Action of Fire on a Corpse.

When fire is applied to a living body a blister filled with liquid is soon raised, and if the heat be continued the epidermis is destroyed. But when the same heat is applied to a dead body the epidermis rises in the form of a blister, which is filled with vapour, and which presently bursts. This test has been proposed by M. Martin de Cordoux, to ascertain whether a person is really dead before the body is interred. In performing the test, the author recommends a small flame, such as the flame of a match, to be applied for a short time at about half a centimetre from the skin.

Lighting Gas by Electricity.

Many attempts have been made from time to time to effect the simultaneous ignition of a great number of gas jets by the aid of electricity. Thus all the lamps, not alone in a single street, but in an entire district, might be lighted in a single instant of time, and in addition to the convenience of such an arrangement, an actual saving of gas would be effected, because, now, certain lamps have to be lit too early in order that others may not be lit too late. In theatres, concert-rooms, churches, &c., it is obvious that great advantages would follow on the successful employment of any system of electrical simultaneous ignition.

Hitherto this has been proposed to be effected by a wire running from jet to jet, the circuit being partially interrupted by the introduction of a filament of platinum in proximity with the orifice through which the gas issues. This filament becomes red hot when a strong current of electricity is transmitted through the wires, and thereby lights the gas. One or two other expedients have been adopted, but hitherto with very partial success. But, although the simultaneous ignition of a number of jets cannot be effected with certainty, it seems far from improbable that the ubiquitous lucifer will be superseded by very simple and elegant arrangements. At a recent meeting of the Franklin Institute, Philadelphia, Messrs. Cornelius and Baker exhibited a very beautiful method of lighting gas by means of frictional electricity, arranged for use with a bracket, two portable lighters, and a table light, all being simple in arrangement and readily kept in order. These instruments are constructed upon the principle of the electrophorus. The electric bracket is arranged with a brass cup in the form of a vase, resting upon the bracket, with a connecting piece of hard rubber. This cup is lined with lamb skin covered with silk, and contains the hard rubber electric piece which corresponds in form to the inside of the cup. A coiled covered wire connects the brass cup with a wire attached to the burner, and terminating just above the burner. In order to light the gas, the stop is turned, the hard rubber piece lifted partly from the cup, thus liberating the spark and lighting the gas. The Portable Lighter consists of the same vase or cup, with the addition of a non-conducting handle. When the brass cup is lifted from the electric piece and held to the conducting wire of the burner, the gas is immediately lighted. Another portable instrument, called the Double Air-Tight Electrophorus, consists of two metallic tubes, each closed at one end, and connected together at the other, with a non-conducting ring of hard rubber, the inside being lined with lamb skin. A hard rubber rod is placed within them, the length of one of the tubes, and fitting them so as to move somewhat freely from end to end. When the movable piece inside is allowed to fall to one end, and the tube is raised to the connecting wire of the burner, this piece changes its place again, falling into the tube held by the hand. The spark leaves the upper end of the tube at the same time and lights the gas. The Table light Burner consists of the same instrument arranged upon a pivot regularly attached to the pillar light. The subject is worth the attention of gas engineers here, and we feel little doubt that simple, inexpensive, and elegant little instruments of the kind we have described would soon become popular among us.—*Building News.*

Coal Dust for Fuel.

In the coal mines of Charleroi, in Belgium, 800,000 tuns of coal dust have accumulated, impairing the working of the mines, and M. Dehaynin, Jr., and another company are working on this coal dust. After having it pulverized and freed of all strange matter, by machinery, this dust receives the forms and dimensions the best adapted for heating locomotives, by agglomerating eight parts of coal tar to ninety-two parts of coal dust. This mixture heated to 300 to 350 degrees, with superheated steam, becomes a paste, which is mechanically and powerfully pressed into cylindrical or rectangular forms, and, after having been cooled, solid, compact cylinders, of about five inches diameter, and weighing eighteen pounds, or prismatic blocks of about five and a half by seven and twelve high, and weighing twenty pounds, are obtained. These blocks which are very nearly the same density and weight of the solid coal, and they burn without giving obstacle to the circulation of air through the grate. This new combustible is warranted not to give more than six per cent. of ashes, and is now in great demand by railroad companies, on account of its greater heating power, and its being actually cheaper than the black coal. M. Dehaynin, Jr., and the other company manufacture now, annually, 255,000 tuns of this agglomerate.

Spectral Characters of Indium.

Messrs. Reich and Richter, the discoverers of this new metal, states that its presence is indicated in the spectroscope by two blue lines, one of which, the brighter, corresponds to division 98 of the scale, and the other to 135. In some cases this mode of analysis becomes unnecessary, as the instant the indium salt is placed in the flame of the Bunsen lamp, it communicates to it a bright violet tinge which they consider to be sufficiently characteristic.

Electricity produced in Factories.

At the last sitting of the Paris Academy of Sciences, a paper by M. Loir was sent in by the Minister of the Interior, in which the author endeavoured to show that a quantity of electricity was produced in large factories, and might be turned to account by means of the straps which generated it by their friction in communicating motion to the machinery.