of this specimen measures 8ft. in length, with a girth of 5ft.; the two longest tentacles 24ft. and the 8 shorter arms each 6ft. in length. The formidable, horny, parrot-like beak is the size of a man's fist, and the sockets of the prominent eyes give a diameter of 8 inches. Steps have been taken to preserve this the first entire body of one of these ocean monsters ever captured. Many previous attempts, however, have been made to capture specimens of these creatures. A gigantic calamary was encountered by the French corvette *Alecton*, between the islands of Madeira and Teneriffe. The monster was found floating at the surface of the water about mid-day, Nov. 30th, 1861. It was attacked with harpoons and with fire-arms, neither of which made much impression on the yielding flesh. One ball, however, had a marked effect, the creature immediately on being struck discharging a quantity of foam mixed with blood and giving out a strong musky odor, which was plainly perceptible all over the ship. A noose was at length made fast round the body of the fish, but when a large portion of the weight of the body began to tell on the rope the softness of the flesh was such that the cord cut through it, and thus only the posterior part was brought on board. The remainder with the head and arms disappeared immediatetly. The attempt to capture this enormous creature lasted during three hours, this length of time giving opportunity to M. Rudolphe, one of the officers, to make a sketch of the scene. The length of this calamary was estimated by those on board the *Alecton* at about 30ft., of which 18 or 20 belonged to the body. It is supposed that these monsters are by no means rare in the deep waters of the ocean. Unlike whales they are not compelled to rise to the surface for air, and their powerful organs of sight enable them to see and avoid approaching ships. The nature of their food has not yet been determined, but on the other hand there is evidence that they are themselves an easy prey to the physeteridal, or toothed whales, these latter having been frequently seen with arms of cuttle-fish, thirty and forty feet in length, depending from their mouths.

CREMATION.

Perhaps no single subject has lately been so fully discussed in public journals as that of the disposal of the human body when it has served its purpose and become something which nature insists shall be put away, but to which the minds of the survivors cling as to the only remaining part of an object of the dearest affection. The present system of burial is one to which our minds have become accustomed and from our reading and from association we have become accustomed to look upon the place of interment with certain feelings of grateful sentiment. It is now proposed in the interests of surviving humanity to discontinue this mothod, especially in the case of urban population. It is found that cemeteries are yearly becoming less remote from the towns and the effect of this is marked upon the public health. Many proposals have been made to obviate [illegible] tate of affairs but the one most generally accepted as feasible is that of cremation, or burning. Many scientific men in England and elsewhere have advocated this system, and we illustrate on page 306 the method devised by Sir Henry Thompson, a leading English scientist, to effect the proposed result. The matter has been thoroughly discussed, found practicable, and even adopted to a certain extent. At Zurich, lately, 2,000 persons formed themselves into an Association for the promotion of this system and a society is stated to have been formed in New York for the same purpose. The chief obstacle to any change in this matter lies in the sentiment which has been formed in the human mind by habit continued through countless generations, and it is questionable whether it will ever be possible so to overcome this feeling that cremation may occupy the place now held by interment. It is argued that cremation is but hastening the slow combustion which we call decay, that the expense attendant on funerals will be much lessened, above all that some change is necessary in a sanitary point of view. The last argument is the only one of very great force, and there is no denying that cases of slow poisoning, and of the inducing of fevers by water and air contaminated by the proximity of graveyards are of every-day occurrence. It is a question which remains to be solved, whether more stringent regulations concerning interments, or cremation, or some other system shall put a stop to this evil. As we stated above, however, it is more than probable that, except in isolated cases, the force of habit and of sentiment will prove stronger than the most cogent and undeniable arguments of science.

PLASTER OF PARIS.

Plaster of Paris, so-called from its having been first extensively prepared near Paris, is the term applied to ground and calcined gypsum. Gypsum is well known in the form of alabaster, and the uses of plaster as a fertilizer and for numerous other purposes are too well known to need description. Ordinary gypsum is a sulphate of lime and contains, in round numbers, in 100 parts, 46½ of water, 32½ of lime and 21 of water. The commercial value of plaster, as regards the manufacture of cements, &c, is derived from the fact that when gypsum is heated to 212° Fah. it begins to lose the water it contains, and at 272° Fah. it parts with it entirely. If it be now withdrawn from the heat and powdered and mixed with water it combines again with the quantity of water it previously held and again becomes solid. The largest and best deposits of gypsum on this continent are found in Nova Scotia and New Brunswick. These are extensively worked, the export to the United States amounting to over one hundred thousand tons annually. Two of these quarries, one at Wentworth, near Windsor, N.S., and the other at Hillsboro', N.B., supply with gypsum the large plaster mills of Messrs. Wotherspoon Brothers, New York. We give on page 303 illustrations of these mills and of the processes employed. The illustrations are from the *Scientific American*. The crude gypsum which, when brought to the mill, is in masses weighing from 20 to 100 lbs. or over, is broken up by the hammer into pieces rather smaller than an ordinary paving stone, and thrown by the workman into the crusher. This consists of an upright shaft expanding below into heavy iron cogs, which turn in an exterior iron shell, as seen in Fig 1. The stone is here rapidly reduced to powder, but not yet sufficiently fine for the calcining process. A pulley below conducts the powdered material, by means of cleats revolving in an inclined wooden pipe, termed a conveyer, to the floor above. This style of conveyer is used in flour mills, and is located on the left of the crusher in the engraving. Here the crushed plaster is fed by a hopper, like wheat, to a burr stone mill, which reduces it to a fine powder, ready for the calcining process. Another conveyer, similar to the one described, carries the fine raw plaster to a bin at the top of the building, where it is delivered in successive charges to the kettles. These, as shown in the illustration (Fig. 2), consist of large cast iron receptacles, capable of holding 45 barrels as a charge. They are set in brick furnaces and their bottoms are constructed in a peculiar manner and of stout iron, to withstand the heat of an anthracite fire. Revolving stirrers, almost in contact with the bottoms and sides, are kept in motion to prevent caking.

Care and skill are requisite in the calcination process, to avoid either over or under burning. If all the water be driven off, the plaster will not harden so rapidly as that which has been heated so long as the tumultuous expulsion of vapour lasts; and if only half the contained water be expelled, the plaster will have entirely lost its power of hardening with water Properly calcined gypsum seems to retain one-fourth of its combined water. When the calciner judges the process