Milk, whisky, and beef tea have been taken often. Pulse 96.

April 30th. Continued improvement. Bowels opened four times on the 15th. Morphine not required so often. Gave one grain of sulphate of quinine in solution three times a day. Opisthotonos, however, is evidently increasing, but swelling of face disappears again. On the 17th food rejected, on account of weakness of stomach. The next day he had a sudden attack of vomiting and purging. Gave bismuth subnitrate. From that day onward convalescence was established.

The first stage in the disease in this case may be said to end on the ninth day, March 30th. After this day the temperature rarely rose above 101.7° F., and the pulse was not higher than 96 strokes a minute. The second stage, which is longer, then began, and ended the twenty-fourth day, the pulse remaining nearly stationary at 96, and the temperature at 101° F. In the first stage the pulse was nearly always between 115 and 120, temperature 102+° F. The third stage does not show so marked curves. The first stage continued nine days, the second fifteen, and the last about a week.

It will be very clearly seen that the treatment rested almost entirely upon alimentation. Drugs were used simply for symptoms which now and then had to be combated. The expectant method, then, was the one here employed. Whisky and other alcoholic liquids were not often given alone, and if so only so long as the patient could not readily take nourishment proper of any kind. All alimentation was of a liquid character for a period of three weeks. Further, a strict observance of the laws of hygiene was insisted upon; and the family moved from that locality to a better one as soon as the boy recovered. The pulse ran up as high as 128, and never fell below 100, for the first week. The temperature was 105.5° F. at its highest point, and so far as the temperature was observed for three weeks never, with but two exceptions, fell below 100° F. Symptoms of pneumonia showed themselves, and also those of typhoid fever. Edema of the face and abdomen occurred several times; dilatation of the pupils of the eyes was noticed only in the last stage of the disease. At the termination of the disease the boy seemed to possess all his faculties intact.

Comments. It will be seen that all these cases occurred during the same year (1873), and the first half of that year. In the registration report for 1873 Dr. Snow gives thirty-nine (39) fatal cases of cerebrospinal meningitis; and in the report for Rhode Island for the same year Dr. Caswell mentions sixty-two (62), the majority of deaths by that disease taking place during the first half of the year. Never before nor since have there been in Providence so many fatal cases. Dr. Snow, in his report for 1874, says in regard to the disease (there were only ten (10) deaths in the city in 1874 by that epidemic) that the first death was reported in 1864, and no more than one or two up to 1871, when there were 12; in 1872, ten; in 1873, the greatest number occurred. To give a little summary of the cases from Dr. Snow's reports:—

1864	1 death.
1865	2 deaths.
1866	1 death.
1867	0 deaths.
1868	1 death.
1869	0 death.
1870	0 death.
1871	12 deaths.

1872	10 deaths.
1873	39 deaths.
1874	10 deaths.
1875	6 deaths.
1876	4 deaths.
1877	7 deaths.

More than fifty per cent. of these were children under fifteen years of age. On the addition of the tenth ward the increase in the number of deaths by this disease was not sufficient to make any perceptible difference in the whole number.

The exciting causes are unknown. Proximity to the canal and cove may seem to be in some degree responsible in my own cases. But it is not known in what wards the greatest number of deaths by this disease occurred. Since the date of these cases the cove has been drained, and the general sanitary condition of the city greatly improved by the removal of vaults and wells rendered impure from the near neighborhood of privies and cess-pools, by the introduction of city water, and by the connection of houses with the sewers.

Reports of Societies.

THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

LITHOLAPAXY.

E. G. CUTLER, M. D., SECRETARY.

NOVEMBER 24, 1879. — DR. H. J. BIGELOW addressed the society on the subject of Litholapaxy, exhibiting the latest instruments and a new evacuator.¹

The discussion was opened by DR. FIFIELD, who said that the succession of events which lead Dr. Bigelow to the discovery of the operation was remarkable and interesting. Heurteloup forty-five years ago established the fact of the tolerance of instruments by the bladder. He also established another fact, which was the ill effects of the fragments on the bladder, and insisted on the removal of all angular pieces to make the operation safer and bring speedy relief. Cornay's instruments, as shown by the plates, in his essay, *De la Lithérétie ou Extraction des Concrétions urinaires*, published in 1845, seem almost to have served as the models of Dr. Bigelow's instruments. He first used curved, then straight, tubes. The principle of aspiration he also undertook, but the instruments were probably not well made at that period. As he lived in Rochefort, a small place, perhaps it is not surprising that he obtained no followers. Mercier originally used a balloon, which bears a very close resemblance to that of Dr. Bigelow; instead of the glass on a stand, however, he used a large vial. If so long ago the importance of size, straight tubes, aspirators, and so forth were made out, why were they not used? Probably because they were not found to be applicable in all cases. To introduce the large instruments of Dr. Bigelow one requires large-sized urethræ. Otis's rule is ten times the circumference of the penis, in inches, for the size of the catheter, French scale.

The operation cannot be universally applicable if certain conditions of the neck of the bladder and prostate will not admit of the introduction of Dr. Bigelow's instruments; and if only the most fitting cases can be taken the results must necessarily be good.

DR. T. B. CURTIS, being called upon by the chairman, said that as the testimony of others besides the

¹ See page 30 of this number.

originator of a new procedure was often of value he would communicate briefly to the society some of the results of his experience. Since the publication of Dr. Bigelow's views, Dr. Curtis had applied the new method in a number of cases with uniform success. He believed that rapid lithotripsy, or litholapaxy, was destined to supersede completely the old dilatory lithotripsy in multiple short sittings, and that this new method would not only prove to be applicable to all cases of vesical calculus, except those in which lithotomy was called for, but that it would also invade the present domain of lithotomy itself. It had been asserted, both in Europe and in this country, that urethra sufficiently capacious to admit the large tubes advocated by Dr. Bigelow were exceptional, and that in a considerable proportion of cases the new method would be found inapplicable. This had not proved to be the case. Dr. F. N. Otis, whose researches were made with another end in view, had found that the *average calibre* of the male urethra was nearly 33 French. The meatus was almost always smaller, measuring on an average 24.7. Therefore, after division of the meatus, the average urethra would admit Dr. Bigelow's largest tube, the calibre of which is 31. Moreover, it should be borne in mind that a contraction of the canal preventing the use of an efficient tube, measuring from 28 to 31, would also be a source of difficulties and dangers in the old lithotripsy, with spontaneous discharge of the fragments, and would constitute a counterindication to that operation.

Dr. Curtis had used in all his cases a comparatively simple apparatus, improvised by modifying, according to Dr. Bigelow's principles, a Clover's aspirator, which had been purchased several years before in London, and which had proved quite useless in its original condition. A set of large tubes with short curves and wide eyes had been substituted for the utterly inefficient tubes provided by the maker, Weiss. A strong rubber bulb was fitted in place of the weak one originally belonging to the instrument. Lastly, a piece of rubber tubing, a few inches long, was interposed between the catheter and the glass trap of the washing bottle. Using this instrument for the first time nearly three years ago, Dr. Curtis succeeded in removing a uric calculus weighing over a half an ounce (253 grains) in less than an hour and a half. The urine, carefully strained for a week, yielded only two and one half grains of gravel. The patient made a very rapid recovery, and has remained free from symptoms of calculus up to this date. In several cases this aspirator was used with tubes 27 and 29, without ether, for the removal of crushed fragments and entire stones small enough to be withdrawn.

One point remained on which Dr. Curtis wished to add a few remarks. The length of the operation, as performed in this country, had been criticised, and attempts had been made to improve upon Dr. Bigelow's procedure by shortening its duration. This had been effected in two ways: in the first place, by operating in a hurry, "against time," as the phrase is, with two lithotrites alternately brought out packed, and with an assistant at work cleaning them; and, in the second place, by omitting the final exploration by which the completion of the evacuation is carefully verified. Sir H. Thompson has expressly stated that he prefers to postpone the search for lost fragments, at the risk of leaving the evacuation uncompleted, rather than protract the operation, as he thinks, needlessly. The cases

recently published by him illustrate this practice. His largest stone, weighing 521 grains, was thus dealt with in two successive operations. This proceeding, however, is a relic of the old traditions, and is unavoidably attended, in a certain measure, by the dangers which it is the object of Dr. Bigelow's method to avoid. With etherization there need be no undue haste to terminate the operation. On the other hand, a small fragment left behind may produce the most disastrous results. A case lately treated by Dr. Curtis illustrates the dangers which are thus likely to be incurred. An aged patient, with multiple small calculi, was operated upon by Dr. Bigelow's method. After about three quarters of an hour of crushing and aspiration, the bladder seemed to be relieved of all fragments. As the patient had a fairly large, unobstructed urethra, Dr. Curtis, influenced by the then recently published recommendations of Sir H. Thompson, refrained from the usual prolonged exploration, and concluded the operation. The immediate effects were soon recovered from, and on the third day the patient was up and dressed. He continued, however, to suffer from frequent painful micturition, with purulent urine.

A second exploration under ether was found necessary, which resulted in the detection and removal of a small last fragment, less than a third of an inch in diameter. This second operation was followed by a severe febrile and inflammatory reaction (with a temperature of 105°, great suffering and delirium), which threatened to carry off the patient, and from which he is now convalescing. Judging by the results attained in this case, as compared with his other cases in which complete evacuation was effected and verified by a prolonged leisurely operation, and taking into consideration the theory upon which the procedure is based, Dr. Curtis firmly believed that it was in all cases preferable to protract the operation for two hours or more, if necessary, rather than incur the risk of leaving fragments in the bladder.

Recent Literature.

Outlines of the Practice of Medicine, with Special Reference to the Prognosis and Treatment of Disease. With appropriate Formulæ and Illustrations. By SAMUEL FENWICK, M. D., Lecturer on the Principles and Practice of Medicine at the London Hospital. Philadelphia: Lindsay and Blakiston. 1880.

Dr. Fenwick states that he gives this small volume, having its origin in previously delivered lectures, to the public with a view to combat a tendency, existing especially among students and young practitioners, to adopt physical diagnosis as the basis for treatment to the neglect of those indications furnished by symptoms, which are of so much importance in leading to a correct method of rational treatment. The book is, in a word, a protest against routine practice. The prognosis and treatment of the more usual diseases of the various organs and of the abnormal conditions of the general system are outlined as fully as the space occupied will permit. It is an eminently practical little treatise, pervaded with much common sense, and would doubtless be found useful, particularly by advanced students. The appended formulæ are collected from various sources.