

and a half per cent. We need not fear however, of losing our senses from eating too much fish. It supplies the waste, but does not augment the proportion of the phosphoric matter."

The chemistry of the matter might, perhaps, be stated with more precision. For instance, instead of saying that every thing we eat may be turned into charcoal, it would be more accurate to say that carbon, being the one solid of the four organic elements, the others may be driven off by heat, leaving the carbon behind in the form of charcoal.—*Scientific American*.

Rancid Butter for Cooking.

Many persons sneer at the common notion that butter too rancid to be eaten raw upon bread, may be used without objection in cooking; but this notion, like many other popular ideas, is more in accordance with the truth of the matter than the imperfect knowledge that ridicules it. All fats are compounds of acids with glycerin. Butter is a mixture of several fats, and one of them, constituting, however, only a small portion of its mass, is butyric; this is a compound of butyric acid with glycerin. Butyric, like other fats, is a neutral substance, but when it is decomposed—in other words, when the butyric acid is separated from the glycerin with which it is combined—we then have the two substances, the acid and the glycerin, exhibiting each its peculiar properties. Butyric is a very powerful acid, caustic and sour, and having that peculiar strong odor which is characteristic of rancid butter. One of the early steps in the decay of butter is the decomposition of the butyric, which is made manifest by the odor of the butyric acid set free, and by the sour and biting taste of this acid. Now, at a temperature of 315 degrees, butyric acid is evaporated, hence it is only necessary to raise the temperature of the butter to this point in order to drive off the acid which makes it rancid, and to leave the remainder perfectly sweet. If rancid butter is mixed in cake, a portion of the butyric acid will be absorbed by the water in the cake and it may not be all expelled by the heat in baking; but if the butter is used for frying in an open pan, it is pretty certain that the butyric acid will all be evaporated. With a knowledge of the properties of butyric acid, a skilful cook ought to be able to use rancid butter in such ways as to retain none of the rancidity in the cooked articles. *Scientific American*.

New Mode of Embalming.

M. AUDIGER, a French chemist, has invented or discovered a new mode of embalming, which consists in pouring down the throat of the corpse two glasses of a liquid, whose composition is still a secret. The operation lasts but twenty minutes, and in two or three months the corpse becomes as stone. Experiments have been made with this new method at Marseilles, Algiers, and in the public hospitals, with complete success.

Fortunes of an Inventor.

MR. JAMES GALE, the inventor of the method for making gunpowder non-explosive, was born in Tavistock, in the west of England. He is the son of poor parents, and received but little education at

the school of that town. During his school-days he earned his livelihood by selling cakes of blacking on Saturdays, going from house to house. A sad calamity befell him while thus engaged. He became perfectly blind, after every effort had been made to restore his sight without success. He then resumed his former pursuit, walking his rounds alone. Having an ear for music, he soon became an accomplished player on the concertina, which, with his blacking business, furnished him lucrative employment. Having made a little money, he married the schoolmistress of the Tavistock workhouse. Her friends blamed her much, but their advice was of no avail. They were married and removed to Plymouth, where they opened a bread store. The wife managed the shop, and the husband devoted his attention to galvanism and electricity; and on learning of the explosion of the powder-train at Balaklava he conceived the idea of the possibility of making gunpowder non-explosive without deteriorating its power, so that by a mechanical change it was restored to its original strength. This he has succeeded in doing, and is now raised from comparative poverty to wealth. He has already received \$150,000 for his invention, with an interest in the company which has undertaken to manufacture the article, and carry on the business of carriers of the combustible article at non-explosive rates, saving the merchant £5 per ton for transportation.

The Inventor of the Needle-gun.

HERR VON DREYSE, the inventor of the needle-gun, is now 87 years old, and, notwithstanding his advanced age, his mind is so fresh and his whole appearance so vigorous, energetic, and active, that he may well be taken for twenty years younger. He rises at four every morning, and spends the whole day in working out his inventions. His attention is chiefly engrossed with the rectification and perfecting of the different weapons he has invented. He has several workshops for this purpose, to which few persons have access, where he is busy several hours a day. When the weather is fine, he practices shooting in the neighbouring fields, and he is so scrupulously exact and conscientious in testing the powers of his new improvements that very often many months elapse before he pronounces himself satisfied with this or that weapon. Perpetual changes and readjustments have to be made, and he is so painfully anxious on all matters of the kind that he does not speak to his most intimate friends, not even to his own son, about a new discovery until he himself can say he approves of it. It is rumoured in the neighbourhood of Sömmerda, where Hera von Dreyse resides, that he is about to submit to the King of Prussia a newly-invented cannon calculated to work as important a revolution in the Prussian artillery as the needle-gun has in the infantry.—*Cor of London Times*.

Nitro-glycerine.

The Academy of Sciences has received a paper from M. Ropp on the application of this highly explosive substance to blasting the sandstone quarries of the Vosges. The catastrophes at Aspinwall and San Francisco having proved how dangerous it is to convey this substance from place to place, M.