LATEST FOREIGN INTELLIGENCE.

SERPENTINE.—Among the ornamental building stones introduced during the past few years in the buildings of London, and other large cities, granite and serpentine have advantages which no other stones yet tested can claim—great durability combined with extreme beauty. The fracture of the common serpentine is harsh and brittle, but that of the commercialserpentine is concoidal, breaking in flakes like slate. It is adapted for taking the finest carving, and wears even better than granite, inasmuch as lichens (which, of course, harbor insects and retain damps) will cling to granite, but not to serpentine. Several church towers in the neighborhood of the Lizard illustrate this fact. Serpentine also retains its polish out of doors. In the Geological Museum at Oxford there were recently a number of columns representing the various limestone marbles and ornamental stones. The roof of the museum was removed, and continued to be so, the columns being meanwhile wrapped round with hay bands. When this covering was removed on the serpentine and granite the polish remained perfect, and upon those stones only. It will no doubt be interesting to numbers to know the comparitive degrees of strength of serpentine, Portland stone, and Devonshire marble, and, therefore, the statistics of the test made before the committee of the Institute of British Architects, on Aug. 7, last year, is subjoined. The shafts of each material were 1 foot in length and 3 inches in diameter. The trial resulted as follows:—

	First fracture. Tuns.	Broken. Tuns.
Portland stone, No. 1.....	7·3	10·25.
Portland stone, No. 2.....	8·7	8·7
Devonshire marble.....	9·2	10·7
Serpentine, No. 1.....	12·15	16·25
Serpentine, No. 2.....	16·92	17·62

The figures relating to the fractures represent the hydraulic pressure applied, and indicate the superior weight-bearing qualities of serpen ine. Thus it is shown that in regard to polish, hardness, strength, durability, and beauty, serpentine is a stone that is very desirable for the ornamentation of buildings, and in an age when the adornment of private dwellings and public edifices is held to have an effect in increasing the refinement and taste as well as the wealth of the country, the extension of this useful branch of manufacture may be regarded with satisfaction, not only in the interests of a company whose management has been characterized by energy and enterprise, but also in the interests of the public, and of Cornwall especially.

[In Middlefield, Mass., says Feuchtwanger's "Treatise on Gems," there is a bed of serpentine one-fourth of a mile wide and six miles long; enough to supply the whole world.—EDS.

The *Mechanics' Magazine* says:—"It has been decided to adopt throughout the naval service a new pattern of quill friction tubes, fitted with loops and studs, on the gun, the detonating hammers and tubes, as well as the friction tubes now in use, being accordingly withdrawn, and the new tubes universally adopted. All guns now in store at the home stations, whether in ships, in commission, or in the steam reserve, are to be fitted with the stud, and the vents enlarged at the top, as recommended. Ships now on foreign stations will retain the present proportion of detonating tubes until put out of commission.

MANUFACTURE OF WELDED IRON TUBES.—In the ordinary manner of constructing heating furnaces used in the manufacture of these tubes the furnace is made in two compartments, each compartment being provided with a fire-grate. One of the said compartments is called the back hole or warming furnace, and the other is called the welding furnace. The skelp, or partially formed tube to be welded, is first heated in the back hole or warming furnace, and afterward transferred to the welding furnace, where it is raised to a welding heat. The invention of Mr. James Fisher, of West Bromwich, consists in dispensing with the fire-grate at the back hole or warming furnace, and in so constructing and arranging the said back hole or warming furnace and the welding furnace, that the warming furnace shall be heated by the waste heat from the welding furnace. He builds the warming furnace and welding furnace side by side in the ordinary manner, but builds the warming furnace without any fire-grate. He builds the welding furnace in the ordinary way, excepting that he closes the end of the said furnace, instead of making it communicate directly with the stack. He perforates the wall separating the two furnaces with a series of holes, through which holes the flame and heated air from the welding furnace pass into the warming furnace, and from thence to the stack. By this arrangement the two furnaces are heated by the fire from one grate—namely, by the fire of the welding furnace grate. It is claimed, that by constructing the heating furnaces according to this invention great economy is effected in the fuel employed.

THE *Bellerophon* is ordered to be fitted with a light iron head in order to lessen the force of the large wave now thrown up by the frigate when going through the sea at full speed, and, at the same time, to give her head a handsomer appearance than it at present possesses. During the time the improvements are being effected alterations will be made in the screw propeller, the recent trials having shown that the principal cause for the comparatively low rate of speed realized was the character of the screw fitted to her, which was much too ponderous.

THE extreme heat, which prevailed on the continent during the vintage, produced a curious result. The grapes being in general very ripe fermented in the vats with extraordinary rapidity. A great portion of the saccharine matter had not time to be converted into alcohol, and the wine, on account of the saccharine matter remaining in it, will ferment for a long time in the cask.

THE fish in the river Thames are bearing testimony to the beneficial effects of the main drainage scheme. The chairman of the Metropolitan Board of Works at the last meeting stated that Mr. Webster had sent him a fine roach that was caught in front of the Parliament Houses. He kept it for three days, but could not keep it longer. Since then other specimens of roach and dace have been caught there.

The Best Substance for Making Cloth and Leather Water-proof.

Dr. F. Grace Calvert, F.R.S., F.C.S., in one of his recent lectures on chemistry applied to the arts, introduced the interesting and valuable invention of one of the most learned and eminent chemists of England —Dr. J. Stenhouse, F. R. S.—who has devised quite a new method of water-proofing vegetable and animal tissues and fabrics. Previously to his discovery, the modes of water-proofing consisted in using bees-wax and various kinds of drying oils, such as linseed, the siccation of which is enhanced by boiling them with peroxides of lead or manganese. Further, you are all aware of the extensive use which has been made of caoutchouc and gutta-percha for water-proofing purposes. Dr. Stenhouse's water-proofing material is a white solid substance, having no odor, undergoing no change through the action of the atmosphere, and which has acquired of late great popularity, by the application which has been made of it as an illuminating and lubricating agent—I mean paraffin, the discovery of which, in a commercial point of view, and its introduction into public notice, are due to Mr. Young, of Bathgate, near Glasgow, who has established one of the largest manufactories in the world for the production of this article, notwithstanding it was considered a commercial novelty in 1852. Dr. Stenhouse found that if he employed pure paraffin for water-proofing, owing to its tendency to crystallize, it would not adhere sufficiently to fabrics. He therefore conceived the happy idea of adding to it a few per cent of linseed oil, which overcame the defects presented when paraffin was employed alone, effecting a better adhesion between the water-proofing material and the textile fabrics, and rendering leathers more flexible. Dr. Stenhouse melts together paraffin oil with a few per cent of linseed, as above stated. He runs the whole into cakes, and, in order to apply this water-proofing agent, he heats the cake and rubs the materials over with it, or spreads the melted mixture over the fabric by means of a brush. His process is applied with great advantage by Messrs. Silver & Co. to the water-proofing of soldiers' tents, and other materials of that class, to the great comfort of the soldiers, for, without increasing the weight of their tents, it renders them impermeable, and protects the men from rain and its attendant discomfort and danger. Another most useful application of Dr. Stenhouse's water-proofing material is the rendering of leather impermeable. By examining the specimens you will immediately see the immense advantage that cavalry will derive from having their saddles rubbed over with this preparation, as it renders the leather incapable of absorbing moisture, and enables the soldier to mount his horse after heavy rain with as much comfort as if it had remained under shelter. It also renders the soles of shoes quite impermeable, and at the same time communicates to them great flexibility, so that the boots of navvies and other similar articles are rendered far more useful and durable, as we all know that the constant wetting and drying of leather expedites in a marked manner its decay. There is one more application of Dr. Stenhouse's water-proofing to which I should wish to call your special attention, as it is of interest to the manufacturers of Manchester and of Lancashire generally. In those districts large quantities of what are called water-proofing materials are used in packing the goods, and preserving them from external wet or injury. Many of these materials are made by covering a coarse calico fabric with a coating of boiled linseed oil, but this class of packing is very imperfect, and loses its strength rapidly, especially in hot climates, owing to the fact that boiled oil absorbs oxygen and carries it on to the fiber, oxidizing it, and, thereby, soon destroying its tenacity. By applying Dr. Stenhouse's process to the fabric previously to the drying oil, not only is great impermeability attained, but the fiber, being saturatad with paraffin, is preserved from the subsequent oxidation which it would undergo under the influence of the atmosphere in the presence of the boiled oil alone.

New Silver Salt.

It is stated that M. Meynier, of Marseilles, is manufacturing a salt which he calls an ammoniacal nitrate of silver, or nitrate of silver and ammonia analogous to the ammoniacal sulphate of iron introduced by him for developing.

The advantages M. Meynier claims for his new salt are the following:—It is much more sensitive to light than nitrate of silver, and, therefore, the time of exposure with this salt is much shorter. The image obtained is sharper, and the sensitive plate can be kept in good condition for a longer time before exposure. Paper sensitized with this salt is also more sensitive, and its use does not necessitate so much care in the selection of a paper, as a paper which will not give passable pictures with the ordinary silver bath will yield good pictures with the new preparation. Another advantage claimed for this salt is that it dispenses with all necessity for ammoniacal fumigation of albumenized paper, giving results equal in all respects to those obtained on fumigated paper. It is used in the same proportions as nitrate of silver for forming the baths. For negatives on collodion or albumen, the bath should be slightly acidulated with glacial acetic acid, in the proportion of two or three drops of acid to four ounces of solution. The solution for paper pictures, on the contrary, should be rendered alkaline by adding thirty or forty minims of liquid ammonia to a quart of solution. The salt should always be dry and quite neutral before being used; if it be acid, a little more ammonia must be used in the bath for paper. Last, and not least, the price is such that a saving of thirty per cent of the nitrate of silver now used is expected.

M. Niepce de St. Victor promises in his next memoire to describe a new mode of preparing a silver plate, by which he obtains not only the natural colors, black and white, but the luster of metals and the sparkling of precious stones. The labors of this *savant* ar extraordinary, and among all workers in our science none engage in more delicate and refined researches, or in the pursuit of experiments for results so marvelous, as the eminent philosopher of the Louvre.

THE cohesive force of the best red sealing wax has been proved to be equal to 1,500 lbs. per square inch, and that of the black sealing wax rather more than 1,000 lbs. to the square inch; the deficiency in the latter is attributed to the diminished quantity of lac used in the composition. The cohesive force of solid glue was found to be 4,000 lbs. per square inch; that of cast iron is 25,000 lbs.