we must strive for an abundance of this national health, tough, pliant, and elastic, ready and fit for any good work anywhere.

APPENDIX.—The following tables were arranged and very kindly given to me by Mr. Sutton.

Male Population enumerated in Census of 1881. Distribution according to Ages and Occupations.

Between the Ages	Class I. Professional.	Class II. Domestic.	Class III. Commercial.	Class IV. Agricultural.	Class V. Industrial.	Class VI. Returned by Property, Rank, &c.; not by Special Occupation.	All Classes.
0—5	..	..	..	..	..	1,757,657	1,757,657
5—15	6,361	8,822	59,463	72,345	174,223	2,649,595	2,970,809
15—20	56,265	42,145	146,662	208,113	691,078	124,006	1,268,269
20—25	75,498	41,301	147,230	150,695	665,540	32,090	1,112,354
25—45	201,619	106,989	420,133	419,173	2,028,958	62,560	3,239,432
45—65	88,062	48,142	162,025	345,260	1,024,698	87,632	1,755,819
65—upwards	23,150	11,109	25,148	122,758	210,681	142,716	535,562

Probable Annual Amount of Sickness, expressed in Weeks, based upon the Experience of the Manchester Unity Order of Oddfellows.

Between the Ages	..	..	..	..	..	..	..
0—5	..	..	..	..	..	..	..
5—15	..	..	..	..	..	..	..
15—20	37,462	28,061	97,647	138,560	460,130	82,568	844,428
20—25	56,269	30,453	108,560	111,110	490,730	23,661	820,183
25—45	200,660	106,480	418,140	417,190	2,019,400	62,264	3,224,134
45—65	240,930	131,710	443,270	944,600	2,803,500	2,397,750	4,803,760
65—upwards	279,890	134,310	304,050	1,484,200	2,547,400	1,725,500	6,475,350

Probable Annual Number of Deaths according to English Life Table No. 3.

Between the Ages	..	..	..	..	..	..	..
0—5	..	..	..	..	..	..	..
5—15	..	..	..	..	..	..	..
15—20	349	261	910	1,291	4,285	769	7,863
20—25	653	357	1,273	1,303	5,751	277	9,614
25—45	2,271	1,205	4,732	4,721	22,846	705	36,480
45—65	2,115	1,156	3,891	8,295	24,618	2,105	42,180
65—upwards	1,953	937	2,122	10,360	17,779	12,039	45,190

Female Population enumerated in Census of 1881. Distribution according to Ages and Occupations.

Between the Ages	Class I.	Class II.	Class III.	Class IV.	Class V.	Class VI.	All Classes.
0—5	..	..	..	..	..	..	..
5—15	5,672	100,423	1,250	2,150	101,031	1,763,207	1,763,207
15—20	87,028	453,548	4,235	9,466	366,251	2,766,392	2,976,918
20—25	37,561	332,968	4,606	6,905	298,555	408,435	1,278,963
25—45	65,956	411,051	6,352	14,803	515,583	535,277	1,215,872
45—65	38,622	203,463	2,451	20,864	243,719	2,481,037	3,494,782
65—upwards	11,281	43,849	573	10,652	53,050	1,442,594	1,951,718

Probable Annual Amount of Sickness expressed in Weeks, based upon the Experience of the Manchester Unity Order of Oddfellows.

Between the Ages	..	..	..	..	..	..	..
0—5	..	..	..	..	..	..	..
5—15	..	..	..	..	..	..	..
15—20	24,658	302,030	2,820	6,303	243,900	271,990	851,701
20—25	27,701	245,555	3,397	5,092	220,180	394,760	896,685
25—45	65,604	408,860	6,318	14,724	512,840	2,467,800	3,476,146
45—65	106,230	559,620	6,741	57,388	670,350	3,967,900	5,368,229
65—upwards	140,360	545,580	7,129	132,530	660,050	6,640,200	8,125,849

Probable Annual Number of Deaths according to English Life Table No. 3.

Between the Ages	..	..	..	..	..	..	..
0—5	..	..	..	..	..	..	..
5—15	..	..	..	..	..	..	..
15—20	243	2,974	28	62	2,401	2,677	8,385
20—25	338	2,998	41	62	2,689	4,822	10,950
25—45	752	4,685	72	169	5,876	23,276	39,830
45—65	809	4,263	51	437	5,105	30,225	40,890
65—upwards	893	3,473	45	843	4,201	42,265	51,720

MALTOPEPSYN.—Maltopapsyn is a fine powder, not unpleasant to take, and consisting, according to the statement of Messrs. Burgoyne, Burbidges and Co., who have introduced it into this county, of saccharated pepsine, 10 grains; saccharated pancreatine, 5 grains; acid lactophosphate of lime, 5 grains; excised extract of malt equal to one teaspoonful of liquid extract of malt, 10 grains. The drug, according to this formula, contains ferments capable of acting on and digesting albuminous, fatty, and starchy bodies; that is to say, all the elements of food. We have found maltopapsyn useful in several cases of imperfect digestion, taken at the time of sitting down to table. It has also acted well when taken after meals, when some particular article of food has caused eructation.

LECTURES ON SOME IMPORTANT POINTS IN CONNECTION WITH THE SURGERY OF THE URINARY ORGANS.

Delivered at the Royal College of Surgeons, June 1884.

By SIR HENRY THOMPSON, F.R.C.S.,

Surgeon Extraordinary to His Majesty the King of the Belgians, Professor of Surgery and Pathology to the Royal College of Surgeons, Consulting Surgeon and Emeritus Professor of Clinical Surgery to University College Hospital, etc.

LECTURE II.—THE SYSTEMATIC DIAGNOSIS OF URINARY DISEASE. DIGITAL EXPLORATION OF THE BLADDER, AND ITS RESULTS.

[The lecturer commenced by illustrating in detail a systematic method of arriving at a correct diagnosis of diseases affecting the urinary organs, one which, he believed, might be found adequate to the solution of a very large majority of all cases met with; and continued:—]

But it happens that the most patient application of the inquiry described sometimes fails to reveal the cause of symptoms; although it may, and often does, arouse suspicions as to what that cause may be. Thus, the evidence available in an exceptionally obscure case may point in the direction of impacted calculus, which is associated usually with extremely painful and frequent micturition, and mucopurulent urine; or it may indicate the presence of a growth within the bladder (not cancerous deposit in its walls, which is readily recognised from the rectum), such growth being usually associated with long continued or repeated bleeding, and sooner or later depositing in the urine organic debris, the structure of which may determine its character. In either case, no permanent relief is attainable without operation. Besides these, there is sometimes, as in the cases of elderly men who are unable to pass any urine without very frequent catheterism, another cause, not unfrequent; namely, distressing cystitis not amenable to relief by ordinary treatment, because the cystitis itself is maintained by the very agency—the catheter—without which the patient's existence is impossible. A vicious circle of actions is thus set going, which can only move from bad to worse. In all the conditions thus described, the patient's fate is sealed; but even this grave fact does not disclose all the severity of his lot, since the fatal event almost inevitably arrives through severe and protracted suffering. The painful experience which I have had of misery of this kind, and for which, in the later stages of disease, little relief is afforded except through the influence of narcotics, has long impressed me strongly with the hope of finding a means of escape for some of these patients, equally from the fatal issue and from the suffering which precedes it.

In January 1869, I opened the bladder for a man, about 60 years of age, in University College Hospital, above the pubes, solely to afford relief in cystitis of the kind described, no attack of retention being present, and maintained a tube there some weeks, to drain and relieve the bladder. I repeated this proceeding in six other cases, affording some relief, but with less of permanent benefit than I had hoped to attain. The opening was ill placed for purposes of drainage; it became sore from contact with urine, and kept the patient for the most part confined to his room. But the last case in which I did this operation impressed me so strongly, that from that time I determined on a different course, which issued in the plan which I have now put in practice nearly four years, and the results of which I shall lay before you without reserve to-day. But first I ask you to listen to a brief report of the case referred to.

Mr. C., aged 31, I first saw in 1870. For six years, he had had occasional attacks of bleeding. After two or three visits, he took a sea-voyage for his health, and thought himself cured. But he came again in October 1874, having had several fresh attacks recently. I sounded him, and felt nothing; some fusiform cells were observed in the urine, and were sketched in the note-book at that visit, and the bleeding was believed to be vesical.

1876. He had continued to bleed more frequently. I found three ounces of residual urine, and advised the use of the catheter daily, which checked the bleeding, as when there was no straining there was no blood.

1877. He passed shreds of organic tissue; sounded, nothing felt; weaker; micturition frequent and painful.

1878. Micturition was so painful that I resolved to open the bladder by a suprapubic opening, so as to enable the patient to obtain some sleep, which had been terribly broken by constant micturition. The operation afforded some relief, but he gradually became weaker, and sank about a month afterwards.

At the necropsy, a single pedunculated tumour was found in the bladder; it resembled in form and size an ordinary fig. It could have been easily removed had the suprapubic opening been enlarged.

It was clear to me from this case that a careful sounding had proved incapable of giving me sufficient information relative to the presence of a considerable growth within the bladder. Supposing that I could but once have put my finger there, instantly discovering, as I should have done, that easily removable tumour, how different would have been the issue of that unhappy case! He might have been enjoying life and health to-day. What, then, was to prevent me in future, under circumstances of equal gravity and like obscurity, from determining the presence or absence of such a growth by the direct sense of touch, as I could so easily have done there, had the necessity for applying it ever occurred to me? The question which therefore naturally presented itself was, from which point could I best examine with my finger the whole interior surface of the bladder; from the perineum, or from above the pubes? After experiment on the dead subject, the answer seemed not doubtful. With a small opening into the membranous urethra from the perineum, just large enough to admit the finger to arrive at the neck of the bladder, and making at the same time firm suprapubic pressure, I could explore without difficulty every portion of the surface described. If, then, by means of anesthesia I could attain that degree of flaccidity and inertia in the living body which is natural to the dead, why should I not be able to effect as easily the exploration in the former case as in the latter?

Opportunity for making the experiment soon occurred, partly in the course of a lithotomy case or two; and, finally, in the person of a patient who came under my care in 1880, with severe and obscure symptoms.

At the outset of the case I met with a small calculus and crushed it, but subsequently found another, as I thought, impacted, not being able to remove it by the lithotrite. In order to ascertain the real state of the case, I decided to explore the bladder, and did so in November 1880, Mr. Ceely of Aylesbury, and others, being present. Having made the median incision, and complete etherisation having been attained, I felt, as soon as the finger entered the bladder, no difficulty in exploring the interior, finding, to my surprise, not a stone, but a single pedunculated tumour of considerable size, with a thick coating of phosphates on its surface. It was this coating, together with the immobility of the mass as previously determined by the lithotrite, which had suggested to me the presence of impacted calculus. I seized the tumour with a small lithotomy-forceps, and twisted it off at the neck. The patient made a rapid recovery, had no return of the growth or any sign thereof, and has enjoyed excellent health and activity ever since, as he does at this day. The operation took place nearly four years ago, but I waited a year and a half before presenting the case to the Royal Medical and Chirurgical Society, having then adopted the proceeding in three other cases.

I then proposed the systematic examination of the bladder by means of the finger as a desirable, and, indeed, as a necessary, proceeding in obscure disease believed to affect the bladder, when all other means had failed to detect the cause, distinguishing the method by the term "Digital Exploration of the Bladder."

In the surgical proceeding itself there is nothing new, nor did it ever occur to me that it could be claimed in that sense by any modern surgeon. Like others, I had often opened the urethra from the perineum for stricture, for chronic and obstinate urinary fistulae, for impacted calculus, for calculus sacculated in front of the neck of the bladder, and after lithotripsy, when the patient could pass no urine except by catheter, and was unable to introduce the instrument, etc. But the object with which I proposed to operate was a new one, inasmuch as it was solely the exploration of every part of the bladder with the end of the finger, in order to diagnose its condition, and not necessarily to perform any further operation, unless this should be required by the discovery of a tumour or other condition admitting of surgical treatment. To effect this purpose, then, it was extremely important to determine what is the shortest and easiest route for the surgeon, as well as that which would incur the smallest amount of risk to the patient.

At first sight, it appeared that an incision involving the neck of the bladder must be necessary, and that the operation must therefore be some form of cystotomy. Happily, experiment proved that a section carried from the perineum to the urethra, in other words "external

urethrotomy," would suffice for my purpose. "Now, this is a procedure almost without risk. The mere section of parts from the perineal surface in the median line, down to any part of the urethra anterior to the prostate, is one of the simplest and least dangerous of surgical operations.

Old, however, as is the proceeding in question, whether it be termed "external urethrotomy," or, as with the older French surgeons, the quaint term of the "boutonnière" be adopted (the very term shows how simple even at that period they considered it), the mode of performing it appears to me not altogether a matter of indifference. I shall, in the first place, however, premise that there is no longer any doubt that the median incision of the perineum opens the shortest road to the neck of the bladder, and I shall briefly describe the steps of the proceeding which appear to me the most desirable to be followed in order to attain the end proposed with ease and safety.

The position of the patient, and the general accessories necessary, are those required for lithotomy; while the various steps of incising are those now generally adopted in the first stage of median lithotomy. When these are completed, and the tip of the finger first enters the cavity of the bladder, the morbid condition is generally recognised at once, and with it, therefore, the nature of the disease for which the exploration was undertaken. Whether this be or not, the operator, maintaining the index in its place, and firmly pressing it into the cavity of the bladder, rises from his seat if necessary, and stands so that, by means of his own right hand, he can make firm suprapubic pressure, and bring the upper surface of the bladder into contact with the left index. He rapidly ascertains the presence or absence of tumour; if it be absent, he will, by slightly changing the point of suprapubic pressure, and also, as far as he can, the direction of the tip of the left index-finger, examine bit by bit the whole internal surface of the bladder. He will recognise or not, as the case may be, the smooth satin-like surface of the healthy lining, with here and there only a slight inequality; or he may find an irregular surface, elevated by interlacing lines of fibres, with little depressions and interstices, roughened patches on a surface otherwise smooth, and adhering scales of earthy matter perchance, or a small calculus half exposed, half hidden, lodged rather than sacculated, in a corner, etc. Indeed, it is difficult to say at present what may not be found, as fresh experiences have brought to light conditions to some extent not heretofore recognised, of which I have yet to speak. Hence there are few occasions, I confess, which for me have excited a more lively interest, than the moment at which my finger enters a bladder, the condition of which has been a theme of keen inquiry and speculation for some months or even for years before.

But, supposing it is at once apparent, from the examination just described, that tumour is present, the operator must next deliberately study its size, form, situation, and mode of attachment to the bladder. This is an extremely important matter, and will be considered, as well as the best mode of removing the growth, in the next lecture, devoted to the subject of vesical tumour.

On the other hand, no growth having been found, the next steps of the proceeding will depend on what other morbid or irregular condition has been revealed. Supposing that either some calculus or other matter has been removed, or that the bladder and urethra are merely to be maintained in a state of rest from their functions for a few days, free exit for the urine must be secured. For this purpose, a soft but stout India-rubber tube is to be fastened, with one end (smoothly bevelled) just within the bladder, the remainder occupying the wound, and protruding so as to convey the urine direct to some vessel suitable to receive it. If the object of treatment be that last described, the tube should remain a week or so, unless its presence occasion pain, in which case a large soft catheter may be tried; or, as sometimes happens, it is better, after the first or second day, for the urine to take its course through the wound. In any case, the bladder is to be rested and drained at least for a week; even a longer period is sometimes advantageous. The relief from frequent habitual catheterism thus afforded to a patient, who for months has been compelled to use a catheter twelve times or more every day, is so great that he often desires that the term of rest may be extended. I have seen some very remarkable examples of relief arising from the process, and relief of a permanent character.

I shall now briefly advert to the analogous operation in the female, when dealing with obscure forms of disease for the purposes of diagnosis and treatment. For digital exploration of the female bladder, all that is needful is sufficient dilatation of the urethra to admit the introduction of the index-finger; this may be accomplished by means of a three-bladed dilator or otherwise, after which the facility for examining is, of course, greater even than that attained in the male. Dilatation, however, always comprehends, in whatever way it is rapidly performed, a certain amount of splitting or rupture of the urethra, which, however, I have never known to be followed by any permanent injury. I

have thus examined five cases of women for the purpose of diagnosis, and have found tumour in two, and have removed both without any further enlargement of the opening. These will be included in the series of cases appended, forty-two in number, which I desire to present as the sum total of my experience of digital exploration of the bladder, together with the results which have followed in each case.

[The lecturer then presented a brief epitome of the histories of all the cases, in a tabular form, on which he had performed digital exploration of the bladder; omitting, for consideration at the next lecture, the twenty cases of tumour. He continued:]

In carefully analysing the twenty-two cases which remain after subtracting the twenty cases of tumour, there appear to be four chief forms of vesical disease, in which the operation of opening the urethra to withdraw the urine altogether by an artificial route, and so suspend the functions both of the bladder and urethra for a time, may render good service.

The first class consists of those cases, not unfrequently met with, in which all the symptoms of chronic cystitis have existed for a long period, and in a severe degree, and which persist in spite of long-continued and appropriate treatment; while, at the same time, it is understood that the absence of material cause for the cystitis, such as stone, stricture, vesical incompetence, etc., has been ascertained. Examples are Cases 2, 24, and 31, of the series.

The second class of cases includes those examples of prostatic disease in which the bladder has to be emptied by the catheter many times in the twenty-four hours, and in which painful chronic cystitis is obviously aggravated, if not maintained, by the necessary process of relief. Examples are Cases 5 and 34.

The third class embraces those cases in which impacted calculus or adhering calculous matter may be suspected, or may be known to be present by sounding. Examples are Cases 3, 4, 7, 22, and 36.

In the fourth class I place those cases in which painful and very frequent micturition or bleeding, separately or combined, have long existed, without signs of cystitis, the urine being clear, free, or nearly so, from mucous or purulent deposit; the cause of these symptoms having baffled the most careful inquiry. On exploration being made, no organic change is discovered, no light is obtained on the diagnosis of the case, but the functions of the bladder and urethra are suspended for a week or so, and the patient gets perfectly well. Of this remarkable history there are no fewer than six examples in the series; of which three, viz., Cases No. 8, 14, and 35 perfectly recovered, besides three others in which great improvement took place, but not complete recovery, Nos. 17, 23, and 41. The result of operation undertaken in the circumstances described, as a last if not almost hopeless resource, has been very remarkable, and I do not at present pretend to explain the pathological condition in any one of them. Besides, there was one case, already referred to, in which adhesions between the mucous lining of the bladder were separated by the finger, Case No. 12; one case of division of the neck of the bladder, which was extremely tight and rigid, Case 41, which was greatly benefited; and one case of hæmaturia, in which the surface of the mucous membrane was studded with numerous minute villous papillæ; removed by scraping, followed by applications of caustic, No. 37, and in which, five months after operation, there has been no sign of return.

I cannot but hope that the results reported in these cases may lead to a further employment of this simple operation in cases of like obscurity, feeling sure that much valuable relief to suffering, as well as prolongation of life, may be attained by a judicious application of the proceeding.

BEQUESTS AND DONATIONS.—Mr. Robert Hunter, of Dalhousie Chesters, farmer, has bequeathed £8,000 to the Edinburgh Royal Infirmary. —Mr. Stoneham, of Ilfracombe, has bequeathed £1,000 to the Tyrrell Cottage Hospital. —The Rotunda Hospital, Dublin, has received £1,000 under the will of Mr. James Benjamin Hall. —The British Home for Incurables has received £1,000, and £68 interest thereon, under the will of Miss Martha Grant; £1,000 from "Miss M. H. F.," for the endowment of a bed in memory of a relative, and £250 from Major H. Thurlow and Captain Ernest H. Thurlow. —Mr. J. H. Andrew has given £500 to the Sheffield Public Hospital. —The Norfolk and Norwich Hospital has received £500 under the will of Miss Spencer. —The National Hospital for Consumption, at Ventnor, has received £500 under the will of Mr. Samuel Lancaster. —Messrs. Marshall and Snelgrove have given £210, and Miss Mary Doxat £100, to the Middlesex Hospital, in aid of the funds for the new buildings. —Mr. James Gingell, of Whitechapel and East Ham, hay-factor, bequeathed £100 each to the London Hospital, the Samaritan Hospital in connection therewith, the Eastern Dispensary, Leman Street, and the City of London Hospital for Diseases of the Chest.

CLINICAL REMARKS

ON CASES ILLUSTRATING THE ESSENTIAL IDENTITY OF PROGRESSIVE MUSCULAR ATROPHY AND PROGRESSIVE BULBAR PARALYSIS.¹

By J. MAGEE FINNY, M.D. Univ. Dubl., F.K.Q.C.P.I.,
King's Professor of Practice of Medicine in the School of Physic; Clinical Physician to Sir Patrick Dun's Hospital.

(Concluded from page 1133.)

CASE II.—James C., aged 39, married, labourer in the country, was admitted under my care in the City of Dublin Hospital on May 5th, 1882. The patient, in the first instance, sought advice from my colleague, Dr. Fitzgibbon, the surgeon on duty, as his friends thought he was suffering from some tumour or abscess of his tongue, which interfered with his speech. Dr. Fitzgibbon, recognising the nature of the complaint, requested me to take charge of him.

Nine months previously, the patient's friends noticed a peculiar change in his speech, which gradually became so bad that they could not, without great difficulty, understand him. In January (1882), the patient noticed a weakness and loss of power in his hands, so that he was not able to dig and do other heavy field-work, but he continued to do light work, as driving horses and tending cattle, up to a couple of months before admission. His wife considered his present illness due to the fact of his having been engaged in working in a drain for some time last year, as while thus employed he had often to stand for hours in wet up to his body.

There was no history of his having had any previous illness, or syphilis. He had had six sisters and one brother, and, though the former were dead, he was not aware of their having had any affection like his.

On admission, the patient was a small man, fairly nourished, and, except in the regions affected by paralysis, presented nothing abnormal. His gait was unaffected, and he was able to walk well; but, when doing so, he kept his head bent forward, and turned his body when he wished to look to either side. This peculiarity seemed due, not to rigidity, but to weakness of the cervical muscles. His face presented a great contrast in its upper and lower halves; the former was bright and intelligent, and at times cheerful; the latter was vague, expressionless, and had a sad drawn look. The lips, which lay apart, were thinner than normal at the outer side, though thick in their middle, and the saliva ran in continuous streams from the sides of the mouth, unless constantly wiped away. There was also complete inability to whistle, smoke, spit, or to puff out his cheeks. On asking him to put out his tongue, he was unable to make its tip pass the front teeth. His efforts to comply with the request were very strange, and always the same, no matter how often he made the attempt. He would open the mouth very wide, and draw down the chin with his hand, receding his head at the same time, as if by this expedient the tongue would remain protruded. He could not raise the tip to the upper teeth, nor to the palate, and had very slight power in a lateral direction. It generally lay helpless in the bottom of the mouth. The organ was remarkably smooth in front from an atrophy of the papillæ, and was seemingly shortened, due probably to the inability to protrude it, and also from atrophy of its substance. It was raised in lumps in several parts, and particularly along the sides. This grooved and unequal appearance was also due to the atrophy of its substance. Fibrillary movements were plainly visible along its left side and near the tip. Its sensibility was unimpaired, and taste was normal. Speech was very indistinct, while the pitch of the voice was high and loud. Some few monosyllabic words he could make a fair attempt to pronounce, but any approach to a dissyllable or a sentence ended in a confused jargon. There was no aphasia, as he could correctly name each object shown him, and describe his symptoms sufficiently to make himself understood, partly by sounds which resembled words, and largely by gesticulation. In going through the letters of the alphabet, the letters E, K, N, P, and Z, seemed the most difficult to pronounce. As he was illiterate, his powers of reading and writing could not be tested. The power of mastication was not lost, but the food passed quickly, without almost any chewing, from presumably the inability of the tongue to roll it under the teeth. He drank but little at a time, and then did so by throwing the liquid well back, and gulping it down.

The palate, to all appearances, seemed unaffected, as, in touching

¹ Read before the Academy of Medicine in Ireland.