

Under the present tariff, cement is free of duty when imported into Germany, and there was a small influx of 51,947 tons in 1902, which came across the border at points in Belgium, Denmark, France, Austria and Switzerland, where factories near the frontier were geographically tributary to German territory. To shut out this slight competition the new German tariff imposes a duty of 50 pfennigs (about 12 cents) per 100 kilograms (\$1.20 per metric ton) on cement, as against \$4.04 per ton duty assessed by Russia, \$2.38 in Austria and Switzerland, \$1.42 in Sweden, and \$1.76 in the United States.

The sum of all recent information is that only the oldest and largest factories in Germany, which enjoy every advantage of location for obtaining raw material and handling their product, are able under present conditions to earn any substantial profit; many of the newer and smaller establishments are working at a loss. Early in the year 1903 there was a meeting in Berlin of cement manufacturers from all parts of the Empire, which, after a long, secret session, appointed a commission to consider and report in April upon a plan for the organization of the entire industry under a cartel, or syndicate, which should control output and manage the market. Thus far it would appear that the commission has not reported, and its continued silence is construed as an indication that the differences between local syndicates and individual factories have again been found irreconcilable, and that no general basis of combination can be reached.

The question is frequently asked, "what is cement?" There are several kinds of commercial cement; that which is known as silica, or sand cement is, we are told, manufactured by grinding together silica or clean sand with Portland cement, by which process the original cementing material is made extremely fine, and its capacity to cover surfaces of concrete aggregates is much increased. The sand is an adulteration, but on account of the extreme fineness of the product it serves to make mortar or concrete containing a given proportion of pure cement much more dense, the fine material being increased in volume. The increase in cementing capacity due to the fine grinding of the cement constituent offsets, in great degree, the effects of the sand adulteration, so that sand cement made from equal weights of cement and sand approximates in tensile strength to the neat cement, and the material is sold as cement. The extreme fine grinding also improves cement that contains expansives. Sand cement should be made on the work from approved materials, if used for other purposes than for grouting, for which it is peculiarly adapted.

The following are the best definitions of Portland cement that we have been able to obtain.

France. Product of grinding of clinkered rock obtained by the burning to a point of softening of an intimate mixture of carbonate of lime and argillaceous matter, rigorously combined and chemically and physically homogeneous in all its parts.

Germany. (Minister of Public Works). Portland Cement is a material resulting from the calcination, carried to the point of incipient fusion, of an intimate mixture of lime and argillaceous substances as its essential components, such calcination being followed by the grinding of the product to the fineness of flour.

Germany. (Portland Cement Manufacturers). Portland Cement is a product formed by cintering together materials containing only clay and lime, and finely pulverizing. It is allowable to add not more than 2 per cent. of plaster of Paris, or of some similar substance, for the purpose of rendering the setting of the cement slower. Beyond this, all additions or substitutions are to be regarded as adulterations.

Switzerland. Product obtained by the burning to the point of vitrification of hydraulic limestones, or of mixtures of argillaceous and calcareous materials, which are subsequently ground and reduced to fine powder. Port-

land cement, in addition, must contain a minimum of 1.7 parts lime to the unity of hydraulic materials.

Austria. Compounds of natural marls or artificial mixtures of clay and lime-bearing materials which are burned to vitrification and are subsequently ground to great fineness, and in which the calcareous material shall at least be 1.7 to the unity of the argillaceous.

Russia. Product made out of natural marls or artificial mixtures of materials in which clay and carbonate of lime are contained, and which materials are subsequently burned to clinker and are thereafter ground to the fineness of flour.

England. (London Chamber of Commerce). A mixture of two or more suitable materials intimately and artificially mixed in the requisite proportions, and afterwards properly calcined and ground, to which nothing has been added during or after calcination, excepting that an addition not exceeding 2 per cent. of gypsum is permissible for the purpose of regulating the setting. If any material whatever, excepting 2 per cent. of gypsum for the purpose of regulating the setting, be added to the Portland cement clinker during or after calcination, the article so produced shall not be sold as Portland cement, but under some other distinctive name.

United States. (Corps of Engineers, U. S. Army). Product obtained from the heating or calcining up to incipient fusion of intimate mixtures, either natural or artificial, of argillaceous with calcareous substances, the calcined product to contain at least 1.7 times as much of lime, by weight, as of the materials which give the lime its hydraulic properties, and to be finely pulverized after said calcination, and, therefore, additions or substitutions for the purpose only of regulating certain properties of technical importance to be allowable not exceeding 2 per cent. of the calcined product.

EDITORIAL NOTES.

Mr. H. T. McCoubrey, of the Standard Mfg. Co., St. John, Newfoundland, informs us that he is interested in promoting a Newfoundland Manufacturers' Association similar in aims and objects to the Canadian Manufacturers' Association. We wish his proposed enterprise every success. No doubt Newfoundland will soon be a province in this great Dominion of Canada, and when that time arrives we presume the new association will be assimilated with the old one.

Mr. S. Dillon-Mills, M. Ex., Toronto, informs us that he has recently ascertained the existence of radio-active force in a mineral which he discovered last fall in Cardiff Township, Ont., the exact nature of which has not yet been accurately determined, but it is probably Blomstrandite, a hydrous litano-niobrate of uranium. The radio-active force of the sample is equal to one thirty-fourth of that of uranium oxide. It occurs in thin seams from a quarter-inch to one inch in thickness, and in small patches in zneiss. It is jet black with glassy, resinous fracture, hard and brittle. The examination, Mr. Dillon-Mills informs us, was not made in time to be reported at the reading of Mr. Obalski's paper on "The Radio-Active Minerals of Quebec" at the recent meeting of the Canadian Mining Institute in Toronto. In an address before the Mining Institute, Mr. J. Obalski, inspector of mines for Quebec, made the interesting announcement that radium is likely to be found in considerable quantities in Canada, especially in the Laurentian range. The white mica and coal found in Charlevoix County, Quebec, he demonstrated, possessed radio activity. He showed the specimens gathered in that province and had no doubt that on investigation the white mica deposits in Eastern Ontario would be found to have the same valuable properties.