

rigid and scientifically controllable conditions can the evidence of such abnormal sensibility be relied upon. Even the precautions against indications as above described would probably have to be added to, if hypnotic subjects were experimented upon.

In conclusion it is desired to lay stress not only on the negative character of the results, but on the method employed, and especially on the fact, that, as the precautions were rendered more and more effective, the negative character of the conclusions became more and more evident.<sup>1</sup>

JOSEPH JASTROW.

#### LONDON LETTER.

No more interesting and valuable report has been presented to parliament during the recent session than that of the inspectors of explosives for 1885. Colonel Majendie and his colleagues have been engaged for ten years in protecting the public against the most terrible dangers to which modern science has exposed it. A list of twenty-nine men is given who have been caught and punished for complicity in what are usually known as dynamite outrages. In 1885, 133 ordinary explosions due to accident came under the notice of the Home office, and some almost incredible stories are told of carelessness in connection with explosives. The explosion of tablets of chlorate of potash in the pocket of a gentleman in Brookline, Mass., who dropped his watch upon them quickly, is characterized as the most curious explosion of the year. Among other 'explosive medicines' is mentioned nitro-glycerine, which is made up with lozenges, etc., for use in cases of angina pectoris and other complaints. In the United Kingdom, 22,268 houses are registered for the keeping of explosives. It is the duty of the local authorities to see that the provisions of the act are complied with. Sometimes, however, they are very remiss, and the inspectors act as a useful check upon them. In 1885, 392 places where explosives were kept for retail sale were inspected, and in some cases they were found to be 'about as bad as they could be.' London, Liverpool, Bristol, Birmingham, Sheffield, Huddersfield, and Bath are selected for special commendation in this respect.

At the last meeting of the London section of the Society of chemical industry, a very valuable paper was read by Dr. Meymolt Tidy on the chemical treatment of sewage. Premising that

<sup>1</sup> The above is simply a general account of the experiments. For a detailed account, the reader is referred to the full paper on the subject, to appear in the next number of the Proceedings of the American society for psychical research.

he had for many years read every thing he could get hold of on the subject, and had also gained practical personal experience therein, he defined sewage as "the refuse of communities, their habitations, streets, and factories." Its very complex nature was commented upon. Two elements were constant, and 'the rest nowhere:' viz., 1°, excreta (every thousand people gave, on a very large average, 2,640 pounds of liquid, and 141 pounds of dry, sewage daily); 2°, roads (if wood-paving be excluded, road-washings contained, on an average, 280 grains of solid matter per gallon, of which 120 were in solution). The extreme difficulty of obtaining fair samples was amusingly commented on; and the salutary effects on sewage, of air and of dilution, as shown by the appearance therein, or otherwise, of comparatively high forms of microscopic life, such as the Vorticella, Rotifera, etc., was pointed out. An unfailing characteristic of sewage was the presence of hairs of wheat, and of *free* spiral cells, their casing having been dissolved in digestive processes. Authorities were agreed upon two points; viz., that the valuable matters were in solution, and the offensive in suspension. Irrigation could not be relied on for giving absolutely continuous purity. Of the precipitation processes, those in which lime and alumina were employed successively, gave the best general results; and the smell still remaining might be entirely got rid of by causing the effluent to flow over a little land. This combination was probably the best method of dealing with liquid sewage; but, in Dr. Tidy's opinion, the whole system of water-carriage of sewage was a mistake. It was absurd to take expensive and elaborate precautions about purity of water-supply, and then only to use one-ninetieth of this for drinking, allowing the rest to be polluted. The dry-earth system of dealing with human excreta was the only proper and scientific method.

The second, and ladies', *conversazione* of the Royal society was held on the evening of June 9. Many of the objects of interest exhibited at the former one were on view again. Among the novelties were the following: some microscopic sections, diagrams, and specimens illustrating the alteration artificially produced in vitreous rocks by the action of heat alone, by Mr. F. Rutley; floral studies in Chili, of orchids, nests, etc., by Miss North; illustrative diagrams of and specimens from Roraima; some rare earths from Samarskite, Gadolinite, etc., with illustrations of their phosphorescent spectra, by Mr. W. Crookes; pumice, volcanic ash, drawings, diagrams, etc., illustrative of the great volcanic eruption, by the Krakatoa committee of the Royal society; ap-

paratus employed in the examination of air for micro-organisms, by Dr. Percy Frankland; and a remarkable collection of gems, by Mr. Bryce Wright. Photographs of celestial phenomena and microscopic sections of devitrified rocks were exhibited in the lime-light-lantern, and demonstrated by Mr. Norman Lockyer, Mr. Common, and Mr. Rutley; and the United telephone company had established temporary communication with the Savoy theatre, where 'The Mikado' was being performed.

The annual meeting of the Marine biological association was held on June 8, Professor Huxley, the president, in the chair. The council's report mentioned a small increase in the number of members during the year, and the progress that has been made with the plans for the new laboratory at Plymouth, which will be commenced immediately. It is hoped that it may be in working order by the autumn of next year. Much interest is taken in it by the residents of Plymouth, one of whom, hearing that the council of the association were contemplating the omission, for pecuniary reasons, of certain desirable features in the building, has generously offered to provide the five hundred pounds necessary for the purpose.

A large amount of valuable zoölogical work has been recently carried out by the Liverpool marine biology committee, which was established some two years ago. The shallow water off the coast of North Wales and round the Isle of Man has been systematically explored with the dredge, with the following very gratifying results: whereas only 270 species of marine invertebrates were known from this neighborhood before 1853, 913 species are recorded in the report of the Liverpool committee. Of these, 235 were not previously known in the locality; 16 are new to British seas; while 7 species and 3 varieties are new to science.

W.

London, June 14.

#### NOTES AND NEWS.

THE Lackawanna institute of history and science, recently founded at Scranton, Penn., has taken steps for the purchase and preservation of the two great glacial pot-holes found in the Lackawanna valley at Archbald. An illustration of one of these pot-holes was published in *Science* for Dec. 19, 1884. The second one has not yet been cleared out, but will be cleared by the Lackawanna society. These holes are described by Professor Branner in his recent paper upon the glaciation of the Wyoming and Lackawanna valley.

—The destructive effects of poisoning by phosphorus are narrated in a paper read at a recent

meeting of the Ohio state medical society by a physician whose practice has been large in one of the most extensive match-factories of that state. He finds that the head of each match contains about a seventieth of a grain of phosphorus, and that the injurious results of the process are most marked among those who work in the dipping and packing rooms. The affection is a disease of the bones of the jaw known as necrosis. In some it appears within two years after they enter the factory; in others its appearance is more delayed. Operatives with unsound teeth are the most susceptible. He recommends that only persons possessing sound teeth be employed in these two rooms; that thorough ventilation be provided in all parts of the factories; that the operatives be not permitted to eat their meals within the factory or with soiled hands; and, finally, that mouth-washes of the alkaline carbonates be freely used.

—O. P. Jenkins was elected, June 23, professor of biology, and curator of the museum at DePauw university, Greencastle, Ind.

—The *Sanitarian* records an instance of flies acting as sanitary inspectors. In one of the rooms of a residence in an eastern city, offensive odors were detected, but their exact source could not be located. The carpets were raised, and a carpenter engaged to take up the entire floor. At this moment a friend who chanced to come in, suggested that an appeal be made to the instinct of the fly. Two blue-bottles were brought from a neighboring stable, and the doors and windows of the room closed. The flies soon settled upon one of the cracks in the floor, and, when the boards were raised at this point, a decomposed rat was found.

—The Japanese disease beri-beri, or kakké, is now regarded as a contagious disease, having for its cause a microbe. The infection enters through the intestinal canal, and locates itself at this part of the economy.

#### LETTERS TO THE EDITOR.

*\*\* Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

##### The flight of the flying-fish.

THE question, among naturalists with whom I have been associated, as to whether or not the flying-fish flaps its wings during its flight, was at first a great surprise to me. My years of sea-service, without hearing a single doubt upon this point, had been exclusively among seafaring men, who are generally positive: naturalists seldom are. Nevertheless, association with the former teaches one that their 'opinion' on a subject is, as a rule, a confirmed belief.

In the region of the Cape de Verde Islands, where a very large species of flying-fish is abundant, it is easy to observe the beating of the creature's wings;