

Scientific American.

ESTABLISHED 1845.

MUNN & CO., Editors and Proprietors.

PUBLISHED WEEKLY AT

No. 261 BROADWAY, NEW YORK.

O. D. MUNN.

A. E. BEACH.

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NEW YORK, SATURDAY, OCTOBER 7, 1882.

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BLUE FIRE AS AN EXPLOSIVE.

Last winter a fire in the pyrotechnic establishment of Professor Samuel Jackson, at Chester, Pennsylvania, resulted in an explosion more severe and disastrous than could be accounted for by the quantity of explosive material known to be stored in the building.

The recent occurrence of an explosion in the yard of a New Zealand chemist who had compounded an unsatisfactory blue fire, and had sent an assistant out to destroy it, has put Professor Jackson on the track, he thinks, of an explanation to the mysterious explosion in his establishment. The New Zealand explosion resulted from throwing a little water on the burning blue fire. Professor Jackson remembered in a small building attached to his factory there were stored a number of blue light stars. He had made blue light for nearly forty years, and had never known it to develop extraordinary force; yet, acting on the hint given by the New Zealand accident, he set about making experiments, which have convinced him that blue light powder fired by a detonating compound is not only explosive, but more powerful than dynamite in its explosive effects. In a public experiment to test the explosiveness of blue fire, made at Woodbury, N. J., a tube containing a couple of pounds of the blue fire was placed in the earth and a huge stone laid on top of it. The party went off a couple of hundred feet, and the detonation was caused by electricity being applied to a percussion cap. The effect was startling. The stone was shattered into fragments, a large hole was dug into the ground, and a cloud of dirt and dust thrown into the air at least a hundred feet. The same amount of powder was exploded under exactly similar conditions, but the result was nothing worth speaking of. A little gunpowder was placed in the top of the can of blue fire, and it was exploded with about the same result as the previous one had been. Fire was applied to a can of the blue fire, and it merely burned up.

Speaking of this and subsequent experiments, Professor Jackson said to the Philadelphia Record that concussion will always cause a detonation of blue fire, especially when it is highly heated. He believes that the Chester explosion resulted from a spattering of water on the highly heated cans containing the blue fire mentioned. A direct stream of water, he thinks, could not possibly have resulted in an explosion.

Professor Jackson believes that blue fire will be found valuable as an explosive for blasting purposes. It is more powerful than dynamite, and safer, since it is a more stable compound, and is not liable to explode when struck with a hammer or when dropped. By means of a percussion cap, or the concussion of exploding gunpowder, it explodes readily, wet or dry.

There are two kinds of blue fire made. One is composed of chlorate of potash, three parts by weight; sulphur, one part; and ammonio-sulphate of copper, one part. Another and safer kind is made without sulphur. Its formula is: Ammonio-sulphate of copper, eight parts; chlorate of potash, six parts; and shellac, one part. The salts should be dried on a plate or shovel, powdered separately, and then carefully mixed with a spatula on a sheet of paper.

THE COMMON MUSHROOM AND ITS POISON.

The current belief is that, while many fungi are virulently poisonous, others, including the common mushroom, are free from poison and may be eaten in any quantity. When mushroom eaters show symptoms of poisoning, it is accordingly assumed that a blunder has been made, and noxious species taken for or with wholesome ones. The fact that an eminent English fungologist is numbered among those who have lost their lives by the alleged mistake, would seem to throw grave doubt upon blunder theory, unless it be true, as some have held, that the edible species are mimicked by those that are poisonous so closely that the most expert is liable to misjudge them. The fear that this may be the case deters many from making any use of this savory and nourishing but treacherous vegetable.

At this season, when the fields abound with wild mushrooms, and where multitudes might find in them a cheap and enjoyable addition to the daily bill of fare if they were not afraid to eat them, it is a matter of considerable importance to have the real standing of fungi as food stuffs made clear.

According to recent investigations by Professor Ponfick, of Breslau, the question seems to be, not how to distinguish poisonous from harmless species, but how to treat mushrooms of every sort in such a way as to remove or neutralize the poison which they all contain, with the proper precaution of using this class of food stuffs at all times with moderation.

Professor Ponfick finds that repeated washing with cold water removes most of the poison of mushrooms, and cooking, especially boiling, dissolves out the rest. The water in which mushrooms are boiled, however, is always poisonous, more so even than raw mushrooms. Experiments made upon dogs showed that if a dog ate one per cent of its own weight of raw mushrooms it fell sick, but recovered; and if the dog ate two per cent of its weight, the result was always death. Of boiled mushrooms dogs ate ten per cent of their weight without harm. When the mushrooms were well washed with cold water, a larger quantity could be eaten raw without bad effects than was possible with those that were not washed; but simple washing never removed the poison entirely. Dried mushrooms were found to be dangerous for twenty days, and also the water in which such mushrooms

had been boiled. They were not really safe until after four months' drying.

The moral is: treat all mushrooms as poisonous; carefully throw out the water in which they have been washed or boiled; cook them well, and never eat them in large quantities. If men are no more susceptible than dogs are to the poison, a man can as safely gorge himself with well boiled mushrooms as with beef or any other highly nitrogenous food. When otherwise cooked, or when the species is doubtful, a sparing use is always prudent.

The fact that all mushrooms and allied growths are more or less poisonous should be no bar to their use as food, proper care being taken in the cooking and eating. The common potato is not free from poison; and the juice of the root from which tapioca is made is a virulent poison. The latter poison is expelled by heat, and the former is in quantity too small to be harmful, as is the case with many other useful vegetables.

In preparing mushrooms for the table, safety is assured, not by looking for specific characteristics supposed to indicate harmlessness, but in considering all as poisonous and requiring judicious treatment to destroy or remove their noxious qualities. This properly attended to, mushrooms and many other fungi are not only edible, but really delicious and valuable food stuffs.

MODIFICATION OF THE TRADE MARK LAW.

The following act, relating to the registration of trade-marks, was passed at the last session of Congress:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That nothing contained in the law entitled "An Act to authorize the registration of trade-marks and protect the same," approved March third, eighteen hundred and eighty-one, shall prevent the registry of any lawful trade mark rightfully used by the applicant in foreign commerce or commerce with Indian tribes at the time of the passage of said act.

Section 3 of the law relative to the registration of trade-marks, approved March 3, 1881, expressly prohibits the registration of a trade-mark which is merely the name of the applicant.

This rule was found to discriminate seriously against old, well-established, and valuable trade-marks, like "Collins' Axes," "Fairchild's Pens," and others. Accordingly an act was passed at the last session of Congress, and approved August 5, 1882, so modifying the above-mentioned section as to authorize the registration of the prohibited class of trade-marks, provided they were in rightful use by the applicants in foreign commerce or commerce with Indian tribes at the time of the passage of the act of 1881.

As the matter stands, new trade-marks which are merely the names of the applicants cannot now be registered, nor can such trade-marks, if brought into use since March 3, 1881. If they were in use before that date, they can be registered.

The Cure of Saccharine Diabetes.

In a paper by Dr. G. Félizet, read before the Academy of Sciences, August 14, says the Journal d'Hygiene, the author claims to have discovered a remedy for a disease usually regarded as incurable—saccharine diabetes. The author states that he has succeeded in putting an end to glycosuria artificially produced in animals, and that the medicine that suppresses that artificial glycosuria will likewise cure diabetes in a few weeks or months. There exists, says he, a bond of union between artificial glycosuria, intermittent diabetes and confirmed diabetes, and that bond is irritation of the rachidian bulb. It is not, then, in masking the disease by submission to the severities of a regime exempt from bread, feculents, sugar, etc., that we succeed in curing it, but by tapping the very source of the production of sugar, that is to say, by suppressing the irritation of the bulb. Bromide of potassium, by the elective action of sedation that it exerts on the functions of the bulb, suppresses the effects of such irritation with a rapidity that is often surprising, and, in large and repeated doses, cures the diabetes.

The Building News relates a singular misfortune which has occurred to a small church in Andover, Mass., which seems to be in process of being eaten up bodily and swept away. The church was erected about six years ago, and is finished with what is said to be ash, but has more the appearance of chestnut, which often closely resembles the coarser kinds of ash. A year or two after its completion the sexton noticed little heaps of dust on the carpet near the walls. These grew more and more frequent, and appeared in various portions of the building, so that they had to be gathered up regularly every week, and on searching for their cause the wood of the base-boards and portions of the pews was found to be completely riddled with holes made by small, round, black or blue worms, the debris of whose borings fell out occasionally upon the floor in the form of dust. Unlike most boring worms, this species seems not to object to the taste of varnish, for the polished surface of the wood is pierced in thousands of places. The stock was regarded as completely seasoned and in good condition when put into the building, but it would seem that it must have contained the embryos of the insects, for the finish of the galleries is attacked equally with that of the ground floor. If any of our readers, adds the News, met with a similar case we should be pleased to receive an account of it, and if any know of a remedy, the trustees of the church would be glad to avail themselves of it.