

and there was effusion into the knee-joint, so that it was impossible to bring the fragments into apposition, and he aspirated the knee-joint. After removing the fluid, the fragments were brought together, and the man left the hospital with the fragments in close apposition. The aspiration was conducted under the spray, and with all antiseptic precautions.—Mr. STOKES said that Professor Lister's address recorded seven surgical results, which could only be characterised as brilliant. Although he did not concur with Mr. Thomson in thinking that they should not hope for or care for osseous union in these fractures, yet the surgeon who operated undertook a tremendous responsibility. Even occasional failure, in spite of the most careful antiseptic Listerian precautions, should make them very slow in recommending or performing the operation until some other method of carrying out antiseptic practice than that now used and advocated by Lister was discovered.—Dr. R. M'DONNELL said the really important question for the surgeon to consider in a matter of this kind was, would he conscientiously and honestly, being in the position of the patient, submit to the operation himself?—Mr. TUFNELL said that was the practical way of putting the question to the test.—Dr. LENTAIGNE had perfect confidence in the Listerian method. If he fractured his patella, he would submit to the operation at Mr. Lister's hands.—The PRESIDENT had drawn attention to the fact that the displacement of the lower fragment was due to gravitation, and not the ligament of the patella, as Malgaigne supposed. Undoubtedly, in fracture, bony union might be obtained without the application of any apparatus. This result, however, was impossible in wide separation of the fragments. In the case which he exhibited of bony union resulting from the use of his own splint, the separation was approximately the width of three of his fingers, about two inches and a half. That case was seen by Mr. Colles, Mr. Butcher, and Mr. Tufnell, and ultimately the use and perfect motion of the joint was recovered. About two years afterwards the man died of phthisis in the Richmond Hospital. Through the courtesy of Dr. Gordon he obtained the patella, in which was found complete bony union. The patella was examined by Professor Macalister, and seen by Mr. Hamilton and others. As to Mr. Lister's treatment of fracture of the patella—opening the joints and suturing the fragments together—he would make no comment beyond remarking that, in his recent publication, Mr. Lister made drainage and cleanliness the prominent essential factors.—Mr. COPPINGER said that he had suggested that inefficient bony union was much more dangerous than fibrous union, and much more liable to lead to dangerous injury, such as a compound fracture into the knee-joint, an injury which would not occur if the union were by fibrous tissue. The speakers had concurred in the views laid down in his paper, and there was no surgeon who considered Mr. Lister had made a sufficiently strong case for such serious treatment as opening into the knee-joint.

REVIEWS AND NOTICES.

A GUIDE TO THE PRACTICAL EXAMINATION OF URINE, FOR THE USE OF PHYSICIANS AND STUDENTS. By JAMES TYSON, M.D. Fourth Edition. Revised and corrected, with coloured plates and wood-engravings. Philadelphia: P. Blakiston, Son and Co., 1883.

In a short preface to this edition of his *Guide*, Dr. TYSON says that it is intended to be a working guide for the examination of urine, and not an exhaustive treatise; and we may at once say that the book appears, on the whole, exceedingly well adapted to fulfil this purpose. At the beginning, a full list of all the reagents and apparatus likely to be required in the clinical examination of the urine is given, and this is followed by a rapid survey of the physical properties of the urine, its acidity, colour, specific gravity, and quantity, and the variations which occur in disease. Dr. Tyson, we see, recommends for calculating the total amount of solids from the specific gravity, Hæser's co-efficient, which is 2.33. The use of this brings us, as Dr. Tyson says, to the result that, taking the mean normal total excretion in 24 hours at 1,500 c. c., and the mean specific gravity as 1020, the average amount of solid matter passed in the 24 hours is 70 grammes. Parkes deduced, from the collection he had made of observations on the total solid in which the amount was determined by evaporation and weighing, that the mean amount of urinary solids was 61.14 grammes, and added a note which shows that he thought that this was probably too high. If Trapp's co-efficient, which is 2, be used, we arrive, by a similar calculation to that named above, at 60 grammes as the average total solids, a

number which agrees very closely with the observed quantity. The table to which we refer is to be found in Dr. Parkes' *Composition of the Urine*, p. 23. Trapp's co-efficient is recommended, not only by the late Dr. Parkes, but also by Dr. William Roberts, of Manchester, in the last edition of his well-known treatise. However, Dr. Tyson follows most of the other latest authorities in advising the use of the higher co-efficient; for instance, in Neubauer and Vogel's *Analyse des Harns*, Hæser's co-efficient is recommended, and is stated to give remarkably accurate results. The chapter which treats of the detection of albumen under varying circumstances is excellent, and the precautions advised are such as are most necessary for every student to be well-acquainted with; the same remarks apply also to the chapter on Sugar in the Urine. It is justly remarked that much of the criticism of clinical methods of testing for the presence of sugar is not justified, and arises partly from the fact that the chemist and the physician view the subject from different standpoints. It is one thing to establish what is the minutest proportion of sugar, dissolved in pure water, which will show a given colour or other re-action, but it is a thing of much greater difficulty to recognise with certainty the presence of a trace of sugar in a complex liquid like the urine. Dr. Tyson agrees with Dr. Pavy, that the copper-test, applied either by Trommer's or by Fehling's method, is quite delicate enough; Dr. Pavy has even said that it would be a misfortune if any more delicate test came into general clinical use, and Dr. Tyson, speaking of the minute traces of sugar which can be extracted from urine, says that it is not necessary that they should be recognised by the physician; for, he adds, "such amounts of sugar have no more clinical significance than has the normal proportion of urea in a specimen." From this statement it might be supposed that Dr. Tyson believed sugar to be a constant constituent of normal urine. The question has been long in dispute; Brücke and Bence Jones believed that they had obtained evidence that sugar was always present, in minute quantities, in the healthy urine; Schunk, in 1862, announced that healthy urine, boiled with acids, gradually deposited a resinous substance, and acquired the power of reducing cupric oxide, that is that a substance having the properties of glucose was thus obtained; it was said to be derived from the colouring matter. Schunk's theory, however, did not meet with general acceptance, and the view commonly held that sugar was contained in minute quantities in normal urine was confirmed by the more recent researches of Dr. Pavy. Dr. Tyson, however, states his belief, on the authority of Professor Wormley, of Pennsylvania University, that Dr. Pavy mistook uric acid for sugar; if the filtrate obtained by the lead-process be at once tested with the copper-test it gives a re-action, but if allowed to stand for twenty-four hours it does not, a considerable sediment of uric acid having fallen in the interval.

The account given of the nature and reactions of the urinary pigments is unusually full, and forms, indeed, a very clear summary of a difficult subject. For the estimation of urea, Dr. Tyson recommends Liebig's process with nitrate of mercury; but he also gives full directions for the hypobromate process; it is probable that the latter process leads to more correct results, the observed error being almost constant in amount.

The author rejects the fermentation-theory of the deposit of acid urates from clear acid urine after it is passed, in favour of the chemical theory advanced by Voit and Hoffmann. By this theory, the increase of acidity is attributed to the action of the acid sodium-phosphate on basic urates. He also states that the urine grows less acid during this period of deposition; this is contrary to the doctrine usually held, which teaches that acid urine increases in acidity after it is passed, and that the acidity attains the maximum on the third day. Indeed, the author is far from happy when he discusses the subject of fermentation, for his account of alkaline fermentation strikes us as meagre.

The last part of the book will probably be found to be the best and most useful; it treats in a practical comprehensive manner of the sediments of urine, and is well illustrated by drawings, which are chiefly borrowed. The chapter on the "Differential Diagnosis of Renal Disease" is very good indeed, and if Mr. Jonathan Hutchinson's suggestion to provide, for use in emergency, or at the bedside, *schemata* of diagnosis and treatment, be ever carried out, some such *schema* as this here drawn up by Dr. Tyson, ought to be among the number. Altogether, we can strongly recommend this book as fulfilling the purpose for which it is designed, namely, a guide to the practical examination of the urine. It is a distinct advance on previous manuals for the use of physicians and students, and reference to its pages will often save both classes from tedious delays and vexatious errors.

HOSPITAL-MANAGEMENT; being the authorised Report of a Conference on the Administration of Hospitals, held under the auspices of the Social Science Association in July 1883. Edited by J. L. CLIFFORD-SMITH, Secretary of the Association. London: Kegan Paul, Trench, and Co. 1883.

THIS octavo volume of 190 pages contains the papers which were read at the recent Conference on Hospital-Administration, and the discussions which followed thereon. The subject of hospital-management was treated in all its length and breadth; and, as great pains were taken to bring together from all parts of the country persons who were conversant with the subject, we have here a most valuable record of facts, opinions, and suggestions.

To consider the opinions and suggestions that were offered would require more space than we can afford. But we have culled a few of the facts that were stated by various speakers, and they are such as call loudly for reforms.

1. While ten of the largest general hospitals are all grouped within a radius of a mile and a half from Charing Cross, giving 3,439 beds for that region, the whole of the north, east, and west of London, with a population of millions, has only five hospitals, affording respectively 33 beds in the north, 810 in the east, and 232 in the west.

2. The annual income of all the medical charities cannot be taken at less than three quarters of a million sterling, divided very unequally among about 200 institutions.

3. The number of persons obtaining gratuitous medical relief at the metropolitan hospitals and dispensaries does not fall short of a million, or one-fourth of the whole population of the metropolis.

4. The last report of the Leeds General Infirmary says: "Amongst the number of persons applying for relief as out-patients, there were 2,099 whose cases were too trivial for treatment, who were consequently sent away; and about 150 were rejected as being in a position to pay for medical treatment." The number of out-patients admitted was 15,873. If the same proportions were applied to the million out-patients of London, in what a striking way the abuse of hospitals would be represented!

5. There are in the metropolitan hospitals 1,000 beds daily unoccupied.

6. In 1882, the deficit at nine of the general hospitals amounted in the aggregate to £40,000; nor does this represent the total excess of expenditure over income, for, at these same institutions, the income expended included no less than £69,700 derived from legacies.

7. Hospital-accounts are not kept according to any uniform plan, and in but few instances is a balance-sheet presented at all.

8. As regards the audit of accounts, out of 54 institutions, only 15 employ professional auditors, and at five hospitals the accounts are audited by the hospital-officials themselves.

9. The number of hospitals in London and the neighbourhood that are now receiving money from their patients is 41.

10. Last year, the receipts from "poor paying patients," who are received in the ordinary wards at St. Thomas's Hospital, were £65; while the fees from patients at St. Thomas's Home amounted to £5,774.

11. The persons of the middle and lower middle class who were last year received into the Bolingbroke House Pay Hospital paid 73 per cent. of their cost.

These facts show how large are the interests involved, how unequally the medical charities are distributed over the vast area of 122 square miles which constitutes Greater London, how much hampered many of these institutions are for lack of funds, and how ready people are to contribute according to their means when paying systems are brought within their reach. That these questions can only be dealt with by a Royal Commission, seems to be the growing conviction of those who are best able to judge. We trust that the Committee which was appointed at the close of this Conference may be able to induce the Home Secretary to grant such a Commission.

THE ORGANS OF SPEECH, AND THEIR APPLICATION IN THE FORMATION OF ARTICULATE SOUNDS. By GEORG HERMANN VON MEYER, Professor in Ordinary of Anatomy at the University of Zurich. London: Kegan Paul, Trench, and Co. 1883.

THIS book forms the forty-seventh volume in the International Scientific Series, and was written with special reference to the requirements of the philologist on the subject of the structure and function of the organs of speech. The anatomical and physiological handbooks, as the author says in his preface, are little adapted

to this purpose, much of them being discussed at length which is of little use to the philologist, while, on the other hand, points which to him are of considerable importance are only briefly alluded to.

The book is divided into a short introduction of a few pages, and three long chapters, which again are divided into convenient sections and subsections. The first chapter, on the Formation of the Organs of Speech, opens with an account of the production of the air-current, the structure of the lungs, and the mechanism of respiration. A detailed description is then given of the anatomy of the larynx, pharynx, mouth, and nasal cavities. This part of the book is well illustrated by woodcuts, arrows being used to indicate the direction of the force in the action of the muscles of the larynx. At the end of the description of the various organs, a short summary is appended, in which are briefly recapitulated the chief points discussed in the preceding pages, a practice, we think, that might with advantage be more frequently adopted by authors. In the second chapter, on the Relation between the Organs of Speech and the Formation of Sound, the physiology of the subject is treated of. In the third chapter, on the Formation of Articulate Sounds, the facts and theories discussed and explained in the two former chapters are applied. The author, as we should have expected, adopts the physiological classification of articulate sounds in place of the old classification usually given in the grammars, and founded on the erroneous assumption that any alphabet furnishes in its various letters the whole of the sounds of the language of which it constitutes the symbols. The noises employed in the formation of articulate sounds are classed under the heads of *strepitus continuus*, and *strepitus repentinus*; the former being subdivided into *spirans*, *stridulus*, and *vibrans*, the latter into *avulsivus*, *explosivus*, and *occlusivus*. As an example of the *spirans*, we of course have H, the air passing through the open mouth; of the *stridulus*, ach (German) and loch (Scotch), the air being forced during this sound through a narrow opening between the palate and the dorsum of the tongue. Of the *vibrans* we have, as an example, the lingual R; of the *avulsivus*, the peculiar clicking noise of the Hottentots produced by suddenly withdrawing the anterior part of the tongue from the hard palate, and occasionally used by us in the whispered P, to produce which we have to suddenly separate the lips. But space does not permit us to give further examples of this very interesting subject, and for such we must refer the reader to the work itself.

The section on the production of the vowel-sounds is particularly interesting; and the position of the tongue, soft palate, and larynx during the emission of these sounds is admirably illustrated by diagrams of longitudinal sections of the parts.

The book is well printed on capital paper, and is provided with a good index. We can recommend it as likely to supply a want which has doubtless long been felt by those interested in the subject.

NOTES ON BOOKS.

The Electro-Magnet, and its Employment in Ophthalmic Surgery. By SIMEON SNELL. London: J. and A. Churchill. 1883.—This little book forms a capital summary of all that is known up to the present on the use of the electro-magnet in eye-surgery, a subject which the author has done so much to elucidate. He gives as many as sixteen cases of his own in which the magnet was used to extract small pieces of iron, with a successful result, and gives explanations—apparently not unsatisfactory—of the three cases in which the removal of the foreign body was not accomplished. He anticipates good results in practice from the employment of the magnetised needle in the detection of fragments of metal within the globe. With such a record of eyes saved by the magnet, any surgeon practising in a manufacturing district would be unwise if he neglected to make a trial of this procedure in suitable cases. We cordially commend the book to all such.

Birmingham Health-Lectures.—The useful lectures on health at the Birmingham and Midland Institute are being continued with much success, and are published at one penny each by Messrs. Hamilton, Adams and Co., London. The very interesting and excellent series already issued includes *Ways and Means of Health*, by Dr. HESLOP; *Coughs and Colds*, by BALTHAZAR FOSTER, M.D., F.R.C.P.; *Facts about Food and Feeding*, by ALFRED H. CARTER, M.D. Lond., M.R.C.P.; *On Wounds and Broken Bones, and on Burns and Bruises*, by OLIVER PEMBERTON, F.R.C.S.; *Dangers of Defective Drainage*, by ALFRED HILL, M.D., F.I.C., Medical Officer of Health, Birmingham. To these will next be added, *Address to Women*, by LAWSON TAIT, F.R.C.S., Surgeon to the Hospital for Women, Birmingham. Women only were admitted to this lecture.