

no suspicion at all rested of being in error to any thing like that amount.

Mr. J. R. Hind, London, has discovered another new planet. It is like a star of the tenth magnitude, and is situated almost exactly upon the ecliptic, about midway between two stars of the fifth magnitude—29 and 32 of Hamstead in Capricornus.

The Earl of Rosse says, that he does not believe there is any known photographic process, which is sufficiently sensitive to give details of the Moon's surface in the least degree approaching to the way in which they are brought out by the eye.

The same Nobleman in a letter to the Astronomer Royal, a portion of which is published in the *Athenæum* of June 17th, says, in relation to specula for telescopes:—"You recollect, no doubt, how greatly superior silver would be to speculum metal, if it could be as well and as easily polished as speculum metal. At the Ipswich meeting of the British Association, I described a process which had been, to a certain extent, successful. It is difficult, however, and uncertain; and as a silver surface is very perishable, it would scarcely be worth while to employ it, except under special circumstances. Another method which I have very recently tried is perfectly easy, and promises well. A plate of glass is coated with silver by precipitation from saccharate of silver. The silver film is then varnished with tincture of shell-lac, and when dry, the temperature of the glass is gradually raised to the fusing point of shell-lac. Pieces of shell-lac are then laid upon it, and over them a piece of thick glass. A slight weight presses out the superfluous shell-lac, and the whole having gradually cooled, the silver film adheres permanently to the shell-lac, the glass upon which it had been originally precipitated being easily removed without injuring it. We have thus a silver surface apparently as true as the glass upon which it has been precipitated, and with a beautiful polish. The experiment is imperfect so far as this, that as yet merely common plate glass has been tried, and not a true glass surface; and as I am about to set out for London, I shall have no opportunity for some time of completing these experiments. With the view of applying Mr. Lassell's levers to one of our 6-foot specula, should there be a reasonable prospect of improving its performance in that way, I have tried some experiments as to the practicability of drilling speculum metal. I find it can be drilled by a tubular drill of soft iron and emery, the core being from time to time removed by a pointed chisel, and a very light hammer, by which it can be safely broken up gradually. A drill with diamonds set in a groove, cuts it well also; and even a drill of perfectly hard steel, revolving slowly, cuts it well; so that there can be no serious difficulty in making the necessary perforations."

At the Fort Pitt works, Pittsburg, the proprietors are engaged on a Government order for 21 guns of the heaviest calibre, called "Columbiades," having a ten-inch bore and throwing a 124 pound shot. Lieutenant Rodman is the inventor of a new principle in casting ordnance. The cannon is cast hollow, and a constant and ever-renewed stream of water forced in, thus cooling the interior first instead of, as was the old plan, casting solid and allowing the outside to cool first. Cannon cast by both methods have been subjected to powerful tests, and it is found that those cast on the new principle bear five and six times the number of charges of those cast by the old method.

In the year 1806 the total number of Iron Furnaces in Great Britain was 216 and the production 243,851 tons; in 1852 the total number of Furnaces was 655 and the production 2,701,000 tons.

A Parliamentary paper just printed contains the following satisfactory statements relative to the Revenue, Expenditure and Commerce of the United Kingdom.

In the year 1853 the surplus of revenue was 3,254,505*l*, being the largest excess for ten years. The net amount of the several branches of the revenue of the United Kingdom paid in the exchequer was 51,430,344*l*. The expenditure out of the revenue paid in the same year was 51,174,839*l*. In 1853 the taxes repealed or reduced amounted to 3,247,474*l*, and the estimated amount imposed was 3,356,383*l*. At the end of last year the balances in the exchequer were 4,185,240*l*. The capital of the national debt last year was 770,923,091*l*. The quantity of raw cotton imported last year was 895,266,789*l*, and of wool, 111,396,445*l*. The total declared value of British and Irish produce exported last year was 93,357,306*l*. Last year the number of vessels built and registered was 798, of 293,171 tons. The number of vessels belonging to the United Kingdom last year, exclusive of river steamers, was 18,206, of 3,730,087 tons, and the men employed, exclusive of masters, was 172,525. The

coinage in the year was 12,664,123*l*. The births in the year were 612,311, the deaths 421,775, and the marriages 162,185. The total paupers relieved were 818,315.

There appears to be no longer any doubt as to the capabilities of India to supply the United Kingdom with cotton. The *London Morning Chronicle* considers it as demonstrated beyond all question, that India can furnish cotton for the British Market. The inferiority of Indian Cotton compared with American arises from what befalls it subsequently to its production in the fields. Railways for transportation, and an improved method of collecting, cleaning, and packing are all alone required to enable Central India to furnish an immense and continually increasing supply.

In a list of casualties to British Shipping taken from a Parliamentary blue book, the startling fact is announced, that during the four years ending 1850, not less than 204 ships and their crews departed from the various ports of the United Kingdom, of which *not one was ever heard of again*.

The *Daily News* says, that the Egyptian Railroad is in good working order, and answers exceedingly well. The trains do not run on it at present at any stated periods. It is chiefly used when European or Indian passengers arrive in Egypt. English engine drivers are employed on it. The speed is about 20 miles an hour. The railway the whole distance between Alexandria and Cairo will soon be open. It passes through a level and most fertile country. The Arabs do not know what to make of it. They were dancing before it some time since, and having no conception of its speed, they did not get out of the way in time, and an Arab woman was killed.

Madame Sontag, who died in Mexico, on June 18th, was forty-eight years old, having been born at Coblenz, on the 13th of May, 1805. She was the child of an obscure German actor and actress. She married a foreign gentleman of noble family, and until 1848, did not appear on the public stage. As one of the consequences of the Revolution of 1848, Madame Sontag was compelled by the vicissitudes of fortune to return to the Opera Houses of Europe.

In Hunt's *Merchant Magazine*, under the head "Foreign Trade of Oswego," we find the following statement:—"There has been a handsome aggregate increase, although there has been a falling off in the Importations of Canadian flour, of near one-half, as compared with last year. The cause of this we have before explained, the principal one being the reciprocal free trade adopted between the Provinces, which has tended to divert Canadian Flour from our channels down the St. Lawrence." The deficiency at this point this year, is made up by the increased receipts of Canadian wheat. The receipts of three articles of largest import, from Canada for two seasons, have been as follows:—

	1852.	1853.
Flour	193,190	113,008
Wheat.....	1,362,482	1,781,157
Lumber	75,500,000	121,288,329

Large amounts of the products of the forests, such as shingles, lath, railroad ties, oak and pine timber, &c., imported at this point, are not embraced in the above lumber figures.

SUPPLYING LOCOMOTIVES WITH WATER.—A resident of Fredonia (N. S.), has invented a curious apparatus for supplying locomotives with water, according to which, a cistern must be constructed beneath the track, having connected with it a force pump, which in its turn is connected with a series of "friction wheels," inserted above it in the track. The locomotive is run upon these wheels, and then, however swiftly its wheels may revolve, it can go no further, as the friction wheels upon which it stands revolve with those of the engine. The force pump is in this manner set at work, and made to raise from 1500 to 5000 gallons per minute.

PROPERTIES OF IRON.—The *Philadelphia Ledger* states, that in the concluding lecture of Prof. Smith at the Smithsonian Institute, the lecturer dwelt upon the tendency of iron to undergo a change from a fibrous to a granular condition—thus causing the abstraction of an indefinite amount of its tenacity and strength. Fibrous iron, by being for a considerable time subjected to concussion, will become granular and therefore weak. A knowledge of this principle has induced the French government to disallow the use of iron axles on their public diligences beyond a certain time; they must then be removed. Iron cannon, originally very strong, become weaker and weaker by use, from the loosening of the texture of their substance.