ded £30,000,000 to the National Debt, and raised our expenditure for the forces from £16 000,000 to £30, 000,000, and our civil expenditure from £7,000,000 to above £10,000,000. As for the mode in which the taxation was raised at the two periods we levied nearly £4,000,000 more by Customs and Excise duties last year, but £8,000,000 more from income tax and stamps and taxes; making a considerable difference in the incidence of taxation, because, though the working classes and humbler classes generally pay about two-fifths of the Custom and Excise duties, the upper and middle classes pay the bulk of the direct taxation. But all classes were able to pay more in 1860 than in 1853, though that was a year of extraordinary prosperity. The declared value of the British and Irish produce and manufactures exported was £98,933,781 in 1853; in 1860 it was £135,842,817. The exports to foreign countries rose from £65,601,057 in the former year, to £92, 170,560 in the latter; to British possessions from £33, 332,724 to £43,672,257. The progress in the cotton trade has far exceeded all others. In 1853 we sent out to clothe the world, 1,584,727,106lbs. of cotton manufactures; in 1860. 2,765,337,118lbs; the declared value of these exports increased from £25,817,248 to £42,141,505.

The tonnage of vessels entered and cleared, with cargoes and in ballast, at the ports of the United Kingdom, was, in 1853 British, 10,268.423; foreign, 8,121,887; in 1860, British, 13,914,923; foreign, 10,774,369. 1016 vessels, of 241,968 tons, were built and registered in the United Kingdom in 1860, and the total number of vessels of the United Kingdom employed in the home and foreign trade (exclusive of river steamers) rose from 18,206, of 3,730,087 tons in 1853, to 20,019, of 4,251, 739, in 1860. These vessels employ 171,592 men. Ships brought us from abroad in 1860, no less than 5,880,958 quarters of wheat and 5,086,220 cwt. of wheaten flour; the quantity of British wheat sold in the principal market towns in England was smaller than for years—4,628,257 quarters; but, owing to the price having been low in the early part of the year, the average *Gazette* price of wheat in 1860 was only 53s. 3d. The computed real value of our imports of corn and flour of all kinds was £21,671,918, in 1859 only £18. 042,063. The computed real value of our imports was not ascertained until 1854; in that year it was £152, 389,053; in 1860 it was £210,648,643.

Orange, Red and Yellow Colors from Coal Tar.

The following is the substance of a patent lately taken out in England by C. Cowper, of London. It relates to a new method of extracting colors from coal tar. The patentee takes a quantity of the solid pitch obtained from coal tar, which is placed in a clay retort and heated until the retort is red. In conducting this operation, a quantity of red-orange and resinous matter distills over toward the end of the operation. This resinous matter is then treated for 24 hours with cold fuming sulphuric acid, which dissolves it. It is now diluted with water, the excess of acid neutralized with chalk and the clear liquor filtered. This solution slightly acidulated and heated colors silk and wool a red-brown.

A beautiful yellow color is also obtained from the coal tar as follows:—Sulphuric acid, as free as possible from nitrous vapors and sulphate of iron, is heated in a water bath, or in a glass or earthenware vessel, to about 190° Fah. The orange-red matter is then added gradually to the extent of about one-ninth the weight of the acid—*i. e.*, nine parts of sulphuric acid to one of the orange-red matter. When it is found that, by throwing a small quantity of this mixture into water, it is dissolved, the heat must be removed. To promote the action of the acid on the coloring matter, the mixture should be continually stirred during the operation by means of a glass spatula. If neutralized by means of carbonate of soda, a yellow dye is obtained principally for dyeing silks, which is purified in the following manner:—The mixture of the coloring matter with sulphuric acid is diluted with water: it is then neutralized by means of carbonate of lime. After having removed the sulphate of lime again by washing and filtering, the yellow solution is heated to boiling point, and small quantities of hydrate of lime are gradually added, until it is found that, by pouring a small quantity of the yellow solution into a solution of protochloride of tin, a brown powder becomes precipitated. The yellow solution is allowed to cool completely. After separating from it the brown precipitate, by filtering and washing, the yellow solution is again heated to boiling point, and is acidulated with pure hydrochloric acid (muriatic acid). A solution of albumen or gelatine is then added, in small quantities, until it is found that the yellow solution when filtered and heated to boiling point, colors silks a pure yellow.—*Scientific American.*

TO INVENTORS AND PATENTEES IN CANADA.

Inventors and Patentees are requested to transmit to the Secretary of the Board short descriptive accounts of their respective inventions, with illustrative wood cuts, for insertion in this Journal. It is essential that the description should be concise and exact. Attention is invited to the continually increasing value which a descriptive public record of all Canadian inventions can scarcely fail to secure: but it must also be borne in mind, that the Editor will exercise his judgment in curtailing descriptions, if too long or not strictly appropriate; and such notices only will be inserted as are likely to be of value to the public.

TO CORRESPONDENTS.

Correspondents sending communications for insertion are particularly requested to write on one side only of half sheets or slips of paper. All communications relating to Industry and Manufactures will receive careful attention and reply, and it is confidently hoped that this department will become one of the most valuable in the Journal.

TO MANUFACTURERS & MECHANICS IN CANADA.

Statistics, hints, facts, and even theories are respectfully solicited. Manufacturers and Mechanics can afford useful coöperation by transmitting descriptive accounts of Local Industry, and suggestions as to the introduction of new branches, or the improvement and extension of old, in the localities where they reside.

TO PUBLISHERS AND AUTHORS.

Short reviews and notices of books suitable to Mechanics' Institutes will always have a place in the Journal, and the attention of publishers and authors is called to the excellent advertising medium it presents for works suitable to Public Libraries. A copy of a work it is desired should be noticed can be sent to the Secretary of the Board.