of standing apart from the patient, with my base of support on the floor. It is conceivable that if a spinal support could be made to be fixed in the ground and yet grasp the patient, it might effect some good; but as the modern machines are made to take the pelvis of the patient as their supposed fixed point, they are of no service, since they slip up and down as the screws are worked and as the patient's body moves. The proof of this is seen in one of the supports I show you, in which, in order if possible to counteract this "riding" tendency, an iron has been added, passing down the leg to a socket in the boot. Not only do these machines fail to do good, but they do positive harm by preventing the proper exercise of muscles; and yet they are extensively applied, and applied, too, to my certain knowledge, to cases where no apparatus at all could be required, the patient's back having nothing the matter with it!

And now we will suspend our patient, that you may see the effect of taking off the weight of the head and thorax, and of hanging the weight of the pelvis and lower limbs on the curved spine. Here we employ Sayre's triangle and slings; but for the patient's own use in exercising herself, I have had a much cheaper and less formidable set of pulleys made, which I have found to work well in private cases. It is simply a set of double pulleys, with a screw which can be fastened into the top of any ordinary bed-room doorway or other convenient beam. It has the same head-piece as Sayre's, but no axillary straps or crossbar, which, indeed, are unnecessary for "self-suspension". A young lady can take this about with her when visiting friends without attracting attention, which could hardly be the case with a folding tripod.

We will now put on the knitted jersey with the "dinner-pad" over the abdomen and cotton-wool over the breasts, and apply the plaster-of-Paris bandage, strengthening it on the projecting side with strips of tin. While this is being done, I will give the mother of the patient directions as to the after-treatment which must be carried out. In the first place, we must raise the left side of the pelvis by adding half an inch to the heel of the left foot, which has already concealed in it a heel of three-quarters of an inch, which, however, is not sufficient. Next the patient must learn to exercise herself three times a day by adapting the head-sling and then, with the hands well over the head, suspending herself until only the toes touch the ground. While in this position, she is to take three deep breaths or inspirations slowly, and then lower herself again; and this, after a minute or two's rest, is to be repeated three times. In the intervals, she is to walk without fatiguing herself and to lie down for half an hour after each exercise. She has a comfortable home and is well fed, and, at present at least, requires no special medicine. In a fortnight's time, gentlemen, this patient will come before you again, and we shall then be able to judge of the amount of improvement which is likely to take place.

CHRYSOPHANIC ACID OINTMENT IN PSORIASIS.—Dr. Neumann of Vienna thus endorses (*Wiener Mediz. Presse*, No. 14-16, 1878) Mr. Balmanno Squire's treatment of psoriasis by an ointment of chrysophanic acid, as first communicated by Mr. Squire in this country at the latter end of 1876. After giving due credit to Mr. Squire, and to the other English observers who followed him in this research, the professor winds up his paper with the following summary. 1. Chrysophanic acid derived from Goa powder is an excellent remedy for herpes tonsurans, pityriasis versicolor, and psoriasis vulgaris. 2. Psoriasis in its earlier stages begins to disappear after a few applications of the drug, and in a far more unequivocal manner than under any other remedy that has ever yet been used against psoriasis. 3. Even inveterate forms of the disease can be abolished by means of chrysophanic acid, and it is quite the exception to find them oppose any protracted resistance to it. 4. Chrysophanic acid is a perfectly painless application to the diseased skin. The morbid phenomena occasioned by it on the healthy skin result apparently from the admixture of resinous matter with the acid. 5. As a result of this mode of treatment, psoriasis belongs no more to those skin-diseases which in so high a degree are a source of misery to the patient, and it has now become an easy matter to cure relapses. Every patient with psoriasis that I have as yet treated by this means gives the palm without hesitation to this method of treatment in preference to all others. In any case, this at the least is emphatically true; namely, that the therapeutics of skin-diseases have for the last ten years been enriched by but few remedies which have been crowned by so eminent a success as the one in question. 6. There are other skin-diseases, also, which are curable by chrysophanic acid. 7. He expresses a hope that this method may be examined by other observers; and he does not doubt that it will soon permanently assume its due rank amongst the treasures of therapeutics.

REMARKS

ON

THE MINUTE ANATOMY OF THE SMALL RED GRANULAR KIDNEY.

By GEORGE JOHNSON, M.D., F.R.S.,

Professor of Clinical Medicine; Senior Physician to King's College Hospital; etc.

In the March number of the *London Medical Record*, Dr. Saundby has given a clear and complete *résumé* of an able and interesting lecture by M. Charcot on what he designates "epithelial visceral cirrhoses". The lecture which Dr. Saundby has analysed is published in *Le Progrès Médical* of December 22nd, 1877, and February 2nd, 1878. M. Charcot's observations relate to the lung, the liver, and the kidney; and he shows that analogous changes occur in each of these organs. In his description of the structural changes in the small red kidney, he entirely confirms the account which I first gave of those changes in the thirtieth volume of the *Medico-Chirurgical Transactions*. Histologically, he says, there are two prominent facts: 1. The epithelium of the convoluted tubes undergoes granular degeneration, and finally disappears; 2. The connective tissue which surrounds and sustains the tubes is developed in excess. But he requests special attention to one particular: "At a given time, the dark granular epithelium which in the normal state lines the convoluted tubes is replaced by a cuboid epithelium resembling that of the collecting tubes." "This change", he says, "has been described by all histologists who have been engaged with the subject: George Johnson, Cornil, Ranvier, Kelsch, etc. It seems to be a fundamental characteristic of the small red kidney, and, if met with in other forms, is so only accidentally and in places."

After describing analogous changes in the lung and the liver, and stating that the changes found in these different organs are, (1) modifications of the granular epithelium, (2) modifications of the connective tissue-wall supporting this epithelium, he inquires which of these two is primary, and expresses his belief that it is the epithelial change; and therefore he calls the structural change "epithelial cirrhosis". Amongst other arguments in favour of this view, he says there is much reason to believe that epithelial tissues have an autonomous existence independent of subjacent structures, or at least without direct participation with the connective tissue in which they rest, except "for the supply of interstitial liquid: a necessary influence for the maintenance of vitality in all the tissues".

It is satisfactory to me to find that my views as to the relation of the epithelial and the interstitial changes which are found in the small red kidney are thus confirmed by so able an observer and so eminent a pathologist as M. Charcot.

In the lecture referred to, Charcot makes no reference to the state of the renal arterioles; but MM. Cornil and Ranvier, in their *Manuel d'Histologie Pathologique* (part 3), not only give the same description and illustration of the epithelial changes in the kidney, but they give drawings of the thickened arterioles which are identical with those which I first published in the thirty-third volume of the *Medico-Chirurgical Transactions*. This thickening of the arterial walls, however, they look upon as the result, not of a physiological hypertrophy, but of a chronic arteritis.

All the characteristic specimens of renal arterioles in the form of disease under consideration show an inner longitudinal and an outer circular layer of fibres of nearly equal thickness. I formerly supposed that the inner longitudinal as well as the outer circular layer was muscular; but I am now convinced that the inner is the thickened elastic coat; and, since this thickened inner layer in a hypertrophied renal arteriole has precisely the same structural appearance and arrangement as the elastic layer in the larger but still microscopic arteries, I cannot but look upon it as being thickened by a true hypertrophy or overgrowth of the normal tissue. And a probable explanation of this hypertrophy of the elastic inner tunic of the arterioles is to be found in the need for resisting the tendency to elongation of the arteries by the distending force of the hypertrophied left ventricle. The tortuosity of many of the hypertrophied renal arterioles shows that they have become more or less elongated by the injecting force of the heart, notwithstanding the increased thickness and strength of their longitudinal elastic tunic; and it can scarcely be doubted that, but for the

strengthening of the elastic coat by this hypertrophic thickening, the elongation and tortuosity of the arterioles would be much greater than they are. The tortuosity of the hypertrophied renal arterioles is well shown in my first illustration of this subject (*Med.-Chir. Trans.*, vol. xxxiii, p. 114), a copy of which is here given. (Figs. 1 and 2.)

Fig. 1.—Portion of Renal Artery in the normal state, showing the relative thickness of its coats. c. Circular fibres. l. Longitudinal fibres. Magnified 200 diameters.

In a leading article in the *JOURNAL* of April 6th, reference is made to Dr. Ewald's paper in Virchow's *Archiv* on the Changes in the Arterioles in Bright's Disease. Dr. Ewald appears to have looked for hypertrophy of the arterioles in the pia mater alone, and therefore his

Fig. 2.—Portion of Artery from a Granular Kidney, showing great hypertrophy of its coats. c. Circular fibres. l. Longitudinal fibres. The canal of the vessel is filled with injection. Magnified 200 diameters.

observations are incomplete, and insufficient to support the objections which he raises to my explanation of the relationship between the arterial and the cardiac hypertrophy. In the cases in which he found hypertrophy of the heart without hypertrophy of the arterioles of the pia mater, it is probable that the arterioles in other tissues, more especially in the skin, may have been sufficiently hypertrophied to explain the cardiac hypertrophy; and, on the other hand, it is obvious that hypertrophy of the arterioles of the pia mater without arterial hypertrophy in other tissues would not cause cardiac hypertrophy. Therefore arterial hypertrophy limited to the pia mater may be unassociated with hypertrophy of the left ventricle. In reply to Ewald's argument, that "the absence of cardiac hypertrophy in amyloid and atheromatous thickening of the arterioles is against the vascular changes as causes of the heart-affection", I beg to say, as I have often said before, that, while this shows that mere degeneration of the walls of the arterioles, with consequent loss of contractile power, is not the cause of the hypertrophy of the heart, it is entirely in accord with the view that arterial contraction and resistance, with resulting arterial hypertrophy, are the main cause of the hypertrophy of the left ventricle associated with chronic renal disease. Ewald's theory, that the resistance which causes the arterial tension and the cardiac hypertrophy originates in the capillaries, and not in the contracting muscular arterioles, appears to me to be inconsistent with the facts and with the doctrines of vasomotor physiology. It is suggested that the polyuria of granular kidney is the result of increased pressure on the Malpighian capillaries consequent on capillary obstruction in front. To this I object, that increased pressure on the Malpighian capillaries would cause, not a copious secretion of urine, but an abundant transudation of albumen; whereas we find that, in cases of granular kidney with the evidence of high arterial resistance afforded by the great hypertrophy of the arterioles, albumen in the urine is rarely copious, usually scanty, and sometimes entirely absent. On the other hand, we have the clinical fact that when, as a result of valvular disease of the heart, the return of venous blood from the kidney is impeded, the increased pressure on the Malpighian capillaries is associated with a scanty secretion of highly concentrated urine, which, too, is often copiously albuminous. It appears, then, that the effect upon the urinary secretion of an impediment in front of the Malpighian capillaries is the exact opposite of that which the theory in question assumes it to be.

DR. MENZEL of Trieste, a surgeon who had already gained for himself a considerable reputation, has recently died at the early age of 32. While attending the Congress of German Surgeons in Berlin last month, he was attacked with hæmoptysis, and, after a brief illness, died of acute phthisis in the Augusta Hospital. He was one of the most eminent disciples of Billroth's school.

CLINICAL LECTURE

ON

ANTISEPTIC OSTEOTOMY FOR ANKYLOSIS AND DEFORMITY.

By RICHARD BARWELL, F.R.C.S.,
Surgeon to Charing Cross Hospital.

[Concluded from page 707 of last number.]

GENTLEMEN,—A few words remain to be spoken concerning a different deformity, which I have kept for separate consideration, because of late some curative operations, with which I will contrast my own, have been introduced. The ordinary knock-knee, or *genu valgum*—a very common deformity—is always accompanied by obliquity of the femoral condyles, in such manner that the inner lies on a plane lower than the outer. I say accompanied by, and not, as is usually said, produced by, because I conclude from the great lateral looseness of the knee-joint that a certain yielding outwards of the tibia is likely to be the *primum mobile* of the deformity, and the faulty growth at the lower end of the femur, a secondary condition, superinduced by changes in the amount of pressure. I conceive, then, the malady not as a mere lengthening of the inner condyle, but as an obliquity of the whole lower epiphysis, caused by increased thickness of the entire epiphysal mass on the inner, or decreased thickness on the outer side. However this may be, it is certain that when the deformity is fully developed, the exaggerated projection downward of the internal condyle—in other words, the obliquity of the joint-surface—is the obstacle to rectification of the limb. The problem of surgery is to discover the best and safest method of overcoming or evading this obstacle.

Examination of the results obtained or not obtained by instrumental treatment, criticism of some earlier operations, such as cutting out a piece of the tibia, even sawing off the lower end of the femur, lie beside my purpose: I only wish to direct attention to the operations of Dr. Ogston (Aberdeen) and of Dr. Macewen (Glasgow). Dr. Ogston's method consists in passing a knife, then a saw, obliquely from above the inner condyle into the knee-joint, over the anterior surface of the femur, to midway between the two condyles: the inner one is then very nearly sawn off from before backward; the thin remaining portion of bone is broken by forcing the tibia into its normal position; and the condyle, thus pushed up on the femur, is allowed to attach itself in the new position (*Edinburgh Medical Journal*, 1877, p. 782; *Langenbeck's Archiv*, vol. xxi, p. 537). Dr. Macewen's method is thus described:—"An incision was made over the inner condyle of the right femur, the centre of which corresponded with the upper part of the condyle, the object being to go as near the knee-joint as possible without opening it. A V-shaped portion of bone was struck out by the chisel from the inner side of the condyloid extremity of the femur; the remainder of the bone was broken, and the limb was brought round straight."* (*Lancet*, March 30th, 1878.)

Both these operations appear to me more severe than the exigencies demand. Of Dr. Macewen's, it is to be observed that two of the three cases suppurred, and under such circumstances there would seem to be some danger of extension of the inflammation to the knee-joint. From the description given in that gentleman's paper, and quoted above, it is difficult to make out in what direction the triangle of bone is struck out; but I suppose it to be horizontal. If I be correct in this supposition, the section would, I think, of necessity interfere with the epiphysal function, thereby in all probability affecting the subsequent growth of the limb.†

Dr. Ogston's operation is also rather severe—even, it would seem,

* In his paper, Dr. Macewen claims to be the first in England who performed antiseptic osteotomy. I am not concerned here to dispute the assertion, which, although his case has only just been published, is doubtless correct. I would, however, point out that, in his osteotomy for ankylosis of the knee, he cut out a wedge of bone from the front of the femur. This procedure is not only different to mine, but is one that I deprecate as unnecessarily severe. Nature supplies a wedge of new bone to fill up an angular gap left between a deflected straight section with much greater precision than that with which a surgeon can cut out a piece to avoid a gap: the limb will not be shortened, and the bone will heal much more quickly and surely if a mere straight division be made.

† While the above was in press, I have received a note from Dr. Macewen, in which he informs me that the incision in the soft parts is vertical; the wedge-shaped piece of bone is oblique, sometimes horizontal.