

### Caisson or Tunnel Disease.

As one of the New York members of the board of consultants of St. Francis Hospital, Jersey City, J. Leonard Corning, M.A., M.D., of New York, had the rare opportunity of studying a number of cases of that remarkable affection known as the "caisson" or "tunnel disease," which he reported in the *Medical Record* for May 10, 1890. The disease is an affection of the spinal cord, due to a sudden transition from a relatively high atmospheric pressure to one much lower. Hence, those who work in caissons, or submerged tunnels, under an external pressure of two atmospheres or more, are liable to be attacked by the disease shortly after leaving the tunnel. The seizure never, however, occurs while the subject is in the caisson, or, in other words, while he remains under pressure.

The chief clinical features of the disease are pain, which may be relatively mild, as when confined to some portion of one or more extremities, or of frightful intensity, as when it appears in the ears, knees, back, or abdomen; anæsthesia and paralysis, usually of paraplegic type; bladder symptoms, assuming the form of retention or incontinence; and, more rarely, rectal disturbances (usually incontinence).

In cases of moderate severity the patient usually recovers in a few days or weeks, while in the very severe ones he gradually loses strength, and eventually succumbs. Besides these extreme phases of the disease, there is an intermediate class of cases in which the patient, though grievously ill, may recover sufficiently to get about with sticks, or even unassisted. In these cases recovery is, however, but partial, the subject remaining more or less feeble and hyperæsthetic during the remainder of his life.

Since Triger, a French engineer, first described the characteristic pains of the caisson-disease in 1841, the affection has several times received attention at the hands of European physicians who were in a position to observe it in connection with the diving-bell, bridge-building, mining, and other operations requiring the use of compressed air.

In the United States several opportunities of studying the disease have occurred during the last few years. The most noteworthy of such occasions were the construction of the St. Louis Bridge in 1868, the Brooklyn Bridge at New York about the same time, and the Hudson River Tunnel at a later date.

### The Inefficiency of Sand Filters.

Drs. Frankel and Piefke of Berlin have recently made an exhaustive study on the filtration of drinking-water through sand (*Zeitschrift für Hygiene*, No. 1, 1890). Their experiments conclusively prove, says *Medical News*, that the danger of infection from impure water is only slightly reduced by filtration through sand; bacteria passing through at all times, but in larger numbers just after the filter has been cleaned, and again after it has been in use for some time.

### 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 editor will be glad to publish any queries consonant with the character of the journal.

On request, twenty copies of the number containing his communication will be furnished free to any correspondent.

### Census of Hallucinations.

MAY I ask for the publicity of your pages to aid me in procuring co-operation in a scientific investigation for which I am responsible? I refer to the "Census of Hallucinations," which was begun several years ago by the Society for Psychical Research, and of which the International Congress of Experimental Psychology at Paris, last summer, assumed the future responsibility, naming a committee in each country to carry on the work.

The object of the inquiry is twofold: 1st, to get a mass of facts about hallucinations which may serve as a basis for a scientific study of these phenomena; and, 2d, to ascertain approximately the proportion of persons who have had such experiences. Until the average frequency of hallucinations in the community is known, it can never be decided whether the so-called "veridical"

hallucinations (visions or other "warnings" of the death, etc., of people at a distance) which are so frequently reported, are accidental coincidences or something more.

Some eight thousand or more persons in England, France, and the United States, have already returned answers to the question which heads the census-sheets, and which runs as follows:—

"Have you ever, when completely awake, had a vivid impression of seeing or being touched by a living being or inanimate object, or of hearing a voice; which impression, so far as you could discover, was not due to any external physical cause?"

The congress hopes that at its next meeting, in England in 1892, as many as fifty thousand answers may have been collected. It is obvious that for the purely statistical inquiry, the answer "No" is as important as the answer "Yes."

I have been appointed to superintend the census in America, and I most earnestly bespeak the co-operation of any among your readers who may be actively interested in the subject. It is clear that very many volunteer canvassers will be needed to secure success. Each census-blank contains instructions to the collector, and places for twenty-five names; and special blanks for the "Yes" cases are furnished in addition. I shall be most happy to supply these blanks to any one who will be good enough to make application for them.

WM. JAMES.

Harvard University, Cambridge, Mass., May 10.

### The Winnebago County (Iowa) Meteorites.

ON Friday evening, May 2, 1890, at 5.15 P.M., standard western time, a meteor was observed over a good part of the State of Iowa, and is described as a bright ball of fire, moving from west to east, leaving a trail of smoke which was visible for some minutes. It was accompanied by a noise likened to that of heavy cannonading or of thunder; and many people rushed to the doors, thinking it was the rumbling of an earthquake. Substantiated reports have been received from Des Moines, Mason City, Fort Dodge, Emmetsburg, Algonia, Ruthven, Brett, and Forest City. The noise was also heard at Sioux City. Some of these places were at a distance of over a hundred miles from the point where the meteor fell. It exploded about eleven miles north of Forest City, Winnebago County, in the centre of the northern part of Iowa, latitude  $43^{\circ} 15'$ , longitude  $93^{\circ} 45'$  west of Greenwich, near the Minnesota State line. The fragments were scattered over a considerable surface of ground. Up to the present time, there have been found a 104-pound, a 70-pound, and a 10-pound mass, and a number of fragments weighing from one to twenty ounces each; and a part of the main mass of the meteorite is believed to have passed over into Minnesota. The pieces are all angular, with rounded edges.

This meteorite is a typical chondrite, apparently of the type of the Parnallite group of Meunier, which fell Feb. 28, 1857, at Parnallee, India. The stone is porous, and when it is placed in water to ascertain its specific gravity, there is a considerable ebullition of air. The specific gravity, on a fifteen-gramme piece, was found to be 3.638. The crust is rather thin, opaque black, not shining, and, under the microscope, is very scoriaceous, resembling the Knyahinya (Hungary) and the West Liberty (Iowa) meteoric stones. A broken surface shows the interior color to be gray, spotted with brown, black, and white; the latter showing the existence of small specks of meteoric iron from one-tenth to four-tenths of a millimetre across. Troilite is also present in small rounded masses of about the same size. On one broken surface was a very thin seam of a soft black substance, evidently graphite (?), and soft enough to mark white paper; a felspar (anorthite?) was also observed, and enstatite was also present. I present a paper on this meteorite at the meeting of the New York Academy of Sciences, May 12, and will give full particulars at the next meeting.

This is the fourth meteorite that has been seen to fall in Iowa. The other three falls were as follows: at Hartford, Linn County, Feb. 25, 1847; at West Liberty, Iowa County, Feb. 12, 1875; and the great fall of siderolites at Estherville, Emmet County, May 10, 1879, which fall comprised over two thousand pieces weighing from a tenth of an ounce to four hundred pounds.

GEORGE F. KUNZ.

New York, May 8.