

CLASSIFIED LIST OF ADVERTISERS.

Air Compressors and Rock Drills
 Bostelmann, Louis F.
 Bullock, M. C., Mfg. Co.
 Burlington Rock Drill Co.
 Clayton Air Compressor Works
 Fraser & Chalmers.
 Gates Iron Works.
 Ingersoll-Sergeant Drill Co.
 Fairbanks Co.
Aluminum Bronze
 Fairbanks Co.
Amalgamators
 Bucyrus Steam Shovel & Dredge Co.
 Fraser & Chalmers.
 Gates Iron Works.
Anti-Friction Metals
 Besley, Chas. H., & Co.
 Chester Steel Cast. Co.
Architects and Builders
 Berlin Iron Bridge Co.
 Plattsburg Bridge Co.
 Pollock, Wm. B., & Co.
Assayers and Chemists' Supplies
 Alinsworth, Wm.
 Baker & Adamson.
 Baker & Co.
 Becker, Christian.
 Bullock & Crenshaw.
 Denver Fire Clay Co.
 Elmer & Amend.
 Gates Iron Works.
 Henry Hell Chem. Co.
Attorneys, Corporation
 Jones & Rhett.
Automatic Boiler Feeds
 D'Este & Seeley
 Penberthy Injector Co.
Babbitt's Metal
 Besley, Chas. H., & Co.
Bankers and Brokers
 Bonbright, W. P., & Co.
 Carnauk, A. A.
 Decker, L. B.
 Dorsey, H. H.
 Dornbier, R. O. & Co.
 Edsall, Clarence & Co.
 Farnsworth, G., & Co.
 Fletcher, C. S., & Co.
 Gardner & Co.
 Grant, E. R.
 Handy & Harman.
 Harriott, W. H.
 Hendrickson, W. J.
 Hicks & Benzie.
 Kinney, M.
 Kjellander, C. F., & Co.
 Lents, John S.
 Lindley & Fitzpatrick.
Belting
 Carpenter, Geo. B., & Co.
 Hendrie & Bolthoff Mfg. Co.
 Lelphelmer, N.
 Miller, Chas. N., & Co.
 Mayer, Andrew
Belt Lacing
 Bristol Co.
Blasting Caps
 Metallic Cap Mfg. Co.
Blasting Batteries
 Climax Fuse Co.
 Lau, J. H., & Co.
Pressure Blowers
 Connorsville Blower Co.
Boilers
 Denver Eng. Wks. Co.
 Enterprise Boiler Co.
 Fraser & Chalmers.
 Gates Iron Works.
 Heine Boiler Co.
 Philadelphia Eng. Wks., Ltd.
Brattice Cloth
 Besley, Chas. H., & Co.
Brick Machinery
 Freese, E. H., & Co.
Bridges
 Berlin Bridge Co.
 Plattsburg Bridge Co.
Brackets
 Scaife, Wm. B., & Sons. (See Machinery.)
Carbons
 Bishop, Victor, & Co.
 Bostelmann, Louis F.
 Lexow, Theodore.
Chain and Link Belting (See Belting.)
Chemicals
 Baker & Adamson.
 Bullock & Crenshaw.
 Elmer & Amend.
 Henry Hell Chem. Co.
Coal
 Herwind-White Coal Mfg. Co.
Castner & Curran
 Consolidation Coal Co.
Coal Cutters
 Ingersoll-Sergeant Drill Co.
 Jeffrey Mfg. Co.
 Leyner, J. Geo. (See Machinery.)
 Link Belt Machinery Co.
Compressors
 Norwalk Iron Works Co.
Concentrators, Crushers, Pulverizers, Separators, Etc.
 Allis, Ed. P., & Co.
 Beckett Foundry & Machine Co.
 Blake, Theo. A.
 Boston Ore Machinery Co.
 Bradley Pulverizer Co.
 Colorado Iron Works.
 Denver Eng. Works Co.
 Engelbach Mach. Mfg. Co.
 Fraser & Chalmers.
 Frue Vanner Concentrator.
 Gates Iron Works.
 Hendrie & Bolthoff Mfg. Co.
 Joplin Mach. Co.
 Krom, S. B.
 Krupp, F.
 Link Belt Machinery Co.
 McCully, H.
 Scoville, H. H., & Co.
 Stedman Foundry & Mach. Co.
 Waburn-Swenson Mfg. Co. (See Machinery)
Contractors (See Machinery.)
Copper Dealers and Producers.
 American Metal Co.
 Arizona Copper Co.
 Atlantic Mining Co.
 Baibach S. & Ref. Co.
 Baltimore Cop. Wks.
 Bath, H., & Son.
 Boston & Mont. Mfg. Co.
 Bridgeport Copper Co.
 Butte & Boston Mfg. Co.
 Canadian Copper Co.
 Copper Queen Mfg. Co.
 Detroit Cop'g Mfg. Co.
 Elliott's Metal Co., Ltd.

Corrugated Iron
 Berlin Iron Bridge Co.
 Scaife, W. B. & Sons.
Crucibles, Graphite, Etc.
 Denver Fire Clay Co.
 Dixon, Jos. Crucible Co. & Machine Works.
Damper Regulators
 D'Este & Seeley.
Diamonds
 Bishop, Victor, & Co.
 Bostelmann, L. F.
 Lexow, Theodore.
Diamond Drills
 Bishop, Victor, & Co.
 Bostelmann, L. F.
 Bullock Mfg. Co., M. C.
 Lexow, Theodore.
 Sullivan Machinery Co. (See Air Compressors and Rock Drills.)
Draughtmen
 Young, Wm. R.
Drawing Materials
 Besley, Chas. H., & Co.
 Dietzgen, E., & Co. (See Engineering Instruments.)
Dredges
 Bucyrus Steam Shovel & Dredge Co.
 Southern & Co.
Dryers
 Brown, Horace T.
 Cummer, F. D. & Son Co.
 Denver Eng. Wks. Co.
Dump Cars
 Denver Eng. Works Co.
 Gates Iron Works.
 Hendrie & Bolthoff Mfg. Co.
Educational Institutions
 Arizona School of Mines.
 Columbian University.
 Chicago School of Assaying.
 Correspondence School of Mines.
 Mass. Inst. of Technology
 Michigan Mining School.
Electrical Batteries
 Macbeth, James, & Co.
Electrical Machinery and Supplies
 Besley, Chas. H., & Co.
 Card Electric Co.
 Denver Eng. Wks. Co.
 Gates Electric Mfg. Co.
 Gates Iron Works.
 General Electric Co.
Elevators, Conveyors and Hoisting Machines
 Brown Hoist. & Conv. Mach. Co.
 Caldwell, H. W., & Co.
 California Wire Wks. Co.
 Cooper, Hewitt & Co.
 Crook, W. A., & Bros. Co.
 Denver Eng. Wks. Co.
 Field & Goetzman. (See Wire Rope Tramway and Machinery.)
Emery Wheels
 Besley, Chas. H., & Co.
 New York Belting & Packing Co., Ltd.
Engineers, Chemists, Metallurgists
 See Directory Pages 4, 5 and 6.
Engineers' Instruments and Supplies
 Buff & Berger.
 Bullock & Crenshaw
 Dietzgen, E., & Co.
 Eckel, T.
 Gurvey, W. & L. E.
Knives
 Buckeye Engine Co.
 Bullock, M. C. Mfg. Co.
 Dayton Gas Engine & Mfg. Co.
 Enterprise Boiler Co.
 Ellison, Wm., & Son.
 Fraser & Chalmers.
 Lidgerwood Mfg. Co. (See Machinery.)
 Philadelphia Eng. Works, Ltd.
Excavators
 Bucyrus Steam Shovel & Dredge Co.
 Vulcan Iron Works.
Fire Brick and Clay
 Chur, A. T.
 Denver Fire Clay Co.
Fossil Meal
 Jassin, E.
Furnaces
 Brown, Horace.
 Gates Iron Works.
 Hoskins, Wm. (See Machinery.)
Fuses, Powder
 Ingersoll-Sergeant Drill Co.
Fuse, Safety
 Climax Fuse Co.
Gas Engines
 Dayton Gas Engine & Mfg. Co.
Gas Works
 Pollock, Wm. B., & Co.
 Wood, H. W., & Co.
Gauges, Recording, Etc.
 Bristol Mfg. Co.
Gearing
 Besley, Chas. H., & Co.
 Chester Steel Cast. Co.
 Denver Eng. Wks. Co.
Graphite, Etc.
 Besley, Chas. H., & Co. | Dixon, Jos. Cruc. Co.
Harveyed Steel
 Pierce & Miller Engineering Co.
Heavy Machinery
 Denver Eng. Works Co.
 Fraser & Chalmers.
 Gates Iron Works.
Rose, Rubber, Etc.
 New York Belting & Packing Co. Ltd.
Hotels
 Antlers Hotel.
Injectors
 Penberthy Injector Co.
Insulated Wires and Cables
 James & Shakespeare.
 Kearsage Mfg. Co.
 Lambert's Wharf. Co.
 Lewisohn Bros.
 Orford Copper Co.
 Osceola Con. Mfg. Co.
 Pass, C., & Son, Ltd.
 Penn Salt Co.
 Phelps, Dodge & Co.
 Tamarack Mfg. Co.
 Vivian, Younger & Bond.
Insurance Companies
 Hartford Steam Boiler Inspect'n and Ins. Co.
 Mutual Life Insurance Co.
Joint Fittings
 Tight Joint Co.
Lead Linings for Chlorination Tubs.
 Raymond Lead Co.
Locomotives
 General Electric Co.
 Hunt, C. W. Co.
 Porter, H. E., & Co.

Machinery, Dealers in Mining, Milling and Other Machinery
 Allis, Edw. P., & Co.
 Bacon, E. C.
 Beckett Foundry & Mch. Co.
 Besley, Chas. H., & Co.
 Blake, T. A.
 Bostelmann, L. F.
 Boston Ore Machinery Co.
 Bradley Pulverizer Co.
 Buckeye Engine Co.
 Bullock, M. C. Mfg. Co.
 Caldwell, H. W., & Co.
 Card Electric Co.
 Carpenter, Geo. B., & Co.
 Colorado Iron Works.
 Connorsville Blower Co.
 Crook, W. A. & Bros. Co.
 Davis-Cobly Ore R. Co.
 Denver Eng. Wks. Co.
 Ellison, Wm., & Son.
 Engelbach Ma. Mfg. Co.
 Field & Goetzman.
 Fraser & Chalmers.
 Gates Electric Mfg. Co.
 Gates Iron Works.
 Hammond, Mfg. Co.
 Hendrie & Bolthoff Mfg. Co.
 Ingersoll-Sergeant Drill Co.
 Jeffrey Mfg. Co.
Manganese Steel.
 Taylor Iron & Steel Co.
Metal Dealers
 American Metal Co.
 Am. Zinc-Lead Co.
 Baker & Co.
 Bath, Henry & Son.
 Besley, Chas. H., & Co.
 Bogue Lead Co.
 Bridgeport Copper Co.
 Elliott's Metal Co., Ltd.
 Eureka Co.
 Foster, Blackett & Wilson.
 James & Shakespeare.
 Johnson, Matthey & Co.
 Lambert's Wharf, Co.
Metallurgical Works and Ore Purchasers' Processes
 Amer. Zinc Lead Co.
 Baker & Co.
 Baibach S. & Ref. Co.
 Baltimore Copper Wks.
 Bridgeport Copper Co.
 Canadian Copper Co.
 Denver Eng. Wks. Co.
 Elliott's Metal Co., Ltd.
 Foster, Blackett & Wilson.
 Fraser & Chalmers.
 Gates Iron Works.
 Mathiessen & Hegeler Co.
Mine Cars
 Denver Eng. Wks. Co.
 Gates Iron Works.
 Hendrie & Bolthoff Mfg. Co.
 Hunt, C. W. Co.
 Sheffield Car Co. (See Machinery.)
Mine, Mill and Smelters Supplies.
 Carpenter, Geo. B., & Co.
 Denver Eng. Wks. Co.
 Gates Iron Works.
 Park's & Wilkinson. (See Machinery.)
Mining and Land Companies
 Atlantic Mfg. Co.
 Arizona Copper Co.
 Boston & Mont. Mfg. Co.
 Butte & Boston Mfg. Co.
 Clark Land & Mines Co.
 Copper Queen Mfg. Co.
 Detroit Copper Mfg. Co.
 Eureka Co.
 Kearsage Mfg. Co.
 Osceola Con. Mfg. Co.
 Rio Tinto Co.
 Tamarack Mfg. Co.
 Tamarack, Jr., Mfg. Co.
Nickel
 Canadian Copper Co.
Ore
 Brown, Horace F.
 Cummer, F. D., & Sons Co.
 Davis-Cobly Ore Roaster Co.
Ore-Combining Waster
 Hunt & Robertson.
 Ledoux & Co.
Packing and Pipe Coverings
 Brandt, Randolph.
 Jamin, E.
 Jenkins Bros.
Perforated Metals
 Aitchison, R. Perf. Metal Co.
 Fraser & Chalmers.
 Harrington & King Perforating Co.
Phosphor-Bronze
 Phosphor-Bronze Smelting Co.
Pile Drivers
 Bucyrus Steam Shovel and Dredge Co.
 Ingersoll-Sergeant Drill Co.
Pipe Joints
 Tight Joint Co.
Pipes
 Pollock, Wm. B., & Co. | Wyckoff, A., & Sons.
Platinum
 Baker & Co.
 Johnson, Matthey & Co.
Powder
 Atlantic Dynamite Co.
 Actna Powder Co.
 Ingersoll-Sergeant Drill Co.
Pressure Blowers
 Connorsville Blower Co.
Pressure Regulators
 D'Este & Seeley. (Curtis.)
Publications
 Allison Coupon Co.
 Arms & Explosives.
 Australian Mg. Stand.
 Bullionist.
 Colliery Guardian.
 Denver Republican.
 El Minerio Mexicano.
 Electrical Plant & Electrical Industry Financial Times.
 Indian Engineer
 I. N. C. Trade Review
 Lixiviation of Silver Ores.
 McNeill's Code.
 Mining Journal.
 Scientific Pub. Co.
 So. African Mg. Jour.
 Stetefeldt, C. A.
 Zeitschrift fur Practische Geologie
Pumps
 Blake, Geo. F., Mfg. Co.
 Cameron, A. S., steam Pump Works.
 Denver Eng. Wks. Co.
 Fraser & Chalmers.
 Gates Iron Works.
 Gowids Mfg. Co.
 Hooker Steam Pump Works.
 Jeannette Iron Wks.
 McGowan, J. S., & Co.
 Pulsometer Steam Pump Co.
 Denver Eng. Wks. Co.
 Smith-Valle Co.
 Tod, Wm., & Co.
 Worthington, Henry

Quarrying Machines
 Bostelmann, L. F.
 Gates Iron Works.
 Ingersoll-Sergeant Drill Co.
 Rand Drill Co.
 Sullivan Machinery Co.
Quicksilver
 Eureka Co.
Railroads
 C. B. & Quincy R. R.
 Denver & Rio Grande R. R.
 Denver, Leadville & Gunnison Ry.
 Florence & Cripple Creek R. R.
 Midland R. R. of Kentucky.
 Rio Grande Southern R. R.
 U. P., D. & G. R. R.
Railroad Supplies and Equipment
 Carpenter, Geo. B., & Co. | Porter, H. E., & Co.
 Fairbanks Co. | Robinson & Orr.
 Hunt, C. W., Co. (See Machinery.)
Regulators, Damper, Heat, Etc.
 D'Este & Seeley Co. | Jenkins Bros.
 Eddy Valve Co.
Return Steam Traps
 D'Este & Seeley. (Curtis.)
Rock Drills. (See Air Compressor.)
Roofing
 Berlin Iron Bridge Co. | Scaife, Wm. B., & Son
 Plattsburg Bridge Co. | Shiffer Bridge Co.
 Pittsburg Bridge Co.
Rubber Goods
 New York Belting & Packing Co., Ltd.
Scales
 Fairbanks Co.
Screens
 Aitchison, R. Perf. Metal Co.
 Denver Eng. Wks. Co.
 Fraser & Chalmers.
 Gates Iron Works.
 Harrington & King Perforating Co.
 Link Belt Machinery Co.
 Ludlow-Saylor Wire Co. (See Machinery.)
Second Hand Machinery
 Robinson & Orr.
Separators
 D'Este & Seeley Co.
Shoes and Dies
 Chester Steel Cast. Co. | Fraser & Chalmers
 Chrome Steel Works. | Gates Iron Works.
 Creasen Steel Co. | Pierce & Miller Engi-
 Denver Eng. Wks. Co. | neering Co.
Shovels (Steam)
 Bucyrus Steam Shovel & Dredge Co.
 Southern & Co.
Smelting and Refining Works
 Balbach S. & Ref. Co. | Orford Copper Co.
 Baltimore Cop'r Wks. | Penna. Salt Mfg. Co.
 Bridgeport Copper Co. | Refining Works
 Elliott's Metal Co., Ltd. | Phoenix & Ref. Co.
 Kan. City S. & Ref. Co. | Phoenix & Ref. Co.
 Mathiessen Smelting Co. | Smelt. Co.
Steam Traps.
 D'Este & Seeley. (Curtis.)
Steel Rails, Castings, Rolls, Drill Steel
 Bethlehem Iron Co.
 Carpenter Steel Co.
 Chester Steel Cast. Co.
 Chrome Steel Works.
 Crescent Steel Co.
 Garrison, A. Fdry. Co.
 Hobson, Seaman & Co.
 Tanks
 Denver Eng. Wks. Co.
 Gates Iron Works.
 Jessop Wm. & Sons Ltd.
Store Coupon Books.
 Allison Coupon Co.
Telegraph Wires and Cables
 Okonite Co., Ltd. The
Temperature Regulator
 D'Este & Seeley. (Curtis.)
Testing Laboratories
 Fairbanks Co.
Tools
 Besley, Chas. H., & Co.
 Pratt & Whitney Co.
 Streifinger, C. A., & Co.
Tool Steel.
 Hobson, Seaman & Co.
Tubes
 Besley, Chas. H., & Co. | Pollock, Wm. B., & Co.
 Williams Bros.
Tabling-Rubber
 New York Belting and Packing Co., Ltd
Tarline Water-Wheels
 Gates Iron Works.
 Stillwell-Bierce & Smith-Valle Co.
Valves
 D'Este & Seeley Co. | Fairbanks Co.
 Eddy Valve Co. | Jenkins Bros.
Ventilators
 Bullock, M. C. Mfg. Co. | Tod, Wm., & Co.
 Fraser & Chalmers.
Vulcanite Emery Wheels
 New York Belting and Packing Co., Ltd
Water-Wheels
 Girard Water Wheel Co.
 Lefel, James, & Co.
 Stillwell-Bierce & Smith-Valle Co.
Well Drilling Machinery
 Bostelmann, L. F.
 Sullivan Machinery Co.
 Williams Bros.
Wharfage
 Lambert's Wharfage Co.
Wheels, Car
 Chester Steel Cast. Co.
 Sheffield Car Co.
 Taylor Iron & Steel Co.
White Lead
 Foster, Blackett & Co.
Wire Cloth
 Aitchison, R. Perf. Metal Co.
 Barnum, E. T.
 Gates Iron Works.
 Harrington & King Perforating Co.
Wire Rope & Wire
 Besley, Chas. H., & Co. | Hunt, C. W., Co.
 Broderick & Bascom | Leschen, A., & Sons.
 Rope Co. | Rope Co.
 California Wire Wks. | Phelps, Dodge & Co.
 Carpenter, G. B., & Co. | R'bling, J. A. Sons & Co.
 Carpenter Steel Co. | Ropeways Syndicate.
 Gates Iron Works.
Wire Rope Tramway
 Brown Hoist. & Conv. | Gates Iron Works.
 Machinery Co. | Hunt, C. W., Co.
 Colorado Iron Works. | Robbing, J. A., Son
 Denver Eng. Wks. Co. | & Co.
 Fraser & Chalmers. | Ropeways Synd. Ltd
 Vulcan Iron Works

POSITIONS VACANT.

FREE ADVERTISING

Inquiries from employers in want of Superintendents, Engineers, Metallurgists, Chemists, Mine or Furnace Foremen, or other assistance of this character, will be inserted in this column WITHOUT CHARGE, whether subscribers or not.

The labor and expense involved in ascertaining what positions are open, in gratuitously advertising them and in attending to the correspondence of applicants, are incurred in the interest and for the exclusive benefit of subscribers to the ENGINEERING AND MINING JOURNAL.

Applicants should inclose the necessary postage to insure the forwarding of their letters.

1417 WANTED—CIVIL ENGINEER FOR A coal mine capable of taking charge of machinery; must be a good office man and draftsman. Address communications to "A," care ENGINEERING AND MINING JOURNAL.

1418 WANTED—A THOROUGHLY EXPERIENCED business manager for mining and milling property in Mexico. Address L., ENGINEERING AND MINING JOURNAL.

1419 WANTED—A FIRST-CLASS ASSAYER and experienced ore sampler, with thorough business education, as manager of branch office in Mexico, through which ores are purchased and mining supplies sold. Address, stating references, etc., 71 B., ENGINEERING AND MINING JOURNAL.

1420 WANTED—FOR MEXICO, CHEMIST with experience in making charges for blast furnace matte smelting. State experience and salary expected. Address COPPER MATTE, ENGINEERING AND MINING JOURNAL.

1421 WANTED—A MAN TO TAKE charge of a developed silver mining property in Mexico. Must be a thorough business man, with sufficient experience in mining and metallurgy to exercise a general supervision over the superintendents in charge of those departments. The property is to be fully developed and the milling plant largely increased, and judicious business management is the most essential point. A knowledge of Spanish would be serviceable. ARGENTUM, ENGINEERING AND MINING JOURNAL.

1422 WANTED—FOR A LARGE MEXICAN city, a man who has had experience in assaying and analytical work in some Western lead or copper smelters; salary, \$151 (Mexican money) per month; steady work with chance of an increase in salary; applicants should state their age, experience and references. Address SAN LOUIS, ENGINEERING AND MINING JOURNAL.

1423 WANTED—EXPERIENCED FOREMAN for blast furnace copper-smelting plant in British Columbia. Climate good; all the accommodations of civilization. Salary \$125 per month. Applicant must be able to work himself, do sledging and tapping when required and be familiar with all the practical points in the running of furnaces. Must know how to handle men and to follow orders. Send applications, with testimonials and references, to FOREMAN, ENGINEERING AND MINING JOURNAL. Must be ready to come January 2d.

1424 WANTED.—A LARGE GOLD MINING company desires the services of a young single man for assaying and clerical work at its mine in South America. He must be a competent assayer and be capable of handling money, as he will have the paying of the employees and other expenses of company. A salary of \$125 per month will be paid. Address stating age, experience, etc., to J. H. B., ENGINEERING AND MINING JOURNAL.

1425 WANTED—A GENERAL MANAGER for an iron ore company making a large output. Familiarity with the Spanish language is desirable. Address with full particulars of experience and references, M. H. HIERRO, ENGINEERING AND MINING JOURNAL.

1426 WANTED—AN EXPERIENCED foreman capable of taking charge of the construction and operation of a lead refining plant of 20 tons daily capacity. Must have references from former employers. Address BULLION, ENGINEERING AND MINING JOURNAL.

1427 WANTED—A FIRST-CLASS ASSAYER and ore sampler, with a knowledge of the Spanish language, to take charge of an ore purchasing agency. References imperative. Address ORE BUYER, ENGINEERING AND MINING JOURNAL.

1428 WANTED—A BUSINESS MANAGER for a successful steel works; a live man who understands and has been successful in the business management of large works, and who can increase an already large trade in an article of very exceptional quality, can find here an excellent opportunity to make both fortune and reputation. Apply, stating experience, etc., FORTUNE, ENGINEERING AND MINING JOURNAL.

SITUATIONS WANTED.

Advertisements for SITUATIONS WANTED will be charged only 10 cents a line.

AMERICAN MINING ENGINEER OF LARGE and very successful experience as manager of prominent Western mines, and at present identified in that capacity with a heavy-producing and profitable mine, desires a change. United States preferred, but will go anywhere if inducements are sufficient. Unquestionable references can be furnished. Address W201, care ENGINEERING AND MINING JOURNAL. No. 17,318, Jan. 11.

MINING ENGINEER AND METALLUR- gist of long and successful experience as manager of mines and smelting works in the United States and Mexico desires position; has thorough business and technical knowledge and speaks Spanish. Highest reference furnished. Address M. M., care ENGINEERING AND MINING JOURNAL. No. 17,325, Jan. 25.

WANTED—A POSITION AS ASSISTANT in laboratory by a young man holding similar position at present. Six years' business experience. References from past and present employers. Address ASSISTANT, ENGINEERING AND MINING JOURNAL. No. 17,322, Jan. 11.

GRADUATE MINING ENGINEER AND chemist desires position. Eleven years' successful experience in the economical management and development of mining properties and the milling of ores by amalgamation and cyanide process. Understands Spanish. Best of references. Address COLORADO, ENGINEERING AND MINING JOURNAL. No. 17,316, Jan. 4.

METALLURGIST, 14 YEARS' EXPERI- ence, six as superintendent, wants location in the East; best of references. Address METALS, ENGINEERING AND MINING JOURNAL. No. 17,323, Jan. 18.

A YOUNG CHEMIST AND ASSAYER DE- sires position; good draftsman; best of refer- ences. Address ASSAYER, ENGINEERING AND MINING JOURNAL. No. 17,324, Jan. 4.

CHEMIST, UNIVERSITY GRADUATE, SIX years' experience, four years in charge of large laboratory, desires a position. Has had large practice on foundry analyses, also furnace and steel works analyses. Address, A. C. ENGINEERING AND MINING JOURNAL. No. 17,326, Jan. 11.

METALLURGIST AND MECHANICAL EN- gineer; specialties, erection of plants and treat- ment of gold and silver refractory ores. Thirty years' experience; no objection to foreign countries. Open to engagement. Jan. 1. References, prominent mine owners. Address PACIFIC, ENGINEERING AND MINING JOURNAL. No. 17,329, Feb. 1.

MINING ENGINEER HAS OVER 20 YEARS' practical experience, desires engagement in Mex- ico as foreman or superintendent of mining property. Having spent some years in that country as superin- tendent of mines, knows the customs and language of the people, or would accept position in any part of the West. First-class reference. Address ORO, ENGINEERING AND MINING JOURNAL. No. 17,330, Jan. 4.

AN ANALYTICAL CHEMIST AND AS- sayer of experience desires a position; experi- enced in all branches of work in the West, and also in the iron and steel business; young man; can furnish best of references. Address RELIABLE, ENGINEERING AND MINING JOURNAL, Denver office, 206 Boston Building, Denver, Colo. No. 17,327, Jan. 25.

Contracts Open.

TREASURY DEPARTMENT, Office Super- vising Architect, Washington, D. C., December 31st, 1895.—Sealed proposals will be received at this office until 2 o'clock p. m. on the 24th day of January, 1896, and opened immediately thereafter for all the labor and materials for furnishing and erecting complete a hydraulic passenger Elevator, including pumps, tanks, piping, car, etc., for the U. S. Post Office, Court House, etc., building at Charleston, S. C., in accordance with the drawings and specification, copies of which may be had at this office, or the office of the Superintendent at Charleston, S. C. Each bid must be accompanied by a certified check for the sum of \$20. The right is reserved to reject any or all bids and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated for opening will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for a Hydraulic Passenger Elevator in the U. S. Post Office, Court House, etc., building at Charleston, S. C.," and addressed to WM. MARTIN AIKEN, Supervising Architect. Orig.

TREASURY DEPARTMENT, Office Super- vising Architect, Washington, D. C., December 31st, 1895.—Sealed proposals will be received at this office until 2 o'clock p. m. on the 27th day of January, 1896, and opened immediately thereafter for furnishing all the labor and materials and putting in place the steel and iron work of the 5th and 6th floors, upper floors and ceiling of tower, main and lower roof, and columns above 4th floor, of the U. S. Post Office, Court House and Custom House, at St. Paul, Minn., in accordance with the drawings and specification, copies of which may be had at this office, or the office of the Superin- tendent at St. Paul, Minn. Each bid must be accom- panied by a certified check for the sum of \$800. The right is reserved to reject any and all bids or to waive any defect or informality in any bid, should it be deemed in the interest of the Government to do so. All proposals received after the time stated for opening will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for Steel and Iron Construction, etc., of the U. S. Post Office, Court House and Custom House, at St. Paul, Minn.," and addressed to WM. MARTIN AIKEN, Supervising Architect. Orig.

WELL DRILLING.—Well, Unionville, Mo.—The Mayor and Board of Aldermen of Unionville, Mo., will receive sealed bids until January 10th, 1896, for price per foot for drilling and casing complete, a 6-in., or 8-in., or 12 in. well, including everything. Contractor will be required to give bond in the sum of \$2,500 as a guarantee that if award is made the contract will be entered into and work completed in a satisfactory man- ner in the shortest possible time. The city of Union- ville reserves the right to reject any or all bids. By order of Board. LORENZO JONES, Mayor.

CONSTRUCTION OF A SEWER.—Office of the Commissioners of the District of Columbia, Washing- ton, D. C.—Sealed proposals will be received at this office until January 25th, 1896, for constructing a main intercepting sewer from near the intersection of P street and Florida avenue to near the intersection of Twenty fifth and Water streets northwest, with lateral branches on M and Twenty-seventh streets. Blank forms of proposals and specifications may be obtained at this office upon application therefor, together with all necessary information, and only bids upon these forms will be considered. The right is reserved to reject any and all bids or parts of bids. J. W. ROSS, GEORGE TRUEDELLE, CHAS. F. POWELL, Com- missioners, D. C.

PUMPING ENGINE.—Office of the Commis- sioners, Washington, D. C. Sealed proposals will be received at this office until January 10th, 1896, for furnish- ing and erecting at the U street pumping station one 8,000-gallon vertical triple expansion crank and fly- wheel pumping engine with boiler and appurten- ances. Bids for other types of engines will be received under conditions stated in the specifications. Specifi- cations and blank forms of proposal may be obtained at this office. JOHN W. ROSS, GEORGE TRUEDELLE, CHAS. F. POWELL, Commissioners, D. C.

PIPE.—Tenders will be received, by registered post only, addressed to the City Engineer, Toronto, the 15th of February, 1896, for the supply and delivery of 2,350 ft. of steel or cast iron pipe, 6 ft. in diameter, with the necessary flexible joints. Specifications and plans may be seen at the office of the City Engineer, Toronto, on and after Wednesday, the 11th inst. A deposit in the form of a marked cheque, payable to the order of the City Treasurer for the sum of 2 1/2% on the value of the work tendered for, must accompany each and every tender, other- wise they will not be entertained. Tenders must bear the bona fide signatures of the contractor and his sureties or they will be ruled out as informal. Lowest or any tender not necessarily accepted. DANIEL LAMB, Chairman Committee on Works.

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MEETINGS.

THE ANNUAL MEETING OF THE SCIENTIFIC PUBLISHING COMPANY
Will be held at the office of the company, 253 Broadway, New York City, January 15th, 1896, at 12 o'clock noon, for the election of trustees and for the transaction of such other business as may be brought before the meeting. S. BRAEUNLICH, Secretary.
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NOTICE.

On account of limited space, in consequence of our enlarged number this week, we were forced to omit the pages containing the book catalogue, which we had intended starting in this issue of the Journal. The publication of the same will begin in our next issue, January 11th, 1896.

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The New Year. A happy and prosperous New Year is the wish and the greeting which the *Engineering and Mining Journal* sends to its many readers in every part of the world—and it is pleasing to feel that present indications give good ground for the expectation that this heartfelt wish will be realized.

Belated. Our London market reviews of lead, spelter and antimony had not arrived in time for this issue, but will appear next week.

Some important Australasian reports of mineral production also failed to arrive in time.

The Acetylene Bubble. We have received a large number of communications about "The Acetylene Gas Bubble," some of which add important points in the discussion, but they must stand over until our next issue, for our space this week is devoted solely to statistical and market reports. Next week we shall again take up this interesting matter, and in a manner which promises to become highly interesting to the investors in Acetylene securities, and perhaps to their vendors also.

Silver Production. The production of silver in the United States from domestic ore was 41,238,764 fine ounces as compared with 49,846,875 ounces in 1894. The production therefore declined 7,668,111 ounces, though the price advanced from an average of 63 cents in 1894 to 65.3 cents per ounce in 1895. As has frequently been shown in the *Engineering and Mining Journal* the production of silver is bound to decline for a number of years whatever its price may be.

The Mineral Production in 1895. The year 1895 has been a prosperous one in the American mineral industry, and had it not been for the financial uncertainties prevailing in the early part of the year occasioned partly by the withdrawals of gold from the United States Treasury, and partly by the renewed agitation of the question of the independent free coinage of silver, the year would have broken all records in production in nearly every department. The year 1896 now promises to do this in every article of the mineral industry in this country. The value of the metals produced from domestic ores in the United States in 1895 amounted to \$249,997,020, as compared with \$194,095,622, the value of the output of the same metals in 1894. This is an increase of 24.2%.

METAL PRODUCTION OF THE UNITED STATES IN 1894 AND 1895

Metals.	Customary measures.	1894.		1895.	
		Customary measures.	Value at place of production.	Customary measures.	Value at place of production.
Aluminum.....	Pounds	817,000	\$490,560	850,000	\$467,500
Antimony.....	Short tons	220	39,200	425	67,575
Copper.....	Pounds	353,504,314	33,540,489	386,000,000	38,695,500
Gold.....	Troy oz.	1,923,619	39,764,708	2,152,877	44,870,998
Iron, pig.....	Long tons	6,657,388	71,966,364	9,346,606	112,159,272
Lead (value, N. Y.).....	Short tons	160,867	10,585,048	159,245	10,287,227
Quicksilver.....	F'k. 76 1/4 lbs.	30,440	1,955,819	33,978	1,313,589
Silver, comm. val.....	Troy oz.	49,846,875	31,463,531	41,238,764	26,928,712
Zinc (spelter).....	Short tons	74,004	5,209,892	85,491	6,266,647
Total metals.....			\$194,095,622		\$210,997,020
Coal.....	Tons	169,960,781	184,721,871	195,000,000	212,000,000
Iron ore.....	Long tons	11,800,000	14,800,000	18,000,000	31,500,000
Zinc oxide.....	Short tons	22,814	1,711,275	22,690	1,588,300
Total values.....			\$201,283,146		\$245,088,30

The value of the coal output increased 16.6%, or \$27,278,129, and of iron ore 112.1%, or \$16,650,000.

The statistics already collected for other substances are not sufficiently full to justify us in publishing in separate items, but they indicate an increase in about the same proportion, as that of the metals and coal, iron ore and zinc oxide—which is about 22.9%. It seems probable therefore that the total mineral production (including iron ore) of the United States in 1895 amounted in value to about \$698,325,000 as compared with a value for the same articles produced in 1894 of \$568,206,500.

Zinc Production. The production of spelter has increased from 74,004 short tons in 1894 to 85,491 tons in 1895 though the average price of spelter for the year advanced but little, being in New York 3.63 cents per pound as compared with 3.52 cents in the previous year.

The zinc oxide production remained stationary at 22,814 short tons in 1894 and about 22,690 tons in 1895. There was produced in addition to this a certain amount of zinc-lead pigment.

English Investors in Colorado. We learn by wire from our special correspondent at Leadville, Colo., that English capitalists are seriously turning their attention to investments in Colorado, as is evidenced by the closing of a deal at the price of \$750,

000 in that camp. In our issue of November 30th we referred to the option given to the Elkhorn Mining Company of London of the Fitzhugh Kennebec, etc., group, 62 acres, on East Fryer Hill, to be examined by Capt. J. W. Plummer. The purchase has now been concluded.

United States Copper Production.

The increase in the copper production for 1895 is quite marked, and as the demand not only here but in Europe has more than kept pace with increased supply, we have further testimony to the general improvement in business activity on a substantial basis. In this country the production of copper for the past year in a total of 172,300 long tons shows an increase of 29,947,360 pounds over 1894, and as we pointed out in our last issue the copper in sight is less than at any time since 1887. A striking feature, and of interest from the home point of view, is that in spite of the increase of production and a good demand at fair prices existing abroad, the exports have fallen in 1895 to 62,474 long tons as against 76,297 in 1894.

Foreign Copper Production.

The foreign copper production shows a falling off from 89,031 long tons in 1894 to 86,300 in 1895, so far as we have returns, but as some of these are estimated for the final months of the year, and other smaller producers have not yet sent in their figures, the output from all foreign sources has been about equal to that of 1894. There is a probability that the improved price of copper during the year will have some effect in stimulating production, at least we learn from a valued correspondent in Chile, that "the improvement in copper is a real Godsend to Chilean miners," and that in the neighborhood of Antofagasta where costs are so excessive, old mines in the latter half of the year were being taken up. Mines are now at work, where instead of fighting water as is so often the case, the water for the entire service has to be hauled 40 miles. This looks like an increased production from Chile, once the greatest copper producer in the world, in the year 1896.

The world's production in 1895, estimating the small foreign mines, amounted to about 336,300 long tons, as compared with 324,859 tons in 1894.

The Mining Exchanges.

We have so far had here, not exactly a "Kaffir circus," as in London and Paris, during the past year, but the craze for gold and gold mines, and the notable success that has been met with in Cripple Creek, Leadville, Southern Colorado, and the successful reopening of mines in California, has resulted in a wonderful development of mining stock exchanges throughout the country. Those of Colorado are dealt with fully in another column of this issue, but in addition to these we now have one in Chicago, another to be opened within a week in New York, a marked revival on the San Francisco Stock Board and a greater volume of business in Boston, principally in copper stocks, but also extending to new gold mining companies, than perhaps has ever been transacted at that point, in its most speculative days. To the above must be added the opening of a mining exchange in Salt Lake City. As a rule the new mining exchanges seem to be governed by sound rules and regulations for the listing of stocks, and these if strictly adhered to will protect not only the investor, but even the speculator from "wind bags" and "wild cats."

Nickel Production.

The production of nickel in this country, from domestic ores, is virtually nothing, but there is so large a source of supply close to our borders, nearly the whole of which is refined, and the greater part consumed in the United States, that we cannot overlook the importance of this metal in our industries. Although the consumption of nickel is largely increasing in its application to the improvement of steel for armor plates and possibly burglar-proof safes, the production from Sudbury, Canada, has slightly fallen off, being in 1894, 4,897,191 pounds and in the fiscal year ending October 31st, 1895, which differed but little from the calendar year 1895, the production of nickel was 4,566,542 pounds, of which about 3,138,400 pounds were imported into the United States by the Canadian Copper Company for refining.

A portion of the production of the Sudbury district was exported direct to Europe. In addition to the above-mentioned quantity of nickel this district produced in the fiscal year about 4,731,000 pounds of copper. The most noticeable feature of the market has been its steady decline which has reached as low as 24 cents per pound, and with this decline, that in the price of the shares of the French New Caledonia Company, which was the only important producer before the American refined metal and nickel oxide came into the market. The price of these shares has been steadily on the down grade until within the last few days, when a sudden recovery has taken place raising the price in Paris from 118 frs. to 235 frs. This rise is stated to be in consequence of an agreement come to between the American refiners and the New Caledonia Company.

The World's Gold Production.

The following table shows the gold production of the world and is of the greatest interest. The increase in output in all the principal countries is very marked. The total production is about 9,860,220 fine ounces, with a coin value of \$203,120,590. Naturally at this early date in the year 1896 some of the figures for the latter months from the more remote countries have been estimated, but they will be found substantially correct. This year the United States leads the world with a production of 2,170,827 ounces, value \$44,870,998. The whole of South Africa comes a very close second with \$44,750,000 in value, and Australasia close on the heels of the latter with \$44,000,000.

Russia makes a good showing, producing in value \$33,990,000. The falling off in British Guiana amounts to more than \$400,000, leaving the total production for the past year at \$2,052,500.

This production shows an increase in this country of \$5,110,000, and in the world of \$23,775,000.

It should be noted that the weights of gold given in the column for 1895 are in fine ounces, while those in the column for 1894 are not in fine metal, which accounts for the apparent discrepancies in their values.

THE WORLD'S PRODUCTION OF GOLD AND SILVER. (a) (IN KILOGRAMS AND DOLLARS.)

Countries.	1894. 1 kg. silver = \$20.25 (63c. per oz.)				1895. 1 kg. silver = \$20.98 (65.3c. per oz.)			
	Gold.		Silver.		Gold.		Silver.	
	Kilo-grams	Value.	Kilo-grams	Commercial Value.	Kgs.	Value.	Kilos.	Commercial value.
United States	59,824	\$39,761,205	1,550,387	\$31,403,531	67,513	\$14,870,998	.....	\$26,928,712
Australasia	68,440	40,051,875	562,263	11,388,638	66,406	44,000,000	.....	.....
Mexico	6,771	4,500,000	1,463,361	29,640,378	8,426	5,600,000	.....	.....
Russia	41,598	27,646,000	10,117	204,220	51,144	33,990,000	272,647	172,398
Germany	3,315	2,203,100	193,151	3,912,273	3,310	2,200,000	.....	.....
Austria-Hungary	2,535	1,684,800	61,319	1,242,016	2,542	1,690,000	.....	.....
Sweden	94	62,500	2,869	58,112	91	62,500	.....	.....
Norway	.....	.....	4,705	95,239	.....	.....	.....	.....
Italy	176	117,000	28,885	585,066	166	110,000	.....	.....
Spain	.....	.....	35,436	717,756	.....	.....	.....	.....
Greece	.....	.....	1,516	30,707	12	8,000	.....	.....
Turkey	.....	.....	98,077	1,986,549	271	180,000	.....	.....
France	279	185,300	7,932	160,662	99	66,000	.....	.....
Great Britain	99	65,800	.....	.....	.....	.....	.....	.....
Dominion of Canada	1,648	1,095,261	20,202	409,192	1,189	790,000	.....	.....
Argentine Republic	.....	95,000	37,334	756,206	143	95,000	.....	.....
Colombia	4,353	2,892,800	52,511	1,063,610	4,364	2,900,000	.....	.....
Bolivia	101	67,000	6,418	13,832,888	101	67,000	.....	.....
Ecuador	103	68,400	240	4,861	102	68,000	.....	.....
Chile	698	464,400	88,680	1,796,213	707	470,000	.....	.....
Brazil	3,339	2,219,500	.....	.....	3,385	2,250,000	.....	.....
Venezuela	1,213	806,100	.....	.....	1,128	750,000	.....	.....
Guiana (British)	4,308	2,464,176	.....	.....	3,089	2,052,500	.....	.....
Guiana (French)	872	579,500	.....	.....	873	580,000	.....	.....
Guiana (Dutch)	2,000	1,329,200	.....	.....	1,956	1,300,000	.....	.....
Peru	112	74,400	107,670	2,180,856	111	74,400	.....	.....
Uruguay	213	141,600	.....	.....	213	141,600	.....	.....
Central American States	708	470,500	48,123	974,731	1,768	475,000	.....	.....
Japan	737	489,800	60,869	1,232,901	737	490,000	.....	.....
China	9,049	6,014,000	.....	.....	9,027	6,000,000	.....	.....
Africa	73,585	39,555,836	.....	.....	67,333	4,750,000	.....	.....
India (British)	6,507	3,766,251	.....	.....	9,129	5,990,000	.....	.....
Korea	703	467,200	.....	.....	601	400,000	.....	.....
Total	293,535	\$179,346,504	5,205,065	\$105,422,034	.....	\$203,120,590	.....	.....
U.S. coinage value	.....	.....	.....	216,358,937	.....	.....	.....	.....

The figures of production given in the accompanying table are all from official reports, but they are nevertheless subject to correction when the final returns for December are in. The final official figures will be published in the *Mineral Industry*, Vol. IV., now in preparation.

Coal Production.

The production of coal in the United States increased very largely during the year just ended, and has attained a total greater than ever before. We have already received reports of its production in a considerable number of States, and are thus enabled to make an estimate of the total output which will be found fairly accurate.

The total production of coal in the United States in 1895 amounted to about 195,000,000 tons of 2,000 pounds, or 176,902,800 metric tons, valued at \$212,000,000, as compared with 169,960,781 short tons or 154,229,383 metric tons in 1894, valued at \$184,721,871.

Colorado produced 3,449,000 short tons; Maryland, 3,346,346 tons; Wyoming, 2,600,000 tons; Alabama, 6,000,000; Indiana, 4,080,025 tons; Indian Territory, 1,228,440; a total for these States of 20,703,829 tons, or 23.9 per cent. more than their output in 1894. The increase in production in most of the other States was almost as great as this.

The production of anthracite in 1895 was about 55,000,000 short tons, or about 3,500,000 tons more than in 1894. The bituminous coal production was about 140,000,000 short tons.

The United States is rapidly moving up toward the first place as the greatest coal producer in the world. No doubt before the year 1900 it will have reached that point.

Nothing better measures the industrial activity of a country than its consumption of coal. With a production of 195,000,000 short tons, an import of 1,195,000 tons and an export of 3,625,000 tons, the consumption of the United States in 1895 was about 192,500,000 tons, or 2.75 tons per capita, counting the population at 70,000,000.

Lead Production.

The lead production of the United States is made up of lead produced from domestic ores and lead smelted or refined from foreign material. Our refiners have without exception returned to us their production, and have stated how much of it was from domestic and how much from foreign material. The government Bureau of Statistics gives the imports and exports, but the imports and exports for December and in part for November have not yet been furnished, and we have estimated what is lacking from the best information at our command. From all these data we have compiled the following table of lead production imports, exports and consumption in the United States in 1895 as compared with 1894:

LEAD PRODUCTION, IMPORTS, EXPORTS AND CONSUMPTION.

	In short tons.	
	1894.	1895.
Domestic production—desilverized.....	123,823	127,368
non-argentiferous.....	37,044	31,577
Total domestic.....	160,867	159,245
Produced from foreign material—Mexico.....	59,340	68,000
Canada.....	1,835	7,500
Imported from Europe—in pig.....	8,566	23,000
Total import.....	69,741	98,500
Total supply.....	230,608	257,745
Exports.....	40,000	16,000
Consumption.....	190,608	241,745

Assuming stocks to have remained constant.

This shows what an enormous lead industry has grown up in Mexico, largely through our own foolish legislation, and this competition is now affecting our domestic output, which during 1895 was actually less than in 1894, though the output of nearly every other mineral product increased last year.

ANTIMONY IN 1895.

The production of antimony in the United States in 1895 was 425 short tons, showing a very considerable increase over 1893. This includes the antimony prepared from imported ores.

Markets.—Antimony has been the most uninteresting metal on the list, the market remaining without any special feature throughout the year.

No quantities worth speaking of were received from California. Importations from Japan, however, are still on the increase, and thus the standard English brands are being more and more supplanted, which is not at all to be wondered at in view of the fact that European producers are very loath to make concessions in prices, while the new brands, some of which are said to be of excellent quality, are easily obtainable at more reasonable figures. Production on the whole is still increasing, but consumption has remained about the same as last year, in consequence of which the market has followed a declining tendency throughout the year.

In January, the prices quoted for Cookson's, Hallett's and the United States French Star antimony were 8½, 7½ and 8¼c. respectively. Values receded about ¼c. during the following three to four months, the higher tendency for other metals not having had the slightest influence on this.

AVERAGE MONTHLY PRICES OF ANTIMONY IN NEW YORK.

Year.	Brand.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1891....	Cookson's.....	19.00	18.00	17.50	17.13	16.00	14.50	13.63	12.00	11.63	13.25	16.00	16.25	15.50
"	Hallett's.....	16.50	16.75	16.00	15.00	14.75	13.00	12.00	10.63	10.00	11.00	12.25	12.75	13.50
"	L. X.....	17.13	17.00	16.75	16.00	15.13	13.63	12.50	11.38	10.63	12.00	15.25	15.13	14.33
1892....	Cookson's.....	15.88	15.00	14.90	15.00	15.13	14.40	14.20	13.50	11.50	11.80	12.00	11.50	13.75
"	Hallett's.....	14.40	11.00	10.90	11.00	11.50	11.25	11.00	10.75	10.50	10.50	10.63	10.75	12.10
"	L. X.....	12.13	12.13	12.50	12.50	13.00	12.75	12.50	11.88	11.25	11.20	11.19	10.80	12.00
1893....	Cookson's.....	11.00	10.75	10.75	10.75	10.13	10.50	10.50	10.25	10.30	10.25	10.00	10.25	10.50
"	Hallett's.....	10.25	10.38	10.00	10.00	10.00	9.90	9.88	9.75	9.60	9.75	9.50	9.25	9.88
"	L. X.....	10.50	10.63	10.38	10.25	10.38	10.00	10.13	10.00	10.00	10.00	10.00	10.00	10.20
1894....	Cookson's.....	10.25	10.00	10.13	10.13	10.13	9.75	10.00	10.00	9.50	9.63	8.50	8.38	9.63
"	Hallett's.....	9.50	9.38	9.50	9.38	9.25	9.13	8.75	8.88	8.88	8.25	8.25	8.13	8.88
"	Cookson's.....	8.00	8.25	8.15	8.00	8.00	8.00	8.00	7.85	7.85	7.75	7.75	7.75	7.95
"	Hallett's.....	7.25	7.25	7.10	7.00	7.00	7.05	7.10	7.20	7.25	7.13	7.00	7.00	7.11
"	U. S. Star.....	8.25	7.50	7.30	7.50	7.35	7.50	7.50	7.75	7.50	7.50	7.50	7.50	7.56
"	Japanese.....	7.00	7.00	6.88	6.88	6.88	7.00	7.00	7.00	7.00	6.88	6.88	6.88	6.94

The market continued quiet but steady during July and August, with an occasional slight rally hardly worth mentioning. Quotations at the end of the year were 7¼c. for Cookson's, 7¼c. for United States Star, 7c. for Hallett's and 7c. for Japanese antimony. This refers to small lots; larger quantities could undoubtedly be obtained at still lower figures.

The accompanying table shows the prices of antimony in New York in each month of the past five years, the figures being taken from the weekly market reports of the *Engineering and Mining Journal*. For the years previous to 1890 the figures can be found in *The Mineral Industry*, Vols. I. and II.

ALUMINUM IN 1895.

While there was an appreciable increase in the production of aluminum in 1895 over that of previous years, the output, as for several years past, was from the works of one producer only. The Pittsburgh Reduction Company during the year started up its new works at Niagara Falls, taking 4,500 H. P. from the Niagara Falls Power Company. The addition to its facilities enabled the company to turn out 850,000 lbs. of the metal, an increase of about 100,000 lbs., over 1894. The increase was readily taken up, and the demand for the metal is still beyond the capacity of produc-

tion. The company has arranged to double the size of its plant and to increase the production accordingly, having contracted for an additional 4,500 H. P.

No new uses for aluminum were developed during the year. The demand for the pure metal has been largely for the manufacture of small articles and household utensils, the demand for which is increasing. The cost, as heretofore, continues to limit the use.

The production in Europe is still controlled by the Neuhausen Company in Switzerland, which controls the French works as well as its own, and is gradually extending its operations. The production, however, has not yet been much increased, and is estimated at about 750,000 kilo. for the Neuhausen and Froges Works. The British Aluminum Company, which purposes making the metal from Irish bauxite, has not completed its works, and it is uncertain when it will become a producer.

Prices.—At the opening of the year the price fixed by the producer here was 58@63c. per lb. for No. 1 metal, 98% pure in ingots for rolling; 53@60c. per lb. in ingots for remelting, the variation in price being according to size of order. No. 2 metal, 94% pure, 50@55c. per lb. in ingots for remelting. In March a slight reduction was made, prices being fixed at 55@60c. for No. 1 in ingots for rolling; 50@55c. in ingots for remelting; No. 2 metal, 48@53c. per lb. A further reduction was made in November, and prices now stand as follows: No. 1 metal, rolling ingots, 50@55c. per lb.; No. 1 metal, ingots for remelting, 48@53c. per lb.; No. 2 metal, ingots for remelting, 45@50c. per lb. There has thus been a reduction in price varying from 5c. to 8c. per lb. in amount, or about 12.5% in proportion. The reduction may be expected to continue as improvements are made in production. The producers evidently recognize the policy of increasing the use of the metal, and of reducing its prices as rapidly as possible.

In Europe the Neuhausen Company, which controls the market, has kept the price at 5 fr. per kilo., making, however, a discount on large orders varying in amount. This price is for No. 1 metal, which is 98 to 99% pure. The quotation in Paris, which was 5 fr. per kilo for the greater part of the year, dropped to 4.65 fr. in November.

The London quotation for ingots, 98% pure, was, at the close of the year, 17@18d. per lb. for large quantities, and 18½@19d. per lb. for small orders.

COPPER IN 1895.

The production of copper in 1895 reflected very nearly the general course of business. During the first half of the year there was little change in the output, but with July the production began to increase and continued heavy until the close of the year.

The production of copper in the United States from domestic ore, amounted in 1894 to 353,504,314 lbs., and in 1895 to 386,000,000 lbs., or 172,300 long tons, an increase of about 32½ million pounds, according to the statistics collected by Mr. John Stanton for the associated producers. These statistics are very carefully compiled, but the output of a number of somewhat important producers are only estimated, and the final figures which will appear later in *The Mineral Industry*, Vol. IV., will give the final authoritative figures for those now estimated. The production has been as follows as compared with 1894, taken from *The Mineral Industry*, Vol. III.:

PRELIMINARY STATEMENTS OF COPPER PRODUCTION IN THE UNITED STATES.

States.	1894.		1895.	
	Pounds.	Long tons.	Pounds.	Long tons.
Arizona.....	4,531,108	19,880	48,000,000	21,429
Michigan.....	114,526,555	51,128	130,000,000	58,036
Montana.....	183,004,755	81,739	185,000,000	82,589
All other states.....	11,351,896	5,067	23,000,000	10,246
Total.....	353,504,314	157,814	386,000,000	172,300
Value.....	\$31,815,460		\$39,603,600	

The following table shows the production of copper in the United States and by the leading foreign mines, and the exports of copper from the United States. The figures for the different months (December only being estimated) are those reported by the producing companies to Mr. John Stanton, of New York, who acts as their statistician. The quantities are in long tons (2,240 lbs.).

Month.	Production		Exports from United States.
	United States.	Foreign.	
January.....	11,694	6,737	7,142
February.....	12,720	6,739	3,450
March.....	14,153	7,424	3,194
April.....	13,544	7,219	5,677
May.....	14,860	7,400	5,430
June.....	12,741	6,965	8,600
July.....	13,624	6,988	6,035
August.....	15,390	7,129	4,493
September.....	15,351	6,947	4,106
October.....	16,115	7,753	3,773
November.....	16,330	7,728	4,874
December.....	16,578	7,771	5,700
Total.....	173,100	86,800	62,474
Total 1894.....	159,686	89,031	76,297

The reporting mines in the United States are as follows: In Montana—Anaconda, Boston & Montana, Butte & Boston and Parrot, and the Montana Ore Purchasing Company, whose output heretofore has been reported under "outside sources." In Arizona it includes United Verde, Arizona Copper Company, Copper Queen, Detroit and Old Dominion; and in Michigan all the mines—Calumet & Hecla, Tamarack, Quincy, Osceola, Atlantic, Franklin, Tamarack, Jr., Kearsarge, Wolverine and Central, etc. In addition to the production of these mines an estimated quantity is given each month for the copper obtained from pyrites and by smelters and others from ores not considered as copper ores.

The foreign companies reporting are the following: The Rio Tinto and Tharsis in Spain; the Mason & Barry in Portugal; the Mausefeld in Germany; the Cape Copper and Namaqua in South Africa (the Cape Copper Company also owns a mine in Newfoundland); the Wallaroo in Australia; the Quebrada in Venezuela, and the Boleo in Mexico.

The table shows that there was in 1895, as compared with the previous year, an increase of 13,414 long tons, or 8.4% in the United States production; a decrease of 2,231 tons, or 2.5%, in the output of the reporting foreign mines; and a decrease of 13,823 tons, or 18.1% in the United States exports. The increased output in this country, accompanied by diminished exports reflects the condition of the market and the growth in home demand and consumption as explained below.

The decrease in exports shown in the table has directly affected the stocks of copper in Europe, notwithstanding some increase in the Chilean production. On December 15th the stocks were estimated at 45,560 long tons, or 9,250 tons less than on January 1st. They were, in fact, at a lower point than had been reached for several years.

The course of prices during the year is shown below, in the articles relating to the market.

Probably the most interesting event in the history of copper during 1895 has been the transfer of a large interest in the Anaconda Company to foreign holders, who took one-quarter of the capital stock of \$30,000,000 at a price of \$30 per share, the par value being \$25. The Anaconda had always been a closely-held property, and the publication of reports by the company itself and by the purchasers' experts presented the first opportunity ever given to thoroughly realize the magnitude of this, the largest copper property in the world. The only mines to compete with it in resources and in present output of copper are the Rio Tinto in Spain, which comes second, and the Calumet & Hecla, Lake Superior, which is third.

THE NEW YORK COPPER MARKET IN 1895.

The great financial depression which visited our country during 1893 cast its shadows far into 1895. As during previous severe depressions, history repeated itself in this instance too, and it took a considerably longer time than could have been foreseen, even by the shrewdest business men, before the vitality of the country was restored to its fullest extent.

In the meantime the manufacturing communities were among those on whom the burden fell most heavily, and it was only by degrees that business could again be greatly extended. The unhealthy financial depression in which a great many of the large railroad systems found themselves after the panic, and which necessitated the greatest economy, had a marked influence on all metals, as for a long time only the most necessary repairs were made, while there was practically a suspension of new orders for a period of about 18 months. Building operations also were greatly affected, perhaps not so much in the larger towns on costly buildings, but in the country at large, both for manufacturing and private purposes.

Under all these adverse factors, copper had to suffer most severely, as was fully reported in our last year's review, and although some signs of a larger consumption were noticeable towards the end of 1894, it was not until the spring that consumption became considerably larger and quickly absorbed the stocks which had never been very large during the past two years. The main demand was for electric purposes, and wire-drawers found themselves busier and with more orders on their books than at any period before in the history of copper.

Enormous quantities of copper have been used for trolley wires, the extension of trolley roads in the suburbs of larger towns and connecting neighboring centers, and the conversion of horse railroads into electric lines having all at once made extraordinary progress.

Whether the construction of similar roads will continue at the same rate is a question difficult to answer, but it may be fairly assumed that it will not be quite as rapid as during 1895. A great many roads were projected and would have been built during 1893 and 1894 had it been possible to raise the necessary amounts of money at advantageous rates, and after this difficulty was overcome, the amount of work done during a period of twelve months was equal to that of 10 to 36 months in ordinary times. The most thickly populated neighborhoods of our country are now provided with trolley or cable roads.

A most interesting statement is found in the annual report of the President of the Western Union Telegraph Company for the year ending June 30th, 1895, in which it is stated that during the previous twelve months 15,748 miles of new wire were constructed, of which over 10,000 miles are of copper, "in accordance with our policy of re-placing the defective iron wires on our trunk routes with copper wires. This has been made practicable by the fully assured processes for the manufacture of hard-drawn copper, and important advantages are gained by using it." Nothing could more plainly show, nor put in a brighter light, the advantages of copper over iron wire than this statement from one of the largest consumers of wire—both of iron and copper.

Similar reports have been received from Europe, and the continued extension of the telephone system all over the world insures for years to come a very large consumption of copper in this direction.

For months past extensive trials have been going on with the view of utilizing the trolley system for general railroad purposes, and satisfactory results have been obtained by several companies. There may be some details which still require perfection, but in the main it is only a question of time when the introduction of electricity, replacing steam power, will revolutionize the railroad system of the world. This will again greatly extend the use of the metal.

Not alone for electric purposes, but in a great many other ways has the consumption of copper expanded. The brass and yellow metal trade has

been very good. The modern technique of war requires copper to a very large extent for weapons, cartridges and other military purposes, and the revival in the ship-building trade had a marked and beneficial influence. Not alone did Europe consume large quantities of the metal at all the large ship-yards, but our own industry has made most wonderful progress in this respect and, besides the many men-of-war which have been built in the United States during the past two years, two of the finest steamers now riding the Atlantic were built at the ship-yards of Cramp & Sons, in Philadelphia.

The demand for sulphate of copper during the past year was larger than ever, and unless all signs fail, consumption in future will be larger than it has ever been in the past. While thus the outlook for a steady demand for copper remains very good, production, especially in the United States, has of late shown signs of a not inconsiderable increase. The famous camp of Butte, Mont., has been exceedingly busy, and with the great progress which has been made of late in the smelting and refining process, handsome returns were made on the capital invested.

The Lake region in Michigan has, in conformity with its known conservatism, slowly but surely increased, and the cost-sheets of the main producers reflect great credit on the careful management of the different concerns.

Arizona also reports a heavier output, which is likely to increase during the next year, for the Old Dominion mine, which has been closed down for almost 12 months, and has since changed hands, will again become a producer. The Copper Queen mines, which have during the year been equipped with converters, which are known to give satisfactory results, are producing more than before, and the excellently managed United Verde Company is more and more pulling to the front. Besides, the smaller producers in that State are also gaining, even if not in the same proportion as their larger colleagues.

Among the other States, Colorado and Utah show increases, and from California larger supplies have to be expected during next year. Besides, the Republic of Mexico will more and more come into the foreground, as extensive works have been and are in course of erection in the States of Sonora and Aguas Calientes. British Columbia too is being eagerly prospected now, and appears to give fair promises.

Lake copper early in the year was quoted 9½c. per pound, and this price was fairly maintained until the period for the opening of navigation drew near, when a slight falling off in prices took place, and during the months of March and April 9½ @ 9¼ was freely accepted for large quantities. The production of electrolytic copper, which by that time had again increased, added largely to the supply of fine copper, but with the great consumption then experienced, especially for wire purposes, not much difficulty was experienced in selling. Besides, Europe was taking fairly large quantities, but the buying from this quarter was, as at all times during the year, conducted with great caution, and very often buyers exacted sacrifices from producers so far as prices were concerned.

In any case, during the months of March and April very large contracts were made, and the accumulation of Lake copper prior to the opening of navigation was quickly absorbed. The steamers could not bring the metal down quickly enough, and it all very readily found its way into manufacturers' shops or was exported. Under the circumstances it did not take long for the market to stiffen, and now a period of uninterrupted rise set in, which carried Lake copper up from about 9¼ at the end of April to 10½ at the end of May, 11½ the end of July and 12c. at the end of August. Whatever was offered found ready buyers, either for spot or forward deliveries, and such a veritable boom as the summer months experienced has not been seen for many a year past. Consumers seemed never to be satisfied, and, as usual, in similar periods, prices were driven up against themselves, so that it could not be prevented reaching a level, which to real and true friends of the industry became alarming. Thus while Europe was all along a ready buyer of our product, prices here were driven up far beyond the parity of those abroad. Speculation was at its height, and no means were too good or too bad to raise prices still higher. In Europe reports were eagerly spread that consumption here was so large that our own production would not suffice, and in order to make the story the more plausible, several hundred tons of copper were taken from warehouses on the other side and shipped to this side, where most of it was stored away to be reshipped later on when a suitable opportunity presented itself.

For some time past the activity of the mining stock markets in London and Paris, especially in South African mining enterprises, had been a source of envy to the brokers on this side, when all at once a large field for their operations was opened. Copper shares, mainly dealt in on the Boston Stock Exchange, experienced even larger fluctuations than during the time of the French Syndicate bubble, and the value of some of the shares was doubled, while some even exceeded their quotations earlier in the year by more than three times. The fact that this could not last forever was not lost sight of by those who had for years past been patiently awaiting an opportunity to get rid of some of their high-priced stocks, while on the other hand the appetite of new buyers appeared to have no bounds. The highest price for the shares was reached in August, and after copper became quieter and the market for the metal eased off somewhat, the decline was almost as rapid as the advance, and with the exception of the dividend-payers which have justly retained part of the advance, values have pretty nearly reached their former level. Meanwhile the active business in the metal continued, and with it the desire on the part of producers to constantly exact higher prices.

Toward the middle of September business in the raw metal began to fall off perceptibly. Prior to that the Calumet & Hecla Company had made a very large sale, said to be between 15,000,000 and 20,000,000 lbs. of copper, for delivery up to the end of the year, at 12c., and this filled the requirements of buyers for a long time to come. Values abroad were too low to admit of exports. Manufacturers were well covered with orders, but in the absence of new business did not wish to enlarge their holdings—on the contrary, tried to reduce their interests—and kept out of the market. Thus a long period of inactivity set in, seldom witnessed in such an important trade as copper. Many of the larger producers considered the crumbling off of prices as only temporary, and this was taken advantage of by one of the largest operators in the market to get rid of

enormous holdings of copper which he had accumulated, and which were now marketed, irrespective of price, mainly in Europe.

A large increase in the production of some of the main producers, principally Anaconda and Calumet, frightened buyers more and more, and thus, without any business of consequence being done, prices for Lake copper quickly receded from 12c. to 10½c. by the beginning of December.

As usual, during the latter month, there was hardly any demand on the part of consumers. The Presidential message on the Venezuela dispute caused quite a flurry on the Boston Stock Exchange, and copper shares experienced a heavy drop, which was partly recovered after the excitement had subsided a little. However, the disturbance of the money market and the threatening financial outlook, naturally adversely influenced prices of the raw material and values declined still further.

Within the last few days of December, it was reported that the Calumet & Hecla Company had made a sale to home manufacturers at 10c. per pound. The quantity involved is said to be 10,000,000 to 12,000,000 lbs.

In other grades the decline was even more marked. Electrolytic copper, which, in the fall, readily sold at 11½c. per pound, could be bought at 9½ 10c. at the end of December, and casting copper, which, earlier in the year was quoted at 9½c., and later sold as high as 11½c., declined to 9½c.

The statistical position of the article is considered a rather favorable one, and with a revival in business and subsequent better demand on the part of consumers, higher values may again be expected.

The following table shows the average prices in New York for each month of the last six years, the figures being taken from the weekly reports of the "Engineering and Mining Journal."

AVERAGE PRICE PER POUND OF LAKE COPPER AT NEW YORK.

Yr.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
1890.	14 8/10	14 3/33	14 5/90	14 1/90	15 1/25	16 0/100	16 8/90	15 4/100	17 0/100	16 9/100	16 8/100	15 9/100	15 7/50
1891.	14 7/5	14 5/90	14 0/90	13 7/50	13 2/20	13 0/100	13 0/90	12 2/100	12 5/100	12 2/50	11 0/100	10 6/25	12 6/25
1892.	11 0/100	10 6/25	10 3/75	11 5/100	11 6/25	11 8/75	11 5/90	11 5/100	11 1/25	11 5/100	11 8/75	12 3/75	11 5/50
1893.	12 1/25	12 0/90	11 8/75	11 3/75	11 0/100	11 0/100	10 8/75	0 0/100	9 8/75	9 7/50	10 0/100	10 2/50	10 7/50
1894.	10 1/25	9 6/25	9 8/13	9 5/100	9 8/100	8 9/38	9 0/100	9 1/25	9 4/100	9 8/75	9 6/100	10 8/100	9 5/60
1895.	10 0/100	10 0/90	9 7/50	9 7/50	10 2/50	10 6/25	11 2/50	12 0/100	12 2/50	12 0/100	11 0/100	10 5/100	10 7/60

THE LONDON COPPER MARKET IN 1895.

The New Year opened in downward tendency, the increase of 2,000 tons in the visible supplies of copper having brought out selling orders resulting in a fall of 12s. 6d. in g. m. b.'s, viz., to £40 12s. 6d. sharp cash. Later in the month there was a rally of a few shillings, followed by a fresh decline, though the total range of the fluctuations was on the whole very limited, the prevailing note being apathy, as shown in the limited volume of speculative business and the inertia of values. Refined copper remained steady with tough qualities ruling at about £43 to £43 15s. and best selected at about 15s. per ton higher. In America, on the other hand, things wore a decidedly firm aspect, Lake being held for 10c., the consumption, specially for electrical purposes, being very active and production proceeding on a reduced scale. This should, in the natural course of things, have given a lift to our market, but there were unfortunately some counteracting elements, as the very large American shipments (mostly in execution of old orders, it is true) and the unsatisfactory aspect of finances in the States, with the heavy gold shipments thence which excited apprehensions of large copper exports ensuing. The second fortnight of January, as a matter of fact, brought an increase of about 1,000 tons in the statistics, and under this influence February opened dull at £40 1s. 3d. g. m. b.'s s. c., and before the month closed the value had fallen half-a-crown below £39. Factors in this movement were the continuation of large shipments from the States, and more immediately still, Stock Exchange manipulations in connection with Rio Tinto shares. As to the market for consumers' copper, the general demand was poor, business being hampered by the prolonged frost and the manufactured trade (sheet, plates, tubes, etc.) being in a sorry plight. There was, however, some very important business done in fine copper (English best selected and Australian copper) with the English Admiralty, which took nearly 2,000 tons in all, while one large English smelting concern sold over 1,000 tons of tough and best selected chiefly to the Continent, which also took large quantities of electrolytic copper. Fine sorts consequently grew scarce and their value tended upward.

Lake had meanwhile declined to 9.62½c., which price was still dear in comparison with European values.

Throughout the month of March the g. m. b. market remained, on the whole, decidedly in a lethargic state, the advices from America being of a nature to check rather than encourage active interest in the article. The weaker silver market likewise had an adverse effect on copper values, and toward the middle of the month the market was affected by the falling due of prompts of the large balance of French syndicate stock realized three months previously. Cash g. m. b.'s were consequently depressed to £38 12s. 6d., but from this point rallied to £39 5s., assisted by an advance of over 3d. per ounce in the price of silver and by the anticipation of good statistics. Previous to that advance demand on the part of consumers was of the poorest, and the pressure of American offers, especially of cathodes, at low prices, coupled with the lack of orders and the unremunerative prices complained of by brass and copper manufacturers, sufficiently accounted for the hesitancy shown by consumers to cover anything beyond their present needs. The said rise in silver, due mainly to Chinese purchases, gave a momentary fillip to demand, resulting in business in manufactured copper for India and in refined sorts for home and continent.

At the beginning of April the improvement in g. m. b.'s was still in progress, £39 12s. 6d. being ultimately paid for spot; but the upward movement in silver having culminated in the quotation of 30½d. standard, and being followed by a relapse, copper followed suit, but only for a brief space, a potent factor for good making its appearance in the shape of a general revival of trade in the States and at home. In both countries there was quite an active demand for fine sorts, including electrolytic. The hardening tendency which this exerted upon prices of consumers' copper was enhanced by the fact that producers had in many cases sold the bulk of their make for forward delivery. Good business to place in India sheets, and Birmingham consumers, though still complaining

of unprofitable prices, were all decidedly better off for work than they were during the previous quarter, and were now, in fact, working full time, as against three-quarters time previously. Encouraged by the brighter outlook, speculators again began to take an interest in copper, and their purchases resulted in an advance to £40 13s. 9d. s. c.

May opened with further large sales of English copper, followed by the withdrawal of first-hands from the market, while the price of Lake in America was steadily advancing. The second week of the month was marked by greater excitement than at any moment since the time of the French Syndicate. The cause of this was the negotiations between the European and the American producers for the limitation of American exports to 60,000 tons per annum and the reduction of the European output by 7½%. While the American imports for the present year so far had not exceeded the rate proposed to be fixed as a limit, the announcement of the agreement being carried through inspired great confidence, the previous year's exports having greatly surpassed the figure named. A rapid rise ensued in g. m. b.'s from £40 13s. 9d. to £44 15s. 1d. and £45 10s., three months, when, to the general astonishment, came the news that one of the largest of the American producers declined to enter into the agreement. The disappointment of those who were so greatly misled by bull operators was intense, and selling became general, with the result that a drop of £3 took place in g. m. b.'s, while English and continental consumers, who had been buying freely, at once ceased purchasing. Lake, which had risen to 10.62½c., and of which very large quantities had been sold, now declined to 10.25c.

The various attempts subsequently made to take up the thread of the negotiations created a momentary flutter, but did more harm than good by unsettling the minds of some of the smaller speculators, though the general trade practically disregarded these manipulations, the more so as American shipments were proceeding on a moderate scale, while the intrinsic position of the article appeared good. A reaction to £44 s. c. and £44 10s., three months, ensued upon the fall above named, but the month closed with a fresh collapse due to the operations of certain speculators and to the lack of confidence thereby induced, and the value of spot on May 31 stood at £42 16s. 3d.

June opened with a brisk advance to £43 15s. s. c., but the value was again depressed to its former level by realizations and "bear" sales. Thenceforward the speculative market was subject until the end of the month to minor fluctuations, the close being at £42 8s. 9d. s. c.

Consumption continued active, but fresh orders were sparse and inquiry for refined copper was consequently not very active. Toward the middle of the month came the first sign of reaction from America, whence a quiet market and a reduction of 12½ points in the Lake price was reported. Statistics, too, were bad, the month of June showing a total increase of 4,000 tons.

Early in July things again began to wear a more cheerful aspect, and a revival of speculative demand led to a brisk advance in g. m. b.'s, which carried the value from £42 7s. 5d. to £43 7s. 6d. s. c. American reports also came firmly; but here, although consumption was admittedly good, while very little copper was offered, consumers themselves held aloof and seemed disposed to wait for lower prices. The Continent, however, bought freely at full prices, and these had risen considerably, following the gradual advance in America from 10.75 to 11, and then to 11.75c. for Lake. Meanwhile g. m. b.'s—from the above-named price (£43 7s. 6d.)—had risen to £45 11s. 3d., the cash value on July 31st. Despite somewhat extensive realizations at the higher figures, the market continued to rise during the first week in August, and £46 5s. was reached for cash g. m. b.'s demand both speculative and consumptive being brisk, while Lake copper had advanced to 12c.

A check was, however, given to this improvement by gold shipments from America, and the realizations of g. m. b.'s which ensued here, led to a relapse of 23s. 9d. per ton. The market, however, quickly took heart again, and an active speculative demand setting in, in which America joined, g. m. b. values rapidly recovered and touched £47 8s. 9d. before the month closed. In America the consumption appears to have been enormous, and large quantities of American copper, bars, ingots and electrolytic, were bought back and re-shipped from Liverpool and other ports to America, while several parcels of English copper, chiefly best selected and tough, were also bought and shipped to America. Meanwhile Lake had risen in New York to 12.25c., after a very large sale had been made at 12c. The demand for high conductivity wire had been very extensive indeed, and the purchases of electrolytic copper for this purpose had brought about quite a scarcity of this description.

September opened less strong, with the quotation for Lake nominally lower, and with America no longer a buyer here, while in Birmingham the demand was practically nil, and low prices, £51 for best selected, and £50 10s. for tough, were accepted for delivery in Birmingham, or equal g. m. b.'s receded to £46 3s. 9d., but a rally was caused by hopes that the English syndicate who had purchased one-fourth of the Anaconda share stock (with the intention of issuing the same in London) would take an active interest in supporting the copper market. The advance in pig iron also aided copper, which rose to £47 2s. 6d. for cash g. m. b.'s, but pig iron collapsing again, and no effectual support coming from the said syndicate, g. m. b.'s receded to £46 3s. 9d. s. c. America was now a rather freer seller of copper, but the month closed with good prospects, the Japanese Government having given out good orders for armaments and ships, which, with other important work, appear to have filled the order books of North country and Scotch engineers and shipbuilders for a long period in advance. Refined copper had become rather scarce, and the demand continued good, electrolytic copper for the Continent being particularly in request. The statistical position had improved during September to the extent of about 2,600 tons, and October opened in upward tendency with firmer cable news from America, whose offers of copper to Europe continued to be at full prices. From £46 10s. g. m. b.'s advanced during the first week of the month to £47 6s. 3d. s. c., but, although copper in itself was sound enough, the improvement was converted into a decline owing to extraneous influences, chiefly to the fall of values on the Stock Exchange, and to the unsettled state of the iron market; £45 17s. 6d. was eventually touched for s. c., which afterward rallied to £46 3s. 9d., and then fell rapidly to £45 on the closing day. The offer of the Anaconda shares alluded to above, to the public, toward the close of October, fell flat, and, taken together with the evidence of increasing readiness to sell

on the part of the Americans, tended also to discourage and depress our market, and early in November the collapse of African gold shares, the resulting weakness and panic on the Stock Exchange, and further, the serious Scotch labor disputes, all combined to induce heavy realizations of g. m. b.'s, and the value fell quickly from £45 5s. to £43 10s. s. c. Consumers, however, bought more freely at the lower prices, and the good mid-monthly statistics, showing a decrease of 2,400 tons in the visible supplies, gave a satisfactory indication of the intrinsic healthiness of the article. The Prime Minister's speech at the Guildhall inspired greater confidence in the political situation, which had created a certain degree of perturbation, and a recovery was thus induced to £44 7s. 6d. s. c. The better feeling was, however, unable to assert itself permanently against the widespread distrust in the financial and political situations, and against the apprehensions of heavier American shipments and lower American values. The offers from this latter source had grown very pressing and unduly low prices were accepted for electrolytic and other sorts. The effect on g. m. b.'s was a decline from £44 7s. 6d. to £42 7s. 6d.; a rally of £1 per ton was followed by a relapse to £43 3s. 9d.

During the present month (December) the market has, on the whole, been steady. The cash value of g. m. b.'s during the first fortnight has fluctuated very gently in the near neighborhood of £43, mostly a few shillings under that figure. No salient feature has marked the course of the market, which was devoid of all speculative elements. As to consumers' copper, a moderate business has taken place, American and English sellers meeting the market more readily. Consumptive demand is quiet, the approaching holidays and the prolonged deadlock in the relations between masters and men at Belfast and on the Clyde combining to check purchases.

GOLD AND SILVER PRODUCTION IN 1895.

The production of gold in the world has, for a few years past, been the most engrossing subject of discussion in the mineral industry. The partial disuse of silver as money throughout the world has greatly increased the demand for gold and the question whether, under the universal law, this increased demand has already or will eventually increase the value or purchasing power of gold has been an all-absorbing topic of discussion.

Efforts have been made by those who have maintained the sufficiency of gold to meet the monetary needs of the world to show that the world's production of the metal is increasing so rapidly that it now alone amounts annually to as much as the output of both gold and silver did only a few years ago; this might well be and yet in no way contradict the statement that the demand for gold has grown still more than its output and that at best the production is being abnormally stimulated by this demand and by the increasing value of the metal.

It is therefore very important to show with approximate accuracy, at this early date, what the world's output of gold and silver have been during the year just ended. The *Engineering and Mining Journal* has therefore collected preliminary statistics of the production of the precious metals in the chief producing countries. These statistics are based upon official figures for a portion in most cases for 11 months of the year 1895, and the output for the remainder of the year is estimated.

The final revised statistics will be published a little later in *The Mineral Industry*, Vol. IV., which is now in preparation. The following figures of production of gold and silver in the United States are from direct returns by the several refiners, and are very nearly exact. Those of Mexico are from the reports of the Mexican Mint and the exports of the metals and from special information secured for the *Engineering and Mining Journal*. The Canadian statistics are in part official returns. Those of Guiana are official figures for 11 months of the year.

The Russian figures are from official special reports of the deposits on the Russian Mint during 10½ months of the year 1895, and are consequently nearly complete and accurate.

South Africa is from official figures for 11 months and a close estimate for the remaining month.

The United States has once more resumed the first place among the gold producers of the world, the output of Australasia, which last year exceeded our own by a few thousand dollars, having increased less rapidly than ours. Africa takes the second place and Australasia is third, Russia retaining, as in 1894, the fourth place.

The total output of gold in the United States has reached approximately \$44,871,000, the increase being made up by gains in almost all the mining States. The greatest has been in Colorado where the activity in gold mining in all the older camps, the gold discoveries in Leadville, and the very active exploitation of the mines of Cripple Creek, the latest district, have raised production from \$9,549,731, to only \$15,000,000. Nearly one-half of this amount, or \$7,225,000 is from the Cripple Creek district alone. Leadville produced \$1,327,500. California has reached a total of about \$15,500,000, owing to the working of many new mines and the reopening of old ones, which were abandoned years ago, but many of which can be made to pay under the closer working and more economical methods of to-day. Arizona has largely increased its production, rising from \$1,991,000 in 1894 to about \$3,000,000 in 1895. Alaska also shows a substantial increase, nearly 45% in amount, and takes a high rank among the producing States. South Dakota, which produced less in 1894 than in 1893 has risen again very nearly to the output of the earlier year. Montana and Idaho show substantial gains, and considerable progress has been made in Oregon and Washington.

The silver production from domestic ores was somewhat less than in 1894, but there was a considerable increase in silver smelted or refined from imported ores and bullion, the total increase being small. The silver lead mines of Idaho have seen some vicissitudes owing to labor troubles, low prices and other causes, but, on the whole, have kept up their production better than might have been expected. The Montana silver mines have suffered somewhat from the greater attention given to gold properties. In Colorado the competition for ores among the smelters has assisted in keeping up production, though the output of the white metal has attracted little attention owing to the interest concentrated on the new gold districts. The great silver producers of Utah have kept steadily at work and their production aggregates a large amount. In Utah, as in Colorado, attention has been somewhat diverted from silver by the in-

creased working of the gold mines, and interest has turned to the large deposits of low-grade gold ores in the Mercur and the adjoining mines and to gold discoveries reported from other quarters.

In the South gold mining has made but little progress, and the returns show only a small gain over 1894. Much has been said and written about the gold mines of Alabama, but little actual work has been done, though there has been a good deal of prospecting. In Georgia and North Carolina no new work of importance has been reported, and the same may be said of South Carolina, while the output of Virginia is limited to a very small amount.

Special reports from our correspondents at Cripple Creek and Leadville will be found below.

Cripple Creek during the year has certainly made a remarkable record in every way; a record of which not even its most enthusiastic admirers ever dreamed; a record that has had no equal since the days of Leadville in the West. The population has nearly doubled, the number of producing mines has increased nearly one-hundred-fold. The post-office is now third in the State; the telephone is the busiest in the United States, and the railroad companies have all the freight they can handle. The Florence & Cripple Creek Railroad has 12 locomotives to 40 miles of track.

One of the best plants in the camp may be found at the C. O. D.—a substantial shaft house, steam hoist, compressor plant—erected at a cost of \$20,000.

Production.—A summary of production and improvements is as follows:

Hill.	No. of new steam hoists.	Surface improvements.	Development, Ft.	Output.
Gold.....	22	\$22,000	21,800	\$650,000
Globe.....	3	1,800	5,200	80,000
Haven.....	12	36,000	24,700	1,200,000
Bull.....	27	30,000	32,700	2,150,000
Battle.....	5	140,000	21,300	2,350,000
Squaw.....	6	9,000	3,250	175,000
Other hills.....	5	38,000	12,000	620,000
Total.....	80	\$276,800	125,950	\$7,225,000

The 125,950 ft. of development noted represents 23.85 miles.

The value of the product of the Leadville mines for 1895 will be \$8,522,082, which is a slight increase over the previous year and brings the production of the camp from 1879 to date up to \$204,000,000. The gold, silver and lead produced here during the past year give the following value: Gold, \$1,327,500; silver, \$5,079,840 (at the United States coining rates of \$1.29 per ounce); lead, \$1,705,027, counted at 3 cents per pound. The balance of the valuation is zinc and copper. The tonnage of the camp for the year is 330,933 tons, divided as follows: Lead carbonate ore, 70,429; iron ore, 86,243; sulphide ore, 116,975; silicious ore, 57,286. The output of Leadville's great gold property, the Little Johnnie, is given by the management as 47,360 tons of silicious ore.

MEXICO.

For the fiscal year ending June 30th, 1895, the exports of gold and silver from the Republic of Mexico, according to the Mexican Treasury returns, were as follows: Gold—In ores of all kinds, \$59,660; Mexican gold coins, \$164,113; gold bullion, \$4,139,645; total gold, \$4,363,418. Silver—In ores of all kinds, \$10,935,353; Mexican silver coins, \$17,077,119; silver bullion, \$18,803,876; silver sulphides, \$785,009; silver bearing slags, \$50,866; total silver, \$47,652,223. These silver values figures are given in Mexican dollars, the average value of which in our currency, at New York, during the year ending June 30th last, was \$0.5101. In the item of "gold bullion" is included the gold contained in the bars exported, and "silver bullion" includes the silver contained in the argentiferous lead and copper as exported. Comparisons with previous years can not be made, as this method of classification was adopted only in the past year.

To obtain a fairer estimate of the total gold and silver production of Mexico during the fiscal year the following additions should be made to the official figures, viz.: 15% of the total for exports made without returns, 0.5% used in the arts in Mexico; 1% retained in the banks; 2% in circulation; total, 18.5%. This is to a great extent a matter of conjecture. The 3% estimated as being retained by the banks and put into circulation represents that portion of the annual production applied to the increase of the circulating medium of the country. Checking the official figures of exports accordingly, the total production for the year ending June 30th, 1895, is approximately as follows: Gold, \$5,170,700; silver, \$56,257,884.

Our estimate of the production of gold in Mexico for the calendar year is \$5,600,000.

The report of the operations of the Mexican mints shows the following receipts for the fiscal year 1894-95: Fine gold, 3,991 kg., 498,109 gms.; valued at \$2,674,278, taking \$643.52 as the price per kilo. The receipts of fine silver were 981,222 kilos, 111 gms., valued at \$38,934,191, based on \$39,109 per kilo. The total coinage was: Gold, \$545,237; silver, \$27,628,981; copper, \$32,957,40.

In the mint accounts are specified the various metallurgical processes employed in obtaining the precious metals and the amounts produced by each. For the fiscal year 1894-95 they were as follows, including base bullion: Patio process, 654,949 kilos, 18 grms.; barrel process, 30,300 kilos, 932 grms.; lixiviation, 69,357 kilos, 170 grms.; smelting, 19,070,358 kilos, 600 grms.; pan amalgamation, 166,868 kilos, 536 grms.; total weight, 19,991,834 kilos, 256 grms. Compared with those of the preceding fiscal year they show decreases of 83,105 kilos, 148 grms. by the patio process, and of 19,153 kilos, 160 grms. by lixiviation; and increases of 1,370 kilos, 712 grms. by the barrel process; 15,533,028 kilos, 417 grms. by smelting, and 1,493 kilos, 875 grms. by pan amalgamation.

OTHER NORTH AMERICAN COUNTRIES.

Canada.—In British Columbia there has been great activity in mining and prospecting, both in gold and silver properties. Many new locations are reported, and the number of mines opened and actually worked is steadily increasing. Several British Columbia properties have been placed in London with companies which propose to work them on a large scale, and there has been a continued inflow of men and capital from the United States. A large part of the product from the mines comes to this country either in the form of ores sent to the smelters, or of base bullion to be refined.

The output of Ontario shows little change, and not much that is new

can be reported. Some work has been done in the new Rainy Lake and Seine River gold-fields, but not very much product has yet come forward.

Work has continued steadily in the gold mines of Nova Scotia, and the mining Department of that province reports to us that the total output for 1895 was 22,500 oz. gold.

SOUTH AMERICA.

The gold production of South America, so far as reports have been received, shows no material change. In British Guiana the production slightly increased over that of 1894, but did not quite reach the maximum attained in 1893. Estimating the December returns, the total amount was 4,400 kilos, valued at \$2,516,800.

In Brazil the Ouro Prieto Company continued to work steadily through the year. The St. John del Rey Gold Mining Company made many improvements in new machinery and methods of mining, but the full effect of these has not yet been felt, and the ore worked during the year was of lower grade than usual.

In Venezuela the new mines whose working was undertaken by El Callao Company have not met expectations, and the operations of that company have been limited. The Playa de Oro Company, in Ecuador, has been reorganized by the New York stockholders, but the output of gold is, and probably will continue to be small.

In silver mining there were no new developments of importance. The output of the Huanchaca mines in Bolivia was somewhat reduced by an unexpected influx of water early in the year, and by several accidents, but the other Bolivian mines continued their production, and the reports both from that country and Peru show but moderate increase over the totals of 1894; in that year, however, a great increase over 1893 was noted, the result of the opening of new railroad lines giving communication between the mines and the coast ports and cheapening the cost of fuel and supplies. Some improvements in machinery are also being made.

EUROPE.

No European country outside of Russia is a large gold producer. Germany holds the first place and Austria the second. No changes of importance are to be noted in them in 1895. Of silver, Germany is the chief producer, the metal coming from the mines of Freiberg and the Harz, and from the Mansfeld copper mines. The production of France and Spain, which come next in order, is obtained from the lead and zinc ores.

Russia.—In Russia (in which Asiatic Russia or Siberia is included) as in nearly all the other gold producing countries of the world, the output of the yellow metal in 1895, showed a notable increase. The extension of placer working in the Oural and Siberia has continued, and there has been a notable movement toward introducing improved methods and closer working than have heretofore been customary. During the year several companies were formed, in Russia itself and in France, for the purpose of working gold mines on a large scale.

The production may be expected to increase for some years to come. The rapid extension of the Siberian Railroad is not only opening new fields, but will, by reducing the cost of supplies, and facilitating the transportation and introduction of machinery, permit the working of deposits which have heretofore been considered of too low grade for profitable exploitation. The increase will be further aided by the growing importance of vein mining, to which more attention is being paid each year. So far the greater portion of the Russian gold output has been from placer workings.

The production of silver in Russia is not large; it varies slightly from year to year, but does not show any considerable increase.

We have obtained, through our esteemed correspondent in St. Petersburg, the official figures of the gold and silver registered in the Imperial Mint and its branches. These returns cover the years 1893 and 1894 in full, and the year 1895 up to November 15th. We give the figures in the table below, adding for 1895 the estimated amount necessary to bring the returns up to the close of the year.

Year.	Gold.		Silver.	
	Ounces.	Value.	Ounces.	Commercial Val.
1893	1,224,626	\$25,514,169	334,355	\$261,166
1894	1,185,875	24,138,664	273,647	172,398
1895	1,495,320	31,163,750	330,250	215,653

Commercial value of silver was 78 2c. per ounce in 1893; 63 0c. per ounce in 1894, and 65 3c. in 1895.

Under Russian law all gold and silver produced must be registered and brought to the Imperial Mint, which has agencies for its reception established at convenient points. The silver, which is mainly produced in the smelting works of Siberia, is probably closely so registered; but it is altogether possible that a considerable amount of gold is concealed, or otherwise fails to reach the mint. An allowance of 10% for this gold is probably within the mark; making this addition we have the output of gold for three years as follows:

	Fine oz.	Value.
1893	1,347,088	\$27,844,209
1894	1,304,407	26,942,193
1895	1,644,852	33,990,000

From these figures the increase of the production last year is seen to be, in value, \$7,056,998, or 26.2%, over the preceding year.

AUSTRALASIA.

The Australasian gold mines in 1895 continued the increase shown in the previous year though not quite in the same ratio. Our special reports from Australia, now overdue, have failed to reach us in time for this issue, so that the provisional figures of production, about \$44,000,000, which we estimated on previously acquired data, may be modified when these reports come to hand. Australasia, counted at \$44,000,000, was surpassed by both the United States and South Africa, so that the Australasian colonies dropped from the first to the third rank. As in 1894 a large part of the increase in production came from the extension of alluvial mining, though very good returns have been made by the

mines of Ballarat, Bendigo and other important districts, the general depression in business in Australia continued throughout the year, so that new investments of home capital were not marked except in Western Australia.

New South Wales, which showed an extraordinary increase in production in 1894, could not be expected to make as great a gain in 1895, but has probably held its own well. This colony is the chief silver producer, but has shown a decline in the output of the white metal. The fire in the Broken Hill Proprietary mines and other causes checked production slightly, though the losses have been less than was at first expected. The erection of works to treat the sulphide ores of Broken Hill is in progress.

Western Australia so far has proved disappointing, and the great returns expected from the Coolgardie and Murchison districts have not been realized. A very large amount of English money was put into the mines of this colony in 1895, since it shared to some extent with South Africa the distinction of being a fashion in London. Notwithstanding the money invested and spent in various ways, the working of the Coolgardie mines continues very difficult and costly, owing to lack of water and transportation.

New Zealand, whose production had been declining for several years, in 1895 attracted a new interest. The development of several mines on a large scale has been begun, and capital for others has been received, so that increased production may be expected in 1896.

ASIA.

As in previous years, the statistics from most Asiatic countries are largely conjectural, and it is only in the case of colonies under European governments that figures can be given with any approach to accuracy. The Siberian production is included in that of Russia.

British India.—The Colar gold-field in Mysore continues to be the only one where regular workings are in progress, and this field has shown a healthy growth during 1895. The monthly returns have shown in almost every instance a steady increase over 1894, and the larger companies have been able to pay steady dividends to their shareholders. The output of this field for four years past has been as below:

	Ounces.	Ounces.	
1892	163,140	1894	209,247
1893	210,455	1895	249,491

During the year there were two new companies—the Yerrakonda and the Mysore West & Wynaad—added to the list, but neither of them is a large producer as yet. The ores of the Colar field can, for the most part, be worked by amalgamation, and average from \$25 to \$35 in gold per ton. With increased depth of working there is said to be but little variation in the value.

China.—The amount and the sources of the gold production of China continue a matter of discussion among outsiders, and no addition has been made to our knowledge during the year. The same may be said of the silver. The war in China probably affected the production but little.

Japan.—The war has interfered to some extent with mining operations, but not sufficiently to make any important changes. The gold and silver production are not large.

Korea.—This country has been known as a gold producer only through the fact that it exports gold in some quantity, the amount reaching \$918,659 in 1893. The amount in 1894 did not increase; in 1895 it probably decreased, in consequence of the disturbed condition of the country.

Philippine Islands.—The operations of the two English companies, which in 1894 obtained concessions to work in the gold-fields, have continued, and developments have been made which, it is stated, will warrant the expenditure of a considerable amount in machinery. The companies are not yet producers on any large scale, but may be added to the list in 1896.

AFRICA.

The gold industry of the Transvaal, which for the time is not only the great African producer, but has also absorbed a very large share of the world's attention, has continued to grow, though perhaps not in as rapid a ratio as was expected. The extraordinary speculation based upon the Transvaal mines is spoken of elsewhere, and reference is made here only to the actual progress of the industry itself.

The development of the year has been wholly confined to the Witwatersrand district, so far as actual production is concerned. In that district the new work has been confined to the opening of some new mines, the further development of the older ones, and the erection of additional stamps, increasing the milling capacity.

The production of the Witwatersrand from the first commencement is given in the following table by months, as reported by the Johannesburg Chamber of Mines. As the Transvaal gold averages .816 fine, we have added to the totals the production reduced to 5 oz. at that ratio:

THE OUTPUT FROM THE WITWATERSRAND GOLD FIELDS.

	1893.	1895.	1895.
January	108,374	149,814	177,463
February	93,252	151,870	168,955
March	111,474	165,372	184,915
April	112,053	168,745	186,323
May	116,911	169,773	194,580
June	122,507	168,162	200,941
July	126,169	167,953	199,453
August	136,069	174,377	203,573
September	124,585	176,707	194,784
October	136,652	175,378	192,652
November	135,610	175,304	193,218
December	146,357	182,104	195,060
Total ounces	1,478,473	2,024,159	2,295,207
Fine ounces	1,206,434	1,651,714	1,872,889

The monthly production passed 200,000 oz. in June and reached the maximum of 203,573 oz. in August. From that point it declined slightly and did not again reach the level of 200,000 oz. The increase shown for the entire year over 1894 was 271,048 oz. (equivalent to 221,175 fine oz.), and the value of the output was \$33,712,616.

In October the number of stamps at work in the Witwatersrand mills reached 2,716, and the ore crushed was 309,800 tons. With the new

plants in course of erection the number of stamps must have reached 2,900 by the close of the year.

No important improvements have been made during the year, and the work has been mainly on the old lines of mill amalgamation with treatment of the tailings by the cyanide process and of the pyritic concentrates by chlorination. The use of Siemens-Halske electric process is gradually extending, but not very rapidly.

The outside districts of the Transvaal showed a slight decrease from 1894. There was a gain in the Lydenburg and Potchefstroom districts, but a loss in the De Kaap, where the output of the great Sheba mine showed a decrease of 21,870 oz., the result of injury to the mine and mill from disastrous floods early in the year. The production of the entire Transvaal, therefore, reached (estimating the month of December) a total of 2,530,200 oz., equivalent to 2,064,643 fine oz., of a value of \$42,676,171.

The proportion of gold obtained from the tailings by the cyanide process continued last year to be about 30% of the total output. Nearly all the companies have now worked off their old accumulations of tailings, and are now treating only those which come from the mills in the regular course of working.

The reduction of output in the later months of the year from the maximum reached in August seems to have come from several causes. The scarcity of water resulting from an unusually dry season; this has already passed away since heavy rains have recently fallen, and, moreover, it has caused several of the larger companies to provide against its recurrence by seeking out new sources of supply, establishing storage reservoirs and taking other precautions. The second cause is that several of the older and larger companies, including some whose ores have been among the best in the district, have included in their mill crushings an increasing proportion of the low grade "Main Reef" ores, thereby reducing the general grade and the amount of their output. The third cause, and the one likely to make the greatest difficulty in the future, as well as in the present, has been the scarcity of labor. The demand for native workmen has been largely increased by the opening of new mines and the extension of workings, and it has been wholly impossible to keep up the supply. The Johannesburg Chamber of Mines, aided by some of the principal companies, has made systematic efforts to secure men, but without very much success. The demand exceeds the apparent supply, and the result, for a time at least, must be not only a restriction of output, but also an increase in expenses resulting from the higher wages which must be paid.

An event of considerable importance to the Witwatersrand was the starting up in October of the Geldenhuis Deep, the first of what is known as the first range of deep level mines to begin raising and working ore. While it would, perhaps, be unfair to judge the result until after several months' operation, the indications so far obtained are that the banket bed at this point is yielding about half an ounce to the ton. While this is not far from the grade of most of the Witwatersrand ore, the result is below that which had been claimed for the new range of mines. Other mines of this series will come into operation during the first quarter of the new year.

The mines of the Chartered Company's territory do not yet appear as producers, and only small amounts were obtained from them during 1895. The cost of transportation is still so high and the difficulties in the way of obtaining machinery are so great that it has not been possible to begin working any of the numerous claims which have been taken up in Mashonaland and Matabeleland on a considerable scale.

UNITED STATES IMPORTS AND EXPORTS OF GOLD AND SILVER.

The imports and exports of gold and silver in the United States for six years past have been reported by the Bureau of Statistics of the Treasury Department as below. The value of gold is \$20.67 per ounce; silver is

IMPORTS AND EXPORTS OF GOLD AND SILVER.

Year.	Gold in ores.		Silver in ores.		Gold coin and bullion.		Silver coin and bullion.	
	Imports.	Exports.	Imports.	Exports.	Exports.	Imports.	Exports.	Imports.
1890.....	\$149,366	\$ 32,094	\$8,356,412	\$1,126,697	\$24,063,074	\$20,230,090	\$26,539,789	\$22,426,119
1891.....	323,269	100,918	9,717,443	1,090,514	79,085,581	44,970,110	27,692,879	18,192,750
1892.....	714,110	3,262	9,726,704	1,592,931	76,532,056	17,450,946	35,975,834	21,726,252
1893.....	518,183	276,933	9,490,892	.....	79,775,820	72,762,389	46,288,721	18,274,804
1894.....	743,046	231,413	7,809,186	.....	101,819,924	20,607,561	47,044,205	9,824,408
1895 (Dec. estimated)	1,825,847	385,223	12,450,000	202,120	95,939,639	32,829,563	52,877,148	10,509,548

counted at its commercial value, which averaged 65.28c. per fine ounce in 1895.

The statement for 1895 includes an estimate for the month of December, and on the returns from New York and San Francisco. In 1893 and 1894 the exports of gold and silver in ores were not reported separately, and the amounts given under gold for those years include both metals.

The receipts at the United States Assay Office in New York for the year 1895 were (approximately) \$38,350,000 in gold and 6,651,000 fine ounces silver. These receipts come from all parts of the country.

The course of the gold movement is fully commented on in the Financial Review of the year. The increased exports of silver have been chiefly due to the demand for the metal in foreign markets, and to sales in London and the East. The course of exports showed a change of considerable amount during the year; while the exports of silver from New York (nearly all of which go to London) for the eleven months showed an increase in 1895 over 1894 of \$4,463,706, those from San Francisco direct to China and Japan gained \$4,764,868.

The total amount of the coinage of the mints of the United States for six years past is shown in the following table, the total amounts being given at coinage value:

COINAGE OF THE MINTS OF THE UNITED STATES.

Year.	Gold.		Silver.		Year.	Gold.		Silver.	
	Gold.	Silver.	Gold.	Silver.		Year.	Gold.	Silver.	
1890..	\$20,467,183	\$39,202,995	1892..	\$4,787,223	12,641,078	1891..	\$99,474,913	\$6,024,898	
1891..	29,222,005	27,518,857	1893..	30,038,140	12,560,935	1895..	69,596,357	5,698,010	

The statement for 1895 is for eleven months. The gold coinage showed a decrease from the very large amount turned out in 1894, but it exceeded largely that of any other year given in the table.

The shipments of silver from London to the East, which are always an important element in the market have been reported as below by Messrs. Pixley & Abell, of London, for five years past:

	1891.	1892.	1893.	1894.	1895.
India.....	£4,462,754	£7,229,199	£7,052,271	£5,012,093	£3,535,596
China.....	211,985	147,882	2,390,969	2,728,771	1,630,023
The Straits.....	2,209,966	3,826,738	1,612,513	1,233,446	753,883
Total.....	£6,914,705	£11,203,820	£11,055,753	£8,964,310	£5,919,502

The decrease in shipments to India has been in part made up by remittances in other forms. The sale of Council bills in London this year up to December 21st showed an increase of £1,031,836. There has also been in India considerable amount of buying of "rupee paper," the silver obligations of the Indian government, though the total amount of these purchases cannot be ascertained. The decrease in the London exports to China has been largely made up by the shipments direct from San Francisco above referred to, and the remainder of the decrease can readily be accounted for by Chinese purchases of war material in Europe during the year.

The price of silver showed a greater degree of steadiness in 1895 than for several years past. The lowest price of the year in London, 27¹/₂d. per ounce, was recorded in January; the highest, 31¹/₂d. per ounce, in October. From the lowest, which was also the opening price, there was but little variation until March, when the quotation rose to 29¹/₂d. per ounce. In April there was a further rise to 30¹/₂d., and from that time until the opening of December the variations were between very narrow limits, the extremes being less than 1d. apart. Early in December there was a slight reaction and the price fell to 30d. per ounce, which was 1¹/₂d. below the maximum. From the fall there was a slight recovery, however, and the closing quotation is 30⁷/₈d. per ounce.

The New York price, as usual, followed the London quotation closely. The following table, prepared from the daily quotations given in the *Engineering and Mining Journal* shows the average prices of the year:

PRICES OF SILVER PER OUNCE, TROY, AT LONDON AND NEW YORK IN 1895.

	London. Price in Pence.			New York. Price in cents.		
	High-est.	Low-est.	Aver- age.	High-est.	Low-est.	Aver- age.
January.....	27.4375	27.1875	27.3588	60.0000	59.5000	59.6875
February.....	27.6875	27.2500	27.4700	60.3750	59.1250	59.8967
March.....	29.7500	27.6250	28.5317	65.7500	60.3750	61.9760
April.....	30.8750	29.3750	30.3881	67.5000	65.6250	66.6050
May.....	30.8750	30.1875	30.6134	67.1250	66.0000	66.7548
June.....	30.8125	30.1875	30.4687	67.0000	66.1250	66.6100
July.....	30.6250	30.1875	30.4832	67.6250	66.0000	66.7152
August.....	30.5625	30.3125	30.3967	67.0000	66.2500	66.6065
September.....	30.5625	30.4375	30.5365	67.1250	66.7800	66.9000
October.....	31.1875	30.3125	30.8944	68.5000	67.0000	67.6435
November.....	30.9375	30.6250	30.7925	67.7500	67.0000	67.3950
December.....	30.6875	30.0000	30.4000	67.1250	66.0000	66.4720
Year.....	31.1875	27.1875	29.5300	68.5000	59.1250	65.2824

The prices in London are always per sterling ounce, that is for metal .925 fine. The New York quotations are always per fine ounce, or for pure silver.

In 1894 the average price for the year in London was 29.13d., the lowest monthly average for the year having been 27.78d. in December, and the highest, 31.41d. in November. The average price for the year in New York was 63c.

The speculative element in the silver market during the year was comparatively small. What speculation there was appears to have been based chiefly on a prospective demand from the East, and on the possible requirement of a large amount of silver for the settlement of the Chinese indemnity payments to Japan after the conclusion of the war between these countries. The payment of the first installment of the indemnity in gold, and the probable use of a large part of the amount in Europe disposed of the assumed demand; but the effect on the silver market was not serious, showing that there was but little speculation.

The market was, in fact, carefully handled by the larger producers, and at no time during the year were supplies furnished in excess of the probable demand. The steadiness of prices was largely due to this careful management.

The movement of gold and silver in Great Britain up to November 30th, is given by the Board of Trade returns as below:

	Gold		Silver	
	1894.	1895.	1894.	1895.
Imports.....	£25,977,682	£31,881,559	£10,290,114	£9,881,925
Exports.....	13,235,423	19,713,911	11,454,242	9,579,504
Excess.....	£12,742,259	£12,167,648	£1,164,128	£1,302,421

The large increase in gold imported this year was more than balanced by that in exports, the surplus retained showing a decrease of £574,611, or 4.3% from last year.

THE IRON TRADE OF THE UNITED STATES IN 1895.

The history of the iron trade in the United States in 1895 shows a period of agitation and of sharp fluctuations, the changes being quite as marked as in 1893 and 1894, but in the reverse direction. In 1893 the first half of the year showed a large production, but a somewhat halting and uncertain market; the second half, after the beginning of the currency panic in June, showed a rapid and continuous fall in demand, in prices and in output as furnaces and mills closed down, one after another, under the stress of the times. In 1894 the depth of the reaction in prices was reached, and about the middle of the year production was at its lowest level. In the latter half of the year a somewhat slow and hesitating recovery began, which gradually gained impetus, and the year closed with a marked improvement and the promise of continued gains in the future.

The year 1895 opened with less activity and more uncertainty as to the future than had been anticipated in the closing months of its predecessor. The tariff question had been settled and taken out of the way, but the continued delay of Congress in acting upon the currency question and the uncertainty as to future values depressed business generally, and in the earlier months of the year there was a slight decline in production, while prices gained either very slowly or not at all. The revival of confidence which followed the closing of the Syndicate contract for the government bonds at the close of February, when business men began to realize the fact that the government was at once ready and able to maintain the public credit, at first affected the iron trade slowly, and was manifested rather in the appreciation of prices and the diminution of stocks than in any immediate increase in production. February had shown an actual decrease in the rate of production of raw iron and steel, as the makers hesitated as to the future; while from March to June the production continued at a nearly even level, notwithstanding continued inquiries for material and other manifestations of increasing demand. The first half of the year had almost closed before the active list of blast furnaces much surpassed the point attained six months before.

In June, however, the improvement in general business had so far advanced, the demand for finished products had so increased and the disposition to undertake new construction had become so general, that there was no longer any hesitation. It became evident that there would be a demand which would tax the resources of the producers of raw material and would speedily exhaust the existing stocks. The manufacturers of finished material in its various forms came into the market to secure supplies, and began to be urgent in their demands. As July opened a genuine "boom" was well under way; prices were going up rapidly and production was gaining at an unprecedented rate. As usual at such periods, the conditions of the market increased the anxiety of buyers and their disposition to supply themselves before a further rise should come; at the same time the element of speculation entered in, and operators for a rise are understood to have bought very considerable quantities of iron for future delivery. Under these circumstances the plants which had been able to keep at work during the depression enlarged their operations and put all their available capacity at work; others which had suspended started up, and as demand was still maintained still others were brought in, until the output reached nearly the producing limit of the available plants.

The rise in prices thus briefly sketched, while it affected more or less all branches of the trade, was most marked and most active in steel billets. We have frequently called attention in the columns of "The Engineering and Mining Journal" to the extent to which steel has replaced wrought and cast iron, and the result has been that steel billets have become almost the foundation of the trade in finished material and to a great degree the barometer which indicates its condition. Accordingly we find that the first marked rise and the subsequent speculative "boom" was shown chiefly in steel billets and Bessemer pig iron, and while there was a very considerable increase in prices of other products, it was much less abrupt and later was much better maintained.

Rapid as was the gain in production briefly sketched above, it did not seem to surpass that in demand, and throughout the third quarter of the year the prices were not only well maintained, but continued to rise, and the readiness with which the output was taken up showed no sign of decreasing. By September the production of pig iron had reached a rate equivalent to over 10,500,000 tons a year, which was the highest point on record, but there was no cessation in the growing activity and apparently none in the demand, since the output was absorbed as fast as it came on the market and stocks decreased somewhat rather than increased.

In September, when the highest point of the rise was reached, steel billets which had started in January at \$14.75 per ton at mill had reached a quotation of \$24.50, showing an appreciation of \$9.75, or about 66%; while Bessemer pig iron had shown a still greater proportional gain, from \$9.88 to \$17.25, an advance of \$7.37, or nearly 75%. The "boom" then showed signs of weakening, and a sharp break followed, prices for several weeks falling rapidly. At first it seemed as if this reaction had been caused by a cessation of the demand. This proved to be the case, however, only to a certain extent; a number of large consumers were supplied for their immediate needs, it is true, but orders continued to come in, and both mills and furnaces continued steadily at work. In reality the break was due in part to the loss of the speculative element in the market, which had carried prices further than the situation really warranted, and in part to the general conviction that the continued entrance of new producers into the market would certainly prevent any scarcity of supplies, and would in time result in an oversupply, which must inevitably restore a lower level of prices. It is almost certain also that the reaction was in part due to the combined action of a number of large buyers, who aided in the attack upon the speculators, which met with a certain degree of success. The reaction once started continued, with some slight checks, and at the present time the price of steel billets ranges about \$18.25 at mill, and of Bessemer pig about \$12.75 at furnace. In spite of the drop from the highest point, both of these products show a substantial gain—of 23.7% and 29.1% respectively—over the opening prices of the year.

The speculative element in the market during the latter half of the year was confined almost entirely to steel billets and Bessemer pig. Those products were carried to the highest point and suffered from the succeeding reaction almost alone. The prices of foundry irons showed a steady rise from the beginning of the business improvement, and when the fall in Bessemer pig came in September they retained the advance and held it substantially until the close of the year. The same thing may be said of almost all forms of finished productions. Bar iron, structural iron and steel, merchant steel and the other forms in which the market is supplied have advanced steadily in spite of a

great increase in production, and in almost all cases the prices are still close to the highest point reached during the year.

Another evidence of the largely speculative nature of the billet and Bessemer market is the fact that the production of pig iron has continued to increase steadily, notwithstanding the much-talked-of "reaction," and that this increase has been taken up without difficulty, the stocks reported on hand at the close of November being rather smaller than usual. Although, also, December is not generally a very active month, the production of pig iron, which in November had reached the rate of 11,500,000 tons yearly, continued through that month at substantially the same rate.

In considering the general advance in prices it is to be remembered that a very large proportion of this went directly to the benefit of the iron makers. A very large part of the Bessemer pig produced during the second half of the year, for instance, was made from ore supplied at low rates under contracts made early in the year. Advances were made in prices of coke, but not until some time after iron prices began to go up; in many plants advances were made in wages also, but these formed only a small part of the total cost. The probability is that much of the raw iron sold cost the operators but little more than when prices were ruling at their lowest point. In the coming year this will be entirely changed, and prices of ore and fuel will be on a level adjusted to the higher range of iron.

During the closing six weeks of the year the general iron market has been in what can only be described as a waiting condition. The concerted raid on prices which began in September, and which succeeded, as has been said above, in shaking out the purely speculative element in the market, and in bringing quotations down from the high point to which that element had carried them, succeeded, with the aid of some of the self-constituted "organs" of the trade, in arousing in buyers of raw material expectations of a decided fall in prices, and led them to believe that by holding off until the latest moment they could secure their supplies for next year at the fall. This has been done to a large extent, but without producing the expected effect. On the other hand, nearly all the producers have been so fully employed that they were in a condition to hold out and not under the necessity of soliciting business, except in exceptional cases. Again, the furnace-men claim, and apparently with reason, that they must work next year on an entirely different basis. Higher prices for fuel are the general rule, and while ore contracts for next season have not been closed, as a rule, there is no doubt that they must be made at higher prices than those ruling a year ago. Wages generally are higher, and all the elements which go to make up the cost of a ton of pig iron cost more. At present the advantage seems to be somewhat on the side of the producers, and unless there is a slackening of business or a return to panic conditions, which does not at present seem at all probable, buyers will have to compromise on a basis which will be largely in favor of the sellers, though some degree of concession may be expected from the latter.

One considerable element of demand has been largely absent from the market during 1895. Not many years ago the railroad purchases were almost the ruling element in the iron trade. The rapid extension of the use of iron and steel in building construction and for other purposes has reduced the railroad trade in relative rank and importance, although it remains large in absolute amount. The railroads felt the effects of the business depression very severely, and postponed all purchases and renewals as a rule, so that they have made very small purchases. In November and December a large number of orders for cars were placed, and some contracts for locomotives also; the rail orders, however, have been on a limited scale, largely because of the mistaken policy of the steel rail combination. At the opening of the year the price for standard sections steel rails was \$22 per ton at mill and this quotation was continued up to June, orders, however, being very light, as the railroads had not yet recovered sufficiently from the depression to undertake renewals on any considerable scale, and the construction of new lines was very small. On June 30th a meeting of the rail-makers was held, and as the growing business improvement was then manifest, an increase to \$24 per ton at mill was ordered. To this, perhaps, no serious objection would have been offered, as prices of other descriptions of iron and steel had begun to rise, though the cost of fuel and raw materials to most of the rail-makers was practically unchanged. The combination was not satisfied, however, and three months later, in September, another meeting was held, at which the price was raised to \$28 per ton at mill. This action was taken in face of the fact that orders for rails continued to be much lighter than had been expected, and its direct effect has been to discourage purchases. The combination, in its eagerness for profit, probably overlooked two important facts: first, that the recovery in earnings had not yet passed the point which required strict economy in expenses; and second, that the railroad tracks are now very largely laid with steel and that renewals can be postponed for a certain length of time without seriously compromising the safety of operation. The result has been that the rail business has not shown the same growth as other branches of the trade; a few of the great companies—like the Pennsylvania—have placed their orders, though on a restricted scale, while many companies have held out altogether. With regard to the rate, it must be remembered that rails are almost the simplest and least costly form in which finished steel can be put upon the market, and that the profit upon their manufacture at the present price is out of all proportion to that obtained on other products under normal conditions.

The combination, however, has continued to control the trade absolutely. It has been lately reported that it has made arrangements by which the large new plant of the Ohio Steel Company at Youngstown, if it does not join the combination, will at least keep out of the market. The report is credible, and it is supported by the fact that the concern in question is making no rails.

As affecting the rail market, it is to be noted that the construction of new railroad lines fell during 1895 to a lower point than in any year of the past thirty. The total new mileage built during the year, as collected and estimated by the "Railroad Gazette," was 1,300 miles, or considerably less than that constructed in 1894, when 1,760 miles were reported. It must be remembered that it takes some time to carry out a railroad project to completion, and that in the first year of depression there are generally a number of lines partially built, for the construction of which arrangements have been made and which must be carried out. The low mileage of 1895, therefore, really reflects the extreme depression of the previous year.

To some extent the rail demand from the steam railroads was made up by the increased construction of electric railroads. The additions to electric lines in 1895 were about 1,800 miles, against 1,500 miles in 1894. Not all of the mileage reckoned was new; probably one-half of it was roads which had previously used animal motive power, so that the demand for new rails was less than would appear at first sight. There was, however, an actual increase in new electric construction of about 400 miles.

The growth of electric railroads promises to furnish a continually growing demand upon the rail mills. Not only is the building of new lines going on rapidly, but it is found that renewals are required more frequently than on steam roads. The present construction, in which the heavy motors are carried on the axle and all the shocks of rotation are communicated directly to the track without the interposition of springs, is particularly trying, and the life of the heaviest steel rails yet used is found to be much shorter than even on the steam lines running the heaviest locomotives at high speeds.

It may be noted that in the English market steel rails were selling a year ago at \$17.50 per ton at mill, and remained at that price for the greater part of the year, while billets were selling at \$14.50 per ton, or a difference of only \$3 per ton. A rapid rise began in August and rails are now quoted at \$23.50. This rise has been due chiefly to a large demand from India and other countries, and to unusual orders for renewals from home lines, and it is not expected that it can be held after the present pressure to buy has passed. Already it has been the means of sending some foreign orders to Belgian and German makers.

The iron trade throughout the year has suffered little from labor troubles. The increase in business and the general rise in prices permitted a very general rise in wages also, and almost everywhere at least a part of the reductions made in 1893 and 1894 has been restored. There has been but little of the agitation and disturbance which have affected the bituminous coal trade to so great an extent.

PRODUCTION IN 1895.

Pig Iron.—The production of pig iron by months for the past three years is given in the following table, in which the fluctuations of the trade can readily be traced. The quantities given are in gross tons. The table also shows the kind of iron produced, classified by the fuel used, and the number of furnaces in blast at the opening of each month.

Month.	1893.		1894.		1895.	
	Furnaces		Furnaces		Furnaces	
	Number.	Tons.	Number.	Tons.	Number.	Tons.
January	259	766,225	137	447,723	185	762,474
February	259	719,975	128	406,443	181	641,550
March	256	746,151	134	515,137	172	688,179
April	259	706,388	144	571,784	171	666,315
May	255	786,470	124	472,863	175	664,600
June	243	778,069	91	304,003	172	664,449
First half-year		4,562,918		2,717,983		4,087,553
July	230	634,135	109	411,500	187	728,156
August	174	497,067	136	539,540	203	764,855
September	126	381,340	169	694,374	219	881,400
October	116	325,826	172	717,691	228	916,630
November	122	351,590	186	761,251	238	959,933
December	130	371,596	188	814,449	244	1,068,104
Second half-year		2,561,584		3,339,405		5,259,078
Totals for the year		7,124,502		6,657,388		9,346,636
Fuel Used.			1893—Tons.	1894—Tons.	1895—Tons.	
Anthracite			1,947,529	914,742	1,276,936	
Coke			5,390,184	5,520,234	7,845,251	
Charcoal			386,789	222,432	224,629	
Totals			7,124,502	6,657,388	9,346,606	

The production of the last six months of 1895 is estimated from the number of the furnaces in blast and their average weekly capacity. Although there were many changes during that period, it is believed to be close to the actual output.

The weekly capacity, as those familiar with the trade well know, does not always express the actual production, being, as a rule, slightly above the real output. During the earlier part of 1895 and up to September this rule held good as usual, but during the stress of the closing months of the year most of the furnaces were driven to their full capacity, and it is probable that the amount of pig iron made was above rather than below the amount expressed in the table.

This table requires but little further comment. It may be noted, however, that the production reported in December is generally above the average, as the furnace statements in that month generally exceed their reported capacity.

It is interesting to note the variations in the average furnace output. In January, 1893, the average monthly production per furnace was 3,065 tons; in October of the same year it was 2,809 tons. In March, 1894, it was 3,844 tons, and in October 4,173 tons. In January of 1895 it was 4,121 tons, in July it was 3,894 tons, in October 4,020 tons and in December 4,132 tons. While there is a tendency to increase the size of furnaces, it may be said that in periods of low prices and depression it is usually the larger furnaces which are able to keep at work, because they can be more economically operated.

The output for 1895 puts the United States again in the position of the leading iron-making nation of the world. In 1894 Great Britain led this country by about 600,000 tons, but in 1895 the British output has shown only a small increase.

Large as the increase in output over 1894 shown by the anthracite furnaces was, it still remained much below any previous year, and was only 58.4% of that made with this fuel in 1890. The fact is that the anthracite furnaces are steadily declining in relative importance under the competition of the Western and Southern plants, which have access to cheaper supplies of fuel and ore. It is not probable that they will ever disappear entirely, but the time when the blast furnaces of the Lehigh and Schuylkill valleys and Northwestern New Jersey were of leading importance in the trade has long since passed away. A supply of cheap iron ore of good quality from Cuba or other countries would maintain the activity of some of the plants located on or near the seaboard, but otherwise they will have to withdraw from the market except in seasons when demand is good and prices fairly high.

The charcoal iron industry is also a declining one. The slight gain shown in 1895 over the preceding year does not by any means compensate for the

continuous decrease of preceding years. The charcoal furnaces as a rule cannot compete with the makers of coke iron, and their number will probably continue to decrease until the list includes only a few making brands of high-priced iron for special purposes.

Finished Iron and Steel.—The production of finished iron has shown a fair increase, less marked than that of pig iron, because wrought iron is gradually ceasing to compete with steel in many forms of production. The cheapness with which Bessemer and open-hearth steels can be produced and the improvements in quality made in recent years have given them very great advantages in the competition, before which the older material is gradually giving way.

While we have not yet the exact figures for the production of steel, the increase was large and the output exceeded the maximum of 4,927,581 tons which was reached in 1892. It is to be noted that in the years of depression the output of steel did not decrease to as great a degree as might have been expected, nor in an equal ratio with that of pig iron. The fact is that the growing use of steel for construction and other purposes to some extent offsets the general diminution in demand.

Iron Ore.—The supplies of iron ore from Lake Superior, through their abundance and quality and the wide distribution given them by the cheap lake transportation, have gradually come to rule the market, and their output shows better than any other figures which could be given, the condition of the trade. In 1894 the region suffered from the general rule of light demand and low prices. The production was greater than in 1893, but was 1,326,000 tons below that of 1892, while the prices were lower than ever before known, a careful average showing that the rate on Lake Erie docks varied from \$3.35 per ton for the best Minnesota hard 67% Bessemer ore, down to \$1.70 for 58% non-Bessemer Menominee ore. A very large quantity of ore was contracted for at \$2.75 delivered on Lake Erie docks.

The following tables show the shipments of Lake Superior ore for six years past. In the figures for 1895 the rail shipments and the distribution by ranges are partly estimated:

SHIPMENTS OF LAKE SUPERIOR ORE BY RANGES FOR SIX YEARS.

Year.	Marquette.	Menominee	Gogebic.	Vermilion.	Mesabi.	Totals.
1890	2,993,664	2,282,237	2,847,786	890,014	.....	9,003,701
1891	2,511,395	1,843,326	1,848,721	891,539	.....	7,094,981
1892	2,666,856	2,361,499	2,973,993	1,167,650	4,245	9,074,243
1893	1,829,053	1,466,197	1,329,464	820,621	613,620	6,058,955
1894	2,058,683	1,139,273	1,810,200	948,514	1,792,172	7,748,832
1895	2,085,000	1,985,000	2,550,000	1,085,000	2,795,000	10,500,000
Totals from opening of ranges	43,863,293	21,369,220	18,386,976	8,139,308	5,205,037	93,544,434

SHIPMENTS OF LAKE SUPERIOR IRON ORE BY PORTS FOR SIX YEARS.

Year.	Marquette.	Esca-naba.	Glad-stone.	Ashland.	Two Har-bors.	Duluth and Superior.	Total Lake.	Rail.	Totals.
1890	1,307,395	3,714,662	91,061	2,123,556	826,063	.....	8,062,767	940,634	9,003,401
1891	1,056,027	3,058,590	177,866	1,261,658	890,299	.....	6,444,440	651,541	7,094,981
1892	1,026,338	4,010,085	115,886	2,223,083	1,165,076	4,245	8,545,313	528,930	9,074,243
1893	1,086,334	2,048,981	203,585	1,117,524	903,329	520,565	5,880,918	178,037	6,058,955
1894	1,424,469	1,657,340	79,169	1,731,703	1,373,344	1,367,286	7,633,991	115,841	7,748,832
1895	1,079,485	2,860,172	109,211	2,350,219	2,118,156	1,716,667	10,233,910	260,000	10,500,000

The increase in shipments in 1895 over 1894 was therefore 2,751,068 tons, or 35.5%. The tonnage of 1895 was the largest ever shipped from the Lake Superior mines. The actual shipments do not represent the whole of the consumption, since the stocks at Lake Erie ports were less by 418,000 tons at the close of the season in 1895 than in the preceding year. The total consumption may therefore be estimated at very nearly 11,000,000 tons.

The following table—for the figures in which we are indebted to the "Iron Trade Review" of Cleveland—shows the receipts of iron ore at Lake Erie ports for two seasons and the stock on docks December 1st in each year. This stock is not unsold ore, but a large part of it is under contract and waiting shipment by rail to furnaces.

RECEIPTS OF IRON ORE AT LAKE ERIE PORTS, 1894 AND 1895.

Port.	1894.		1895.	
	Receipts.	Stock Dec. 1.	Receipts.	Stock Dec. 1.
Toledo	158,384	96,157	260,730	113,132
Sandusky	23,043	77,004	12,361	34,375
Huron	172,775	147,632	146,442	101,000
Lorain	150,424	223,733	214,219	224,264
Cleveland	1,624,573	1,441,785	2,312,370	1,200,792
Fairport	976,222	660,980	914,617	605,470
Ashtabula	1,987,732	1,439,119	2,474,791	1,301,302
Conneaut	237,905	199,365	244,967	292,460
Erie	624,438	454,233	811,989	335,718
Buffalo and Tonawanda	395,339	94,239	719,742	207,199
Totals	6,350,825	4,834,247	8,112,228	4,415,712

While a considerable part of the ore sent down this year was on season contracts made at the low rates ruling at the opening of the year, a large amount must have been paid for at the higher prices resulting from the increase in demand which was not anticipated at the opening of the season. Not only did new buyers come into the market, but many who had season contracts were forced to increase their orders largely. Before the close of the season Minnesota hard Bessemer ore was sold in Cleveland at \$5, and Gogebic Bessemer at \$4.25 to \$4.40. The increase in price did not all go to the mine-owners, however, for the greatly enlarged demand for tonnage presented an opportunity which vessel-owners were not slow to take. At the opening of the season many charters were made at 75c. to 80c. per ton from Duluth to Cleveland, but before its close as high as \$1.75 per ton had been asked and paid.

The ore rates for 1896 are still an open question and few or no contracts have yet been closed; in fact, negotiations have hardly been begun. It is probable that prices will be secured which will leave a good profit to the mine-owners.

Lake rates can hardly be as high, as arrangements have already been made for a large increase in the number of carriers available for the ore trade next season.

Toward the close of the season a strike brought about by the Ishpeming Miners' Union interrupted shipments from the Marquette and Menominee ranges for about four weeks. The deficit thus caused was partly made up by hurrying work after the strike was settled, but the loss in tonnage was considerable.

The local iron ore mines throughout New Jersey and Pennsylvania showed a great increase in activity throughout the year. Similar reports come from the South. In Alabama the activity in iron mining has been unchecked. In Virginia a number of mines which had been closed down have been reopened to supply the demands of local furnaces. While it is impossible at this early date to give figures, the output of iron ores has undoubtedly shown an increase of more than 30% over 1894.

The demands of the Eastern coke and anthracite furnaces for Bessemer ore, however, could not be fully met from local sources, and imports of iron ore show a large increase. For the nine months to the end of September the imports reported at all United States ports were 287,429 tons, and the arrivals at Philadelphia and Baltimore—where nearly all the ore imported is received—for the last quarter have brought the totals up to 468,000 tons, against a total of 167,307 tons for 1894. Nearly all of this ore was for furnaces in the Lehigh and Susquehanna valleys. The supply was drawn chiefly from Cuba and Spain, but in December several cargoes of Algerian ore were received. The revolution in Cuba has prevented the mines of the island from meeting the demand upon them, and several large contracts for Spanish ores have been made for 1896 delivery.

The production of iron ore in Alabama for the year 1895 was 1,458,119 tons, of which 1,200,292 tons were red ore and 247,827 tons brown ore. The output of iron ore in Georgia and Tennessee shows a large increase, though the exact figures are not yet attainable.

The production of pig iron in the Birmingham district in 1895 was 820,707 tons, showing a substantial gain over 1894.

Conclusion.—The summary given above shows the conditions under which the iron trade has been conducted during 1895. The year 1896 opens with the prospect of large demand and production at a range of prices somewhat below the highest level of the past year, but still sufficient to permit well-managed plants a fair profit, in spite of increased cost of ores, fuel and labor. The element of "boom" which followed the rebound from the panic depression is gone, but there remains a demand which, should no contingencies now unforeseen arise, ought to give the iron trade a fairly prosperous season in all its branches. The solid common sense of the country will doubtless soon overcome the difficulties caused by the "war scare" of the closing months of the year, and it may indeed be of service by defining the issue between business and politics and showing the necessity of subordinating the latter to the former.

THE CLEVELAND IRON ORE MARKET IN 1895.

BY OUR SPECIAL CORRESPONDENT.

The year 1895 was full of surprises to the iron ore trade. The year opened with the trade terribly depressed. Furnace-men for a year or two had been buying ore from hand to mouth, and as the price kept dropping in 1893 and 1894 they found the practice advantageous. At the close of 1894 two large mines had gone out of business and others were on the verge of suspension. There were no signs of hope in the future. The mining companies held conferences for mutual protection and some of the newspapers talked of a pool among them. The conferences were attended by representatives of all the old Bessemer producing companies, and the Mesabi producers were the only factors to the high grade on market who did not participate. For nearly three months these meetings kept up at intervals, and late in March the producers announced to their customers a schedule of prices for the year 1895. It was stated that these prices would prevail throughout the year, so that buyers from time to time would get no advantage. The scale adopted was an advance of from 10c. to 25c. per ton over the prices of 1894, usually a 10c. to 15c. rise. Norrie was quoted at \$2.90, Aurora at \$3, Chandler \$3.05, Chapin \$2.55.

It was estimated by the ore-men that the total output for 1895 would probably not greatly exceed the 7,750,000 tons production of 1894. There were on the Lake Erie docks May 1st, 1895, about 2,640,000 tons of unsold ore, a slight increase over the previous year. Most of this consisted of non-Bessemer, which had had a very slow sale in 1894. The ore-men estimated that a maximum of 7,000,000 tons of Bessemer might be produced during 1895. Of this it was computed 2,500,000 might be conceded to the Mesabi Range, the total production of the latter in 1894 having been nearly 1,800,000 tons. Therefore 4,500,000 was thought to be a fair maximum output of the old Bessemer companies for 1885, and the coming year's work was gauged to that basis.

Soon after this announcement of prices the furnace-men began to make contracts for their ore material, and by May 1st it was estimated that 5,000,000 tons of Bessemer had been sold, of which 1,200,000 tons were Mesabi ores, some 200,000 non-Bessemer and the balance old Bessemer.

The season of navigation opened and the ore began coming down in fair volume. Quite a block of the ore had been contracted for by vessel-men on a basis of 80c. from Lake Superior ports, but there was a general feeling among shippers that lake carrying rates would average lower than that figure rather than higher. The season charters were made much as a man insures his house, as a safeguard against remote contingencies, not in expectation that the property would be burned. A large proportion of the ore was left uncovered by lake contracts.

Although the bulk of the ore was sold early in the season, there was a constant nibbling by furnace-men, and before July 1st the curious spectacle was witnessed of buyers asking the Bessemer producers to sell more ore than the output agreed upon. Three months before the arranged output was considered the maximum amount which under any circumstances would be desired. The Bessemer owners declined to flood the market with a fresh output and buyers turned to the Mesabi ores. They bought and kept on buying right along. Early in July ore prices began to jump. There was an advance of 25c. to 30c. during that month, and the demand for lake tonnage to cover the extra shipments started freights upward.

Fortunately for the ore shippers the miners' strike in the Marquette district broke out at this juncture. Shipments from that port dwindled to almost nothing. This released a large amount of lake tonnage, but the entire fleet was quickly absorbed in the ore-carrying trade from the head of the lakes, and still there were not enough boats.

The grain interests about this time also began bidding actively for the boats, and the freights advanced steadily at a pace that astonished the vessel-men and produced consternation among the ore-men, who had sold their product in the spring, who had left much of the ore uncovered and were now obliged to pay unexpectedly high rates. With one or two unimportant declines the freights continued upward throughout the season up to the very close.

The average ore freights from Duluth and from Escanaba to Ohio ports were by months as follows during the season:

AVERAGE FREIGHT RATES PER TON ON ORE TO LAKE ERIE PORTS, 1895.

Port of Shipment.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
From Escanaba.....	Cents. 42½	Cents. 52½	Cents. 55	Cents. 57½	Cents. 75	Cents. 100	Cents. 110	Cents. 100
From Duluth.....	Cents. 77½	Cents. 85	Cents. 85	Cents. 92½	Cents. 120	Cents. 153½	Cents. 200	Cents. 200

The season charter rates for Duluth were 80c., and for Escanaba 40c. to 45c.

Ore prices kept pace with these freights, that is, on the limited amount of ore that was for sale. The top figure for the year that was reported was \$5.25, or more than \$2.25 in excess of the prices established in the spring.

The Marquette strike did not end until about the close of September. Some of the Marquette range producers gave notice to their customers that they could not, in consequence of the strike, fill contracts, and the furnace-men looked again quite largely to the Mesabi mines for relief, thus still further stimulating the production from that district.

The result has been that the iron ore output for 1895 on the upper lakes exceeds by more than a million tons its largest previous productions.

With the year just closed the aggregate has reached 10,233,910 tons by lake, with an accretion by rail shipment yet undetermined. Of this total, 8,112,228 tons were shipped to Lake Erie ports, 1,863,781 tons to South Chicago and Bay View, and 257,901 tons to the charcoal furnaces of the upper lakes.

The entire output of 1895 has been more than sold, and it is estimated that there will remain on Lake Erie docks next spring only a small quantity—very small in comparison with the 2,640,000 tons unsold last spring.

PIG IRON.

At the opening of the year 1895 sales of Bessemer pig iron in Ohio were reported to have been made below cost of production in order to check the growth of stock piles. There were some labor troubles, but the men usually accepted with good grace the depressed condition of trade and made no prolonged strikes. The low-water mark for the year was about the first sales made, on a basis of from \$9.90 to \$10.15 for Bessemer pig in Cleveland.

RANGE OF PRICES OF BESSEMER PIG IRON IN CLEVELAND, 1895.

Month.	Highest.	Lowest.	Average.	Month.	Highest.	Lowest.	Average.
January.....	\$10.00	\$10.00	\$10.00	July.....	\$13.40	\$14.40	\$14.00
February.....	10.25	10.25	10.25	August.....	14.40	16.25	14.96
March.....	10.25	10.40	10.33	September..	16.75	17.75	17.25
April.....	10.65	10.90	10.74	October.....	16.25	14.25	15.30
May.....	10.90	11.65	11.24	November...	14.25	13.25	13.75
June.....	12.00	12.90	12.55	December...	12.75	11.75	12.25

Transactions continued small until spring. If there had been buyers they would have had the advantage, but the market was lifeless. Perhaps the first feeling of strength was imparted by the persistent talk of an advance in coke, and it was not long before the ore-men also gave currency to reports that they too must receive higher rates for their product. Stocks in the hands of iron consumers had run low, but when the tide turned and prices began to strengthen the demand for pig iron grew, and the course of the market for eight months was steadily upward. Stocks were thoroughly cleaned up and the bare state of the market gave rise to some peculiar conditions of trade. Pig iron in considerable quantities was shipped in early summer from Chicago to Cleveland and here worked into finished product to be retransported back to the West. Legitimate demand for finished iron and steel during this rising market came not as largely from the railroads as usual, but from various other sources. Structural material was unusually active, and the mills for months were unable to keep up with their orders. Shipbuilders were seriously cramped and delayed in getting the big steel freighters off the ways through inability to procure plates, angles and channels. Everybody wanted iron and its products at one time. The tide reached its culmination in September, when a valuation of \$17.50 for Bessemer was touched in this market. Since then the trend has been steadily downward.

THE CHICAGO IRON MARKET IN 1895.

BY OUR SPECIAL CORRESPONDENT.

The year started in with very low values, only a small business in hand and not a very much larger amount in prospect, and with not an especially hopeful feeling among dealers and manufacturers. The preceding year had been dull and in it losses by fire, strikes, failures and receding values had been large, causing iron and steel manufacturers generally to entertain very conservative views as to the future. For several months in the first part of 1895 business was not large, but iron and steel men generally gained faith in the future, and with a more hopeful feeling among sellers came more confidence among buyers; sales gradually increasing in number and in volume. About the first of March prices commenced to rally, and from then until almost the end of the year they continued to rise with only occasionally a slight reaction which in nearly every case was very soon made up. About March also orders began to be more plentiful and buyers commenced to realize that if they were not on the verge of a "boom," at least there was every prospect for continued good business for their products and probabilities for higher values of material were great. In May wages and fuel commenced to advance and these advances added to the belief becoming more and more prevalent every day that iron and steel products would maintain their values easily and also advance in cost.

In May came labor troubles at the South Works and the Joliet Works of the Illinois Steel Company, dissatisfied laborers asking for an advance in wages. These strikes, lasted at the South Works only a few days, but at the Joliet

Works two weeks, causing a delay in shipments of pig iron and billets and quite a little embarrassment to users of the latter, notably tin plate manufacturers, a number of whom expected to have to shut down. This was avoided by the starting up of the works on the settlement of the labor troubles.

In the latter part of June the market began to take on the features of a boom, largely increasing sales and advancing values being reported every week. Apparently, however, the increase in demand was caused almost entirely by increased needs on the part of consumers, and not by the entering into the market of any speculative element. While later developments showed that there had been some buying of billets and Bessemer pig by speculators, at the same time a very much larger part of the purchases throughout the year came from consumers for legitimate needs, and not for speculative purposes. Commencing in June prices advanced very rapidly, a rise being chronicled in some classes of material each week for several months. During July and August crude material was quiet and sales were smaller than in the months immediately preceding. This change was a welcome one to the furnaces, however, as they were very heavily over-sold, and the falling off in new purchases gave them a chance to catch up on their contracts.

In July and August buying of billets, rods and sheet-bars was very heavy, and prices advanced from \$22.50 on July 1st to \$25 in September on billets and proportionately on rods and bars, with considerable fluctuations between those dates. Some large contracts for structurals were also placed in the summer months and prices advanced from \$4 to \$5 a ton. On September 15th the Calumet Furnace was put in blast and ran until December 1st on foundry iron, turning then to Bessemer to fill a contract of 15,000 tons for the Illinois Steel Company. About September 1st purchases of material commenced to fall off, and from then on to the end of the year the market generally was a declining one. In some branches trade continued good—notably in bars and structural material—until considerably later in the year. The prices on bar iron were held up throughout the decline and until almost the close of the year by the Merchants' Bar Iron Association, which thus displayed its strength. About the middle of December, however, the association found it was necessary to reduce the price of these products to meet the lower values of other material, and quotations were cut from 1.50c. to 1.35c. Chicago. In September and from then until December 1st orders for cars from the railroads and transportation companies were very large, and the car works received sufficient business to keep them busy through the year and well into 1896. This created a large demand for bar iron and other classes of material.

Early in December orders for 14 large vessels were given to lake shipbuilders by the ore interests, causing a very large demand for plates, angles and other material required for their construction.

The end of the year finds a larger number of furnaces in blast and a larger tonnage of mills running than ever before, notwithstanding the slackening in trade. The early fall witnessed a large amount of speculation in Eastern markets, and this had considerable to do with the reaction to lower values which followed. Very little speculation, however, was indulged in in the Chicago market. The feeling generally among manufacturers of iron and steel products at the end of the year was that buying would commence again and would be very heavy very soon after the first of 1896, and this feeling of confidence was shared in by consumers of iron and steel to a very great extent.

The range of values in the Chicago market in the past year is shown by the following table of prices:

MONTHLY RANGE OF IRON PRICES IN CHICAGO, 1895.

Date.	Pig Iron.			Steel Billets.	Rails.	Bars.	Beams.	Plates.	Sheets.
	Lake Superior Charcoal.	Northern No. 2 Foundry.	Southern No. 2 Foundry.						
January 1..	\$13.00	\$9.75	\$10.25	\$17.00	\$23.00	1.05c.	1.45c.	1.40c.	2.35c.
February 1..	13.00	9.75	10.00	16.50	23.00	1.00	1.45	1.40	2.30
March 1.....	13.00	9.75	10.00	16.50	23.00	1.00	1.45	1.35	2.30
April 1.....	13.00	9.75	10.00	16.50	23.00	1.00	1.45	1.30	2.25
May 1.....	13.00	10.25	10.50	17.50	23.00	1.10	1.45	1.30	2.25
June 1.....	13.00	10.25	10.25	20.00	23.00	1.15	1.50	1.45	2.40
July 1.....	13.25	11.50	12.50	22.50	25.00	1.30	1.70	1.70	2.60
August 1.....	13.50	13.00	12.25	23.50	25.00	1.30	1.80	1.90	2.80
September 1..	14.50	13.50	13.25	25.00	25.00	1.50	1.90	2.10	2.85
October 1.....	15.50	14.50	13.85	26.00	29.00	1.50	1.90	2.00	2.95
November 1..	15.50	14.50	13.85	24.00	29.00	1.50	1.90	1.90	2.75
December 1..	15.00	14.50	13.85	22.00	29.00	1.50	1.90	1.75	2.55

The future is too uncertain for prophecy, but it does seem probable that the total amount of business for 1896 in this market will be at least as large as, if not larger than, that of 1895. It is evident that the freight carriers think their business will be good in the coming year, as orders from railroads for cars and locomotives have been very large for several months past. This and the orders placed with lake shipbuilders goes to indicate the feeling that freight carriers have regarding the future. The iron mining interests also have made preparations to mine and ship large quantities of ore next season, of which preparations the vessels ordered are only part.

THE NEW YORK IRON MARKET IN 1895.

BY OUR SPECIAL CORRESPONDENT.

The local iron market in New York may be said to have followed very nearly the course of the general market during 1895. Its condition can, perhaps, best be understood by the table of prices given below. New York is not the center of a great producing district like Pittsburg, nor is it a distributing point of great importance. A considerable quantity of iron is sold during the year for the supply of local establishments and contracts are made for the supplies of a manufacturing district of some extent and importance. Nevertheless it can hardly be ranked among the more important iron markets of the country.

Up to June there was very little activity in the local market, and the foundries and machine shops generally reported business quiet and were buying supplies and material lightly. About the close of June business began to improve and orders came in more freely; this state of affairs continued through July and August, and in September unusual activity was the rule. The foundries and mills were full of orders, large and small, demand and prices were good. There was a rapid expansion in the demand for structural iron as new buildings were planned and started, and this branch of the business continued active up to the end of the year. A temporary interruption was caused by a strike in the building trades in November and December, but it was not of very long duration.

The feature of the market from September to well into December was the steady buying on small orders, showing the extent to which the smaller concerns were employed. In many cases the foundries running on general work found some difficulty in securing supplies of lower grade irons or scraps for mixing, and the latter commanded for a time much above its usual price.

The speculative rise in Bessemer pig iron did not affect this market, where that grade of iron is not sold. The foundry irons as a rule held most of the advance which they made when business became active.

The closing month of this year was less active. In New York, as elsewhere, buyers were holding off in expectation of lower prices, and for several weeks a waiting market was reported. The stock market excitement had an unfavorable effect, but the year closes with prospects for a fair business in 1896.

The following table shows the range of prices in the New York market for 1895.

Month.	Pig Iron, per Ton.				Common Bar, per lb.	Refined Bar, per lb.
	Northern No. 1.	Southern No. 1.	Southern No. 2 Soft.	Gray Forge.		
January....	\$12.00@12.50	\$11.25@11.50	\$10.25@10.75	\$10.00@11.00	1.15@1.30c.	1.25@1.80c.
February....	12.00@12.50	11.25@11.50	10.25@10.75	10.00@11.00	1.15@1.30	1.25@1.90
March.....	12.00@12.50	11.25@11.50	10.25@10.75	10.00@11.00	1.15@1.30	1.25@1.90
April.....	12.00@12.50	11.30@11.56	10.25@10.75	10.00@11.00	1.15@1.30	1.25@1.90
May.....	12.25@12.75	11.50@11.75	10.50@10.81	10.30@11.00	1.15@1.30	1.25@1.90
June.....	12.75@13.25	12.35@12.81	11.30@11.60	10.50@11.00	1.15@1.30	1.24@1.90
July.....	13.25@13.75	13.00@13.56	12.00@12.44	10.75@11.50	1.30@1.45	1.45@1.60
August....	13.70@14.20	13.50@14.00	12.50@13.00	12.05@12.55	1.35@1.45	1.45@1.60
September..	13.80@14.38	13.75@14.00	12.94@13.44	12.38@12.88	1.40@1.50	1.50@1.65
October....	14.00@14.50	13.75@14.00	13.25@13.75	12.50@13.00	1.40@1.50	1.50@1.65
November..	13.80@14.38	13.70@13.95	13.20@13.70	12.50@13.00	1.35@1.45	1.45@1.60
December..	13.75@14.25	13.63@14.00	12.83@13.41	12.00@12.50	1.28@1.41	1.30@1.54

Month.	Steel Billets per Ton.	Steel Wire-Rods per Ton.	Structural Material.			
			Beams, Per lb.	Angles, Per lb.	Channels, Per lb.	Plates, Per lb.
January.....	\$17.50@18.00	\$24.00@24.50	1.30@1.50c.	1.20@1.30c.	1.40@1.50c.	1.25@1.40c.
February....	17.50@17.88	23.63@24.13	1.30@1.40	1.20@1.35	1.40@1.50	1.25@1.40
March.....	17.35@17.75	23.50@24.00	1.30@1.50	1.20@1.35	1.40@1.50	1.25@1.40
April.....	17.25@17.75	23.50@24.00	1.30@1.50	1.20@1.35	1.40@1.50	1.25@1.40
May.....	17.44@17.94	23.56@24.06	1.30@1.50	1.20@1.35	1.40@1.50	1.25@1.40
June.....	18.25@18.75	23.90@24.50	1.41@1.52	1.31@1.38	1.43@1.52	1.27@1.42
July.....	21.00@23.00	26.00@29.00	1.63@1.73	1.50@1.60	1.65@1.75	1.45@1.60
August.....	23.20@23.90	30.10@30.80	1.65@1.75	1.54@1.64	1.65@1.79	1.81@1.88
September..	26.00@26.50	31.50@32.25	1.80@1.88	1.73@1.85	1.88@2.00	1.90@1.95
October....	24.58@25.25	30.50@31.33	1.80@1.90	1.73@1.87	1.90@2.00	1.90@1.95
November..	22.63@23.25	30.81@31.38	1.78@1.89	1.68@1.81	1.84@1.95	1.85@1.93
December....	19.25@19.90	28.44@29.25	1.40@1.80	1.58@1.68	1.70@1.80	1.64@1.74

THE PHILADELPHIA IRON MARKET IN 1895.

BY OUR SPECIAL CORRESPONDENT.

The course of the iron market in Eastern Pennsylvania can be most readily seen by an examination of the following table, which gives the prices of leading products at the opening of each quarter, and also for the month of December:

PRICES OF IRON IN PHILADELPHIA, 1895.

Product.	January.	April.	July.	October.	December.
Pig iron:					
No. 1 foundry.....	\$12.50	\$12.50	\$13.00	\$14.50	\$13.25
No. 2 foundry.....	11.50	11.50	12.00	13.50	12.25
Gray forge.....	10.50	10.50	11.50	12.00	11.50
Bessemer.....	12.00	12.25	13.50	15.50	11.00
Steel billets.....	17.00	17.30	21.50	26.50	17.00
Manufactured:					
Angles.....	1.25c.	1.25c.	1.45c.	1.75c.	1.60c.
Beams and channels.....	1.30	1.30	1.80	1.80	1.60
Tank steel.....	1.25	1.25	1.90	2.00	1.60
Heavy plates.....	1.25	1.25	2.00	2.00	1.60
Shell plates.....	1.50	1.50	2.10	2.10	1.65
Flange plates.....	1.60	1.60	2.25	2.25	1.75
Bars.....	1.15	1.15	1.25	1.60	1.40
Skelp iron.....	1.20	1.20	1.45	1.45	1.30
Old material:					
Choice railroad scrap.....	\$12.00	\$12.00	\$12.50	\$14.50	\$14.50
Heavy shell scrap.....	11.00	12.00	11.50	12.50	13.25
No. 1 wrought.....	11.00	10.00	11.50	14.00	13.50
Light scrap.....	6.50	6.00	7.50	9.00	8.50
Old iron rails.....	11.75	12.00	14.50	16.50	15.00
Old axes.....	15.50	15.50	16.00	18.00	16.50
Old car wheels.....	9.75	10.50	11.50	12.00	11.50

The year opened with promise of better trade and better prices than in 1894. Manufacturers felt as though the turn had at last come. In fact, many large buyers of billets had already covered their requirements for the first quarter of the new year as a matter of wholesome precaution. The ore question was giving Eastern furnace people a good deal of concern, but there was no thought or even suspicion of what was ahead. The demand for ore had just advanced 25c. a ton, and buyers were figuring on possibilities of a further advance. There were also in January evidences of a growing demand for foundry and forge iron, and large producers made prices on large blocks of material. But stocks had been increasing and consumers were not rash. The tin plate industry had suffered a 12½@15% reduction in wages. A great deal of business was talked of; there was an evident impatience to push ahead, but withal the experience of the previous twelve months admonished manufacturers to measure their steps cautiously. One of the stimulating influences which had its effect early in the year was the placing of a 35,000-ton order for a bridge near New York City, and another of 18,000 tons for a bridge across the Delaware River at Philadelphia. A sale in one lot of 30,000 tons of billets aroused a good many steel buyers to the possibilities of a heavier demand. Small orders were coming in for plates and shapes. Big orders had been received for improvements at Buffalo. A good many people began to wonder if the iron trade was not really improving. Each succeeding week developed greater demand, greater strength and firmer tone in the market. New requirements appeared, furnaces and mills began to book orders of some magnitude and pig iron stocks were drawn upon for certain desirable makes.

By the opening of April the market had acquired a strong undertone, even though prices had not notably advanced. There were disquieting rumors then of a coming demand that would push all prices up to a higher level, but pig iron makers and mill-men were too anxious for business to pay much attention to them. Finished material was weak; cost of production, however, was pointing upward because of ore advances. Furnace-men began to buy ore greedily; large season contracts were made, and also big Bessemer pig contracts. Manufacturers who scented the coming squall kept their secret, bought and contracted ahead in a way that surprised many who had not caught on. We were watching big consumers in Pittsburg and Wheeling, and observed that only a few were large buyers, and that in such a secret way that it could be learned only through private sources. On the surface a good many were holding aloof from buying. The storm was on its way, but they did not know it. When May arrived, more manufacturers got their eyes open. Big concerns were found to be enormous buyers. The smaller buyers said it was a speculative movement and would soon blow over. Every week and in fact every day brought new surprises. Our manufacturers imagined they were encountering the manipulations of a few speculators and jobbers, but when the Carnegie interests led them comprehended the situation.

By July pig had begun to climb. Foundry had advanced 50@75c., forge was up \$1, Bessemer \$1.50, billets had bounced \$4.50, and a first-class flurry was aboard. There was a continuously good demand; mills had all the business they could handle. Furnace-men began to wear their hats on the back of their heads. The situation had not been better for years. The market was clearly working to higher conditions. Manufacturers began to be downright scared. Those who needed forge had to scamper after it, and telegraph to know why shipments were delayed. There were signs of a shortage in billets. Wrought pipe mills found themselves unexpectedly sold ahead. The bar mills were somewhat suddenly loaded up. The plate and structural mills began to quote higher prices. All raw material was advancing. Coke struck \$1.25, and a further advance was hinted at because of the rumored agitation for higher wages.

With the advent of summer the iron trade threw off its modesty and conservatism, and old Vulcan roared in six hundred mills as he had never roared before. Advances were made which were not called for by cost of raw materials. Steel billets broke loose like Apaches. All through the summer months orders piled in, business expanded, wages were advanced, and manufacturers saw three to four months' business ahead. The supply of raw material was a great source of anxiety. Enormous purchases of ore were made during the summer. Pittsburg in two or three weeks licked up all our Eastern Bessemer and left us nothing. Steel rails had moved up \$2 in June, but the summer months passed without much activity in them beyond the filling of very ordinary requirements. By the opening of October everything was at full speed. Billets were up to \$26@26.50, Bessemer imagined itself worth \$15.50, beams and channels had \$1.80 marked opposite them in market quotations, and old iron rails were ticketed \$16.50.

People were convinced this sort of business could not last, that the momentum of the movement would soon exhaust itself. Railroad managers and other large consumers when asked to place orders declined for good reasons. The manufacturers had filled up with large orders and were content for the time. Every ramshackle mill in Eastern Pennsylvania was in the swim. And at this speed October and part of November were put in. Late in the latter month the tide turned, but the effects were not for a while visible in the mills, and are not yet visible at the furnaces. The high prices entailed requirements. Consumers in looking forward to 1896 saw it would not be safe to make calculations until 1896 ore prices were known, and until the limit of the probable advance in coke was known. Besides this, a conservative feeling came over the people. They saw the production of pig iron expand enormously, and they decided to wait and see.

The month of December has brought declining demand, almost no demand in some lines, and lowering prices. The influence of organization has manifested itself in several branches of the iron trade, but the test of the value of such movements will be had later on. Eastern blast furnaces are all busy; most of them have contracts that will require a month or two to fill. The renewing of expiring contracts is not general nor satisfactory. The bar, sheet, skelp and plate mills are not filling up with business, and prices are weak and weakening in consequence.

The anticipations, are that January will develop a valuable trade in all branches, and that there will be a permanent return to normal conditions during 1896.

THE PITTSBURG IRON MARKET IN 1895.

BY OUR SPECIAL CORRESPONDENT.

The iron and steel operations for 1895 will long be remembered as showing wonderful increase in volume and exceeding all previous records by amounts so astonishing that it goes to prove that Pittsburg is by far the greatest iron mart in the world. In the year 1894 sales of Bessemer pig reached 944,825 tons; in 1895 Bessemer sales amounted to 1,856,095 tons, exceeding the previous year by 911,270 tons. The total sales of raw material, all descriptions for 1895 reached the enormous amount of 3,546,555 tons; the amount for 1894 was 2,277,979, being 1,268,576 tons below that of the year just closed. These figures show the wonderful growth of the trade of Pittsburg; no person can form any conception of what the trade will be in a few years. Business men generally have unbounded faith in the year 1896; better prices are certainly expected unless all signs fail. To show what can be done in the way of making pig iron, one of the leading firms during November made 102,000 tons.

At present the weekly production seems to be largely in excess of consumption. Curtailment must be made. The next question is, who will be willing to shut down? These are questions of great importance to the trade and must receive attention in the near future. The year shows a wide range in values: Bessemer pig iron was dull at the beginning, selling at \$9.90@10; prices showed very little change until May, but during that month they advanced to \$12.50. Again they moved up in June to \$13.65; July closed with quotations at \$14.50; August was a good month, for it closed with sales at \$17 \$17.50. September showed good prices for the entire month, closing at \$17.50. In October quotations showed signs of weakening and closed at \$15.70@16.50. In November they started on the down grade, closing \$13.75@14 for next year's delivery; December opened weak with sales for 1896 delivery \$12.60@12.75.

Steel billets opened in January at \$14.60@15.15; in April prices began to advance and touched \$16. In May the highest reached were \$17@17.50. In

June prices again advanced to \$19.75@20.25; in July they reached \$21.50@22. August showed sales at \$23.75@24. September was a very good month for makers, as billets opened at \$25 and closed at \$24.65. In October, however, prices steadily declined, closing at \$20.85@21.75; November quotations showed continued weakness, and billets sold down to \$18.25. In December the decline continued with sales at \$16.80.

Gray forge opened in January at \$9@9.25; advanced in June to \$11@11.50; in August touched \$12.75@13; declined in November to \$12.25@12.50; and closed in December at \$11.75@12.

The following table shows the total amount of sales of raw material in Pittsburg for the year:

TOTAL SALES OF RAW MATERIAL IN PITTSBURG IN 1895.

Period.	Bessemer Pig.	Billets.	Gray Forge.	Raw Material, all kinds.
	Tons.	Tons.	Tons.	Tons.
First quarter.....	312,750	150,800	53,565	681,235
Second quarter.....	636,420	159,790	73,225	1,123,325
Third quarter.....	667,925	239,200	113,350	1,252,810
Fourth quarter.....	255,830	83,800	27,025	517,990
Totals.....	1,872,925	638,650	267,165	3,575,360

The greatest volume of business in Bessemer pig shown in one week was in that ending June 21st, when 104,000 tons were sold. In billets the transactions reached their maximum in the week ending August 2d, with sales of 32,750 tons. The highest total sales were for the week ending June 21st, when 156,450 tons were reported; the week ending September 6th coming second with 146,505 tons.

The tables show the astonishing fact that one-third of the raw iron made in the United States is bought and sold in the Pittsburg market.

The following table shows the average monthly prices of leading varieties of iron and steel in Pittsburg during 1895:

PRICES OF IRON AND STEEL IN PITTSBURG IN 1895.

Month.	Pig Iron.		
	Bessemer.	No. 1 Foundry.	Gray Forge.
January.....	\$9.90@10.04	\$10.18@10.87	\$9.09@9.22
February.....	10.02@10.22	10.80@11.07	9.08@9.20
March.....	10.11@10.33	10.75@10.93	9.00@9.17
April.....	10.60@10.79	10.63@10.89	9.25@9.38
May.....	11.21@11.43	11.78@11.43	9.56@9.89
June.....	12.41@12.83	11.83@12.41	10.54@10.83
July.....	13.88@14.35	13.00@13.85	11.25@11.51
August.....	14.68@15.21	14.10@14.32	11.90@12.23
September.....	17.21@17.85	14.77@14.95	13.35@13.61
October.....	15.90@16.48	14.09@14.90	13.12@13.31
November.....	14.42@14.88	14.47@14.70	12.57@12.86
December.....	12.37@12.75	14.17@14.37	11.92@12.67
Year.....	\$12.93@13.10	\$12.61@12.86	\$10.20@11.10

Month.	Ferromanganese.	Steel Billets.	Wire Rods.	Sheet Bars.	Muck Bar.
	January.....	\$47.73	\$14.81@15.23	\$21.03	\$20.59	$18.33
February.....	47.46	15.10@15.23	21.33	21.03	18.31
March.....	47.55	14.95@15.22	21.34	18.82	18.31
April.....	47.31	15.59@15.86	21.28	20.75	18.40
May.....	47.80	16.20@16.82	21.85	22.21	18.73
June.....	50.38	18.79@19.50	25.16	22.54	20.09
July.....	51.44	20.88@21.56	27.93	23.56	21.56
August.....	53.55	22.28@22.55	29.72	24.20	22.77
September.....	56.56	24.25@24.89	32.40	26.69	23.69
October.....	56.38	22.50@23.31	30.88	25.25	22.81
November.....	55.35	24.59@25.63	28.40	23.50	21.60
December.....	55.00	17.02@17.53	25.25	19.50	20.67
Year.....	\$51.28	\$18.51@19.02	\$26.08	\$22.43	\$20.42

As the fluctuations in Bessemer pig iron and steel billets constituted the leading feature of the market for the year, and in fact its chief speculative feature, we give below the range of prices weekly of those articles:

WEEKLY PRICES OF BESSEMER PIG IRON AND STEEL BILLETS IN PITTSBURG FOR 1895.

Week.	Price per Ton.		Week.	Price per Ton.	
	Bessemer Pig.	Steel Billets.		Bessemer Pig.	Steel Billets.
January 4.....	\$10.00	\$15.15	July 5.....	\$13.75	\$20.75
" 11.....	9.90	15.15	" 12.....	14.50	21.50
" 18.....	10.00	15.25	" 19.....	14.65	22.00
" 25.....	10.25	15.35	" 26.....	14.50	22.00
February 1.....	10.35	15.35	August 2.....	14.50	22.00
" 8.....	10.25	15.39	" 9.....	14.20	22.00
" 15.....	10.15	15.10	" 16.....	14.75	22.25
" 22.....	10.15	15.15	" 23.....	15.25	22.50
March 1.....	10.25	15.10	" 30.....	17.50	24.00
" 8.....	10.25	15.15	September 6.....	19.00	25.15
" 15.....	10.20	15.10	" 13.....	17.65	25.00
" 22.....	10.30	15.10	" 20.....	17.50	24.75
" 29.....	10.65	15.65	" 27.....	17.25	24.65
April 5.....	10.75	15.75	October 4.....	16.90	23.50
" 12.....	10.85	15.90	" 11.....	16.00	23.75
" 19.....	10.80	15.80	" 18.....	16.50	23.60
" 26.....	10.75	16.00	" 25.....	16.50	22.40
May 3.....	10.90	15.80	November 1.....	16.40	21.75
" 10.....	11.35	16.65	" 8.....	15.75	21.75
" 17.....	11.40	16.75	" 15.....	14.50	20.00
" 24.....	11.75	17.40	" 22.....	13.75	20.00
" 31.....	11.75	17.50	" 29.....	14.00	19.00
June 7.....	12.50	18.25	December 6.....	13.25	18.00
" 14.....	12.65	19.25	" 13.....	12.75	17.60
" 21.....	12.90	20.25	" 20.....	12.25	17.00
" 28.....	13.25	20.25	" 27.....		

It will be seen that prices reached their highest point in the first week in

September, when sales also were very large. Quotations began to drop from that time, but the decline was not heavy until October.

CLOSING PRICES FOR SIX YEARS.

The following table of prices of the leading articles for December will be found useful for reference, furnishing the cash prices the last week in December for six years. Compared with last year, Bessemer shows \$2.50 advance; No. 1 foundry, \$2.85; gray forge sold \$2.50 above last year's prices. At present prices, ferromanganese shows \$4.50 advance; muck bar, value \$2.60 above last December; charcoal iron shows a slight advance; steel billets show \$2.45 advance; old iron rails, \$2.10; new steel rails, \$6 advance. Coke at furnace advanced 60c. in price. Notwithstanding the heavy decline in most leading products in the closing two weeks of the year, the present prices show a very material advance compared with those ruling one year ago.

CASH PRICE OF IRON AND STEEL IN PITTSBURG LAST WEEK OF DECEMBER.

Year.	Pig Iron.							
	Bessemer.	Coke Foundry.						Silvery.
		No. 1.	No. 2.	No. 3.	Gray Forge.	Mottled.	White.	
1890.....	\$16.50	\$17.25	\$16.25	\$14.75	\$14.25	\$14.25	\$14.25	\$16.50
1891.....	15.75	16.00	15.25	13.65	13.25	13.25	13.25	17.00
1892.....	13.75	14.25	13.25	12.00	12.50	12.00	12.00	16.00
1893.....	11.00	12.25	11.25	10.00	10.00	10.25	10.60	15.50
1894.....	10.25	11.40	10.40	9.50	9.25	9.00	9.00	13.60
1895.....	12.75	14.25	13.50	12.00	11.75	9.00	9.00	14.80

Year.	Charcoal Iron.				Ferro-manganese, 80%.	Spiegel, 20%.
	No. 1.	No. 2.	Cold Blast.	Warm Blast.		
1891.....	22.50	20.50	26.50	19.50	63.00	27.00
1892.....	20.00	19.00	25.00	19.00	61.00	28.50
1893.....	18.50	18.00	25.00	18.00	52.50	23.75
1894.....	17.50	16.25	23.50	16.50	49.50	18.50
1895.....	17.80	17.25	24.00	16.00	54.00	18.00

Year.	Steel.						
	Billets.	Rail Ends.	Bloom Ends.	New Rails.	Old Rails.	Steel Nails.	Wire Nails.
1891.....	24.50	17.25	17.25	30.00	17.50	1.60	1.70
1892.....	22.50	15.50	16.00	30.00	14.50	1.55	1.55
1893.....	16.75	11.50	11.50	24.00	10.50	1.10	1.20
1894.....	15.15	10.50	10.45	22.00	10.00	1.00	1.00
1895.....	17.00	14.50	14.60	28.00	14.00	1.25	1.30

Year.	Wrought Iron.						Coke at Furnace.
	Muck Bars.	Old Rails.	No. 1 Scrap.	No. 2 Scrap.	Bar Iron.	Iron Nails.	
1891.....	26.00	23.25	24.00	17.50	1.65	1.60	1.90
1892.....	24.50	20.50	20.50	15.00	1.60	1.55	1.90
1893.....	21.00	14.50	16.25	15.00	1.45	1.10	1.15
1894.....	18.40	12.50	10.00	9.50	1.15	1.00	1.00
1895.....	21.00	14.60	14.00	12.50	1.25	1.25	1.60

advantage to the iron industry resulting from the use of minette ore as mentioned above, has been the improvement in processes resulting in the diminished consumption of coal. The direct conversion of molten pig iron into steel, that is, the direct transmission of iron from the blast furnace to the converter without a second melting, was carried on everywhere with the best results. New plants have been erected which produce from the ores billets and slabs without using any other fuel in the steel making than the gases generated in the blast furnaces.

The Rhenish Westphalian district is trying hard to get a share of the profits derived from the use of minette ores, though these ores have to be transported a distance of about 300 kilometers to the furnaces in that district, but with the Prussian State administration of the railroads, the attempt has not been a success. A scheme to open up water transportation by means of the canalization of the Moselle also failed. This district is therefore compelled, for the purpose of keeping up its production, to have increasing recourse to the importation of foreign ores. The first imports were of Spanish ores, but lately the importation of Swedish ores from Gellivara and elsewhere has increased until it reaches at present 500,000 or 600,000 tons a year.

In consequence of the rise in production, new plants have been erected. Hans Holsch's steel works at Dortmund have added two blast furnaces; the Deutscher-Kaiser works have also added two blast furnaces and one steel plant; the Dillinger iron works, at Dillinger-on-the-Saar, one Thomas steel plant. New blast furnaces are also in construction at Esch and at Burbach.

A deposit of iron ore containing phosphorus has been found in Middle Germany, and a new Thomas steel plant and also a blast furnace have been built to use those ores.

A strong market was caused by the extension for ten years of the Rhenish Westphalian Coal Syndicate, which includes almost all the coal mines.

The production of coal in Westphalia during the first three-quarters of 1895 amounted to 30,129,963 metric tons, or about 0.28% above last year.

The prices of the principal materials used in the iron industry during the current year stood as follows:

Gas coal ranged throughout the year 10 to 11 marks per metric ton; lean Foerder coal 7 to 8 marks. Furnace coke was 11 marks per ton up to December, when the price was raised to 11.50 marks. Spathic iron ore cost through the year from 9.50 to 10.50 marks per ton.

White iron brought 43@44 marks per ton for three-quarters of the year; in October it rose to 46@47 marks, and in December to 48@49 marks. Foundry iron for nine months stood at 63 marks; in October it rose to 65 marks and remained at that price until the close of the year. Best grade bar iron was quoted 102@105 marks per ton in January and remained at that point until October, when it went up to 108 marks, and remained there the rest of the year.

During 1895 nothing has been heard of labor troubles or strikes; this is probably due in great part to the system of insurance of workmen against sickness, accidents, old age and disability. The assessments which fall on the iron industry from this system are considerable, but its results in operation have been upon the whole satisfactory.

Exports of iron products for ten months to October 31st have been, in metric tons:

	1894.	1895.
Pig iron.....	120,608	105,664
Beams, etc.....	112,775	143,510
Rails.....	98,693	94,314
Bar iron.....	254,028	235,681
Steel ingots.....	32,345	51,162
Wire rods.....	102,115	95,036

This shows decreases in pig iron, rails, bar iron and wire rods, but increases in beams, etc., and in steel ingots.

SALES AND PRICES OF IRON ORE.

The following table shows the sales of Lake iron ore in Pittsburg for the past three years. All sales are made deliverable on the docks at Cleveland, Erie, and other Lake Erie ports. The ore sales for the year are generally made during February, March and April. In 1895 the first sale occurred March 27th.

SALES OF LAKE SUPERIOR IRON ORE AT PITTSBURG.

Date of Sale.	Quality.	Tons Sold.	Prices.
March 27.....	Bessemer.	300,000	\$2.90 to \$3.25
April 5.....	"	3,000,000	2.90 to 3.25
Total sales, 1895.....	"	3,000,000	2.90 to 3.25
" " 1894.....	"	2,950,000	2.25 to 3.25
" " 1893.....	"	4,010,000	2.75 to 3.00

At the present time the prices demanded for 1896 deliveries are materially above those which governed the market in 1895.

When our ship canal from Pittsburg to Lake Erie is completed the ore boats will be able to pass from the shipping ports on Lake Superior to the Pittsburg docks, and ore freights to our furnaces will be about one-half what we have to pay at present.

THE GERMAN IRON INDUSTRY IN 1895.

FROM OUR SPECIAL CORRESPONDENT.

The results of the iron and steel trade in Germany during the year 1895 can be designated as generally satisfactory. The amount of business increased, and the selling prices which, in the beginning of the year, were close to the cost of production, reached higher points later in the year. The production of pig iron in Germany, including Luxemburg, reached during the ten months to October 31st 4,788,571 metric tons, showing an increase of 4.5% over the production during the corresponding period of 1894, in which 4,579,180 tons were made. The share of the Rhenish Westphalia district in this production was 2,277,793 tons. This district, which has heretofore been the principal producer of iron in Germany, has now to make an increasingly active fight against the growing competition resulting from the occurrence of "minette" ore in Lorraine, Luxemburg and on the Saar; so the production of basic pig used in making Thomas steel in the last-named district showed an increase exceeding that in the Lower Rhine and Westphalia more than 25%. A substantial

NICKEL IN 1895.

The chief use of this metal has continued to be as an alloy in the manufacture of steel, the demand in this direction having still felt the impetus given by the very successful tests of armor plate made of nickel-steel in different countries.

The production of nickel in the United States from native ores has practically ceased, and nearly or quite all the nickel refined or consumed in this country is of Canadian origin. The other sources of nickel supply are the French colony of New Caledonia and Norway, the production of Sweden, which at one time was of some importance, having practically ceased. The amount imported into this country from Canada in the form of matte (all refined here) shows a falling off from 1894, the figures being 3,138,400 lbs. for 1895, against 4,897,191 lbs. in 1894. With the Russian contracts already secured for armor plate by manufacturers in this country and the certainty of increase in our own consumption for the same purpose, the demand is sure to become greater, and the lower price makes the metal just so much more available as an alloy with steel. In spite of a rumored agreement between the French company controlling the New Caledonia supply and the refiners in this country to maintain the price and probably raise it, the present low figure of 25c. in large amounts will tend to extend its use, and recent improvements in refining cheapening very materially, the cost as hitherto treated will tend to keep down the price, combination or no combination. On this latter subject we shall be able to give some information to our readers in a later issue.

QUICKSILVER IN 1895.

The production of quicksilver in California, estimating the months of November and December, was 34,000 flasks. For ten months the actual reported output was 27,528 flasks. The demand in California, which furnishes practically all the output of this country, was large and the exports showed some decrease.

The course of prices during the year showed on the whole an improvement. In January they opened at \$36 per flask in New York, and no change was reported till April, when an increase was made to \$38.50. Another to \$40 followed and in June \$41 was reached. In August they dropped to \$39, but in September went up again to \$40, at which the quotation remained until the close.

LEAD IN 1895.

The production of lead in the United States from domestic ores of all kinds was about 170,000 short tons, showing an increase of about 9,000 tons over 1894. The lead smelted from foreign ores and obtained from base bullion imported was about 75,000 tons. The total production of the metal was therefore about 245,000 tons, showing a large increase over the previous year. This has been chiefly due to the greater amount of foreign material treated by our smelters.

THE NEW YORK LEAD MARKET IN 1895.

A period of eighteen months has now elapsed since the duty on lead was reduced from 2c. to 1c. It was greatly feared by many that production in this country would seriously decrease. Events have proven the fallacy of this idea, and that in spite of the lower level of prices now ruling—which amount in round figures to about 25% of the value which the metal formerly had—production has not only held its own, but showed a tendency to increase. To a very great extent this may be due to the fact that lead is largely produced as a by-product when mining gold and silver, while the pure lead ores found in South Missouri can be profitably mined even at present prices.

During 1894 the large smelting works in Colorado formed a sort of combination to pay not above certain figures for ores, yet giving the miners fair market values, but in consequence of some differences arising among the interested parties, this combination went to pieces early in the year 1895, and the competition for all lead ores in Colorado and adjacent States has been sharper than ever before.

Idaho is still suffering from the vexatious demands on the owners of lead mines by the labor unions, otherwise the output from that State would surely have been considerably larger.

Consumption for all purposes has been good throughout the year, and especially the white lead industry has shown satisfactory results.

In the beginning of the year stocks were moderate throughout the country, and prices were at the low figure of 3.05@3.10c. These low figures induced consumers to lay in stocks somewhat earlier than usual in anticipation of the spring business, and prices gradually hardened and advanced slowly, reaching by the end of February 3.4@3.15c., this being the price at which foreign lead could be imported. The fear of this and the very cold weather experienced in February and March had a depressing influence, and by the middle of March 3.05c. was again reached, at which price a very large business was done. After a slight flurry at the end of March the market again became very weak during the month of April, and for some time prices experienced but slight fluctuations, being 3.07@3.10c. Toward the end of May values in Europe hardened considerably, and for several months thereafter prices ruling on this side were more or less governed by those established abroad. In any case, prices here were favorably affected and quickly jumped to 3.25@3.30c., remaining steady until the end of July. A continuous good demand was experienced, but refiners proved to be reluctant sellers, in spite of the fact that for some time past the lead which is refined in bond at the east coast was not exported. All other metals then showed considerable advances in price, and it was surmised that lead could not remain behind. In consequence of producers being so firm, prices actually advanced to 3.50@3.55c. by the beginning of August, and this figure was kept up until the beginning of September, when signs of weakness appeared. It was learned that very large purchases of refined lead had been made in Europe before the rise set in there, and in all about 7,000 tons of foreign lead were imported and brought into our market to the detriment of the home product. These importations had their good effect in so far as they forced the lead refined in bond out of the country.

Exports during the summer months had stopped almost entirely, but from the beginning of September up to the end of the year exports were very heavy, and everything available was shipped abroad. In consequence of this, stocks of bonded lead at the time of writing are at the lowest possible ebb, comprising practically only what is in the course of being refined.

From the moment that refiners were somewhat willing to meet the market, prices declined in spite of the advancing market in Europe, and by the end of September 3.30@3.32c. had been reached, and with unimportant changes these figures were maintained until the middle of November, when all at once a heavy pressure from the West was felt. Lead had been piled up there for some time in anticipation of a good fall trade, but when business in general was found to be unsatisfactory and the looked-for larger demand did not set in, the quantities so accumulated were all at once thrown on the market, and very large contracts were made at from 3.25 down to 3.4c. After these forced sales were effected, it was found that all the metal had gone into strong hands and would be firmly held until wanted for consumption. For this they had not long to wait, as consumers were anxious buyers, and prices quickly advanced to 3.25@3.30c. by the beginning of December. Later in the month prices showed a considerable decline, partly owing to the dullness of trade and partly to the threatening aspect of financial and political affairs. They closed December 31st at 2.90c. per lb. St. Louis, and 3.15c. per lb. New York.

PRICES OF LEAD.

The following table shows the average price of lead in New York for each month of the last six years, compiled from the weekly reports given in *The Engineering and Mining Journal*, p. 410. For the years prior to 1890 statistics will be found in *The Mineral Industry*, Vols. I. and II. The quotations are for spot lead in carload lots or over.

AVERAGE MONTHLY PRICES OF LEAD IN NEW YORK, IN CENTS PER POUND.

Year.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1890....	3.86	3.85	3.95	4.05	4.20	4.42	4.62	4.60	5.11	5.87	5.02	4.24	4.48
1891....	4.38	4.31	4.35	4.25	4.28	4.48	4.42	4.42	4.52	4.39	4.12	4.25	4.35
1892....	4.20	4.12	4.21	4.15	4.22	4.16	4.13	4.11	4.11	4.02	3.84	3.80	4.09
1893....	3.87	4.22	3.96	4.08	3.89	3.77	3.58	3.41	3.80	3.51	3.41	3.27	3.73
1894....	3.19	3.31	3.37	3.43	3.39	3.31	3.50	3.41	3.17	3.12	3.14	3.10	3.29
1895....	3.10	3.12	3.12	3.08	3.16	3.25	3.25	3.50	3.35	3.33	3.25	3.22	3.23

The average yearly prices thus show a sturdy decrease during the six years, and in 1895 was somewhat below the level of 1894. The variations from month to month were less marked than in any previous year. The large lead production referred to above checked any tendency to an increase from larger demand.

TIN IN 1895.

No tin was produced in the United States in 1895. The production in other countries, chiefly in the Straits Settlements, has increased very considerably, from various causes, to which references are made in the market articles given below.

THE NEW YORK TIN MARKET IN 1895.

If in the history of the tin market the year 1894 figured as one during which wider fluctuations occurred than for several years past, the year 1895 broke the record in so far as during its course lower prices were witnessed than at any previous time during the last sixteen years.

There has always been more speculation with tin than with any other metal. The syndicate concerning which we reported last year is still in existence, and though its holdings are at the present time not nearly so large as in December, 1894, still its influence has been felt throughout the year. That it has not been successful is due to various causes. First of all, there was the strong bear party, whose operations at times contributed largely to the demoralization of the market, especially during the first half of the year. In the second place, the low prices ruling for silver naturally had a depressing influence on those for tin, without in the least affecting production, which was again quite heavy. Last, but not least, it proved impossible to induce consumers to take an interest in the article. Thus the demand did not come up to expectations, importers and consumers bought most conservatively—hardly anybody laying in stocks—and the syndicate had to carry the whole burden lone. When it became evident that the scheme would result in failure, the members tried to unload with the view of covering later on at lower prices, in order to make up for their losses. However, these manipulations had only the effect of at times seriously disturbing the market. Whenever there were buying orders attributed to syndicate members, the market advanced a little, only to drop again as soon as this support ceased.

Production in the United States is nil.

As to the tinplate industry, the expectations entertained in this country were not realized to any large extent, chiefly owing to the high prices which had to be paid for black plates. The boom in the iron market interfered most seriously with this trade, while English manufacturers, though similarly affected, did not suffer to the same extent, and were still able to compete successfully to the detriment of the home industry.

The year opened with a total visible supply, including shipments afloat, of 24,614 tons, or 8,224 tons more than on January 1st, 1894. Prices were lower than at any time during the previous year, spot metal selling at 13.4@13.4c. Toward the end of January the lethargy which hung over the market for such a long time was lifted, and the continual drop in prices ceased, giving way to great excitement brought about by the buying of all spot and near delivery tin for account of strong operators here. They practically succeeded in cornering the market, as much as 14.4c. having been paid for spot tin. A similar state of affairs existed during the first and second weeks of February, when again high premiums had to be paid for spot tin, owing to the fact that several steamers carrying tin did not arrive until after they had been due for over a week.

During March the market reached the lowest point. Tin could be bought at 13c. and even cheaper for future deliveries. These low prices did not fail to attract attention. With orders for manufactured goods coming in at a better rate, with confidence returning and the prospects of future business brighter than for a long time past, consumers started to buy more freely, and in consequence values hardened from week to week. The firmer market for silver also caused prices to reach a higher point.

In spite of unfavorable statistics and an apparent disinclination on the part of consumers to pay the higher prices which had meanwhile been established for the metal, we had to record a further advance, which was mostly due to the strong tendency existing in other metals. Naturally, this could not go on forever, and while in the middle of May considerable business was done at about 15.4c., by June 1st prices had again dropped to 14.4c.

In the second half of the year there was not much of interest to report. The market continued steady with small fluctuations, following closely the ups and downs of the London market.

In October values hardened a little, and at one time 14.4@15c. was paid. The consumptive demand was then quite fair. The crisis in some of the financial centers of Europe which occurred about the end of November naturally also adversely influenced the prices of tin, and values again receded about 1/2c. per lb. The break in silver in December caused a further decline, and round lots changed hands at prices considerably below 14c. During the last few days of December another heavy drop occurred, and the year closed with the price at 13.4c. per lb.

It was reported at the beginning of November that severe floods had prevailed in some of the Straits mining districts, and it was estimated that there might be a loss in production, which would be noticeable in the December-January shipments, of about 1,500 tons. But even if this surmise should turn out to be correct (which we doubt) the statistical position of the metal, as will be seen from figures given on another page, will remain rather an unsatisfactory one, the result of this year's transactions being a further increase of a few thousand tons in the visible supplies over those of last year.

PRICES OF TIN.

The tables given below show the monthly average prices of tin in the chief markets of the world for each month of the last six years, compiled from the figures given weekly in *The Engineering and Mining Journal*. For the years prior to 1890 the figures will be found in *The Mineral Industry*, Vols. I. and II.

PRICES OF STRAITS TIN IN NEW YORK, IN CENTS PER POUND.

Year.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1890....	20.95	20.87	20.39	20.13	21.52	21.53	21.17	21.62	24.00	22.60	21.07	21.21	21.42
1891....	20.20	19.99	19.75	19.50	20.00	21.00	20.20	20.10	20.25	20.10	20.00	19.90	20.12
1892....	20.50	20.90	20.25	20.50	20.80	22.00	21.00	20.50	20.35	20.50	20.80	20.00	20.60
1893....	19.90	20.30	20.71	20.81	19.96	19.76	19.15	18.81	20.14	20.84	20.61	20.67	20.15
1894....	20.16	19.60	19.09	19.75	20.21	19.75	19.22	19.22	16.27	15.35	14.56	18.51	18.08
1895....	13.25	13.35	13.20	14.00	14.65	14.15	14.40	14.35	14.45	14.65	14.40	13.91	14.05

THE LONDON TIN MARKET IN 1895.

This market, which sustained last year a fall of £12 per ton, has been subject during the year under review to much less violent fluctuations.

The new year opened with a scarcity of spot and a consequent contango on that position which was dealt in at £61 2s. 6d., while three months, usually at a premium, was done at £61. The statistics published early in the month showing an increase in the stock in and afloat to Europe, from 17,739 to 19,827 tons, had a bad effect and spot touched £59 17s. 6d. during the first week. A rally to £60 7s. 6d. (for both positions) was followed by a fresh decline, due to free offers from the Straits and so "bear" tactics here, and spot was done as low as £58 15s. Some vigorous buying, getting it at this juncture, there was a brisk advance of nearly £3 per ton, to £61 12s. 6d. s. c., followed by "bear" sales, and a drop to £59 12s. 6d. The rise in silver which then occurred, coupled with a sudden advance of about £8 per ton in America, due to the "cornering" of a "bear," caused a sharp rise of 4% here, which was nearly all lost again when the New York market subsided to its former level.

February opened in quiet tendency, with business in cash Straits at £60 15s. down to £59 17s. 6d. The severe frost preventing the landing of parcels arrived in the river, produced a transitory dearth of spot stuff which consequently stood at a premium, but £60 12s. 6d. was the highest price realized, and the month closed dull at £60, £59 5s. having been touched in the interval. The proposal made at the end of February for an International Conference for the rehabilitation of silver induced hopes of an improvement in the latter article, and a consequent advance in tin; and after a drop to £59 10s. during the first half of the month of March these hopes were to a certain extent realized, silver rising to 30gd. and tin rapidly improving to £63 5s. before the month closed and to £64 12s. 6d. at the beginning of April. Throughout this month the tin market continued to be affected mainly by the fluctuations in the value of silver. A drop to £63 5s. was followed by a rally to £64 5s. and later to £64 12s. 6d., the subsequent values ruling between that figure and £63 7s. 6d. Shipments were on a considerable scale, while consumers and speculators here withheld their support. Both during this and the previous months a fairish quantity of foreign tin was purchased by English smelters for conversion into English tin. Had it not been for this outlet, the deliveries would have made a much poorer show than was actually the case. May was a brighter month for trade generally. Peace had been concluded between China and Japan, and the political outlook was on the whole not unsatisfactory. Activity and higher values characterized most metal markets, and tin in sympathy therewith rose rapidly, touching eventually £68 12s. 6d. s. c., an advance of about £4 12s. 6d. per ton upon the closing value of April. The collapse which took place in copper during the third week in May led to a reversal of the strong upward movement in tin, and £65 17s. 6d. was quickly reached. A rally to £67 17s. 6d. followed and was in its turn succeeded by a relapse to £64 6s. 3d., the closing value. The bad statistics published at the beginning of June, showing an increase of about 1,300 tons in the visible European supplies depressed the value still further and there were the additional factors of poor speculation and poor trade demand, partly owing to the total inactivity of a large number of the Welsh tinplate Works. Under these circumstances the decline continued with transitory rallies until £61 17s. 6d. was done, when a reaction carried the value up to £63, the month closing 5s. thereunder. July opened in better tendency and a certain stimulus was imparted by the decrease of a thousand bars in the statistics and by a prime silver market and—with slight fluctuations—the value improved to £64 7s. 6d., from which, in harmony with lower silver, it receded to £63 7s. 6d. This level attracted buyers and the execution of several good buying orders was attended by an advance to £66 15s. The position of the article in itself was far from good and had indeed been undergoing steady depreciation, owing to the greatly increasing excess of production over consumption. The chance of definite improvement appears to lie, therefore, chiefly in hopes of improved consumption and something like a permanent recovery of silver, which, by lowering the dollar price, would naturally tend to check excessive production in the Straits. From £66 15s. prices were sent down to £64 12s. 6d. by the beginning of August as the result of realizations induced by the former relatively high level. The tone continued decidedly dull during the major part of this month and the value declined to £63 10s., recovering, however, to £64 15s. by the close. The statistical position had remained in the *status quo* and the price fluctuations during the ensuing month, September were unusually small, the value ranging between £65 10s. and £64 15s. Business was also on a limited scale, apprehensions of heavy gold shipments from the States checking speculation, while the consumptive demand (especially for the tin plate industry in America) left much to be desired. The interference with trade caused by the shipbuilding strike in Glasgow and Belfast in October, coupled with the unsettled political outlook and the flatness in the various stock exchanges, affected the tin market unfavorably by discouraging speculators. Values, however, were again comparatively steady, and toward the end of the month a rise from £65 3s. 9d. to £66 15s. was caused by anticipations of the severe floods in the Straits checking the production there. The strength derived from this fortuitous circumstance was, however, short-lived, and November witnessed a marked depreciation of values, the market being chiefly under the influence of the weakness in mining shares here and the financial troubles in America, while political affairs were also of a nature to repress, rather than encourage, speculative interest. From £66 15s., accordingly, the value declined to £63 15s. December brought a continuation of the retrograde movement. Early in the month the easing-off of silver and expectations of heavy shipments from the Straits caused a fall from £63 12s. 6d. to £62 10s., and after a rally to £63, the predominance of the selling element sent the value down to £61 6s. 3d., from which it has recovered after intervening fluctuations to £61 12s. 6d. s. c. on the 19th of December.

Australian tin, which opened the year at a premium of 2s. 6d. per ton over Straits, rose gradually to 30s. premium, this figure being attained in September and October. Since then it has gradually sunk until 15s. was reached, and at this it has remained quite steady for some weeks.

The quotations for English tin (common ingots) have varied from about £2 10s. to about £4 5s. per ton over the price of Straits, it being remembered that the terms for the former are less 2½% discount delivery free on board, as against net in warehouse for the latter.

ZINC IN 1895.

The production of zinc in the United States in 1895 will be found summed up in a note on the editorial page. The course of prices is given in the market reports below.

THE NEW YORK SPELTER MARKET IN 1895.

In reviewing the course of the spelter market during the year 1895, we find that more than ever before has the fact been demonstrated that the law of supply and demand is that which ultimately governs the markets of the world, and that it is exceedingly difficult to maintain inflated values for any length of time. It is true that with the excessive prices which at times the smelters had to pay for ores in comparison with those which they realized for the refined metal, many of them found it exceedingly difficult to make both ends meet. However, the events of last year ought to have taught them a lesson and convinced them of the fact that in the long run conservatism is the best policy.

Our last year's report closed with the words: "It is known to the trade that some of the producers have accumulated large stocks, and although during the next two months production may be somewhat less on account of winter interfering with mining operations, the probability is that it will be larger than the demand." This prediction was fulfilled almost to the letter.

In January smelters showed a great desire to sell, and prices sagged off from week to week until they reached 3-25c. New York. It was hoped that this great decline would stimulate consumption and restrict production, especially as, in consequence of the inclemency of the weather, ore went up to \$20 per ton. This hope, however, was not realized. The stocks in the hands of the smelters were a constant menace to the market, and inasmuch as there was no opportunity to use the old safety valve, Europe, for our surplus—in fact, hardly any quantities worth speaking of were exported during 1895, for prices on the other side remained below those ruling in the United States—values receded still further.

Toward the end of February a round lot changed hands in New York at considerably below 3-20c. per lb., a price which had not been reached for some time past. During March and April the market remained dull at about 3-05c@3-10c. St. Louis and 3-25c@3-30c. New York, consumers showing no desire at all to buy. At the beginning of May it was reported that a strike had broken out in the Pittsburg, Kan., district owing to a dispute in connection with wages, and this caused some speculative buying in the St. Louis market. The main advance set in only toward the end of May.

The general revival in business could not fail to have a beneficial influence on the spelter market also, but something more substantial than mere sentiment was needed to give the market a lift. This was brought about by the great improvement in the iron and brass trade, which, however, is now past history. The reports from the galvanizing and brass mills were exceedingly cheerful, and orders from consumers in general were coming in in larger proportions than at any time during the past two years. By the middle of June the surplus stocks had disappeared, and spelter was quoted at about 3½c. St. Louis and 3¾c. New York. Though somewhat irregular, the market advanced steadily during July and August, owing to a continued excellent demand on the part of consumers.

In September destructive rains wrought great havoc in the Joplin, Mo., district; a great many mines were flooded and mining operations were seriously interfered with. Smelters found great difficulty in securing the necessary raw material, and prices for ore advanced considerably. This naturally had to reflect on the prices of the refined metal, and values advanced to about 4-20c@4-25c. St. Louis and 4-35c@4-40c. New York.

During this time everything was in full blast in the spelter districts. Undoubtedly prices had reached a point where it paid the smelters to light all their furnaces. While production was thus as large as at any time during the year, there were already signs of consumers not being as eager buyers as for the three or four months previous. Not only did the high prices of copper and spelter seriously interfere with the brass trade, but the heavy break in iron alone would have been enough to put a stop to any further advance. Though most of the manufacturers were still very busy with old orders, there was an utter lack of new business, and consequently no inquiry at all for the raw material. This fact was still more noticeable in October, when a marked decline set in, prices receding to about 3-80c. St. Louis. Production of ore as well as of spelter continued quite heavy, and though speculation again took a hand, it was impossible to check a further decline to the extent of ¼c. per lb., which we witnessed in November.

At the end of the year we have about the same situation as during the same period in 1894. A stock of about 3,000 tons is held in the West by a speculative clique, in which some of the smelters are said to be interested. Production, though somewhat curtailed—a few furnaces have been shut down and there is some talk of one or the other smelter following this example—is still rather heavy. Consumers show a little more interest at the present low prices. In view of existing conditions, however—the uncertainty regarding financial legislation, the large stocks, etc.—this demand is not as yet sufficient to cause a substantial rise. It will require a further decrease in the production and a better demand on the part of consumers to establish higher prices for the metal, and thus bring about a more prosperous condition of one of the greatest industries of the Southwest.

PRICES OF ZINC.

The accompanying tables give the average prices of commercial zinc, or spelter, in the leading markets for each month of the last six years, compiled from the weekly market reports of *The Engineering and Mining Journal*. For the years previous to 1890 the figures will be found in *The Mineral Industry*, Vols. I. and II.:

AVERAGE MONTHLY PRICES OF SPELTER IN NEW YORK, IN CENTS PER POUND.

Year.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1890....	5-41	5-28	5-18	5-08	5-35	5-57	5-55	5-27	5-06	6-01	6-12	6-10	6-55
1891....	5-55	5-02	5-12	5-00	4-85	5-08	5-06	3-50	4-95	5-02	4-89	4-75	5-02
1892....	4-69	4-62	4-89	4-68	4-79	4-71	4-78	4-69	4-53	4-41	4-47	4-40	4-63
1893....	4-39	4-33	4-28	4-38	4-41	4-27	4-13	3-80	3-69	3-68	3-65	3-80	4-07
1894....	3-56	3-85	3-89	3-62	3-47	3-40	3-43	3-38	3-44	3-45	3-36	3-43	3-52
1895....	3-28	3-20	3-23	3-30	3-50	3-65	3-75	4-15	4-30	4-10	3-55	3-49	3-63

BORAX IN 1895.

The borax industry in the United States in 1895 continued under the same management as heretofore. The production increased slightly, but there was a fall in prices from an average of 7c. per lb. in 1894 to 5c. in 1895, resulting from the reduction in duty on the imported product. The producing localities in 1895 were the Calico mines and the Saline Valley marshes in California, the Columbus and Rhodes marshes in Nevada.

The following table shows the output for five years past:

PRODUCTION OF BORAX IN THE UNITED STATES.

Year.	California.	Nevada.	Total.	Value.
	Pounds.	Pounds.	Pounds.	Dollars.
1891	8,533,337	3,296,663	11,830,000	887,250
1892	11,050,495	1,487,701	12,538,196	940,365
1893	7,990,562	1,199,438	9,190,000	689,325
1894	11,540,069	1,600,498	13,140,567	919,842
1895	11,809,173	1,587,215	13,496,388	739,386

As to the condition of the industry, experience so far has justified the prediction that borax production is on a firmer basis as a mining proposition than under the old plan of working marsh deposits. The mines of borate of lime so far have proved enduring and of favorable quality.

No new element of domestic competition has been introduced during the year. At present prices the margin of profit is too small to permit a profit to any but the most favorably located and economically handled mines or deposits. This leaves the field entirely in the hands of the large producers.

COAL IN 1895.

The coal production of the United States in 1895 is given in the editorial columns in this number. The condition of the coal trade in the various markets is given in the following articles.

THE ANTHRACITE COAL MARKET IN 1895.

In many ways the past year was a remarkable one for the anthracite coal trade. It was remarkable for the things done which ought not to have been done, and also for the things left undone which ought to have been done; in the first half it was remarkable for the number of meetings of presidents and sales agents; in the second half for the total absence of such gatherings, and throughout the twelve months for the numerous plans suggested, all of which were remarkably unacceptable to the majority. The year was also remarkable for the poor showing made by producers in general, and for the fact that even greater disaster was averted.

Probably there is not another industry involving the very existence of many thousands of people and a product that runs beyond the \$100,000,000 mark which has been managed with such an apparent disregard for sound business principles. It has been said that the ability shown in managing the great coal corporations has been about of the grade necessary to conduct a country store, though this is probably an exaggeration. It has seemed to some officials that if they could manage to sell a certain number of tons of coal per month, they had done all that was required of them. To others, that if the traffic statements of their particular roads showed certain figures, they had been equal to the situation. Still others have considered that if the stock of their companies was quoted on the Stock Exchange at a certain figure—generally far above its intrinsic worth—a great and praiseworthy feat of financing had been accomplished. It would thus seem that this trade lacks men who can demonstrate the ability to rise superior to the relative pettiness of the present; that is, men who can grasp the situation and whose vision can take in more than two degrees of the business horizon. This is not, after all, to be taken as derogatory. Great geniuses are rare, and it takes genius—or at least the ability to work—to master all the intricacies and perplexing details of the trade as it stands to-day.

Anthracite coal occupies a position that is in many respects unique. Competition, which is the life of every normal trade, seems to be death to the anthracite. The productive capacity of the collieries is about 5% in excess of the present consumption. An unsold block of a mere 100,000 tons of coal can affect and has affected detrimentally the sale of twenty-five times that quantity. The ordinary laws of demand and supply cannot, in the strict economic sense, prevail in this market without entailing heavy losses—losses, we may add, which can be of particular benefit to no one person or interest, though of great injury to many thousands.

On the other hand, there is no other industry, save a few controlled by "trusts," which can be so closely regulated. The production of anthracite coal is in few hands and can be curtailed without difficulty, so that the danger of over-production can be minimized. This fact in a measure offsets the difference set forth in the preceding paragraph.

The actual cost of producing coal naturally varies in different regions and in different mines. Anthracite has to be "prepared"—that is, broken into certain sizes. The difference in the actual cost of preparing these sizes is seldom the difference in the actual selling prices. "Stove" coal sells at \$3.50 per ton f.o.b., and "broken" at \$3. But if a breaker turns out very much \$3.50 stove, there will also be too much \$2 buckwheat and more than enough worthless culm. This much is known to each producer—that is, the cost per ton; but prominent operators confess that they can only guess at the proper amount of each size which they should prepare in order to profit most by the demand. In other words, an accurate knowledge of the actual requirements of the market, based upon detailed statistics, is wanting, and tends further to aggravate the inherent instability of prices.

If the operators of all the collieries were operators only the situation would be after all comparatively simple. Unfortunately, the great coal-mining companies are also great coal-carrying railroads. There is always a struggle between the two interests. The Delaware, Lackawanna & Western can apparently make money where the Lehigh Valley cannot. Both, let us say, get the same price for their product, and we will assume that the coal itself costs both companies the same. The profit, then, is probably in the transportation. The great trouble is that the double nature of the business permits at any time a juggling arrangement, by which whatever profit or loss there is

may be made to appear in the mining or transportation account as the exigencies of the company—or the stock market—may require.

In 1894 there was a sort of combination, a "gentleman's agreement," which was as near a trust as the anthracite interests could go and keep out of the law courts. Words and promises were broken, and it was shown that such "understandings" availed nothing. The year, in spite of them, was not profitable. In 1895, after June, there was no understanding whatever, and the year was also a poor one. It seems a repetition of an unfortunate alternative. With or without "percentages" and agreed "restrictions" the anthracite men have been unable to make a good showing.

The Market During 1895.—The previous year, 1894, had seen the trade approach dangerously near to utter demoralization, but in December the presidents of the various companies seemed to realize their peril; they held meetings and made suggestions and promises, and appointed a committee of three, consisting of Messrs. Torrey, of the Delaware & Hudson, Henderson, of the Philadelphia & Reading, and Sayre, of the Lehigh Valley, to collect data relative to the outputs and percentages of all the companies for several years previously. So much was expected of these gentlemen that the *Engineering and Mining Journal* christened them the "Salvation Committee," and 1895 really opened better than there had been reason to expect two months before. The "circular"—that is, the f.o.b. prices which the companies had agreed to maintain—was \$3.60 for stove, \$3.45 for egg and chestnut and \$3.35 for broken, and the sales agents recommended that the production for January be restricted to 2,300,000 tons, or 45% of the June '94 tonnage. The market, as usual at that time of the year, was dull for "new" business, and though the companies made some effort to maintain the circular, a pernicious practice of "stretching" old or cheap-priced orders for favored customers soon caused prices to sag, and coal could be bought for 25c. below the "official" figures. Shipments for the month amounted to 3,063,535 tons, exceeding by over 750,000 tons the amount "recommended" by the sales agents and by 375,514 tons the output of January, 1894.

For February the output agreed upon was 2,045,000 tons, or 40% of the June tonnage. The January circular was left unchanged. The "Salvation Committee" continued its labors, for the various companies wanted to establish new "allotments of production," or the percentages of the total tonnage which each transportation company was entitled to. The effect of the excessive output of January was manifest in the weakness of prices, which were really about 30c. below the circular. Some "rusty" and "stock" coal sold for \$3 a ton, stove and egg, f.o.b., and though not really a fair basis for values of the better grades of coal, it tended still further to unsettle prices. A cold snap, which should have strengthened them had the companies adhered to the 40% restriction agreed upon, served only as an excuse for heavy mining, and the month's production was 3,133,246 tons, as against 2,344,511 tons for February, 1894, and 2,045,000 tons, the amount "recommended" by the sales agents as being in their opinion what the market would take safely. It began to look as if in spite of the disastrous experience of 1894 the wholesale anthracite coal trade had not learned wisdom.

For March the circular was left "unchanged," which was wise considering that actual prices were 30c. below it, and the output was agreed on at 3,067,415 tons, or 60% of the June tonnage. Though March is a good coal-using month, prices continued to weaken. The companies did not adhere strictly to the circular, but they did not sell as cheaply as it was said at the time. However, the prices sagged, and from \$3.30 for stove, declined until \$3 was paid at the close of the month. The "Salvation Committee" completed its compilation of statistics and submitted them to the general committee. A new committee, consisting of Messrs. Henderson, of the Reading, Torrey, of the Delaware & Hudson, Sayre, of the Lehigh Valley, Joyce, of the Pennsylvania Railroad, and Maxwell, of the Jersey Central, was appointed to submit new "percentages" based on the "Salvation Committee's" figures.

March shipments amounted to 3,761,665 tons, as against the 3,067,495 tons "recommended" and 2,565,061 tons in March, 1894. The result was that the sales agents met, advised a restriction to 50% of June's output, or only 2,550,000 tons, and again left prices unchanged. Actual prices on April 1st were \$3@3.15 for stove and \$2.85@3 for broken, egg and chestnut. The presidents held a meeting on April 5th, instructed the sales agents to advance f.o.b. prices to \$3.50 for stove and \$3.35 for the other sizes, less the usual commission of 15c., and discussed the matter of percentages, but could not reach a decision, and so a committee to make suggestions was appointed, consisting of Messrs. Wilbur, of the Lehigh Valley, Roberts, of the Pennsylvania, Olyphant, of the Delaware & Hudson, Sloane, of the Delaware, Lackawanna & Western, and Harris, of the Philadelphia & Reading. The latter, however, could agree to nothing without consulting the receivers, and it developed later that the policy of the Reading was "21% and not a ton less." All negotiations came to an abrupt end on account of this stand. The April output was 3,139,122 tons, as against the "recommendation" of 2,550,000 tons and 2,799,307 tons in April, 1894.

May opened badly, in the nature of things. The demand was very light, and though prices were still supposed to be upheld, in view of the presidents' orders, a few sales of stove coal at \$3 on board took place. The sales agents, in the absence of percentages, had been unable to agree on the precise amount to be mined during the month, but after several meetings the representative of the independent operators in a fit of inspiration suggested that every producer should close down entirely three consecutive days each week. This was adopted and the various interests agreed to try to maintain prices at \$3.35 for stove and \$3.20 for the other sizes. Then one of the most senseless of all the senseless actions of the anthracite interests occurred. In spite of the unsettled feeling, the lack of demand and the inability to agree on a working plan to save the trade from demoralization, in spite of the fact that a radical restriction—half-time—had been agreed upon, the various operators rushed the production to such an extent that notwithstanding the three days' suspension per week, shipments during the week ending May 18th were 817,523 tons, or at a rate at which, had the various interests worked continuously, would mean more than 85,000,000 tons a year. Of course, no producer could maintain the degree of efficiency necessary to achieve such a vast total, but it showed how great the productive capacity of the collieries was, and how much in excess of any demand that is likely to arise for many years to come. Although working on half-time during the month, the May production was nevertheless 3,788,946 tons, a decrease of nearly 100,000 tons as compared with 1894, to be sure, but still far too much for the market. Of course, at the next meeting the sales agents could only recommend again the three-days-per-week suspension and leave prices "unchanged" at \$3.35 for stove and \$3.20 for the other sizes. Actual selling prices were unsettled and stove could be bought for \$3, though buyers very wisely decided that as prices were weak and showed a de-

clining tendency there was no especial inducement to buy ahead. The June shipments aggregated 3,777,644 tons, and the sales agents held several meetings in reference to the course of action for July. Everybody seemed more or less weary of the farce, and all such attempts were abandoned. The trade was thenceforth to be governed by ordinary market conditions, and with the aid of Providence it was hoped to avert bankruptcy.

Early in July the Delaware, Lackawanna & Western, for "good and sufficient reasons," declined to furnish to the Bureau of Anthracite Statistics the figures of its shipments, and the trade had the still greater disadvantage of working without knowing how the general production was running.

Shipments for the six months ending June 30th, 1895, were 20,674,905 tons, against 19,398,020 tons for the first half of 1894.

Naturally prices continued to sag and in July sales of stove coal were made at \$2.75 on board. This was for good grades—not "fancy"—of coal, and "stock" coal was sold for even less. In August coal still sold on the basis of \$2.75 for stove, and many rumors of \$2.60 were heard. Probably some sales were made at less than \$2.75, but as many transactions took place at more than \$2.75 we give that figure as a fair quotation. The market was very dull, and neither buyers nor sellers were anxious to trade, the former because there was no profit at that figure and the latter because it was thought that prices might decline still further.

With the approach of the fall prices began to stiffen. September opened with some stove selling at \$2.75 f.o.b., and closed at \$3.20@3.30. There was an almost unprecedentedly severe drought in some of the regions, which made unavoidable a marked restriction of the output. The West was bare of stocks and shipments thither caused a scarcity of cars, which still further aggravated the situation, so that little coal, comparatively, came to tidewater. Dealers at this time, foreseeing trouble, began to send in their orders at around \$3 and \$3.25, and the first thing the trade knew, prices were advanced to \$3.75 and then to \$4. The latter advance did not really obtain. A few dealers who were absolutely without coal in their yards and could not get deliveries on their old orders were forced to pay such figures for small cargoes for immediate delivery. But with the ending of the drought and the consequent increased output prices again declined, so that very few sellers disposed of any \$4 coal to speak of, and few even at \$3.75. We know from the returns made by certain companies to certain independent operators, whose product is bought on the basis of 60% of the tidewater price, that these companies received only from \$3.10 to \$3.20 for coal sold, at a time when \$4 was supposed to obtain. In other words, the advance came too late and lasted too short a time, for as soon as Western shipments were sufficiently heavy to preclude the danger of a shortage there, values declined slowly but surely, and by December 1st coal was selling at \$3.60 for stove, \$3.35 for chestnut, \$3.25 for egg, and \$3 for broken. The market closed with a demand governed exclusively by the thermometer. Quotations on the last day of the year were: Stove, \$3.35@3.50; chestnut, \$3.10@3.25; egg, \$3.15@3.30; broken, \$3@3.10; all net on board.

General Observations.—It will be seen from the foregoing that the past year must have been an unprofitable one for all producers. It has been stated that the only operators who made money were A. S. Van Wickle & Co., who had a contract with the Pennsylvania Railroad, by which the latter company agreed to buy the entire output of one colliery operated by the firm at a price which we understand to be \$2.35 per ton at the mine. The contract was signed at the time when the "Penny" feared that the meteoric McLeod would "gobble up" all the tonnage of the collieries in the region. The colliery in question worked on full time the year through.

Primarily, the unprofitable year is doubtless due to the absence of an *entente cordiale* among the anthracite interests. The Reading, that old mother of combinations, has been blamed for its refusal to accept less than 21% for its allotment. It declined to submit the matter to arbitration, and not being compelled to pay interest, as it was in the hands of receivers, it presented its ultimatum, and calmly proceeded to mine as much as it pleased. This question of allotments is in itself such a complicated matter that it is impossible to offer plans. It approaches, too, dangerously near an illegal affair. It is well enough to allot fixed percentage to each coal transportation company, but after all, none has ever adhered to its allotment, and the Pennsylvania has always declined to enter into any agreement to restrict, formal or informal. However, the lack of even this understanding, half-binding only though it was, rendered futile all efforts at a concerted restriction. And unrestricted production wrought havoc.

Though all interests suffered, some were worse sufferers than others. Briefly stated, we may say that those sellers who disposed of the least \$2.75 stove suffered the least. And the selling of coal at the August figures was a matter of individual temperament more than of anything else. When the Lehigh Valley sold stove coal at \$2.75 on board, it meant that operators along its line received \$1.65 per ton on cars at the mines. The cost of mining, royalties, etc., differ so much in the various regions and collieries that no estimate of value in calculating losses or profits can be given. The companies admit that profits were small. Some of the independent operators, who certainly can mine as cheaply as and, oftener than not, more cheaply than the companies, claim that they actually lost money.

The amount of dead work performed by the companies which make the best apparent showing was small. The stockholders may receive a report which is not so poor, in view of the circumstances; but it is not specified therein, in the item of expenditures, that the amount of development work was really inadequate to the future needs of the collieries, and that this will have to be made up sooner or later—probably the former. Colliery superintendents and district inspectors have assured us that the amount of such development work, and the preparation of the collieries in order to insure a continued normal output, was last year considerably below that for previous seasons. Therefore, when stockholders a year or two hence read under the head of "Expenditures" that the amount expended in 1896 for "colliery improvements" greatly exceeds that spent during 1895, they will know that they are simply paying back debts. In other words, the ill effects of the past year will be felt for many moons to come.

Throughout the year buyers bought ahead less than usual. In the unsettled condition of the market, they felt, not illogically, that there was no telling just how low prices might go. This created a chronic light demand, and accumulations of stocks seemed to so frighten certain sellers that every possible inducement and opportunity was offered to buyers to place their orders. There can be no objection to reasonable prices. We should condemn \$5 coal as extortionate; but there is decided objection to sales at a loss where there is little real need for it. The stockholders of the various companies have invested many millions of dollars in an industry which affords a means of liveli-

hood to hundreds of thousands of people. It is only reasonable that they should have a fair return for their investment, and for this reason, while opposing anything that savors of trusts or combinations as illegal and immoral, "The Engineering and Mining Journal" desires to see the anthracite companies so managed as to yield fair profits. It is practically impossible for anthracite coal to go unduly high. But it may go unduly low. While it may have been impossible in midsummer to obtain \$3.25 per ton for coal, why did the companies bid so eagerly on yearly contracts for schools and other public institutions at prices at which there could be little or no profit and which could serve but to unsettle still further an already overweak market? It is the stockholders of the great coal corporations who should ask this and other pertinent questions. And they should insist upon categorical answers.

THE COAL TRADE OF BUFFALO FOR 1895.

BY OUR SPECIAL CORRESPONDENT.

The annexed figures give some idea of the trade in anthracite and bituminous coal and coke in Buffalo for 1895. A sketch of the trade since its inception to the present time would be interesting reading, but we can only say here that in 1842 only 900 tons of anthracite coal were reported as being received; in 1852, 23,000 tons; in 1862, 132,500 tons; in 1872, 521,000 tons; in 1882, 1,623,000 tons; and in 1892, 4,894,700 tons. Fifty years thus showed progress and material wealth.

During 1895 a large trade was done in anthracite coal at a very small profit. A distinguishing feature of this market is the total lack of co-operation among dealers to maintain prices. Coal has been sold to private families who ordered five tons or more at a profit of only 10c. per net ton. Poor families, however, ordering from half to one ton at a time, were, as a rule, always charged full circular rates.

All the coal is sold from the trestles, as their facilities prevent the expense of keeping coal yards, and anybody who can hire a horse and wagon becomes a dealer in coal; therefore there is no necessity now, as far as making money goes, to lay in stocks when coal is cheap in the spring and hold for higher prices the next fall and winter.

Since the end of October the anthracite coal schedule of prices has been fairly well maintained on small orders, and some concessions allowed on large ones. The trade for this winter depends upon the weather; if it is an open season, then there will be small consumption, and if severe cold occurs, then business will be large. It is not expected that any advance will be made in quotations before next April.

With regard to bituminous coal, all contracts made during the year were at extremely low figures. Coal was abundant; there was no "famine" at any time—supply generally far exceeding the demand. With run-of-mine coal at \$1.40 per net ton on track at Buffalo, dealers say that electricity will have sharp competition in the race for cheap fuel and light.

The supply of cars at times while navigation was open was scarce for anthracite coal. No difficulty apparently was experienced in the bituminous regions on this account.

The anthracite coal brought to Buffalo comes by five lines of railroads; the Delaware, Lackawanna & Western brings 25%; the Erie 23%; New York Central, 18%; Lehigh Valley, 23%; Western New York & Pennsylvania, 9%.

There are seven shipping docks and coal pockets at the port of Buffalo; total average shipping capacity daily, 25,000 tons; the average capacity of the pockets daily, 36,800 tons. Outside the city limits at Cheektowaga is the stocking coal trestle of the Delaware, Lackawanna & Western, with a capacity of over 100,000 tons storage. At the same place the Lehigh has its trestles and stocking plant of 175,000 tons storage capacity, with a shipping capacity of 3,000 tons daily; and has a transfer trestle for loading box-cars, with a capacity of 100 cars daily. And at the same point the Erie has a stocking plant, with average daily capacity of 1,000 tons, and storage capacity of 100,000 tons. The Reading has in the city a large trestle and pocket for the convenience of the retail trade, and in connection with their docks, with a capacity of 2,000 tons. The Buffalo, Rochester & Pittsburg has terminals fronting on the Blackwell Canal, with a water frontage of 1,100 feet; also a town delivery yard, with a hoisting plant for loading and coaling vessels, used by Messrs. Coxie Bros. & Co.

The imports of bituminous coal into Buffalo in 1882 were only 65,000 net tons, and in 1893, 2,896,614 net tons—the highest figures on record. In 1892 the statistics report only 2,280,470 net tons, while this year the estimate is 2,350,000 net tons.

The coke trade of Buffalo during 1895 was very large in consequence of the increase in November of manufacturers using this product. Coke is cheaper at Buffalo than at Chicago and Philadelphia through the low railroad freights. Crushed coke is being largely introduced for family use; it is claimed that it lasts longer than a similar quantity of anthracite coal, is \$1 per ton cheaper, besides being a clean, smokeless fuel.

The course of coal prices at Buffalo during 1895 is shown below:

LIST PRICES OF ANTHRACITE COAL AT BUFFALO IN 1895.

Date.	Per Long Ton, f.o.b. Buffalo.		Per Long Ton, on cars at Buffalo or Suspension Bridge.			Per Short Ton, at Retail in City Limits.		
	Grate.	Stove, Egg and Chestnut.	Grate.	Stove, Egg and Chestnut.	Pea.	Grate.	Stove, Egg and Chestnut.	Pea.
January 1.....	\$4.70	\$4.95	\$4.40	\$4.65	\$3.75	\$5.00	\$5.25	\$3.75
May 3.....	4.05	4.30	3.75	3.90	3.00	4.40	4.50	3.75
September 15.....	3.85	3.80	3.35	3.50	3.00	3.75	4.00	3.50
October 1.....	4.30	4.55	4.00	4.25	3.00	4.50	4.75	4.00
October 24.....	4.45	4.70	4.15	4.40	3.00	4.75	5.00	3.50

The price of ordinary bituminous coal ranged in 1895 in Buffalo from \$1.15 per ton for slack to \$2.50 for screened lump. These prices were for short tons (2,000 lbs.) in car lots on track, delivered at most convenient siding to factories, vessels, etc. No. 1 Cannel sold at \$4.25 per ton, and Briar Hill lump at \$6 per ton. The price of coke varied from \$2.85 to \$3.75 per short ton.

The statistics collected by William Thurstone, secretary of the Merchants' Exchange of Buffalo, show that the coal trade of Buffalo have been as follows for five years, in tons of 2,000 lbs., the figures for December, 1895, being estimated in advance of the preparation of the full statement:

	1891.	1892.	1893.	1894.	1895.
Receipts—					
Anthracite by canal.....		54,760	70,546	42,130	12,382
Anthracite by rail.....	4,507,804	4,750,000	4,700,000	4,230,000	4,000,000
Bituminous by rail.....	2,428,084	2,652,441	2,921,614	2,905,470	2,350,000
Total receipts.....	6,935,888	7,457,201	7,692,160	6,577,600	6,362,382
Shipments—					
Bituminous by canal.....	34,060	29,316	19,396	8,840	4,280
Anthracite by lake.....	2,358,895	2,822,330	2,681,173	2,475,255	2,620,768
Bituminous by lake.....	7,000	30,000	22,500	10,000	22,000
Total shipments.....	2,399,955	2,881,646	2,723,069	2,494,095	2,646,288

Vessel owners did an excellent season's business in 1895, despite the dull opening. High freights, with plenty of grain, ore, coal, etc. to carry, were the features of the last part of the year 1895.

The coal rate from Buffalo to Chicago opened at about 30c. per net ton, advancing gradually to 50c. the middle of June; advanced again to 65c. the first week in September, and later in the month to 70c.@75c.; and from October 1st to the close, 90c. Duluth freights on coal ruled low; opened at 15c., advanced to 20c.@25c., and from the middle of August 30c. was paid. Freights to other ports followed suit relatively. The total movement of the year exceeded that of 1894, but was not quite up to 1893 figures, shown as follows: Shipments, 1895, 2,620,768 net tons; 1894, 2,485,255 net tons; and 1893, 2,703,673 net tons. Navigation lasted about the same number of days. Notwithstanding the movement as stated, indications point to the necessity of heavy railroad shipments this winter to supply the wants of the West, the Northwest and Canada, as many orders are unfilled.

Of the 2,620,768 net tons of anthracite coal shipped by lake from Buffalo during 1895, about 938,000 tons went to Chicago, 610,000 tons to Milwaukee, 85,000 tons to Toledo, 6,000 tons to Detroit, 16,000 tons to Bay City, 9,000 tons to Kenosha, 25,000 tons to Saginaw, 28,000 tons to Racine, 32,000 tons to Green Bay, 198,000 tons to Duluth, 270,000 tons to Superior, 43,000 tons to Gladstone, 30,000 tons to Manitowoc, 8,000 tons to Sault Ste. Marie, 5,000 tons to Sheboygan, 6,500 tons to Washburn, 3,000 tons to St. Clair, 3,000 tons to Port Huron, 10,000 tons to Lake Linden, 14,500 tons to Fort William, 10,000 tons to Ashland, 17,000 tons to Hancock, 1,700 tons to Houghton, 2,000 tons each to Grand Haven, Menominee, Cheboygan, Marine City and Michigan City, and the balance to Canadian and other ports too numerous to specify, varying from 25 to 1,000 tons per cargo. The rates of freights to principal ports were as follows from Buffalo: 30c.@35c. to Chicago, 30c.@35c. to Milwaukee, 15c.@30c. to Duluth, Superior and Lake Superior ports, 30c.@35c. to Green Bay, 25c.@50c. to Toledo and Bay City, 20c.@40c. to Detroit, 40c.@1 to Racine, 35c.@70c. to Saginaw.

Natural gas continues to be extensively used for family purposes in our city. The supply is obtained from the fields of Pennsylvania, the wells in Canada, twenty miles away, and from the numerous wells just outside the city line east. This fact accounts for the decreased consumption of coal which should show an increase in accord with our increased population. A large residence area has been piped for, and is now supplied with this fuel since 1894. New wells come in every few weeks, which practically take the place of those which do not flow so freely as when first discovered.

A coal dealers' protective association was formed here last fall in consequence of the demoralization of the trade by cutting of prices, giving short weight, etc., so as to protect their interests as well as those of the consumer.

Electric power is slowly but surely coming to Buffalo from Niagara Falls. One of our suburban railroads is using it, and a few manufacturers. By next August it is expected that the contract now being made with the Niagara Falls Power Company will be an accomplished fact, and 10,000 horse-power will be available as a first instalment of many thousands more.

THE CHICAGO COAL MARKET IN 1895.

BY OUR SPECIAL CORRESPONDENT.

The year 1895 was one of the most remarkable years in the history of the coal trades of this city. It was a year that brought no profit to the coal dealer, and it showed the lowest prices on coal than had ever before been known in this market. Almost through the entire year the railroads centering here have been carrying on a war of rates. The lines bringing soft coal from Ohio, Indiana and Illinois points battled fiercely among themselves for the privilege of carrying coal, and in consequence it was never before so cheaply brought to Chicago. The railroads running west to the Missouri River fought over the hard-coal traffic, and it is said that rates of \$1 per ton were made by one of the roads to get the business. Vessels for carrying coal on the lakes were in such demand for the haulage of iron ores from Michigan and Minnesota points that it was almost impossible for coal shippers from Buffalo and other ports to get the boats, the profit being so much higher in carrying iron ore. In consequence shippers had to pay a very high rate to get anthracite coal to the Chicago market. The month of January brought with it but little improvement in the coal trade over the closing month of 1894, and the following months up to and through August bettered the situation but little. Quotations in January on anthracite coal stood at about \$5; this held until June, when there was an utter collapse in prices, and the market went to pieces. Dealers apparently abandoned all thought of profit, as may be seen from the following. In July, bids to furnish the city of Chicago with 82,000 tons of anthracite coal were received. A great many firms tried for this business and all bid low. One firm offered to supply the coal at \$4.45 delivered, and at that price it represented a saving of 70c. per ton to the city over the 1894 figures. Bids were also opened for supplying the city with bituminous coal, and they ran from \$1.97 to \$3.80, according to specification and in every case there was a large decrease in price from 1894.

Contention for the limited business outside of the city contracts was great, and in most cases the consumers undoubtedly got the best of the deal. Toward the end of August some improvement was observed, and the remaining months of the year showed up fairly well, November and December business being the best that dealers had seen in a long time.

Throughout the entire year there has been no lack of either hard or soft coal in the yards and on the docks of this city. Rumors of short supplies were circulated frequently, but there was really no cause for them, as stocks have been ample to meet all demands. To be sure the hard-coal tonnage is some 50,000 tons short of a good year's supply, but when one takes into consideration the year's demand, no shortage is apparent. The receipts of hard coal by lake increased over 1894 shipments, and rail shipments did not reach a large

aggregate on account of the smaller production at the mines and the lack of demand.

Navigation opened on the lakes a couple of weeks later in 1895 than it did in 1894, but it kept up a couple of weeks longer at the close of 1895. In two days during the closing week of navigation, such was the rush to get coal to Chicago that no less than sixteen large boats laden with hard coal arrived at the city. Bituminous coal has been shipped to Chicago in great quantities, speculators having had a hand in running up a large tonnage during the worst time of cutting rates among the railroads. Receipts of soft coal were also greatly augmented by the fact that the mines of Ohio, Indiana and Illinois were all working for a large output, and as there were no strikes of any importance, a great tonnage was shipped to this and other markets. The actual consumption of soft coal for 1895 was much larger than in the preceding year, chiefly through the marked increase in manufacturing and other industries. There was but little profit in the business, however, prices having risen but little all through the year, owing to the large supplies and sharp competition.

The closing price of hard coal for the year was about \$5 per ton, though there was nothing much to indicate firmness, and possibly \$4.75 would be nearer the actual wholesale price. The year on the whole has furnished but little satisfaction to the coal dealer, and it has been remarked that another year of such trade would throw out of business nearly a third of the dealers in Chicago.

THE PITTSBURG COAL MARKET IN 1885.

BY OUR SPECIAL CORRESPONDENT.

The Pittsburg river coal trade is something very uncertain, having to depend entirely on the weather, which, as all persons know, is not very reliable. We have known of coal shipments every month in the year; this, however, is something that does not take place very often. Take, for instance, this year; the coal runs up to date were made in January, March, April and November; this is all so far, with a total shipment of 45,003,000 bushels. The table of shipments for 14 years given below will furnish our readers with a fair view of the situation. The highest shipment in that time was in 1888, which reached 109,902,000 bushels; this shows what the coal trade will do for Pittsburg when the system of locks and dams on the Ohio River is completed. The lowest amount shipped, except this year, was 55,432,000 bushels in 1884. The coal run in November was probably the most disastrous on record. Owners in their anxiety to meet the wants of their customers in the West and South started the tows before there was a sufficient stage of water; the result was that coal and other property was lost, variously estimated at \$75,000 to \$100,000. There is at present loaded in the pools and harbor between Pittsburg and Davis Island dam, at least 25,000,000 bushels of coal ready to go out as soon as circumstances will permit. The first good rise in the Ohio will witness about one-half of that amount depart. Between low water in the Ohio and miners' strikes, the river coal operators have had a year of trouble, accompanied with heavy losses and very hard work.

The river shipments from Pittsburg for 14 years past have been as follows, in tons of 2,000 lbs.:

Year.	Cincinnati.	Louisville.	Total.	Year.	Cincinnati.	Louisville.	Total.
1882.....	1,378,480	1,467,260	2,845,740	1889.....	1,214,400	1,515,800	2,730,200
1883.....	1,261,320	2,258,480	3,519,800	1890.....	1,304,640	2,042,160	3,346,800
1884.....	985,240	1,232,040	2,217,280	1891.....	1,125,000	1,931,600	3,056,600
1885.....	1,303,600	1,633,360	2,936,960	1892.....	973,560	1,519,960	2,493,520
1886.....	1,329,160	1,537,406	2,866,566	1893.....	879,950	1,617,840	2,497,790
1887.....	830,800	1,498,920	2,329,720	1894.....	1,139,960	1,383,280	2,523,240
1888.....	2,053,560	2,340,520	4,394,080	1895.....	736,240	1,663,880	1,800,120

To find a similar state of affairs we must go back to the great "coal famine" of 1879, when coal in Cincinnati went up to 40c. a bushel.

THE COKE TRADE OF 1895.

BY OUR SPECIAL CORRESPONDENT.

The growth of the coke trade of Western Pennsylvania has been unprecedented notwithstanding the strikes and the scarcity of water; at certain periods there has been a large growth of production, and with sufficient cars to carry it away the production would have been larger still. The number of ovens in the coke region is 17,937; at the present time there are 16,190 in blast and 1,747 ovens idle. The January production was 540,521 tons; shipments during the same time, 536,945 tons. In March production reached 783,197 tons, with shipments amounting to 809,898 tons; in this month's shipment there was 26,701 tons of stock coke used. During April, May, June and July, production fell off largely owing to strikes, scarcity of cars and water. In August the revival of the iron trade caused a big demand; production was 717,294 tons, shipments 763,643 tons, stock coke being again used. In September and October business fell off about 100,000 tons.

November, however, beat all records with production amounting to 800,714 tons, and shipments of 47,680 car-loads, or 863,484 tons. The total result for the year 1895 was as follows: Production, 7,305,273 tons; shipments, 413,960 car-loads, or 7,538,549 tons. Thus the year's shipments included 233,276 tons of the stock coke on hand at the beginning of the year.

Prices.—Prices opened in January at \$1 f.o.b. at ovens for a ton of 2,000 lbs. and remained nominally at that figure for some time, although there were reports of sales below that figure. Later the demand was such that prices advanced to \$1.35. A short time since a further advance was reported to \$1.60; the question of a further advance of the price to \$2 is an open question. The competition is so strong that it is extremely difficult to form any opinion; the month of January will probably solve the question. The present quotations per ton are: Furnace, \$1.60; foundry, \$2; crushed, all sizes, \$2.65 per ton of 2,000 lbs. f.o.b. cars at ovens.

Freight per ton from the Connellsville region (which includes any part of it) to the principal points of consumption is as follows: To Pittsburg, \$0.65; to Mahoning and Shenango Valleys, \$1.29; to Wheeling, W. Va., \$1.20; to Cleveland, O., \$1.56; to Buffalo, N. Y., \$2; to Detroit, Mich., \$2.40; to Cincinnati, O., \$2.55; to Toledo, O., \$2.40; to Louisville, Ky., \$3.10; to Chicago, Ill., \$2.65; to St. Louis, Mo., \$3.30; to East St. Louis, \$3.15; to Baltimore, \$3.15; to Boston, \$3.50.

THE CHEMICAL MARKET DURING 1895.

HEAVY CHEMICALS.

The course of the heavy chemical market during 1895 was regular and unexciting. Following the lines of general business improvement noted during the second half of 1894, the consumption showed signs of returning to normal proportions and the production of the domestic article and the importations of foreign goods showed a corresponding increase. In this country the Solvay Process Company, and in England Brunner, Mond & Company, and the United Alkali Company practically control the situation, so that after the episode of 1894—the sending to England of two or three lots of caustic soda—a truce was arranged and the various interests worked amicably in so far as this country was concerned.

There really was no especially salient feature in the market here during 1895. Caustic soda opened at 2@2½c. according to test. There was an improved business in point of volume, but lacking in elements of uncertainty or speculation. The weeks dragged on without appreciable change, but in the fall, owing to the understanding among makers, values stiffened and ruled steady, so that at the close of the year ruling prices were 2½@2¾c. per lb. for 70-74% and for 76%, 10c. more per hundredweight. The same remarks apply to alkali. Prices declined during the course of the year, for on January 1st, 1895, quotations were 90@95c., according to test and package. As low as 80c. per 100 lbs. was subsequently paid on a few large orders, but this could scarcely be called a fair market quotation. In the fall prices stiffened gradually and advanced, so that at the close of the year quotations were 90@97½c. according to test and package, though actual business was done at 85@90c.

Late in December it was definitely announced that the differences between the English alkali makers had been satisfactorily arranged and an agreement signed. The details of the plan had not reached us at the time of going to press.

The large decrease in the imports of sal soda noted in the statement given below show how the decreased cost of the domestic article has brought it into more extended use. Prices opened at 70@75c. for domestic and 5c. higher for English. Gradually the price declined, and as low as 60@62½c. was paid for domestic.

Our cousins across the water have not deemed it worth their while to compete with this price, and hence the falling off in imports. Bleaching powder enjoys the advantage of having no competition from domestic sources. The English article is the favorite, due to its excellence, and the Continental makes have a hard time of it in their endeavors to gain a foothold here. Owing to the general business improvement the imports of bleach were heavier in 1895 than in 1894 by about 20%. It is noteworthy, though scarcely to be wondered at, that the imports of the Continental article for last year show a falling off of over 50% as compared with 1894.

Prices being regulated by the Alkali "Union," naturally fluctuated but little, opening at 1.75@1.90c. for prime English brands, and 1.50@1.65c. for continental. Prices stiffened and advanced slowly until at the close 1.90@1.95c. was the current spot price. Contracts for yearly supplies are made for a certain quantity, and prices are based on the current market quotations at the time of delivery with the stipulation that they are not to exceed a certain maximum figure. Such an arrangement is equitable to the contractor, for it eliminates the uncertain or speculative element. The lower the current price is the less the contractor pays.

During the past month supplies have grown scarcer owing to storms on the other side interfering with shipping operations, and as a consequence current market rates are 10 or 15 points higher than the maximum contract price. The principal consumer, the paper trade, has been more active this year than last, and the bleaching powder market showed a corresponding improvement.

Chlorate of potash also shows a marked increase in imports. Closing quotations were 8½@9½c.

IMPORTS.

The imports of heavy chemicals into the United States for the 10 months ending October 31st, according to the Bureau of Statistics, were as follows:

Soda ash, 229,349,774 lbs. in 1895, against 229,081,101 lbs. in 1894; bleaching powder, 86,511,857 lbs. in 1895, against 78,629,773 lbs. in 1894; caustic soda, 54,705,758 lbs. in 1895, against 36,483,160 lbs. in 1894; sal soda, 5,792,659 lbs. in 1895, against 18,928,704 lbs. in 1894; other salts of soda (excepting nitrate), 1895, 8,060,760 lbs. and 1894, 14,645,153 lbs.; chlorate of potash, 4,028,191 lbs. in 1895, against 3,768,837 lbs. in 1894.

ACIDS.

During the first half of 1895 the acid market was practically what it had been during the preceding year. The depression of 1893 and 1894 resulted in leaving considerable stocks in the hands of makers, and this in turn tended to make competition among them very lively and prices very low. During the second half of the year a marked improvement took place in the demand and acid became scarcer than at any time since 1892. Prices naturally advanced, and by the time the contracts for 1896 delivery were ready to be signed, values were higher than had been expected.

Prices opened in January as follows: Sulphuric, 60°, 60@70c.; 66°, 70@85c.; chamber acid, 50°, \$5.75@\$6.50 per ton; muriatic, 18°, 75@85c., 20°, 80@95c.; nitric, 36°, 3-20@3-50c.; 40°, 3-90@4-35c.; 42°, 4-35@5c. These prices did not go much lower, though early in the summer they were "shaded" and obtained rather freely, 66° sulphuric selling in some instances at 65@70c., and chamber acid in large lots at \$5.25@\$5.50 per ton. Later on values advanced, and on December 31st they were: Sulphuric, 66°, 75@90c. per lb.; chamber acid, 50°, \$6.50@\$7 per ton; muriatic, 20°, 70@80c. per lb.; 22°, 80@90c.; nitric, 36°, 3-50@4c.; 40°, 4@4-50c.; 42°, 4-50@5c.; aqua fortis, ½c. less per pound than nitric of the same strength.

As compared with 1894, the past year undoubtedly showed an increased consumption. The improvement in the business of consumers was general and more acid was used. The production also shows an increase over 1894. While there has not been a marked increase in the productive capacity of the plant of any one manufacturer, alterations and improvements were made by various others, which resulted in a greater aggregate capacity. The year was not altogether a profitable one, for business was not really good until the fall, but, considering the "cutting" of the

first half of 1895, manufacturers should not be dissatisfied with their showings.

BRIMSTONE.

The course of the brimstone market during 1895 was devoid of excitement or fluctuation. It was uniformly steady and prices ruled low. On January 1st quotations for best unmixed seconds were \$16@\$16.25, and \$1 less for thirds. On July 1st prices for seconds were the same but thirds were higher, being quoted at only 50c. per ton less than seconds. On December 31st best unmixed seconds were held at \$15.25@\$15.37½ and thirds at 50c. less. All these quotations were for shipments. The price of brimstone on the spot or "near-by" is always higher, as nobody buys that way unless he is in urgent need of supplies or else in small lots, and hence is expected to pay a higher sum. Again, a decrease in the available supply for prompt delivery puts up the price of spot, as was recently the case, when, owing to the loss in the Mediterranean of a steamer having some brimstone for this country, prices advanced, and \$17 for spot and "near-by" was quoted. This lasted, of course, only as long as the shortage in the supply existed.

The shipments of brimstone from Sicily to the United States during 1895 were less than in 1894. We are enabled, through the courtesy of Messrs. Alfred S. Malcomson and Parsons & Pettit, the well-known brokers in brimstone, to give interesting and valuable statistics. Thus the exports from Sicily to the United States during 1895 were as follows: January, 5,758 tons; February, 9,675 tons; March, 7,350 tons; April, 5,900 tons; May, 3,225 tons; June, 9,675 tons; July, 7,650 tons; August, 8,613 tons; September, 11,485 tons; October, 7,494 tons; November (estimated), 12,000 tons; December (estimated), 10,000 tons. Total for the year (estimated), 98,825 tons.

A comparison of the first 11 months of the year for some years past shows 88,825 tons in 1895; 93,000 tons in 1894; 75,000 tons in 1893; 74,000 tons in 1892, and 84,000 tons in 1891. Shipments from Sicily to all countries for the first 11 months were 318,000 tons in 1895; 306,000 tons in 1894 and 316,000 tons in 1893.

Stocks in Sicily have been heavy of late months, to which fact must be attributed the uniformly low price of the past year. In November, 1895, stocks were 216,000 tons, as against 193,000 tons in November, 1894, and 210,000 tons in November, 1893.

Some Japanese brimstone arrived at this port during the year, and while exact figures are wanting it is safe to say that the total was under 10,000 tons.

The total imports into the United States during 1895 may be estimated at about 127,000 tons, compared with 124,467 tons for 1894. The greater amount for the past year is due to the fact that in the receipts are included cargoes which sailed from Sicily in 1894.

The United States production in 1895 was confined to a small output from Cave Creek, Utah, and a few hundred tons produced in an experimental way in Louisiana. It is expected, however, that the near future will see a substantial output from these and other domestic fields.

Producers in Sicily have claimed there is no profit in their operations with sulphur selling at present figures, and, as a result of their agitation on the subject, the Italian Chamber of Deputies has passed a bill having in view the promotion of the warehouse system in Sicily. The full particulars about the bill have not been cabled over yet, but it is understood that warrants will be issued and that depositors will get a certain rebate. Producers, it is to be presumed, will be enabled to "carry" stocks of brimstone for a longer period than they can now, thus being able to sell at the proper time—that is, when prices are highest. The Italian Government may also reduce export duties. But how all this will advance the price of brimstone it is difficult to say, in view of the excess of the production over the consumption. Details of the new plan will be published in the *Engineering and Mining Journal* at an early date.

NITRATE OF SODA.

There were no violent fluctuations in this market during 1895. The price opened at 1.95@2c. in January and declined steadily, touching 1.60 in May. From that time it slowly and steadily improved, going as high as 1.80c. It closed steady at 1.70c. The consumption showed a fair increase over the preceding year.

In a report, issued in 1895 by the Treasury Department of Chile, the production of nitrate for several years back is given as follows, in Spanish quintals, the quintal being equivalent to 90 lbs.: 1894, 23,778,413; 1893, 21,056,580; 1892, 17,478,000; 1891, 18,739,000, and 1890, 23,373,000.

Messrs. Mortimer & Wisner, the well-known nitrate brokers of this city, estimate that the production during 1895 amounted to 1,270,000 tons, the largest ever known. Of this amount about 1,162,000 tons were shipped to Europe and about 108,000 tons to the United States.

The production for 1896 promises to be even greater than last year, the prevailing low prices having caused an increased consumption in Europe, which is likely to continue.

Stocks on hand in the United States on January 1st, 1896, 58,367 bags. The visible supply to April 1st, 1896, 363,839 bags of 220 lbs.

SODA PRODUCTION IN THE UNITED STATES.

The production of soda in the United States is increasing rapidly, and the output for the year 1895 was about 161,000 metric tons, counted as 58% ash. (It is a satisfaction to have one industry in which the greater part of the product is counted in metric tons.)

The great Solvay Works are preparing to increase capacity by 50% through their new Detroit Works. The Mathieson Alkali Company at Saltville, Va., is also preparing to make a large output of ash and caustic during the coming year, and is now working the Castner electrolytic process with excellent results. This company has a magnificent plant, and will no doubt become a very important factor in the market.

The neighborhood of Detroit, Mich., will shortly become a great, if not the greatest, alkali producing center in the United States. The new Solvay works, now under construction, the Michigan Alkali Works at Wyandotte, Church & Co. at Trenton and two other projected works are all in the vicinity of Detroit. The Standard Oil Company is also proposing to operate alkali works at Cleveland, O., and there are two or three other projected works in other parts of the county.

There is every prospect that in a few years more the United States will not only make all the alkali required for domestic consumption, but it will before many years export to other markets. When our manufacturers have been able to meet a market price of 80 cents per 100 lbs., as they did this year, it is evidence of what they can do, and the cost is constantly being reduced by increasing production and by utilizing waste by-products.

FINANCIAL REVIEW OF 1895.

The year 1894 closed with a somewhat uncertain prospect for its successor. On the one hand there had been for some months a gradual improvement of business. The effects of the panic of 1893 were slowly wearing away; the people at large were beginning to buy goods more freely and merchants to venture once more to lay in stocks for the future. Manufacturers regarded the tariff question as settled for some three years at least, and—whether they approved of its provisions or not—were adjusting themselves to the new law, and many were making arrangements to increase production. The naturally buoyant and hopeful feeling of the people, was, as many believed, slowly beginning to reassert itself.

On the other hand was the feeling of uncertainty and doubt caused by the condition of the currency, the continued inaction of Congress and the fear entertained by many—probably by many more than those who openly expressed it—that the United States Treasury would be unequal to the task imposed upon it of meeting promptly the payments required of its demand obligations, which, under the law requiring legal tender notes to be reissued, were practically unlimited in amount. It had become evident that the plans of currency reform proposed were either defective in themselves, or of such a nature that they could not hope to secure the necessary majority in Congress.

The doubtful side of the case was perhaps more appreciated abroad than at home, and toward the close of 1894 it found expression in the withdrawal of foreign capital and a tendency to closer collection of balances owed to abroad. The result was the export of gold to an amount which increased rapidly during the closing weeks of December, and seemed to gain fresh impetus as 1895 opened. This was followed by an increasing feeling of alarm, which reached its height about the close of January, when to the withdrawals of gold from the Treasury for export there began to be added those made by our own people, partly for the purpose of hoarding and partly by speculators who believed that the Treasury would be compelled to stop payment of its notes, and that gold would consequently go to a premium. The situation not only became grave, for a few days it approached a panic, and the belief was expressed by many that in a short time the Treasury gold reserve would be exhausted and the country compelled to fall back, for a time at least, upon a paper basis, with all its attendant disadvantages and a general disorganization of business.

Fortunately prompt action was taken by the Government in this emergency, and on February 8th there was closed the well-known "syndicate" contract, under which the Treasury sold \$62,315,400 in 4% bonds to a group of bankers for 3,500,000 oz. of gold, one-half of the metal to be brought from abroad under the terms of the contract. The syndicate, moreover, undertook to protect the gold until October, and to begin at once to supply the metal.

The announcement of this contract quieted public apprehension and at once the gold exports ceased, as did also the withdrawal of the yellow metal for hoarding. Gold began to take an opposite course, to return instead of going away. In spite of opposition in Congress and of criticism of the terms of the contract in other quarters, the general popular approval was manifested, more clearly than in words, by the immediate improvement in business and the general relief shown in all directions. The restoration of confidence abroad was shown by the fact that withdrawals of capital ceased and there was once more a willingness to buy American securities.

It may be of interest to note here that the total amount of gold received in exchange for the \$62,315,400 bonds issued was \$65,116,245, the last payment being made in June. Moreover, under its contract to protect the gold reserve for a specified term, the Syndicate paid into the Treasury a further amount of \$16,127,433 in gold, in exchange for legal tenders; so that the total amount of gold received was \$81,243,678. A considerable proportion of the bonds issued were sold abroad.

The reaction was felt most actively in various branches of the mineral industry, and especially in the iron trade, as noted in another column. Manufacturers continued to report more and more business as the year advanced; prices rose from the panic level as demand increased, at first gradually and then rapidly, and wages in many branches of trade were raised. The period of improvement, which began about with the month of March continued uninterrupted for fully half a year.

As the gold movement has played so important a part and has held so much effect upon the course of business, it will be of interest here to note its course throughout the year. The total amount is given under the head of "Gold and Silver," in another column; in the table below we give a statement by quarters, in round figures:

	Exports.	Imports.	Excess.
January-March	\$30,621,000	\$14,110,000	E. \$16,511,000
April-June	4,610,000	11,875,000	I. 7,265,000
July-September	37,959,000	2,855,000	E. 35,104,000
October-December	22,750,000	3,990,000	E. 18,760,000
Total	\$95,940,000	\$32,830,000	E. \$63,110,000

The exports for the first quarter of the year were nearly all in January, and the imports nearly all in March. In the third quarter a new outward movement set in, due to the high rate of exchange, which resulted from light exports of grain and cotton, chiefly the result of speculative advances in price to points beyond those permitting the marketing of the surplus abroad. This in part corrected itself, but the outgo of gold continued, though with a somewhat diminished amount, until the last week of the year, when it was again checked by the report of a new issue of bonds, which, it is said, will be \$200,000,000 in amount, in order to provide a sufficient reserve to last for some time to come under any probable demand.

The total gold exports from the port of New York where transactions with Europe are chiefly carried on, were \$71,089,250, and the imports were \$29,091,060, showing a balance exported of \$41,998,190.

The imports and exports of the country for eleven months of the year showed the following result:

Total exports, merchandise	\$732,268,184
Total imports, merchandise	739,416,217
Excess, imports	\$7,148,033
Excess of exports, gold and silver	83,660,317
Net balance, exports	\$76,512,284

This statement, like all similar ones, is deceiving, as it shows a large apparent balance in our favor, and does not take into account the fact that the United States is a debtor nation, owing and paying very large amounts to Europe outside of those due for the purchase of merchandise only.

In October a slight reaction in business set in, and the usual fall trade was hardly as heavy as had been expected. Activity in the line of new construction continued, however, and the demand for materials remained good. The meeting of Congress and the apparent determination of that body to take no action on the reform of the currency had a distinctly unfavorable effect on business. This was emphasized a few days later by the unexpected message from the President on the Venezuelan boundary question, which was at once accepted as indicating a possibility of a serious conflict with England. The immediate effect of this was a heavy selling of American securities abroad, which produced almost a panic on the stock exchanges and a general break in prices. The reflection which followed the first excitement produced some improvement, as it was seen that the prospect of war was not immediate; but the effects of the scare have not passed away, and are unfavorably felt in many directions.

The receipts of the United States Treasury for the 11 months ending November 30th were \$291,975,712, of which \$152,273,646 were from customs, \$124,550,924 from internal revenue, and the balance from miscellaneous sources. The excess of expenditures over receipts has been gradually decreasing, and for the five months of the fiscal year from July 1st to November 30th it was \$15,869,327, showing an improvement of \$6,355,916 over the corresponding period in the previous year.

The Treasury statement at the close of the year showed balances in excess of outstanding certificates as below, comparison being made with the opening week of the year:

	Jan. 3.	Dec. 28.
Gold	\$86,244,415	\$68,085,850
Silver	7,650,304	14,385,911
Legal tenders	32,934,157	78,477,795
Treasury notes, etc.	26,488,672	22,232,374
Total	\$153,337,578	\$183,081,930

This shows an increase of nearly \$50,000,000 in the balances available during the year.

The Bureau of Statistics of the United States Treasury makes the following estimate of the amount and kinds of money in circulation in the United States December 1st:

	1894.	1895.
Gold coin	\$463,789,187	\$480,232,104
Silver dollars	57,449,865	58,760,743
Subsidiary silver	61,636,967	65,416,119
Gold certificates	58,925,899	50,233,979
Silver certificates	332,317,084	335,855,893
Treasury notes	124,574,901	115,260,322
U. S. notes	276,910,489	234,912,457
Currency certificates	57,135,000	45,935,000
National bank notes	202,517,054	277,568,852
Total	\$1,637,223,451	\$1,594,195,479

The amounts held in the Treasury are not included in this statement. There are many reasons for believing that the estimate of gold coin is high, though it has been based on the best data available.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the closing week of the year gives the following totals, comparisons being made with the corresponding dates in 1894 and 1893.

	1893.	1894.	1895.
Loans and discounts	\$116,287,000	\$498,266,200	\$489,646,600
Deposits	498,817,700	554,502,700	517,290,800
Circulation	13,256,500	11,191,400	13,973,400
Specie	104,520,700	72,097,000	67,856,500
Legal tenders	98,129,000	160,431,100	75,555,000
Total reserve	\$202,649,700	\$172,528,100	\$146,411,500
Legal requirement	124,711,925	138,627,675	129,322,700
Surplus reserve	\$77,937,775	\$33,900,425	\$17,088,800

These bank returns indicate an increase in activity of money and less accumulation of unused funds.

The notable events of the foreign markets have been the revival of speculation and the continued accumulation of money at the business centers. There has not been for many years—in fact it might be said that there never has been—so long a period of cheap and abundant money. The depression which followed the Baring failure of five years ago caused the withdrawal from foreign investments of enormous amounts of capital which were returned to Europe, either to be idle or to take such investments as might be found near home. The result has been rates of interest heretofore unknown. During the whole year the official discount rate of the Bank of England has remained at 2%, and for a large part of the year short loans have been made in the London market at the rate of 0.5% a year; in some cases a shade below even that point has been reached. One result of this has been a great appreciation in the prices of government bonds and other securities regarded as safe.

This accumulation of money has helped to revive the speculative spirit, which had for some time been apparently dead. The revival in England and France, and to a much smaller extent in Germany, took the direction of a movement of great amount in the shares of the numerous companies owning and operating, or expecting to operate, property in the Transvaal gold-fields. Investments in these companies, which began to be very large in 1894, reached in 1895 an enormous amount. The prices

QUARTER OF A CENTURY OF FLUCTUATIONS IN MINING STOCKS COMPILED FROM THE "ENGINEERING AND MINING JOURNAL."

The following table shows the fluctuations of mining stocks as are quoted in New York and San Francisco during the past 25 years. This table fully illustrates the waves of speculation already mentioned, and at the same time substantial prosperity in the different districts at the various periods.

We have already referred to the extraordinary fluctuations that occurred between 1870 and 1874 in the Comstock stocks and the notable increase in value at that period, and we now draw attention to the revival of speculation in 1886, and which was more speculation than any real appreciation of value in the stocks.

To give an idea of the extent to which the present speculation in mining shares in Colorado has gone, although at present confined or nearly so to the one district of Cripple Creek we give the following figures: Since the opening of the mining exchanges in Colorado Springs, and since September, 1894, up to November 25th, 1895, the total number of shares of listed stocks dealt in amounts to 77,867,167.

1884 to 1895.

Table with columns for Company, State, Par Value, and years 1884-1895. Each year has High (H.) and Low (L.) price columns. Lists various mining companies like Alpha, Belcher, Best & Belcher, etc.

1871 to 1883.

Table with columns for Company, State, and years 1871-1883. Each year has High (H.) and Low (L.) price columns. Lists various mining companies like Alpha, Belcher, Best & Belcher, etc.

* Belcher in August, 1872. A new issue of stock was made which was floated at \$81 and advanced to \$150. Prices from 1873 are in the new issue. † Imperial. In June, 1872, a new issue of stock was put upon the market at \$5 and advanced to \$15. The prices from 1872 are on the new issue. ‡ Crown Point. In August, 1872, a new issue of stock was floated at \$77, advancing to \$170. The prices from 1873 are on the new issue.

of shares were worked up to figures which, in many cases, were far above their real value, and promoters found it easy to float companies on almost any kind of a showing, provided the property was in South Africa. In London there was also a very considerable speculation in the new gold mines of Western Australia, but these shares never reached the prices or amount of the dealings in the "Kaffirs," as they are called on the London Exchange. In September it was estimated on good authority that the current prices of the South African stocks registered in London represented a total of \$1,150,000,000. In France very large amounts of these stocks were bought, partly for speculation, but very largely for investment.

The inevitable reaction from over-speculation came in the last quarter of the year, and the prices fell in every direction. The break might have been postponed a little longer had it not been for the panic caused by the political complications in Europe, the heavy fall in Turkish and other government securities, and the fear of a general war. At present these stocks seem to have reached a permanently lower level, and the disposition to invest in them is decreasing.

The accumulation of money in the great banks of Europe is shown by the table below, in which their holdings of gold and silver at the close of the year and at the end of 1895 are given. We have heretofore called attention to the fact that a very large part of the gold accumulations really constitute "war treasures," held in readiness for a possible conflict. The date of the return for most of the banks is December 28th. In all cases we have given the return for the latest attainable date.

	Gold.	Silver.	Total.
Bank of England	\$222,882,625	.....	\$222,882,625
1894	168,811,945	.....	168,811,945
Bank of France	392,598,700	\$247,895,500	640,494,200
1894	413,913,911	248,394,166	662,308,077
Imp. Bank of Germany .....	.....	.....	220,440,000
1894 .....	.....	.....	267,340,000
Austro-Hungarian Bank	143,032,900	58,613,900	201,646,800
1894	75,525,000	70,810,000	146,335,000
Netherlands Bank	18,586,000	34,274,000	52,860,000
1894	20,416,000	34,369,000	54,785,000
Belgian National Bank .....	.....	.....	19,376,000
1894 .....	.....	.....	25,852,000
Bank of Spain	40,022,000	52,277,000	92,299,000
1894	40,022,000	54,214,000	94,236,000
Bank of Italy	59,675,000	9,725,000	69,400,000
1894	59,990,000	12,570,000	72,560,000
Imp. Bank of Russia	351,560,000	46,680,000	398,240,000
1894 .....	.....	.....	.....

With regard to this table we may note that the Bank of Germany and the National Bank of Belgium do not report gold and silver separately, while the Bank of England reports gold only.

The prospect of still further accumulations is presented at the close of the year by the partial cessation of the South African speculation, the threatening condition of political affairs and the presence in London of no less than \$65,000,000 in gold paid over by China as a war indemnity and held there on Japanese account.

To return to our own country we find at the close of 1895 a renewed attention called to the currency conditions and the uneasiness caused by the "War Message." Owing chiefly to these influences the year closes again somewhat uncertainly. Nevertheless, there has been a distinct advance shown in the larger volume of business as indicated by the increase in the bank clearings reported from all sections of the country; by the improvement in traffic and earnings of the transportation lines; by the greater readiness to invest in new enterprises; by the amount of new construction going on all over the country, and by the general range of prices, which, though below the highest points reached during the year, is still higher in a marked degree than that of a year ago.

The unfavorable element in our case continues to be the unsettled condition of our currency. Until this important problem is satisfactorily solved a degree of uncertainty as to the future must be expected. Though the great resources of the country and the activity of the people may, as they have during 1895, enable us to make advances and to show much real prosperity, a full realization of our opportunities will not come until a solid basis is reached.

We must hope that the new year will enable us to report at least some progress, and that the close of 1896 will be free from the remaining doubts which still cover the future at the present time.

THE MINING STOCK EXCHANGES IN 1895.

We give a large share of space in the following columns to reviews of the mining stock exchanges of the country. The great present and prospective interest in mining property and the increasing extent of the dealings in mining shares is shown in these reports, which also contain many interesting particulars with regard to individual properties. The reports of the markets and the tables of prices furnish an interesting study both for investors and for owners of mining properties.

THE BALTIMORE MINING STOCK MARKET IN 1895.

Mining stocks in Baltimore during the past year have been entirely neglected and we can see at this time no prospect of any revival in activity.

Many of the North Carolina shares, which in former years were so actively dealt in on the Exchange have been stricken from the list and no new ones appear to take their places.

The legitimate coal stocks have held their own as regards prices, but transactions have been very infrequent.

Taken all in all, there cannot be said to have been any market for mining stocks in Baltimore for the year 1895.

THE BOSTON STOCK MARKET IN 1895.

BY OUR SPECIAL CORRESPONDENT.

The year 1895 will be memorable for its active speculation in mining stocks. The gold mines of the old world, as well as those recently discovered in our own country have laid the foundations of large fortunes, while the copper mines of Lake Superior and Montana, which have been for many years almost exclusively a Boston specialty, have afforded large opportunities for money making during the past twelve months. A few

FLUCTUATIONS IN PRICES OF MINING STOCKS AT BALTIMORE DURING 1895.

Company.	Par Value.	Opening.		Highest and Lowest During the Year.				Closing.	
		Bid.	Asked.	Bid.		Asked.		Bid.	Asked.
				Highest	Lowest	Highest	Lowest		
Atlantic Coal...	10	50	.....	50	.....	.....	.....	.....	.....
Balt. Mg. & Sm. Co.....	5	.....	2	.....	.....	.....	.....	.....	.....
Baltimore & N. Carolina...	5	.....	2	.....	.....	.....	.....	.....	.....
Conrad Hill	10	.....	4	.....	.....	10	.....	.....	.....
Cons. Coal.....	10	30	31½	33	30	36	31½	31	.....
Cons. Gold and Copper Co.....	5	.....	2	.....	.....	4	.....	.....	.....
Diamond Tunnel	10	33	35	33	32½	35	.....	.....	.....
George's Creek	100	108	115	110	102	120	104	108½	115
Great Republic	5	.....	2	.....	.....	.....	.....	.....	.....
Howard Coal and Coke.....	5	110	120	110	.....	120	.....	.....	.....
Lake Chrome.....	5	.....	10	.....	.....	10	.....	.....	.....
Newburg Orrel.....	25	.....	10	.....	.....	10	.....	.....	.....
Ore Knob.....	10	.....	5	.....	.....	50	.....	.....	.....
Silver Valley.....	5	.....	20	.....	.....	20	.....	.....	.....
Vernon Mining.....	.....	.....	20	.....	.....	20	.....	.....	.....

Quotations given are in percentages of the par value.

of the Lake Superior companies pay regular dividends; some are in process of development and will soon be paying mines, while others are purely speculative in character and have a record to make, but all offer to the active operator great inducements for trading. In the early months of the year the market was dormant, but in the summer months an advance in ingot copper of about 2c. per lb. started a boom in the market for the shares of the several companies and led to the highest prices which have been known for many years. At times the excitement was intense, and prices were carried up beyond all reason; this, however, soon worked its own cure, and the decline was as rapid as the advance had been. During the recent "war scare" prices of some of the stocks were down below the lowest figures touched previously during the year.

The leader of the market in point of activity and advance was the Boston & Montana Mining Company, of Montana, a company comparatively new, but a large producer, and chiefly owned and managed by Boston people. Early in the year its stock was selling at \$33 per share, and for several months did not advance above \$40. When the active movement was started in June the stock advanced rapidly, until on July 30th it reached its maximum at \$99½. Since that date it has had wide fluctuations, selling in November at \$60½, on December 16th at \$78½, and on December 21st it declined to \$57, recovering on December 24th to \$69. The company has paid the past year two dividends, one of \$2 in May and one of \$4 regular, and \$1 extra in November—\$7 in all; and it expects to pay regular quarterly dividends hereafter.

Butte & Boston is under the same management as the Boston & Montana, and is in process of development; it is expected to prove a valuable property and in time a dividend payer. Like the Montana, its stock is largely held in Boston, and sold in February at \$8½. It participated in the summer rally and sold up to \$26 per share, declined to \$13½ in November, and during the recent scare sold at \$8½, with recovery later to \$13.

Of the Lake Superior stocks the Calumet & Hecla is the old reliable for investors. It has paid the past year four dividends of \$5 each, and its market price has ranged from \$280 in April to \$330 per share in July. In the recent decline it touched \$290.

The Tamarack is also a favorite investment stock, paying the past year two dividends of \$4 each. The market price at the opening of the year was \$158, followed by a decline to \$125 in April. In the summer rise it reached \$173, on December 21st it sold at \$115, with later sales at \$121.

Quincy is another valuable property, and is held by both New York and Boston parties. The company paid two regular dividends and one extra of \$4 each, for the year, and its stock after selling at \$99 in January, advanced to \$170 in July, and on the recent decline touched \$110. Latest sales were at \$120.

Osceola sold in January at \$25, in March at \$20, and reached the top price, \$41½, August 9th. Owing to the accident at the mine in the early fall, and the general decline in the market it dropped to \$25, and has since sold at \$33. In the recent depression it went off to \$20, recovering to \$24. It has paid \$3½ in dividends the past year, and its future is considered favorable.

Franklin "still lives," and continues to produce fairly well for a mine which a few years since was considered about exhausted. The work on the Franklin, Jr., is pushed with vigor and its outlook is very promising.

The Franklin has not paid any dividend the past year, all its surplus fund being used for the development of the new property. Its market price has ranged from \$15 at the opening of the year to \$11 in April, followed by an advance in July to \$24. Since which it has gradually declined, touching \$9 recently and recovering to \$11. The stock is well held and large amounts are seldom offered for sale.

Kearsarge has ruled fairly active during the year and has paid one dividend of \$1 per share. Its lowest price, \$7½ in April, was followed on the general advance in July to \$26. On the down track it receded to \$12½ in November, and on December 21st it sold at \$7, with recovery to \$11½ the following day.

Atlantic is not a very active stock in this market, being largely held in New York. The stock sold at \$9 in April and on the upward wave in July advanced to \$29 and gradually settled with the rest of the market to \$11 in the recent decline and recovered later to \$15.

One of the promising mines of the Lake region is the Tamarack, Jr. The work of developing the property has been pushed with a good degree of energy the past year and with satisfactory results. Its market price has ranged from \$9½ in May to \$30 in July, and it sold at \$11 recently, with recovery to \$15.

The work of development was resumed on the Tecumseh mine the past year and the outlook for reaching paying rock is very favorable. There was nothing doing in the stock during the first six months of the year, but the advance induced some speculation in it, and after selling at \$3,

it advanced to 4½ when the boom was at its height—later sales were at \$3. Centennial has practically "played out," and the mine is to be sold under foreclosure. An effort is being made to redeem the property, and the stockholders are asked to contribute \$2 per share toward that object, but, so far there has not been a very generous response. The stock sold as high as \$2 and as low as 15c. the past year. This stock sold some years ago at \$4¼ per share, and was then thought to be one of the best properties in its class. The outcome serves to show the uncertainty attending mining operations.

Wolverine is considered by many people as having a fair show for a paying mine some day. Its market value the past year has ranged from \$3 early in the year to \$10½ when highest in July. In the reaction which followed it sold down to \$5, recovering to \$6.

The Arnold was in evidence during the excitement of last summer, and sold up from \$1 in May to \$3 in July, declining since to the lowest price of the year. There was very little done in Copper Falls. A sale at \$7 was recorded in May, and in August it sold at \$6.50 and \$10, since which there have been no transactions. There were rumors of a consolidation with the Arnold, both mines being under one management, but it was authoritatively denied.

The low-priced mines which in former years have been more or less active in this market did not make much showing in the recent boom, and only a few of them were quoted at all. We note sales of Allouez from 25c. to \$2.75, and later at \$1. Bonanza Development sold from 20c. to 75c., and more recently at 30c.; Humboldt, 25c. to 35c.; Pontiac at 25c.; Mesnard at \$1 and National at \$1 up to \$3, and later at \$1.50.

The Anaconda, and the Old Dominion Copper Companies have recently been added to the Exchange list, but so far the transactions in both have

account of the dismal prospects for a paying output, the unprofitable prices at which ores were selling and of the attention which the new Mesabi range was attracting. The apathy in the market thus existing at the outstart has continued through most of the year. The returns to the ore mining companies have not been commensurate with the unexpected boom in the product for the reason that the bulk of ore was sold in the spring at prices little more than a shade above last year's low range of values. Another check to financial returns has been the advance in lake carrying charges during the latter portion of the season of navigation. These increased freights had to be paid by the ore companies in some instances, for those companies had not always covered by season charters their product sold in the spring, and the added cost of freightage thus reduced profits below the estimates made last spring. That was the dark side of the picture. There were other ore transactions made at the advancing prices which yielded considerable revenues to the companies. Taken all in all it was an unsatisfactory year, though better than its predecessor. The net financial results were not proportionate to the immense output. Dividends were paid by some of the companies, but in one instance at least they were not earned.

While prices for next year are not yet fixed the present expectations among the various companies is that an advance of about \$1 will be made next year in high grade ores, and an output is anticipated largely in excess of that of 1895.

During the year there has been quite a decided improvement in the value of stocks, even though the market has remained dull. Republic iron shares have advanced from \$5 to \$12; Lake Superior, from \$22 to \$32; Chandler has gone up from \$30 in January to \$38; Cleveland Cliffs, now quoted at about \$40, have advanced several points. Minnesota Iron

FLUCTUATIONS OF MINING STOCKS AT BOSTON DURING 1895.

Name and Location of Company.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Sales	
Allouez, Mich.	25	35	25		1 25	50	1 00	75	1 00	75	2 75	1 00	1 00	17,000
Arnold, Mich.	25				3 50	1 00	3 00	2 00	6 00	2 88	5 38	2 50	3 50	86,705
Atlantic, Mich.	25	11 00	10 00	10 50	10 00	11 00	9 75	16 50	11 00	17 13	15 50	29 00	21 50	41,462
Bonanza, Mich.	10			20	22 50	20	25	30	75	30	60	50	50	19,200
Boston & C. C., Col.	1													
B'st'n & M'st'n M't	25	39 25	33 28	38 88	34 50	38 50	35 50	42 50	37 00	54 50	42 00	60 50	50 25	99 50
B'te & B'st'n M't	25	11 37	9 50	10 00	8 75	9 88	9 00	14 00	9 00	17 00	13 50	16 50	14 00	22 50
Breece, Col.	25													800
Cal. & H'eta, Mich.	25	290 10	265 00	290 00	290 00	290 00	290 00	300 00	282 00	298 00	292 00	330 00	293 00	315 00
Catalpa, Col.	10	08	08	08	08	08	08	08	08	08	08	08	08	5,800
Centennial, Mich.	25	90	50	60	50	50	50	50	50	50	50	50	50	4,000
Central, Mich.	25	75												25,451
Copper Falls, Mich.	25													215
Dom. Coal, N. S.	100													950
Dom. Coal, pref.	25													52,427
Franklin, Mich.	25	15 00	14 50	14 00	12 50	12 00	11 00	15 50	11 00	17 63	14 75	17 00	15 00	17 00
Gold Coin, Col.	1													29,687
Humboldt, Mich.	25													48,405
Illinois Steel, Ill.	100													700
Kearsarge, Mich.	25	9 25	7 50	9 50	8 00	8 75	7 50	10 00	8 25	15 25	9 75	15 00	13 25	26 00
Lake Sup. Ir Mich.	25													5,756
Minn. Iron, Minn.	100													153,792
Mesnard, Cal.	15													1,080
Mesnard, Mich.	25													200
Napa, Cal.	7													8,948
National, Mich.	25													400
Old Dom., Ariz.	25													1,014
Osecola, Mich.	25	25 00	20 50	22 50	21 25	21 25	20 00	24 25	21 00	30 00	24 00	29 00	26 00	45 00
Pontiac, Mich.	25	25												5,190
Quincy, Mich.	25	107 00	99 00	102 50	98 75	103 00	100 00	108 00	101 50	125 00	106 00	119 50	115 50	170 00
Quincy Scrip	25	45 00	41 00	43 00	39 75	46 75	39 25	57 00	48 50	70 00	57 50	66 00	62 00	89 00
Santa Ysabel, Cal.	5													9,050
Santa Rosa, Cal.	10													30,070
Tamarack, Mich.	25	158 00	144 50	146 50	143 00	143 00	134 88	136 00	125 00	149 00	128 00	141 00	128 00	175 00
Tam. M. G. R'ts, M.	25													1,775
Tam. scrip, Mich.	25													17,767
Tam, Jr., Mich.	25	12 25	10 50	12 00	11 00	12 00	11 00	14 50	11 50	20 13	9 50	19 88	18 50	30 00
Tecumseh, Mich.	25													1,016
Wolverine, Mich.	25	3 63	3 00	4 50	2 63	4 63	2 69	5 00	4 05	7 25	4 09	7 00	6 25	10 25
Westinghouse Pa.	50													1,725

been limited. Anaconda was quoted at \$35 and Old Dominion at \$14 17. The silver mining stocks have been neglected during the year, the interest largely centering, outside of the copper stocks, in the gold mining industry. We note sales of Breece Mining at 25c. and Catalpa at 8c.

Napa Quicksilver has continued to pay regular and extra dividends during the year, amounting in the aggregate to 70c. per share. The lowest recorded market price for the stock was in May, \$5½, and the highest, \$8, in August. More recent quotations were at \$7.

Several gold mining stocks have been placed on the Exchange during the year, but they have not been very largely dealt in as yet, although they offer great inducements to traders. The present year will probably see greater activity in this class. The Merced Mining Company was started at \$45 per share and sold even higher than that previously on the Street; later sales have been as low as \$18. Its par value is \$15 per share, with \$10 paid in. Santa Ysabel was started at \$8½, sold up to \$16½, but recently declined to \$7. Santa Rosa was placed by subscription at \$1½ per share, par \$5, but sold on the Exchange at \$1. The above are all California mines. Another California mine, the Pioneer, has also been placed on the market, but as yet has not been listed on the Exchange. The subscription price was \$5, and sales have been as high as \$9½ per share. It is now quoted at about \$4.

The Boston & Cripple Creek Mining Company, of Colorado, was listed on the Exchange and sold at \$1.25, but the attempt to market too much stock resulted in a decline to 20c. per share; later it sold at 50c., and more recently at 55c. The Gold Coin Mines, another Colorado company, sold at \$1.35, and declined to \$1.05. A dividend of 1½c. per share was paid in November, and the stock sold ex-dividend at 97½c. with later sales at \$1.05.

The year closed with a somewhat better feeling than that prevailing during the recent flurry in the general stock market, and the outlook for the mining industry of our country for the coming year may be said to be at least of an encouraging nature.

THE CLEVELAND MINING STOCK MARKET IN 1895.

FROM OUR SPECIAL CORRESPONDENT.

Trading in the ore stocks of the companies mining iron ore in the Lake Superior region for 1895 has been inactive. Shares in the old companies at the opening of the year seemed undesirable properties to outsiders on

Company shares have jumped from \$40 to \$70. Pittsburg & Lake Angelina has remained steady at \$75 for \$25 shares. Jackson has also maintained its value of about \$75. Aurora, quoted at \$6 in January, is now held at \$8. This improvement in values has been gradual as to be almost unnoticed, and has been unattended by any activity.

THE MINING STOCK EXCHANGES OF COLORADO IN 1895.

The year just ended in Colorado will be recorded as one of gold mining development and mining stock speculation. Gold has been mined in Colorado for more than three decades, and people there have speculated in mining securities for years past, but not to the extent that is now going on. The reason is easy to discover, and is the result of the fall in the price of silver, stimulating the search for gold, resulting first in the Little Johnny gold mining at Leadville, and in the special attention drawn to Cripple Creek. The developments of that district are fully treated elsewhere in this issue.

The history of the year's trading in mining stocks is practically the history of the exchanges and Colorado Springs being the most important speculative center, demands first mention in these columns.

The oldest and, therefore, perhaps the best known of all the exchanges located in the famous health resort, is the Colorado Springs Mining Stock Association. A number of prominent men resolved to further Cripple Creek's progress by legitimate trading in the stocks of the mining companies operating in the "Johannesburg of Colorado," as well as of companies in other camps of the State. The result was that the Association was incorporated in May, 1894, and opened for business on September 4, 1894 with 31 members, each one of whom paid \$180 for his seat. With the undoubted reputation of the members, and the able officers of the Exchange, in addition to the favorable developments in the mines of Cripple Creek the institution could not but prosper. The business of the Association increased so rapidly and seats were in such active demand at \$1,000 that the Governing Committee deemed it wise to increase the membership to 50 at \$500 each, which would mean 19 new members. The books were opened on October 31, 1895, and nearly 50 applications were immediately received, of which 35 were considered desirable and consequently the total membership was raised to 66. Since the books were closed, seats have sold as high as \$750, and they are now held at \$900. Not the least reason why the Colorado Springs Mining Stock Association

Denver until comparatively late in the year, the Exchange did a much heavier business than in 1894, its total sales of listed stocks being 63,149,450 shares. It was also proposed to deal in mining securities at the Denver Real Estate Exchange and elsewhere in the city, but the old Exchange did, and probably will, continue to do by far the greater part of the local business. The Colorado Mining Stock Exchange will do well to emulate the example of its Colorado Springs competitors in reference to the stocks which it allows to be listed and all matters pertaining thereto, as well as to the selling and buying of stocks.

The shares of companies owning or operating mines in Colorado are dealt in in various cities of the world. On the London Stock Exchange

Mountain, and the anomaly is that a mine that within five years has paid in dividends over \$1 per share on all the original stock sold, and within 12 months ten 2c. and two 1c. dividends, a total of \$110,000 with a larger ore reserve than ever in its history—fully equipped and free from debt, with a safe of conservative management—should find its stock fluctuating 50% in 90 days and falling from 75c. to 50c. I can only account for it on the ground that larger blocks of the stock have been held as collateral and forced on the market to raise quick money. It is not because the share buying public are discriminating as to the real value of their investments in this line; if they were the mining share business would be better for all concerned.

FLUCTUATIONS OF MINING STOCKS AT NEW YORK DURING 1895.

Name and Location of Company.	Par Value	Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Sales	
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.		
		Adams, (s. l.) Col.	\$10																								
Alice, (g.) Mont.	25							45	40	65	40			40				20		30						15,945	
American Flag, (s.) Col.	100							07	04	05		01	03	01	03	04				06	04	05	01			11,700	
Argentum, Juniata, Col.	1									1 05				1 05	1 00											5,000	
Atlantic, (c.) Mich.	25													17 75												50	
Belcher, (g. s.) Nev.	100			85						50									60	45			11			700	
Best & Bel, (g. s.) Nev.	100	1 20	94			98				80	55	07	55	1 00	60	1 20	1 05	1 10	1 05	90	85	75	52	85	50	4,310	
Bodie, (g.) Cal.	100		75	70		1 25	1 15	1 20						30						30		38		50		1,100	
Bost. & Mont., (c.) Mont.	25													83 75	75 25	91 00	90 88									6,500	
Breece, Col.						25																25	20	27	24	2,400	
Brunswick, (g.) Cal.	5			03	02	04	03	18	04	17	07	15	12	13	12				10	07	13	10	13	10	19	11	95,800
Butte & Bost., (c.) Mont.	10													18 50	17 25											300	
Bullion, (s. g.) Nev.	100			15		19										60 1/2		15		15						600	
Bulwer, (g.) Cal.	100	09	08			20										05										1,300	
Castle Creek, Idaho.	10									03	02										03	02	02			2,300	
Chollar, (s. g.) Nev.	100							50	49	20	17	20	17	19	19						12		35			8,250	
Chrysolite, (s. l.) Col.	50	58	47	62	43	07	54	20	15	20	17	20	17	11	11								24	27	24	25,500	
Comstock Tun., Nev.	100	07	06	06	05			15		11		11	07	12				10		08	08	08	09	08	08	08	38,425
Const. Tun., Bds. Nev.	100					06		15		15		12	11	12								10				30,300	
Const. Tun., Scrip. Nev.	100							15		15				03												1,015	
Con. Cal. & Va., (s. g.) Nev.	100	4 40	3 50	3 55	2 50	3 15	2 40	3 50	2 55	3 10	2 45	2 75	2 25	3 00	1 85	3 00	2 65		2 85	2 60	2 75	2 55	2 60	2 25	2 30	1 95	21,446
Cons. Imp., (g. s.) Nev.	100					05	04	08	07										08	08	03	02	05	04	05		12,900
Creede & C. C., Col.	1																									08	
Crown Point, (g. s.) Nev.	100	70	55	48	34	50		77	72					50					60								1,250
Daly, (s. l.) Utah	20															7 38	2 55		7 38	7 00					6 63	6 50	500
Deadw., Terra., (g.) S. D.	25	40				40								1 00													1,800
El Cristo, Rep., Col.	2																										400
Enterprise, Col.	5							75	55																		9,015
Eureka Con., (s. l.) Nev.	100					30	05			35																	350
Gold & Globe, Col.	1																										900
Gould & Curry, (s. g.) Nev.	100	52	45	49	40	62	55	60		30	35	35	47	38	60	45			63	59	18	17	35	25	47		5,300
Hale & Norcross, (g. s.) "	100	1 25	90	60	80	1 50	1 00	1 60	1 20	1 50	90	1 00	80	1 45		2 30	1 60		1 50		1 45		1 40	40	1 15	80	6,000
Homestake, (g.) S. D.	100	28 00	20 00							22 00											31 50	25 00	2 40	30 50	27 00		825
Horn Silver, (s. l.) Utah	25	2 50		2 50		2 30		2 75	2 30	2 80	2 70	2 70	2 50			2 40			2 20	2 40	2 00	2 30	2 05	2 40	2 25	7,970	
Iron Silver, (s. l.) Col.	20	15				30		32	21	33	32	37	35	50	40	48	40		30	25	30	24	27	20	25	29	15,350
Isabella, Col.	1							23	20												26	25	30	50	49	11,220	
Kingston & Pemb., Ont.	10							20		30	25	50	25	30	25	30			25	21	35	25	25	25			4,106
La Crosse, Col.	10	10	07			10	07	10	07	10	09	14	09	13	10	20	13		16	10	16	08	13	10	14		42,300
Leadville, (g.) Col.	10	09	08			14	10	19	12	17	11	15	13	13	12	14	11		15	12	15	12	15	12	15	12	60,800
Little Chief, (s. l.) Col.	50	08		10		15	08	20	14	19				15	14	15	13		22	15	13	25	12	25	20	17,900	
Mexican, (g. s.) Nev.	100	1 10	95	95	72	1 10	90	90		75		70	35	75	70	75	60		83	67	68		61	40	60	43	6,400
Mollie Gibson, (s.) Col.	5							1 30	1 05	1 05										65		50					16,800
Moulton, (s. g.) Mont.	5													20	30	21					35	30					70
Ontario, (s. l.) Utah	100																		9 00	9 00	10 00	9 75	9 63		9 25	8 75	3 5
Ophir, (g. s.) Nev.	100	2 15	1 80	1 60	1 40	2 25	1 60	1 75	1 65	1 70	1 50	1 50	1 25	1 60	1 45	1 60	1 50		1 80	1 70	1 65	1 50	1 25	1 00	1 50		5,600
Phoenix Con., (g.) Ariz.	100	11			10			10	08	10	08	05											13	01	11	07	9,200
Plymouth Con., (g.) Cal.	50	40	25					20		30																	1,650
Portland, (g.) Col.	1							80	60					30	98	1 30	1 25		1 75	1 65	2 03	1 75					16,800
Potosi, (s.) Nev.	100	65	60	55		58		55		43	41										62	55	65				2,920
Quicks., Cal. (com.)	100	2 25						4 00	3 13	4 13	3 88	3 88									3 00	2 75	2 50				4,000
Quicks., Cal. (pref.)	100	13 50						20 00	18 00	19 50											18 00	15 60					1,413
Quincy, (c.) Mich.	25																										2,250
Savage, (s.) Nev.	100	66	55	50	40	45						40		55	51	75	15		43		51	38	40		35		10,160
Sierra Nev., (s. g.) Nev.	100	80	58	63	54	76	74	90	85	77	62	43		75	50						1 00	90	90	70	75	55	3,250
Small Hopes, (s.) Col.	2																				80	95	80	1 00	96		3,250
Standard Con., (g. s.) Cal.	100	2 50	2 00	2 75		3 00	2 50	3 00	2 75	3 00	2 75	2 80	2 40	2 10	2 20	2 30	2 25		2 35	1 75	2 60	2 25	2 20	1 50	1 80	1 45	9,000
Tamarack, (c.) Mich.	25													1 41													260
Union Con., (g. s.) Nev.	100	60	53	65																							

mining resources held an informal meeting, and elected the following committee to formulate a plan for facilitating this work: William Balderston, editor; David Falk, merchant; John B. Hastings, mining engineer. O. E. Jackson, mine owner, H. E. Neal, banker, Joseph Pinkham, ex-U. S. Marshal; Fremont Wood, lawyer.

The committee decided upon the establishment of the Exchange, to be conducted similarly to other stock exchanges, in addition to which it should furnish a bureau with cabinets and files, where samples of ores and description of various mines and mining districts could be filed. It would also issue pamphlets descriptive of the mineral resources of the State and use every other effort to properly promulgate such information. It was felt that although there was no legal or moral law preventing residents of other states and counties from purchasing and working mining property in Idaho, it was better for the welfare of its people that these holdings should be in the hands of actual residents. They claimed that the history of all the prominent mines shows that \$10,000 properly expended in its prospect state would have accomplished all the results now attained, in other words, that with such a start the net earnings from the mine would have built the plant as required, and there was enough capital in Idaho to develop her mines, and all that was needed was segregation of holdings into small amounts within reach of every pocketbook, which was easily and best effected by formation of stock companies. As a result of their labors the committee presented the following subscription paper, which will probably be signed by 300 of Idaho's leading citizens:

"We, the undersigned, hereby agree to associate ourselves together for the purpose of incorporating, establishing and maintaining a Mining Exchange in Boise City, under the name of 'The Idaho Mining Exchange,' the same to be managed and controlled by a board of eleven directors, to be hereafter elected by the members; the annual membership fee to be \$20 for charter members; said fee for the first year to be payable one-half immediately following incorporation and election of officers, the other one-half subject to the call of the board of directors after 90 days

for listing stock," which is reproduced herewith as a matter of interest to the listing committees of other mining exchanges. The president and secretary of the applicant company, under oath, are required to fill out a blank containing pertinent questions concerning the property. It is as follows: 1, Name of company; 2, purpose for which organized; 3, date of incorporation; 4, under what state or territory law incorporated; 5, amount of authorized capital, \$—, divided into — shares of the par value of \$— each; 6, is the stock assessable?; 7, is the stock issued "full paid" or is it subject to further installments?; 8, if subject to further installments, state the conditions; 9, state the amount of capital stock issued, amount paid on each share, and in what manner paid; 10, number of shares originally set aside (or donated) for working capital; 11, number of shares now at the disposal of the treasury; 12, location of the principal office; 13, location of transfer office; 14, name of transfer agents; 15, are all certificates of stock registered and, if so, where; 16, names of officers; 17, names of directors (or board of trustees) who have accepted the position and own stock; 18, number of shareholders and names of holders of a majority of stock issued; 19, location of property; 20, mining claims, name, size, etc.; 21, metals produced; 22, has the mine heretofore been worked, and if so, by whom?; 23, amount (in dollars) expended for mine development by present company, and the amount so expended by former owners; 24, amount expended for milling machinery, buildings, etc., by present company and also by former owners; 25, capacity of milling machinery and of hoisting or mining machinery (tons per day); 26, average width of the vein or veins, formation, peculiarities, etc.; 27, depth of shafts, length of levels or tunnels; 28, number of men employed at present; 29, estimated value of ore in sight in levels or tunnels; 30, amount of ore now on the dump (tons) and estimated net value; 31, average value of ore per ton, ascertained (a) by reduction test, and (b) by assay test; 32, cost of mining, per ton, and cost of reduction, including transportation, per ton; 33, distance to mill or smelter and cost of transportation

PRICES OF COAL STOCKS: AT NEW YORK DURING 1895.

Table with columns for Name and Location of Company, Par Value, and monthly price ranges (High and Low) from January to December. Includes entries for American Coal, Baltimore & Ohio, Chesapeake & Ohio, etc.

from the date of the incorporation, the said Exchange to be incorporated for the following purposes:

- "For the development of the mining industry of the State.
"For the collection of information in relation to the mining resources of the State and for the advertising of the same.
"For the purpose of listing and affording facilities for the sale of such mining stocks as may be permitted by the board of directors under the rules and regulations hereafter adopted by the Exchange.
"and for the purpose of carrying out the above objects we hereby agree to execute the necessary and proper articles of incorporation as charter members of the said Mining Exchange and agree that the meeting of the members for the election of said directors shall be held in Boise City on the 22d day of January, A. D. 1896."

THE NEW YORK MINING STOCK MARKET IN 1895.

For a number of years back public interest in this city in mining stock trading has been declining. The chief reason for this is probably an unfortunate experience with "wild cats" years ago, which has prejudiced many people against the purchase of mining stocks as a speculation or a form of investment proper.

In New York the principal selling and buying place for mining securities has long been the Consolidated Stock and Petroleum Exchange, which absorbed the old mining board. The New York Stock Exchange has a few mining stocks, such as Ontario, Daly, Homestake, Horn Silver, Phoenix and Quicksilver among its "unlisted securities," but it has rather discouraged such trading, and its governors have refused time and again to allow any more stocks to be added to the aforementioned.

The Consolidated has, therefore, been recognized as the Mining Exchange. Starting with a long list, it has added to it steadily, if not always wisely, and for the past three years the absurdity of "calling" three or four score of mining companies, many of which had lost or practically abandoned their property, or had been proven worthless, doubtless helped to increase the dullness.

The Consolidated Exchange has had drawn up a form of "application

per ton; 34, Is the ore free milling or refractory?; 35, By what process is the ore reduced or treated?; 36, (a) number of tons mined by present company, (b) number of tons reduced, (c) gross value of bullion produced from same, and (d) net value; 37, number of dividends paid by present company and aggregate amount; 38, price at which the stock was sold in first subscription; 39, present "bid" and "asked" prices for the shares; 40, remarks to cover any point not specially asked above.

In addition to complete answers to the foregoing, the following papers must also be submitted to the committee: A report of the company's superintendent to date of application; a certified copy of charter of company; a certified copy of abstract of title, including United States patent, if any; date of patent; a certified copy of court records, if any; detailed statement of present financial condition of the company, showing debts and resources; maps, diagrams, etc., of the property; a receipt of the treasurer of the Exchange, showing payment of \$50, to be retained whether the application is withdrawn before action, or is rejected. The application blank concludes as follows:

"In making this application, it is hereby agreed, as a condition precedent to the listing of the stock, that the company shall furnish to the committee on mining securities at any time, on demand, such reasonable information of its general condition as may be required, and that a failure to give such information, shall subject the company to the penalty of having its stock stricken from the list. It is further agreed and understood that the company, having been duly notified (through its president and secretary, or legal representative) of the listing of its stock, shall, within 60 days thereafter, send a written communication to the chairman of the Exchange to have the stock regularly called for quotation purposes, and in default of such notification, the committee on mining securities reserve the right to have it called and quoted."

It will be seen from the above that the Consolidated Exchange really endeavors to protect its patrons, for with complete answers to all the requisite questions there can be little talk of false pretences. One of the chief blunders of the Exchange has been the keeping on the list a great number of companies which for some reason or other did not fulfill the expectations of the incorporators and practically went out of existence years ago.

The course of the market itself in 1895 was uninteresting to a degree, though transactions were numerically greater than in 1894. It was very dull throughout the year, and the brokers fell into a habit of alluding to it in that manner. Thus, in their reports, they would speak in May, of "the usual spring dullness," in August of "the annual mid-summer lethargy," in October of "the customary fall inactivity," and in December of "the habitual holiday calm." The gradual decline of business may be seen from a comparison of the past eight years. The table shows the total number of shares sold in each year:

Year.	Shares sold.	Year.	Shares sold.
1895.....	678,925	1891.....	2,522,660
1894.....	302,372	1890.....	3,925,926
1893.....	624,617	1889.....	4,114,480
1892.....	1,527,371	1888.....	11,689,388

There was no particular activity in any one stock or group of stocks and though there were several temporary "spurts" none seemed to be able to last a fortnight.

The Comstocks were lifeless. Ever since the *Engineering and Mining Journal* aided by the San Francisco Mining Stock Association, exposed the methods of the notorious mill "ring" there has been a widespread distrust of these stocks. Prices fluctuated but little and as there were no especially favorable developments on the Lode there was no marked advance and no attempt to "boom." Comstock Tunnel Company stock and bonds owing to the new management and to the explorations on the Brunswick Lode were in some demand and prices advanced from 5 and 6c. to 15c. for the stock and the same for the bonds, though later they declined to 8 and 9c. Transactions in this stock were moderately heavy, though it is understood that many of the sales were "washed," as indeed, is said to be the case with the majority of the reported sales of the other Comstocks. It is difficult to prove that a broker has been guilty of "washing" and as his purpose is only to lead outsiders to think that the market is not altogether dead and as there is no especial sufferer from the "washing," there need be but little said about it.

Of the California stocks the Bodie group underwent more or less desultory trading. Standard Consolidated is the foremost and reached the \$3 mark, though it declined later and closed under \$2, owing probably to the suspension of dividends. Bodie, for reasons yet unknown, rose to \$1.25 in March and April, but closed at about 30c. The other "Bodies" were in no demand.

Such stocks as Quicksilver never fluctuate much, and both the preferred and the common stocks were steady at \$18 to \$20 and \$3 to \$4 respectively. Brunswick Consolidated opened at 2@3c., advanced to 15 @18c. in Apr. 1, and declined gradually to 10@13c. in December.

In point of numbers some of the old Colorado shares show the heaviest transactions of the year. Lacrosse, a Gilpin County gold property, owing to favorable developments in its neighborhood, advanced from 7c. in January, to 20c. in August, but declined gradually, closing at 10@12c., with fairly heavy transactions. American Flag, another Gilpin County gold property, was also in some demand, and fluctuated from 4 @ 6c., with a top price of 7c.

The Leadville group was among the most active. The developments in the Leadville Gold Belt and a number of pleasant rumors—unfortunately unconfirmed—helped the demand. Leadville Consolidated seemed to be the most active of all, the prices rising from 8c. in January to 19c. in April, and declining to 11c. on the following month. During the remainder of the year it fluctuated between 11@14. Little Chief, iron, silver and chrysolite, also advanced and declined during the year.

The Aspen group was exceedingly quiet throughout.

A number of Cripple Creek stocks are on the "temporary" list, that is, brokers are permitted to trade in them. A number of sales at the prices then ruling in Colorado Springs were made. They are nearly all good stocks, and people buy them chiefly for investment. Attempts are making to list more, to see if some of the Colorado Springs activity can be coaxed eastward. Victor, which is on the regular list, was very quiet, for the reason that holders have no desire to part with it. There were but two sales, one in January at \$4, and the other in November at \$5.25.

Of the Utah stocks Horn Silver is the favorite. Owing to the passing of two of the regular dividends last year the price declined from \$2.75 to \$2—the highest and lowest of the year—but it ruled steady throughout at about \$2.25. Ontario and Daly are two high priced for much popular trading and are moreover, closely-held stocks.

Other shares were dealt in, and the table elsewhere printed in this issue tells their story succinctly.

In view of the increasing interest in mining stock speculation "out West," the Consolidated Stock and Petroleum Exchange made some efforts late in the fall to bring about a resumption of activity in this market. The Committee on Mining Securities considered various plans and suggestions. The first step was taken on December 5th, when it was decided to strike off from the regular list of the Exchange the stocks of the following mining companies, to take effect on and after February 1st, 1896: Argenta, Bechtel, Bassick, Bradshaw, Consolidated Pacific, Carson River Dredging, Columbia, Del Monte, Diana, El Cristo, Excelsior, Elko, Emmett Water and Mintog, Freeland, Found Treasure, Grand Prize, Gold Stripe, Iron Hill, Kossuth, Martin White, Monitor, Mutual Mining and Smelting, Mount Diablo, Navajo, North Belle Isle, Proustite, Rappahannock, Reward Mining and Smelting, Sutro Tunnel, Sutro Tunnel (trust certificates), Surinam, San Sebastian, Sullivan, Scorpion, Tioga, United Copper and Wall Street Mining and Milling Company.

The following stocks will be placed on the "suspended" list on and after February 1st next: Augusta Mining and Industrial (stock and bonds), Columbia & Beaver, Cleveland Tin, Clechis, Helena, Holyoke, Hector, Lee Basin, Monte Cristo, Oriental & Miller, Plutus, Robinson Consolidated, Ruby Silver (bonds), Stormont, Silver Queen, Santiago, Shoshone, Trio and Tornado.

Several applications by new mining companies for listing were made during the last fortnight of the year.

Following the example set by some of the Western cities the establishment of a new mining board here is being contemplated. Papers for the incorporation of the New York Mining Exchange were sent to the Secretary of State at Albany on December 16th. The incorporators are Henry

A. Mott, Edwin A. Beers, James H. Kerr and Edward H. Williams, all of New York. The object of the exchange, as stated in the application paper, is to establish an exchange and open a market for the sale of and dealing in shares of the capital stock of mining and other corporations and other securities created by such corporations, including bonds and the various classes of certificates representing interests in property; also mines of gold, silver, copper, quicksilver, coal, lead, marble, granite, tin and all and every class of mineral properties.

The capital stock of the new Exchange is \$10,000, divided into shares or \$100 each. The directors for the first year are Isham B. Porter, James H. Kerr, Howard Scrymser, Stephen B. French, W. Leslie Scrymser, Henry A. Mott, Edwin A. Beers, W. C. Nicol and Edward H. Williams. How successful the new venture will be remains to be seen. Members of the Consolidated Exchange say that they are going to establish connections with the Colorado Springs Mining Stock Exchange and that the public will find "unexampled facilities" for trading in mining securities new and old, good and—but "wild cats" are to be "strictly forbidden."

FLUCTUATIONS OF PRICES IN MINING STOCKS AT PITTSBURG DURING 1895.

Company.	Par Value.	Opening.		Highest and Lowest During the Year.				Closing.	
		Bid.	Asked.	Bid.		Asked.		Bid.	Asked.
				Highest	Lowest	Highest	Lowest		
COAL:									
Mansfield C. & C. Pa.....	50	.....	.....	40	35	40	.....	.....	.....
New York Gas Coal.....	50	.....	46	35	.....	46	.....	.....	.....
MINING:									
Enterprise, Col.	5	.....	.....	36	.....	.....	.....	.....	.....
Lustre, Mex.....	10	11½	13	14½	9½	16	10¾	13¾	14½
Silverton, Colo.	10	.....	.....	.....	.....	.....	.....	.....	.....
NATURAL GAS:									
Alleghany, Pa.....	100	49¾	51½	49	46	51½	48	6½	7¼
Chartier's Val. Manufacturer's, Pa.....	100	.....	9	.....	6	10	7	.....	.....
Ohio Valley, Pa.	50	.....	38	.....	.....	40	31	.....	.....
Peoples Natural Gas, Pa.....	50	33½	36	34	12	40	13	25	.....
Peoples Nat. Gas & Pipeage, Pa.	25	14½	13	13¾	3	15¼	4½	14¾	15
Pennsylvania, Pa.	50	19	.....	15½	3	15¼	4	3½	5¾
Philadelphia, Pa.....	50	18¾	18½	18¾	14½	18½	14¾	17½	17¾
Wheeling, W. Va.....	50	21	22	44	15½	45	15	16	16¾
OIL:									
Tuna Oil Co.....	.....	.....	.....	10	.....	35	20	.....	.....
Washington.....	50	.....	50	38	.....	50	.....	.....	.....

THE SALT LAKE CITY MINING MARKET STOCK IN 1895.

BY OUR SPECIAL CORRESPONDENT.

With the close of December the mining stock market of Utah ended a year important for the reason that it has been marked by a great improvement in general business and a wonderful increase of not only home but foreign interest, and eventful for the reason that a large number of heavy deals have been negotiated which will probably have the result of bringing in many heavy operators from the outside and also in the development of many properties that might otherwise have been neglected. This market is just now attracting the attention of investors from all parts of the United States, and from foreign countries also. The mining properties of this Territory are being operated on a very conservative basis and not withstanding the low prices of silver and lead, there is not one that is losing money for its owners, while on the other hand six of the companies are paying handsome dividends and the prospects are bright for several additions to this number, some of the old companies resuming dividends and the other new ones commencing distributions. During the past year the six public dividend payers of the Territory have paid out to their stockholders in earnings the sum of \$1,555,000, making the total dividends of the properties now active in the Territory \$29,905,100. There are 14 dividend-payers in the list, the Ontario leading with \$13,175,000 to its credit and the Horn Silver coming next with \$5,080,000. For the year 1895 the Centennial-Eureka leads with \$540,000, and is followed in the order indicated by the Bullion-Beck with \$450,000, the Silver King with \$275,000, the Mercur with \$175,000, the Horn Silver with \$100,000, and the Utah with \$15,000. There have been other companies that distributed profits, but the amounts of the payments are not made public, their holdings being strictly of a private character.

The most important of the many deals carried through during the year was that involving the properties of the Mercur Gold Mining and Milling Company, in the Camp Floyd District, Captain John R. DeLamar of New York securing for a syndicate an option on the stock of the company at the rate of \$7.50 per share. This deal also had to do with the Golden Gate properties, which are located to the north of the Mercur ground, and owned by DeLamar personally. The option price fixed the value of the Mercur group at \$1,500,000, and one of the terms of the contract was that the entire sum involved should be on deposit to the credit of the stockholders before the transfer of the stock took place.

During the year several of the old listed stocks have been dropped, there being an entire absence of business in them, but the vacant places have been filled with new securities, most of the new stocks being gold properties.

With a record of nineteen 10-cent assessments paid without default of a single stockholder, Alliance presents a remarkable example of faith in mining ventures. During the year the company cut the vein for which it had so long been searching. The stock has held very firm, the bid price advancing 65c. per share, while the asked quotation has fallen off about the same amount. The company has acquired the Old Massachusetts ground, which is in the immediate vicinity of the Alliance and is believed to be valuable.

Having freed itself from debt, Ajax has come into the market. While

the stock depreciated in value fully \$2 per share during the year it is now on the up grade again. There have been several changes in the management during the year, putting the company into the hands of competent mining and business men.

Dividend talk during the closing months of the year 1894 and the opening month of 1895 caused Anchor to advance sharply. It was the very general opinion that the company was in a position to make a dividend payment, but the board of directors did not see things in the same light and the payment was not made. From above \$4 per share the stock fell to in the neighborhood of \$3, and there it still remains. The properties of the company have operated steadily and continuously. It is anticipated that a new concentrator will be erected in the spring.

The piping of natural gas into Salt Lake City from Lake Shore was the foundation for the listing of a new stock, the American Natural Gas. Considerable business was done in the security toward the end of the year.

Early in the year there was considerable inquiry for Bogan, but a serious disagreement between the minority and majority stockholders threw the affairs of the company into the courts, and the value of the stock was cut in two by investors. The shaft on the properties of the company has not yet cut the ore bodies for which it is being sunk.

Bullion-Beck was a rather erratic stock, the reason being the irregular payment of dividends by the company and disquieting reports from the property. Early in the year the company made heavy and regular distributions, but toward the close a change came and the stock, which had been held in the vicinity of \$11 per share, went down to \$7. The total dividend payments of the company for the year reached the total of \$450,000. A new mill was put in for the treatment of the second-class ores, and the expenditure necessary in making this and other improvements was given as the reason for the repeated passing of dividends.

A gain of \$17.50 per share was the record of Centennial-Eureka and the upward movement is still in force. Increased dividend payments and the continued splendid showing in the properties of the company were the causes of this handsome gain. The stock closed the year at \$60, which is \$10 above par. The company has now paid to its stockholders the full value of their stock, \$50 per share, or \$1,500,000, and is now paying \$60,000 per month in dividends.

of debt. Toward the close of the year there was a marked increase in business in the stock.

A change in the name of the Meears occurred early in the year and it is now known as the Morgan. The properties of the company are being equipped with steam hoists and preparations are being made for a greatly increased output of ore. Treasury stock is being sold to raise the necessary funds for the improvements. The stock is 50c. lower than at the close of 1894, but the tendency is now upward.

Mercur was marked by some rapid advances, the stock opening the year at \$3 and closing at \$7.50, the price at which Capt. De Lamar secured the option on the control. The company paid to its stockholders \$25,000 per month during the year.

The dividends from Silver King were regular, \$37,500 a month, and the stock held its own in the neighborhood of \$14.50 per share.

Utah, at Fish Springs, continues to haul its high-grade silver-lead ores to the railroad over a long stretch of desert in wagons and pay its stockholders 2c. per share in dividends per month, or \$2,000.

The chief new developments have taken place in the Camp Floyd District, which is located some 50 miles southwest of Salt Lake City, and reached by the Union Pacific Railroad and the Salt Lake & Mercur roads, the latter having been built into the district during the year. The ores seem most susceptible to treatment by the cyanide process and its modifications. The gold does not occur in a free state, or, at least, it can never be seen, even with the aid of a glass. The district is seven miles long by about three in width and the entire surface seems to be underlaid with ore, as systematic development has brought values to the surface on every property worked up to date. During the year a large number of companies have been organized to operate in this district. Chief among the new companies are the Sunshine, which has a mill at work on a seemingly inexhaustible deposit of good grade ores; the Gold Dust, owner of one of the most promising semi-developed properties in the district, and the Rover, which has uncovered some ore bodies north of the Gold Dust. It seems evident that the two properties last named have the extension of the Mercur-Marion-Geyser veins. The Sunshine went on the market at \$2.50 per share, in very limited quantity, and advanced over \$1 within two weeks. The others have made as marked gains, but are still cheaper stocks. The extensive development work of De Lamar

PRICES OF MINING STOCKS AT SALT LAKE CITY DURING 1895.

Company.	Par Val.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
Ajax	\$10	1 60	85	1 50	1 00	75	65	65	50	35	35	35	25	30	25	35	25	37 1/2	30	40	37 1/2	50	1 45	50	45
Alliance	1	85	65	75	70	1 00	80	1 15	1 10	1 10	1 00	1 15	1 10	1 25	1 10	1 50	1 40	1 45	1 25	1 50	1 45	1 45	40	1 40	1 40
Am. Nat. Gas	10			35	30	25	15	25	20	22	20	22	20	30	20	25	12 1/2	15	12 1/2	10	10 1/2	13	14	14	14
Anchor	2	3 00	3 40	3 40	3 00	3 50	3 30	3 50	3 45	3 40	3 20	3 50	3 30	3 35	3 20	3 35	3 25	3 25	3 20	3 25	3 10	3 00	2 00	3 00	2 85
Bogan	10	1 25	1 00	90	80	75	60	50	45	50	40	60	50	50	25	30	25	30	25	25	25	25	20	20	25
Bullion Beck	10	10 00	9 00	9 00	8 75	9 00	8 50	9 00	8 25	9 00	8 50	11 50	10 00	10 50	9 75	8 75	8 50	8 75	8 00	8 75	8 00	7 25	7 00	7 80	7 00
Centennial	5	12 00	9 50	43 50	39 50	42 50	49 00	43 00	41 00	50 00	43 00	51 00	50 00	60 00	54 00	60 00	55 00	60 00	55 00	60 00	50 00	50 00	56 00	60 00	58 00
Comstock	2 1/2	37	30	25	25	25	20	25	25	20	25	50	40	50	45	60	55	75	60	75	50	60	25	25	15
Crescent	2 1/2	05		01 1/2	04	04	03	03	02													05	02	05	
Dalton	25	03	02 1/2	03	02 1/2	02 3/4	02	01 1/2	01	02	01 1/2	03	02	05	02	05	03	06	05	20	06	19	15	18 1/2	15
Daly	30	8 00	7 25	7 25	7 00	6 25	7 00	6 75	7 25	7 00	7 25	6 50	6 75	6 25	6 75	6 50	6 75	6 00	6 75	6 50	6 50	6 25	6 50	6 25	6 25
Daly West	20	6 00	5 00	6 00	5 75	6 75	6 00	7 00	6 75	7 00	6 50	6 75	6 50	6 25	6 50	6 30	6 50	6 25	6 50	6 30	6 50	6 37 1/2	6 50	6 50	6 25
Horn Silver	25	3 55	2 50	2 50	2 50	2 50	2 30	2 65	2 40	3 05	2 60	2 85	2 30	2 30	2 25	2 25	2 30	2 35	2 00	2 25	2 10	2 30	2 25	2 30	
Lucky Bell	10	50		50	40	40	25	40														12 1/2	10	12 1/2	
Mammoth	25	1 25	1 10	1 25	1 05	1 25	1 15	1 15	1 10	1 15	1 05	1 10		1 05	1 00	1 10	1 05	1 10	1 00	1 27 1/2	1 25	1 25	1 15	1 25	1 20
Mercur	25	3 50	3 46	3 50	3 25	3 62 1/2	3 50	3 90	3 62 1/2	4 00	3 90	4 10	3 90	4 15	4 05	4 25	4 20	5 00	4 30	7 25	5 15	7 40	5 50	7 00	6 75
Morgan	25	85	75	75	85	75	85	85	75	75	60	85	75	65	60	60	55	65	60	65	60	65	50	60	50
Ontario	100	11 00	10 00	10 00	9 25	9 50	9 00	12 00	10 50	11 00	10 12 1/2	10 00		10 00	9 50	9 75	9 50	10 50	10 00	10 00	9 40	9 25	9 00	9 50	9 50
Rover	10																					1 25	1 00	1 35	1 15
Silver King	20	13 50	13 00	13 00	12 50	14 50	13 00	14 50	14 25	15 00	14 25	15 00	14 50	14 75	14 25	14 75	14 50	14 75	14 25	14 50	13 75	14 00	14 00	14 25	14 00
Sunshine	10																			3 00	2 50	3 65	3 10	3 70	3 50
Tetro	1	25		25		25		25		25		25		25	08	25	10	20	10	25	15	25	10	15	10
Utah	1	1 00	50	1 00	50	90	75	75		1 00	90	1 00	75	1 00	65	1 00	75	1 00	75	1 10	1 00	1 10	1 00	1 15	1 10

The bottom pretty well fell out of Comstock of Park City, some of the stock of which has been floated in the East by officers of the company, several of whom are now very desirous of getting out of the company. The claim is made that the property is of comparatively little value.

Crescent was very quiet during the year and only toward the end was there any inquiry for the stock. The management is making preparations for the shipment of considerable ore from the property in the Spring.

On the strength of reports from the properties of the company at Marysvale, and of heavy inside buying, Dalton stock made rapid advances. Several years ago Dalton was one of the favorites on the local market and the mines sent out some high-grade gold ore. Continued development demonstrated, however, that this ore came from stringers only, and the value of the stock fell down to practically nothing. Now it is said that the main vein has been encountered and experts say it is a true fissure, carrying gold ore of good grade. The stock has now climbed back to in the neighborhood of 20c. The company has a stamp mill in place.

The great Ontario and Daly drain tunnel has been completed to beyond the property line of the Daly, and is still being extended to the westward. The completion of the tunnel solved the water problem for both the Ontario and Daly, and also for the Daly-West. Much development work has been done in the properties, and the two mills have been in constant operation. Both the Ontario and the Daly stocks held their own during the year.

Daly-West did not change materially during the year. The company has put in a concentrator, and the mines are in good shape.

The Horn Silver is just recovering from the effects of the great fire. Two quarterly dividends were passed in order that the surplus might be maintained at about \$200,000, but this did not weaken the stock, and but little is on the market and that is held at advanced quotations. The new mill is in operation and with some improvements in the shaft extensive development work will be made possible. The reports from the properties are of the best.

Except for some loss toward the close of the year, Lucky Bell, at Park City, held up well. The shaft is still going down in barren rock, but the indications are promising. Repeated assessments were the cause of the decline in the stock.

There was little change in Mammoth and the stock held its own in the neighborhood of \$1.25. The mill and mine work during the year gave such good results that the company was enabled to practically clear itself

and the uncovering of large bodies of fair grade ores in all parts of the district, together with the sale of the Mercur, have given the Camp Floyd District a start in reputation.

THE SAN FRANCISCO STOCK MARKET IN 1895.

BY OUR SPECIAL CORRESPONDENT.

The year just closed has been one of the most uneventful in the history of mining speculation on the Pacific Coast. It would have been much more profitable for the Board of Brokers had the exchange been closed entirely during this period, the majority of them having had to put their hands in their pockets to meet the current expenses of their offices, besides doing the most of the clerical work themselves. This, too, in the face of the fact that money is plentiful with the public, and the times ripe for a speculative boom. The deposits have been accumulating for the past 12 months with the savings banks, the vaults of which are overflowing with funds for which no profitable employment can be found. Everything has favored an active mining speculation from a financial standpoint, and yet the market has hung fire, and even settled back to a lower level of values on any effort made to change its condition for the better. The trouble is that the old manipulators have all left the street, taking their capital with them, leaving stocks in the hands of the small people who are doing well for themselves in financing the companies so as to keep the salary list intact; and that transactions are limited to the Comstocks and few others in which the public long ago ceased to be interested.

The official list of transactions in the board for the past 12 months is the smallest on record since the doors of the exchange opened for business, and it will be noticed that cents now cut quite an important figure in the quotations. The innovation has cut down the margin of the brokers' profits considerably, and many of them now incline to the belief that a great mistake was made in changing the by-laws which prohibited transactions of the kind. The assessments, while as numerous as ever, have been considerably reduced in amount, and now the largest companies find it difficult enough to collect on a 25-cent levy, which they seldom exceed. The reduction in treasury balances has necessitated scaling salaries to some extent. As the Miners' Union at Virginia City has absolutely refused to lower wages from the standard fixed in bonanza days, economy at that end has been studied by working as few men as possible, many of the mines employing one set of men for a certain number of days and then another, so as to give all an equal chance

o make a living, married men with families getting the preference, as a rule.

No important new developments of ore have been made during the year. At one time it was thought that Consolidated California & Virginia had made another bonanza find on the 1,650-ft. level in new ground, but the ore gave out in a short time, much to the disappointment of the shareholders, who had calculated upon another lengthy run of dividends. Enough bullion was produced to make a disbursement of 25c. per share and leave a handsome balance in the treasury to meet expenses. When this was paid out and the company began to accumulate an indebtedness an assessment of 25c. was promptly levied, which is now in process of collection. It is confidently expected by the company's advocates that this mine will soon again be on a self-supporting basis, as the ground is so prolific in mineral that a surprise is always in order just about the time when the fortunes of the company look the darkest.

At the south end of the Comstock Lode, Crown Point and Belcher have been extracting from time to time some rock which runs high in gold,

In so far as mines outside of the Comstock listed on the stock exchange are concerned, there are only about two left in which any public interest has been taken for some time past. These are the Bodie Consolidated and the Bulwer mines of Bodie. The former managed to work up a little excitement now and then by opening up a rich vein in the mine, which is celebrated for a peculiarly rich character of ores. The worst of it is they are bunched. Bulwer develops a streak of the same class of ore occasionally, and gets enough of it to make a mill run.

The Tuscarora mines were knocked out completely by the fall in silver, and the Quijotas have been dropped from the list and practically abandoned by the management, who found it no longer profitable to run them.

The Mt. Diablo mine, of Candelaria, Nevada, the Holmes mine, of the same place, and the Silver King mine, of Arizona, are still called, but their glory has faded. New mining enterprises in California are plenty, but they keep carefully away from the exchange.

One thing is certain, however; the coming year will seal the fate of the San Francisco Stock Exchange. Unless something occurs there to awaken

FLUCTUATIONS OF MINING STOCKS AT SAN FRANCISCO DURING 1895.

Name and Location of Company	Par Value	Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
Alpha, Nev.	\$100																								
Alta, Nev.	100	50	30	40	30	35	21	28	12	16	65	21	66	16	10	08	10	08	19	16					
Belcher, Nev.	100	69	30	43	36	47	38	73	40	66	42	43	32	33	37	60	29	60	34	45	42	42	26	38	20
Best & Belcher, Nev.	100	1 10	39	88	70	1 10	80	95	73	78	43	61	37	96	38	1 25	26	1 15	1 00	97	75	78	55	87	59
Bodie Consol., Cal.	100	1 00	65	95	80	1 50	70	1 40	1 05	1 15	45	42	25	52	20	94	10	39	12	35	25	40	27	50	35
Bulwer, Cal.	100	14	05	16	11	25	14	25	09	15	04	06	05								19	05	11	45	15
Chollar, Nev.	100	50	35	58	37	65	45	58	42	45	21	66	15	61	55	68	50	61	60	56	42	40	21	57	20
Commonwealth	100					60																			
Con. Cal. & Va., Nev.	100	4 00	3 20	3 35	2 35	3 10	2 60	3 25	2 60	2 95	2 15	2 75	2 20	2 80	2 45	2 95	2 60	2 85	2 65	2 70	2 40	2 55	2 05	2 35	1 92
Crown Point, Nev.	100	74	35	45	25	55	37	70	38	60	41	43	33	41	37	55	38	58	52	43	30	37	24	32	23
Eureka Cons., Nev.	100					1 35				35															
Gould & Curry, Nev.	100	45	24	43	19	57	45	58	44	46	24	37	20	46	28	65	35	58	54	51	38	37	22	46	27
Hale & Norcross, "	100	1 20	73	91	67	1 25	96	1 50	1 20	1 50	80	99	125	1 50	1 10	2 00	1 55	1 70	1 60	1 65	1 35	1 40	96	1 15	80
Mexican, Nev.	100	1 05	82	86	68	1 00	78	91	77	76	38	70	29	70	64	74	63	80	67	74	58	57	37	63	30
Mono, Cal.	100	35	24	25	20	30	20	30	15	21	08	09	05								12	05	12	08	13
Ophir, Nev.	100	2 05	1 50	1 60	1 35	2 10	1 55	1 80	1 55	1 75	20	1 00	1 20	1 55	1 30	1 70	1 25	1 80	1 60	1 55	1 35	1 75	1 05	1 40	1 05
Potosi, Nev.	100	60	32	52	42	56	47	58	43	47	31	47	32	46	35	65	32	65	58	68	55	69	44	71	49
Savage, Nev.	100	55	37	44	34	47	34	49	26	36	15	48	30	51	39	45	39	47	40	55	30	57	32	49	28
Sierra Nevada, Nev.	100	48	40	60	31	85	64	94	77	78	46	45	46	63	45	42	65	78	96	76	83	34	69	45	
Union Cons., Nev.	100	66	50	54	40	61	49	61	48	50	30	38	25	44	31	53	48	72	57	72	54	63	45	60	40
Utah Nev.	100	69	63	66	64	68	65	68	66	11	04	05	03	03	07	10	10	10	10	06	07	04	06	04	04
Yellow Jacket Nev.	100	68	39	50	40	70	50	61	38	53	20	50	39	42	37	43	31	62	42	49	32	35	20	49	17

and this has helped out the finances of the companies considerably, although nothing has been left to distribute among the shareholders.

Potosi and Chollar have also done fairly well in the matter of bullion production, and the assessments in this quarter have been correspondingly light. Some good reports have lately come along from Alpha, and the management are hopeful. The other mines have been working with indifferent success, the operating expenses constituting a heavy drain upon the stockholders, especially in view of the dull market which affords no relief in the way of an opportunity for any profitable turns in the shares. Many mines which at one time ranked among the most famous in the lode, are now of little more repute than wild-cats; one by one they have quietly passed into oblivion with the men who manipulated the rascally deals in their stocks.

A new departure was made a few months ago by the purchase of a certain portion of the Brunswick lode, Best & Belcher, Ophir and other companies at the northeast end of the Comstock, acquiring certain locations for the purposes of exploration. Work is now being pushed in that direction with considerable vigor.

Last month a strike, said to be important, was made on the 650-ft. level of Occidental, the principal mine on the Brunswick lode, and the stock, which had just sold as low as 16c., a week later was scarce at \$1.50 per share.

The ore encountered is said to be rich and of the same character as that found in the old bonanza mines. Where it was cut, the face of the drift, 7 x 5 ft., was all in ore, 80% of the assay returns being in gold. It will take some time to prove the extent of this find. Should the ore turn out as represented, it will have a tendency to awaken public interest to a much greater extent in the prospective value of the Brunswick lode, and the market in Pine street will be largely benefited in turn.

Outside of this and the possible discovery of paying deposits on the Comstock, it would seem that the future of mining in that section depends in a great measure upon the application of some new and cheap system for working low-grade ores.

There is plenty of \$10 rock available for extraction whenever it will pay to do so. In the old days, when the price of stocks was much higher in dollars than they are now in cents, the management scoffed at \$20 and \$30 ores. The high grade was selected solely and the other left in place, when it could as well have been used in grading down to a value where every pound of it could have been utilized. Now, with silver depreciated, it does not pay to handle rock below a certain grade, so that the vast resources are practically valueless under the present expensive system of handling. Several new processes for working ores on a cheap scale are now being closely investigated by Comstock mining men in the hope that something may be found which will permit these low-grade deposits to be used. Water power is obtainable all the year round from the Truckee River, at Reno, if it could be made available.

There is another movement on foot which it is believed will do much to resurrect mining on the Comstock. East of Gold Hill a number of rich properties have been worked at desultory intervals on what is known as American flat, and here are the old Baltimore, Knickerbocker and Rock Island mines, all of which produced ore until the management were forced to shut down after a hopeless contest with water which swamped them out when they got down to a depth of about 600 ft.

It is thought that an extension of the Sutro Tunnel from its present connection with Crown Point will settle the water question by affording drainage facilities at a depth of 1,400 ft.

It will take, it is estimated, \$200,000 to extend this tunnel to this point, intersecting in its course a number of mining claims. An effort will be made to interest the New York management of the Tunnel Company in this enterprise. All the leading mining men of Virginia City are in favor of this enterprise.

the public to the fact that such an institution exists, the chances are that it will pass into history as one of the phenomenal exhibits of a period in mining, when the eyes of the whole civilized world were directed in amazement to the bonanza mineral developments on Mt. Davidson.

During the last week in December the California Gold Mining Exchange of San Francisco was organized with the following charter members: John M. Daggett, Charles G. Yale, Horace G. Ranlett, William K. Flint, George R. Walls, S. P. Holden, Walter Turnbull, Rudolph Herold, Jr., Julius Jacobs, Clement J. Schussler, Theodore Reichert, John H. Roberts, Wilfred Page, D. E. Miles, H. Pichoir, J. F. Wertheimer, J. F. Crossett, W. R. Smedberg, C. L. Hovey, Herman Bendell, F. Chappellett, M. Wate and P. T. Dickinson. The organization of a new exchange free from the complications of the old ones had been rumored for some time. It remains to be seen how much backing the new enterprise has.

THE ST. LOUIS MINING STOCK MARKET IN 1895.

BY OUR SPECIAL CORRESPONDENT.

At one time there was an active business in mining stocks in St. Louis, but after the passing of the Granite Mountain fever the market collapsed, and for over a year the business has practically been dead. The Mining Exchange has never been revived. There are a few brokers who congregate in the Merchants' Exchange in a circle of their own and sell local stocks. The following statement gives the bulk of the business done during the year 1895.

Small Hopes has been down to 60c. and sold up to \$1; at the close 90c. is bid. American Nettie started at 30c., then fell to 10c., and 10c. is now bid. Granite Mountain opened at \$3, went down to \$1, and \$1.60 is now bid. Bi-Metallic sold from \$3 down to \$2.50, and \$2.50 is the closing bid. Hope (Montana) ranged from \$3 down to \$1.50, and \$1.50 the last bid in December. Adams sold from 25c. to 35c., and closed at 30c.

This appears to be about the bulk of the business in mining stocks, which is very small, merely nominal and hardly enough to bear quotation.

THE LONDON MINING STOCK MARKET IN 1895.

FLUCTUATIONS IN PRICES OF MINING STOCKS AT LONDON DURING 1895.

Company.	Par Value.	Opening.		Highest.		Lowest.		Closing.	
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
Alaska-Mexican, Alaska.....	1 0 0	1 5 0	2 3 9	18 9	1 5 0				
Alaska-Treadwell, Alaska.....	5 0 0	3 0 0	5 15 0	3 0 0	5 10 0				
Alaska-United, Alaska.....			1 10 0	1 5 0	1 10 0				
Banner, Cal.....	4 0 0		15 0	12 6	12 6				
Cripple Exp., Colo.....	1 0 0		1 5 0	1 0 0	15 0				
De Lamar, Idaho.....	1 0 0	1 8 0	1 11 0	1 0 6	1 0 0				
Elkhorn, Mont.....	1 0 0	12 0	11 0	2 3	2 3				
Harquahala, Ariz.....	1 0 0	6 6	7 9	2 0	6 9				
Holcomb Valley, Cal.....	5 0 0	1 9	3 6	1 0	1 0				
Jay Hawk, Mont.....	1 0 0	2 0	3 6	1 3	1 0				
Montana, Mont.....	1 0 0	13 0	12 6	6 9	8 0				
New Guston, Colo.....	1 0 0	13 9	12 6	10 0	10 0				
Palmarejo, Mex.....	1 0 0	2 3	3 9	1 3	1 3				
Plumas-Eureka, Colo.....	2 0 0	15 0	12 6	11 3	13 9				
Poorman, Idaho.....	5 0 0	2 0	4 0	1 6	1 9				
Richmond, Nev.....	5 0 0	11 3	1 2 6	11 3	17 6				
Sierra Buttes, Cal.....	2 0 0	12 6	10 6	9 3	11 3				
Springdale, Colo.....	4 0 0	2 3	3 9	1 6	1 9				
Twin Lake, Colo.....	1 0 0		1 7 6	1 5 0	1 7 6				
Anaconda, Mont.....	5 0 0		7 5 0	6 10 0	6 10 0				
Cape Copper, So. Africa.....	2 0 0	1 11 3	2 15 0	1 8 9	2 7 6				
Rio Tinto, Spain.....	10 0 0	15 2 6	19 12 6	13 13 9	15 18 9				
Tharsis, Spain.....	2 0 0	5 2 6	5 0 0	4 7 6	4 15 0				

DIVIDENDS PAID BY AMERICAN MINES. (1=\$1000; total, full amount.)

DIVIDENDS PAID BY AMERICAN MINES—Continued.

Table listing dividends for various American mines from 1884 to 1895. Includes columns for Company, years (1884-1895), and Total. Mines listed include Adams, Etna Cons., Alaska-Mexican, etc.

Continuation of the dividend table from the previous page. Includes columns for Company, years (1884-1895), and Total. Mines listed include Idaho, Ideal, Illinois, Iron Hill, etc.

DIVIDENDS PAID BY AMERICAN MINES—Continued.

Company.	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	Total.
Viola Limited, S. L., Ida.			38	38	94								337,500
Ward Cons., S., Colo.						20							20,000
War Eagle, B. C.													192,500
Webb City, Z., Mo.						4							4,400
Whale, Colo.								5					5,000
Woodside, S., Utah						25							25,000
W. Y. O. D., G., Cal.							6	36	24	36	24		108,000
Yankee Girl, S., Colo. (S.)	300	187				125	200						1,065,000
Yosemite, S., Utah								5					5,000
Young America, G., Cal.	165				10								175,000

(G) Gold; (S) Silver; (L) Lead; (I) Iron; (C) Copper; (Q) Quicksilver; (B) Borax; (Z) Zinc; (M) Mica.
 (a) Formerly the Alaska Mining and Milling Company, reorganized in 1891 as the Alaska-Treadwell Gold Mining Company; the dividends credited for 1891 and 1892 are the payments of the latter company. The Alaska Mining and Milling Company paid \$700,000 previously.
 (b) Reconstructed into the Golden Leaf, Limited, of Montana.
 (c) Previous to the consolidation in August, 1884, the California had paid \$31,320,000 in dividends and the Consolidated Virginia \$42,390,000.
 (d) Formerly the Young America South Mining Company, reorganized as the Copits in 1891.
 (e) Previous to consolidation, the Deadwood paid \$275,000 and the Terra \$75,000.
 (f) Reconstructed as the Golden Leaf, Limited.
 (g) Jay Hawk and Lone Pine Consolidated Mining Company, Limited.
 (h) Société Anonyme des Mines de Lexington.
 (i) Maid of Erin Silver Mines, Limited, formerly Henriette and Maid Consolidated Mining Company. The dividends for 1887, 1888, 1889 and 1890 were paid by the old company, and those for 1891 and 1892 by the new company.
 (j) Including dividends paid on preferred stock and common stock.
 (k) Yankee Girl Silver Mines, Limited, formerly Yankee Girl Mining Company. The above statement includes the payments by both the old and new companies.
 (l) Enterprise Mining Company, of Rico, Colo.; there is also an Enterprise Mining Company in Aspen and one in Leadville.
 (m) Poorman Mines, Limited, operating the Poorman mine at Silver City, Idaho, which paid large dividends in 1865 and 1866.

ASSESSMENTS LEVIED BY MINING COMPANIES—Continued.

Name and Location of Company.	Levied in 1887	Levied in 1888	Levied in 1889	Levied in 1890	Levied in 1891	Levied in 1892	Levied in 1893	Levied in 1894	Levied in 1895	Total to Jan. 1, 1896.
Head Centre & Trans., Nev.										\$22,824
Henth, Idaho.	\$20,000	\$5,000								25,000
Hector, Cal.			\$45,000							45,000
Hidden Treasure, Cal.								\$1,000		1,000
Himalaya, Utah.	1,800	900			\$1,800	\$1,800				10,000
Holmes, Nev.			\$25,000							345,000
Honorine, Utah.			12,500		12,500					50,000
Hudson Bay, Cal.						10,000				10,000
Huron, Mich.	120,000									280,000
Independence, Nev.						5,000				345,000
Iron Hill, So. Dak.		36,250	15,000	20,625	15,000					169,375
Jack Rabbit, Cal.						15,000	13,000	\$5,000		118,000
Jackson, Nev.							10,000			247,500
John Duncan, Mich.			2,000							4,000
Julia Con., Nev.	16,500				11,000		5,000		\$5,500	1,484,500
Justice, Nev.	31,500	52,200			26,250	42,000	30,000	75,000	20,000	3,050,000
Kearsarge, Mich.	50,000									190,000
Kentucky Con., Nev.					36,750	31,500	10,500	26,250	10,500	114,250
Keystone, Nev.	10,000									240,000
Keyes, Nev.		95,500	30,000							125,000
Kingman Silver, Ariz.						5,000				5,000
King of the West, Idaho.	30,000	15,000								45,000
Kossuth, Nev.	10,800	10,800								433,000
Lady Washington, Nev.		27,000				21,400				128,400
La Plata, Nev.				3,000						3,000
Locomotive, Ariz.	75,000	25,000	10,000	5,000						115,000
Lone Star Con., Cal.						5,000				12,500
Manhattan, Nev.	200,000									250,000
Martin White, Nev.			25,000	50,000	50,000	50,000	25,000	25,000		1,350,000
Mayflower, Cal.	150,000	175,000	35,000							470,000
Mexican, Nev.	50,400	50,400	50,400	25,200	50,400	75,000	75,000	75,000	75,000	3,043,760
Michigan Gold, Mich.								10,000		40,000
Mikado, Mich.	9,200	6,000								15,200
Milwaukee, Mont.						2,500				12,500
Missoula Placers, Mont.		2,000								4,000
Modoc Chief, Ida.							5,000			975,000
Mollie Gibson, Colo.							10,000			20,000
Montreal, Utah.							750			375
Mono, Cal.	100,000	25,000	62,500	12,500	12,500					5,000
Mount Terry, So. Dak.						750				750
Navajo, Nev.	50,000	30,000	10,000	15,000	15,251	20,000	20,000			555,521
Nevada Queen, Nev.	130,000			70,000	15,000	25,000	25,000		5,000	270,000
N. Belle Isle, Nev.	100,000	50,000	100,000	20,000	50,000	20,000	38,075			513,075
N. Bonanza, Nev.	15,000	15,000	10,000							240,000
N. Commonwealth, Nev.			30,000	30,000	25,000	25,000		10,000		120,000
N. Comstock, Nev.	10,000									10,000
N. Extension, Nev.	25,000									25,000
N. Gould & Curry, Nev.				20,000		30,000	10,000	10,000		310,000
No. Occidental, Nev.							6,000			13,000
N. Peer, Ariz.		5,000	5,000							21,000
Occidental Con., Nev.	25,000	45,000	50,000	75,000	25,000	50,000	55,000	30,000	30,000	388,052
Ophir, Nev.	50,400	50,400	50,000	50,000	50,000	50,000	100,000	100,000	100,000	4,610,640
Original Keystone, Nev.								10,000		250,000
Overman, Nev.	28,800		57,600	28,800	79,340	126,720	60,000	24,500	23,040	4,154,000
Paradise Valley, Nev.										57,000
Pennsylvania Con., Cal.							2,750			36,050
Peer, Nev.			20,000	10,000	15,000	20,000	10,000	5,000		215,000
Peerless, Nev.	25,000	25,000	96,000	25,000	10,000	5,000	5,000	5,000		410,000
Phil Sheridan, Nev.	20,000	10,000	35,000							65,000
Pine Hill, Cal.							3,000	3,000	5,000	15,000
Potosi, Nev.	145,000	112,000	10,000	55,400	112,000	56,000	84,000	112,000	56,000	1,933,600
Queen Bee, So. Dak.						3,000				3,000
Rainbow, S. Dak.							1,250			4,688
Ropes, Mich.							20,000			20,000
Sampson, Utah.	25,000	100,000								288,257
San Francisco, Cal.	22,000									22,000
Savage, Nev.	168,000	112,000	112,000		112,000	122,000	112,000	100,800	67,200	961,800
Scorpion, Nev.	20,000	10,000	130,000	90,000		5,000		5,000		411,000
Seg. Belcher & Mides, Nev.			25,000	50,000	80,000	50,000	25,000	35,000	20,000	330,000
Seg. Iron Hill, Nev.		2,500								8,750
Sierra Nevada, Nev.			75,000	100,000	71,910	80,000	55,000	45,000	50,000	4,501,910
Silver Hill, Nev.			43,200	43,200	30,000	16,200	5,400	5,400		1,992,600
Silver King, Ariz.		50,000		30,000	60,000	25,000		100,000		265,000
Siskiyou Con., Cal.						8,000	7,000	9,000	14,000	4,000
Standard, Cal.					50,000					100,000
St. Mary's Copper, Mich.								2,000		2,000
Summit, Cal.		5,000	2,500							120,000
Taylor Plumas, Cal.	4,000	6,000				10,000				20,000
Telegraph, Cal.							975			3,575
Teresa, Mex.						20,000	60,000		15,000	155,000
Tioga Con., Cal.	10,000	10,000								205,000
Triumph, Idaho.				10,000						20,000
Trojan, Nev.										370,000
Tuscarora, Nev.				10,000						15,000
Union, Utah.		1,000								7,000
Union Con., Nev.	75,000		75,000	50,000	80,000	50,000	45,000	35,000	20,000	2,505,000
Utah Con., Utah.							25,000	5,000	5,000	435,000
Valenzuela, Mex.									2,000	6,000
Wall Street, Mon.						900				1,500
Waterloo, Cal.							30,000			30,000
Weldon, Ariz.	20,000		10,000	10,000	10,000	5,000	10,000			65,000
Wolverine, Mich.										60,000
Wood River, Ida.						3,000				3,000
W. Y. O. D., Cal.						22,500				22,500
Yellow Jacket, Nev.			60,000				156,000	90,000	50,000	90,000
										6,054,000

ASSESSMENTS LEVIED BY MINING COMPANIES.

Name and Location of Company.	Levied in 1887	Levied in 1888	Levied in 1889	Levied in 1890	Levied in 1891	Levied in 1892	Levied in 1893	Levied in 1894	Levied in 1895	Total to Jan. 1, 1896.
Ada Con., Utah.			\$30,000	\$40,000	\$40,000			\$300	\$3,000	\$3,333
Alliance, Utah.		\$80,000	40,000	40,000	40,000			\$16,000		1,440,937
Altoz, Mich.		52,500	26,250	42,250	15,000	\$36,750	10,000	6,000	15,750	241,750
Alpha, Nev.	\$30,000	108,000		54,000	30,000	27,000	25,200	50,400	20,160	3,547,300
Alta, Nev.	100,000	105,000	15,000		150,000					560,000
Anchor, Utah.	70,000	105,000	15,000		150,000					560,000
Andes, Nev.	50,000	50,000	25,000	25,000	30,000	25,000		25,000	15,000	245,000
Argenta, Nev.										

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Gates Iron Works.
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1421 WANTED—A MAN TO TAKE charge of a developed silver mining property in Mexico. Must be a thorough business man, with sufficient experience in mining and metallurgy to exercise a general supervision over the superintendents in charge of those departments. The property is to be fully developed and the milling plant largely increased, and judicious business management is the most essential point. A knowledge of Spanish would be serviceable. ARGENTUM, ENGINEERING AND MINING JOURNAL.

1422 WANTED—FOR A LARGE MEXICAN city, a man who has had experience in assaying and analytical work in some Western lead or copper smelters; salary, \$50 (Mexican money) per month; steady work with chance of an increase in salary; applicants should state their age, experience and references. Address SAN LOUIS, ENGINEERING AND MINING JOURNAL.

1423 WANTED—EXPERIENCED FOREMAN for blast furnace copper-smelting plant in British Columbia. Climate good; all the accommodations of civilization. Salary \$125 per month. Applicant must be able to work himself, do sledging and tapping when required and be familiar with all the practical points in the running of furnaces. Must know how to handle men and to follow orders. Send applications, with testimonials and references, to FOREMAN, ENGINEERING AND MINING JOURNAL. Must be ready to come January 2d.

1424 WANTED.—A LARGE GOLD MINING company desires the services of a young single man for assaying and clerical work at its mine in South America. He must be a competent assayer and be capable of handling money, as he will have the paying of the employees and other expenses of company. A salary of \$125 per month will be paid. Address stating age, experience, etc., to J. H. B., ENGINEERING AND MINING JOURNAL.

1425 WANTED—A GENERAL MANAGER for an iron ore company making a large output. Familiarity with the Spanish language is desirable. Address with full particulars of experience and references, M. H. HIERRO, ENGINEERING AND MINING JOURNAL.

1426 WANTED—AN EXPERIENCED foreman capable of taking charge of the construction and operation of a lead refining plant of 20 tons daily capacity. Must have references from former employers. Address BULLION, ENGINEERING AND MINING JOURNAL.

1427 WANTED—A FIRST-CLASS ASSAYER and ore sampler, with a knowledge of the Spanish language, to take charge of an ore purchasing agency. References imperative. Address ORE BUYER, ENGINEERING AND MINING JOURNAL.

1428 WANTED—A BUSINESS MANAGER for a successful steel works; a live man who understands and has been successful in the business management of large works, and who can increase an already large trade in an article of very exceptional quality, can find here an excellent opportunity to make both fortune and reputation. Apply, stating experience, etc., FORTUNE, ENGINEERING AND MINING JOURNAL.

1429 WANTED—A MAN FAMILIAR with the refining of sulphur from its ores, by the most improved modern processes, and who can give estimates of cost of such plant. Address SULPHUR, ENGINEERING AND MINING JOURNAL.

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MINING ENGINEER AND METALLURGIST of long and successful experience as manager of mines and smelting works in the United States and Mexico, desires position; has thorough business and technical knowledge and speaks Spanish. Highest references furnished. Address M. M., care ENGINEERING AND MINING JOURNAL.

WANTED—A POSITION AS ASSISTANT in laboratory by a young man holding similar position at present. Six years' business experience. References from past and present employers. Address ASSISTANT, ENGINEERING AND MINING JOURNAL.

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CHEMIST, UNIVERSITY GRADUATE, SIX years' experience, four years in charge of large laboratory, desires a position. Has had large practice on foundry analyses, also furnace and steel works analyses. Address, A. C. ENGINEERING AND MINING JOURNAL.

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AN ANALYTICAL CHEMIST AND ASSAYER of experience desires a position; experienced in all branches of work in the West, and also in the iron and steel business; young man; can furnish best of references. Address RELIABLE, ENGINEERING AND MINING JOURNAL, Denver office, 206 Boston Building, Denver, Colo.

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Contracts Open.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., December 31st, 1895.—Sealed proposals will be received at this office until 2 o'clock p. m. on the 24th day of January, 1896, and opened immediately thereafter for all the labor and materials for furnishing and erecting complete a hydraulic passenger Elevator, including pumps, tanks, piping, car, etc., for the U. S. Post Office, Court House, etc., building at Charleston, S. C., in accordance with the drawings and specification, copies of which may be had at this office, or the office of the Superintendent at Charleston, S. C. Each bid must be accompanied by a certified check for the sum of \$200. The right is reserved to reject any or all bids and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated for opening will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for a Hydraulic Passenger Elevator in the U. S. Post Office, Court House, etc., building at Charleston, S. C." and addressed to WM. MARTIN AIKEN, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., December 31st, 1895.—Sealed proposals will be received at this office until 2 o'clock p. m. on the 27th day of January, 1896, and opened immediately thereafter for furnishing all the labor and materials and putting in place the steel and iron work of the 5th and 6th floors, upper floors and ceiling of tower, main and tower roof, and columns above 4th floor, of the U. S. Post Office, Court House and Custom House, at St. Paul, Minn., in accordance with the drawings and specification, copies of which may be had at this office, or the office of the Superintendent at St. Paul, Minn. Each bid must be accompanied by a certified check for the sum of \$800. The right is reserved to reject any and all bids or to waive any defect or informality in any bid, should it be deemed in the interest of the Government to do so. All proposals received after the time stated for opening will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for Steel and Iron Construction, etc., of the U. S. Post Office, Court House and Custom House, at St. Paul, Minn." and addressed to WM. MARTIN AIKEN, Supervising Architect.

IRON BRIDGE.—The City of Norfolk, Va., contemplates the construction of an iron bridge across east bank of Elizabeth River, connecting town of Berkley with Norfolk. Said bridge will be about 4 1/2 ft wide, 24 ft in the clear from high-water mark, with a draw to span 100 ft shipway (width of river about 700 ft) and to span tracks of Norfolk & Western R. R. Co.'s yard distant about 150 ft. from water's edge; approach about 300 ft. Norfolk side; all to meet the requirements of the United States Government and the Norfolk & Western R. R. Co. Correspondence is respectfully solicited in reference to specifications and prices of bridge complete. Address, H. B. GOODRIDGE, Member Select Council, Chairman Sub-Committee.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., January 4th, 1896.—Sealed proposals will be received at this office until 2 o'clock p. m. on the 20th day of January, 1896, and opened immediately thereafter, for all the labor and materials required to erect complete two electric elevators in the temporary building for the U. S. Post Office at Chicago, Ill., in accordance with drawings and specification, copies of which may be had at this office or the office of the Superintendent at Chicago, Ill. Each bid must be accompanied by a certified check for the sum of one hundred and fifty dollars (\$150). The right is reserved to reject any or all bids and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated for opening will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for Two Elevators in the Temporary Building for the U. S. Post Office at Chicago, Ill." and addressed to WM. MARTIN AIKEN, Supervising Architect.

CONSTRUCTION OF A SEWER.—Office of the Commissioners of the District of Columbia, Washington, D. C.—Sealed proposals will be received at this office until January 25th, 1896, for constructing a main intercepting sewer from near the intersection of P street and Florida avenue to near the intersection of Twenty fifth and Water streets northwest, with lateral branches on M and Twenty-seventh streets. Blank forms of proposals and specifications may be obtained at this office upon application therefor, together with all necessary information, and only bids upon these forms will be considered. The right is reserved to reject any and all bids or parts of bids. J. W. OSS, GEORGE TRUEDELLE, CHAS. F. POWELL, Commissioners, D. C.

PIPE.—Tenders will be received, by registered post only, addressed to the City Engineer, Toronto, the 15th of February, 1896, for the supply and delivery of 2,350 ft. of steel or cast-iron pipe, 6 ft. in diameter, with the necessary flexible joints. Specifications and plans may be seen at the office of the City Engineer, Toronto, on and after Wednesday, the 11th inst. A deposit in the form of a marked cheque, payable to the order of the City Treasurer for the sum of 2 1/2% on the value of the work tendered for, must accompany each and every tender, otherwise they will not be entertained. Tenders must bear the bona fide signatures of the contractor and his sureties or they will be ruled out as informal. Lowest or any tender not necessarily accepted. DANIEL LAMB, Chairman Committee on Works.

WATER-WORKS.—Office of the City Clerk, Pomona, Cal. Sealed proposals on a cash basis will be received by the Board of Trustees of the City of Pomona, Cal., until the 21st day of January, for furnishing the materials and constructing a system of water-works for said City of Pomona. There will be required approximately about 646 tons of 16 in. cast-iron pipe, 54 tons of 12 in. cast-iron pipe, 316 tons of 8 in. cast-iron pipe, 32 tons of 6 in. cast-iron pipe, 10 tons of special castings, 53 fire hydrants, and the following valves: One 16-in., one 12-in., 11 8-in., 24 6-in., 79 4-in.; 35,664 ft. of No. 16 4-in. single riveted steel pipe; 16 miles trenching and back filling; 1,000 ft. of 3 in. wrought iron pipe. Bids will be received for furnishing any or all of the above materials, or for constructing the works complete, or for any part of the work, all material to be delivered f. o. b. Pomona. Plans may be seen and specifications and form of contract and blank form of proposals procured from the City Clerk or City Engineer. All bids must be accompanied by a certified check payable to the order of the City Clerk for an amount equal to 5 per cent. of the amount of the bid. All bids must be endorsed "Proposals for water works," and addressed to J. R. GATHRHSIDE, City Clerk.

THE ENGINEERING AND MINING JOURNAL. ADVERTISING RATES. (NON-PAREIL MEASUREMENT.) Table with columns for Lines, Inches, Regular Publications, One Month, Three Months, Six Months, Nine Months, Twelve Months, and Full Page. Includes SPECIAL POSITIONS section.

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CONTRACTS OPEN.

Continued from Page 18.

CAST-IRON PIPE.—Sealed bids will be received by the Board of Trustees for the Water-Works and Improvement Bonds of the City of Jacksonville, Fla., until January 21, 1896, for furnishing 160,000 ft., more or less, of standard cast-iron water-pipe, varying in diameter from 4 to 20 in., and also 15,700 ft., more or less, of light cast-iron water-pipe for sewerage and drainage, varying in diameter from 8 to 24 in., with special castings. With the bid must be submitted a certified bank-check payable to the Chairman in the sum of \$2,500, acceptable to the Board. The price must be for delivery f. o. b. cars or vessels at foundry, and also f. o. b. cars or wharves or lighters at Jacksonville. The bid must be on the form supplied by this Board, inclosed in an envelop addressed to this Board, marked on the outside "Bid for Cast Iron Pipe," and may be sent by mail or delivered to the Chairman. Forms and specifications will be furnished on application. Informal bids will not be received, and the Board reserves the right to reject any and all bids. **B. F. DILLON, Chairman.**

TEST WELLS.—Sealed proposals addressed to the Chairman of the Water Committee will be received at the City Hall, Camden, N. J., until January 14th, 1896, for sinking four to six 6-in. test wells complete on land furnished free by the city, in sand and gravel soil, within one mile of railroad station. Bids shall be a definite price per foot for each 100 ft. in depth to solid rock, wells to remain in place and bids per foot for drawing pipe, contract to retain material; also bids per hour for pumping test for each well, contractor to furnish the entire plant required. The several water strata shall be tested. Work to be continuous and to be completed within 40 days from award of the contract, under penalty. Specifications may be seen at the office of the City Engineer, City Hall. Bidders shall state method of sinking wells and give references. Each proposal must contain the full name of the party or parties making the same, and must be accompanied by a certified check for five hundred (500) dollars on a local bank as surety that if the proposal be accepted a contract will be entered into.—**EDWIN HILLMAN, Chairman of Water Committee.**

PIPING.—Tenders will be received, by registered post only, addressed to the City Engineer, Toronto, until February 15th, 1896, for the supply and delivery of 2,356 ft. of steel or cast-iron pipe, 6 ft. in diameter with the necessary flexible joints. Specifications and plans may be seen at the office of the City Engineer, Toronto. A deposit in the form of a marked cheque, payable to the order of the City Treasurer, for the sum of 25 per cent. on the value of the work tendered for, must accompany each and every tender, otherwise they will not be entertained. Tenders must bear the bona fide signatures of the contractor and his sureties or they will be ruled out as informal. Lowest or any tender not necessarily accepted. **DANIEL LAMB, Chairman Committee on Works.**

TUNNEL.—Sealed proposals will be received at the office of the Metropolitan Water Board, No. 3 Mt. Vernon street, Boston, Mass., until February 11th 1896, building sections 2 and 3 of the Nashua Aqueduct, consisting of about two miles of tunnel and 1,000 ft. of masonry aqueduct in open trench, in the Towns of Clinton and Berlin, Mass. The tunnel excavation is to be about 13.5 ft. wide and 12.2 ft. high, and the masonry aqueduct 11.5 ft. wide and 10.5 ft. high. A pamphlet containing further information for bidders, a form of proposal and contract, specifications and plans, will be ready about January 15th, and will be mailed to contractors who apply to the Chief Engineer for the same, or may then be obtained at his office, 3 Mt. Vernon street, Boston, Mass. Plans may be seen at the office of the Chief Engineer, or at the office of the Engineer of the Aqueduct Department of the Metropolitan Water Board in Clinton, Mass. The printed forms must be used in making proposals. The Board reserves the right to reject any or all proposals or to accept the proposal deemed best for the Commonwealth.
HENRY H. SPRAGUE, Chairman; WILMOT R. EVANS, JOHN R. FREEMAN, Metropolitan Water Board; FREDERIC P. STEARNS, Chief Engineer; WILLIAM N. DAVENPORT, Secretary.

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MEETINGS.

THE ANNUAL MEETING OF THE SCIENTIFIC PUBLISHING COMPANY Will be held at the office of the company, 253 Broadway, New York City, January 15th, 1896, at 12 o'clock noon, for the election of trustees and for the transaction of such other business as may be brought before the meeting. **S. BRAEUNLICH, Secretary.** New York, Jan. 2d, 1896.

DIVIDENDS.

GOLD COIN MINES COMPANY (CENTRAL CITY, Gilpin County, Colorado), Office 53 Broadway, Room 34, New York, January 10, 1896. A dividend of ONE AND ONE-HALF PER CENT. has this day been declared upon the capital stock of this company, payable at their office, No. 53 Broadway, New York, on January 30th, 1896, to stockholder of record of January 17, 1893. The transfer books will be closed on the 17th inst. and reopened on the 31st. **J. A. EDWARDS, Secretary.**

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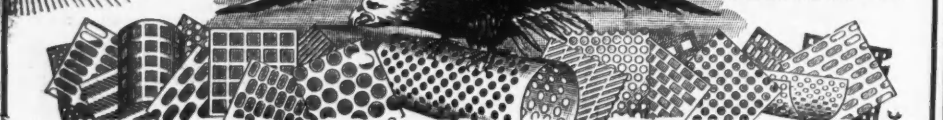
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