for cast irons containing phosphorus to a marked extent it is desirable to operate upon a hearth of magnesia or of carbon agglomerated with lime, it order that it may be less liable to be effected by the basic matters which the puddling of these cast irons necessitates.

For pure cast iron it is evident that this system of puddling may be carried out with facility, and will give good results, but the greatest advantage that it presents is its application to the puddling of the common cast irons containing phosphorus, which it has been attempted to purify by the use of raw tartar and alkaline carbonates, nitrate of soda, chloride of sodium, hyperchlorites, and such-like reagents. But it is difficult to use these reagents in reverberatory furnaces, their relative volatility rendering the reactions very imperfect. The contact between these matters and the cast iron is purely superficial, and the stirring of the workmen cannot sufficiently remedy it.

The improved puddling apparatus or rabble admits of the whole of these reagents being used in a more efficient manner by driving them with the air in fine jets through the cast iron, thus multiplying with the orifice the points of contact. For the puddling of impure cast irons this puddling apparatus is provided with a distributing receptacle, *k*, fixed on the tube, *b*, as shown in the drawing. This receptacle may be composed of thin sheet metal or malleable cast iron, the upper part being by preference contracted, and the neck closed by means of a capsule, *l*, secured by a bayonet screw or other joint. The lower part terminates in a small opening of about 1-8in. diameter, through which the salts or reagents employed (which are contained in the receptacle, *k*,) fall into the tube, *a*. They are carried along the tube, *a*, by the current of air under pressure and driven into the molten metal. In order that the pressure of the air may not prevent the salts or reagents from falling freely a small tube, *m*, is provided and fixed in the receptacle, *k*, so as to admit of the entrance of compressed air into its upper portion. The salts employed should be thoroughly dried and pulverized. The method of operating with the distributor is exceedingly simple. The rabble being out of the furnace and the cocks, *c* and *j*, closed the workman raises the capsule, *l*, and inserts in the receptacle, *k*, the reactive or purifying agents (such as salts or oxides) to be blown into the furnace; he then closes the capsule, opens quickly the cocks, *c* and *j*, and introduces the rabble into the molten cast iron, into which the salts or reagents, which are carried along by the current of air, are forced in fine jets. When the whole charge has been forced in, the rabble is withdrawn from the furnace, the cocks, *c* and *j*, closed, and the receptacle refitted; after which the refining of the cast iron may be resumed. This operation may be renewed several times during the working of one charge, but this is left to the judgment of the workman.

In the puddling of cast irons containing sulphur or phosphorus it is desirable to remove the slag or scoriæ containing the sulphur and phosphorus, and to replace it by scoriæ free from such impurities, which may be effected either by introducing into the molten mass oxides of manganese or titaniferous iron ore forced in through the improved rabble. By operating in this manner the whole of the phosphorus in the cast iron may be removed and pure wrought iron produced from the most impure cast iron.

It will be readily perceived that this mechanical puddler facilitates the refining of the cast iron, since it relieves the workman of the more laborious part of the operation, and since the stirring or agitation is much more energetic by the injection of air than by the ordinary method; a saving of time is therefore effected; it admits of compressed air being applied in a practical manner to the puddling of cast iron and to the manufacture of steel in a reverberatory furnace; and of the employment of reagents, either as oxidants or as fluxes, by being forced into the furnace. By its adoption the quality of the wrought iron produced from phosphoric pig is greatly improved, and also a considerable saving, both in fuel and time, is effected, together with an increase in the daily yield of the puddling furnaces.

Either of the above arrangements, as applied to the rabble, is applicable to tweers for metallurgical furnaces, whereby their durability is increased to an almost unlimited extent, while the use of the ordinary water tweers is dispensed with. This arrangement of tweer with an internal current of water admits of its being plunged more or less into the furnace, and in general of its position and direction being varied without any deterioration resulting from their contact with the fuel or the molten materials in which they are immersed.

Oiling Farm Implements.

The Boston *Cultivator* gives the following sensible and practical advice to its readers:

"Every farmer should have a can of linseed oil and a brush on hand, and whenever he buys a new tool, he should soak it well with the oil and dry it by the fire or in the sun, before using. The wood by this treatment is toughened and strengthened, and rendered impervious to water. Wet a new hay rake and when it dries it will begin to be loose in the joints; but if well oiled, the wet will have but slight effect. Shovels and forks are preserved from checking and cracking in the top of the handle by oiling; the wood becomes smooth as glass by use, and is far less liable to blister the hand when long used. Ax and hammer handles often break where the wood enters the iron; this part particularly should be toughened with oil to secure durability. Oiling the wood in the eye of the axe will prevent its swelling and shrinking, and sometimes getting loose. The tools on a large farm cost a heavy sum of money; they should be of the most approved kinds. It is a poor economy, at the present extravagant prices of labor, to set men at work with ordinary old-fashioned implements. Laborers should be required to return the tools to the places provided for them; after using, they should be put away clean, bright, and oiled. The mold-boards of plows are apt to get rusty from one season to another, even if sheltered; they should be brushed over with a few drops of oil when put away, and they will then remain in good order until wanted."

Correspondence.

The Editors are not responsible for the Opinions expressed by their Correspondents.

Boiler Explosions.

Messrs. Editors:—Ignorance and stupidity still hang upon the minds of ordinary men respecting those perennial inflictions, known as "fatal boiler explosions." Unfortunately, much difference of opinion exists in the minds of the engineering community, regarding the cause of these disasters. The distinction between the bursting and the exploding of a boiler has not been defined with any degree of accuracy.

Some engineers are very fond of airing their ignorance, by asserting that when boilers burst nothing serious can result therefrom, save extinguishing the fires, and causing slight local damages to the boiler. To this too prevalent opinion there are strong reasons for not subscribing. Suffice it to say, that it is difficult to escape the conviction that much loss of life and property results from its general acceptance. Huge boilers of several hundred-horse power are often allowed to burn and corrode, for several years, without any examination whatever as to their condition. If the plates be so rust-eaten and corroded that a pocket-knife could be thrust through them without difficulty, the owner and those in charge of the engine and furnace, take the matter very quietly, comforting themselves with the assurance that the only danger connected with the management of a boiler is an explosion, and that due attention to the pump and indicator will always prevent that contingency. On the other hand, the act of bursting is a mere local affair, conveniently limited to the forcing of a rivet, or the rending of a tube, by which the elements of destruction are released in the most harmless and accommodating manner.

Some of these danger-scorning people will go so far as to affirm that there is no absolute necessity to overhaul a boiler, as it will always give timely warning of its rickety and dangerous condition, by bursting in that particular and commodious spot where it is weakest.

Has any one who has inquired into this subject, with any degree of thoroughness, a right to be surprised that boiler disasters are on the increase, when those directly concerned appear so devoted to the crab-like direction of progress in the matter? The most provoking peculiarities connected with the inquiries into these casualties are, that no one is to blame, and that the killing and maiming of a score or two of human beings are considered as circumstances belonging to the natural order of things.

There are, doubtless, many boiler casualties which are caused by ignorance and carelessness on the part of operatives; but it is scarcely going too far to say that most of the phenomena called explosions are simply the bursting or rending of boilers corroded and worn out by excessive wear. In this case the whole of the rickety fabric suddenly gives way under an increase of pressure, which a sounder structure could bear with perfect safety.

The system at present in use of embedding the large class of boilers in masses of solid masonry, should be unreservedly condemned, as it is the indirect cause of more than half the disasters that occur with such frequency. When a boiler cannot be thoroughly repaired without the necessity of disintegrating and pulling down walls of brick and mortar several feet in thickness, it requires no very blamable degree of suspicion that in nine cases out of ten no repairs will be made. A very dim idea, in fact, can be formed of the condition of a boiler under such circumstances, seeing that it is completely buried out of sight. "Out of sight, out of mind" is an ancient adage, not inapplicable to the present case. There are many boilers now in operation in this city which have not been overhauled or examined for many years, because much expense and delay would be incurred in "getting at them." The presiding functionary treats the matter in question with an indifference that makes a prudent observer tremble for the future. The opinion that is generally expressed on the subject is, that it will be quite time enough for a thorough overhauling when a flue, tube, or something else gives way and puts out the fires. Surely such an order of things imperiously demands legislative correction.

Some effective measures should be taken for the thorough inspection of boilers at stated periods, quite irrespective of the delay and cost which may be incurred by disemboweling them from massive layers of brick and mortar. It is said, with some truth, that wise men often quail at the very things which fill the thoughtless with a sense of security. The mode of managing boilers at the present day would doubtless afford the former a boundless source of uneasiness, were the subject looked into as searchingly as it ought to be.

Boilers which are "bricked up" present a neat and compact appearance, and it is too often taken for granted it is all right within, when the demon of devastation may break loose at any moment.

Boilers should be thoroughly covered to prevent the escape of heat by radiation and convection, but the covering should be such that it can not only be easily removed when required, but the material should be such that steam can readily penetrate so as to expose leakages. There is evidently an opening here for improvement, and any one who can successfully fill it will be entitled to rank among the benefactors of mankind.

C. M. O. Hara, C. E.

Gas and Air Carbureters.

Messrs. Editors:—The want of a safe, reliable, cheap, convenient, and stationary method for domestic illumination, where heat is not a means of production, and the great number of, and increasing patented contrivances therefor, prompt me to respectfully submit the following remarks upon this highly important subject:

A consecutive history of the progress in carbureting illuminating gas and air would be most interesting, but would require more space than is designed for this paper.

More than forty years ago the late and world renowned Mr. William Clegg, of London, who first practically introduced commercial gas, tried several plans to increase its illuminating power by combining it with the vapors of some light hydrocarbon, and for some years after those trials other persons atempted it. Yet, while several were, like Mr. Clegg, temporarily successful, all of them finally abandoned it.

About the year 1848 the late eminent and widely known Mr. Charles B. Mansfield, also of London, succeeded in carbureting atmospheric air, but he was compelled to manufacture his naphtha "benzole," a distillate from coal tar, by a new process. His invention was made public at the time, but was found too expensive for general introduction. Other inventions were patented subsequently for the same use, but practical objections, more or less serious, were found to all of them.

Up to the year 1858, the hydrocarbons to be obtained were either charged with some non-volatilizable property, or, if pure, were made in limited quantities, and they were expensive and difficult to obtain. But after the improved method for distilling petreleum, coal tar, etc., by gradual heat and distinct vaporization, then those naphthaline products were first obtained in a condition of purity, quantity, and cost, to warrant the popular introduction of carbureters, which had increased in variety, in this country and Europe, since the year 1865 for treating either common gas or air. Embarrassments are, however, still encountered in the attempt to treat either gas or air in this way.

The carbureting features of the various systems employed consist of four classes, each being enveloped in a close vessel.

First. Where the medium to be carbureted passes directly into the fluid by a series of small openings from the conducting pipe, and thence to the service pipe.

Second. Where it passes into and through some absorbing porous medium, as sponge, cotton, wool, shavings, pumice stone, etc., which is saturated by the fluid, in some cases by capillary attraction from a shallow reservoir below in which it rests, and in others where the fluid is allowed to fall or trickle upon the mass from above.

Third. Where it passes over a series of shallow trays or channels lined with a warm fabric that is kept saturated automatically with the fluid.

Fourth. Where a woven or a spun fabric or a fibrous woody material is arranged in a regular fixed position, and either stands in or upon or is rotated in the fluid below it.

In all of which systems the result is that the vapors of the fluid are mixed, with more or less facility or uniformity, with the gas or the air which passes through the instrument.

The difficulties have chiefly arisen from the following causes:

First—Quality of the fluid. The hydrocarbons obtainable were charged with oily or resinous matters, which, collecting in the apparatus, rendered it inoperative until cleared of its contents.

Second—Uniformity of pressure and size of flame. This difficulty particularly pertains to carbureters for commercial gas, the pressure of which is only equal to a column of water about three inches high: hence its passage through the instrument should be quite unobstructed, the size of the burner should be enlarged, or the gas prsssure increased, which latter will tend to induce leakage at the joints of gas pipes and fixtures.

This difficulty is, however, modified by the fact that if the gas be well and uniformly carbureted, the light thus being intensified does not require a size of flame to produce a light due to the standard size of the burner.

It is found this trouble of pressure applies often, also, to air carbureters, owing to their construction, which impedes the flow and varies the size of the flame, as more or less burners are worked.

Third—Tendency to surcharge the gas or the air with the vapor, and its condensation in the pipes. As the volume or density of the vapors taken into the pipes is always due to the temperature of the medium passing into the carbureter—the mixture being mechanical, only—and while the higher the temperature the greater is the load this medium will take up, it follows that if after leaving the instrument the temperature be lowered, as is often the fact, a due proportion of those vapors must separate there and accumulate.

They finally trickle down and along to the burners, so that on turning the cock and applying the match, you will have, instead of an upward flame of gas, a downward stream of liquid fire, igniting all combustible matter within its reach.

Fourth—Refrigeration. A result of all evaporation is refrigeration, and this causes, with most carbureters, a diminution of temperature upon their exteriors, so that when in a cellar or other place holding moist atmosphere, water becomes condensed upon the apparatus and frozen there as solid ice, to the detriment, and often involving the safety, of the instrument.

Fifth—Safety. In addition to the insecurity, as represented in the two last mentioned difficulties, are others attending the charging of fluid to the apparatus, and the necessity of skilled attendants, which embarrassments or hazards from the use of this class of inventions have induced combined opposition to them from our most respected and powerful underwriters.

Summary.—The following are essential requisites to the successful use, safety, and convenience of apparatus for naphthalizing of gas or air for illuminating or for heating purposes:

First. The apparatus should be substantial, not liable to derangement, simple in construction, requiring no special skill in its management, easily taken apart, readily put together again, and uniform in its action.

Second. It should present the largest possible surface for evaporation for its bulk or cubic contents, and be safe or doubly safe against any possible accident from leakage of gas or naphthaline, with facilities for charging it readily, without risk of escape of fluid or vapor, and by the least possible trouble.

Third. Its construction should be such that the pressure of the medium entering the apparatus should not be diminished at the outlet pipe, so that the size of flame will always be the same, irrespective of the number of lights used within the capacity of the instrument.

Fourth. It should be provided with a surrounding air chamber af a non-conducting medium to avoid the accumulating of intense cold on the exterior of the apparatus, insuring a depressed temperature to the vaporized medium below that to be assumed by the gas or mixture after entering the service pipes.

Fifth. The fluid should leave no residue or deposit when evaporated.

Sixth. Its cost to consumers should be within the reach of persons of moderate means.

The time has arrived when this important category of economic art should take its proper rank of usefulness and value in popular domestic comfort and economy, and also those branches of trade where in heating with gas it must be found indispensable. J. BURROWS HYDE.

Carpenters Poisoned by Chemicalized Wood.

MESSRS. EDITORS:—The St. Louis, Vandalia & Terre-Haute Railroad Co. have just finished building a freight depot in this city, the timbers—shingles included—of about half the building were saturated with a poisonous compound—arsenic, corrosive sublimate, and salt. If anything else, I do not know.

Inclosed is a slip of newspaper containing an account of the death of one of the carpenters employed on the building:

"Levi Willison, one of the men poisoned sometime since by working on the timbers and shingles of the Vandalia depot building, which had been saturated with some chemical preparation to render them non-combustible, died yesterday. No inquest was held. Another workman, whose name we could not ascertain, is not expected to recover."

Nearly all the carpenters were in a condition similar to the patients that are to be seen in a venereal hospital. The genital parts were most affected. Perhaps he poison would not affect them so if the work was done in cold weather. The timber so prepared will only smoulder away when put in a fire—no blaze.

I consider the inventor anything but a public benefactor unless he can invent some means to save the workmen. The harm outweighs the good. JOHN O'CONNELL.

East St. Louis, Ill.

[We wish our correspondent would ascertain and inform us whose process was employed in the preparation of this timber.—EDS.

Mississippi State Fair.

MESSRS. EDITORS:—You were kind enough to announce in June that our State Fair would be held Oct. 10th. The time was soon after changed to Oct. 24th, so as not to conflict with the St. Louis and Memphis fairs, from which points we expect many visitors.

The Mississippi State Fairwill open at Jackson on Monday, Oct. 24th, and will continue to include the Saturday following. Machinery can be entered and placed in position after Oct. 15th. We are well prepared for a grand exhibition of the industry of our State, and there will be thousands of planters here to note what is new and useful in the way of agricultural implements, machinery, etc.

We are pleased to know that the SCIENTIFIC AMERICAN will be represented by Prof. Colton, from whom we have had the pleasure of a call. I. L. POWER.

Jackson, Miss.

FORTIFICATIONS AND HISTORY OF STRASBOURG.

This city, the capital, in old times, of the half German province of Alsace, and now the capital of the department of the Lower Rhine, boasts its five hundred cannon and its eighty-two thousand inhabitants, and is one of the strongest fortresses in France. It stands on the Ill, about a mile and a half from the broad Rhine, and the stream beside which it is built intersects it with many channels.

Louis the Fourteenth, in 1681, always unscrupulous in his ambition, got possession of Strasbourg, which was then a free imperial town, by an unexpected foray upon it during a time of peace. It was the ambition of France,even then,to extend her Rhenish frontier and push Germany further back. Vauban instantly set to work to secure the conquest by strengthening what was weak, and increasing what was already strong. He built a pentagonal fortress or citadel of five bastions, besides five sluice houses, whose outer works extend to the arm of the Rhine. He gave this stronghold—which will hold seventeen hundred and fifty men—the motto, "Servat et observat." He also constructed large sluices at the spot where the Ill enters the town, so as to lay the whole country round, between the Rhine and the Ill, under water, in case of need. On the side of the Porte-des-Mines, which could not be inundated, the glacis was mined. The arsenal contains—or did before the present war—arms and equipments for nearly four hundred thousand men, and it has also nine hundred and fifty-two cannon, including the five hundred and fifty required for the ramparts and for the citadel. To all these resources of the semi-German town, facing the Duchy of Baden, we must add a cannon foundery, which, every year, produces three hundred pieces of artillery of various calibers, and boasts one furnace that will contain twenty-six thousand four hundred kilogrammes. The town, as a military center, also possesses eight barracks, sufficient for the accommodation of ten thousand men,a military hospital, built for twelve or eighteen hundred beds, and used, since 1814, as a military hospital school. The stronghold is also the seat of a regimental school of artillery, under the command of a general. It is impossible for the traveller to forget, when in Strasbourg, that the town is an important fortress, for all the seven gates are shut in the winter at eight, and in summer at ten o'clock, though diligences are allowed to enter later, as well as travelers by post or steamboat.

The greatest modern event that has taken place at Strasbourg was the wild attempt at an insurrection made in that city by a certain Prince Louis Bonaparte—a man not yet altogether forgotten—on the 30th of October, 1836, the year Charles the Tenth died. The misguided prince, son of Louis, the ex-King of Holland, had been educated in Switzerland, and was a captain of artillery in the army of that country. Having entered into a treasonable correspondence with Col. Vaudry, of the Strasbourg garrison, who gained over a few of the men, and filled the adventurer's mind with too sanguine hopes, the prince came to Strasbourg to fire the train and try for the throne. On the morning of the 30th of October, the prince, dressed as like his uncle as possible,and wearing decorations and a cordonrouge, proceeded to the barracks. The zealous colonel, assembling his men instantly, told them, with great alacrity in lying, that there had been a revolution in Paris; that Louis Philippe was no more; lastly, that Napoleon the Second,a descendant of the "great man," had been proclaimed; and that there, in fact (pushing forward the prince), he stood before them. The coup de théâtre succeeded for the moment. The soldiers, pleased at the remarkable attention paid to them by the new emperor, shouted and followed him as their commander. The prefect was arrested in his bed, and a guard was placed over him. A body of the mutineers, led by a Colonel Pargin, then marched to the house of General Voirot, the commander of the division, and requested his allegiance to the new chief. The general, however, calmly addressing the soldiers, soon convinced them that they had been tricked. The general, being then set at liberty, at once secured the citadel.

In the mean time, the emperor of an hour and his zealous colonel had proceeded to the barracks of the Forty-Sixth Regiment, and tried the old plan. But an aid-de-camp of General Voirot gave notice to the colonel of the regiment, who, going to the barracks, found the prince and his plotters reasoning with the soldiers, and trying to gain them over. The colonel was prompt; he at once closed the gates, and trapped the whole party. General Voirot then, having released the prefect, came down from the citadel, and carried the prince and his accomplices straight to prison. The minor conspirators were tried and punished, but the arch plotter, treated in a generous and somewhat contemptuous way by Louis Philippe, was packed off from L'Orient to the United States,on the 21st of November, in a French frigate. Singularly enough, a similar attempt was made at Vendôme on the very same day by an hussar sergeant,who wished to proclaim the rights of man, arm the pioneers, and march on Tours. He shot a brigadier who tried to arrest him, and then gave himself up. He was condemned to death.

The choicest promenades of Strasbourg are beyond the enceinte. The two finest are called the Contades and the Robertsau. The latter is composed of huge lawns, intersected by walks designed by Le Notre, Louis the Fourteenth's great gardener,of a splendid orangery (twelve hundred trees),where the Empress Josephine lodged in 1806 and 1809, of an English garden,a suspension bridge that leads to the Isle of Wacken, and of a smiling and coquettish village.

The two great celebrities of Strasbourg, besides the immortal but unknown discoverer of the pâté, are Kleber, Napoleon's general, and Guttenberg, the supposed discoverer of printing. A monument to Kleber stands in the center of the square named after him,and is raised over the hero's body, originally interred in the minster. This brave man,who, after many victories in Egypt, was assassinated by an Arab fanatic under a tree still shown in a garden at Cairo, was much esteemed by Napoleon. "Kleber sometimes sleeps," he said; "but when he awakes it is the awaking of the lion." There was a little of the German unreadiness and phlegm about this brave Alsacian until battle roused him. He was never seen at his best but when under fire.

Guttenberg, who practiced printing as early as 1436, at Strasbourg, perfected his invention at Mayence. His assistant, Peter Schöffer, who made metal letters with even greater success than his master, was a native of Strasbourg. The statue of Guttenberg in the herb market, now called the Place Guttenberg, was modeled by David.

But the wonder and delight of Strasbourg is the cathedral—one of the masterpieces of Gothic architecture. Founded by Clovis, in 510, reconstructed by Pepin and Charlemagne destroyed by lightning in 1007, it was rebuilt in 1015 by Erwin de Steinbach, and finished in 1413 by Jean Hultz, of Cologne, after the tower had been four hundred and twenty-four years incomplete. According to tradition,ten thousand workmen toiled at the holy work for the good of their souls, "all for love, and nothing for reward."

An epitome of Gothic art, this cathedral contains specimens of every style, from the Byzantine upwards. Heaven send it a safe deliverance from Prussian shot and shell; let the gunners aim wide of that noble, heaven-piercing spire, which, according to the best guide books, rises four hundred and sixty-eight feet above the pavement—that is twenty-four feet higher than the great Pyramid—and sixty-four feet higher than St. Paul's, the body of the church itself being higher than the towers of York Minster. The view from this network of stone repays the giddiest person. Beyond the dull red roofs, and the high-roofed and many-windowed houses, spreads the whole country of the Rhine and Black Forest, and on the side of France you see those Vosges Mountains, that might have been held against the world. Hope describes the netting of detached arcades and pillars over the west end of the cathedral to be like a veil of the finest cast iron, so sharp and bright is the carving of the durable stone; while Dr. Whewell, comparing the building to an edifice placed under a rich open casket of woven stone, laments the sacrifice of distinctness from the multiplicity and intersection of the lines. The triple portal is peculiarly fine, and is, in itself, a world of quaint statues, and bas-reliefs. The middle arch is adorned with no less than fourteen statues of the Old Testament prophets; on the right arch are the Ten Virgins, and on the left the Virgins treading under foot the Seven Capital Sins. In the Revolution these carvings were destroyed, and the great brass doors melted down into money, but they have been restored with a most reverential care. The choir is plain and simple Romanesque, but the nave is the choicest early decorated German Gothic. The town's special treasures are the fine stained windows of the Fourteenth Century, recently restored (spare them, gentle gunners), the vast marigold windows, and the famous astronomic clock, one of the wonders of Europe, comprising a perpetual calendar, a planetarium on the Copernican system, and shows the hour, the day of the week, the month of the year. It was made in 1571, and,after standing still for fifty-six years (a good rest), was repaired in 1842 by a mechanician of the town. This part of the cathedral is supported by a single pillar of great symmetry, and above the Gothic cornice appears the effigy of Erwin de Steinbach, the architect of this vast building, whose tombstone was discovered, in 1855, in a humble little court behind the chapel of St. John. In an old house at the southwest corner of the Minster Platz there are preserved some curious ancient architectural drawings belonging to the cathedral.

The church of St. Thomas (Protestant) deserves a visit for its fine monument of Marshal Saxe, which cost the sculptor, Pigalle, whom Louis the Fifteenth employed, twenty-five years' labor. It represents the old warrior descending to the grave. France, a female figure, tries in vain to deter him, and, at the same time, to repel Death. Theatrical, say the critics, and French, but the expression of affection and anxiety in the woman's face is very tender and touching. This monument would have been destroyed by the revolutionary iconoclasts, had not a Strasbourg man named Mangelschott, when the church was turned into a straw warehouse, covered it up with bundles of hay. They also show in this church the mummies, curiously preserved, of a Count of Nassau Searwerden and his daughter.

The Jews of Strasbourg have now a splendid synagogue. In the middle ages they went through much here. In 1348 there was a wholesale holocaust of these poor wanderers, for two thousand of them, suspected by the ignorant citizens of poisoning wells and fountains, were burned in the Brand Gasse, where the Prefecture now stands. Rage and fear had seized the people, and no Jew was henceforward allowed to sleep within the walls. Every evening, at the signal of a horn blown on the Minster Tower, the detested people were compelled to depart to their houses in the suburbs. The new church contains fragments of a Dance of Death, that grim allegory carried at last to a climax by Holbein.

The Academy, originally a Protestant school, formed in 1532, and made a university in 1621, was suppressed at the Revolution. Here the good Oberlin and Schöpflein and Schweighauser, and last, but not least of all, Goethe, studied. Goethe took his doctor's degree here in 1772. The Museum of Natural History is rich in Alsacian fossils, especially those of red marl and trias, and the fossil plants found at Sultz-les-Bains and Mulhausen. The botanical collection includes a section of the trunk of a silver fir from the Hochwald, near Bair; its diameter was eight ft., its hight one hundred and fifty.

The public library, near the new church, contains one hundred thousand volumes (be merciful to these treasures, too, O amiable artillerymen)! Among the priceless curiosities are the Landsberg Missal, or Garden of Delights; it is full of early Byzantine miniatures, circa 1180, and belonged to Herrade, Abbess of Stohenberg. Among the early printed books are Cicero, by Faust, 1465, a Strasbourg Bible, by Eggesteur, 1446, and a Mentchin Bible, printed at the same place in the same year. In the two halls are stored some Roman antiquities found in Alsace, the old town standard of Strasbourg, a statue of Rudolph of Hapsburg, and some painted glass from Molsteins. The hope that all these treasures may escape the chances of war will not be confined to students alone.

[Since the above was in type, Strasbourg has capitulated, and is now occupied by the Prussian forces. The defense was very stubborn and heroic.

THE work of erecting a water battery on the south side of Governor's Island, between Castle William and the South Battery, is now going on under the direction of General Newton and Colonel Eggleston. The battery will be mounted by thirty-six guns, and will be in every respect a formidable work.

LEMONADE can be cheaply made from citric acid and water flavored with essence of lemon.