THE PRECIOUS METALS.

The following interesting items are from M. Roswag's new work on the subject, entitled *Les Méatux Précieux.* From the year 1500 to 1848 America yielded 27,122 millions of francs in silver, and 10,028 millions of francs in gold. These numbers comprise 13,774 millions of silver drawn from Mexico, 43,059 from Peru and Bolivia, 230 from Chili, and 58 from New Granada. As to gold, the share of Brazil was 4,625 millions of francs; that of Granada, 1,952; of Mexico, 1,341; of Peru and Bolivia, 1,172; of Chili, 862; and of the United States, 76. Europe during the same period only produced 2,330 millions of francs in silver, and 1,600 ditto in gold. Africa yielded 2,500 millions from Guinea. Hence the total quantity of precious metals existing in 1848, including 1,000 millions supposed to exist before 1500 formed a total of 44,578 millions of francs—viz., silver, 30,152, and gold, 14,426. From 1848 to 1857 the stock of precious metals has been increased by 2,170 millions of francs of silver, and 6,004 of gold. Of the latter, California has produced 2,508 millions, and the rest of America 445. Australia has yielded 1,695, and Europe 743, including Russia for 678 millions. Asia has contributed 505 millions, and Africa 108. Of silver, Australia has yielded 9 millions; America, 1,827; Europe, 321; and Asia, 22; forming a total of 2,179 millions of francs. There consequently exist at present in the world 32,331 millions of francs of silver, and 20,430 of gold. The ratio of gold to silver, which before 1848 was as 1 to 2, is now as 2 to 3. In weight there existed before 1848 about 31 kilogrammes of silver for every kilogramme of gold; in 1856 this proportion had fallen to less than 24 kilogrammes of silver for one kilogramme of gold. Since 1856 the total annual increase of the precious metals may be stated at 240 millions of francs of silver, and 500 of gold, being more than double the former.

BRITISH POPULATION.

The growth of the population of the British Islands during the last one hundred and fifty years is prodigious. The surplus has furnished the great majority of the population of British America, Australia, and the United States. Great Britian and Ireland have furnished upwards of 30,000,000, of people to these countries, and yet the home population, which was in the year 1700, only 7,650,000, and in 1800, only, 15,800,000, is now upwards of 30,000,000. The British Islands have doubled their population twice in one hundred and sixty-five years. France in the year 1700 contained 19,669,000 inhabitants, in 1800, 27,349,000, and in 1860, 37,000,000—so that her population has not doubled once during the same one hundred and sixty years, although she has done but little in the way of colonization. The other European States show but a very slow rate of increase; in fact. we believe that one or two of them remain in *statu quo.*

POPULATION OF TEN BRITISH TOWNS.

From returns of the Registrar General, in the middle of the present year, the population of the following towns were:—London, 3,015,494; Liverpool, 476,368; Manchester, 354,930; Salford, 110,833; Birmingham, 327,842; Leeds, 224,025; Bristol, 161,809; Edinburgh, 174,180; Glasgow, 423,723; Dublin, 317,666.

Photography.

RECOVERY OF SILVER FROM OLD BATHS.

(*British Journal of Photography.*)

"From the frequency with which inquiries seem to be made respecting the recovery of silver from old baths and wasted solutions, it would seem that the methods generally prescribed, simple as they are to any one in possession of a laboratory, yet present difficulties to amateurs out of the reach of furnaces, and that a yet simpler method for obtaining reduced silver in a compact fused form (in which state alone can it be safely relied on for furnishing pure nitrate) is for such persons still a desideratum. The following method will, it is hoped, put the recovery of silver in a compact and pure state within the reach of all, even in the most ill-furnished positions.

"Precipitate old nitrate baths with chloride of sodium in excess, and old hypo baths with 'liver of sulphur' or sulphide of potassium, or, if this cannot be procured, with the yellow solution obtained by boiling lime and sulphur together for some time in water. The chloride and sulphide of silver thus obtaned, after washing and drying, are then to be mixed with two or three times their weight of powdered nitrate of potash or saltpeter. Select a solid piece of well-dried wood, of dimensions in the proportion of about eight inches cube to half a pound of the above mixture; place a small quantity, say half an ounce, on the upper surface, and thrust in the red-hot end of a burning stick. When deflagration has fairly commenced, and a cup-shaped cavity has begun to form, add the remainder of the mixture, in small quantities at a time (for fear of its overflowing) by means of a spatula or spoon. If this has been skilfully done the whole quantity may be added without loss; and after the combustion is completed, there will be a deep cavity in the block containing the reduced silver in a spongy form, in the midst of a cake of carbonate and sulphate of potash and chloride of potassium. The whole is to be scooped out and thrown into water, which dissolves the salts, leaving the silver sponge, which, after drying, is ready for the second operation.

"In the above process the niter, in contact with the burning wood, furnishes oxygen to it, thus blowing the fire, so to speak, and keeping up a vigorous combustion, and in so doing becomes reduced to carbonate of potash, which at a red heat readily decomposes chloride of silver. The final result of the two steps of the operation may be thus represented:—

$$KO\,NO_5 + Ag\,Cl + 3\cdot C = Ag + K\,Cl + N + 3\,CO_2.$$

For fusing the spongy silver into a compact mass, a mixture known as Baume's flux, with a reduced amount of sulphur, answers perfectly. Mix six parts of saltpeter, two parts of dry and fine sawdust, and one part of flower of sulphur. Take a