

general schedule are not infrequently made rather high, so that they can readily be reduced and concessions demanded in return. There is always the possibility, however, that the negotiations may be broken off for some unforeseen reason, and the undesired high rates become actual rates. This possibility generally exerts a restraining influence in the framing of the general tariff. The course which events in the field of commercial policy may take will always exert considerable influence in the formation of such tariff schedules, but the main consideration must always be the needs of the home producers.

The most prominent country using the general and conventional system is Germany. The general tariff is practically that of 1879 with the later amendments. The conventional tariff is made up of the schedules contained in the commercial treaties with Austria, Italy, Belgium, Switzerland, Russia, Roumania, Greece and Servia. Partially through commercial treaties and partially through the action of the administration in making most-favored-nation agreements, Germany has extended the application of the conventional schedule until it is now given to all European countries except Portugal. The general tariff, therefore, has only a very limited scope, and in this case may be regarded as a penalty tariff. In Austria the general tariff is based on the laws of 1882 and 1887.

The maximum and minimum tariff system is distinguished from the above system, first of all, in its form. Instead of having two rates for a few articles it has two rates on most articles on which duties are imposed, and for this reason is frequently called the double tariff system. In the application of these rates the maximum schedule corresponds to the general schedule and the minimum schedule to the conventional schedule of the system just described, since the minimum rates are given only to those countries which receive the most-favored-nation treatment. The characteristic difference between the two systems, however, arises from the difference in their origin. The minimum schedule is not drawn up by negotiations between the executives of the two countries, but is framed by the legislative body at the same time that the maximum schedule is made. That is, the legislative power fixes two rates of duty on each article in the tariff. The higher rate is the one which fixes the maximum extent to which those articles may be taxed on entering the country; the lower, or minimum rate, is the one which fixes the minimum extent to which the duty may be lowered. If it is desired to make commercial treaties at any time, these two rates show the exact limits between which the treaty rates are to be fixed.

The countries at present using a multiple or maximum and minimum tariff system are Spain, France, Russia, Brazil, Greece and Norway.

#### A NEW DEPARTURE IN IRON MAKING.

The London Iron & Coal Trades Review has the following to say regarding what is called the new departure in iron making:

It is probably not too much to say that all the pig iron makers in Great Britain are at the present moment looking forward with interest, not unmixed with anxiety, to the possibilities involved in the reconstruction of their existing plants, as typified by the fact that already one of the furnaces of the new order—that recently erected by the Millom & Askam Co.—has approached the output of 300 tons per day, or at the rate of over 2,000 tons a week, against the hitherto general average of 800 tons per week, more or less, of furnaces using the same description of raw material. The reconstruction now being provided for by the Consett Iron Co., the Dowlais Iron Co., and Bolckow Vaughan & Co.—the largest concerns of their kind, and probably the most wealthy and influential in the

United Kingdom—points to the conclusion that they have each and all satisfied themselves that this way safety lies—that they have discarded the old heresies as to the old system of having many furnaces in the place of few, for the production of a given output, that were formerly inculcated at the meetings of the Iron and Steel Institute and elsewhere, and have concluded that the "short life and the merry one" of the large capacity furnace is the proper thing, after all. We hope shortly to be able to publish particulars of the new plants arranged for by these important firms. Meantime we can but note that they will be on what are commonly known as American lines, with the typical American bosh, large blowing power, and mechanical arrangements suited to the conditions involved in handling an enormous volume of raw materials in a given period of time.

We do not expect of course, that the output of the new plants will ever reach the remarkably high levels of American records. It is not to be expected that British blast furnaces, using ores that range from 45 per cent. to 48 per cent. of iron, can ever be expected to reach the 700 tons per day and upwards which have been got from American furnaces using ores that assay 60 per cent. to 65 per cent. of iron, in the dry state. But we do not doubt that furnaces can be, and will be, constructed in Great Britain that are able to produce from ores probably averaging about 47 per cent. quite 400 tons of pig per day, which is more than three times the average daily output of the present time; and we shall be surprised if the ambition of British ironmasters, and the guarantees given by their American advisers, stop much short of this record, while it is quite probable that it may be exceeded.

Mr. Swank in The Bulletin says that this article is worthy of the serious attention of American iron and steel manufacturers, which would naturally include Canadian iron masters also. He says:

It will be only a few years, possibly only one year, until our British competitors will have many furnaces built and operated upon American lines. With their cheaper labor there will then be little room in British markets for American pig iron, and in neutral markets our pig iron makers will have sharper competition than they have recently had. And Germany, too, will have a hand in this competition. Its pig iron manufacturers have already studied and copied our best furnace practice. And so of other branches of iron and steel manufacture. Europe will not long content itself with the old and expensive methods. Our people simply deceive themselves if they think that the world's markets for iron and steel are hereafter to be within their grasp. The activity in our export trade in iron and steel in the last few years was exceptional and abnormal and can not be continued. Not only will Europe adopt our methods but it will always have cheap labor. Again we say, as we have frequently said, that the home market is our best market and that it should be carefully guarded. Whoever says that our iron and steel industries no longer need protection does not realize what fierce competition in our own markets a reduction of even 50 per cent. in our iron and steel duties would bring. He is helping the free trade enemy to break down needed protection.

#### THE METRIC SYSTEM.

The executive committee of the American Society of Mechanical Engineers have issued a circular letter to all its members which contains the report of its committee relating to the metric system. It is strongly against the compulsory adoption of the system in the United States. The members are urged to address their respective representatives in Congress, protesting against the pending legislation in that direction. It is pointed out that the metric or French system is now legal, and its use is optional, while, if the bill now before the Congress is passed, it will be illegal to use in the United States such terms and measures as pounds, tons, yards, feet, inches, gallons, etc. In this connection it is interesting to note the arguments used by Prof. John E. Sweet, of Syracuse, N.Y., in which he gives some good