writers—and I say this because I speak from my own experiences. If you wish it I will go into your school at any time and speak to you in more detail about it, and endeavour to enrol you amongst our number. Believe me that you will never regret giving a little daily time to this work, for it will repay you twentyfold.

And now I have only to say a word of congratulation to the prize winners who are here to-day. They do not need any encouragement; they have fought and won worthily. To those who have failed there remain the pleasures of hope. They must not be cast down because of one defeat. There are years before them yet in which to redeem the position. What I would advise for them is steady, regular work—reading, that is, in truth reading and not mere skimming of pages, which leave only a passing impression upon the mind. It is a good plan to take stock daily of what progress you have made, what new facts you have acquired, and to try your hand at an examination of something you have heard or seen. You will find that trying to get at a reason why will do much for your general enlightenment, for your judgment, and for your power of reasoning, for you will discover very soon that you require all these things if you are to be effective in the profession which you have entered upon.

I hope you do not need to be assured that those who are your seniors in this great College welcome you heartily, and desire that you will have much success in your future. But, after all, the future lies largely in yourselves. If you have not eyes to see, or ears to hear, or brains to retain and to think, then you will perhaps do much better at some other occupation. If you can find no attraction in your studies in the hospitals or the school, you are doing worse than wasting time in staying in our ranks; you are wasting your lives, and these are all too short for what you have to do. If you do remain, then beyond all things be assiduous and resolute in the effort to excel; and although it may not be your lot to become great in name or in doing, you will have an abiding pleasure in the knowledge that what you had to do you did with all your might. And to this end try to see now and always that

Life is worth living,
Through every grain of it,
To the last edge
Of the corner stone—death.

AN ADDRESS

ON

THE BEST METHODS OF REMOVING LARGE CALCULI FROM THE BLADDER.

Delivered before the Medical Society of London, October 26th, 1896.

By P. J. FREYER, M.A., M.D., M.Ch.,

Late Indian Medical Service; Surgeon to Out-patients, St. Peter's Hospital.

I do not think that I shall be held guilty of any very great exaggeration when I state that in the whole range of surgery there is, perhaps, no subject which from time immemorial has appealed with greater force to the imagination of the surgeon or stirred more deeply his enthusiasm than the operation for the removal of a stone from the bladder. When, therefore, you, Sir, were good enough to do me the honour of asking me to contribute a paper towards the proceedings of this Society, I had no hesitation, I may say, in responding to your invitation, believing that the subject to which I propose directing your attention this evening—namely, on the best methods of removing large vesical calculi—was one which would interest the Fellows, and at the same time open up an excellent field for after-discussion and interchange of views.

Now, Sir, I shall assume that it has been absolutely proved beyond the shadow of a doubt, from the statistics and literature that have been published on this subject in recent years, that when we have to deal with a small or moderate-sized stone, or, indeed, with one of very considerable dimensions, whether occurring in the male or in the female, in the adult or the child, there is nowadays, in the vast majority of instances, only one operation either admissible or justifiable—namely, that introduced by the late Professor Bigelow,

of the United States, and named by him "litholapaxy." That operation consists, as you are all aware, in the rapid crushing of the stone and the complete removal of its fragments at one sitting by means of the aspirator and cannula. So much have I myself been impressed by the principles enunciated by that great surgeon and by the practice inculcated by him that I have now almost completely abandoned every other method of treatment of stone in the bladder in favour of his. The force of this statement will be brought home to you when I tell you that amongst my last 300 cases of stone in the bladder in patients of all ages, from 2 to 90 years, the calculi varying from a few grains in weight up to 6½ oz., there were only 7 cutting operations—namely, 2 suprapubic, 4 perineal, and 1 vaginal lithotomies—the remaining 293 cases having been found amenable to treatment by Bigelow's method. And, in order to emphasise still further the almost complete universality with which Bigelow's operation can nowadays be applied, I will mention that in the year 1890 I had 106 cases of stone under my care, one and all of which were treated by this method, with 1 death. The fact is, the practised litholapaxist will nowadays approach a stone of the moderate dimensions I have indicated with a confidence and a certainty of success unequalled, I venture to say, in any other great operation in the whole range of modern surgery.

When, however, the stone passes a certain size and weight—when, in short, it becomes a large stone—the conditions are entirely changed; changed not so much from the difficulty of dealing with the stone itself, as from the fact that the patient, from years of pain and suffering, has his constitution worn out, and his vital organs, and particularly his kidneys, more or less affected. And I venture to say that there is no surgeon, no matter how eminent he may be, who has to deal with a stone of the size or weight of any of those placed on the trays before me this evening, who will not feel that he has a grave responsibility thrust upon him, no matter by what method he may determine on removing that stone from the bladder. The object of my remarks this evening is to endeavour to assist you in arriving at a conclusion as to the best method or methods of removing such calculi.

The question now arises: What are we to regard as a large stone? What is the size or weight below which a concretion is not to be permitted to enter into this category? I need scarcely tell you that it is impossible to draw a hard-and-fast line which will be applicable under all circumstances. But there are two considerations that will assist us in arriving at a solution of this question: (1) The age of the patient, and (2) the experience of the operator. A stone of, say, ½ ounce, which in an adult would be regarded as one of very moderate dimensions indeed, would in a child of 3 or 4 years be regarded as a large one—as large, I should say, comparatively speaking, as one of 3 ounces in an adult. Then, again, the novice at the modern operation—and, in the natural order of things, I suppose we must all be novices at one or other period of our lives, not even excluding those of us who start life as specialists in this particular branch of surgery—a novice would, I say, regard a stone of ½ ounce as a large one, and rightly and justly so consider it, whereas a practised hand like that of our President, for instance, or of some of those gentlemen whose familiar faces I see before me this evening, would regard dealing with a stone of that size by the modern operation nowadays as simply child's play.

Time will not permit of my entering this evening on that extremely fascinating subject, stone in children—not even though we have the pleasure of numbering amongst our Fellows this evening the distinguished surgeon who was the first to extend Bigelow's operation to the case of male children. I must, therefore, ask that the remarks I have to make to-night shall be regarded as applying mainly to the adult. And, passing over the period of our novitiate, I must ask you to draw slightly on your imaginations, and by a kind of poetical licence consider that we are all here this evening practised and accomplished litholapaxists. Under these circumstances, and for the purposes of the evening only, I will define a "large stone" as one weighing 2 ounces and upwards, of which there are on this table before me 49 examples drawn from my own practice, now extending to nearly 900 operations for stone by all methods.

I have drawn up this tabular statement suspended on the wall, giving at a glance some of the important features of

Table giving Particulars of Forty-Nine Calculi weighing Two Ounces and upwards Operated on.

Serial No.	Date of Operation.	Nature of Operation.	Age.	Weight of Stone.	Variety of Stone.	Days in Hospital.	Time Occupied by Operation.	Result.
				ozs. drs. grs.			Minutes.	
17	May 19, 1878	Lateral lithotomy	65	2 0 0	Urates, phosphates	40	—	Successful.
66	Oct. 14, 1881	"	35	2 0 0	Urates	—	—	Died.
72	April 4, 1882	"	25	2 3 0	"	24	—	Successful.
82	April 19, 1882	"	60	2 1 0	"	41	—	"
83	June " 1882	"	40	3 4 0	"	—	—	Died.
90	Aug. 2, 1882	"	22	2 0 0	Oxalates	19	—	Successful.
99	Dec. 5, 1882	"	29	3 0 0	Urates	30	—	"
126	Dec. 6, 1882	Litholapaxy	60	3 2 0	Uric	11	66	"
130	Jan. 11, 1883	Suprapubic lithotomy	17	3 1 0	"	32	—	"
142	Feb. 20, 1883	Lateral lithotomy	20	2 0 30	Urates, phosphates	48	—	"
146	Mar. 17, 1883	"	60	4 0 30	Uric	—	—	Died.
164	May 15, 1883	Litholapaxy	45	2 4 0	"	11	70	Successful.
168	May 25, 1883	"	45	2 6 0	"	—	75	Died.
180	July 3, 1883	Suprapubic lithotomy	27	12 4 0	Urates	—	—	"
209	Nov. 13, 1883	Lateral lithotomy	40	2 6 0	"	33	—	Successful.
211	Nov. 13, 1883	Litholapaxy	80	2 0 55	"	17	90	"
231	Mar. 7, 1884	Lateral lithotomy	75	4 3 0	Uric	—	—	Died.
237	Mar. 7, 1884	"	75	4 3 0	"	24	—	Successful.
264	June 27, 1884	Litholapaxy	35	2 7 0	Phosphates	9	17	"
276	Aug. 12, 1884	Lateral lithotomy	14	2 2 30	Oxalates	22	—	"
277	Aug. 12, 1884	Litholapaxy	26	3 1 30	"	—	52	Died.
297	Oct. 26, 1884	"	55	2 0 45	Urates, oxalates	7	26	Successful.
316	Aug. 30, 1885	"	60	3 2 30	Uric	24	65	"
322	Sept. 9, 1885	"	55	2 2 0	"	8	47	"
333	Aug. 29, 1886	"	55	2 0 0	Phosphates	10	30	"
403	May 23, 1887	"	24	2 1 0	Urates	4	35	"
419	July 6, 1887	"	30	2 4 0	"	10	45	"
494	May 24, 1888	"	44	2 1 50	"	5	17	"
499	May 24, 1888	Suprapubic lithotomy	35	3 2 0	Oxalates	36	—	"
553	Mar. 25, 1889	Litholapaxy	55	2 6 0	Uric	5	35	"
554	Mar. 29, 1889	Suprapubic lithotomy	30	3 4 0	Oxalates	—	—	Died.
570	June 3, 1889	Litholapaxy	90	2 0 39	Uric	—	45	"
604	Dec. 26, 1889	"	15	3 2 17	Urates, phosphates	31	60, 90	Successful.
625	Mar. 4, 1890	"	55	2 6 10	"	16	45	"
628	Mar. 21, 1890	"	80	2 4 37	Urates	9	55	"
633	April 15, 1890	"	75	3 1 0	Oxalates	9	75	"
668	July 30, 1890	"	35	2 4 10	Uric	7	36	"
675	Sept. 6, 1890	"	80	2 4 18	"	9	35	"
677	Oct. 20, 1890	"	70	2 0 39	"	7	35	"
712	Jan. 2, 1891	"	20	3 0 0	Urates	4	35	"
732	Mar. 19, 1891	"	20	2 0 4	"	9	40	"
763	Jan. 7, 1892	"	75	2 0 4	"	11	55	"
773	Feb. 29, 1892	"	45	6 1 0	"	21	120	"
779	Mar. 19, 1892	"	50	2 0 2	"	7	20	"
790	May 2, 1892	Vaginal lithotomy	70	2 0 0	Uric	11	—	"
810	Sept. 24, 1892	Litholapaxy	58	3 0 10	"	6	40	"
838	Feb. 13, 1893	"	65	2 0 50	"	6	22	"
845	Feb. 28, 1893	"	60	2 2 40	Oxalates	12	22	"
865	Mar. 3, 1893	"	57	2 0 53	Urates	7	20	"

each of these 49 cases, namely, the date of operation, the variety of operation, the age of the patient, the weight of stone removed, the variety of calculus, the time spent in hospital after the operation, the time spent over each litholapaxy operation, and the result. The patients were all males except one; they were all adults except 2, boys aged respectively 14 and 15 years, and they all occurred in my practice in India—in my state of previous existence, if I may say so—before I was permitted to have the honour of migrating into the Elysian fields in the vicinity of Cavendish Square, where stones are not supposed to be permitted to grow into large ones!

Now, it is scarcely necessary for me to tell you, considering the lengthened period of years over which the calculous disorder must have existed in each instance to produce stones of these sizes, that the patients were, almost one and all, in bad health, and some of them in extremely bad health. Cystitis, with thickened, rigid, contracted, and ulcerated bladder, was present in the vast majority of the cases; hypertrophy of the prostate co-existed in several and stricture of the urethra in a few; the kidneys were more or less affected in most of the cases and gravely affected in many; and, owing to the irritation of neighbouring organs and the constant straining to pass water, diarrhoea, dysentery, prolapse of the bowel and hæmorrhoids are constant concomitants of these large calculi.

The operations undertaken by me were:

Suprapubic lithotomy...	...	...	4
Lateral lithotomy	...	...	13
Vaginal lithotomy	...	...	1
Litholapaxy	...	...	31
Total	...	...	49

[Some important features in individual lithotomy cases were then referred to.]

Passing on now to the litholapaxy cases, this tray before me contains 31 calculi, or rather the *débris* of these calculi, removed by Bigelow's method, weighing 2 oz. and upwards—this stone which I show you, which is composed of white urates and weighs 6½ oz., being the largest that I have removed by this method. A regrettable feature of the modern operation is that in the removal of the stone it has to be disintegrated into fine *débris*, thus destroying its physical characteristics, and we are thus deprived of many interesting and instructive lessons derived from a contemplation of the physical aspects of the stone as removed entire by lithotomy.

A notable feature of these thirty-one calculi—as, indeed, of the whole collection before me—is their almost universal hardness, there being only two instances of soft phosphatic stones amongst them, the remaining twenty-nine being composed of urates and oxalates, with a little phosphates thrown in in some cases.

[The instruments required for litholapaxy in case of large stone were then exhibited and described.]

A normally capacious urethra is, of course, necessary to enable us to pass these large instruments. When the stone is small, or moderate in size, stricture of the urethra is no bar to the performance of litholapaxy, the stricture being cut internally, or rapidly dilated, immediately before proceeding with the main operation. But when the stone is large the repeated introduction of the instruments is necessary, and I do not think that the repeated passing of these instruments over a recently-dilated or divided stricture is calculated to improve its condition. When therefore stricture coexists with large stone lithotomy should be performed.

Enlargement of the prostate is no bar to the performance of litholapaxy for large stone, unless the hypertrophy be pronounced. Indeed, several of these calculi were removed from patients with enlarged prostate. When, however, the prostate is much enlarged, and the urethra tortuous, lithotomy, either suprapubic or perineal, according to the circumstances of the case, should be had recourse to.

In crushing large calculi there are several special points to be attended to, to which I will now direct your attention.

It will sometimes be found that when a large and hard stone is grasped by the lithotrite, and the instrument screwed home with all one's might, the stone will not at first yield. If we wait a few seconds it is not unlikely that it will do so, and with a loud report. If not, unscrew the lithotrite and catch the stone by another axis, and screw home again. By repeating this process over and over again the stone will, as a rule, yield in the end. Whether the repeated compression of the stone in various directions has the effect of undermining its constitution—if I may so—or whether a stone has less powers of resistance in one direction than in others I am not prepared to say. All I can vouch for is the success of the manœuvre indicated.

But there is a limit to the strength of the largest lithotrite that can be introduced through the urethra, and a prudent and careful surgical instrument maker will limit the screw-opening of the instrument accordingly. So we may find that our largest lithotrite will not lock on the stone in the first instance, as occurred in many of these cases. Now, a glance at this tray of calculi removed entire by lithotomy will show that, as a rule, calculi are irregular in shape; so that, though the lithotrite may not lock on the stone when grasped by the long axis, it may do so when the stone is grasped by a shorter axis or by one end. In this way a portion of the stone is broken off, and reduced to fine *débris*; the main body of the stone is attacked again and another portion broken off, and so on till the whole of the stone is demolished.

In reading over the notes of these 31 cases, preparatory to my remarks this evening, I have been much struck by the fact that in the majority of them the stone was caught in the first instance by the long axis, which had to be changed for a shorter axis before the lithotrite would lock. This is due to the fact which I brought to your notice, Sir, some years ago, and which you were good enough to acknowledge in the last edition of your work on *Diseases of the Urinary Organs*—namely, that, as a rule, a stone lies in the bladder with its long axis in the antero-posterior direction.

If, however, the stone be more or less round, and so large that the lithotrite fails to lock on it in any direction, What are we to do then? We dig the jaws of the lithotrite into one side of the stone, and, holding them in position, screw home the instrument, thus scraping off a portion of the crust. This process is repeated again and again: and, unless the stone be extremely hard, it is wonderful the rapidity with which it will be reduced to such a size as to permit of the lithotrite locking on it.

One of the most difficult complications we meet with in dealing with large calculi is when the bladder is thickened and contracted—hugging the stone, if I may say so—thus preventing the free movements of the lithotrite in the bladder, so that the jaws of the instrument are with difficulty got on to the stone. This difficulty will, as a rule, be obviated by injecting water into the bladder, thus separating the mucous membrane from the stone. But occasionally it will be found that, even under the most profound anæsthesia, the bladder resents the presence of the smallest quantity of water. In such cases it will be necessary to have recourse to lithotomy.

Passing on now from these general remarks, applicable to most cases of large stone, I will deal briefly with some features of interest in a few individual cases.

And let me first call your attention to the three cases of death that occurred amongst the 31 litholapaxy operations. Time will not permit of my reading you out the notes of these cases in detail. I must, therefore, confine myself to telling you that the patients were aged respectively 45, 26, and 90 years; that all three were in extremely bad health, with their kidneys extensively diseased; and that the causes of death were, respectively, pyæmia, suppression of urine, exhaustion and shock.

The details of the largest stone (6½ oz.) that I have removed

by Bigelow's method are interesting, and have already been published.¹

From the tabular statement it will be seen that, broadly speaking, in proportion as my experience of litholapaxy increased, the time spent over the operation diminished. There were 6 calculi of from 2 to 2½ oz. in weight removed in periods varying from seventeen to twenty-two minutes; and in Case 712 I removed a urate stone weighing 3 oz. in thirty-five minutes. These 7 operations were all successful. I attribute the utmost importance to the rapidity with which a large calculus is removed by litholapaxy; and venture to say that, other things being equal, our success will vary in such cases in inverse proportion with the length of time spent over the operation. When the stone is moderate in size there is no urgency about completing the operation, because the patient's health has not, as a rule, completely broken down; but in cases of large calculi of these sizes the constitution is, as a rule, worn out, and the kidneys are affected. Under such circumstances prolonged narcosis leads to congestion of the kidneys, exhaustion of the vital powers, and shock.

Not less interesting than the rapidity with which a large stone can be removed by Bigelow's operation is the rapid cure that sometimes ensues. Case 712, already alluded to, was the most remarkable instance of rapid cure in my practice. The patient alleged that the symptoms of stone had existed only six months. Still I removed this urate stone, weighing 3 oz., in thirty-five minutes, with scarcely a trace of blood in the washings. Next day the patient informed me that he felt so well that he could walk twenty miles. He was discharged on the fourth day. In Case 553 I removed a urate stone weighing 2½ oz. from a patient aged 55. Next day he was walking about quite well, and was discharged on the sixth day. And in Case 633 I removed 3 oz. and 1 drachm of oxalate of lime stone from a patient aged 75 in seventy-five minutes. Next day I had the pleasure of showing him to Surgeon-Colonel Hutchesson. He was sitting up in bed quite happy, save that he grumbled about his food being cut down. He was discharged on the ninth day.

I must now, in conclusion, once more invite your attention to the tabular statement of these 49 operations, which may be divided into three groups, corresponding with three more or less well-defined periods in my surgical career. The first group of 6 cases belongs to my pre-litholapaxy days, and were necessarily lithotomies, for no one ever dreamt of removing large calculi of those sizes by the old operation of litholapaxy, with its numerous sittings. The second group of 15 cases down to August, 1884, belong to what I may call the period of transition, during which I was passing from lithotomy to litholapaxy, and learning how to operate by the latter method; and you will observe that the cutting and crushing operations alternated pretty regularly. There were 6 completed litholapaxies, 7 completed lithotomies, and 2 cases in which I commenced by litholapaxy, but, as already explained, had to finish by lithotomy. Finally, there is the third group of 28 cases from August, 1884, down to the present time—a period during which I suppose I have been more or less expert with the lithotrite and aspirator, and amongst these there were only 3 cutting operations—namely, 2 suprapubic and 1 vaginal lithotomy, the remaining 25 cases having been disposed of by litholapaxy.

There is another operation for large calculi which has, during the last few years, been brought to the front—namely, perineal litholapaxy or lithotripsy, which consists in making an opening from the perineum into the posterior urethra, and through this introducing large lithotrites or crushing forceps, the prostatic urethra admitting, of course, much larger instruments than the rest of the canal. I have no experience of this method myself, but as it has been advocated by no less distinguished surgeons than our President, Keith of India and Milton of Cairo, an address of this kind would not be complete without a reference thereto, and I have no doubt that you, Sir, will give us your experiences of this operation.

The following tabular statement shows at a glance the results of the different varieties of operation for large stone performed by me:

¹ BRITISH MEDICAL JOURNAL, June 16th, 1894, p. 1296.

Operation.	Number of Operations.	Average Age.	Average Weight of Stone.			Average No. Days in Hospital.	Mortality.
			Ozs.	Drs.	Gr.		
Suprapubic lithotomy	4	27½	5	5	0	34	2, or 50 per cent.
Perineal lithotomy ...	14	42½	2	5	23	30	4, or 28½ "
Litholapaxy ...	31	52	2	5	2	10½	3, or 9½ "

The average age of the litholapaxy cases was 52 years, ten years greater than that of the perineal lithotomy cases, and double that of the suprapubic cases. The average weight of stone in the suprapubic cases was, however, twice that of the other two varieties of operation; but the period under treatment after operation in the litholapaxy cases was only ten days, as compared with thirty and thirty-four days respectively in the lithotomy cases. Finally, the mortality, which in the suprapubic operation was 50 per cent. and in the perineal 28 per cent., was in the litholapaxy cases reduced to less than 10 per cent.

Now I am aware, of course, that 4 cases of suprapubic operation do not constitute a sufficiently large number from which to draw any safe or trustworthy conclusion. But a glance at the column of results in the first tabular statement will show that in proportion as I abandoned lithotomy in my practice in favour of litholapaxy, and as I gained experience of this latter operation, my results improved; and the fact that my last 16 litholapaxies for calculi of from 2 up to 6½ ounces were one and all successful shows what splendid results we may obtain from Bigelow's operation.

With results such as these before me, I have no hesitation in pronouncing Bigelow's method the safest and best for calculi of all sizes, in patients of all kinds and conditions, provided only that this operation is feasible. When not practicable, I consider that calculi up to about 3 ounces in the adult, and a corresponding weight in the child, are best removed by perineal lithotomy; beyond that, suprapubically. Six and one-eighth ounces is, as I have said, the largest stone that I have removed by Bigelow's method; but still larger calculi have been successfully removed by Keith, Keegan, and Cunningham in India, and by Milton in Cairo. So fully convinced am I of the vast superiority of Bigelow's operation over all others in saving human life and suffering, that I would lay it down as an absolute rule that in no case, whether in the male or in the female, the adult or the child, should a stone, whether small or large, be subjected to a cutting operation till after trial litholapaxy is found to be not feasible.

REMARKS ON PROGNOSIS IN EXOPHTHALMIC GOITRE.

By R. T. WILLIAMSON, M.D.LOND., M.R.C.P.,
Medical Registrar, Manchester Royal Infirmary, Assistant in Medicine, Owens College.

The prognosis in exophthalmic goitre is a point of considerable importance, for two reasons. In the first place, the patients who suffer from this disease are very nervous and excitable. In many cases the disease has followed some mental shock, and if a very favourable prognosis can be honestly given it will do much to calm the excited mental condition of the patient, and will be of considerable service therapeutically. Then, again, the prognosis in exophthalmic goitre is of importance with reference to the many and varied methods of treatment which have been advocated. Recently operative treatment has found favour especially in Germany. But before one can form a correct estimate of the value of the various surgical operations which have been performed (such as partial removal of the thyroid gland, ligature of the arteries supplying the gland, division of the isthmus, etc.), or indeed of any form of treatment, it is necessary to know the termination of the disease in a fair number of consecutive cases.

I have recently been much impressed by the therapeutic

value of a good prognosis in a private case, in which the symptoms had followed a severe mental shock, and in which there was great mental excitement owing to the development of these symptoms. But do statistics warrant us in giving a very favourable prognosis?

Cases of exophthalmic goitre sometimes terminate fatally. Occasionally, though very rarely, they rapidly terminate fatally. On the other hand, undoubtedly, in some cases, complete recovery occurs. (Good examples have recently been recorded by Professor Pribram in the *Prager med. Wochenschrift*, No. 46, 1895.) I think the experience of most medical men, who sees much of hospital practice, will be that the disease rarely terminates fatally in the hospital. Then again, I think everybody who sees much of pathological work will admit that cases of exophthalmic goitre are very rarely met with in the *post-mortem* room.

Out of forty-five cases of exophthalmic goitre admitted as in-patients at the Manchester Royal Infirmary since 1884, three only terminated fatally whilst under treatment in the hospital. The statistics of other hospitals are somewhat similar. Thus out of fifty patients suffering from the disease who were admitted into the wards of St. Thomas's Hospital, London, between the years 1870 and 1894, only four terminated fatally whilst under treatment.¹ What then becomes of the cases which do not end fatally whilst under observation? The statements in textbooks vary somewhat as to the termination of the disease, and most writers refer to the difficulty of tracing the cases, and the scanty statistics which have been published. Valuable information on this point has been furnished by Dr. Hale White, by Professor Pribram,² and others. Still it appeared to me that an attempt to ascertain the termination of the disease in a larger number of consecutive cases might furnish statistics of considerable interest.

The following are statistics with reference to fifty consecutive cases of exophthalmic goitre, in which I have attempted to ascertain the course of the disease. Forty-five of these had been patients at the Manchester Royal Infirmary, and to the kindness of the medical staff, Dr. Leech, Dr. Dreschfeld, Dr. Steell, Dr. Harris, Dr. Bury, and Dr. Wilkinson, I am indebted for permission to report the course of the disease in these cases. I have recently visited a large number of these patients at their own homes; in the other cases I have obtained reliable information by letter.

In none of the cases was any operative treatment adopted. Most of the patients derived benefit by rest in bed, and various kinds of medical treatment, but none were cured thereby. In the majority of cases the patient only remained in the hospital for a comparatively short time, and very often, on returning home, all treatment was discontinued. The difficulty in tracing these cases has been exceedingly great, but I have succeeded in obtaining definite information with respect to thirty-two out of the fifty cases, and I have good grounds for thinking that the course of the disease, in the cases which could not be traced, did not differ in any marked degree from that in the thirty-two cases traced.

Of these fifty consecutive cases, four died whilst under observation; forty-six left the hospital or passed from direct observation, the condition being either improved, or much the same as when first seen. The following are the results in thirty-two cases at the time this paper was written:

FATAL CASES WHILST UNDER OBSERVATION.

i. Female, aged 39, came under my care, January, 1891. Cardiac symptoms all well marked, palpitation exceedingly troublesome; cardiac enlargement. History of alcoholism. Death in March of the same year from cardiac failure. Duration of disease from time when symptoms first attracted attention, 7 months only.

ii. Female, aged 49; slight goitre for 30 years. This became very large 12 months before death. Palpitation then became very troublesome. All cardinal symptoms present; dilated heart, great palpitation, pulse 200 per minute. Pleuritic effusion; oedema of legs.

iii. Female, aged 22; cardinal symptoms were marked. Hæmorrhage into stomach; duration of illness 3½ years.

iv. Male, aged 44; complicated by dilated heart, mitral incompetence, general anasarca and ascites.

FATAL CASES AFTER LEAVING THE HOSPITAL.

v. Female, aged 44, palpitation and dyspnoea, 2½ years before death. Exophthalmos, thyroid; enlargement appeared 9 months before death. The heart became considerably dilated and a systolic apical murmur

¹ See *St. Thomas's Hospital Reports*.

² *Prager med. Wochenschrift*, No. 46, 1895.