

The following tables given in *Mineral Industry* are instructive as showing the size of the works and the production of the metal and its consumption, and are taken from the *Mineral Industry* of 1902. John B. C. Kershaw, who has compiled these statistics, estimates the production in 1901 in European works (6) 4,000 metric tons, in 1902, 3,800 metric tons. American works (3) 1901, 3,240 metric tons, 1902, 4,402 metric tons. Thus a total of 8,000 metric tons appears to be the world's production for the year 1902. In addition to the works mentioned in the table the Pittsburg Reduction Company has purchased land, and is erecting works at Massena, N.Y., which will have a 1,200 H.P. capacity. It is intended gradually to increase the plant as the demands for aluminium grow with another utilization of 12,000 H.P. At the Niagara works 10,500 H.P. are in use, producing some 19,000 pounds of metal daily. The pots receive 10,000 ampères at 5 volts, and yield 80 to 90 per cent of the theoretical output. At Shawinigan the Pittsburg Reduction Company has a plant whose full capacity will be in the neighbourhood of 1,500 tons of aluminium yearly. The current from the power house to the works, a distance of 400 feet, is carried by aluminium conductors in an enclosed passageway. As regards prices in 1902, there was little variation from 1901. No. 1 metal guaranteed over 99 per cent Al., 33 to 37 c. per pound; No. 2 metal guaranteed over 90 per cent Al., 31 to 34 c. a pound. The above prices are subject to discount of 10 to 15 per cent. Mr. Kershaw's report contains also a statement of the capital involved in the plants of the various companies of the world in the production of this metal. While the Heroult patents have expired in the United Kingdom, the Hall patent has still a short time to run. There has been a recent revival of the litigation existing between the Cowles Bros. & Hall, regarding the validity of Hall's patent, and also concerning the utilization by Hall, so claimed of the Bradley furnace patent owned by the Cowles Company. The utilization of the metal, especially for electrical conductors, is still expanding in America for bare overhead transmission lines. Statistics concerning these lines and their workings are given by Mr. Kershaw in the *Mineral Industry—1902*.

The alloys, especially 'McAdamite,' which consists of 72 per cent Al, 24 per cent Zn and 4 per cent Cu, is a silvery type metal having a white colour, a tensile strength of 44,250 pounds per square inch, and taking a high polish, is being produced by an amalgamated company conducting operations in the United States and at St. John, New Brunswick, Canada, in the neighbourhood of which city it is proposed to erect large works for the production of the metal and the alloy.

The duty on aluminium imported into the United States being 8 cents on metal and 13 cents on sheet and other manufactured metal closes out the European market. The chief uses are the manufacture of small articles and of sheet metal, much of which is being used in printing and lithographing.

Considerable progress has been made in the art of manufacture of aluminium goods through the discovery of its welding properties. Heraeus, in Europe, has produced some important pieces, showing the possibilities. His application for a United States patent went into interference with one applied for by Mary Emmé. Very satisfactory evidence was brought forward, showing that Emmé had antedated Heraeus, so that the welding of aluminium in America is covered by United States patent No. 710,958, issued October 14, 1902, to Mary Emmé.