

SOME REMARKABLE CASES OF SPONTANEOUS COMBUSTION.

M. Cosson recently called the attention of the French Academy of Science to a singular accident that had occurred a short time previously in his laboratory. Night days ago, said he, my laboratory became the scene of a sudden outbreak of fire. The board flooring in the neighborhood of a stove spontaneously ignited. In consequence of a similar accident, two years ago, I had caused the board in the vicinity of the stove to be replaced by a marble slab. Notwithstanding this precaution the fire broke out in the wood around the marble. The heat to which the wood was exposed at the points where it ignited was not very great; the air had only a temperature of 25°. But without doubt there had been a slow carbonization of the wood and a rapid absorption of the oxygen of the air, and in consequence a production of caloric sufficient to cause the combustion. Herein lies a danger which should be impressed on the minds of architects and builders.

This reminded M. Faye of a case of spontaneous combustion that had recently occurred at the house of a friend of his at Passy. The fire was due to the continuous action of the heat of a stove on the surrounding wood-work.

M. Dumas adduced several analogous examples, all of which he explained by that property of finely divided bodies whereby they absorb air very energetically and generate heat. In powder factories, for instance, the pulverized carbon very often ignites of itself. It is for this reason that the practice has been generally adopted of pulverizing it in conjunction with sulphur, because sulphur deprives it of the property mentioned.

In such instances as those cited, the wood deprived of its moisture by long exposure to heat becomes transformed into a substance analogous to lignite or peat. In fact, it is changed into a condition that may be compared to that of powdered wood. In this state it condenses the air and takes fire. It was thus that, on one occasion in his experience, a beam in a coach-house exposed to hot air took fire spontaneously. Sometimes in theaters the lampman's box, filled with miscellaneous oily rubbish, becomes spontaneously ignited. The greasy odds and ends contained therein condense the oxygen of the air. In manufactories where Adrianople red is applied on cotton impregnated with greasy material, spontaneous combustion takes place very often.

M. Dumas cited one more singular fact of which he was a witness in the studio of a painter. The artist had taken a piece of cotton to brush and clean his canvas. He gave the oily surface a good rubbing and put the cotton aside. Very soon the cotton ignited spontaneously.

The all-sufficient explanation of these and like cases is the fact that a minutely-divided and air-conducting substance has the capability of producing suddenly a high temperature.—*Exchange.*

TO DETECT GAS ESCAPING.—To find the leak, first see that no burners have been left accidentally turned on. This is often the case where the cock has no stop, and is caused by the cock being partially turned around again so as to open the vent. Imperfect stop-cocks for this reason are dangerous, and should be promptly repaired. Try all the joints of the gas-fittings, by bringing a lighted match near them, to ignite the escaping gas if any there be. In case it is found by the sense of smell that the gas is escaping either within the floor or walls, do not on any account apply a match near a crevice. Turn off the gas at the meter, and send for a gas-fitter at once. In ordinary leaks, the burner or joint should be unscrewed, and white lead or common bar-soap rubbed in the threads before screwing home again.

THE Empress of Germany offers an international prize for the best treatise tending to facilitate the cure of diphtheria.

SAN XAVIER DEL BAC.

The engraving on this page shows an old Mission near one of the oldest towns in the United States, Tucson, Arizona. This interesting relic of the seal and enterprise of the padres was photographed by Mr. E. Conklin, and an engraving from the photograph appears in his "Picturesque Arizona," published by the "Continent Stereoscopic Co.," of New York city. The Mission is named San Xavier del Bac, and although nearly 200 years old, according to Mr. Conklin's reckoning, it is still in a good state of preservation, and is opened for religious services to the natives, "a half-civilized remnant of a mixture of the Mexico-Indian blood." It is the best preserved Mission ruin in the Territory, and is one of the boldest of its class in design and most elaborate in construction. A recent visitor gives a description of the structure, which we reproduce to accompany the engraving:

Nine miles distant from Tucson, down the valley, is the old Mission church of St. Francis Xavier, which is one of the greatest objects of interest in the country. It was built about 200 years ago by a community of Franciscans.



THE MISSION OF SAN XAVIER DEL BAC, NEAR TUCSON, ARIZONA.

Compared with a majority of these old churches, it is in a good state of preservation. One of the turrets is gone, but the belfry still stands, in which hang four or five bells in silver cadence; the others having been either carried away or stolen. You reach the belfry by a narrow winding stair, built in the solid wall, the steps worn into deep holes and depressions by ascending and descending footsteps in years gone by. The church is cruciform, and is an immense edifice, with magnificent arches, and with really wonderful acoustic facilities. Strange, there was not a nail used in its construction. It is built of a peculiar kind of cement, hard and resembling granite. The art of making it is now entirely lost. The interior is elaborately ornamented; the paintings and colorings upon the walls are still vivid and bright, as though recently executed, and gorgeous in effect. The altar-piece and several other pictures are evidently the work of artists, but the others, which are numerous, were done by pious but not artistic hands. At the end of the transept, high up, midway between the floor and ceiling, is the most ghastly spectacle imaginable. A cross of huge proportions is deeply imbedded in the wall, surrounded by rays of black, or dark brown and white. The body once extended upon it has either fallen or been torn down, leaving one arm, lean and brown as that of a mummy, with bones protruding, nailed to the arm of the cross.

It is a spectacle to make one shudder in spite of himself. There are still 75 life-like statues of apostles and saints left standing in their niches. Upon the faces of some of them the expression is marvelous. Some have fallen down, and others are mutilated by time or the irreverent. They all show skillful workmanship, and must have been brought by the fathers from Spain. The gliding over and above the main altar is still very heavy and rich. The main altar itself is covered with beaten virgin gold, taken by the monks or their Indian proselytes from the mines. The altar service, which is also of solid gold, was carried away a few years ago by some priests who came from Mexico for the purpose, and there are but two small vessels left to show what the other and larger pieces must have been. There are still some of the rich vestments left, but their gorgeous texture is marred by long service and abuse. The heavy doors are made of solid wood of great thickness, which is joined together in panels by grooves. The large outer doors were not only made of thick timber, but were covered by thick sheets of copper, procured from the mines and smelted by the monks themselves, which, in conjunction with the enormous bars on the inside, make them impervious to any attack from their savage enemy. In connection with the church is the monastery or cloister, and within the surrounding inclosure is

the mortuary chapel—a huge sepulcher, where those who kept their vigils and toiled in a strange, inhospitable land to lead into the paths of peace the benighted nations, rest from their labors and are forgotten.

Of what transcendent interest the bill of fare must have been to Cardinal Dubois, who called on the dying Fontenelle at his boarding house! The landlord announcing *separagus* for dinner, and asking instructions in regard to the desired sauce, provoked an animated controversy between the two dogmatists. Fontenelle insisted on cream, the cardinal on melted butter, till the landlord suggested a compromise—he would divide the material and use a separate sauce for each half. But Fontenelle was not destined to eat that dinner—his day of life was ended by a stroke of apoplexy before the sun had reached the meridian. Dubois who had recognized the sad fact with a paroxysm of grief, then rushed to the landing and shouted down the memorable words, "*Mettez tous au bourre!*" (Butter sauce for the whole lot!)

EUCALYPTUS FOR COLD IN THE HEAD.—A European writer asserts that acute coryza, or cold in the head, is cured in half an hour by chewing the leaf of the eucalyptus and slowly swallowing the saliva. Its action is doubtless similar to that of cubeba, which will produce the same effect.