

ELECTROTYPING BY LIGHTNING.

In front of the Bibliotheque Imperiale at Paris there exists an open space, ornamented with a large bronze fountain, which was coated with copper by the electrotype process. The operation was carried on in a workshop, built for the purpose, at the neighboring village of Auteuil. While the upper basin, from which the water flows through sixteen tigers' mouths, was in the bath of sulphate of copper, a violent thunderstorm burst over Paris, and the lightning fell close to the workshop in question. Immediately after the storm had subsided, the electrotyper caused the liquid to be poured off, in order to examine the vase, and to assure himself that the electric fluid had not deranged the deposit. He was extremely surprised to discover that the copper had been deposited on the tigers' heads in streaks or lines, and so happily arranged that they form a veritable tiger's skin, covered with hair, in as perfect a manner as if they had been produced by the hands of a skillful engraver. This curious effect of the electric fluid has accordingly been allowed to remain, and the result is a great addition to the expressive character of the work. The fountain now erected has a square garden round it, in imitation of those of London, and was inaugurated on Aug. 13th, previous to the emperor's fete. The successful completion of this, the largest work ever attempted by the electrotype process, will be followed by an application of a copper deposit on the fountains of the Place de la Concorde, and all the iron and bronze statues in the capital.

FOREIGN SUMMARY—METALS AND MARKETS.

A method of taking photographs upon plates of polished copper for the purpose of engraving therefrom, has just been made known to the public, through the London *Mechanics' Magazine*, by Colin Smart, of Sunderland. It is described as follows:—Take some perchloride of iron and pour it over a plate of polished copper (such as is used by engravers), when the plate will at once be affected and its color changed. It is now washed with cold water and dried with a soft cloth, when it is sensitive to sunlight. If a negative picture is placed upon it in the ordinary way and exposed to sunlight, a beautiful black positive picture will be produced on the copper in the course of ten minutes or a quarter of an hour. This establishes the fact of pictures being taken direct on a copper plate for the purpose of engraving directly from it.

J. Scott Russell, the builder of the *Great Eastern*, has taken out a patent for constructing vessels of what is called "yellow" or "Muntz metal." Iron plated vessels are liable to become foul under water by the adherence of marine vegetation and minute shells: the object of substituting yellow metal plating for the iron is to prevent such fouling of vessels bottoms. The framing of the vessel is specified to consist of angle bars of Muntz metal and the sheets or plates of the same metal fastened by rivets of similar material—the whole hull, in short, to be made of brass. This alloy is a brass composed of 60 parts, by weight, of the best copper and 40 of spelter. It is well known that copper and zinc combine in different proportions, producing yellow metal of various qualities. The foregoing proportions are supposed to be the best, as it is believed the brass thus made is nearly like iron in its electrical character, and that if the iron of the machinery is placed in contact with it, no electrical action will take place, as when iron and pure copper are placed in contact. This application of brass will never amount to much in a practical point of view. Such metal is far more expensive than iron, and experiments have proved it to be less durable and vastly inferior in strength.

Prince Albert, as President of the British Association for the Advancement of Science, which lately met at Aberdeen, made an introductory speech which does him great credit, as he paid the highest possible compliment to those who are engaged in scientific pursuits. He said his election was an act of humility on the part of the members of the association; but although he felt unworthy of occupying his position, yet it would have appeared like pride on his part if he had refused the honor. He accepted the situation, as the representative of the people and as the husband of the Queen, to testify their appreciation of the labors of the Association for the Advancement of Science. We give the following paragraph from his speech:—"Science is not of yesterday. We stand on the shoulders of past ages, and the amount of observations made and facts ascertained have been

transmitted to us and carefully preserved in the various storehouses of science. Other crops have been cut, but still lie scattered on the field; and many a rich harvest is ripe for cutting, but waits for the reaper. Economy of labor is the essence of good husbandry, and no less so in the field of science. Our association has felt the importance of this truth, and may well claim, as one of its principal merits, the constant endeavors to secure that economy."

PRICES OF FOREIGN METALS, SEPT. 29.

	£ s. d.		£ s. d.
Iron, English Bar and Bolt:—		Iron, Swedish, bars, per tun.	11 10 0
In London, per tun.	7 0 0	Russian C C N D.	17 0 0
In Wales.....	6 10 0	Steel, Swedish Keg, nom.	18 10 0
In Liverpool.....	6 10 0	Do. Rolled.....	19 10 0
Staffordshire Bars.	7 10 0	Faggot.....	20 0 0
Sheet, single.....	9 0 0	Spelter.....	21 0 0
Double.....	10 10 0	Zinc, in sheets.....	27 10 0
Hoop.....	8 10 0	Copper, Tile.....	107 10 0
Rod, round.....	7 10 0	Tough Cake.....	107 10 0
Nail Rod, square..	7 10 0	Shipping Iron:—	
Staffordshire Bars..	7 10 0	Do. Rolled.....	— 12
Sheet, single.....	9 0 0	Do. Spelter.....	— 12
Double.....	10 10 0	Bottoms.....	— 12½
Hoop.....	8 10 0	Old.....	— 10
Rod, round.....	7 10 0	Yellow Metal.....	— 10
Nail Rod, square..	7 10 0	Lead, British Pig.....	22 15 0
Iron, Rails, in Wales, cash.....	6 5 0	Spanish.....	22 10 0
Do. 6 months.....	6 0 0	Sheet.....	23 10 0
In Staffordshire.....	7 0 0	Tin, English Block, nom.....	136 0 0
Railway Chairs, in Wales.....	4 0 0	Bar.....	137 0 0
In Clyde.....	4 0 0	Refined.....	142 0 0
Pig No. 1, in Clyde..	2 13 0	Foreign Banca.....	144 0 0
3-5ths No. 1 and 2-5ths No. 3.....	2 13 0	Straits.....	140 0 0
Staffordshire Forge Pig, at the works, L. V., nom.....	4 0 0	Tin Plates, Charcoal, I. C., per box.....	1 10 0
Welsh Forge Pig.....	— —	Do. IX.....	1 16 0
Acadian Pig, Charcoal.....	8 15 0	Coke, I. C.....	1 5 0
Scotch Pig, No. 1, in London.....	3 10 0	Do. IX.....	1 13 0
		Canada, Plates, pr tin Quicksilver, per bottle.....	12 0 0

[The above are prices within three per cent discount, the pound being valued at \$4.85.]

New York Markets.

COAL.—Anthracite, \$4.50; Liverpool, \$5.50; Sidner, \$5 per tun.
 COPPER.—Refined ingots, 22½c. per lb.; sheathing, 26c.; Taunton yellow metal, 20c.
 COTTON.—Ordinary, 8½c. a 8¾c.; good ordinary, 9½c. a 10c.; middling, 11½c. a 11¾c.; good middling, 12c. a 12¾c.; middling fair, 12¾c. a 13c.
 FLOUR.—State superfine brands, \$4.60 a \$4.65; Ohio common, \$4.75 a \$5; Michigan, \$4.65 a \$4.75; Genesee, extra brands, \$5.40 a \$7; Missouri, \$4.75 a \$7; Canada, \$5.50 a \$6.30; Virginia, \$6.25 a \$7.25.
 HEMP.—American undressed, \$140 a \$150; dressed, from \$190 a \$210. Jute, \$90 a \$95. Italian, \$275. Russian clean, \$200 per tun. Manila, 6½c. per lb.
 INDIA-RUBBER.—Para, fine, 56c. a 60c. per lb.; East India, 40c. a 50c.
 INDIGO.—Bengal, \$1 a \$1.60 per lb.; Manilla, good to prime, 55c. a \$1.10; Guatemala, \$1 a \$1.15.
 IRON.—Anthracite pig, \$23 a \$24 per tun; Scotch, \$22.50 a \$23; Swedish bar, ordinary sizes, \$37.50 a \$39; English refined, \$53 a \$54; English common, \$43 a \$45; Russian sheet, first quality, 11c. a 12c. per lb.; English, single, double and treble, 3¾c. a 3¾c.
 LEAD.—Galena, \$5.75 per 100 lbs.; German and English refined, \$5.70; bar, sheet and pipe, 6c. a 6¼c.
 LEATHER.—Oak slaughter, light, 32c. a 34c. per lb.; Oak, medium, 33c. a 35c.; Oak, heavy, 30c. a 33c.; Hemlock, slaughter, light, 23c. a 23½c.; Hemlock, medium, 23c. a 24c.; Hemlock, heavy, 22½c. a 23c. Upper Leather.—Rough oak, light, 31c. a 33c.; Oak, heavy, 30c. a 31c.; Oak, Southern tan, 30c. a 31c.; rough Hemlock, good light, 26c. a 27½c.; Hemlock, good heavy, 24c. a 26c.; Hemlock, polished, 14c. a 15c.; Hemlock, buff, 15c. a 18c. Cordovan, 50c. a 60c. Morocco, per dozen, \$18 to \$20. Patent enameled, 16c. a 17c. per foot, light Sheep, morocco finish, \$7.50 a \$8.50 per dozen. Calf-skins, oak, 57c. a 60c.; Hemlock, 56c. a 60c.; Belting, oak, 32c. a 34c.; Hemlock, 28c. a 31c.
 LUMBER.—Timber, white pine, per M feet, \$17.50; Timber, yellow pine, \$35 a \$36; Timber, oak, \$18 a \$23; Timber, eastern pine and spruce, \$16; White Pine, select, \$25 a \$30. White Pine, box, \$14 a \$18; White Pine, flooring, 1½ inch, dressed, tongued and grooved, \$24.50 a \$25; Yellow Pine, flooring, 1½ inch, dressed, tongued and grooved, \$29 a \$32; White Pine, Albany boards, dressed, tongued and grooved, \$30 a \$31; Black Walnut, good, \$45; Cherry, good, \$45; White Wood, cherry plank, \$12; Spruce Flooring, 1½ inch, dressed, tongued and grooved, each, 22c. a 24c.; Spruce Boards, 15c. a 17c.; Hemlock Boards, 12¾c. a 14c.; Hemlock Joist, 3 by 4 inch, 12¾c. a 14c.; Shingles, cedar, per M, \$28 a \$35; Shingles, cypress, \$12 a \$25; Staves, W. O. pipe, light, \$55 a \$58; Staves, white oak, pipe, heavy, \$75 a \$80; Staves, white oak, bbl. culls, \$20; Heading, white oak, hhds., \$65. Mahogany—Duty, 8 per cent. ad. val.—St. Domingo, fine croches, per foot, 35c. a 45c.; St. Domingo, ordinary do., 20c. a 25c.; Honduras, fine, 12¾c. a 15c.
 NAILS.—Cut at 3c. a 3¾c. per lb. American clinch sell in lots, as wanted, at 5c. a 6c.; wrought foreign, 3¾c. a 3¾c.; American horse-shoe, 14½c.
 OILS.—Linseed, city made, 57c. per gallon; linseed, English, 58c.; whale, bleached winter, 53c. a 60c.; whale, bleached Fall, 58c. a 60c.; sperm, crude, \$1.35; sperm, unbleached winter, \$1.40; sperm, unbleached Fall, \$1.35; lard oil, No. 1 winter, 90c. a 95c.; refined rosin, 30c. a 40c.; camphine, 47c. a 49c.; fluid, 54c. a 56c.
 RESIN.—Common, \$1.60 per 310 lbs. bbl.; No. 2, &c., \$1.70 a \$2; No. 1, per 280 lbs. bbl., \$3.25 a \$3; white, \$3.25 a \$4.50; pale, \$5.50.
 SPELTER plates, 5½c. a 5¾c. per lb.
 STEEL.—English cast, 14c. a 16c. per lb.; German, 7c. a 10c.; American spring, 5c. a 5½c.; American blister, 4½c. a 5½c.
 TALLOW.—American prime, 10½c. to 10¾c. per lb.
 TIN.—Banca, 32¾c. a 32¾c.; Straits, 30¾c.; plates, \$7.25 a \$9.25 per box.
 TURPENTINE.—Crude, \$3.63¾ per 280 lbs.; spirits, turpentine, 46c. per gallon.

Wool.—American, Saxony fleece, 50c. a 55c. per lb.; American full blood merino, 46c. a 48c.; extra, pulled, 45c. a 50c.; superfine, pulled, 37c. a 41c.; California, fine, unwashed, 24c. a 32c.; California, common, unwashed, 10c. a 12c.; Mexican, unwashed, 11c. a 14c.
 ZINC.—Sheets, 7½c. a 7¾c. per lb.
 The foregoing rates indicate the state of the New York markets up to October 12th.

The wool trade is growing into vast proportions, and no better sign could be required than this in regard to our increase in a very stable class of manufactures. The finer qualities are now more sought after, thus indicating progress in the production of superior fabrics. About 85,000 lbs. of domestic fleece were sold last week. There were arrivals of 985 bales of native and 284 of foreign wool.

During the week ending the 10th inst., the quantity of boots and shoes exported from New York was as follows: To Danish West Indies, 9 cases, \$447; Cuba, 3 cases, \$600; Dutch West Indies, 3 cases, \$173; British West Indies, 3 cases, \$364; Chili, 58 cases, \$2,946; total, 76 cases, \$4,530; to clothe the feet of the ereoles and others in the West Indies.

Leather has a downward tendency, but the sales have been so limited that the change in prices is not worth noticing. During the month of September, 255,889 sides of leather arrived in the city.

Flour has increased in price a little over ten cents, owing to a break in the Erie canal, which prevented the usual amount of arrival.

American sperm candles have been in active demand at from 38c. to 50c. per lb.

The cotton market has been somewhat dull. The arrivals during the week have been 4,476 bales, of which Texas sent 614, Georgia, 2,384; South Carolina, 1,220; Virginia, 41; Maryland, 178; and the rest foreign.

Well's Commercial Express (Chicago) states that 3,472,289 bushels of wheat have arrived in that city, this Fall, which is an increase of 1,000,000 over the arrivals in 1858 for the same period. The crop this year is stated to have been a very large one.

About 35,000 sides of lace leather are used annually for the manufacture of belting in the establishment of J. Davis, Pawtucket, R. I. The Dunnel Manufacturing Company, of the same place, print from 6,000 to 10,000 pieces of calico per week, by six machines.

There were shipped on the Lehigh canal, during the week ending the 8th inst., 31,000 tons of anthracite coal, being an increase of 2,850 over the same period in 1858; and thus far, there has been an increase of 97,000 tons over the total export of last year.

SALE OF PATENTS.

We understand that T. H. Wilson & Bro., of Athens, Ga. (whose patent horse-power was illustrated on page 256, Vol. XIV., SCIENTIFIC AMERICAN), have sold the right for Texas for \$10,000.

Mr. Theodore Frederick Weil, of New Orleans, returned from England by the last steamer, having sold his English patent on a fish-hook to a Birmingham house for £5,000 (\$25,000). The hook is of the sockdologer kind, and has been pronounced an excellent invention. Patents were secured upon it for the United States, Great Britain and France, through the Scientific American Patent Agency.

We congratulate our clients on their good success.

A SUBMARINE OYSTER SALOON.—Mr. E. Maillefert, who removed the rocks at Hellgate, East river, N. Y., proposes to build a mammoth diving-bell, with which to work the mammoth oyster-beds recently discovered in Long Island Sound. Parties may then enjoy the pleasure of taking the oysters from their beds and devouring them at a depth of six fathoms below the surface of the Sound.

NEW CEMENT FOR TEETH.—Freshly calcined oxyd of zinc, 9 parts; finely powdered borax, 1 part; finely powdered silic, 2 parts; all mixed well together. A correspondent of the *Druggist* states that this makes a firm plastic mass, and that it is used by French and German dentists.

NATIVE iron has been discovered in but few parts of the world. Specimens have been found in Austria; and in Canaan, N. Y., there exists a seam of native iron, 2 inches in thickness, from which horse-nails have been forged.