HINTS TO COTTON MANUFACTURERS.—As to the remedies for the evils arising in the course of the cotton manufacture, each hurtful agent can be combated separately. The metallic dust given off by the grinding of the carding machines can easily be rendered harmless by the use of magnetic respirators, a remedy which would have been more generally adopted but for the prejudices of the operatives. The remedy for the cotton "fluff" and unavoidable dust given off in the carding-room is the open air. The necessarily warm rooms in which cotton spinning is carried on might be ventilated and still kept warm by admitting air into them through warmed chambers, an arrangement which exist in many private houses, and which could much more easily be carried out in a mill, where the surplus heat from furnaces and boilers, now so constantly wasted, might thus be utilised. Such a plan would also be compatible with filtration of the air through calico before its admission to the mill, by which means the sooty particles and other filth it contains might be removed, so preventing the soiling of the fine white cotton and the irritation of the breather's lungs Gas effluvia might be carried off, as is done in some of the best mills, by waste flues, the heat from the gas keeping up a constant current through them. In order to reduce the danger of taking cold by the sudden exposure to the open air of the operatives who work in the hot spinning-rooms, I would suggest that they spend ten to fifteen minutes in the carding-room before going out, so as gradually to cool the body, after the fashion followed in the Turkish baths. As to the dust arising from over-sizing and the steam bath necessary to the weaving of warps so treated, I have no suggestion to make but the obvious one of a little more honesty.—*Great Industries of Great Britain.*

THE CAUSE OF LONDON FOGS.—Dr. Frankland has lately concluded an investigation into the cause of the persistency and irritating character of the fogs which afflict the large towns of England, a subject which is rather opportune just now. The fogs are not always a sign of dampness, as they occur in comparatively dry air. Dr. Frankland has ascertained that their persistency in a dry medium is due to a coating of coal oil, derived from coal smoke, upon the surfaces of the minute particles of water which compose fog, the oleaginous coating effectually preventing the evaporation of the water. The oleaginous liquids are discharged into the atmosphere in large quantities during the combustion of bituminous coal in fires. Dr. Frankland, therefore, concludes that by the substitution of smokless coal, coke, and gas, for bituminous coal, town fogs would cease. This would be a consummation devoutly to be wished ; but considering the vested interests which are concerned in the supplying and using of bituminous coal, and the national preference for blazing fires, the reformation is just as likely to come from the adoption of some of the, as yet, undiscovered means of heating. But much might be done if the gas companies were more enterprising. Apart from the inconvenience, it is a waste of money to be using costly illuminating gas for heating, when a gas equally effective for that purpose, but far cheaper, could be obtained. Nor would it be requisite to have a double set of mains, as there are several methods by which gas could be rendered illuminating at a cheap rate.—*The Architect,*

WHITE BRICK.—A process is now being carried out, by Clarke & Pickwell, Hull, England, for the manufacture of white pressed brick, from common red clays. This process consists in mixing or grinding into the common clay a cheap material—chiefly magnesian limestone—which has been reduced to an impalpable and harmless powder by being burned and slaked. This mixture is passed through a series of mixing and grinding mills, and so completely ground that each particle of each ingredient is brought into close contact with each other. This mixture is then acted upon as it leaves the last mill by an apparatus which reduces it to a fine grain almost like running soil; in this state it falls through the feeder into the molds of a powerful steam-pressing machine, is subjected to a heavy pressure and is delivered at the delivery table a complete and almost dry pressed brick, which when burnt in the kiln, produces a white brick of good quality. The ingredients added to the clay at once absorb about forty per cent. of the moisture found in the natural clay, and the grinding is so close and complete that the mixture is thoroughly and evenly amalgamated. The change effected in the color of the red clay on being burnt is due to the presence of the mixture.

IRON AND GLUE IN STREET DUST.—In this country we have assays of street dust yielding gold in some towns, but glue and iron we have not searched for. Signor Parnetti has been engaged in analyzing the dust and *debris* of the streets of Florence and Paris. His investigation of the *debris* of the horse paths proves that the dust contains 35 p.c. of iron, given by the shoes of the horses to the stones. In the dust from the causeways this eminent chemist finds from 30 p.c. to 40 p.c. of good glue. Signor Parnetti selected and treated separately the dust from the causeways of the Boulevard des Italiens over a period of two months, which uniformly gave 30 p.c. of good transparent glue, it is said quite equal to Belfast. This eminent chemist is now engaged in the analysis of the dust and *debris* deposited by the shoe abrasions in Lombard street, Cornhill, Cheapside, and other thoroughfares of London, and has it in contemplation to place his discoveries at the disposal of a limited company, with a view of establishing blast furnaces on the banks of the Thames to recover the iron thus lost, and large glue works, which, it is thought, will produce more glue from the wasted material than will supply all London for every purpose.

TROUBLESOME OCTOPODS.—The Leeds *Mercury* says that a rather amusing incident was witnessed in the Scarborough Aquarium recently. The keeper, while engaged in cleaning out the tank occupied by the octopods, was suddenly seized by the leg (fortunately he had sea boots on) by the largest of the octopods, which fastened four of his tenacles round the leg of the boot, and with the other four held firmly on the rocks forming the back of the tank. A struggle ensued, during which the man found he could not disengage himself without killing the animal, and finally hit upon the expedient of slipping his leg out, leaving the boot in the water, and beating a retreat. The hungry octopus stuck to the boot for twenty minutes, when it relinquished its hold. A much more exciting story is reported in the Tokio (Japan) newspapers about a struggle between octopods and a bull, which would have ended fatally for the bull. if some men had not interfered by cutting the arms and legs of the monsters.

TREATMENT OF GOLD FISH.—Seth Green says this as to the proper care and treatment of gold fish : "Never take the fish in your hand. If the aquarium needs cleaning, make a net of mosquito- netting and take the fish out in it. There are many gold-fish killed by handling. Keep your aquarium clean, so that the water looks as clear as crystal. Watch the fish a little, and you will find out when they are all right. Feed them all they will eat and anything they will eat—worms, meat, fish-wafer or fish-spawn. Take great care that you take all that they do not eat out of the aquarium ; any decayed meat or vegetable in water has the same smell to fish that it has to you in air. If your gold-fish die, it is attributable, as a rule, to one of three causes—handling, starvation or bad water."

"AN INTEROCEANIC NUISANCE," is what the *Engineering News* epigrammatically dubs the canal with locks that is advocated by the friends of several of the routes, which the late discussions on the subject of interoceanic transit have called out into print. The *News's* terse and vigorous sentence is too good to be forgotten, nor should its concluding paragraph on this subject be permitted to be lost : "In the canal which is to join the Atlantic and Pacific oceans, and be a highway *for all time* for the world's commerce, which are a few extra millions of money in original cost and its future inexpensive maintenance as against the continually-increasing and never-ending maintenance account of any canal with locks and embankments ?"

BLACK JAPAN FOR SEWING MACHINES.—Remove all rust or old varnish by means of emery cloth, then procure, say, 1 lb. of best black japan, one gill of best turps. Pour a little of the japan in a cup, add a little turps until of the consistency of ordinary paint. Then apply carefully to the parts to be japanned, using an ordinary small-sized paint brush. The japanning should be done in a wareroom, free from dust ; the machine should also be quite free from dust or grease. One coat will be sufficient if done carefully, if not a second coat may be applied with advantage.

ALMOST the universal article used on the continent for kindling fires are dry pine cones. A couple of these are usually enough to start a fire of dry wood, and several of them contain enough resinous material to start a coal fire without other kindling. They are readily lighted with a match, and are free from dust and insects. In Paris and other large cities on the continent scarcely any other than pine cones are used for kindling purposes in the hotels.

RAG PACKING FOR VALVES, BEARING SPRINGS, ETC.—This is made principally from the useless cuttings in the manufacture of India-rubber coats, when the gum is run or spread on calico foundations. Proportions as follows : Grind together useless scraps, 35 lbs. ; black lead, 18 lbs. ; Java gum, 16 lbs. ; yellow sulphur, 1 lb.