the right side of the bladder, overhanging the right ureteral orifice, a small epitheliomatous growth. The base was red and fleshy; the surface phosphatic, crusted, and taggy with ulceration (Photo. 6). A trickling stream of blood found its way slowly down the irregular furrows on the face of the growth, and poured into the orifice of the right ureter, whence it was turbulently ejected by the swirl of urine propelled from that orifice. The growth was so characteristic and the base so sessile that no operation was advised, and the patient died from exhaustion two months afterwards.

CASE XV.—J. A., aged 75. Symptoms of pain and frequency for one month; hæmaturia of one week's duration. Cystoscopy revealed a flat very slightly raised epitheliomatous ulceration at the right ureteral orifice, its area being about that of a sixpenny piece.

The conclusions derived from the consideration of these cases relate to—

1. *The Relative Frequency of Benign and Malignant Growths.*—Sir H. Thompson has said⁸ that "villous growth (papilloma) is in fact of all varieties that which most commonly affects the bladder." This, I would submit, is not supported by the statistics of the removal of vesical tumours, which show a very large percentage of recurrences; nor is it warranted by the number of "cures" effected. Thus, out of 29 cases, Sir Henry Thompson records 5 complete cures.⁹ Again, Guyon¹⁰ has reported 22 cases of vesical growths upon which he has operated, and only 3 of these were benign. My own list for this last year comprises 20 cases of vesical growths, and only 2 of these were benign. Moreover, in preparation of the Jacksonian Prize Essay I examined the various museums of Europe, and found 150 to 200 cases of carcinomatous vesical growths without difficulty, but only about 50 specimens of undoubted¹¹ papillomatous growth.

2. *The Onset Symptom.*—Professor Gross,¹² in attempting a differential diagnosis between malignant and benign growths, asserted that if the hæmaturia preceded, with long intervals of rest, the irritability and pain, the tumour was probably of the benign type; and, on the contrary, if irritability and pain appeared first, the growth was usually malignant. This statement, which has been freely recopied, is, I believe, inaccurate and misleading. Most of the 15 cases I have quoted and examined comparatively early, say, within two years of onset, have had painless hæmaturia as an onset symptom; and from these and other cases I am led to believe that the onset of hæmaturia is determined rather by the softness or delicacy of the growth, and the degree of traumatism to which it chances to be liable from its position in the bladder, than by its malignant or benign character. Moreover, the pain and irritability depend more upon the provocative power of the growth to excite reflex action than upon its nature. Thus a firm benign growth, situated nearer the orifice, or so pedunculated as to readily engage the sensitive neck, will excite pain and irritability at an earlier period; or, again, any growth, by inducing localised cystitis, will evoke similar symptoms. I cannot but believe that this mistake has probably arisen from comparing symptoms due to a hard infiltrating growth which irritates and stimulates the muscular wall long before it bleeds with those induced by typical villous papillomata.

3. *Site.*—Vesical carcinomata originate usually on the posterior wall, usually just behind the ureteral orifices or the interureteral bar, and grow towards the best blood-supply.

I am indebted to Mr. D'Arcy Power for kindly examining and reporting upon various growths, and to Mr. Collings, of New Bond Street, for rapidly and artistically photographing my clay models.

ITALIAN UNIVERSITIES.—The total number of students in the universities of Italy in the present scholastic year is 16,055, as against 16,663 in 1887-88. Among these there are 5,498 students of medicine, 1,697 of pharmacy, 28 of "minor surgery," 680 of obstetrics (midwives), 151 of veterinary surgery, and 1,919 of science.

ADULTERATION IN THE CITY.—Dr. Sedgwick Saunders complains in his report of the inadequate penalties inflicted in the city for adulteration offences as compared with other districts.

SPINAL LOCALISATIONS AS INDICATED BY SPINAL INJURIES IN THE LUMBO-SACRAL REGION.¹

By WILLIAM THORBURN, F.R.C.S.ENG.,
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By comparing a number of clinical records of cases of spinal injury, I have endeavoured to obtain some conception of the functions of the various nerve-roots of the crural plexus. In the JOURNAL for December 22nd, I have shown how such information can be obtained in the cervical region, and I now turn to the plexus supplying the lower limb. The difficulties are here greater than in the former case, owing to the greater dearth of material; the comparative infrequency of *post-mortem* examinations; the short vertical extent of the crural segment of the cord; the long intra-vertebral course of the nerve-roots, which are usually injured collectively, and the rarity of fractures implicating the various roots at their point of exit.

It now becomes necessary to obtain our information chiefly from an examination of pressure lesions of the entire cauda equina, but we are here assisted by the fact that in such lesions the inferior roots usually suffer more than the superior, so that in a paralysis or anaesthesia of unequal incidence we can generally assume that the parts chiefly affected derive their nerve-supply from a lower point than those which partially or entirely escape injury.

Our clinical material is thus of two kinds; first, injuries of the cord itself, in which, given the region of the injury and the extent of the paralysis, we can deduce the region of origin of the affected roots; and secondly, injuries of the cauda equina, in which we may localise the more completely paralysed nerves at a lower level than those which escape.

I have submitted to an analysis a number of cases of spinal injury belonging to both of these classes, and have been able to arrive at certain conclusions as to the functions of the various nerve-roots, which are summarised in the following table.

Root.	Motor Distribution.	Sensory Distribution.
First lumbar	None	Ilio - hypogastric and ilio-inguinal nerves.
Second lumbar	None.	Outer(?) and upper part of thigh.
Third lumbar	Sartorius	Anterior aspect of thigh below second lumbar.
Fourth lumbar	Adductors of thigh	Anterior part of leg.
Fifth lumbar	Flexors of thigh	Part of back of thigh.
First sacral	Extensors of knee	A narrow strip on back of thigh; back of leg and ankle; sole; part of dorsum of foot. Perineum; external genitals; inner and upper part of back of thigh.
Second sacral	Abductors of thigh	
Third sacral	Hamstring muscles	
First sacral	{ Calf muscles } { Glutei } { Peronei } { Extensors of ankle } { Intrinsic muscles of foot } { Perineal muscles (except levator ani) }	Nervi erigentes
Second sacral		
Third sacral		
Fourth sacral	Bladder and rectum	—

This table gives only the results derived from information of the nature above specified, and I omit all mention of certain functions which, although their existence is beyond doubt, are not demonstrable by the cases. Thus, the second lumbar nerve certainly sends motor branches to the cremaster, but as none of my cases illustrate this point, I have omitted all mention of them.

The conclusions arrived at will be seen to be, in the main, consistent with those obtained by the experimental and other methods, as well as with those of previous clinical observations, but a much more extended series of accurate clinical records is required before we can finally establish the details of localisation. The present paper proposes only to raise these questions, not to give a complete answer to them, but the growing importance of an accurate knowledge of spinal localisations, in view of the possi-

¹ Abstract of a paper read before the Manchester Medical Society, on March 6th, 1889.

⁸ *Diseases of the Urinary Organs*, Eighth Edition, p. 411.

⁹ *Ibid.*, p. 426.

¹⁰ *Leçons Cliniques*, 1888, vide the JOURNAL, December 8th, 1888.

¹¹ Author's Jacksonian Essay Prize, 1888.

¹² *Diseases of the Urinary Organs*, Third Edition, p. 146.

bility of operative interference in lesions of the cord, appears to me to warrant the publication at the present time of the above scheme, even should it prove not to be strictly accurate in all details.

A CASE ILLUSTRATING THE VALUE OF SURGICAL TREATMENT OF PULMONARY CAVITIES.

By J. DELPRATT HARRIS, M.R.C.S.,
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A GENTLEMAN, aged about 33, in the winter of 1887, about December, having for years passed cloudy urine, with mortar-like pieces of calculous material, and albumen, from the left kidney, developed symptoms of renal abscess. The abscess broke in four or five places in the back on the left side, and discharged much matter and watery fluid. Throughout the months of February and March, 1888, these wounds were thoroughly drained by india-rubber tubes, and well syringed with disinfecting lotions, and under this treatment the wounds gradually healed, with the exception of one place, which allowed a few drops of thin watery fluid to escape throughout. The patient, being now convalescent, was sent to the seaside to complete his recovery.

Up to this time, March, 1888, there was nothing whatever to point to any pulmonary trouble. The matter which came from the fistulous passages was never particularly offensive. On his arrival at the seaside he was seized with a rigor, and, having remained there short of a week, he returned on March 18th. The cause of the rigor was open to some doubt at first, and it was thought to be probably due to a fresh abscess formation around the left kidney. But in a few days (about two) shortness of breathing, with cough, came on, and it was then evident that the left lung was in a state of pneumonia. At the same time the old wounds in the back broke open, and discharged copiously the same thin matterly fluid; this they continued to do throughout the remainder of the illness.

At first the pneumonia seemed disposed to run a favourable course, but, by April 24th, profuse night-sweats, dyspnoea, amounting to orthopnoea, urgent cough, and other symptoms raised the fear that the exudation, instead of undergoing resolution, would break down and form one or more abscesses. During the month of May, 1888, every care was taken of his general health, but emaciation took place rapidly, accompanied with incessant hacking cough, with considerable expectoration, which towards the end of the month became foetid. There were now all the physical signs of a cavity of the lung posteriorly, just below the angle of the scapula and to its inner side. Pectoriloquy, both spoken and whispered, was very distinct, whilst crepitation could be heard at a slight distance around the point of greatest intensity. During the month of June egophony occurred below the point where the pectoriloquy was best heard. Considerable interest attaches to the value of this sign for diagnostic purposes, but it was my own opinion, as well as that of Dr. Blomfield, who was now associated with me in the case, that the pulmonary pleura was subjected to irritation from the propinquity of the abscess walls, and that effusion had taken place to some extent; the character of the effusion we could not accurately determine, as the temperature could not be relied on, being equally the chart of abscesses around the kidney.

The patient was now in a highly critical condition; the pulse never below 140, whilst the temperature kept very high (102°), and only came down when profuse night sweating occurred; and more especially the incessant cough weakened him, and the free expectoration of putrid material seemed to poison him, whilst the odour of the room was sufficiently noxious to cause *malaise* in his attendants.

Disgust for food helped to run him down, and emaciation was advancing rapidly. By the end of June, on explaining the nature of the procedure, we readily obtained his assent to the operation for exposing the pleura, and making an opening into the abscess cavity with a view to draining it through the chest walls.

On July 2nd, without any anæsthetic, the operation was done. An incision being made through the skin at the lower border of the intercostal space which ran through the centre of the area of loudest pectoriloquy, an aspirating needle, with bottle attached, was plunged in to a depth of three or four inches. This was done

gradually, the sharp point being retracted. Matter flowed freely through the tube. The tissues were now cut through down to the pleura. The latter was cut through, and found slightly adherent to the pulmonary pleura in places; the lung seen, and a scalpel thrust in, using the aspirator needle as a director. A drainage tube of silver was used at first, shaped like a tracheotomy tube, but flat. This was found too short, and on the fourth day a piece of gum elastic catheter was introduced, not less than six inches in length, for it was evident that the cavity had been opened at its extreme lower limit, and the way the elastic catheter slipped in showed very clearly that the cavity was of more than one inch in diameter, possibly more than two. The amount of discharge which came away during the first few days was quite surprising, being enough to thoroughly saturate the Lister dressing applied. The cavity was daily syringed out with very weak solution of carbolic acid, until the fœtor was somewhat checked, when Sanitas fluid was substituted, mixed with warm water. It was most noticeable how the cough seemed to cease after the counter opening was made, as soon as free discharge occurred through the tube.

The tube was kept in for one month, when a rubber tracheotomy tube was substituted. At the end of the second month the tube was removed, and all discharge ceased. The cough was quite gone, and the wound quickly healed. Large tracts of the lung, previously dull to percussion and impervious to air, recovered themselves. The patient gradually regained two stone in weight, and the renal fistulæ in the back healed a second time; and at Christmas, 1888, only one small aperture existed, the patient being about to resume his employment.

The fact of this case occurring in one suffering from renal fistulæ and ending successfully lends an additional interest to this mode of treating abscess cavities in the lung surgically.

NOTES OF A CASE OF SCLEREMA NEONATORUM.

By ALFRED G. BARRS, M.D., M.R.C.P.,

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ON March 6th, 1888, A. Y., aged 1 month, apparently in good health, was brought to me for an intense livid redness of the nates, corresponding pretty much to the surface covered by her napkin, and extending downwards well into the popliteal spaces. The surface, which was uniformly affected, was dry and polished, and the redness disappeared to a great extent on pressure. The appearances were obviously not due to any eczematous condition. The lower limits of the condition tailed off into papules of varying size, which had not the same characters as the general body of the disease. Looked at more closely, the change was seen to affect the parts limited above by the iliac crests; below by the lower borders of the popliteal spaces, and laterally by the line of the ilio-tibial band. Over the whole of this area the skin and subcutaneous tissue, and it almost seemed the still deeper parts, felt as though infiltrated and welded together by some solid material, producing a very close resemblance both in colour and consistency to that of an uncooked ham. The firmest pressure produced not the slightest pitting. The pudenda were not affected. The cleft of the nates had been reduced to a mere line by the mutual pressure of the two sides, converting its naturally rounded surface into a sharp rectangle. It was quite impossible to separate the skin from the subjacent parts at any point in the affected area. One or two isolated patches of a precisely similar nature were found in the right deltoid region. There was nothing in the family history, or in the child's condition, to suggest syphilis or any diathetic or local cause for the disorder. The mother stated that the condition had been first noticed on the fourth day after birth (though it might have been there earlier) on the back of each thigh, just above the popliteal space, and had gradually spread till it had attained the limits above described in the course of about ten days, since which time it had been stationary or nearly so. I ordered the parts to be protected as much as possible from any excoriation by the napkin and excretions, and half a grain of grey powder to be administered night and morning.

On March 13th, the redness was a little less marked, the surface was still dry and polished, and except that there was only a slight disappearance of the condition at its lower part, the