

exhibitors of agricultural implements will be permitted to provide power to suit their own requirements, as at the Toronto and other exhibitions. The management trust that manufacturers in the province will determine to assist their own exhibition by coming forward with a fine display of the material they produce, and show to the farmers and people generally the value and character of their respective products.

A pleasing feature in connection with the Horticultural Department will be the competition by the pupils of the various city schools. Mr. Roy, the superintendent of the Mount Royal Cemetery, has supplied a special bulb to each pupil desiring to compete, and the best specimens shown will be awarded prizes. About 1,200 bulbs were given away this spring. R. Beullac, the well-known decorator, is arranging to have a grand historical museum, and from his thorough knowledge of artistic details and elaborate designs the public may anticipate a thorough treat. There will be an excellent programme of music and attractions provided, and the citizens and public generally may evidently look forward to a very superior exhibition. This year, for the first time in the history of Montreal exhibitions, there will be an excellent street car service direct to the grounds.

ANTIQUITY OF WIRE.

The manufacture of wire is of very ancient origin. It has been traced back to the earliest Egyptian history. Specimens are in existence which can be proven to date to 1700 B.C. The Kensington Museum has a specimen which was made in Minera, 800 years B.C. Ancient literature contains many references to wire. From the ruins of Herculaneum metal heads have been exhumed on which the hair is represented by wire. There is no question that this ancient wire was made by hammering out the metal, which was always bronze or of the precious group. This held true of all made previous to the fourteenth century, during which the process of forming wire by drawing or elongating the metal by forcing it through a conical orifice, made in some substance harder than the metal treated, was invented. It is not until this time that we have any evidence of iron having been used. At first this drawing was by hand power, and it continued so until the latter half of the century, when a German, named Rudolf, built some kind of a power mill in Nuremberg. About 1500 this industry was introduced in France by one Richard Archal. A half century later Queen Elizabeth, of England, granted permission to some Saxons to establish power wire drawing in her domains. Their first mill was driven by water power, and was located at Holywell. But for some time before this hand-drawn wire had been made in England. Pre-American ideas seem to have belonged to the business, as in 1630 Charles I., by royal proclamation, prohibited further importation of wire, because the home supply was sufficient both in quantity and quality. This must have given some encouragement to the "infant industry," as we are told that thirty-three years later the first really mechanical wire mill was built in England, at Sheen. Protected inventive genius had asserted itself. Germany had been the first to develop power drawing, and did not remain idle. In fact, that country, Belgium and England have practically been the only European nations in which the wire industry has flourished. For years after its introduction into this country we depended upon them for our main supply of both billets and rods.—R. W. HUNT, in *Cassier's Magazine*.

MINERAL PRODUCTION OF THE UNITED STATES.

The following statistics of the mineral production of the United States for 1894 have been compiled by Richard P. Rothwell, and published in the *Engineering and Mining Journal*, New York. The item of bituminous coal includes brown lignite coal. Some of the items given in round numbers are estimates.

There was a general decline in production compared with the previous year, the total value for 1893 being \$232,370,022. There were, however, some exceptions, of which the following were the most noteworthy: Production in 1893 of Tripoli and infusorial earth, 1,351 tons, value \$25,625; talc and soapstone, 20,100 tons, \$366,825; asphalt, 3,490 tons, \$68,682; bituminous rock, 31,404 tons, \$114,752; borax, 9,199,000 lbs., \$689,925; bromine, 348,399 lbs., \$87,100; cobalt oxide, 3,894 lbs., \$5,452; copper sulphate, 54,000,000 lbs., \$1,822,500; chrome ore, 1,629 tons, \$16,000; feldspar, 17,000 tons, \$5,000; manganese ore, 9,150 tons, \$60,000; mica, ground, 679,000 lbs., \$29,522; mica, sheet, 6,500 lbs., \$5,478; monazite, 130,000 lbs., \$7,600; marls, 200,000 tons, \$540,000; pyrites, 95,000 tons, \$25,000; slate, other than roofing, 4,138,920 sq. ft., \$475,681; aluminum, 312,000 lbs., \$202,800; gold, 1,739,323 troy oz., \$35,955,000. By comparing the foregoing figures with items in the table the amount of the increase in 1894 will be seen:—

Products.	Customary measures.	Quantity.	Value at place of production.
NON-METALLIC.			
Abrasives—			
Corundum and emery	Short tons ..	1,220	\$109,500
Garnet	" ..	1,000	35,000
Grindstones	" ..	37,400	335,800
Millstones	" ..	297	4,447
Tripoli and infus. earth ...	" ..	1,802	36,687
Whetstones	" ..	1,735	84,450
Alum.	" ..	72,000	2,160,000
Antimony ore	" ..	165	9,075
Asbestos and Talc—			
Asbestos	" ..	250	3,750
Fibrous talc	" ..	39,600	396,000
Talc and soapstone	" ..	21,044	401,892
Asphalt	" ..	4,198	75,654
Bituminous rock	" ..	34,199	148,120
Barytes	" ..	23,758	95,032
Bauxite	Long tons...	10,732	42,928
Borax	Pounds.....	13,140,589	919,841
Bromine	" ..	379,444	98,655
Cement, natural hydraulic..	Bbls., 300 lbs.	7,895,259	4,397,407
Cement, Portland.....	" ..	738,196	1,080,644
Clay, refractory.....	Short tons ...	3,375,738	4,050,885
Clay, kaolin	" ..	24,552	185,169
Coal, anthracite	" ..	52,010,433	80,879,404
Coal, bituminous	" ..	117,950,348	103,842,467
Coke	" ..	8,495,295	12,654,558
Cobalt oxide.....	Pounds	6,550	8,843
Copperas	Short tons ..	14,897	104,100
Copper sulphate	Pounds.....	60,000,000	2,016,000
Chrome ore	Long tons....	2,653	35,125
Feldspar	" ..	23,280	116,400
Fluorspar.....	Short tons...	9,000	64,000
Graphite	Pounds.. ..	770,846	34,689
Graphite, amorphous	Short tons..	165	1,252
Gypsum	" ..	287,517	849,925
Lime	Bbls., 200 lbs..	56,750,000	28,375,000
Magnesite.....	Short tons ..	1,370	4,864
Magnesia ore ..	Long tons..	11,735	74,890
Mica, ground	Pounds	829,500	35,957
Mica, sheet	" ..	9,900	11,103
Monazite	" ..	750,000	45,000
Natural gas .....	.....	.....	11,000,000
Paints, mineral.....	Short tons ...	38,801	662,262
Paints, vermillion	" ..	41	45,600
Paints, white lead	" ..	87,242	8,445,174
Paints, zinc oxide	" ..	22,814	1,711,275
Petroleum (crude).....	Bbls., 42 gals.	48,527,336	40,762,962
Phosphate rock	Long tons ..	952,155	2,856,465
Marls.....	" ..	225,000	607,500
Precious stones .....	.....	.....	250,000
Pyrites.....	Long tons ..	107,462	466,466
Salt, evaporated	Bbls., 280 lbs.	9,161,053	4,608,275
Salt, rock	" ..	2,341,922	788,681
Salica, sand and quartz.....	Long tons ..	315,531	347,951
Slate, roofing	Squares	693,944	2,551,259
Slate, other manufactures...	Square feet..	5,099,791	499,578
Soda, natural	Short tons ..	.....	.....
Soda, natural sulphate .....	" ..	.....	.....
Stone, limestone (flux)	Long tons ..	3,544,393	2,126,636
Stone, marble	Cubic feet ..	5,681,766	2,177,280
Stone, onyx	" ..	1,450	29,000
Other building stones.....	.....	.....	30,000,000
Total non-metals .....	.....	.....	353,760,877
METALS.			
Aluminum.....	Pounds.....	817,600	490,560
Antimony	Short tons ..	220	39,200
Copper	Pounds	353,504,314	33,540,489
Gold	Troy ounces ..	1,923,619	39,761,205
Iron, pig	Long tons ..	6,657,388	71,966,364
Lead, value at New York ..	Short tons ..	160,867	10,585,048
Nickel, fine	Pounds.....	.....	.....
Quicksilver	Flasks, 76½ lbs	30,440	1,095,840
Silver, commercial value ..	Troy ounces..	49,846,875	31,403,531
Zinc spelter	Short tons ..	74,004	5,209,882
Total metals .....	.....	.....	\$194,092,119