

both sides of the heart there were small quantities of pale watery blood; there were no clots. The heart muscle was pale and flabby, with well-marked tabby-cat striation on the musculi papillares. The right ventricle was moderately dilated. The valves were normal. The mucous membrane of the stomach was coated with tenacious mucus but otherwise the stomach wall appeared normal. The small intestine contained a considerable amount of rather thick bile-stained mucus. The mucous membrane was reddened, especially the edges of the valvulae conniventes. In the large intestine the mucous membrane was reddened in patches. The opening of the appendix into the caecum was plugged with a small mass of inspissated faecal matter. The wall of the appendix was in a state of catarrhal inflammation, the proximal half of the appendix being distended with very foul-smelling mucus. The mesenteric glands were slightly enlarged and red. The liver weighed 26 ounces and was very pale in colour. The gall-bladder was distended with dark-coloured bile. The spleen weighed five ounces and was of firm consistence. The kidneys were large, each weighing three and a half ounces; the cortices were not enlarged and the capsules stripped easily. The connective tissue throughout the body was decidedly oedematous. The blood was pale and watery and its coagulability was considerably diminished. Films were made from the bone marrow of a rib. The cells showed a considerable amount of degeneration, many of them staining badly and being difficult to identify. The proportion of non-granular to granular cells appeared to be normal. Nucleated red cells were fairly, but not excessively, numerous, the majority of them being megaloblasts. Of the non-nucleated red cells many were macrocytes. Corpuscle-carrying cells were not present.

This case presents many points suggestive of pernicious anaemia, though the occurrence of this disease so early in life is very unusual, for out of 240 cases collected by Ehrlich only one, or 0.4 per cent., occurred below the age of ten years. The patient was intensely anaemic and during the 14 months that the blood was under observation the red corpuscles were above 2,000,000 for only one period of five months and towards the end they showed considerable variations in size and shape. Nucleated red cells were present in small numbers and in the last count one definite megaloblast was seen. As in pernicious anaemia, rapid changes in the quality of the blood and in the general condition of the patient were marked features. On two occasions the number of erythrocytes fell considerably below 1,000,000 and in the last count of all to 774,000. On the two earlier occasions the numbers were doubled in such short periods as 11 and 15 days, the general condition at the same time noticeably improving after the patient had seemed to be in a very bad way. The haemoglobin value throughout was high, the average of all the estimations being 1.043. The leucocyte count, on the whole, was low and showed no correspondence with the number of red corpuscles, the highest number, 9200, being found at one of the periods of most marked diminution in the red cells.

An alternative diagnosis which was at one time put forward was that of splenic anaemia, but the spleen was never at any time very large and frequently it could not be felt at all. In splenic anaemia, also, the red corpuscles very rarely show the same marked diminution as in pernicious anaemia and the poikilocytosis is much less marked. Erythroblasts are rare and when present are of normal size and above all the colour index is low. The leucocytes are diminished in number with a slight relative increase in the lymphocytes, and basophiles are very scanty. Taken altogether the blood of this case conforms much more closely to the type of pernicious than to that of splenic anaemia.

The child was shown at a meeting of the Society for the Study of Disease in Children on Oct. 20th, 1905, when it was suggested that the anaemia was due to abdominal tuberculosis, but the necropsy showed no sign of tubercle anywhere.

It is possible that the anaemia supervened upon the chronic gastro enteritis, and if this be so is it to be considered as merely of a secondary nature? It seems to us that the blood changes were too severe to be accounted for in this way, and for the reasons given above we incline to the belief that the case was one of primary anaemia presenting many characteristics of the pernicious type.

A CONTRIBUTION TO THE PLASTIC SURGERY OF THE RENAL PELVIS.

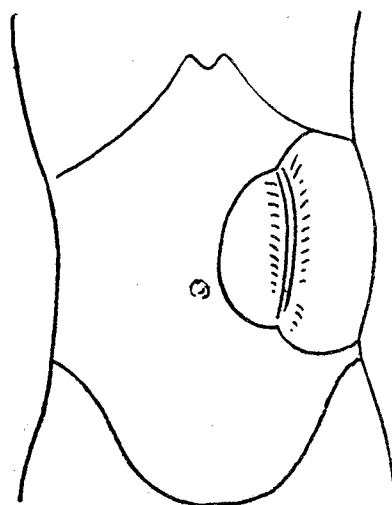
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URINARY DISEASES.

CONSERVATISM in renal surgery has succeeded a somewhat prodigal tendency in regard to the renal tissue. This is partly the result of increased experience in the surgery of renal disease but above all to a wider knowledge of the pathology and of the recuperative power of the renal tissue after apparently irreparable damage. Plastic operations upon the ureter and the kidney pelvis are performed with greater frequency with the object of saving the kidney, even if it be damaged. The plastic surgery of the renal pelvis has not yet emerged from the earlier stages of its development and I have therefore ventured to give publicity to the following case, which appears to me to possess some points of interest.

The patient, an active young woman accustomed to the muscular exertion of massaging patients, was under the care of Dr. H. Stanley of St. Leonards and Dr. A. M. Ross Sinclair, and was referred to me on account of a moveable tumour on the left side of the abdomen. She related the following history. Seven months before I saw her she had a sudden attack of pain in the left side of the abdomen and indicated a spot above, and to the left of, the umbilicus a little below the margin of the ribs (anterior renal pain region). The pain was severe and shooting through to the back at the angle of the last rib and the erector spinæ muscle and caused sickness. She stated that just before the pain came on she had carried a heavy box downstairs. The pain was relieved by rest in bed and she remained perfectly well for about three months, when she had an attack of influenza and the same pain returned. This was followed by another attack four months later and the last attack came on four days before I saw her. These attacks of pain were all similar in their course. The first attack had some apparent connexion with lifting a heavy weight, the second had no such preliminary exertion, and the third attack came on at night when the patient was in bed. The pain always commenced in front and passed through to the back. It did not track along the ureter. The kidney region was tender during and after the last two attacks. There were no

FIG. 1.



increased frequency of micturition and no change in the urine during or after the attacks. Dr. Stanley discovered a tumour in the left loin. This did not increase in size nor was there any history of its sudden disappearance.

On examining the abdomen the left side was seen to be more prominent than the right and was firmer and more resistant. There was some bulging at the side of the left loin with the patient lying on the back, but none posteriorly. On palpation a large smooth mass of the size of a child's

head could be felt in the left lumbar region. The mass had smooth rounded surfaces and no edges or notch. It was oval in shape and appeared to consist of two portions marked off from each other by a vertical groove. (Fig. 1.) With the patient lying on the back it did not quite reach the umbilicus and the lower limit was just above the iliac crest. The mass occupied the renal area and could be readily palpated between the hands placed at the costal angle and on the front of the abdomen. It moved freely with respiration. It could be pushed in all directions. When pushed

fell away from the left loin towards the right side. There were absolute dulness on percussion over the portion of the swelling to the left of the groove and comparative dulness over that part to the right of the groove. There was no tenderness or aching. The mass was firm but not hard. No fluctuation could be obtained. The temperature was normal. The urine contained some phosphates, a trace of albumin, and there were a few pus cells and granular and hyaline tube casts. With the cystoscope the bladder was healthy and both ureteral openings were normal. No

FIG. 2.

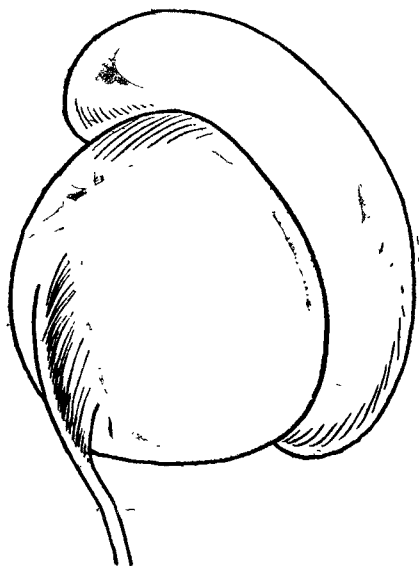


FIG. 3.

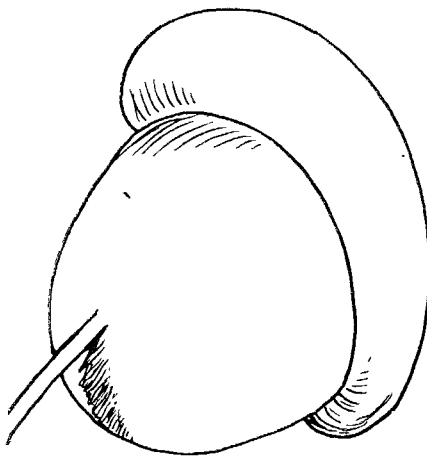


FIG. 4.

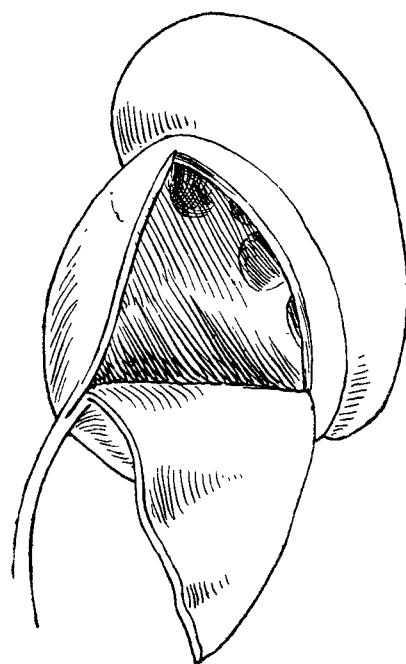


FIG. 5.

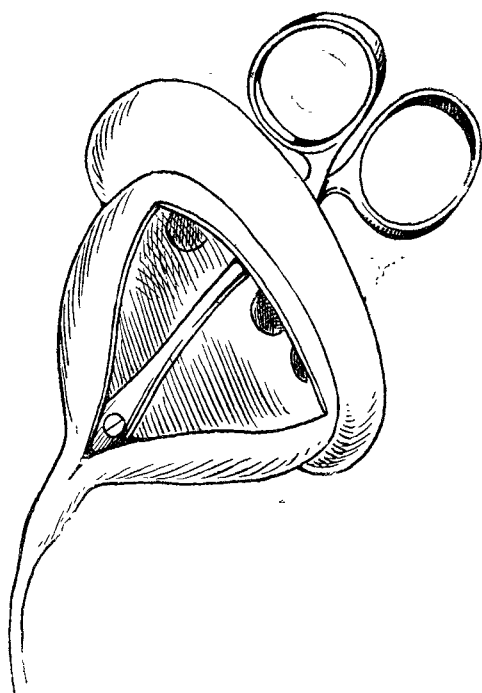


FIG. 6.

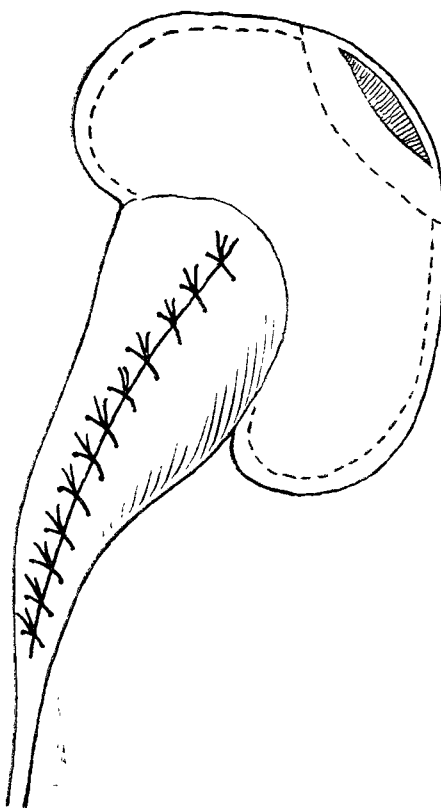
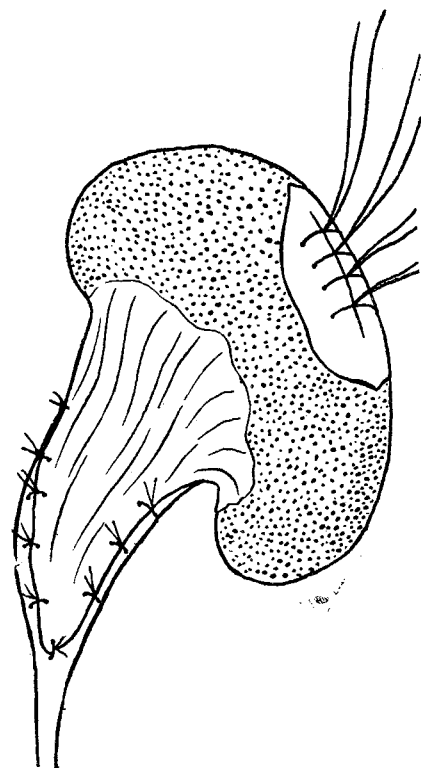


FIG. 7.



Figures illustrating steps in plastic operation upon the renal pelvis. Fig. 2. Distended renal pelvis with adherent ureter. Fig. 3. Ureter dissected to its insertion. Fig. 4. Triangular flap of cyst wall thrown down, showing the interior of dilated kidney. Fig. 5. Portion of cyst wall removed and forceps in position. Fig. 6. Edges of wound united. Dotted lines show incisions through fibrous capsule. Fig. 7. Capsule stripped and stitched over wound. Kidney sutures in position.

downwards into the iliac fossa the fingers could be slipped above it between the ribs and the mass. On pushing it up under the ribs a bulging of the epigastric space took place. The mass could be readily pushed across the middle line until its right limit was midway between the umbilicus and the right side of the abdomen. In all its movements it appeared to swing round a pedicle fixed above the umbilicus. It could not be forced down into the pelvis. On lying upon the right side the mass

efflux could be seen from the left side. With a Luys separator a small quantity of urine was obtained from the left side and this contained a trace of albumin, pus, and epithelial cells, and a few granular and hyaline casts. The right urine showed no albumin but a few casts were present. The diagnosis of moveable kidney with hydronephrosis was made.

The kidney was exposed by a moderate-sized oblique lumbar incision and presented in the wound; with

little difficulty it was brought out on to the loin and this condition was found. The kidney was attached to a large bladder-like cyst which was recognised as an enormously distended pelvis. The kidney itself was dilated to a moderate degree. The whole mass, cyst and kidney, was of about the size of a child's head. The ureter was picked up below the mass and traced upwards. It was small and showed no signs of dilatation or thickening. The upper end lay upon the surface of the cyst and was firmly bound down to it by adhesions for about one and a half inches. (Fig. 2.) The renal pedicle was long and allowed the mass to lie upon the loin without putting any strain on the vessels, so that the necessary manipulations of a plastic operation were carried out in comfort. The ureter was dissected up off the surface of the cyst until its junction became perpendicular (Fig. 3) and a longitudinal incision was then made from the point of union along the posterior surface of the ballooned pelvis almost to the margin of the kidney hilum. The cyst collapsed and allowed a careful survey of the interior of the dilated pelvis and kidney; a bougie was inserted into the upper end of the ureter and passed readily down to the bladder. There was no narrowing at the point of junction between ureter and pelvis. The incision in the wall of the pelvis was continued into the ureter by slitting this tube for about a quarter of an inch. A large triangular portion of the posterior wall of the renal pelvis was now cut away, the base of the triangle lying about a quarter of an inch from the margin of the kidney hilum. (Fig. 4.) An incision was made in the convex border of the kidney about its mid point, and a long pair of artery forceps was pushed through this into the cavity of the pelvis and the conical point inserted into the upper end of the ureter. (Fig. 5.) Over this the margins of the wound of the pelvis were then brought together, and a series of interrupted sutures of fine silk was inserted. (Fig. 6.) In this way the lateral angles of the triangle met about one-third of the distance from the renal end of the wound. The kidney itself was bent pole towards pole so that these angles might be approximated, but there was no tension or kinking of the organ, and when all was finished the bend in the middle of the kidney had almost disappeared. The leathery wall of the pelvis did not admit of the application of Lambert or other special sutures, and a series of closely set interrupted stitches passing through the whole thickness of the pelvic wall was used. With the wound closed and the kidney held in the position it would eventually occupy the pelvis was now reduced to a hollow cone which passed without constriction or angle into the ureter. An incision was now made through the fibrous capsule of the kidney in the form of an ellipse around the wound in its convex border and further incisions from this along the convex border to each pole. The capsule of the kidney was then stripped from the anterior and posterior surfaces of the organ, leaving a margin of about three-quarters of an inch around the wound undisturbed. The capsule from the anterior surface was clipped away at the margin of the hilum, but that from the posterior surface, still attached along the posterior margin of the hilum, was turned over so as to cover the wound in the pelvis, and a few retaining stitches were placed along the edges. (Fig. 7.) Four stout strands of catgut were passed through the kidney substance so as to bring the edges of the kidney wound together, being so placed that the points of entrance and exit were within the surface area undenuded of capsule. These were tied and the ends left long. The kidney was then returned to the abdomen. In turn each of the ends of catgut were threaded on curved needles and brought through the muscles at the upper and lower edges of the lumbar wound and tied so that they formed a part of the series of muscle sutures. Thus each catgut suture passed through the kidney substance uniting the edges of the kidney wound and then one end passed through the muscles of the upper margin of the lumbar wound, while the other end passed through the muscles of the lower part of the wound and the ends were again knotted. The muscle layers were then united by catgut sutures and the skin wound was closed, leaving a rubber drain down to the posterior surface of the kidney. The drain was removed in 36 hours as there was no trace of urine on the dressings. Healing was aseptic and the recovery from the operation was uneventful.

On examining the patient eight months after the operation the kidney was found in the position it had been given at the operation. It was small and moved with the respiratory

movements. There was no pain or other urinary symptom and no tenderness was experienced on handling the kidney. The patient was unwilling to submit to a further separation of the urines so that I had to forego the analysis of the secretion of the restored kidney.

One or two points merit brief notice. The condition was undoubtedly primarily a moveable kidney in which the ureter had become kinked and fixed to the surface of the pelvis by adhesions. The mechanism of this is not difficult to reconstruct. The moveable kidney swings around its vascular pedicle so that the hilum ever faces the vascular attachment, being directed upwards and to the middle line or directly upwards. The ureter thus acts as a drag upon the swing. The wonder is rather that kinking so seldom occurs and that the kink is not more often perpetuated by the formation of adhesions. Probably the ureter escapes from the fact that the swing is seldom a direct one, like that of pendulum, and a certain amount of rolling over is added which to some extent releases the ureteral bend. If the pelvis has once become distended the bent ureter lying upon its surface becomes fixed there by adhesions and further distension increases the obstruction to the outlet by pressing upon the tube. In this case there was certainly no true stricture formation at the upper end of the ureter such as has been found in some similar cases, nor was there any vascular cord over which the ureter was bent.

In regard to the plastic operation upon the kidney pelvis but little need be said. So far as I am aware, the method of excision of a large triangular portion of the kidney pelvis in order to reduce its capacity has not been previously employed.¹ The covering of the wound with kidney capsule is an additional novelty. Further, the method of fixing the kidney in this case is one which seems to me to have something in its favour. It is a combination of the decortication with the non-decortication methods which I am inclined to believe has some of the advantages of both. The object of leaving an area of renal capsule through which the sutures enter and emerge is the prevention of cutting out of the suture. Again and again I have met with the difficulty of the cutting of sutures through a friable decorticated renal substance, but since adopting this method of leaving an island of capsule I have had no further trouble on this account. The stripping of the rest of the capsule insures all the advantages which are claimed for the methods of decortication. I employed at one time a method by which the capsule was stripped forwards and backwards from a median vertical incision along the convex border of the kidney. By rolling these pads of capsule up along the anterior and posterior margins of the hilum a roll was obtained through which sutures might be passed and fixed to the upper and lower margins of the lumbar wound. This method, or something similar, has, I find, been used by Mr. W. H. A. Jacobson, who did not, however, strip the capsule from more than half the surfaces of the kidney. I have experienced certain disadvantages with this procedure. The sutures if drawn tight will project the denuded kidney into the lumbar wound and it is sometimes a matter of difficulty to find a sufficient muscular covering for the organ. This implantation of the kidney among the lumbar muscles appeared to me to have the advantage of securely fixing the organ in place, but the weakening of the abdominal wall was considerable and was not, I thought, sufficiently compensated for by the increased surety of fixation. But another consideration decided me to abandon the method. It is, I believe, of the utmost importance to explore these kidneys by incision, for, in some of them at least, the symptoms result rather from some renal disease than from the actual mobility of the organ. Such being the case, an incision and exploration of the organ are a safeguard against the serious fault of overlooking an important disease while attending to what in such a case is a minor trouble. An incision in a decorticated kidney, as I have said, is a difficult wound to close on account of the friability of the tissues denuded of capsule. For these reasons I have abandoned the method and prefer that which I have described.

It is an important point that the catgut sutures which close

¹ In a recent paper (Bulletin of the Johns Hopkins Hospital, June, 1906) Kelly states that he has twice employed "plication in hydro-nephrotic renal pelvis." The method has already been described by Israel. It is open to the objection that if any permanent kinking or stricture exists it remains untreated, and it is a difficult matter, without opening the pelvis and actually probing the ureter, to say whether or not there is some narrowing of the uretero-pelvic junction or an oblique inset of this tube.

the renal wound serve also to sling the kidney, for the insertion of additional sutures is thus avoided. The fixed kidney in this, as in most of these methods, is in an unnatural position, lying more obliquely and much lower than in its normal state. This is, however, in my experience no disadvantage, for I have not seen any resulting sign of obstruction to the ureter in the cases in which the kidney was fixed in this position.

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Reviews and Notices of Books.

Manual of Medicine. By THOMAS KIRKPATRICK MONRO, M.A., M.D. Glasg. Second edition. University Series. London: Baillière, Tindall, and Cox. 1906. Pp. 1022. Price 15s. net.

ON the appearance of the first edition of this excellent manual of medicine we had the pleasure of reviewing it very favourably. The second edition is now before us and has been brought quite up to date by the author. Fresh articles have been written on tropical splenomegaly, trypanosomiasis, and piroplasmosis; additional illustrations have been introduced and one figure showing the cortical centres on the lateral aspect of the hemisphere has been re-drawn, so as to represent the most recently accepted teaching.

The volume opens with the subjects of fever and of the specific infectious fevers. In writing of typhoid fever we do not find any mention of the advisability of giving urotropine as a measure of preventing infection by the urine. The researches of Dr. P. Horton Smith might with advantage be alluded to in a future edition. The section on relapsing fever is well up to date, the investigations of Dr. Dutton and Dr. Todd receiving due mention. Lobar pneumonia is, of course, placed amongst the infectious fevers. The author, in the treatment of this affection, we are sorry to see, does not mention antimony. In writing of tuberculosis he evidently does not agree (and here he is in consonance with most authorities) with the dictum of Koch that there is little or no danger from tuberculous cattle. The section on this disease is very complete. The treatment advised in cholera is not altogether satisfactory. For instance, the author recommends the diarrhoea to be checked by astringents, whereas there can be little doubt, we believe, that the treatment by purgatives is by far the best, and, indeed, this was recognised a few years ago by the Royal College of Physicians of London. No mention is made of the late Sir George Johnson's lucid theory of collapse. Yellow fever is handled in a very satisfactory manner and the importance of the rôle played by the mosquito is fully set forth. Hamilton Wright's investigations on beri-beri receive their due appreciation and the latest researches on yaws are set forth. The author's successful attempt to keep his manual up to date is well exemplified by his treatment of the subject of tropical splenomegaly, wherein the recent views of Major W. B. Leishman, R.A.M.C., Major C. Donovan, I.M.S., Captain L. Rogers, I.M.S., and Lieutenant S. R. Christophers, I.M.S., are all set forth. In the account of trypanosomiasis and piroplasmosis the student will find all the most recent researches detailed.

Section II. is devoted to constitutional diseases. The theories concerning gout are detailed, special attention being paid to the researches of the late Sir William Roberts. In the treatment of osteo-arthritis the administration of guaiacol carbonate might perhaps have been more strongly recommended. The chapter on diabetes is excellent and nothing of importance is therein omitted.

In Section III. we find an account of the diseases of the circulatory system. We cannot congratulate the author on the diagrams showing the relation of the valves but the illustration of the relations of the heart and great vessels to

the lungs and thoracic walls is excellent. The varieties of the pulse are very lucidly set forth. In that dread disease, ulcerative endocarditis, antistreptococcic serum is rightly advised. In the section on the various valvular lesions the author, as regards prognosis, considers that mitral incompetence is the least dangerous; next comes aortic stenosis, then mitral stenosis (probably); and, finally, aortic incompetence, thus not completely agreeing with the views of Sir William Broadbent.

Passing on to the subject of aortic aneurysm, we are glad to see that the author draws attention to the method of treatment by the hypodermic injection of a 2 per cent. sterilised solution of gelatin. He, however, advises the gelatin solution to be given by the rectum in view of the fact that many cases of tetanus have followed this plan of treatment. The account of the different varieties of corpuscles of the blood in various diseases is succinctly written and should not cause in the mind of the reader any confusion, which cannot invariably be stated concerning such accounts. The different diseases of the blood are also described in a very luminous manner, the only affection that might be more fully set forth being scurvy, as there is no mention here of any of the theories that have been put forth to explain it, such as those of the late Dr. S. H. Ralfe or of Sir A. E. Wright. The sections devoted to the respiratory, digestive, and renal systems next follow and here the article on Abscess of the Liver is not quite up to date as no mention is made of the sub-hepatic abscess of Cantlie.

The section on diseases of the nervous system is the best in the volume. There is an excellent diagram representing the sensory and motor neurons. The whole subject—one that generally is extremely difficult to the student—is so well and lucidly set forth that it is a pleasure to read it. The diagrams employed are excellent and the descriptions of the various diseases leave little or nothing to be desired. The author is to be congratulated heartily on this section of the work. Finally, the volume ends with an account of the diseases of the skin, of the various intoxications, and of the diseases due to parasites. In the chapter on sunstroke we note that no mention is made of the actinic theory, an omission of some importance with respect to the successful prophylaxis founded on this theory.

A Manual of Pharmacology. By WALTER E. DIXON, M.D. Lond. Illustrated; 86 figures in the text. London: Edward Arnold. 1906. Pp. 451. Price 15s. net.

THE object of this manual is to give the student a simple account of the science, albeit an experimental science, of pharmacology; the work is not a text-book on materia medica, while the introduction of therapeutics is only to serve to illustrate the pharmacology. The art of therapeutics can only be dealt with properly at the bedside, and the author thinks that the student should not be burdened by committing to memory the composition of various pharmaceutical preparations. We agree with him here, for the modern student is already overtaxed by an unnecessary amount of such futile labour.

After some general statements the author deals with alcohol and its action, and he considers that the direct evidence is almost overwhelming in support of the theory of Schmiedeberg—that this drug does not exert any direct stimulant action on the central nervous system but that on the contrary it depresses from the beginning. Anæsthetics, narcotics, and hypnotics are next dealt with, and some of the actions of these drugs are illustrated by excellent tracings. A more or less specific group of drugs which act on nerve endings is considered, including those which excite (colchicine, pilocarpine, muscarine, and so on) or depress the activity of nerve endings (belladonna, stramonium, and hyoscyamus). Colchicine, in addition,