laid bare, continues to beat normally. The test was made on three animals; the heart of the first one was laid bare, and continued its contractions and dilatations as if nothing had occurred; on the naked heart of the second one a minim of a solution of *digitaline* was dropped; the heart commenced to beat slower and slower; presently its pulsations ceased entirely, and the animal was dead. On the heart of the third frog they placed a small quantity of the avenging scrapings from the floor, and they produced exactly the same effect as the drop of pure *digitaline;* the heart's pulsations slackened by degrees, and presently the animal was dead.

These interesting experiments were made before the Judge of Instruction, and will be repeated before the jury at the trial. Until they were made the prisoner was indifferent and even joyous; he knew that there was no chemical test for the poison he had used; he had taken care to nurse the condemned woman himself, and to conceal all the probable sources of discovery; but he had not counted on the spots on the floor, nor on the peculiar properties of the heart of the batrachian tribe. Nevertheless he nad occupied himself a great deal with toxicology, and still maintains that he can prove his innocence.

A Longitudinal River.

A river that runs east or west crosses no parallel of latitude; consequently, as it flows towards the sea, it does not change its climate, and, being in the same climate, the crops that are grown at its mouth are grown also at its sources; and from one end to the other of it there is no variety of productions—it is all of wheat and corn, or wine or oil, or some other staple. Assorted cargoes, therefore, cannot be made up from the produce which such a river brings down to market. On the other hand, a river that runs north or south crosses parallels of latitude, changes its climate at every turn, and, as the traveller descends it, he sees new agricultural staples abounding. Such a river bears down to the sea a variety of productions, which one or another of the nations is sure to want, and for which one will send to the market at its mouth or the port whence they are distributed over the world. Its advantages are equally great for trade between the different sections through which it flows, as the staples of those sections are unlike, and productions lacking in one part of its course are supplied in another. The assortments of merchandise afforded by such a river are the life of commerce; they give it energy, activity and scope. Such a river is the Mississippi, and the Mississippi is the only such river in the world!

MISCELLANEOUS SUMMARY.

Substitute for Gutta-percha.—At a meeting of the French Academy of Sciences, M. Serres gave an account of the Valata, a shrub which abounds in Guiana, and affords a juice which he asserts, is superior, for many purposes, to gutta-percha, but especially as an insulating material for enveloping telegraphic wires. The milk or juice is drinkable, and used by the natives with coffee. It coagulates quickly when exposed to the air, and almost immediately when precipitated by alcohol, which also dissolves the resin of the Valata juice. All the articles made with gutta percha can be made with the sap of the Valata, and it has no disagreeable smell. When worked up it becomes as supple as cloth, and more flexible than gutta-percha. M. Serres exhibited a number of articles manufactured of Valata milk. Up to the present time it seems, from M. Serres's report, not to have become an article of commercial export.

Pickled Pork equal to Fresh.—A lady contributor at Perry, Ill., sends the following directions:—"Let the meat cool thoroughly: cut into pieces four to six inches wide: weigh them, and pack as tight as possible in the barrel, salting very lightly. Cover the meat with brine made as strong as possible. Pour off a gallon of the brine, and mix with it one tablespoonful of saltpetre for every hundred pounds of meat, and return it to the barrel. Let it stand one month; then take out the meat; let it drain twelve hours. Put the brine in an iron kettle, add one quart of molasses or two pounds of sugar, and boil until perfectly clear. When it is cold, return the meat to the barrel, and pour on the brine. Weigh it down, and keep it covered close, and you will have the sweetest meat that you ever tasted."

The Paris *Patrie* says that chemists have discovered in wool a new substance that has always been thrown away. This is yolk or grease and is said to constitute nearly one third of the gross weight of the fleece. Chemists purchase the lye in which the wool has been washed, and obtain from it a dry residuum by evaporation. That residuum, on being calcined produces hydro-carbureted and ammoniacal gases, from which ammonia and carbureted hydrogen are obtained by various processes, while alkaline salts are extracted from the residuum left in the retorts. These salts chiefly consist of carbonate of potash. It is supposed that 500,000 francs worth of potash may be procured from the wool washed in France.

The French submarine-boat *Plongeur* it is stated, does not draw more than 8 feet of water, her engine is of 80 horse-power, steam is replaced by compressed air, and her crew of 12 men are completely protected from all danger. The *Plongeur* is intended to be a formidable engine of destruction. Her spur is formed like a tube, and an incendiary shell may be placed in it. Should an enemy's fleet be at anchor the *Plongeur* will drive her spur into the nearest ship and then retreat, unrolling at the same time a metallic wire. When at a safe distance, an electric spark will cause a great explosion, the enemy's ship being blown up.

It would appear that the Government is in urgent want of a large number of locomotives, as the press, in different sections of the country, states that orders have been transmitted to the large locomotive-builders at Paterson, N. J., not to build engines except for the Government. The Boston *Traveller* says that "both the locomotive manufactories in Taunton have been forbidden for the past six months to build engines for other parties than the United States authorities."

Death in the Sweet-meat Jars.—A child was recently poisoned in Pennsylvania, so that death ensued, from eating apple-butter which had been kept in a glazed jar. This glazing contains an active poison—the oxide of lead—which is dissolved by fruit acids, and is extremely dangerous to life. All such substances as apple-butter and the like should be kept in wood or glass vessels, so as to avoid the possibility of mischief. The above is not a solitary instance, as many similar ones have occurred.

The East Douglas (Mass.) Ax-manufacturing Company runs the largest establishment of the kind in the world. It uses 1,200 tuns of iron per annum, about one-half of which is imported, and 250 tuns of cast-steel, much of which is procured from the works at Fitchburg. Its forges consume 18 tuns of coal per annum. Half a million dollars' worth of axes and other edge-tools are manufactured annually and sent not only to all parts of this country and Europe, but Cuba, Australia, South America and Africa.

The Boston *Transcript* says that the Type-setting Machine Company of Boston have had a hearing before the Committee on Manufactures at Washington, upon their petition to be allowed to commence business immediately. Since Mr. Felt first brought his invention to Boston, some five years ago, the task has been finally accomplished by the "justification" of type "more perfectly and uniformly even than by the ordinary hand process," as testified by a practical printer, who has recently witnessed the operation.

Dangerous Advertising.—We know a man who does the principal part of his advertising by writing his name and business on the back of bank-bills. Perhaps he is not aware that, in case those banks whose notes he thus endorses were to break, he could be held responsible for the face of the note. Courts have so decided in similar cases.

Best Time to paint Houses—Experiments have indicated that paint on surfaces exposed to the sun will be much more durable if applied in autumn or spring, than if put on during hot weather. In cold weather it dries slowly, forms a hard, glossy coat, tough like glass; while if applied in warm weather, the oil strikes into the wood, leaving the paint so dry that it is rapidly beaten off by rains.

New Jersey has opened a new trade with South America. Twenty-five tuns of white oak spokes have just been shipped from Sussex county for that market.

The Rome Table at the New York Fair.—There is to be a remarkable attraction to the approaching Fair for the Sanitary Commission in this city, in the shape of a table laden with works of art from American artists at Rome, and with a variety of rare and curious gifts from our friends and countrymen and countrywomen in that city. Mr. Ropes gives one of his admirable landscapes. Mr. Tilton a small picture, and a proof engraving of Turner's. Mr. Handley a marble bust of a faun, which he has executed altogether himself. Mr. Freeman a charming picture of a little Saxon girl. Dr. Butler gives a very valuable collection of old Roman coins. Miss Foley contributes one of her exquisite bas-reliefs of a famous model in Rome. Dr. and Mrs. Gould and others, resident in that city, have been exerting themselves nobly in the good cause, and will send on a rich variety of photographs, marble ornaments, &c. Nowhere in the new world, or the old, have our soldiers, or has our country, better friends than in Rome.

It is stated in a letter from Paris that the French are applying to their iron-plated ships the bronzing process which they find so successful in their street lamp-posts. The plates are first painted (?) so as to prevent any galvanic action between the copper and the iron, then rubbed with black lead, and finally plunged into the bath, there they remain till the copper is deposited to the thickness of one-tenth of an inch.

The Sanitary fairs recently held at Chicago, Boston, Cincinnati, Albany, Brooklyn, Cleveland, and Buffalo, have realized $1,002,000. It is anticipated that the New York fair will nett over a million dollars. It opens on April 4th, and will be an object of great interest.

So great was the anxiety of the Chinese authorities to obtain some of the Whitworth guns which formed the armament of Commodore Osborne's squadron, that they are said to have offered to place silver, weight for weight, in the scales to purchase them.

A new style of shell, invented by Captain William S. Williams, of Ohio, has recently been successfully experimented with at Vicksburg, in a 20-pound Parrott gun. One shell, weighing twenty pounds, by his means of explosion, was broken into one hundred and twenty-seven pieces, which surpasses any of a similar kind now in use.

In proving some 68-pounders, lately received at Woolwich from the Lowmoor Iron Contract Works, one of the guns gave way at the breech, and was shattered to fragments, a very unusual circumstance. It was discovered that a bar of wrought iron, weighing eight or ten pounds, had fallen into the casting machine, as the bar was found imbedded in one of the fragments.

An iron flag has been placed on the Patent Office at Washington. It is handsomely painted in waving folds to imitate the national colors, and is said to present a good appearance. These metal flags are made by the patentee, A. Watson, of Washington city.

The hard-rubber factory of A. G. Day & Co., Seymour, Conn., was recently consumed by fire. Loss $50,000; insurance only $12,000. This is the "old story," of almost every-day occurrence. When will property-owners learn the fact that a small yearly investment in insurance is the safest plan in the end?

Paul Morphy, the chess-player, has just returned from Paris to New Orleans. He went to Paris about four years ago as a loyal man, beat all the Europeans at chess, and was flattered and honored immensely. He made his late visit as a rebel, got beaten at chess, and attracted no attention whatever.

A correspondent "out West," engaged in repairing reaping machines for farmers in his vicinity, desires to know what color he must let the cutters down to give them the proper temper. Any one who can give the information will confer a favor by sending it to us.

The maple sugar season is industriously improved in Michigan and Wisconsin. The sap runs copiously, and there will be a large yield.

We are indebted to Hon. D. P. Holloway, Commissioner of Patents, for volumes of the Patent Office Reports for 1861.