time. In this new edition certain alterations have been made in the form of the tables in the chapter on hospital expenditure, with the object of giving a true comparative analysis of expenditure under each of the different heads. Then follows the usual detailed directory of hospitals and other charitable institutions, occupying some 800 pages, and including not only British, but Dominion, Colonial, and certain American and other foreign hospitals. Full as the information given is, it would be more complete if the names of the staffs of the provincial hospitals were given, in addition to those of the London hospitals; in a publication of this kind the names of the physicians and surgeons at, say, the Royal Victoria Infirmary, Newcastle-on-Tyne, or the Manchester Royal Infirmary, are of as much interest as the name of the auditor or the original architect. The account given of the finance of some of the Colonial hospitals is interesting; in Australia large Government grants to hospitals evidently do not prevent control by an elected committee of subscribers, while in at least one large New Zealand hospital the entire income of £39,000 appears to come from contributions by patients, in spite of the fact that it is free to those who are unable to pay.

It is undoubtedly desirable that the average diabetic patient, having a chronic disease that can only be treated dietetically, should be taken fully into the confidence of his medical attendant and taught as far as possible to take care of himself. The American *Primer for Diabetic Patients*¹⁴ by Dr. WILDER and two lady dietists of the Mayo Clinic attempts to do this; beginning with brief chapters on foods and urine testing, it gives an account of the diets and recipes suitable for different classes of diabetic patients. The book is well written and seems to fulfil very well the purpose for which it has been written. Many of the foods mentioned are American products and presumably to be obtained in other countries only with difficulty.

¹⁴ *A Primer for Diabetic Patients*. By R. M. Wilder, Ph.D., Mary A. Foley and Daisy Ellithorpe. Philadelphia and London: W. B. Saunders Co. 1921. (Fcap. 8vo, pp. 76; 2 figures. 7s. 6d. net.)

APPLIANCES AND PREPARATIONS.

A Penile Clamp.

MR. H. WANSEY BAYLY, M.R.C.S. (London, W.), writes: The penile clamp shown in the figure will, I think, be found useful in those cases where medicaments are required to be retained in the urethra for some time, and also for the "sealing-in" abortive treatment of gonorrhoea. In the latter case, the clamp

is loosely adjusted before the injection of the 20 to 30 minims of collosol argenteum, and is firmly closed after injection. The meatal seal of colloidum can now be applied at leisure, and the clamp should not be removed until after the seal has hardened. I have found the clamp satisfactory for use with any adolescent or adult male patient. Owing to the great variations in size of the penis in different individuals, the usual spring clamp is often useless. The "sealing-in" abortive treatment of gonorrhoea is so valuable in suitable early cases that any method tending to the simplification of the technique is of interest. The clamp has been made to my design by the Holborn Surgical Instrument Company.

A Rigid Binaural Stethoscope.

DR. VICTOR FELDMAN (London, N.) writes: This stethoscope is made up of three main parts, as shown in the illustration. The ear pieces are joined together by means of a ball and socket joint. Into the socket is screwed a metal tube, the length of which can be varied to suit the user's convenience. The chest piece, in its turn, is screwed to the end of the tube. Should we require a movable chest piece, a short length of stout pressure tubing (about 1½ in. long) is supplied, into which the adjacent ends of the tube and chest piece can be fitted, thus allowing lateral movement to the chest piece. The advantages claimed for this rigid stethoscope are: (1) It does away with rubber tubings. (2) Sounds are conducted better than in the ordinary stethoscope. (3) It can be taken to pieces and is therefore portable. The stethoscope is made by Messrs. Mayer and Phelps, of 59 to 61, New Cavendish Street, W.1.

THE HISTORY OF BRAIN SURGERY.

THOMAS VICARY LECTURE BY SIR CHARLES BALLANCE.

At the Royal College of Surgeons of England on December 8th, before a distinguished gathering, with the President of the College (Sir ANTHONY BOWLBY) in the chair, the Thomas Vicary Lecture was delivered by Sir Charles A. Ballance, K.C.M.G., who took as his theme "A glimpse into the history of surgery of the brain."

SIR CHARLES BALLANCE said that the history of surgery of the brain was so wide that he would make no effort to touch its compass, but would merely, like an alpine traveller, salute a few of the peaks and pass on. When did brain surgery arise? He hesitated to dogmatize with regard to the surgical methods of prehistoric races, whose civilization, more or less complex, had perished with its records in the abysmal depths of geological time. He was anxious, in discussing the surgical knowledge which might have been attained by early man, to guard himself against the assumption that it was devoid of knowledge or skill. Surgery was the oldest branch of the healing art, for injuries must have been common events among our remote ancestors, and with the evolution of tribes into nations, one would think that some knowledge of injuries and skill in their treatment must have been acquired and handed down to succeeding generations.

Trephining in Early Times.

No written record had reached us, but the evidence of skulls showed that trephining was practised in prehistoric times. The late Professor Lucas-Championnière made a study of this subject, and in 1912 published an account of the skulls found in the burial grounds of the Incas of Peru and also in the caves and tumuli of various parts of France. His conclusion was that trephining was undertaken among prehistoric races as a remedial measure; and in the main recent therapeutic views justified the cranial therapy of the neolithic savage. It was certainly of surprising interest that, thousands of years before trephining was recognized as a part of scientific surgical practice, a decompression craniectomy was performed among peoples in many parts of the earth.

Early trephining was probably done for the relief of pains in the head, fits, insanity, the biblical disease known as "devil-possession," and fractures of the skull. The portions of skull removed, as he showed by specimens from the College museum, were of considerable size, and it was noteworthy that in very many cases the holes were made over the motor cortex. Lucas-Championnière had shown that the men of the Stone Age employed a very definite method of removing bone, and that they used saws in cutting. Multiple trephining was also performed by neolithic surgeons, and in this procedure they had not been without followers in later times. Guthrie, the great British surgeon, who went through all the battles of the Peninsular war with Wellington, had to set his face against the practice of multiple trephining, which before his time was common. The classic instance was that of Henry of Navarre (sixteenth century), who was thrown from his horse and sustained a fractured skull, and whose surgeon trephined him twenty-seven times. The undaunted Henry gave a certificate to his surgeon to this effect, and that he was quite well; and, as there were still some who doubted, he asked his best friends to supper and drank two or three of them to death! The lecturer showed some interesting examples of saws and other instruments used in surgery in the hinterland of Algeria at the present day. They had been lent to him by Captain Hilton Simpson, who had studied the hill tribes of that country, and had secured these instruments from the native surgeons.

From Hippocrates to Horsley.

Of ancient Mesopotamian surgery very little was known, although there must have been surgery in a fair degree of development in Babylon and Nineveh. Greek surgery was the earliest of which there was any definite record. The operation of trephining by the time of Hippocrates was done in an admirable way, not really to be bettered at the present time, and the method as practised by Hippocratic surgeons was probably in direct descent from the primitive methods of the Stone Age. Crete was a kind of half-way house between the continents, and was probably the

starting point of European civilization. Unfortunately, no record existed of the surgery of the golden age of Crete or of Mycenae; no surgical abode had been dug out, although discoveries had been made of bodies bisected longitudinally, which suggested that anatomy was studied by means of frozen sections. Homeric surgery was chiefly descriptive of wounds. In the eighth book of the *Iliad* the horse of Nestor was wounded in the brain by an arrow shot from the bow of Paris, and it was related that in agony the horse sprang into the air and rolled round and round, causing confusion among the other horses of the team. The lecturer suggested that the horse of Nestor was wounded in the cerebellum, which in the horse was very large as compared with the cerebrum, and that it was the peculiarity of the cerebellar wound to cause this rotatory movement. Hippocrates was the father not only of medicine but of surgery, and whatever personal contributions he made to surgical knowledge, his greater task was to take in all that had been done before him, select the valuable from the worthless, and make surgery a science, independent of superstition and sophistry. His tradition was a priceless asset to the profession for all time. His knowledge of injuries to the head was extremely complete; in some cases he recommended operation in order to slacken the "tightness of the head," he also decompressed when there was inflammation or a foreign body inside the skull. Hippocrates recommended trephining as a cure for blindness when there was no evident disease of the eye; he also recommended operation for meningitis. His trephine had a collar or cross bolts to regulate the depth to which it could go.

The next great period was that of Celsus and Galen, the former of whom described the trephining operation, while Galen, so far as he knew, was the only experimental physiologist before Harvey. Then came the long ages during which men were content without surgical inquiry. Such learning as escaped the blight was preserved in the monasteries of Europe, mostly, so far as medicine was concerned, among the Benedictines. The slow re-creation of surgery was a fascinating study. To come down at once to very recent times, the lecturer said that when he was elected on the surgical staff of the National Hospital for the Paralyzed and Epileptic, thirty years ago, the two great men with whom he came immediately into contact were Hughlings Jackson and David Ferrier. The former remained in his vision as the Socrates of neurology, and his papers were of extraordinary interest. Ferrier belonged to that small group of great men who rediscovered and re-created the science of experimental neurology, which had been lost to mankind since the time of Galen. It was difficult to realize (with Sir David Ferrier sitting immediately in front of him) that his first paper was published in 1873. Then there was Victor Horsley, who from 1884 to 1891 published eight papers of the greatest importance. Godlee was the first to remove, under modern conditions, a tumour of the brain, which he did in 1884, and by the end of 1886 Horsley had done ten such operations. Horsley had long and intimate acquaintance with operations on the brains of monkeys, and the lecturer believed that to this was largely attributable Horsley's success in brain surgery, and any slight success of his own was due to the same opportunity.

The Lesson of History.

What was the lesson to be gathered from the story of the surgery of the brain which he had so imperfectly sketched? In the gradual evolution of truth, at the end of each stage of the world's history, it would seem that a great man appeared who focussed the best thoughts of the preceding centuries or was the messenger of new knowledge. Carlyle, in speaking of the hero as poet, said that ten silent centuries found a voice in Dante, and he spoke of Dante "deep, fierce, as the central fire of the world; Shakespeare, wide, placid, far-seeing, as the sun, the upper light of the world." So it had been in surgery. Hippocrates, John Hunter, Lister—all marked epochs in the advancement of knowledge. There were lesser names bridging the gaps—Morgagni, for instance, between the famous anatomists of the Middle Ages and the great pathologists of the first half of the nineteenth century; and after Hunter there were Astley Cooper and Pierre Ouvrard (a French refugee in Russia), and others. John Hunter awoke in the minds of his pupils and later followers a desire to explore the old ground by the

new experimental method and to discover truths long concealed. There was a spirit of adventure with Hunter and his school akin to that of the Elizabethan explorers. The torch which Hunter lighted was carried forward by Cooper and others, burning with a brighter flame. Galen and Harvey had been like Hunter in their enthusiasm for the experimental method, but neither of them left behind a great band of pupils and followers. In a volume which he himself had had to read as a student it was written that surgery had then reached its furthest limits. But in the fullness of time Lister, the peerless knight of surgery, the "upper light," the herald of the dawn of scientific surgery, arose and inspired a deeper insight into surgical thought and practice. In the fullness of time also came a man specially trained and of great ability and enthusiasm named Victor Horsley, and created a new department—that of neurological surgery—making what was before his time haphazard and dubious to rest upon the surest foundations in the practice of every surgical clinic. None of them had seen Hippocrates in the flesh, but his spirit ruled and energized their teaching and stimulated their clinical investigation. The wonderful character and spirit of Hippocrates, as Dr. Charles Singer had said, were more real and living now than ever they had been since the eclipse of the Greek scientific intellect. None of them had seen John Hunter in the flesh, but his spirit was very evident in the Hunterian Museum, and also in the genius for inquiry and experiment which he had elicited.

The Sacred Duty.

In conclusion the lecturer confessed to an uneasy feeling, shared by some of his friends, that during the last two or three decades the cult of the operator among some of the younger Fellows of the College had displaced in part the recognition of the sacred duty upon each one of them to lay one more stone on the building of surgical knowledge. They were all of them pilgrims of surgery who had only as yet reached the threshold of truth. A vast field of their art and science remained unmapped and unexplored. He trusted that succeeding generations of surgeons would devote time to research work. Research added such zest and satisfaction to life. There was no thrill like that which accompanied the first perception and the slow unfolding of some new truth or principle. Thus might they as surgeons rightly forge new weapons against disease and death.

Wisdom and yet more wisdom was their goal as they groped their way onward upon this bank and shoal of time, for was it not written, "She is more beautiful than the sun, and above all the order of the stars, and being compared to the light, she is found before it; she is the brightness of the everlasting light, the unspotted mirror of the power of God, and the image of His goodness."

LEAD POISONING AND THE INTERNATIONAL LABOUR CONFERENCE.

BY

PROFESSOR HENRY E. ARMSTRONG, D.Sc., F.R.S.

ONE of the decisions taken at the recent Geneva Conference (of which a note appeared in the *BRITISH MEDICAL JOURNAL* of December 3rd, p. 958) involves the early introduction of regulations protecting health in the painting trade. Undoubtedly, the dust produced by dry rubbing down is the chief risk, and if this be eliminated and careless work deprecated, there should be little, if any, objection to house-painting as an occupation. Lead poisoning is practically unknown amongst the painters in Scotland; probably their immunity is that which intelligence provides—the Scottish painters seem to be more careful workers than painters generally. Proof has been given, by a long series of practical trials carried out recently in Manchester and London, that it is not only possible but advantageous to rub down paint after wetting with water, then removing the debris with a wet sponge; in this way all dust is prevented. Several large firms in the painting trade have already adopted this method.

The Belgian and French inspectors asserted at Geneva that regulations are unworkable; probably they have a careless, if not unintelligent, class of worker to supervise. Apart from regulations, however, if it once be made really