 July 15 1941 p 2 and 36.
Note on operations of Western Gold, Inc., at Hydraulic mine near North Bloomfield in Nevada County, Calif; taken over 10 yr ago, mine has been worked on small scale for five years; now that debris can be dumped behind Yuba Narrows debris dam near Smartville, from 3500 to 4000 cu yd can be washed down and sent through sluices each day.

Revival of Historic La Porte District.
W. CARNIE, JR.
Mining Journal (Phoenix, Ariz) v 25 n 7 Aug 30 1941 p 2.
Notes on new developments; dredging on Poverty Hill properties; hydraulic operations at Gibsonville, Scales, Holland Flat and

Pioneer mines; activity at several small drift mines.

Nevada City: Where Hydraulicking Began.
B. THOMPSON.
Mining World v 11 n 3 Mar 1949 p 178.
Narrative of region in California, said to have been first prospected by James Marshall in 1848; hydraulic mining; with canvas hose 35 ft long, started in 1852; experimental milling of gold quartz.

**GOLD PLACER** Mining Method Hydraulic U.S. Colorado

Hydraulic Mining in Colorado.
W.E. THORNE.
Mining and Scientific Press Dec. 8, 1906.
Gives some of the actual costs in this class of mining in Colorado, as conducted at a high altitude and during short seasons of from four to five months. Ills. 1200 w.

**GOLD PLACER** Mining Method Hydraulic U.S. Oregon

Hydraulic Mining with Centrifugal Pumps.
ENOS BROWN.
Scientific American Aug. 19, 1905.
Illustrates and describes a successful plant installed at Grant's Pass, Oregon, where there are acres of rich placers which have never been extensively worked. 1100 w.

Giant Hydraulic Placer Mining in Oregon.
A.S. ATKINSON.
Mines and Minerals March 1906.
Explains the great difficulties encountered in working high elevations, and describes the pumping of water with turbines against a head of 430 feet for operating giant nozzles. 1700 w.

**GOLD PLACER** Mining Method Other

Placer Mining.
ARTHUR LAKES.
Colliery Engineer May 1896.
A general and specific account of placers, their formation, distribution and the construction and development of the different machinery and devices used in working them. Ill. 5800 w.

Placer Mining.
-
Mining Industry and Review July 8, 1897.
Gives calculations made to estimate the plan of working a placer, and the value and future of the same, as an illustration of the correctness. 2200 w.

Pointers on Placer Mining.
-
Mining Industry and Review July 29, 1897.
Discusses the problems presented to the placer miner, and a few of the difficulties. 1400 w.

Placer Mining on Wheels.
J.M. SWEENEY.
Railway and Engineering Review Dec. 18, 1897.
Ill. description of machine to recover gold from placer beds by washing all the gravel. 1800 w.

Placer Mining by Machinery.
WILLIAM M. JOHNSTON.
Mining and Scientific Press Feb. 5, 1898.
Reviews some of the methods adopted which often have resulted in loss, and endeavors to point out lines which may be safely followed. 3000 w.

A New Method of Placer Mining for Gold.
F.B. KNIGHT.
Mines and Minerals April 1898.
Device for excavating and handling large quantities of material at low cost, means by which a gold-saving flume can be used and the tailings disposed of when the surface has but a moderate degree of fall. Ill. 2900 w.

Placer Gold and How It is Secured.
JOHN E. BENNETT.
Cosmopolitan Nov. 1898.
An explanation of what placers are, how formed, descrpn of methods of placer mining. 3500 w. Ill.

Deep Alluvial Mining.

D.H. BROWNE.
Australian Mining Standard Dec. 6, 1900.
Practical hints. 3800 w.

How to Pan Gold from Gravel.
Prof. HENRY S. MONROE
Engineering News Feb. 12, 1903.
Taken from the printed instructions, by author, for students in the ore dressing, laboratory of the School of Mines, Columbia Univ., New York. 1200 w.

Gold Washing in the South.
E.B. WILSON.
Engineering and Mining Journal Nov. 17, 1906.
Describes some crude methods which succeed where expensive outfits would fail. 900 w.

Improved Apparatus for Mining in River Beds.
J.W. HUNSAKER, V. BEISSWINGERT, and R.L. DAVIS.
Mining World May 23, 1908.
Illustrates and describes invention for reaching pockets of goldbearing sands or gravels. 2000 w.

Art of Placer Piping.
DENNIS H. STOVALL.
Mining and Scientific Press Nov. 13, 1909.
Brief discussion of the work of an expert piper. Ills. 1000 w.

A New Method of Working Stream Beds.
H.S. TAYLOR.
Mining World Dec. 11, 1909.
An invention relating to placer mining for gold is illustrated and described, and other work, to which it may be applied, is suggested. 600 w.

Mobility in Placer Mining.
JOHN POWER HUTCHINS.
Mining Magazine July, 1910.
Brief discussion of the importance of factory of mobility in all placer mining operations. Ills. 1400 w.
Hughes' Patent Alluvial Concentrator.
E. CECIL SAINTSMITH.
Queensland Gov Mining Journal July 15, 1914.
Describes apparatus designed to eliminate boxsluicing. Drawings and Ills. 6000 w.

Timbering in Deep Placer Mining.
HAROLD T. POWER.
Mining and Scientific Press Aug. 11, 1917.
Hidden Treasure mine durability of different woods; methods of framing and setting. Ills. 2200

w.

Some Special Methods and Machines for Recovery of Gold and Platinum in Placer Deposits.
C. MCK. LAIZURE.
Calif. Division of Mines and Min., vol. 24, no. 1, Jan. 1929, pp. 94135, 28 figs. Detailed description of many types of special dry and wet washers, concentrators and amalgamators; notes on recovery methods, largely extracts from article by E.S. Leaver in U.S. Bureau of Mines Information Cir., no. 608, Aug. 1928, and from Calif. State Min. Bureau Bul., no. 85, by C.A. Logan, OP.

DeepSeated or Buried Placer Deposits.
J.H. ROBERTSON.
Canadian Mining Journal, vol. 50, nos. 10 and 12, Mar. 8 and 22, 1929, pp. 208209, and 263265, 8 figs. Mar 8:
Discussion of deposits formed in river channels of tertiary age, later buried by debris of glacial period; three groups are considered, classed according to their relation to present drainage. Mar. 22: Details of mining practice; dip and rise, longwall and longwall retreating systems; main and auxiliary shafts; haulage roads; support of main and haulage roads by dirt pillars and timbering; timbering at working faces; caving; washing of dirt; operating costs variable, with about $2 per cu. yd. as minimum.

The Mining of Placer Deposits.
J.H. ROBERTSON.
Canadian Mining Journal vol 50, no. 25, June 21, 1929, pp. 572574, 2 figs.
Some deposits are so situated and constituted that neither hydraulic nor drift mining is applicable in both instances, it is matter of applying systems by which dirt can be handled conveniently and economically; general description of effective mechanical shovel system; dragline scrapers as against shovels and trucks.

Mining Placer Gravel On Steep Grades.
J.W. NEILL.
Engineering and Mining Journal., vol. 128, no. 20, Nov. 16, 1929, pp. 771772, 1 fig.
Mining machine designed for special problem, but not built; essential units consist of steam shovel to do digging and floating; washing plant to handle gravel; recover gold, and stack tailings; outfit equipped with 1 1/4 cu. yd bucket; should be able to dig from 75 to 90 cu. yd. per hr., depending on gravel-

bank conditions and skill of operators.

Notes on Timbering DeepSeated Placer Deposits.
J.H. ROBERTSON.
Canadian Mining Journal, vol. 51, no. 24, June 13, 1930, pp. 564565, 4 figs.
How to proceed with calculations and design of timbering of drifts and other underground openings; effects of nature of dirts; angle of repose; supporting beams; props; examples of calculation.

More Notes on Timbering Shafts in DeepSeated Placer Deposits.
J.J. ROBERTSON.
Canadian Mining Journal, vol. 52, no. 27, Oct. 1931, pp. 759760, 4 figs.
Data supplementing paper from issue of June 19, 1930.

Making Light Rocker.
R. HARVIE
Canadian Mining Journal v 53, n 8 Aug 1932, p 3434.
Equipment built and used by author in course of examination of Ditton River placer field in Quebec; design based on data given in Peele's Mining Engineers' Handbook, with modifications.

Centrifugal Separator for Recovery of Placer Gold.
J.B. GIRAND.
Mining Journal (Phoeniz, Ariz.) v. 16 n 12 Nov. 15, 1932, p. 34.
Features of machine designed by author; material fed to rotating barrel of double conical shape, largest diameter at center, speed 200 rpm; by regulating speed and amount of water fed to mass, centrifugal force is utilized to increase effective differences in specific gravities of gold or minerals; and of lighter material to be discarded; low operating cost and high recovery are claimed.

Placer Mining by Centrifugal Pump.
W.E. SINCLAIR.
Engineering and Mining Journal v 134 n 5 May 1933 p 1847.
Features of principal types of centrifugal gravel pumps, usually made in pipe sizes 6, 8, 10 and 12 in.; three methods of applying gravel pump as pumping unit in placer mining operations; examples typical of practice in Nigeria; detailed yardage costs; example of gravel pump report for 1 mo. operation of tin mines.

Koloro Placer Mining Machine.
E.M. KOLBEN.
Mining Journal (Phoenix, Ariz) v 16, n 24, May 15, 1933, p. 5 and 22.
Design of wet placer machine built on principle of dry washer, using diaphragm to force water through riffle table, where in dry machine bellows forces air through table; machine weighs 550 lb. completely equipped and is capable of handling 50 to 70 cu yd of gold bearing gravel in 8hr shift; operation procedure.

New Gold Saving Machinery.
F.P. MARUGG.
Mining Journal (Phoenix, Ariz.) v 17, n 3, June 30, 1933, p. 5.
Note on Marmac concentrator, combining principle of rocker and sluicebox riffle; separate items on Harris doublefan dry washer and mechanical panner and cleanup machine.

Note on Panning for Gold When Ores of Bismuth are Present.
J. HENDERSON.
Chemical Metallurigical and Mining Society of South Africa J v 34 n 6 Dec. 1933 p 217.
Author's reply to discussion of paper from issue of Apr 1933.

Power Elevation in Placer Mining.
E.F. CARPENTIER.
Mining Journal (Phoenix, Ariz.) v 18 n 10 Oct 15 1934 p 5.
Advantages of use of electric power, at about 1c per hphr, for driving centrifugal pump to supply water under pressure, in operation of gold placer deposits that are below water level of streams, or too low for ordinary sluicing; estimate of expenses and profits.

Dragline Excavator in Placer Mining.
S.R. FOX.
Engineering and Mining Journal v 136 n 4 Apr 1935 p 1636.
Features of machinery suitable for deposit too small in area and depth to warrant construction of gold dredge, or too low in grade to be worked by hand labor; cost of installation, including washing plant and accessories, plus working capital for 60 days, ranges from $25,000 to $50,000; examples of steam-operated and electricallyoperated installations; operating details.

Working Alluvial by Dragline.
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Chemical Engineering and Mining Review v 28 n 325 Oct 8 1935 p 48790.
Comment on work done by Nokomai Gold Mining Co. in New Zealand in 1933 and 1934, using 5 cu yd bucket and later 4 1/2 cu yd bucket, operated from winch driven by 310 hp motor; ground was 90 ft. deep; 485 oz. gold recovered during 7 mo. and scheme abandoned; extracts from US Bureau of Mines Inf. Cir 6846 describing successful operation in Wyoming.

Modern Method of Recovering Placer Gold.
A.R. BREWER.
Mining Journal (Phoenix, Ariz) v 19 n 11 Oct. 30 1935 p 34 and 29.
Description of machinery developed by Production Engineering Co. for recovery of gold values concentrated in bedrock cracks and crevices; equipment used to test placer deposits; feature of each is agitation by use of high-pressure hydraulic jets and removal of material with centrifugal pumps.

WingDamming River Bottoms for Gold Recovery.
E.F. CARPENTIER.
Mining Journal (Phoenix Ariz) v 19 n 12 Nov. 15, 1935 p 5.
Notes on oldtime method, consisting of mining section of river bottom in which ground is blocked off by damming with cribs which have been filled with dirt, changing water course to other side of stream.

Excavating Machinery and Portable Washing Plants in Placer Mining.
S.M. SHOROHOV.
Mining Magazine v 50 n 5 Nov. 1936 p 2705.
Brief description of placer mining methods; now widely used and review of conditions necessary for their advantageous application.

De quelques dispositifs de récupération de l'or fin alluvionnaire.
R. VAN AUBEL.
Chronique des Mines Coloniales v 6 n 62 May 15 1937 p 26871.
Means employed for recovery of fine alluvial gold; notes on use of corduroy. Rauschenbusch elutriator, helicoidal classifiers, jigs, amalgamation and centrifuging; flotation.

Alluvial Mining With Shovels and Draglines.
S.A. WESTROP.
Mining Magazine v 58 n 3 Mar 1938 p 13750.
Author discusses rapid strides that have been made in

applying mechanical excavation methods to alluvial mining work and gives some indications as to costs; typical examples of equipment illustrated, with comments on advantages and applicability.

PowerShovel and Dragline Placer Mining.
E.D. GARDNER and P.T. ALLSMAN.
US Bureau of Mines Information Cir n 7013 May 1938 68 p.
Paper supplements Information Cir n 6788, plant layouts; floating washing plants; typical flow sheet; movable land plants; stationary plants; power; water; labor; sampling and recovery; plant and operating costs.

Where Jigs Replaced Sluice Boxes.
F.A. KENNEDY.
Engineering and Mining Journal v 139 n 7 July 1938 p 505.
Notes on operation of dragline dredge and methods employed in recovering gold and other concentrates from gravel deposit of De Lamar placer mine on Jordan Creek, near De Lamar quartz and other old gold producers in Owyhee County, Idaho; gravel 6 to 18 ft deep; value 9 to 44c per cu yd; 6300 lb dragline bucket; flow sheet; detail of jig operation; amalgamation of gold concentrate; costs for full crew operation, at 3000 cu yd per 24 hr.

Placering Has Its Pitfalls!
M.H. GUISE.
Engineering and Mining Journal v 141 n 1 Jan 1940 p 53.
Notes on various projects, indicating that inexperience of new investors (and of some reputed engineers and practical miners) is often great.

Mining of Deepseated Placer Deposits.
J.H. ROBERTSON.
Canadian Mining Journal v 61 n 10 Oct 1940 p 64850.
Rich deposits are often found deeply buried under unpayable dirts; study of procedure in attacking these deposits; importance of careful and accurate drilling; case of deposit with mineralcarrying strata at two horizons is considered, water being encountered in each and also in stratum nearer surface; drill holes as factor in breaking of "seal" between flows of water of different horizons.

New Developments in Placer Mining and Recovery of Gold.
C.M. ROMANOWITZ and H.A. SAWIN.
Mining Congress Journal v 26 n 12 Dec 1940 p 217 (discussion) 289 and 68; see also Mining

Journal (Lond) v 211 p 5494 Dec. 7 1940, p 7204.
Basic principles of placer mining; resoiling problems, dredge developments; Becker Hopkins dredges; increasing use of tractors; use of portable washing plants; dry land placer operations; progress in use of jigs; improvements in dredge design; pond silt and stackers; Alaskan practice; discussion by C.W. MERRILL and H.W.C. PROMMEL.

Simple Mobile Washing Plant Invented Especially for Shallow Placers.
W.A. ERICKSON.
Mining World v 9 n 5 May 1947 p 34.
Brief illustrated description, of placer washing plant that permits disposal of tailings without rehandling and permits easy maintenance of sluice grade; machine is fully covered by patents, but is not yet on production.

Portable Placer Unit.
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Engineering and Mining Journal v 162 n 9 Sept 1961 p 108.
Portable washing and concentrating plant, that can handle about 50 cu yd of bankrun gravel/hr. has been developed; l5 x 30 ft unit, mounted on structural steel frame, can be equipped with crawlertype forged tracks, or be adapted to pontoontype floating boat; when used in conjunction with portable conveyor and feed hopper, unit can follow dragline throughout placer deposit.

Novaya mashina dlya obogashcheniya krupnykh klassov rossypnogo materiala i ulavlivaniya samorodkov.
E.I. BOGDANOV.
Bornyi Zhurnal v 137 n 9 Sept 1961 p 6871.
New machine for treatment of coarse grained placer material and recovery of nuggets; design of OMTIII600 machine having daily throughput capacity of 700800 cu m; machine represents jig with scraperconveyor.

Ratsional'nyi tip promyvochnogo pribora pri razrabotke rossypei bul'dozerami i skreperami.
E.I. BOGDANOV.
Gornyi Zhurnal n 11 Nov 1962 p 704.
Rational type of washery used during mining of placers by means of bulldozers and scrapers; design of portable washery consisting of skid mounted autonomous aggregates, such as conveyor and sluices.

**GOLD PLACER** Mining Method Sluice General

Sluicing for Gold in Queensland.
-
Queensland Gov Mining Journal Nov. 15, 1902.
Describes the system of working on the Russell goldfield. Ill. 2800 w.

The Saving of Alluvial Gold in Alaska and the Klondike.
CHESTER WELLS PURINGTON.
Mining Magazine Jan. 1905.
Notes on sluices and goldsaving appliances from a forthcoming report of the U.S. GEOLOGICAL SURVEY. Ills. 2700 w.

The Washing of Goldbearing Gravel in Sluices (Die Verwaschung Goldhaltiger Gerölle In Gerinne).
L. ST. RANIER.
Oesterreichische Zeitschrift für Berg und Hüttenwesen Feb. 4, 11, 1905.
A discussion of the influence of the size of pebbles and the velocity of the water flow upon the separation of the gold. Two articles. 5000 w.

Sluice Building on Placer.
DENNIS H. STOVALL.
Mining World Nov. 4, 1905.
Calls attention to important features in the construction of a sluice. Ills. 900 w.

Pan, Rocker and Sluice Box.
H.H. SYMONS.
Mining in California v 28 n 2 Apr 1932 p 20513.
Notes on simple equipment for placer mining.

Design of Sluices for Gold Placer Mining.
F.C. GILBERT.
Mining Journal (Phoenix Ariz) v 16 n 8 Sept. 15, 1932, p 34.
Mathematical derivation of formula involving several factors; special conditions may be considered by change in constants.

Efficient Sluice Box.
F.A. CRAMPTON.
Mining Journal (Phoenix, Ariz) v 20 n 19 Feb 28 1937 p 7 and 29.
Size of sluice boxes, grade, and type of riffles all have important bearing on gold recovery; these must be varied to suit type of gravel

handled; essential features of design discussed.

L'emploi du velours Corduroy dans les exploitations auriféres.
L. LAFFITTE.
Chronique des Mines Coloniales v 5 n 57 Dec. 1, 1936 p 3989.
Brief note on use of corduroy velvet in exploitation of alluvial deposits.

Sluice Boxes Must Pay.
W.A. NEWMAN.
Engineering and Mining Journal v 138 n 5 May 1937 p 22931.
Examples of design of sluice boxes; purpose of sluice in hydraulic mine is to transport alluvial gravels from pit to their final resting place, and to recover gold and black sands; sluice should be so designed and built as not to sacrifice effectiveness of one function to that of other; notes on operation of sluices.

Saving Gold by Means of Corduroy.
M.W. VON BERNEWITZ.
US Bureau of Mines Information Cir n 7085 Aug 1939 17 p supp plates; see also Mining Journal (Lond) v 207 n 5434 Oct 14 1939 p 905; Rhodesian Mining Journal v 11 n 150 Nov 1939 p 1465 and 1469.
Corduroy suitable for wearing apparel is unsuitable for gold saving; characteristics of textiles efficient for catching gold; corduroy tables; ore testing with corduroy; notes on plant practice in various parts of world; launders lined with corduroy; treatment of corduroy concentrates; corduroy for platinum ores; rubber matting for saving gold. Bibliography.

Use of Corduroy in Gold Milling.
-
Canadian Mining Journal v 65 n 9 Sept. 1944 p. 6213.
General notes on Canadian practice; type of corduroy cloth used for clothing is unsuitable for recovery of gold and associated minerals; corduroy blaknet tests; descriptions of use of corduroy at specific Canadian mills; treatment of concentrates collected on corduroy.

Simplified Sand Sluices Cut Downtime.
-
Engineering and Mining Journal v 163 n 4 May 1962 p 82.
Improved separator keeps slurry mixed uniformly throughout system and only adjustments necessary are at sluices discharge ends;

separator's individual parts were small enough to reduce greatly costs of maintenance, repair and shipping.

**GOLD PLACER** Mining Method Sluice New Zealand

Sluicing along Shotover River.
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Chemical Engineering and Mining Review v 27 n 318 Mar 8 1935 p 2013.
Feature of project in New Zealand, involving building of sheet piling weir across river and diversion of water into steel flume 1500 ft long 20 ft wide and 8 ft deep, so that bed of river could be searched for gold; sluicing and elevating practice; gold saving devices and other gear; hydroelectric power plant.

**GOLD PLACER** Mining Method Sluice U.S. - Alaska

Sluicing Methods at Fairbanks.
HUBERT I. ELLIS.
Engineering and Mining Journal Dec. 18, 1915. Details.
Ills. 2500 w.

**GOLD PLACER** Mining Method Sluice U.S.S.R.

Sluicing at the Kolchan Mines, East Siberia.
CHEST W. PURINGTON.
Mining and Scientific Press Feb. 4, 1911. Serial. 1st part.
Map and description of the main physical features of the district. Ills. 1500 w.

**GOLD PLACER** Misc. Treatments

The Extraction of Gold by Chemical Methods.
T.K. ROSE.
Nature March 11, 1897.
Discusses the various processes, with their advantages and disadvantages. 2500 w.

The Loss of Gold in Waste Tailings.
HENRY ROSALES.
Australian Mining Standard April 8, 1897.
Account of examinations made to determine the actual loss of gold in waste tailings. 2800 w.

An Improved BlanketTable.
THOMAS WHITE.
Canadian Mining Review Nov. 30, 1898.
Before the Australasian Inst. of Min. Engs. Description of improvements for simplifying the working of blankettables, and supplying a cheap, easily worked concentrator. discussion. Ill. 2200 w.

The Chemical Precipitation of Gold.
P. DE WILDE.
Journal of the Chemical and Metallurigical Society of South Africa Feb. 1899.
A reply to the discussion on the writer's process of gold extraction, and also a paper by WILLIAM BETTEL, replying to the paper given. 6300 w.

Fine Gold Mining and Concentration.
N.J. FLECK.
Engineering and Mining Journal July 15, 1899.
On the excellent work accomplished with the river burlap machine. 1200 w.

What Has Become of the Gold Run in the Tailings?
B.C. WILSON.
Canadian Mining Record Jan. 31, 1900.
Read before the Min. Soc. of Nova Scotia. On the doubtful value of old tailings. 1300 w.

Gold Extraction Processes and New Solvents.
J. OHLY.
Mining Report April 26, 1900.
Part first describes the process of M. DE RIGAUD, and the substitution of bromine for chloride in the chlorination process.

Working Over an Old Dump.

-
Mining and Scientific Press  May 26, 1900.
Describes an old dump in California being worked with profit, though first worked closely and economically. Describes the process employed by the old company and the present method. Ill. 2800 w.

Saving Gold from Black Sand.
-
Mining and Scientific Press  June 28, 1902.
Explains the difficulty met in solving this problem, and considers the cyanide process the solution, precipitating the gold by the use of a current of electricity. 1200 w.

The Edison Dry Process for the Separation of Gold from Gravel.
Mr. EDISON
Engineering and Mining Journal  May 9, 1903.
A description of a pneumatic and gravity process, authorized by author, Ill. 1200 w.

Undercurrents for Saving Flour Gold and Platinum Sands.
DENNIS H. STOVALL.
Mining and Scientific Press  Oct. 24, 1903.
Describes the system in use at the Royal Group hydraulic mines of Galice District, Oregon. Ill. 800 w.

Second Preliminary Report on Investigation of Black Sand.
DR. DAVID T. DAY
Mining Reporter  Dec. 7, 1905.
Information from the report of author concerning the experiments in concentration by mechanical tables of gold from the sands of the Pacific Coast and the Columbia River, which have been conducted at the Lewis and Clark Centennial Exposition, with a view of ascertaining the most economical method of separation.  1500 w.

Treatment of Auriferous Black Sands.
KENNETH ROSS
New Zealand Mines Record  Aug. 16, 1906.
Information concerning experiments in Otago and Southland. Also report by author on "Some Experiments on the West Coat." 4000 w.

Loss of Gold in Placer Mining.
DENNIS H. STOVALL.
Mining and Scientific Press  Feb. 23, 1907.
Suggestions for a durable and efficient riffle, and remarks on causes of loss. 1000 W.

Rusty Gold, and How It Is Saved.
DENNIS H. STOVALL.

Mining World Oct. 3, 1908.
Method of saving dark red or "rusty" gold in placer mining. 1000 w.

The Saving of Fine Placer Gold.
FRED H. HAZARD.
Engineering and Mining Journal Aug. 26, 1911.
Explains the difficulties, and discusses the utility of undercurrents and related subjects, describing a design of blacksand concentrator. Ills. 3000 w.

Centrifugal Concentration of Placer Gravel.
J.B. GIRAND.
Engineering and Mining Journal, v 134 n 3 Mar 1933 p 1101.
Features of equipment and practice at plant installed at Oro Blanco, Ariz, 1 1/2 mi north of Mexican boundary, placer gravel is given primary treatment of grizzlying off large boulders, scrubbing to break down clay, and screening to minus 3/8 in; scrubber is built on principal of concrete mixer; centrifugal concentrating machine was described in paper by same author in Mining Journal (Phoenix Ariz) Nov. 15, 1932.

Flotation of Gold from River Sand and Black Sand.
A.W. FAHRENWALD.
Mining Journal (Phoenix, Ariz) v 16 n 23 Apr 30 1933 p 34.
Method of treating placer sand by flotation; results of laboratory tests on Snake River goldbearing gravel.

Huelsdonk Concentrator.
D.D. BAKER.
Mining Journal (Phoenix Ariz) v 17 n 1 May 30 1933 p 5.
Device designed for saving gold in auriferous gravels, but adaptable to recovering values in hard rock ores; concentrator consists of disintegrator for breaking up and washing gravel, and long narrow concentrating table.

Treatment and Sale of Black Sands.
N.W. VON BERNEWITZ.
US Bureau of Mines Information Cir n 7000 Mar 1938 21 p.
Black sand defined; report issued in answer to inquiries regarding possible treatment and sale of black sands recovered in beach and river placering; excerpts from literature on origin and occurrence of black sands; clean-up and recovery methods; concentrating tables; grinding and amalgamation; list of

makers and suppliers of ball mills and grinding pans; buyers of black sands and platinum.

Auriferous Black Sands.
E.H. VAUGHAN.
Western Miner v 20 n 8 Aug 1947 p 501.
Notes on treatment of "black sands," to enable prospectors and placer operators to recover values on profitable basis; description of "cradle" or "rocker"; many old workings and creek concentrations contain from 5 to sometimes 25 lb black sands per cu yd; examples of net smelter returns on shipments carrying gold, platinum, iridium, thorium, etc.

Preliminary Investigation of Concentrating Certain Minerals in Idaho Placer Sand. W.W. STALEY and J.S. BROWNING.
Idaho Bureau of Mines and Geology Pamphlet n 87 June 1949 23 p. supp plates. Research described deals only with monazite, zircon, ilmenite, and magnetite; work is confined almost entirely to investigation of screening, gravity concentration methods, magnetic separation, combination of which proved successful.

**GOLD PLACERS** Testing and Sampling

Methods of Testing and Sampling Placer Deposits.
EDMUND B. KIRBY.
Mining and Scientific Press June 17, 1899.
Read before the Colorado Scientific Society. Describes the best way of carrying on the work.

Sampling Placer Deposits.
EDMUND B. KIRBY.
Mines and Minerals July 1899.
Read before the Colorado Scientific Society. On the importance of correct methods of testing their value. 3800 w.

Testing and Sampling Placer Deposits.
EDMUND B. KIRBY.
Engineering and Mining Journal July 29, 1899.
Abstract of a paper read before the Colorado Scientific Society. Outlines the evidence to be secured by tests, etc., and the methods used in test workings. 2000 w.

The Testing of Flat Placer Deposits.
ROBERT NYE.
Engineering and Mining Journal July 14, 1900.
Discusses usual methods of testing, and the proper use of a well driller. 2400 w.

Prospecting Gold Dredge with Steel Hull.
-
Engineering and Mining Journal Nov. 7, 1903.
Describes a prospecting dredge of all steel construction, designed to clean up bed rock at 22 ft. depth, and to handle free material at the rate of 60 tons per hour. 1700 w.

The Prospecting and Valuing of Dredging Ground.
NORMAN C. STINES.
Mining and Scientific Press Feb. 3, 1906. Serial. 1st part.
Describes the prospecting of gravel deposits by means of the Keystone drill, to test their fitness for dredging purposes. Ills. 2000 w.

A Few Hints to Prospectors.
CHARLES A. BRAMBLE.
Canadian Mining Review June, 1906.
Suggestions especially for prospecting work in the north of Canada and British America. 2000 w.

Prospecting a Gold Placer.
-
Mines and Minerals  July 1906.
A description of the machinery used and methods of operating and of calculating values from the results. Ill. 3000 w.

Prospecting Dredging Ground.
D'ARCY WEATHERBE.
Mining and Scientific Press  Oct. 20, 1906.
Discusses points to be taken into account beside the actual gold content, and the methods of determining them. Ills. 3000 w.

Examination of Placer Ground.
REGIS CHAUVENET.
Mining Reporter  April 4, 1907. Serial.  1st part.
Remarks on the importance of a careful testing of the ground in placer mining, and a discussion of the pan as a means of testing are given in the present article. 1800 w.

Examining a Placer Property.
GEORGE W. MAYNARD.
Mining World  July 6, 1907.
Outlines methods and gives an account of an investigation of property in Arizona. 1800 w.

The Essential Data of Placer Investigations.
J.P. HUTCHINS.
Engineering and Mining Journal  Aug. 24, 1907. Serial. 1st part.
Calls attention to points to be ascertained and precautions to be taken in the examination and valuation of placer ground before exploitation. Ills. 2500 w.

River Prospecting for Gold.
MARSHALL MACFARLANE.
Mining Journal  Sept. 19, 1908.
Describes an effective plant and methods of work in French Guinea. Ills. 1600 w.

Examination of Gold Dredging Properties.
T.S. RUH.
Engineering and Mining Journal  May 1, 1909.
Comments on methods that cause failure. 1000 w.

Testing Dredgeable Gravels.
WILLIAM H. RADFORD.
Mining and Scientific Press  May 22, 1909.
Suggestions for testing and working placers. Ills. 3500 w.

Placer Examinations.
ARTHUR LAKES, JR.
Mines and Minerals  July 1909.

Explains method of prospecting with churn drills, collecting and panning samples, estimating and recording results. 3000 w.

Dredging and the Sampling of Placer Ground.
A.P. ROGERS.
Engineering and Mining Journal March 12, 1910.
Brief description of methods of testing and preliminary sampling. 2000 w.

Sampling Placer Ground.
J.P. HUTCHINS and N.C. STINES.
Mining and Scientific Press Feb. 25, 1911.
Directions for treating the sample, calculating the gold content, etc. 2000 w.

Examination of Dredging Properties.
FRANCIS J. DENNIS.
Bulletin of the American Institute of Mining Engineers April 1912.
Considers factors necessary to ascertain in determining the value of placerground. 1500 w.

Prospecting Gold Placers in Korea.
J.J. MARTIN.
Mining and Scientific Press May 18, 1912.
Describes prospecting work at the Chiksan mines. Ills. 1800 w.

The "Salting" of Samples and Means of Detection.
GEORGE A. JAMES.
Mining and Engineering World May 25, 1912.
Calls attention to cases due to ignorance or carelessness. 2000 w.

ChurnDrill Examination of Placers.
JAMES E. DICK.
Mines and Minerals Sept. 1912. Serial. 1st part.
Illustrated description of drill and tools, method of setting up, driving casing, pumping, sampling, and calculations. 3500 w.

Preliminary Testing of Placer Ground.
WILLIAM F. WARD.
Engineering and Mining Journal April 5, 1913.
A combination Empire and Keystone drilling outfit is described by author. Ills. 2500 w.

Successful Salting of Alluvials.
C.S. HALEY.
Mining and Scientific Press Dec. 27, 1913.
Discusses methods of salting worthless gold mines. 2000 w.

Placer Salting in Santo Domingo.
J.W. LEDOUX.

Engineering and Mining Journal Feb. 14, 1914.
An account of extensive salting in connection with placer deposit explorations. 3500 w.

Methods of Testing Placer Gravels.
W.J. RADFORD.
Mining and Scientific Press July 4, 1914.
Gives detailed statements of results based from tests made in both North and South America. 5000 w.

Examination of Placer Ground.
THOMAS A. GRAVES.
Mining and Scientific Press Dec. 26, 1914.
Discusses methods of prospecting and of calculating values. 2500 w.

Prospecting Wet Placer Ground by Shaft Sinking.
DONALD STEEL.
Mining and Scientific Press Jan. 9, 1915.
Describes the work. Ills. 1200 w.

Prospecting Methods at Fairbanks.
HUBERT I. ELLIS.
Engineering and Mining Journal May 8, 1915.
Methods and devices used. Ills. 5000 w.

Prospecting Gold Gravel with Keystone Drills.
J.D. GALLOWAY
Canadian Mining Journal Dec. 15, 1915.
From report of author on conditions in Cariboo division, B.C. Information on operations. 2000 w.

Prospecting Before Dredging on Seward Peninsula, Alaska.
COREY C. BRAYTON.
Mining and Scientific Press April 29, 1916.
Review of methods for testing and of dredge design to meet local conditions. Ills. 5000 w.

Hydraulic Prospecting at the Reelberg Tin Mines.
E.R. SCHOCH.
Journal of the South Africa Institute of Engineers., vol. 17, nos. 45, Nov.Dec., 1918, pp. 6167, 9 figs.
Surface prospecting by means of hydraulic jets or monitors on level ground with artificially conserved return water.

Placer Prospecting Practice.
GERALD H. HUTTON.
Mining and Metallurgy no 176, Aug. 1921, pp. 1517.
Discusses the points to serve as a basis for systematic investigation and technical discussion.

Valuation of Placer Deposits.

GERALD H. HUTTON.
Mining and Scientific Press, vol. 123, no. 11, Sept. 10, 1921, pp. 365368, 2 figs. Discusses discrepancies between sampling estimates and actual recoveries, also methods in use.

Drilling Results and Dredging Returns.
CHARLES W. GARDNER.
Engineering and Mining Journal, vol. 112, nos. 17 and 18, Oct. 22 and 29, 1921, pp. 646649, 1 fig. and pp. 688692, 3 figs. Oct. 22:
Accuracy of churn drilling of placer deposits limited by irregular distribution of gold, the relatively small samples taken, the skill of operator, and many other factors. Work difficult to check. Oct. 29: Examples of placer operations in various parts of the world indicate that prospecting data must be intelligently interpreted to obtain accurate and reliable estimates of probable gold content and recovery.

Placer Prospecting Practice.
A.C. LUDLUM.
Mining and Metallurgy, no. 179, Nov. 1921, pp. 2728.
Observations on handdrilling operations with rotated casing with which in author's belief, accurate results are secured.

The Discrepancy Between Drilling and Dredging Results.
R.G. SMITH.
Engineering and Mining Journal., vol. 112, no. 21, Nov. 19, 1921, pp. 812815.
Nature of clay, gravel, and gold, operating methods employed, crew efficiency in dredging and other factors exert important influences.

Valuation of Placer Deposits.
WILBUR H. GRANT.
Engineering and Mining Journa, vol. 113, no. 8, Feb. 25, 1922, pp. 329331.
Discusses present methods; accuracy in relation to cost of investigation; controlling factors in sampling methods.

Magnetometric Determinations Applied to Placer Mining.
ARTHUR GIBSON.
Engineering and Mining Journal Press, vol. 114, no. 25, Dec. 16, 1922, pp. 10641069, 7 figs. Results obtained by this method of making surveys to ascertain approximate location of mineral concentrations; use of maps and charts.

A Comparison of Estimates Upon a Golddredging Orebody.
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Engineering and Mining Journal. Press, vol. 114, no. 21, May 26, 1923, pp. 934936.
Editorial study of reports of four engineers making independent examinations.

The Determination of Gold Values in Placer Deposits.
J.H. MARKS.
Mountain States Mineral Age, vol. 12, no. 3, Mar. 1927, pp. 1314.
Outline of plan to find value of placer ground.

The Valuation of Alluvial Deposits.
W.R. RUMBOLD. I
Institute of Mining and Metallurgy Bul. (Lond.), no. 283, Apr. 1928, 13 pp. 4 figs; see also discussions and contributed remarks in nos. 284, 286, 288, 289 and 2910, May, July, Sept. Oct. and Nov. 1928, pp. 1135, 15, 13-29, 12 and 131, 7 figs. Two systems of sampling now in vogue; applied to deposits directly related to present river system and to ancient deposits which have no such relation; underestimates to be guarded against as much as overestimates; generally impossible to have all tin concentrate samples assayed by wet methods; tin contents must be estimated by vanning, specific gravity or some other roughandready methods; cost of sampling.

Alluvial Prospecting: the Technical Investigation of Economic Alluvial Minerals.
C. RAEBURN and H.B. MILNER.
Nature (Lond.), vol. 122, no. 3081, Nov. 17, 1928, pp. 764765.
Review of book published by D. van Nostrand Co., New York; main body of text consists of introduction and ten chapters dealing amongst other matters with classification, lithology, provenance and association of alluvial and allied deposits and minerals; theories of transport and accumulation; prospecting methods; geophysical aids; field work; report; and laboratory methods.

The Valuation of Alluvial Deposits.
W.R. RUMBOLD.
Institute of Mining and Metallurgy Trans., vol. 37, 1928, pp. 437451 and (discussion) 451541, 11 figs.
Two systems of sampling now in vogue; applied to deposits directly related to present river system and to ancient deposits which have no such relation; underestimates to be guarded against as much as overestimates; generally impossible to have all tin concentrate samples assayed by wet methods; tin contents must be estimated by vanning, specific

gravity or some other roughandready method; cost of sampling.

A Case of Discrepancy Between Bore Values and Recoveries
J.C. COLDHAM.
Australasian Institute of Mining and Metallurgy. Proc. no. 76, Dec. 31, 1929, pp. 233238 and (discussion) 238242, 1 fig.
Comparison of results of test boring done under contract and of yield from actual mining operations by sluicing and hydraulic elevators; narrow valley deposit of fluvio-glacial origin; wash is 80 to 90 ft. deep and is formed in two distinct layers; returns indicate that drill fails to pick up coarse gold, while mined gold shows high percentage of coarse gold in form of thick plates.

Alluvial Prospecting in South America.
H.L. HOLLOWAY.
Mining Magazine, vol. 43, no. 2, Aug. 1930, pp. 8587.
Details of shaft and hand drilling methods; used in prospecting certain alluvial deposits in Equador and Colombia.

Estimating Metal Reserves of Placer Deposits, Etc.
D.N. OGLOBLIN.
Tzvetniye Metalli n 7 July 1931 p 92649 3 supp plate.
Method of isolines proposed by B.K. SOBOLEVSKY; directions for use of method; practical numerical examples. (In Russian)

Systematic Sampling of Alluvial Deposits by Banka Drill.
P.R. LAKE.
Institute of Mining and Metallurgy Bul n 331 Apr 1932 p 118 and discussions in 332, 333, 334, 335, 336 and 337, May p 124, June p 511, July p 117 Aug p 1933, Sept p 1 and Oct p 113.
Available literature on alluvial mining and on sampling and computation of mineral values of alluvial deposits shows wide divergence of opinion, especially as to procedure and method in sampling; plea is made for simplification and standardization of sampling; layout of property for sampling and preparation of boring plan; taking sample by Banka drill; computation of mineral values.

Prospecting for Alluvial Deposits.
A.F. SKERL.
Mining Magazine v 46 n 4 Apr 1932 p 21319 and discussion by W.C. GRUMMIT in n 6 June p

3478. Notes on purpose and methods, with special application to tin field of northern Nigeria.

Sampling Gold Placer.
D.L. SAWYER
Engineering and Mining Journal v 133 n 7 July 1932 p 3813.
Practice at Rich Hill and Weaver Creek placers in southern Yavapai County, Ariz; shafts sunk and gravel from each 5 ft of depth segregated and washed separately; shafts as sunk average 3 1/2 by 5 1/2 ft cross section and 12 ft deep and most of them had to be cribbed; cribbings used were 2 by 12in planks, cut in 3ft 4in. and 5ft 4in. lengths; labor cost varied from $2 to $6 per ft.

Placer Ground Sampled By WellDigging Equipment.
M.D. DRAPER.
Engineering and Mining Journal v 133 n 10 Oct. 1932 p 537.
Example of application of well drilling machine in southern California; average thickness of gravel 25 ft. ranging 12 to 48 ft; few rocks above 6 in. diam; digging cylinder about 2.5 ft. diam, with cutting blades bolted to bottom; Kelly stems each 18 ft long; if rocks are not over 3 to 4 in diam. 25 ft holes can be drilled in 2 to 4 hr in ordinary gravel; cost/foot of hole is less than by hand work.

Drilling Placer Deposits.
J.H. ROBERTSON.
Canadian Mining Journal v 53 n 12 Dec 1932 p 5414.
Continuation of serial in issue of June 13, 1930; details of testing methods.

Systematic Sampling of Alluvial Deposits by Banka Drill.
P.R. LAKE.
Institute of Mining and Metallurgy  Bul n 340 Jan 1933 p 334.
Author's reply to discussion of paper in issue n 331 Apr 1932.

Alluvial Sampling.
A.J. PETERSON.
Mining Magazine v 47 n 2 Feb 1933 p 858.
Review of some of difficulties standing in way of standardization of alluvial sampling methods.

Evaluating Gold in Certain Placers by Microscopy.
A.L. CRAWFORD.
Mining and Metallurgy v 14 n 321 Sept 1933 p 3724.

Procedure developed by author for microscopic examination of samples of goldplacer gravels; examples of application of method to samples of placer gravel from various deposits in Utah.

Notes on Valuation of Gold Dredging Placers by Keystone Drilling.
J.W.G. MCGEORGE.
Institute of Mining and Metsllurgy Bul n 351 Dec 1933 34 p supp plates.
Types of deposits; mapping; drilling scheme; laying out preliminary drill holes and holes for systematic sampling of channel deposits; description of keystone drill; drill crew; drilling procedure; record forms; calculation of values.

Notes on Valuation of Gold Dredging Placers by Keystone Drilling.
J.W.H. MCGEORGE.
Institute of Mining and Metallurgy Bul n 352, 354 and 359 Jan 1934 p 114. Mar p 512 and Aug p 35.
Discussion of paper in issue n 351 Dec 1933.

24in. Alluvial Prospecting Drill.
W.A. VAN DER HOFF.
Mining Magazine v 50 n 5 May 1934 p 2837.
Description of powerdriven drill originally designed by S.J. VERMAES of Mining University at Delft, for sinking pits 2 ft. in diam. in alluvial material; casing with sawtoothed shoe is rotated and driven down, and ground within casing excavated by grab or other device; operating procedure; advantages as compared with small diameter drills; examples of comparative results on tin and gold placer deposits. Bibliography.

Anent Placer Prospecting with Drills.
G.L. HOLMES.
Mining Journal (Phoenix Ariz) v 17 n 24 May 15, 1934 p 34.
General observations; drilling and sampling not exact science, but accurate results can be obtained by use of efficient methods; study of drilling records and operating results of 100 dredges showed average recovery as about 65% of anticipated results as indicated by drilling; in one case, dredge recovered 139% of expectation; some details of good drilling practice.

Core Control in Alluvial Drilling.
V.V. CLARK.
Engineering and Mining Journal v 135 n 7 July 1934 p

2937.
Method for determining, from extracted gravel, total amount called for by drive; author stipulates that if system is to work, enough holes must be drilled systematically to permit law of averages to be used in computation; equipment must be improved and drill runners should be trained accordingly.

Panner's Role in Placer Drilling.
J.J. BACH.
Engineering and Mining Journal v 136 n 7 July 1935 p 323.
Suggestions for increasing efficiency of crew and promoting greater accuracy in sampling, with special reference to northern areas such as Alaska.

Placer Gravels in Colorado River Basin.
J.W. RICHARDSON.
Mining Journal (Phoenix, Ariz) v 19 n 22 Apr 15 1936 p 4.
Outline description of method used in testing large gravel deposits near Searchlight, Nevada; material shoveled in benches, by hand labor and washed in 12ft sluice lined with corduroy; laboratory test on concentrates gave value of 1.41 oz gold per ton; hand panning showed erratic values.

Neues Schuerfbohrverfahren zur Untersuchung von Seifen
P. STEIN.
Metall und Erz v 33 n 10 2nd May 1936 issue p 24550.
New exploratory drilling method for examination of placers; after brief discussion of socalled Banka drill and Vermaes exploratory drill, new Conrad shaft drill is described in detail and illustrated; apparatus is mounted on Fordson tractor.

Testing Placer Ground in Unique Way.
P.L. JONES.
Engineering and Mining Journal v 137 n 7 July 1936 p 3378.
Description of method developed during testing of deposits in Wyoming; three trenches, each representing dragline cut with dredge, are dug with pull shovel and material is sluiced; to simulate dredging conditions, trenches were dug under water.

Sampling and Testing of GoldScheelite Placer Deposit in Mohave Desert, Kern and San Bernardino Counties, Calif.
H.W.C. PROMMEL.
US Bureau of Mines  Information Cir n 6960 Sept. 1937 18 p.
History and general description; water supply survey

methods; and maps; ground was tested by drilling with two portable rotary drilling rigs using auger type buckets; procedure and test results; 16,278 ft. of drilling on rental basis cost 98.6c per foot of hole, not including cost of engineering and testing of samples.

Prospecting.
E.J. PRYOR.
Mine and Quarry Engineering v 3 n 11 Nov 1938 p 4058 and 414.
Types of alluvial deposits, and forces operating to form them, are considered; technique of placer location, delimitation and valuation, discussed.

Examination of Placer Deposits.
T.A. GRAVES.
New York, Richard R. Smith, 1939.
General information on alluvial deposits and their examination which will enable student to make actual placer examinations; topics covered include description and location of placers, placer working (including economic considerations), determination of value, reports and records, and field equipment. 168 pp. ills., diagrs, tables, $3.00.

Valuation of Gold in Boreholes in Testing Alluvial Dredging Areas.
A.H. FLOWERDEW.
Chemical Engineering and Mine Review v 31 n 372 Sept 1939 p 4923.
Values recorded in grains per cubic yard by three methods; value calculated from measured core extracted; value calculated for each section from volume of pipe; average of preceding, called mean value; assumption is made that 6 in. power drill has been used to test ground; boring practice; handling core; measuring box; method of calculating and recording results.

Testing for Tailing Losses in Placer Mining.
P. MALOZEMOFF.
Engineering and Mining Journal v 140 n 9 Sept 1939 p 4752.
Methods of continuous sampling for use on gold dredges explained.

Notes on Testing of Placer Deposits by Drilling.
J.H. ROBERTSON.
Canadian Mining Journal v 61 n 6 June 1940 p 3558.
Outline of drilling process; securing core;

calculations as to volume of core; measurement of core after drive and after extraction; comparative figures; rate of drilling; recovering gold from cores; treating core dirts; removing gold particles or colors from pan, by picking out, fire assays, or amalgamation; use of rocker as preliminary to panning; supervision; keeping of records.

Unique Portable Sampler for Shallow Placers.
J. HUTTL.
Engineering and Mining Journal v 142 n 9 Sept 1941 p 556.
ParX sample described sinks small shaft large enough for one man to enter; summary of requirements which had to be considered in designing unit; mobile mounting consists of long wheelbase truck chassis; digging element is specially designed clamshell type bucket, bucket carrier, mast and guide frame; construction; details; operating procedure; present equipment is designed to max depth of 30 ft; digging speed averages 35 ft per day in normal ground.

Prospecting.
F.D. POWER.
Mine and Quarry Engineering v 6 n 9, 10, 11, 12, Sept 1941 p 2437, Oct p 2736 and 272, Nov p 299-303 and Dec p 3337; and v 7 n 1, 5 and 11 Jan 1942 p 1521, May p 1246 and Nov p 2714. Sept 1941.
Fifth of series based on free lectures delivered at University of Sydney. Minor's cradle or rocker; paddler; working auriferous beach sand; spear pump; wet shaker, dry blowing; dry shaker. OctNov: Earth and timber dams, for storing water supply; boom gate for ground sluicing; Californian pump; sluice box; ground sluicing operations; hydraulicking. Dec: Eight of series: Miner's wheelbarrow; ladders; ropes; useful knots; windlass; buckets; hooks. Jan 1942: Ninth of series; horse operated whip; horse whim; exploring ore deposits; open cuts; overhead transport; adit, tunnel or day level; timbering; shafts. May 4: Tenth of series; Ore and rock handling; stoping; ventilation. Nov: Eleventh of series: Minerals of commercial value; aluminum; alunite; antimony; arsenic; asbestos; asphalt; barytes; beryllium; bismuth; borax; cadmium; cerium; chromium; clays; cobalt; copper.

Placer Valuation in Alaska.
L.C. DOHENY.

Engineering and Mining Journal v 142 n 12 Dec 1941 p 479 and v 143 n 1 and 3 Jan 1942 p 434 and Mar p 489. Dec:
By application of certain factors; adapted from prospecting in frozen ground to adjacent thawed ground, underruns and overruns are controlled. Jan: Methods of estimating gold contents of a block; triangle valuation. Mar: Caisson sinking, in thawed, shallow loose ground; volumetric valuation; sluffed holes in frozen ground; standard for thawed ground.

Sampling Cat Camp Gold Placers.
J.F. DULING.
Mining Journal (Phoenix, Ariz) v 25 n 18 Feb 15 1942 p 35.
In thorough and systematic testing of Cat Camp placers in Calaveras County, California, 59 samples were taken from 39 different sampling places, or on equivalent of one sampling place for each 2 1/2 acres; complete details of procedure followed are given.

Estimation of Gold and Tin Alluvials in Malaya.
A.G. PALMER.
Australasian Institute of Mining and Metallurgy Proc v 128 Dec 31 1942 p 20120.
Methods described were used in actual practice by author and previous engineers for same company; sampling procedure; field procedure; calculations; drilling equipment; reporting.

Exploration of Placers Suitable for Bucket Line Dredging.
E.J. BLOOM.
Mines Magazine v 33 n 4 Apr 1943 p 1738, 184, 194, 196.
Broad discussion of search for gold and tin placer deposits; types of places of deposition; conditions necessary to successful bucket line dredging; environmental conditions affecting placers; prospecting by drilling and shaft sinking; cost of examination of 28 properties in 7 states in 6 mo; it cost $1241.94 in taxes for the privilege of spending $20,000 in work from which no profit accrued.

Boring Results and Dredge Recovery.
-
Chemical Engineering and Mining Review v 37 n 435 Dec 11 1944 p 7981.
Valuation of alluvial deposits of gold and tin is influenced by factors which should make possible greater degree of accuracy than can

be attained in estimation of value of lodes; comparisons at four New Zealand properties; discrepancies due to irregular occurrence rather than inefficient dredge work.

War Time Placer Testing in Sonora, Mexico.
H.W.C. PROMMEL.
Mines Magazine v 35 n 1 Jan 1945 p 214, 42.
Narrative account of experiences.

Averaging Alluvial Samples.
R.T. HANCOCK..
Mining Magazine v 79 n 5 Nov 1948 p 2704.
Description of method in which assays to be averaged are arranged in order of magnitude and divided into groups, each of which covers some convenient range of values higher than that of its predecessor; number of samples within each group is expressed as percentage of total number of samples and upper limiting assay of each group is plotted on logarithmic probability paper against cumulative percentage up to that limiting figure.

Logarithmic Pattern in River Placer Deposits.
J.B. WERTZ.
Economic Geology v 44 n 3 May 1949 p 193209.
Experiments made in laboratory with wooden trough, supplemented by cases taken from actual placer maps; results indicate that deposition areas and erosion areas alternate with each other; ore concentration zones coincide with erosion areas, whereas barren zones coincide with sedimentational areas; this proves useful in interpretation of placer maps, in checking of quality of prospecting and in explanation of irregularities, where interference factors are to be taken into consideration.

New Way to Interpret Results of Placer Sampling.
J.E. HARDING.
Engineering and Mining Journal v 153 n 1 Jan 1952 p 96-8.
Suggestion based on field experience, for avoiding disastrous errors that are too easily made in interpreting drill logs; drill log described; calculation outlined; counting colors of samples; handling core size; methods; compared.

Gold Pan: Neglected Geological Tool.
J.B. MERTIE, JR.
Economic Geology v 49 n 6 SeptOct 1954 p 63951.
Technique of panning for heavy and semi-heavy accessory

minerals; types of pans, factors in panning, operation of panning, and processing of concentrates in field; gold pan is versatile and efficient field tool, which is completely independent of laboratory facilities.

Valuation of Alluvial Deposits.
H.L.H. HARRISON.
2nd ed. Mining Publications, Ltd., London 1954 308 p L2.50.
Guide for estimation of surface deposits of tin, gold, platinum, chromium, manganese, tantalum and niobium, titanium, tungsten, thorium, zirconium, kaolin and china clay; methods of prospecting; records and valuation; methods of mining alluvial tin ore deposits; chemical assays for tin; health in jungle of South East Asia.

Gold Pan as Quantitative Geologic Tool.
P.K. THEOBALD, JR.
US Geological Survey Bul n 1071A 1957 54 p.
Gold pan used has shape of frustrum of cone with diam. at lip of 16 in., diam at base of 9.5 in and depth of 2.5 in.; field techniques of panning, laboratory work, and analysis of recovery of heavy minerals; recovery of heavy minerals; in riffle samples, recovery and grain size of heavy minerals, relation of recovery to type of sediment and to sorting of concentrate; suggestions for improved panning technique.

Novyi metod oprobovaniya rossypnkyh mestorozhdenii zolota.
A.I. TYUSHNYAKOV, I.P. IVANOV.
Razvedka i Okhrana Nedr n 12 Dec 1962 p 915.
New method of sampling gold placer deposits; upgrading of samples involves washing in special device and amalgamation; new method supplies data on gold content with more accuracy than method of panning samples from boreholes and exploratory pits; criteria for unification of samples.

Valuation of Large, GoldBearing Placers.
A. DAILY.
Engineering and Mining Journal v 163 n 7 July 1962 p 808.
Unit (drill hole) and areal valuation of large thawed or frozen auriferous gravel deposits using data obtained by prospecting with churntype placer drill, resulting in basic valuation, and preparation of estimates of recovery before and after extractive mining

operations are under way; data from drilling required for valuation; procedures are equally applicable to valuation of alluvial platinum bearing deposits, with modifications to tin bearing deposits.

Usovershenstvovanie tekhniki razvedki rossypnykh mestorozhdenii zolota.
B.P. MAKAROV, A.I. LIFSHITS.
Razvedka i Okhrana Nedr n 4 Apr 1963 p 316.
Improvement of techniques in prospecting for gold placers; advantages of impactgrab method of drilling exploratory boreholes and use of centrifugal separator in treatment of samples.

Novye metody razvedki rossypnky mestorozhdenii zolota.
A.S. VLASOV, S.G. ZHELNIN.
Razvedka i Okhrana Nedr n 4 Apr 1964 p 812.
New methods of exploration of gold deposits; in Far East of Soviet Union placers with irregular distribution of gold and in part water logged are explored by excavating trenches by means of bulldozers and excavators; this method proved to be more efficient than exploration by means of pits; details on excavating operations and sampling.

Testing and Evaluation of Australian Placer Deposits.
E.H. MACDONALD.
Australasian Institute of Mining and Metallurgy Proc n 218 June 1966 p 2545.
Some important mineral fields are referred to in discussing formation of placer deposits in Australia; testing methods include boring by hand, with percussion rigs, with auger and pit digging drills, and by vibro drilling; sampling errors are minimized by use of correct techniques and equipment for boring; sampling and sample dressing; hypothetical set of data is used to demonstrate final process of evaluation, and some relevant taxation provisions are discussed.

**LAW** Canada

Deficiencies in Canadian Mining Laws.
H. MORTIMER LAMB.
Mining World June 18, 1910.
Read before the Can. Min. Inst. Critical discussion of some existing regulations. 3000 w.

Canadian Mining Law.
J.M. CLARK.
Bulletin of the American Institute of Mining Engineers April 1911.
A short introductory paper inviting discussion of the proposed changes. Discussion. 3500 w.

The Canadian Mining Law.
J.M. CLARK.
Engineering and Mining Journal April 1, 1911.
Present status, mining law and changes necessary, discussion by ROSSITER W. RAYMOND. 3500 w.

Mining Laws.
HORACE V. WINCHELL.
Journal of the Canadian Mining Institute Vol. XV.
Importance of liberal mining law, refer to laws of US and Canada, and recommendations. 5500 w.

Uniform Mining Law for North America.
T.E. GODSON.
Bulletin of the American Institute of Mining and Metallurgical Engineers, no. 148, Apr. 1919, pp. 653665. Also in Can. Min. Inst. Bul., no. 84, Apr. 1919, pp. 339405.
Mining laws of Canada represented as unassimilated to demands of industry.

Observations upon Mining Law in the Empire.
G. STONE.
Institute of Mining and Metallurgy Bul., no. 271, Apr. 1927, pp. 110.
Deals with Canadian and Australasian, South African, British India, concession, Rhodesian and miscellaneous systems; examples of rent and royalty charges.

Notes on Mining Laws in Canada.
W.B. MCPHERSON.
Canadian Mining Journal, vol. 49, nos. 37, 38 and 40, Sept. 14, 21 and Oct. 4, 1928, pp. 740744, 761763 and 808809. Sept. 14:
Notes mining legislation in Canada; outline of Dominion regs on coal, petroleum, and natural gas,

dredging; alkali, carbonblack production from natural gas, quarrying; details of procedure by provinces. Sept. 21: Mining laws of British Columbia, Manitoba, Alberta, Saskatchewan, Yukon and Northwest Territories. Oct. 4: Nova Scotia divides regs according to two classes of minerals; gold and silver ores are 250 ft. N and S by 150 ft.E and W; lease rentals and royalties, licenses to search for, and leases of right to mine, minerals other than gold or silver; license may not exceed 5 sq mi.; lease may not exceed 1 sq. mi.; bond to compensate owner of lands for damage; special leases for coal; rents and royalties.

Protection of the Mine Investor in British Columbia.
H. MORTIMERLAMB.
Canadian Mining Journal, vol. 49, no. 47; Nov. 23, 1928, pp. 962964.
No Blue Sky Law in British Columbia and belief is that none is needed; mining law permits resident engineers to give personal or public notice regarding statements not in accordance with actual facts and conditions; Engineering Act, providing that only registered engineers can legally report in that capacity on mines, is considered as protection in some degree.

Mining Investments by the Public.
J.D. GALLOWAY.
Canadian Mining and Metallurgy Bulletin, no. 200, Dec. 1928, pp. 13951406.
Paper presents conclusions regarding mining investments, based largely on British Columbia experience; public becomes interested by grubstaking prospectors, buying mineral claims, forming development syndicates; or by buying shares in mining companies; last phase is discussed in detail.

Taxation of a Canadian Gold Mining Company.
E.D. FOX.
Canadian Mining and Metallurgy Bulletin n 264 Apr 1934 (Trans sec) p 16583.
Financial statement of hypothetical Company was designed with express object of having it assessed in respect to profits by several taxing bodies representing Federal and Provincial Governments, Canada; copies were sent to several Ministers of Mines, with request that they be submitted to their acting authorities and assessed accordingly; material constitutes digest of taxation as directly applied to gold mining profits in Canada.

Taxation of Canadian Gold Mining Company.
E.D. FOX.
Canadian Institute of Mining and Metallurgy and Soc of Nova Scotia Trans v 37 1934 p 16583. cf. Can Mining and Met Bul n 264 Apr 1934.

Mine Taxation in Canada.
B. NEILLY.
Canadian Institute of Mining and Metallurgy and Soc of Nova Scotia Trans v 37 1934 p 2519. cf. Can Mining and Met Bul n 265 May 1934.

Mine Taxation in Canada.
J.Y. MURDOCH C.G. WILLIAMS and A.S. BAILLIE.
Canadian Mining and Metallurgy Bulletin, n 284 Dec 1935 p (Trans) 5315, 53643 and 54451.
Three separate papers, submitted at Vancouver, B.C. meeting, Nov 1935; first paper discussed outstanding factors; second gives details of various provincial and Dominion regulations, third is on Cost of Taxation in Mining Industry, dealing largely with conditions in British Columbia.

Advance in Price of Gold and Its Significance to Canada.
G.C. BATEMAN.
Canadian Mining and Metallurgy Bulletin n 284 Dec 1935 (Trans) p 5526.
Economic analysis and critical commentary; new constructive efforts should be encouraged; because gold mining is only noncompetitive industry; governments that demand too much and dissipate too much stifle initiative and kill enterprise; national difficulties cannot be solved by undue taxation of rich; capital will not venture unless it gets square deal.

Canada 1941 Review and Outlook 1942.
J.B. DEMILLE.
Engineering and Mining Journal v 143 n 2 Feb 1942 p 613 and 72.
Metals placed under strict control to insure adequate supplies for war; Dominon's gold output increases slightly; cumulative dividend record of Canadian metal mines; by provinces and territories; list of Canadian metal mines producing in 1941.

Mining Laws of Canada, prepared by author.
A. BUISSON
4th ed. Canada Dept Mines and Tech Surveys Mines Branch, n 828, 1950, 133 p. Digest of Dominion and Provincial laws and regulations

affecting mining; synopsis of mining laws at present in force, summary of special acts relating to mining, mine taxation, etc. lists of acts, amendments and regulations at present in force, royalties, bounties, schedule of fees, and personnel.

Digest of Mining Laws of Canada.
H.A. GRAVES, G.R.L. POTTER.
Canada Dept Mines and Tech Surveys, Ottawa Mines Branch n 854 1957 148 p. Mining laws and regulations designed for Indian reserves, federal land, and separate provinces, petroleum and natural gas regulations included.

Mining Legislation in British Commonwealth Countries Where Minerals are Vested in Crown.
F.R.H. GREEN.
Institute of Mining and Metallurgy Trans v 73 pt 8 196364 p 57183.
Right to explore and prospect may either be nonexclusive or exclusive; right to mine may be shortterm and renewable annually or long-term for periods of from 5 to 99 yr; holders of rights to mine must pay rent to owner of surface and mineral rent to government, must commence operations within given periods, keep proper plans and records and submit periodic returns and reports; 3 main systems of royalty and circumstances under which they are applicable; ways in which control of possession, purchase and sale of certain minerals are exercised.

Comments on Mine Taxation in Canada and United States of America.
V.C. WANSBROUGH. I
Institute of Mining and Metallurgy Trans v 73 pt 8 196364, p 5659.
Provisions of Canadian federal and provincial taxation applying to mining industry, including depletion allowances, new mine tax exemption, capital cost allowances, excise and income taxes and provincial royalties and percentage levies; comparison with United States mine taxation.

Summary Review of Federal Taxation and Legislation Affecting Canadian Mineral Industry.
E.C. HODGSON, W.J. BEARD.
Revised February 1964. Canada, Dept. Mines and Tech Surveys Mineral Resources Div Mineral Information Bul 73 1964 27 p.
Summary of certain Federal legislation affecting mining, oil and gas enterprises in Canada; details on Income Tax Act, Excise Tax Act, Customs Tariff, and certain other Federal

legislation.

**LAW** Canada B.C.

Mining Law of Foreign Countries.
-
Colliery Guardian Dec. 24, 1896.
Reviews and compares the laws of different lands. 1600 w.

Mining Law and Its Bearing on the Development of Mines and Mining Districts.
FRANK C. LORING.
Canadian Mining Review Jan. 1898. Paper read at meeting of the B.C. Assn. of Min. Engs.
Historical review of laws in various lands regarding ownership and right to dispose of mines, reviewing quite extensively the conditions existing in the United States, with the special object of considering the state of affairs in British Columbia. 7500 w.

The Mineral Act of British Columbia.
R.W. RAYMOND.
Canadian Mining Review Feb. 1898.
Considers various points of the law, especially the size of claims, the proof of their mineral value, and the manner of their demarkation. 2000 w.

Mining Law in British Columbia, Mexico and the United States.
ROSSITER W. RAYMOND.
Engineering Magazine March, 1898.
A general summary by the secretary of the American Institute of Mining Engineers intended to afford a basis for comparison with other countries and especially with the laws of South Africa. 2500 w.

Mining Laws of British Columbia.
-
US Consular Reports. No. 413 April 29, 1899.
Copy of a placer mining act passed Jan. 18, 1899. 3600 w.

Placer Gold Mining Claims in British Columbia.
-
US Consular Reports., No. 956 Feb. 8, 1901.
A brief statement of the laws governing the locating and working of placer claims. 1300 w.

Mining Laws of British Columbia and Some Notes on Blue Sky Legislation.
A.M. WHITESIDE.
Canadian Institute of Mining and Metallurgy Bul. no.

149, Sept. 1924, pp. 574585.
Discussion of laws bearings upon economics of mining in British Columbia.

Aspects of the Mining Industry in British Columbia.
W. SLOAN.
Mining and Metallurgy, vol. 7, no. 235, July 1926, pp. 284286, 1 fig.
Mining statutes in province are especially liberal to outside capital; taxation is relatively light.

New Legislation and the Mining Industry of British Columbia.
-
Canadian Mining Journal, vol. 50, no. 18, May 3, 1929, pp. 410411.
Of 90 new acts prorogued at session of 17th Parliament, only 10 either directly or indirectly affect mining industry; summaries of legislation are given.

Some Legal Aspects of Prospecting.
H.L. JESTLEY.
Western Miner v 19 n 11 Nov. 1946 p 504.
Continued existence of mining industry in Canada is dependent on prospector and promoter; relationship between men in field and men supplying capital should be so clear as to preclude possibility of dispute of later date; litigation is expensive and often retards development; importance of holding Free Miner's Certificate, or License; British Columbia Statutes. Before Prospecting Session, Annual Western Meeting, Canadian Institute of Mining and Metallurgy.

**LAW** Canada Yukon

The Yukon Mining Laws.
ROSSITER W. RAYMOND.
Canadian Mining Review Aug. 1897.
Comments on and objections to the regulations governing placer mining along the Yukon river and its tributaries, recently adopted by the Dominion Government. 2000 w.

Yukon Gold Region.
-
US Consular Reports Oct. 1897.
Canada's Mining Regulations. Copy of the regulations governing placer mining on the Yukon, issued by the Canadian Government. 3300 w.

The Mining Regulations for the Canadian Yukon.
-
Engineering and Mining Journal Feb. 5, 1898.
The new regulations governing placer mining and dredging of this district in Canadian territory. 4400 w.

New Canadian Mining Regulations.
-
US Consular Reports March 10, 1898.
A copy of the new regulations issued by the Interior Department of Canada, governing mining in the Yukon regions. 5500 w.

Canadian Mining Regulations.
MR. HAMILTON SMITH
Engineering and Mining Journal March 19, 1898.
Extracts from a letter published in the Montreal "Star," containing much of interest in regard to the mining regulations for the Yukon district. 1200 w.

The Yukon Royalty.
A.N.C. TREADGOLD.
Canadian Mining Review Sept., 1898.
Discusses the justice of the royalty imposed, concluding that the crown keeps back too much considering the conditions. 1500 w.

Yukon Mining Laws.
J.B. TYRRELL.
Journal of the Canadian Mining Institute 1906.
Presents some of the main provisions of the laws which have been in force for the past eight years, pointing out their advantages and disadvantages in the working of goldbearing gravel deposits. 3500 w.

The Taxation of Mineral Resources in Canada.
O.D. SKELTON.
Canadian Mining Journal  Nov. 1, 1908.
Reviews the measures adopted, with comments. 3500 w.

Placer Mining Claims in the Yukon.
J.A. MACDONALD.
Mining and Scientific Press  Feb. 27, 1915.
Information concerning terms of the Yukon placer mining
act. Ills. 1000 w.

Incongruities in the Yukon Placer Mining Regulations
and Suggested Remedies.
J.A. MACDONALD.
Canadian Mining Journal  March 1, 1915.
An explanation of some of the difficulties and
remedies. Ills. 1200 w.

Operation of the Yukon Placer Act.
C.A. THOMAS.
Engineering and Mining Journall  May 5, 1917
Critical discussion.  Ills. 4000 w

**LAW** - Other

Lease of GoldBearing Land in Siberia.
-
US Consular Reports, No. 562 Oct. 25, 1899.
A translation of a circular, issued by the Ministry of Agriculture and Domains, in regard to leasing six tracts of land. 700 w.

Auction of Siberian Mining Land.
-
U S Consular Report No. 595 Dec. 5, 1899.
Details in regard to the leasing by auction of gold mining territory. 2800 w.

West African Gold Mining and the Concessions Industry.
JOHN GEO LEIGH.
Engineering Magazine August 1902.
A review of conditions on the Gold Coast, giving the true state of affairs on this overexploited region. 4000 w.

"Marauding" in French Guiana.
DAVID LEVAT.
Engineering and Mining Journal Dec. 13, 1902.
The term indicates a prospector or placer miner who practices his industry on any goldbearing territory regardless of the legal proprietor, and is not locally considered at all disgraceful. 1800 w.

Gold Mining in French Guiana.
DAVID E. HEADLEY.
Engineering and Mining Journal Jan. 19, 1905.
An illustrated account of the industry, and of the regulations which allow no one but a surveyor to mark boundaries, and so deprive the poor miner of his opportunity. 1600 w.

Methods of Financing Large Mining Operations.
H.B. FERNALD.
Mining and Metallurgical Society of America Bul. no. 195, vol. 21, no. 3, MayJune 1928, pp. 4860 and (discussion) pp. 6072.
Discussion excludes all cases below stage of large mining operations; states three typical situations in which large mining operations are considered as justified; questions of amount of money needed and when; what return expected, and when; will earnings as realized be available to pay off investment or must they be reinvested in further equipment or development; viewpoint of banker; present value formulas;

bibliography.

**LAW** General

Notes on Development of Mining Law.
H.C. and L.H. HOOVER.
Engineering and Mining Journal Nov. 2, 1912.
History shows that the tendency has been to give the individual wider rights at the expense of the state. The present tendency is to limit the rights of the individual and exalt those of the community. 4000 w.

Proposed Regulating of GoldDredging.
CHARLES JANIN.
Mining and Scientific Press March 8, 1913.
Reviews the history of golddredging, the area of land affected, reclaiming dredged land, and related subjects. 3500 w.

Effect of Revaluation on Goldmining Industry.
J.J. CROSTON.
American Institute of Mining and Metallurgical Engineers Tech Publ n 709 1936 28 p; See also Mining Journal (Lond) v 193 n 5250?, 5260 and 6261, June 6, 1936 p 5455, June 13, p 5645 and June 20 p 58891.
Review of recent trends in production, ore reserves and costs; statistics of annual output of world's leading gold mines, 1929 to 1935, inclusive; gold production of custom smelting, silver and basemetal mining companies; reported ore reserves; production and cost data of principal companies; government taxation takes large proportion of gain caused by increased in world price for gold.

**LAW** U.S.

Responsibility for Debris.
-
Mining and Scientific Press Jan. 9, 1897.
Data aiming to prove that hydraulic mining was not the chief cause of the evils complained of, but that the Sacramento River has been raising its channel and increasing the swamps for centuries. 1100 w.

The Law as to Dredging in Rivers for Gold.
R.W. RAYMOND.
Engineering and Mining Journal March 5, 1898.
Some information on points hearing upon this subject. 900 w.

Lodes vs. Placers.
F.T. FREELAND.
Engineering and Mining Journal April 1, 1899.
Discusses an opinion rendered by Justice Goddard in the Supreme Court of Colorado, and also other decisions. 900 w.

The Principles of Mining Law.
CHARLES J. ALVORD.
Engineering and Mining Journal Nov. 17, 1900.
Abstract of a paper read before the Inst. of Min. and Met., in London. Reviews briefly the law of the more important countries of the world. 3200 w.

The Debris Problem in the Sacramento Valley.
-
Engineering Record Nov. 24, 1900.
Information from the Report of the California Debris Commission, concerning the prevention of injury to navigation in the Sacramento Valley from the enormous quantity of material washed into the river beds by hydraulic mining. 2500 w.

The Leasing System.
PROF. ARTHUR LAKES.
Mines and Minerals Nov. 1903.
Describes a method of working mines which is operated on both large and small scales and is applicable to peculiar conditions. 2000 w.

Control of Hydraulic Mining Debris in California by the Federal Government.
CAPT. WM. W. HARTS.

California Journal of Technology Sept. 1905.
Read before the Mining Conference. Explains the problem, the extent of the damage, discussing the duties of the commission, and the general principles of improvement. Ills. 6000 w.

Control of Hydraulic Mining Debris in California by the Federal Government.
CAPT. WM. HARTS
Mining and Scientific Press Sept. 2, 1905.
Abstract of a lecture by author, at San Francisco, Cal., giving an account of what has been done and what is proposed in this great work. Ills. 4000 w.

Mergers in Placer Mining.
J.P. HUTCHINS.
Engineering and Mining Journal June 23, 16. 1906.
Discusses benefits from merging, and the recent merger in dredgemining operations. Ills. 2300 w.

What Does and What Does Not Constitute a Placer?
ARTHUR LAKES.
Mining Reporter Aug. 23, 1906.
Discusses the almost universal distribution of alluvial gold, and the legal test to determine what should be classed as placer. 1500 w.

The Rights of the Miner.
THEO F. VAN WAGENEN.
Mining and Scientific Press May 16, 1908.
Discusses existing laws as related to prospectors, laboring miners, mining engineers, and mining investors. 5000 w.

Growth of American and Australian Mining Law.
A.C. VEATCH.
Engineering and Mining Journal April 2, 1910.
Compares the laws of America and Australia, explaining the causes that helped to form them. 9500 w.

Geologic Bases of Mining Law.
COURTENAY DE KALB.
Mining and Scientific Press May 7, 1910.
Address before the San Francisco Bar Assn. Explains the variety of ore deposits and their sources, and the mining laws of the present, showing that they were formed when knowledge was too limited to cover all the facts. 6000 w.

Methods of Promoting or Financing a Mine.
FRANCIS C. NICHOLAS.
Mining World Aug. 20, 1910.
Critical discussion of different plans and methods. 4000 w.

Proposed Revision of Alaskan Mining Laws.
F. LYNWOOD GARRISON.
Mining and Scientific Press Jan. 6, 1912 (Special.)
Gives the report of the committee of the Min. and Met. Soc., and extracts from the address of W.L. FISHER, with critical remarks. 3500 w.

A Discussion of Mining Law.
H.V. WINCHELL.
Engineering and Mining Journal March 9, 1912.
Read before the Can. Min. Inst. Considers features of mining laws in general and of the United States in particular. 6500 w.

Birth of the American Mining Act.
H.W. MACFARREN.
Mining and Scientific Press April 13, 1912.
Explains the conditions under which was passed the first mining act of 1866 relating to lode claims, the second act of 1870 relating to placer claims, and the third and final act of 1872 superseding the acts of 1866 and 1870. Serial. 1st part. 5500 w.

The Prospector and the Mining Law.
T.F. VAN WAGENEN.
Mining and Scientific Press May 18, 1912.
Discusses the ends to be secured in mining laws, with special reference to inducements and protection. 3000 w.

The New Mining Laws of Alaska.
-
Mining and Engineering World Nov. 29, 1913.
An act providing for the location and possession of mining claims in Alaska. 2500 w.

Placer Mining Investment Possibilities.
J.F. DULING.
Mining Journal (Phoenix Ariz) v 16 n 15 Dec 30 1932 p 45 and 289.
Broad discussion of possible profits from operations of different types of gold placer deposits in western United States and Alaska.

Federal Grubstaking of Placer Mines
A.S. KONSELMAN.
Mining Journal (Phoenix Ariz) v 17 n 12 Nov 15 1933 p. 5.
Grubstaking experiment conducted for relief of unemployed by Yavapai County Chamber of Commerce, Prescott, Ariz: tools, food and clothing supplied on credit basis; practical placer miner instructs inexperienced; gold weighed each week. Federal aid advocated.

Federal PlacerMining Laws and Regulations.
F.W. JOHNSON, and SmallScale PlacerMining Methods. C.F. JACKSON.
U S Bureau of Mines Information Cir n 6611R Feb 1938 37 supp plates.
Reprint and revision of paper published originally in Apr 1932 and May 1934; special reference also made to Information Cirs 6659, 6660, 6786, 6787, 6788, and 6846, out of print but available in most technical libraries; outlook for success; favourable small scale areas; laws and regulations; equipment and methods. Bibliography.

Federal Placer Mining Laws and Regulations.
F.W. JOHNSON and SmallScale Placer Mining Methods. C.J. JACKSON.
U S Bureau of Mines Tech Paper n 591 1938 49 p.
Information regarding location of placer mining claims, required assessment work, and procedure to obtain patent; inquiries regarding mineral lands in national forests where United States mining laws are not in effect should be addressed to Department of Agriculture. Second section of paper is largely revision of Information Circular 6611, 1932

War Production Board Orders Nation's Gold Mines to Cease Production.
-
Mining Journal (Phoenix, Ariz) v 26 n 11 Oct 30 1942 p 24.
While WPB's order L208 carried note of finality, issue is not yet settled; gold producers are taking advantage of appeal provisions and are filing their cases for review; some modification of original order is expected.

Gold Dredging and PostWar Employment.
H.A. SAWIN.
Mines Magazine v 34 n 7 July 1944 p 33941.
Comment on effect of War Production Board Order L 208 of Oct 1942, closing down gold mining industry without notice; granting of special permits; gold production by dredges, in earlier years, as indication of potential post war employment; outline of various benefits as outcome of gold dredging; dredge operation; tailings disposal and utilization.

**YUKON** General

Routes to the Yukon.
-
Mining Industry and Review Dec. 5, 1895.
Discussion of the various possible routes to the gold placers along the Yukon River, showing their relative merits. 1000 w.

Life in the Klondike Gold Fields.
JOE LADUE
McClure's Magazine Sept. 1897.
Personal observations of the founder of Dawson, recorded by J. LINCOLN STEFFENS. Ill. 3500 w.

The Klondike Country.
-
Mining Industry and Review Sept. 16, 1897.
Editorial on the richness, character and resources and the rapid development sure to follow the mining excitement. 900 w.

The Relief of the Klondike.
PERRY F. NURSEY.
Industries and Iron Nov. 19, 1897.
Reviews the situation in this district, and explains the works intended to be undertaken by the Northwestern Trust and Development Company of America. 1700 w.

The Yukon Mining Region.
CHARLES G. YALE.
Mining Industry and Review March 10, 1898.
The conditions at present existing, the high price of living and transportation, the severity of the climate, and the expectations are discussed. 2300 w.

The Rush to the Klondike over the Mountain Passes.
EDWARD S. CURTIS.
Century Magazine March 1898.
Brief account of the difficulties encountered on this route in 1897. Ill. 1400 w.

The Gold Region of the Klondike.
-
Board of Trade Journal, London May 1898.
Describes a new route to be opened by the Canadian government which will remove the great difficulties of transport to the Yukon district. Also briefly comments on the mistake of people going who were physically

and intellectually unable to cope with the conditions existing. 900 w.

The Klondike Gold Fever.
D. ZAHN.
Chautauquan Nov. 1898.
Translated from "Ueber Land and Meer." Account of rush to this field, difficulties of travelling and living, with report of one who made the journey. 1400 w.

A Trip to Dawson.
AUGUSTE MATHEZ.
Mines and Minerals Dec. 1901.
Describes the tour as easy and pleasant in the summer, all the difficulties and dangers of the past having disappeared. 2500 w.

Recent Publications on Alaska and Yukon Territory.
ALFRED HULSE BROOKS.
Economic Geology Feb. 1906.
Discussion of literature that has appeared during the past six months. The metalliferous deposits are first discussed; followed by a brief summary of the literature on the coal fields. 6500 w.

The Year 1906 in the Klondike District.
J.P. HUTCHINS.
Engineering and Mining Journal March 16, 1907.
A report of the year showing changes in plan of working, and discussing some of the problems of this region. 2500 w.

Condition and Needs of Mining in the Yukon.
F.T. CONGDON.
Canadian Mining Journal Feb. 1, 1910.
Extracts from a speech describing conditions in the Yukon, explaining the causes of the reduction of revenue and discussing the policy of the Canadian government. 3800 w.

Water Supply and Fire Protection in the Klondike Gold Fields.
DOUGLAS H. FERRY
Engineering Record June 3, 1911.
Notes from a report by author, giving an idea of what has been done in the way of providing Dawson with water supply and fire protection. 4000 w.

Conditions in the Yukon.
GUY A.R. LEWINGTON.
Mining Magazine April 1912.
Explains conditions in the Klondike district of Yukon territory of Canada, showing their superiority to Alaska, and describing the climate. 1000 w.

Present Outlook and Conditions in the Klondike Region.
ARTHUR LAKES, JR.
Mining and Engineering World April 27, 1912.
An account of this region of the Yukon, B.C. 1500 w.

Quartz Mining in the Klondike District.
D.D. CAIRNES
Canadian Mining Journal Dec. 1, 1912.
Abstract of a report by author. Describes the deposits, and gives information concerning the more promising properties. 4000 w.

The Development and Problem of the Yukon.
HENRY M. PAYNE.
Quarterly Bulletin of the Canadian Mining Institute March 1913.
Outlines the general characteristics of the region, the processes by which the gold is removed, and some of the problems to be solved. 4000 w.

Mining in the Far North.
EMIL EDWARD HURJA.
Mining and Scientific Press Oct. 17, 1914.
Information concerning the districts tributary of the railroad operating from Skagway to White Horse. Ills. 3000 w.

Dawson to Nome.
H.E. CHAKO.
Engineering and Mining Journal Dec. 26, 1914.
Gives experience in travelling from Dawson, Yukon, to Nome, Alaska, and in visiting mining districts. Transportation very unsatisfactory. Ills. 4500 w.

Lode Mining in Yukon.
T.A. MACLEAN.
Size 9 3/4 x 6 1/2"; pp. 205. Ottawa: Department of Mines.
An investigation of quartz deposits in the Klondike division.

Mining in the Yukon.
J.B. TYRRELL.
Canadian Mining Journal Nov. 1, 1915.
Methods, production, costs. Ills. 6000 w.

The Economic Possibilities of the Yukon
D.D. CAIRNES.
Canadian Mining Institute, Trans 1915. Future. Ills. 34 pp.

Acquiring PlacerMining Claims in British Columbia.
J.A. MACDONALD.
Engineering and Mining Journal Nov. 6, 1915.

Details of requirements. Ills. 1500 w.

The Mining Industry in Yukon 1929.
W.E. COCKFIELD.
Canadian Mining Journal vol. 51, no. 7, Feb. 14, 1930, pp. 150152, 2 figs.
General review, indicating satisfactory progress; Klondike output slightly reduced; lode gold mining; Mayo district; new orebodies found; southern Yukon; transportation much improved.

Northern British Columbia and Yukon in 1930.
W.E. COCKFIELD.
Canadian Mining Journal, vol. 52, no. 6, Feb. 6, 1931, pp. 138143, 4 figs.
Gold placer development in Atlin and Big Salmon districts; Atlin silverlead mines; engineering old mine on Tagish Lake; Mayo silverlead district; Klondike district.

What of Alaska!
D.L. SAWYER.
Engineering and Mining Journal., vol. 131, no. 9, May 11, 1931, pp 400402, 6 figs.
Former obstacles to development of mining industry in Alaska are disappearing; transport facilities; trail, highway, and railroad; increasing use of airplane; exploration of new and promising districts.

Mining Industry of Yukon, 1933, and Notes on Geology of Carmacks MapArea.
H.S. BOSTOCK.
Canada Dept. Mines, Geological Survey  Summary Report 1933 pt A, n 2350 1934 p 18.
Placer mining in Klondike, 60 mi river, Mayo and other districts; lode mining in Mayo and Carmacks districts; geological data to indicate favorable ground for prospecting.

Mining Industry of Yukon, 1934.
H.S. BOSTOCK.
Canada Dept. Mines, Geological Survey  Memoir v 178 n 2387 1935 10 p.
Notes on placer mining and lode mining, gathered chiefly by means of correspondence with those connected with various enterprises.

More Power for Yukon.
-
Electrical News v 45 n 14 July 15, 1936 p 178.
About two million dollars worth of gold mined in Yukon every year and new 5000 hp hydroelectric unit installed last year by Yukon Consolidated Gold Corp, indicates that this mining field is still of considerable importance; generator supplied by Canadian

Westinghouse, Co is 4695 kva, 80% pf, 3-phase, 2300 v. 60 cycle, 514 rpm, 50 C, horizontal 2bearing coupled type waterwheel.

Carmacks District, Yukon.
H.S. BOSTOCK.
Canada, Dept Mines Geological Survey Memoir 189 n 2413
1936 67 p maps in pocket. Area lies between latitude 62 and 63 deg north and longitudes 136 and 138 deg west; physiography and glaciation; general deposits and lode deposits carrying gold, silver, copper, lead, zinc, antimony and other metals, was well as large reserves of bituminous coal. Bibliography.

Mining Industry of Yukon, 1935.
H.S. BOSTOCK.
Canada Dept Mines Geological Survey Memoir 193 n 2417
1936 12 p.
Notes on mining activities, with data on statistics of production; placer mining in Sixty Mile, Klondike, Clear Creek, Mayo, StewartSelwyn, Pelly River, Big Salmon, Teslin and Laird River districts and in southwestern Yukon; lode mining in Klondike, Pelly River, Carmacks, Teslin, Whitehorse and Southwestern districts.

Mining Industry of Yukon, 1938.
H.S. BOSTOCK.
Canada Dept Mines and Resources Geological Survey
Memoire 220 n 2452 1939 21 p. Report on activities; production statistics; gold placer mining in Forty Mile River, Sixty Mile River, Klondike, Mayo, and other districts, 9 dredges in Klondike district handled 8,550,652 cu yd gravel; lode mining in Klondike, Mayo, Carmacks and Whitehorse districts: few hundred tons of coal mined from Tantalus Butte mine and shipped to Dawson. Bibliography.

Gold Rushes.
W.P. MORRELL.
Macmillan Co., New York,1941. 427 pp. maps.
Book describes major gold rushes of world in Brazil, Siberia, Alaska, Canada, Australia, South Africa and United States: brief preliminary historical information given in each case and effect of such occurrences on territory involved and on world economic conditions discussed.

Mining Industry of Yukon, 1939 and 1940.
H.S. BOSTOCK.

Canada Dept. Mines and Resources  Geological Survey
Memoire 234 n 2466 1941 40 p.
Production statistics; placer mining, by districts; lode mining; Tantalus Butte coal mine near Carmacks remained closed in 1939, good readily mineable coal being exhausted; development at lower level is feasible; special war minerals; tungsten, antimony, and manganese deposits and prospects; list of recent reports and maps.

Mineral Possibilities of Areas Adjacent to Alaska Highway, Pt I  Yukon Section.
L.O. THOMAS.
Canadian Institute of Mining and Metallurgy  Trans v 46 1943 p 375401. (Bul n 379 Nov 1943).
Exploration has practically been restricted to areas readily accessible from White Pass and Yukon railway, from main waterways, or from two wagon roads west and north from Whitehorse; eight sections or districts are briefly described; placer and lode gold; copper, silver; platinum; lead; zinc; tungsten; iron; antimony silver; silver lead; coal; saline deposits; regulations as to use of Alaska Highway for prospecting. Bibliography.

Developments in Yukon.
G. BLACK.
Miner v 16 n 12 Dec 1943 p 45.
Brief general review; no great industrial expansion in Yukon is anticipated consequent on construction of Alaska Highway; fact that Canol pipe line traverses rather inaccessible section of Yukon may open that section to exploration; gold, silver, lead and zinc. Before Canadian Institute of Mining and Metallurgy.

Alcan Highway a Potential Aid to Prospecting.
L.O. THOMAS.
Engineering and Mining Journal v 145 n 8 Aug 1944 p 88-91.
Highway traverses Interior Plains and Canadian Cordillera, latter being preeminently a mining region; geological outline only small fraction of region is known in detail; review of known lode deposits and placers; along highway and in areas accessible from highway.

Alaskan Mining Should Gain From Alcan Highway.
H.C. WILCOX.
Engineering and Mining Journal v 145 n 9 Sept 1944 p 847.
Route of Alcan Highway, in Tanana Valley; notes on known and reported mineral occurrences;

White River and adjacent region; Nabesna-Chisana district; SlanaTok area; Gerstile-Johnson River district; Goodpaster and Healy Rivers; headwaters of Ladue and Forty Mile Rivers; obstacles; possibilities.

Lode Mining in Cariboo.
O.H. SOLIBAKKE.
Western Miner v 18 n 8 Aug 1945 p 448.
Comment on three gold stampedes in North America; California in 1849; Fraser River and Cariboo in 1860. Klondike and Alaska from 1898 to 1900; narrative of personal experiences in Cariboo region, from 1927 to date.

Progress in Yukon.
G.A. JECKELL.
Western Miner v 19 n 4 Apr 1946 p 667.
Brief review, with statistics; substantial increase in gold production; continuation of prospecting; increase in staking; gold production for year was 39,424.55 ounces, which had value of $1,379,859; forecast for 1946; geological reconnaissance.

Klondike Discovery.
H.G. HENDERSON.
Canadian Mining Journal v 67 n 11 Nov 1946 p 10279.
Historical and descriptive narrative of gold rush, following discovery made in Mar 1896 by "Klondike Bob" Henderson, when he panned $620 from discovery claim.

Accelerated Activity in Yukon.
W.F. LOTHIAN.
Western Miner v 19 n 12 Dec 1946 p 479.
Review for 1946; increased activity in both placer and lode areas; gold production from placer operations showed substantial increase over that of previous year, prospecting was extended over wide area, and prospects for development of new quartz mining field in vicinity of Nansen Creek, west of Carmacks, are believed to be promising. Before Can Inst. Mining and Met.

British Columbia and Yukon in 1946.
F.H. STEPHENS.
Canadian Mining Journal v 68 n 2 Feb 1947 p 7984.
Review, with statistics; British Columbia mineral production valued at $70,250,000; greatest obstacle has been labor trouble; gold; silver; lead and zinc; copper; Yukon production advanced; placer and lode gold; transportation inadequate; labor troubles.

1947 Mining in Yukon Territory.
F.H. STEPHENS.
Canadian Mining Journal v 69 n 2 Feb 1948 p 812.
Brief descriptive review of placer mining and lode mining; White Horse copper belt; silver lead deposit staked on south shore of Moose Lake.

Mining in Yukon 1948.
F.H. STEPHENS.
Canadian Mining Journal v 70 n 2 Feb 1949 p 812.
Brief descriptive review; prospecting and exploration not as active as in preceding postwar years; little information available on results of gold rush in Firth River area; dredging and other gold placer operations; coal mining; gold vein mining.

Silver and Lead Double Yukon Metal Production.
J.A. MACKINNON.
Western Miner v 22 n 4 Apr 1949 p 901.
Review for 1948; total of 53,660 oz of gold produced; biggest producer was Yukon Consolidated, in Dawson Mining District, with 47,649 oz; United Keno Hill, in Mayo District produced 1,904,562 oz of silver, 5,064,848 lb of lead and 493,469 lb of zinc; third mining district Whitehorse, produced 4066 oz of gold.

Mineral Areas of Yukon.
W.M. BONHAM.
Canadian Mining Journal v 70 n 4, 5, 6, 9, Apr 1949 p 713, May p. 6971, June p. 6770, Sept. p 813.
Apr:
General description of area comprising 207,000 sq mi, largely unexplored and not prospected; Klondike placer diggings have produced about $200,000,000 in gold; copper at Whitehorse; southern Yukon is accessible by sea; air fields; road system is poor; some maps on mineralbearing areas are available; geology of some areas is favorable to metallic deposits. May, June: Details of southern part of Territory, now easily accessible; many small gold placers have been worked; Whitehorse copper belt; gold, silver, lead and antimony in area along Wheaton and Watson rivers; Windy Arm goldsilver; coal; Central Yukon; gold; silver; lead; main need of Yukon is roads. Sept: Northern Yukon, known only from wide spread traverses; epic journeys of pioneer travellers; silver lead on southern border.

New Records in Yukon.
-
Western Miner v 24 n 4 Apr 1951 p 846.

Gold produced during 1950 estimated at $3,832,720 and value of silverleadzinccadmium production estimated at $5,454,650; Whitehorse, Dawson and Mayo mining districts reviewed.

Progress During 1951.
-
Canadian Mining Journal v 73 n 2 Feb 1952 p 72112.
Group of related articles; Progress During 1951 in British Columbia Mining, G.C. CROSS; Yukon Annual Review, G.C. CROSS; Alberta Mineral Review, C.W. JACKSON and J.M. YOUNG; Mineral Activities in Northwest Territories; Saskatchewan Mineral Industry, J.T. CRAWLEY; Review of Mining in Manitoba During 1951, J.P. DEWET; Ontario Annual Review, 1951, J.C. BROWNING. Quebec Annual Review, 1951, J.C. BROWNING; New Brunswick Mineral Industry in 1951; R.J. GILL; Mining Industry of Nova Scotia, A.H. MCKINNON; Mining Industry in Newfoundland in 1951, C.K. HOWSE.

Group of Related Papers on Annual Review of Canada's Mineral Industries.
-
Canadian Mining Journal v 74 n 2 Feb 1953, p 62112.
Mineral Production Increases Again, H. MCLEOD; Yukon Mining in 1952, G.C. CROSS; 1952 in British Columbia Mining, G.C. CROSS; Mineral Production in NWT in 1952, F. WHYARD; Mineral Development in Saskatchewan in 1952, J.P. DEWET; Mineral Development in Manitoba in 1952; J.P. DEWET; Ontario Annual Review 1952, J.C. BROWNING; Quebec Annual Review 1952, J.C. BROWNING; Mining Industry of Nova Scotia 1952, A.K. MCKINNON; Mining Industry of Newfoundland 1952, C.K. HOWSE.

1953 Annual Review of Canada's Mineral Industries.
-
Canadian Mining Journal v 75 n 2 Feb 1954 p 54111.
Following related papers presented; Mineral Production Continues to Rise. H. MCLEOD; Yukon Mining in 1953, G.C. CROSS; 1953 in British Columbia Mining, G.C. CROSS; Mineral Development in Saskatchewan in 1953, J.P. DEWET; Mineral Development in Manitoba in 1953; J.P. DEWET; Ontario Annual Review 1953, J.C. BROWNING; Quebec Mineral Review 1953, J.C. BROWNING; New Brunswick A Record Year; Mining Industry of Nova Scotia 1953, A.H. MCKINNON; Mineral Industry of Newfoundland 1953, C.K. HOWSE.

Yukon and Northwest Territories.

R.U. MAHAFFY.
Canadian Mining Journal v 75 n 10, 11, 12. Oct 1954, p 647, Nov. p. 7783, Dec. p. 618, v 76 n 1, Jan 1955 p 658.
Value of mineral production; exploration and production in Yukon; power supply; mining activity in Mackenzie district and in districts of Keewatin and Franklin.

Annual Review of Canada's Mineral Industry 1954.
-
Canadian Mining Journal v 76 n 2 Feb 1955 p 54101.
Mineral Production Up Again, Tenth Successive Increase. H. MCLEOD; Yukon Mining in 1954, G.C. CROSS; Mining in British Columbia in 1954, G.C. CROSS; Mining Activity in Northwest Territories 1954, K.J. CHRISTIE; Alberta Fuel Industry in 1954; G.J. SKILLING; Mineral Developments in Saskatchewan 1954, P.J. DEWET; Mineral Development in Manitoba 1954, P.J. DE WET; Ontario Annual Review, J.C. BROWNING; Quebec Annual Review; J.C. BROWNING; Exploration in New Brunswick, 1954 A.L. MCALLISTER; Mining Industry in Nova Scotia, in 1954, M.G. GOUDGE; Newfoundland's Mining Industry 1954.

Yukon Territory.
H.S. BOSTOCK.
Canada Geological Survey Memoir, n 284, 1957, 650 p. 3 maps.
Compilation of Yukon Territory geological reports covers period from 1876 to 1933 inclusive, and is arranged chronologically summarizing field work accomplished each year; original accounts of Klondike placer fields. Whitehorse copper belt, Windy Arm and Wheaton River silver and antimony ores. Mayo and Beaver River silverlead camps, Carmacks coal deposits and other districts and areas where indications of mineral wealth have been explored.

Mineral Possibilities of Yukon Territory.
A.E. AHO.
Canadian Mining and Metallurgy Bulletin v 51 n 556 Aug 1958 p 47986.
Major future mineral possibilities are leadzinc, copper, asbestos, silverlead, gold, and mineral fuels; mineral possibilities are outlined for various geological subdivisions of Yukon.

Some Economic Factors Affecting Northern Mineral Development in Canada.
A. DUBNIE.
Canada Dept Mines and Tech Surveys Mineral Resources Div Mineral Information Bul MR 38 Dec 1959 61 p 1 map.
Factors which contribute to cost increment for northern operation are geographical factors, size of operation, type of extraction process required, availability of labor, and company policy concerning labor and inventories; analysis of special problems related to mining.

Mineral Industry of Yukon Territory and Southwestern District of Mackenzie, 1960.
R. SKINNER.
Canada Geological Survey Paper 6123 1961 52 p.
Operations and production of placer, lode and coal mining in 1960; exploration and prospecting; Yukon placer gold and silver production. 1960; mineral production of Yukon territory; mineral claims recorded. Yukon territory; value of mineral production, Yukon territory.

Mineral Industry of Yukon Territory and Southwestern District of Mackenzie, 1961.
R. SKINNER.
Canada. Geological Survey Paper 6227 1962 48 p.
Placer and lode mining, coal mining, exploration, and prospecting; statistics on Yukon placer gold and silver production, 1961; mineral production, mineral production; mineral claims recorded, and value of mineral production.

Prospecting and Mineral Development in Yukon.
A.E. AHO.
Western Miner and Oil Review v 35 n 2 Feb 1962 p 314.
Areas which are most favorable for exploration of lead-zincsilver, silverlead, copper, tungsten, asbestos, mercury, nickel, gold and iron; recent discoveries and developments in these minerals.

Reconnaissance HeavyMineral Study in Northern Yukon Territory.
C.F. GLEESON.
Canada. Geological Survey Paper 6332 1963 10 p.
Heavy mineral samples were obtained from areas comprised of plutonic and extrusive rocks; most of samples were taken from steam and river gravels and several were procured from weathered bedrock; general conclusions are made concerning provenance of heavy

minerals.

Mineral Industry of Yukon Territory and Southwestern District of Mackenzie, 1962.
L.H. GREEN, C.I. GODWIN.
Canada. Geological Survey Paper 6338 1963 71 p.
Mineral production and exploration in Yukon and Nahanni mining district; lode mining and exploration, placer mining, and coal mining.

Annual Spring Number.
-
Western Miner v 37 n 4 Apr 1964 25 p between p 30 and 79.
Nine articles by 9 authors on value and production of metals; industrial minerals and fuels, exploration trends, activities and discoveries during 1963 in Northwest and Yukon Territories, British Columbia, Nova Scotia, Saskatchewan, New Brunswick, Ontario, Manitoba, and Alberta.

Mineral Potential of Mayo District.
A.E. AHO.
Western Miner v 37 n 10 Oct 1964 p 808
Mineralization in Mayo district is associated with 70 mi long and 30 mi wide anticlinal and intrusive belt trending N70'E with major longitudinal faulting along its crestal region and orebearing, northeaststriking veinfault fractures complicated by NNW crossfaults on its flanks, ultimate potential for silver, lead, zinc, cadmium and antimony is in order of billion dollars gross value.

New Mines in Yukon.
F.H. STEPHENS.
Western Miner v 37 n 8 Aug 1964 p 404.
Most current mineral production of Yukon comes from gold mining operations in Dawson District and silverleadzinc mining in Mayo District; in Whitehorse District, 3 separate orebodies adaptable to open pit mining have reserves of 1,700,000 tons grading 1.2% Cu and 18% Fe; rich leadzinc silver orebodies have been found in Mayo District; large asbestos deposit at Clinton Creek is being developed; renewed interest in gold mines in Carmacks area and in silverleadzinccopper deposit at Vangorda Creek; in area of Arctic Circle hematite deposit of 22 billion tons of ore grading 45% Fe or better recently discovered.

Annual Mining Review 1961.
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Canadian Mining Journal v 86 n 2 Feb 1965 p 75168, 170,

175, 181, 183, 1856, 194. Twentyfive articles by 27 authors on mineral industry, by Provinces, in Canada; principal metals; nonmetallic minerals, coal, petroleum, natural gas, mining exploration, mining methods, milling and process equipment, new mining equipment; mining developments and trends in United States, Europe, United Kingdom, Australia, South Africa and other African states.

Exploration Activity and Mineral Developments Across Canada.
H. SARGENT, K.J. CHRISTIE, S.R. LYON, M.G. GOUDGE, A PRATT.
Can Mining Journal v 86 n 4 April 1965 p 6995.
Group of articles covering mineral production, important developments and trends in exploration and mining in British Columbia, Yukon and Northwest Territories, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia and Newfoundland.

Annual Spring Number.
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Western Miner v 38 n 4 Apr 1965 32 p between p 46 and 122.
Ten articles on value and production of metallic and industrial minerals and fuels, exploration trends, activities and discoveries during recent years in Ontario, Yukon and Northwest Territories, Alberta, British Columbia, Saskatchewan, Manitoba, Nova Scotia, Quebec and New Brunswick.

Mineral Industry of Yukon Territory and Southwestern District of Mackenzie, 1964.
L.H. GREEN.
Canada, Geological Survey  Paper 6519 1965 94 p.
Most of value of mineral production of Yukon in 1964 was from silver, lead and zinc from lodes on Galena and Keno Hills; in lode exploration, development work in number of properties gave promising results, particularly on Clinton Creek asbestos property and properties in Whitehorse Copper Belt; descriptions of most active and few inactive lode properties; gold placer mining in 1964 increased slightly over previous years; coal production continued from Carmacks area of Whitehorse Mining District.

La Forma in Production.
F.H. STEPHENS.
Western Miner v 38 n 9 Sept 1965 p 3944.
Property consists of 32 claims on Free Gold Mountain;

deposit has been described as being contact metamorphic in Precambrian rocks near Mesozoic plutonic intrusives; drifting and diamond drilling has indicated ore shoot length of 444 ft. assaying 1.01 oz/ton over average width of 5 ft; ore reserves are being developed at considerably greater rate than tonnage being milled.

Mineral Industry of Yukon Territory and Southwestern District of Mackenzie, 1965.
L.H. GREEN.
Canada. Geological Survey Paper 6631, 1966, 137 p.
Brief descriptions of most of active lode and placer properties are given together with descriptions of some inactive lode properties; details by mining districts on use of metallic and nonmetallic mineral resources.

Mineral Industry of Yukon Territory and Southwestern District of Mackenzie, 1966.
D.C. FINDLAY.
Canada. Geological Survey Paper 6740, 1967, 104 p.
Placer mining and exploration, and lode mineral exploration; work by Geological Survey during 1966; data on coal mining.

Lode Mining Potential of Yukon Territory.
L.H. GREEN.
Canada. Geological Survey Paper 6736 1968 28 p, map.
History of prospecting and geological framework of Yukon Territory deposits of gold, silver, leadzinc, copper, molybdenum, nickel, tungsten, antimony, iron, asbestos, other industrial minerals and coal; probable potential of known deposits and possible future developments.

Mining Industry of British Columbia and Yukon, Industry Survey Report Jan 1968,
J.C. DAWSON.
Industrial Development Dept. British Columbia Hydro and Power Authority, Vancouver, B.C. Jan 1968 53 p. Phenomenal growth of British Columbia and Yukon mining industry since 1960 is continuing strong, particularly in British Columbia's copper and molybdenum ore mining; total mine concentrator capacity has grown from about 30,000 tpd in 1960 to 101,000 tpd in 1967 and is expected to reach 240,000 tpd by early 1970's; this due to transition from small highgrade, to large lowgrade-operations; strong growth was also seen in nonmetallic minerals and fuels segments of industry; statistical data tabulated and maps showing locations of principal copper, molybdenum, silver, lead, zinc, iron, gold,

nickel, mercury, asbestos, and coal mining centers are included.

Mineral Industry of Yukon Territory and Southwestern district of Mackenzie, 1967
D.C. FINDLAY.
Canada. Geological Survey Paper 6868 1969 131 p;
Developments in mineral industry in 1967; in Yukon Territory mineral production rose to about 15.5 million dollars by introduction of two new producing mines into economy; in lode exploration, Yukon recorded active year in 1967; placer gold production decreased sharply to about 11,837 crude oz against 52,953 crude oz in 1966; particular mining areas are described, 82 refs.

[i]. Joshua E. Hannum, ed., "History of the Engineering Index," *The Engineering Index - 1929* (New York, 1930)p. xi.

[ii]. Ibid., p. xii.

[iii]. "Preface," *The Engineering Index - 1919* (New York, 1920),p. vii.

[iv]. H.C. Bolton, *A Catalogue of Scientific and Technical Periodicals 1665-1895* 2nd ed. (Washington, D.C., 1897).

[v]. H.H. Suplee, ed., "To The User" *The Engineering Index 1896-1900* (New York, 1902) p. vii.

[vi]. J.B. Johnson, "A Short Account of the Origin of the Engineering Index as published by the Journal of the Association of Engineering Societies," *The Engineering Index, Five Years 1896-1900* , H.H. Suplee ed. (New York, 1902), p. vi.

[vii]. J.E. Hannum, ed., "History of the Engineering Index," *The Engineering Index - 1929*, (New York, 1930) p. xi-xii.

[viii]. J.E. Hannum,ed. "History of the Engineering Index," *The Engineering Index - 1930*, (New York, 1931) p.xiii.

[ix]. H.H. Suplee, ed., *The Engineering Index, Five Years - 1896-1900* (New York, 1902) p.x.

[x]. A search and photocopy service for engineering literature is provided by the Engineering Services Library, United Engineering Centre, 345 E 47th St., New York, N.Y. 10017, USA.