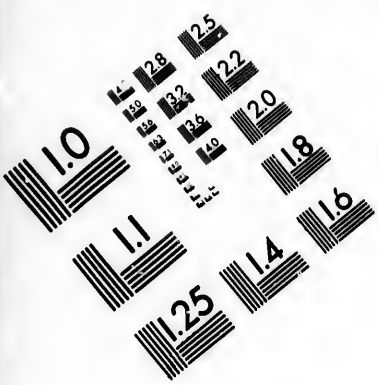

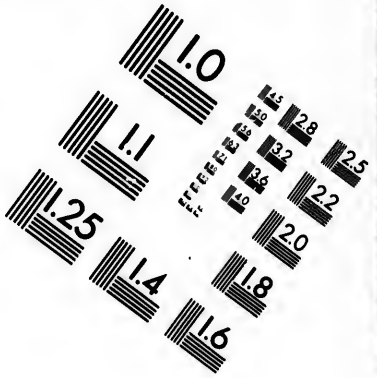

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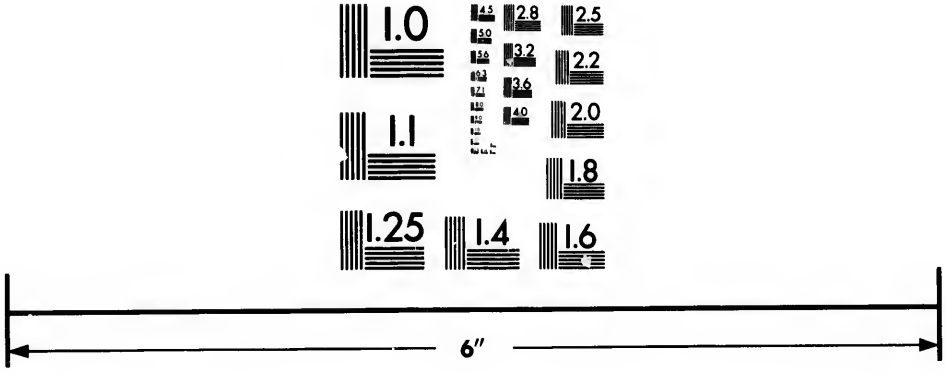

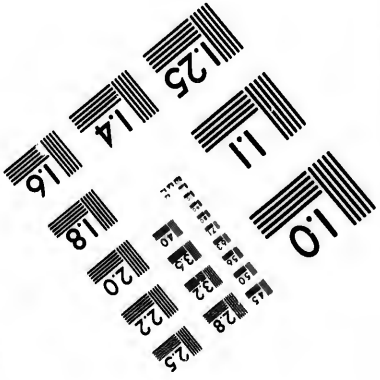

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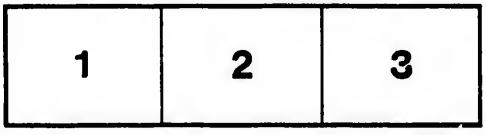

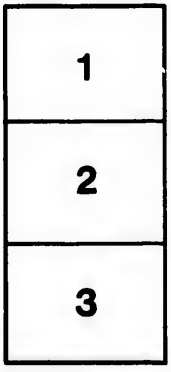

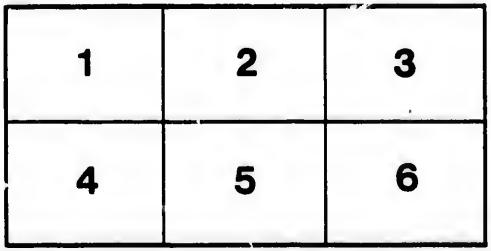

MEDICAL CASES,

BY

GEORGE ROSS, A.M., M.D.,

Professor of Clinical Medicine, McGill University; Physician to the Hospital.

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MEDICAL CASES

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GEORGE ROSS, A.M., M.D.,

Professor of Clinical Medicine, McGill University; Physician to the Hospital.

I.—*Case of Extreme Dilatation of the Stomach, caused by Pyloric Stenosis, resulting from the Contraction of an Old Ulcer.*

Mrs. D., æt. 37, a Swiss woman, was admitted into the Montreal General Hospital on the 16th December, 1878, complaining of uneasiness in the stomach, heartburn, and frequent vomiting.

Patient has always been strong and healthy until lately. The only illnesses she has ever had were ague 20 years ago, and small-pox about 15 years ago. Her youngest child was born 16 months ago. She says she was in her usual health at that time—a good appetite and no trouble in digesting her food: still she was obliged very soon to wean the infant because there was so little breast-milk. Since then she has menstruated quite regularly until three months ago. There is no reason to think that she is pregnant.

About three months ago she began to suffer from disturbed digestion; the symptoms which then showed themselves, and have since continued gradually increasing, were as follows: first a "*squeezing sensation*," as she describes it, at the pit of the stomach. It would seem as if a sense of distension were meant to be also implied. Other uneasy feelings were also experienced, but at no time anything of the nature of actual pain. A severe and constant *burning in the stomach* and up the throat. *Nausea* was often felt, and she frequently induced vomiting pur-

posely by irritating the fauces with her finger. *Vomiting* also spontaneously occurred at irregular intervals, but was uninfluenced by the taking of food. It would sometimes be absent for a period of 2, 3, or 4 days at a time, when she would bring up large quantities of sour-tasting fluids and food. Her appetite is good: she can eat meat or any other kind of food, and finds that she does not suffer more from one kind of food than another. Bowels have been extremely constipated, and have sometimes failed to act even after doses of strong medicine. Has been steadily losing flesh and strength.

Present Condition.—Much emaciated; skin harsh and dry. Tongue coated with a whitish fur, red at the tip. Pulse slow, soft, and compressible. On examining the abdomen, lineæ albicantes are well marked. Superficial veins considerably enlarged. The abdomen is distended, chiefly at its lower part. It is resonant, giving a decided amphoric note, except at the depending portion, which is dull. This dulness changes with the position of the patient. On palpation, it feels soft and elastic, like a half-filled bladder. There is no tenderness anywhere. When rapidly handled by both hands, a very loud-resounding splashing of fluid is heard. On exposing the abdomen, and watching the surface for a few minutes, it is found that, at irregular intervals, certain very distinct and constantly-repeated movements of a creeping or vermicular character are to be witnessed. A kind of heaving of the left side is first to be observed, which, whilst becoming more pronounced and rendering the part unduly prominent, gradually extends downwards and round to the right side, where it is lost. Now the contraction is at its height, and the bagpipe-like outline of the stomach is clearly traceable through the abdominal parietes. If the hand is placed on this, it feels hard and firm, like a contracted uterus, but not so solid. The greater curvature seems to extend to the pubes—the lesser to enclose a small space, which is much depressed,

and lies just beneath the inner margin of the left hypochondrium. This state of contraction remains for a few moments and then again relaxes, leaving the parts as before described. In this state, if deep pressure be made to the right of, and below, the umbilicus, a small, rather firm, and somewhat irregular lump can be made out. This, which seems to occupy the seat of the pylorus, is not at all tender upon pressure.

All the other organs were carefully examined, and no evidence of disease was anywhere discovered.

The day after admission she vomited about 3 pints of what proved to be composed principally of fluids, with a small quantity of undigested food; there was also in it a little stringy mucus. It was brownish in colour, very strongly acid, and covered with a thick layer of yeasty or frothy greyish scum. The odour also resembled that of yeast. Under the microscope it was seen to abound in sarcinæ.

She was fed by small quantities of milk and wine, frequently given, and small pieces of ice to allay the thirst, which was usually much complained of. In addition to this, enemata of beef-tea were administered every four hours. Sulphite of soda was also given to check the fermentative processes. Besides this, the stomach pump was regularly employed At the first evacuation, about a gallon of fluid, similar to that previously thrown up, was removed. The stomach collapsed into a very small space, and the tumour could be raised and thoroughly explored. It was found to be the size of a large hen's egg, very firm and slightly irregular on the surface. Under this management at first the patient's condition decidedly improved. Vomiting entirely ceased; heart-burn disappeared. The bowels acted sufficiently of themselves; but thirst and great weakness continued to be felt, and in spite of the temporary alleviation of the more distressing symptoms, it was soon evident that the nutrition of the body was

daily losing ground, in spite of diligent attempts at preventing this by rectal alimentation. The patient gradually became thinner and thinner, with a drawn, pinched, and haggard face. The greatest possible muscular prostration and feebleness were witnessed; the mind showed evidence of a starving brain by a mild delirium, and, finally, she died exhausted on the 2nd February, 1879.

Autopsy—Body extremely emaciated. Belly slightly protuberant. Skin rough and harsh, and presents a few petechiæ. On opening abdomen, an enormously dilated stomach is seen almost filling the entire cavity, occupying all the regions except the right hypochondriac and part of the umbilical. The organ is placed somewhat vertically, and passes down to within 4 centimètres of the pubes, where it turns into the right inguinal region, and terminates in the pylorus, about 5 centimètres to the right of the navel. The greater curvature is, of course, the most prominent—only a small part of the lesser curve is seen, the upper portion being covered by the left lobe of the liver. The only part of the intestines to be seen are the transverse colon, wedged between the stomach and the pubes, the caput cœci, and the first portion of the duodenum.

Stomach removed and laid on table measured 45 cm. in length, 19 cm. in breadth at the middle, and 21 cm. in breadth in the pyloric region. It contained 5 pints of a dark grumous fluid, in which were 35 large plum stones, numerous orange pips, two date stones, and a number of smaller seeds. Capacity of organ, measured with water, about 8 pints. Œsophagus dilated in lower two-thirds. When slit open, upper part natural-looking. Red muscle-fibres extend down from pharynx fully three inches from cricoid cartilage. The mucosa of lower half, particularly on posterior side of the tube, presents a number of irregular losses of substance, the transverse muscle-fibres are exposed, and there is scarcely any normal mucous membrane, the strands between the ulcers being firm and cica-

tricial-looking. Stomach itself preserves its normal shape and colour, and numerous bands of muscle-fibres can be seen from the outside, the majority passing transversely, some longitudinally along greater and lesser curves. At the pylorus there is a firm, puckered mass, the tissue being white and cicatricial. The muscular coat is considerably thickened, 5 to 8 m, most so at the pylorus. On turning the organ inside out, the mucosa is pale, thin, and cuticular in character in fundus and cardiac regions; thicker and more natural-looking in pyloric half, where it is also mammillated; at the cardia it is easily torn; at the pylorus it is firmer. Thickness varies from 2 to 5 m. Through the mucous membrane numerous muscle-fibres can be seen crossing each other in all directions. Immediately at end of lesser curve there is a semi-circular ulcer 4·5 cm. in length, 2 cm. in breadth; its convex border towards the cardia; edges shelving and smooth; base fibrous and hard, and the tissues beneath and around it are much thickened. It is situated close to the pylorus, and has puckered the mucous membrane in such a manner that several folds appear completely to close the orifice, but the index finger can be inserted as far as the first joint. The entire ring is involved in a cicatricial thickening, particularly in the part nearest the ulcer. From the duodenum the orifice also appears closed by folds of the mucosa. On the peritoneal surface of the pylorus, and about the base of the ulcer, the tissue is fibrous, and a constriction is seen at the anterior surface.

There was nothing of note in the other organs beyond the extreme pallor and wasted condition.

Examination of teased portions of the mucosa of the stomach shows, in the cardiac region where the membrane is cuticular in character, scarcely any trace of normal gland tissue, only irregular groups of cells, in a condition of fatty degeneration, sometimes arranged in tubular form. In the thicker portions, the tubules are distinct, but the cells are

very granular and fatty; some of the tubules apparently are made up of nothing but a granular débris.

Remarks.—The diagnosis of this case, as far as regards the dilated stomach, was of course easy. At the time of admission, the degree of distension was so great, and the peculiar alternating contractions of the organ so marked, that the stomach was plainly mapped out in a manner that made it impossible to mistake it for anything else. It was easy enough, also, to arrive at the conclusion that pyloric constriction was the proximate cause of the changes witnessed in the gastric walls. The fact that this is by far the most frequent cause, and that we had an evident lump at or near the pylorus, both pointed clearly in this direction. The only remaining question therefore was: the nature of the stenosis. I may say at once that after fairly examining the case, the conclusion I arrived at was, that it was one of Fibroid thickening of the Pylorus. The autopsy confirmed the fact that the pylorus was narrowed by the contraction of a new growth of fibrous tissue, but it showed us also, what we did not know, that the origin of the fibrous growth lay in the formation of such tissue for the cicatrisation of an old gastric ulcer of very considerable size. Now this patient was most carefully questioned with reference to her past history, with especial reference to this very point. She denied *ever* having suffered from gastralgia, or vomiting, or other dyspeptic symptoms in former years. This being the case, I excluded ulcer. It would, as I now see, have been wiser to admit the possibility of a long-previous ulcer, which had declared itself by no symptoms—another proof of the possible latency of this disease

With reference to the treatment of these cases by the stomach-pump, or, perhaps, preferably, by the stomach-syphon, I should say that I am impressed with the correctness of the views expressed by Kussmaul and others on this subject. I am convinced that this woman was greatly re-

lieved of many distressing feelings by having her stomach freed from a great load of fermenting fluids, although I think it may fairly be doubted whether in this case life was actually prolonged. These cases of distended stomach are generally of a most hopeless nature, even apart from the too-often malignant nature of the obstructing cause. This being so, we should certainly be ready to employ all measures calculated to ensure greater comfort to the patient, although these do not enable us to modify the ultimate prognosis.

II.—*Case of Cirrhosis of the Liver with great Enlargement, characterised by Jaundice, Fever and Hæmorrhages.—Death.—Autopsy.*

Margaret Macaulay, æt. 22, was admitted into the Montreal General Hospital on the 21st October, 1878, with intense jaundice, and complaining of severe abdominal pain and vomiting.

Her family history is good. There are no indications of tubercle, cancer, or syphilis.

Patient is a medium-sized, tolerably well-nourished Irishwoman. Has been married for 2½ years, but has had no children. Has always been regular up to 4 months ago, since which time she has "seen nothing"; but does not think she is pregnant. With the exception of the usual diseases of childhood, has always enjoyed excellent health until the month of June last. She has, however, been addicted to considerable excess in the use of alcoholic liquors. About the time just mentioned, she was observed to be somewhat sallow, and especially was there yellowness in the ocular conjunctiva. Her urine also was dark in colour, and she vomited a little, more particularly in the mornings. Several times the vomited matters contained blood, and once in July, according to the statement of her husband, as much as a large bowl-full of black clotted

blood at once. Thus she continued during the remainder of the summer—sallow, rather weak, without appetite, and with occasional vomiting; urine scanty, dark in colour, and frequently voided. Did not lose flesh to any material extent. About the 1st October felt worse, and vomited pretty frequently, principally fluid matters (she calls it water-brash). On the 9th inst. she had several chills, and was very feverish in the intervals; vomited bilious-looking fluids constantly. Jaundice soon became well marked all over the body. There was also very great pain, principally across the upper zone of the abdomen (the situation of greatest intensity being in the epigastrium), but felt more or less over the whole abdomen, and sometimes also between the shoulders. The pain was constant, not paroxysmal, and aggravated by movement. The symptoms as described—pain, thirst, vomiting, jaundice and fever—have persisted from their commencement until the time of her admission; but there have been no more chills at any time. For a few days previously, also, she has had a troublesome, dry, hacking cough. Patient feels dull, heavy, and weak, but has no headache. She has never been troubled with itchiness of the skin. Thinks she has grown slightly thinner since this illness began.

Upon examination the following notes were made: Intense jaundice of deep, bright yellow colour. Abdomen full and rounded, markedly more so upon the right side. Some large distended blue veins are seen ramifying over the right lower costal cartilages, and also on the sides of the abdomen. Lineæ albicantes well marked. By palpation and percussion it is found that there is great enlargement of the liver, its lower edge extending below the umbilicus, and down to the anterior iliac spine. The surface is smooth, and feels hard, but the lower margin seems slightly indented. It is everywhere tender upon pressure, but most so at the epigastrium and on the lower edge. There is also great tenderness in the splenic region. The

dull area is very extensive, occupying from the fifth rib to below the umbilicus, across the epigastrium, and through the lower costal cartilages on the left side, but not below them. The edge of the spleen cannot be felt. There is no sense of fluctuation in the abdomen, nor any dulness in dependent parts.

The bowels are constipated, and she says the motions have been black. The tongue is very slightly furred in the centre; ver[illegible] red at the tip and edges.

The urine is scanty, high-coloured, and turbid, and deposits, on standing, a copious sediment of a brownish-grey colour. Sp. gr., 1020; contains ¼th by volume of albumen. On applying heat and nitric acid the urine becomes of a decided *olive* tint, and the albuminous deposit is deeply stained of a dirty green colour; no sugar. Decided reaction for bile-pigment. No reaction with Pettenkoffer's test. Under the microscope, great numbers of scattered epithelial cells and broken-down débris, together with numerous epithelial tube-casts. All these foreign matters are deeply stained of a bright yellow colour.

Her pulse was 120; skin dry, and temperature 103° F. The chest was examined, but no abnormal physical signs observed.

To avoid detailed report, the following extracts from the record may suffice: The *fever* continued for one week, the temperature ranging from 99·5° F. to 102° F., after which it gradually fell, and became even slightly subnormal. The alvine evacuations were regular, and always greyish or almost colorless. Very much abdominal pain constantly complained of, with persistent tenderness. The vomiting was soon checked by effervescing alkalines. Cough became very troublesome, and destroyed rest at night, but no physical signs ever appeared in the chest. On the 28th she became aphonic, with noisy laryngeal breathing, for which an inhalation was given. On Nov. 2nd urine was scanty (8 ozs.), though she was taking digi

talis, and was bloody, also containing a few clots. Sharp epistaxis occurred, necessitating plugging with tannin. In the evening, sudden suffocative symptoms showed themselves. A laryngoscopic examination revealed the fact that a firm, dark clot of blood was filling the larynx. A sudden expulsive effort brought this away entire, with complete relief to the breathing. She had been, however, getting very prostrate; epistaxis recurred; there was some hæmaturia, very little urine being passed; a little blood passed by the bowels, and she gradually sank and died on the morning of November 3rd.

Autopsy.—Liver much enlarged; flattened from above downwards. Colour, pale yellow. Firm to the touch, and on the surface a number of radiating veins. Weight, 3080 grammes. On section, it cuts with remarkable firmness, considering its colour and manifest state of fatty degeneration. The surface of the section is of a light yellowish-brown colour. No trace of lobular blood-vessels, large or small. On examining with a low-power lens, each lobule is seen to be surrounded by a zone of light-greyish translucent tissue about ·5 m. in thickness. The centre of each lobule is of a brown colour, from accumulated bile-pigment; the periphery of an opaque dead white, from the presence of fat. Here and there an entire lobule is seen to be in this last condition. There is no puckering on the surface of the organ, nor are there any areas where the fibrous tissue is more abundant than usual. Biliary ducts free, and of natural appearance throughout. Gall-bladder contained small quantity of dark, viscid bile.[1]

Kidneys were large, soft, and mottled; dark red in colour. Section greenish from bile-staining. Substance remark-

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1 On microscopic examination, Dr. Osler found a condition of advanced cirrhosis; the new growth being chiefly about individual lobules—monolobular—and in many instances extending into the acini between the cords of liver cells. There is no special development of bile canaliculi in the new tissue. Liver cells fatty.

ably swollen and flabby: outlines of the pyramids not distinct. General colour, reddish. Whitish lines of fatty degeneration are seen along the tubules and extending into the cortex. The pyramids are of deeper colour than the cortex, and in these also groups of tubules are filled with granular matter.

The *intestines* contained dark tarry matter, like meconium

The *larynx* contained a quantity of sticky blood-stained mucus, some of which can be washed away by a stream of water. There was then left behind an extensive superficial clot extending from above the false vocal cords to the bifurcation of the trachea.

Nothing of importance was observed in any of the other organs.

Remarks.—The pathology and clinical history of Cirrhosis of the Liver with enlargement, as compared with those of ordinary contracting cirrhosis, are not yet thoroughly established; and this is my reason for contributing a case which must certainly be looked upon as affording a good illustration of many of the principal characteristic features which have been observed in connection with it.

When first this patient came under observation, we had great difficulty in making a diagnosis, owing to the impossibility of obtaining correct data from herself concerning her past history. She refused entirely to admit of drinking habits, and insisted that, having had a slight attack of jaundice, lasting three or four days, in the month of June, she had been perfectly well until the commencement of the last illness in October. It was only some days after that, having procured an interview with her husband, we were able to substantiate the facts as given above. Previously to this, the opinion held was that it was probably a case of suppurative phlebitis of the liver, arising from some unknown cause. This idea was based upon the (then supposed) acute nature of the attack, with chills

and fever; the enlarged liver, with great pain and tenderness; and the jaundice, with absence of ascites. When, however, we learnt of previous hæmatemesis, with an ingravescent jaundice of some months, cirrhotic enlargement was confidently diagnosed. Murchison says that these cases frequently die with jaundice, hæmorrhages, and symptoms of blood-poisoning. This was exactly what was observed in this case.

It is now generally admitted that this disease is essentially different from chronic atrophy or contracting cirrhosis. Certainly the course and character of the symptoms, as here exemplified, were entirely different from that seen in the common alcoholic disease. In the first place, its rapidity was much greater. In six months from the first indications of hepatic disorder, the patient died from its exhausting effects. In the other, usually many months or years elapse. Ascites is one of the prominent and almost constantly present symptoms of the small liver, whereas here it was entirely absent, although the changes in the liver existed to a marked degree. Of course this may have been exceptional here, as it may be equally in the disease with shrinking. I have recently been shown by Dr. Osler the liver of a woman in a most advanced condition of fibroid atrophy. She had died of pneumonia, and there had been no ascites or other symptoms referable to the liver. Marked jaundice would seem to be the rule in the one, whilst in the other it does not occur at all, except from casual pressure upon the excreting ducts by contracting nodules. In consequence, also, of the blood-changes induced by the intense jaundice, tendency to hæmorrhage in distant parts (not mechanically produced, like hæmatemesis, &c.,) are more frequently met with than in the common disease. In this case, fever was a prominent feature at the outset. The reason for so much febrile disturbance I do not quite understand. Dr. Murchison speaks of symptoms of blood-poisoning, but I read this to mean

such as we see in cholæmic states during jaundice from various causes (which are essentially non-febrile), and not such as would occur from any septic derangement of the blood from the entrance of septic matters. I think, possibly, the renal disease, of which there was abundant evidence, was to some extent accountable.

III.—*A Case of Athetosis, or Unilateral, Slowly-moving, Spasm.*

Frederick T., æt. 20, was admitted into the General Hospital on the 28th September, 1878. He was sent from a town in Ontario to be treated for some trouble remaining in his chest after an injury. It may be as well to mention the facts concerning this shortly now, as it is desired to draw attention specially to the nervous affection of which he was found to be the subject. About four weeks previously he had, through the accidental explosion of a revolver, received a bullet wound in the sixth interspace of the left side, beyond the nipple. There was no wound of exit. He did not lose very much blood, but had suffered from a good deal of pain in that side. For some time before admission he had had occasional chills, followed by feverishness, and had occasionally sweated. His appetite was very poor, and he felt weak. Physical examination of the chest determined the presence of a considerable quantity of fluid. Its traumatic origin and the subsequent febrile symptoms indicated the probability of the occurrence of suppuration. After waiting, therefore, a few days for the purpose of observing the patient, with the assistance of my colleague, Dr. Roddick, the left chest was opened by incision, and about 20 ozs. of very fœtid, somewhat sanious pus removed. A drainage tube was passed, carbolized and other disinfecting injections were regularly employed, and complete recovery followed, with, of course, some retraction of the side.

He was observed to be the subject of an unusual spas-

modic condition of the right limbs. The following history was therefore taken of the case :—

His father is alive and well, but a drunkard. Mother died when he was an infant. Has only two sisters, both of whom are healthy. As far as can be ascertained, there is no account of neurotic disease in the family.

As long as he can recollect he has been lame in his right leg and weak in the right arm ; has no idea how or when this came on, but says he has always been so. Has, in consequence, never been able to do any heavy, manual labour, but was employed to do the light work about a house. Knew that his right leg was shorter than the left. The limbs of the right side, he states positively, were only *weak;* there never were any movements or twitchings in the muscles. Apart from this he has always been hearty and well. Has never had any illness except smallpox, two years ago. Four weeks ago he met with the accident above related. Ten or twelve days subsequently, and whilst he was suffering a good deal from the side, his right arm and leg were suddenly seized with active, continuous spasmodic movements. He says that the limbs jerked violently and continuously in this way for a length of time, so much so that his friends were alarmed, and endeavoured to restrain the limbs by fastening them with bands to the sides of the bed. He never lost consciousness, and is not known to have had any kind of fit. This condition of clonic spasm gradually wore off, and then for the first time he began to notice that the peculiar motions of fingers and toes about to be described were more or less continually present.

On examination, the following notes were made : Patient is a rather delicate-looking and pale lad, somewhat marked by smallpox. It is evident that the limbs of the right side are shorter and somewhat less developed than those of the left side. This fact is better shown by the following measurements :—

RIGHT ARM.		LEFT ARM.	
Humerus	11¾ in.	Humerus	12½ in.
Ulna	8½ "	Ulna	9½ "
Girth, Mid. Humerus	7½ "	Girth, Mid. Humerus	8¾ "
" " Forearm	7¼ "	" " Forearm	7½ "
Hand—Length	6½ "	Hand—Length	7½ "

RIGHT LEG.		LEFT LEG.	
Antr. Spine to head of Fibula.	16½ in.	Antr. Spine to head of Fibula.	17½ in.
" " " inner Malcolus	31½ "	" " " inner Malcolus.	33 "
Girth, Mid. Thigh	11¾ "	Girth, Mid. Thigh	13 "
" " Calf	9 "	" " Calf	10¼ "

Whenever this patient is awake, peculiar slowly performed movements are going on in his right arm and his right leg. These occur independently of his will, but can be partially controlled if the limb be held steadily quiet for a short time. Consequently, it is common to find him constantly holding his right hand with his left in order to keep it quiet. These motions cease entirely during sleep, except during any change of posture, when similar, but slighter, contractions are observed. It has been also noticed that at times very little motion occurs if his attention has been entirely distracted from it, but is immediately renewed by merely looking at or thinking of it again. The commonest position for the hand is that of strong flexion at the wrist, with alternate flexion and extension of the phalanges. The tendons and ligaments of the hand appear very lax, and permit of extended bendings in almost any direction, and notably backwards. The spontaneous movements, when watched, appear to consist of a series of muscular contractions, beginning in the extensors of the phalanges and, passing thence up the arm, along the muscles of the anterior region, flexing the wrist and forearm, and rotating the hand from within outwards. At the same time, there is a movement of abduction in the phalanges, all the other fingers being drawn away from the middle finger. The muscles of the arm and forearm

can be felt to contract, especially the biceps. The muscles of the shoulder and the pectoralis major also participate. All the movements are done slowly and deliberately: no jerking or hurried movement ever taking place. When directed to shut his hand, there is first extension of the fingers and flexion of the wrist; then the thumb is flexed and drawn into the palm of the hand, and the two middle fingers slowly and imperfectly close over it. The index finger remains extended, and sticking straight out; the little finger also is only capable of being partially bent down. With any degree of effort of the will, it is only possible for him to retain the hand thus closed for a few moments, for, in spite of himself, extension of the fingers begins again—slowly, and, as it were, with a dragging effort. And so it goes on—a similar rhythmical series of movements taking place, perhaps twice or three times in a minute. He has much more voluntary control over the muscles of the forearm and arm, and can perform all ordinary evolutions with them, such as bending the elbow, putting his hand on his head, &c. Tactile sensibility in the limb is normal. The right leg lies flat upon the bed, the foot extended and somewhat inverted. He can, with difficulty, make an attempt to flex the toes, but can readily perform any movement with the leg. Involuntary spasmodic contractions are observed to occur at short intervals in nearly all the muscles of this extremity, but not at all so strong or marked as in the upper extremity. Here there is simply a slight, but perfectly appreciable, muscular contraction, generally not sufficient to move the leg or foot. The great toe is the only part which moves much—passing slowly from extension to flexion, and *vice versâ*. These movements are quite independent of, and occur at different times from, those of the arm. Sensation is unaffected. Reflex movements normal. Tendon-reflex exaggerated, and ancle-clonus present.

This condition remained permanently, as above described, until his discharge from the hospital, after a stay of some weeks, which was required for the cure of his empyema. One notable exception, however, must be made to this statement. For the performance of the operation on his chest, he was given ether. Previous to this his pulse had been rapid, rather small, and weak; during the incision, unfortunately, an intercostal vessel was wounded, and bled very smartly, so that alarming syncope took place, and we were obliged to invert the patient and take other measures for resuscitation. As soon as the anæsthetic effect was complete, all movement ceased in the affected limbs, and *did not return* when he regained consciousness, but gradually re-appeared at the end of a week, and did not resume its customary strength and frequency for several days after.

It should have been stated that the intelligence of this patient is of a low grade. He can neither read nor write; is somewhat shy and backward; still, all his answers were clear and straightforward.

Remarks.—The condition described clearly belongs to that to which Hammond gives the name of Athetosis. Before the description by this author, this kind of derangement of motor function had already been observed, but had not received any particular appellation. It is probably useful to have some one word to designate this special condition, provided it be always understood that it is applied only to a symptom—one which may be common to several different pathological conditions. Dr. Gowers, in a most interesting paper,[1] describes a number of varieties of post-hemiplegic disorders of motion, several of the cases presenting features closely resembling those of this one, and I should like here to quote the views expressed by him of the lesions likely to cause such mani-

1 Royal Medico-Chirurgical Society's Transactions, Vol. LIX.

festations. "The symptoms," he says, "clearly point to damage of the grey matter of the brain—to local perverted nutrition of nerve-cells, in consequence of which they overact, either spontaneously or on the additional stimulus of volitional impulse, which is, by their over-action, perverted or irregularly distributed." In all, or nearly all, the cases where Athetosis has been observed, there has been hemiplegia, or, at any rate, some degree of hemiparesis. In the present instance, it would appear that some cerebral trouble had occurred in early infancy, the nature of which it would be impossible now to say, but which led to partial loss of motor power in the limbs of the right side, and to arrest of their growth and development. It is clearly cerebral, and not the result of infantile spinal paralysis, because of the general and even distribution of the paresis and the entire absence of wasting or complete paralysis of any muscle or group of muscles. A remarkable feature is the fact of the onset of the athetosis only after the chest-wound. I can only explain it by supposing that the shock of the accident, together with the very considerable pleuritic pain he afterwards suffered, so acted upon the damaged portion of the brain and its immediate surroundings as to set up first a condition of genuine clonic spasm, without epileptic loss of consciousness, and then left behind it "a state of perverted nutrition of certain nerve-cells," which caused this over-action which is productive of these determinate movements.

IV.—*A Case of Acute Spinal Paralysis in an Adult (Poliomyelitis anterior acuta).*

E. L., æt. 20, machinist, was admitted into the Montreal General Hospital on October 15th, 1878, with paraplegia and emaciation.

His family history is good. His father was killed in an accident. His mother and several brothers and sisters all enjoy good health.

Patient was always strong and vigorous as a boy. Has never had syphilis. At ten years of age had smallpox. With this exception had no illness whatever, but continuous good health until eleven weeks ago. At this time he felt, for about two days, that he was not very well, but did not complain, and continued his work as usual. On the third day he was taken ill whilst at work, and was obliged to return home and lie down. He suffered then from rather severe headache (principally frontal) with general pains, considerable feverishness and complete loss of appetite. After two days he felt a numbness in the soles of his feet, which sensation kept increasing until it was present in a high degree. After some days longer similar numbness was felt in the palms of the hands and inside of the fingers, and he thinks his legs were getting weaker, but he could move them about freely in the bed, and was able to stand and walk until about the twentieth day, when he had a fit of some kind, followed at short intervals by several more, so that within about eighteen hours he had six fits. During the fit he is described as first stiffening up his limbs and then presenting much clonic convulsive movement. He was quite unconscious during the attacks, and is said to have breathed heavily for some time after, as though stertor had been present Thinks he first noticed after this that his legs were so feeble that he could not stand upright; is sure that if then the attempt had been made he would have fallen to the ground. Noticed also that his arms and hands soon became markedly enfeebled, so much so that he could not grasp or hold even a very trifling object. At the same time, moreover, a marked change took place in the sensations experienced in his hands and feet. These parts, from having previously, as stated, been feeling numb, became now the seat of severe darting pains—these were much worse in the feet than in the hands—sudden stabs of a most excruciating nature would dart

from the soles of his feet up the backs of his legs, and cause him to scream with pain; but the hands still felt somewhat numb. If anything touched or struck against the ends or insides of the fingers, he would experience violent shooting pains all the way up to the shoulder. But the pain rarely occurred spontaneously in the upper limbs. The soles and sides of the feet also evidently became exquisitely hyperæsthetic, for he says he could not permit of even the lightest touch upon these parts without a sense of great suffering. During this time he had been rapidly losing flesh. Has throughout had complete control over both bladder and rectum. After lying in bed in this helpless and painful condition for about two weeks longer (*i.e.*, about the fifth week of his illness), it was first observed that his knees were becoming somewhat drawn up. He soon began to improve, and thinks he has much more power in the limbs now than he had some weeks ago. The pains have gradually subsided, and are now nearly gone.

On admission his condition is as follows:—He is very much emaciated, somewhat pale, and wears a look of pain upon his face. He lies upon his back, with both legs moderately flexed at the knees. Any attempt to straighten them gives pain. He can, in bed, move the limbs in any given direction—the knees can be only partially extended owing to the contraction mentioned—but with this exception he can use all the muscles of the thigh and leg. The movements are very much weakened. The grasp with either hand is extremely feeble. Tactile sensibility is everywhere normal with the following exceptions:—the skin of the sides and soles of both feet, and a considerable portion of the dorsums as well; in fact, all but a small area just in front of the ankle-joint, are markedly hyperæsthetic. The skin of the ends of the fingers feels somewhat numb, and it hurts a little still if they are struck. On scratching the soles of the feet,

there are lively reflex movements; it is not easy to judge how much of this is voluntary on account of the sensibility of the parts, but the patient declares he does not draw them away because of pain. There is no increase in the tendon-reflex, either at the ligamentum patellæ or at the tendo Achillis.

Chest organs sound. Heart only weak. The urine is pale, somewhat alkaline, deposits a good deal of white sediment of phosphates. There is no fever. Pulse 90.

Dr. Buller kindly examined his eyes, and found no definite pathological appearance, but noted a somewhat turbid state of the margins of the optic disks, which he thinks might be the precursor of an optic neuritis.

Since admission, I may state that up to the present time (31st October) this patient has improved very materially. This is most marked in the hands. Power of grasping has increased with great rapidity, being almost noticeable from one day to another. He can move the legs with greater freedom, and can also extend them much more than before. The hyperæsthesia has become much lessened, and numbness has almost left the tips of the fingers. He has a good appetite, and sleeps fairly well. He has been taking—Potass. bromid, ʒiv.; Tr. ferri. mur., ʒiii.; Aquæ ad., ʒvi.; ʒss. ter. die., and has had lin. belladon. applied to the feet.

The principal outlines of this case might, I think, be condensed in this way. A young and previously healthy man is all at once taken down with a feverish attack presenting no very special features—a feeling of sickness, headache, and pains in the back and limbs. Very soon there is added the first distinct indication of some disturbance in the nervous system in the form of paræsthesia, *numbness* in the lower extremities. The fever continues, and the numbness invades the upper extremities. After twenty days occurs a series of fits of an indefinite character, but apparently accompanied by loss of conscious-

ness. Immediately after (*i.e.*, as soon as consciousness returns) he experiences *pains* in the previously numb parts (especially in the feet) of a very excruciating character, and it is soon found that he is paraplegic. Great loss of power in the arms occurs soon after. He gets rapidly thin. The soles and sides of the feet become excessively hyperæsthetic, and the fingers are affected in the same way to a less extent. He comes under observation eleven weeks after the commencement of his illness. There is then great emaciation of all the extremities, and especially the legs. An incomplete paraplegia but no definite paralysis of any particular muscle or muscles, legs somewhat contracted at the knees, great deficiency of power in the arms. Tactile sensibility normal everywhere except on the soles and sides of the feet, which are markedly hyperæsthetic, and some numbness in the fingers on being touched. The ordinary reflex movements increased. Tendon-reflex not present. Much improvement had taken place as to power over limbs; and this improvement has continued since admission. Intellect clear. No cerebral symptoms. No implication of bladder or rectum at any time.

This series of symptoms is in itself sufficiently remarkable. I think there can be no doubt, from the paraplegic character of the attack, from its involving finally all four extremities, and from the absence of all symptoms of a cerebral nature, beyond the single attack of a spasmodic nature, that the lesion is situated in the spinal cord. Then whether, as I have been asked, the paralysis be consecutive upon typhoid fever or some other specific unrecognized febrile disease, I think the fact of the very early occurrence of the altered sensation in the limbs precludes entirely this idea. If this position, therefore, be correct, we have here had an acute spinal disorder, commencing with marked febrile symptoms, leading to a rapid and extensive paralysis of motion,

accompanied by certain disturbances of sensation, but still leaving the general sensation in the affected parts intact. There is no affection, as far as I know, which presents a similar symptom-picture except that disease which is the analogue of the one long known under the title of Infantile Spinal Paralysis. It is a recognised fact, in the present pathology of the spinal cord, that organic changes of an exactly similar nature and locality to those found in infantile spinal paralysis may develop themselves in adults; and though quite common in the former, it is exceedingly rare in the latter. It is described under the name of Acute Spinal Paralysis of Adults, and by Erb (in Ziemssen, vol. xiii.,) it is designated, from an anatomical point of view, Poliomyelitis anterior acuta.

With a view of substantiating the similarity of the case I have reported to those referred to this category, I may be permitted, as briefly as possible, to sketch from the descriptions of Erb, Hammond and others the main features of this affection of the anterior gray horns as seen in children and in the adult. Which done, I shall only add a few remarks upon some very striking symptoms observed in my patient which do not belong to the typical and uncomplicated disorder.

It is remarked that in adults, as compared with children, the manifestations are essentially the same, but merely modified by the fact that the brain of the adult offers somewhat more resistence to the initial disturbances, that the general organism is not so highly disposed to fever, and that the growth of the bones is already completed, and the firmness of the joints is greater. It is said to begin with a general ill-feeling, with fever which is often introduced by smart pain in the back and limbs, and not rarely with paræsthesia (formication, a feeling of numbness, &c).: cerebral symptoms are generally wanting. General convulsions have never yet been observed, but severe headache, dullness, somnolency

and even slight delirium occur. Well-marked gastric symptoms have been frequently observed. In some cases the fever reaches great intensity. Then *paralysis* develops rapidly—in one night perhaps, or in a very few days. It is complete, widespread, and the muscles quite flaccid. Reflex action is *lowered* or *extinguished;* though, in some cases (Erb), it may be retained, at least in those muscles which are not permanently or not completely paralysed. Then, as in children, follows rapid commencement of improvement in the paralysis, until finally it may entirely disappear, or at any rate some of the muscles quite recover, leaving only certain groups or higher muscles permanently affected. There is said to be no *trace of disturbances of sensation.* The patient is rarely sick enough to go to bed. The general nutrition soon gets quite good again.

We are more familiar with the current of events in *children.* With them the *first* is often *fever.* Not seldom convulsions, and sometimes other very severe cerebral disturbances, such as deafness, coma and delirium. Then a pretty sudden paralysis of variable extent, with flaccid limbs and without disturbance of sensation, or implication of the sphincters, or bedsores. Then arrest of the paralysis and a gradual improvement, some special parts, however, remaining permanently paralyzed. In these we have the reaction of degeneration. The development of the bones is retarded, contractions take place, and many varieties of deformities are thereby produced.

It will, no doubt, be observed that the points in the case which do not agree with this description are the following:

1st. The fits.

2nd. The hyperæsthesia.

3rd. The pains, and the increase in the reflex movements.

1st. With reference to the convulsive spasm, with unconsciousness, which is mentioned as having occurred on the twentieth day of the illness, I may say that we had much difficulty in getting any clear account of the

attack. His mother has once described them as distinctly epileptic; on another occasion as entirely wanting the characters of epilepsy, but being rather tetanic. On the whole, however, I think they must be looked upon as having been of an epileptiform nature, especially from the accompanying unconsciousness. As I have stated, Erb says that general convulsions have never been observed in this disease, and they are not alluded to by any of the other authors I have consulted. Still, they do occur pretty frequently in children at the outset of the disease and before the occurrence of paralysis, which might be used as an argument (although admittedly a poor one) in favour of a possible similar occurrence in an adult. Besides, this case would appear to have been of an exceptionally severe nature.

2nd *The hyperæsthesia.*—In the typical disease, sensation is unaltered. It must, therefore, stand as proof that other parts of the cord are affected than those implicated in ordinary acute paralysis. It would, perhaps, be very difficult to hazard an opinion as to what part this is, as the manner in which hyperæsthesia may be produced is certainly not well understood.

3rd.—The occurrence of severe excruciating pains after the onset of the paralysis and the increase of reflex movements may be taken, along with the exalted sensibility, to prove that some factor is present beyond the lesions ascribed to anterior grey myelitis, because it is painless, or nearly so, and the reflex acts are nearly always unaffected.

The question that has arisen in my mind is, Would extension of an acute tissue-change, going on in the anterior horns to the posterior horns, account for these extraneous manifestations? If so, then we might be justified in looking upon this case as one of acute myelitis of the anterior horns of gray matter, plus some subsequent disturbances in the gray matter of the posterior horns.