amount of force employed in straightening the spine, instead of depending on such chance condition as the patient's weight, lies entirely within the surgeon's choice. 4. The surgeon may occupy what time he finds necessary in putting on the bandage, and can make a much more perfected one than when hurried. 5. The admixture of glue renders the jacket very durable and strong, capable of upholding a heavy much-curved trunk. 6. Less plaster is needed, therefore the jacket is lighter. 7. Bits and flakes of plaster do not chip away into the clothing and bed. 8. If a jacket removable by cutting down the middle be desired, a much more springy and less friable one, more easily taken off and put on without cracking, can thus be obtained.

Wimpole-street, W.

ON THE PRESENCE OF URO-HÆMATO-PORPHYRIN IN THE URINE IN CHOREA AND ARTICULAR RHEUMATISM.

By ARCHD. E. GARROD, M.A., M.D. OXON., F.R.C.P.

DR. MACMUNN¹ has shown that a pigment, closely resembling hæmato-porphyrin, to which he has given the name of "uro-hæmato-porphyrin," is met with in the urine of sufferers from a variety of morbid conditions, and is especially constant and abundant in that of rheumatic patients. This statement has been confirmed by Le Nobel of Leyden, and I have myself found this substance in almost every case of rheumatic fever out of a considerable number in which I have looked for it. I have also found that the pigment present in rheumatic urine usually shows the characteristic five-banded spectrum (described by Dr. MacMunn) in alkaline solution; although I am inclined to think that in some of my cases the substance present was ordinary hæmato-porphyrin. In acid solution the spectrum of uro-hæmato-porphyrin contains two bands and an intermediate shading, which I cannot distinguish from those of acid hæmato-porphyrin in dilute solution, and Dr. MacMunn holds that there is also a band like the urobilin band. The amount present in the urine of rheumatic patients is rarely, if ever, sufficient to impart a characteristic colour to the urine, and, although in some cases the characteristic bands are seen on adding a small quantity of mineral acid to the urine, the presence of this substance can, as a rule, only be recognised by precipitating the pigments and making an acidulated alcoholic extract from the precipitate. Even in such extracts the quantity present is often insufficient to yield an alkaline spectrum, and when this is the case the recognition of the pigment rests upon the observation and measurement of the characteristic acid hæmato-porphyrin bands. Some recent observations by Salkowski² upon urines containing hæmato-porphyrin render it probable that the administration of sulphonal may cause the excretion of that substance; and it is therefore important to state that the occurrence of uro-hæmato-porphyrin in the urine in acute rheumatism is quite independent of the salicylic treatment; for I have found it in urine passed immediately after admission to hospital by patients who stated that they had as yet had no treatment for their disease, and whose urine gave no salicylate reaction. In the course of a systematic examination of morbid urines for hæmato-porphyrin pigments, I have obtained some results with regard to chorea which I venture to regard as sufficiently interesting to form the subject of a preliminary note. I have examined the urines of twenty patients suffering from chorea, and in fourteen of these have found uro-hæmato-porphyrin, sometimes in quantities such as are but seldom met with. The quantity of the pigment present appears to bear some relation to the severity of the case; but considerable amounts may be found in the urine of patients who have a persistently subnormal temperature. The analysis of the cases shows that the presence of uro-hæmato-porphyrin is most constant in cases in which there is reason to suspect a rheumatic taint. Of the twenty patients referred to, five had

definite personal histories of articular rheumatism, and all of these were passing uro-hæmato-porphyrin in their urine—four of them in considerable quantities and one in traces only; two had doubtful histories of articular rheumatism, and both of these had uro-hæmato-porphyrin in their urine—one in considerable and the other in unusually large amount; three had murmurs, but nothing else to suggest rheumatism, and of these—two were passing urine containing considerable quantities of uro-hæmato-porphyrin, one with a trace only; two had clear family histories of rheumatism, but no personal histories, and no murmurs—the urine of one of these contained a trace of the pigment, that of the other none. The remaining eight patients had no rheumatic family or personal histories, and no cardiac murmurs. Of these, three had uro-hæmato-porphyrin in their urine: one in unusual amount, one in considerable quantity, and one a trace only. The urine of the other five contained no uro-hæmato-porphyrin when examined. Since the presence of the pigment in the urine is by no means peculiar to rheumatic cases, but is only an unusually frequent phenomenon in that disease, the above results, did they stand alone, would scarcely offer any evidence of the part which rheumatism plays in the causation of chorea; but, when they are taken in conjunction with the evidence derived from other sources, they must, I think, be acknowledged to supply a fresh link between these two conditions. This conviction gained in force from the fact that I have not obtained such results in other nervous disorders; but up till now my observations on the urine of patients suffering from such diseases are few in number, and it is quite possible that the results of a further search may tend to invalidate this argument. However this may be, I believe that the frequent occurrence of uro-hæmato-porphyrin in the urine of choreic patients affords evidence that one at least of the perverted chemical processes which accompanies rheumatic attacks is shared by chorea; and that it may be ultimately found that the presence or absence of this pigment affords a means more delicate than any which we yet possess of distinguishing which cases of chorea are due to the rheumatic taint and which own some different causation. In conclusion, I must express my thanks to Drs. Sturges, Barlow, Hadden, and Herringham, who have kindly allowed me to examine the urine from some of their cases of chorea.

Chandos-street, W.

ON THE TREATMENT OF STRICTURE OF THE URETHRA BY HOLT'S METHOD OF DILATATION,

WITH A MODIFICATION OF VOILLEMIE'S DILATOR.

By SURGEON-MAJOR EDWARD LAWRIE.

FOR want of an instrument of precision, Holt's method of dilatation of stricture of the urethra has been to a great extent superseded by internal urethrotomy. This want has, I believe, been remedied by the introduction of a dilator fulfilling all the requirements of such an instrument, which Messrs. Arnold and Sons have made at my suggestion; and Holt's operation will, I trust, now take its proper position as in all probability the soundest and safest method of treating organic stricture. The instrument Messrs. Arnold

and Sons have made consists of a branching dilator constructed on Voilemier's principle. The branches, which are passed through the constriction as a No. 3 Lister's steel bougie, fit into two grooves in the dilator, so

¹ Brit. Med. Journ., vol. ii. 1883, p. 1060; vol. ii. 1888, p. 117. Proc. Roy. Soc., No. 208, 1880; Journal of Physiology, vol. x., p. 71.

² Zeitschrift für Physiol. Chemie, 1891, Bd. xv., S. 286.