

Luys's separator a fraction of 1 c.cm. of colourless fluid containing a trace of urea was collected from the right side. In the same time 10.5 c.cm. of normal urine were collected from the left kidney.

The above cases illustrate most of the common and some of the rarer practical problems of renal surgery, and the assistance afforded in their solution by the use of the cystoscope, the ureteral catheter, and the urinary separator. A few concluding observations may be made on the relative value of these three methods.

Leaving on one side the use of the cystoscope in discriminating between affections of the kidneys and affections of the bladder, a use which is too obvious to need further argument, we have in the visual inspection of the trigone and ureteral offices a simple means of obtaining direct evidence of the greatest value of the patency or occlusion of the ducts of the kidney, and of the secretory activity of each organ. The appearances of the mouths of the ureters and of the neighbouring mucous membrane often enable us to diagnose tuberculosis of the kidney, or impaction of a stone in the ureter. The previous ingestion of methylene blue or other pigment enables us to watch the force and frequency of the jets expelled from each ureter, and the degree of pigmentation of the jets and the rapidity with which the pigment is excreted from the blood gives us some idea of the functional capacity of each kidney. The use of the ureteral catheter carries the investigation a stage further, for it not only enables us to test the patency of either ureter with precision, but to collect and analyse the urine of each kidney separately. The latter object is attained, though perhaps less perfectly, by means of the urine separator of Luys. Of other separators I have no experience, but as to the relative advantages of ureteral catheterization compared with Luys's separator, the following remarks may be made.

In the first place, as regards ease of application, there is little to choose between the two methods, but on the whole catheterization is the easier, as it is certainly the more precise. The separator requires a preliminary cystoscopy in order to exclude conditions of the bladder which may introduce fallacies in the use of the separator; and since cystoscopy and catheterization can be carried out with the introduction of a single instrument, that is a distinct advantage over the separator. Catheterization of the ureters, again, is possible under general anaesthesia while the use of the Luys's separator is not, so that the former operation can be performed immediately preceding an operation on the kidney, and with the same anaesthetic. This is not, however, generally a procedure to be recommended, for two reasons. In the first place, general anaesthetics nearly always diminish or inhibit the secretory activity of the kidney; and, in the second place, it is not advisable to catheterize both ureters immediately before an operation on either kidney for fear of adding to the inhibitory effect of an operation on both. Whatever method of separation be employed, it is better to carry out this procedure on a separate occasion and employ only a local anaesthetic, which is quite efficacious for the purpose. By means of Luys's separator properly used I have satisfied myself that reliable observations can be made as to the patency of the ureters and the relative functional activity of the two kidneys, with little pain, in five to ten minutes.

Nevertheless, both care and experience are required to avoid certain fallacies, and I think it is probable that those who are familiar with the use of the cystoscope will prefer to employ the ureteral catheter in most cases.

A DISCUSSION on the ventilation and warming of public buildings will be opened at the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W., on Wednesday next, at 8 p.m., by the Rev. J. B. Lock, Bursar of Caius College, Cambridge, who will read a paper on the ventilation of the large Examination Hall, Cambridge.

WE are glad to note that the trustees of the Carnegie Hero Fund, at a meeting on January 27th, decided to grant an allowance of £35 per annum (with a supplement of £15 for the first year in consideration of special circumstances) to the widow and family of Dr. John Herbert Wells, formerly of the therapeutic inoculation department of St. Mary's Hospital. An obituary notice recording the circumstances of his death will be found at page 1322 of the JOURNAL for October 30th, 1909.

RESULTS OF THE TREATMENT OF FRACTURED LIMBS IN WORKMEN.

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A PAPER read by Mr. Mansell Moullin before the City Branch of the British Medical Association, drawing attention to modern methods of treating fractures by early mobilization and massage, or wiring these cases in which good position could not otherwise be attained, and a remark he made that few statistics are available to show how long men are kept from work after fractures, led me to examine a series of cases which have come under my notice during the last three or four years, or have been treated in the City Police Hospital in the last few years (I am indebted to Mr. Gordon Brown, City Police Surgeon, for these). My own cases have been in connexion with workmen's compensation and have been treated at various hospitals; they show that the aforesaid modern methods, which have been advocated at any rate for ten years, have not yet become very completely established.

The patients are all men working in arduous and hazardous employment, they have to be really "fit" before going back to work, and their lot on half wages is often hard when inability to work is prolonged, entailing much poverty and semi-starvation for themselves and families.

There are several causes which, "under the Act," at times contribute to the inordinate length of time away from work. These are:

1. Unwillingness to return and the hope of getting a lump sum by hanging on. Men belonging to clubs are sometimes better off "resting."

2. Malingering, not common in connexion with fractures.

3. The average working man shirks the pain necessary to get an injured joint or stiff tendons in working order; the pain to him is an all-sufficient reason for not using them and he clings to his crutches or stick.

4. Light work, which would often be good for them, is hardly obtainable nowadays. Employers have shifted their responsibilities on to insurance companies and say that if a man is not able to do his full work he is no good to them.

5. If insurance companies adopt the "strong hand" policy and stop payment, the workman has no difficulty in getting a sympathetic solicitor to run his case, one or two sympathetic doctors to swear to his incapacity or permanent impairment, and a sympathetic judge who usually fears to interfere with the award, and who in his anxiety not to wrong the working man often wrongs the employer; it must be remembered he has only a layman's knowledge of surgery. Employers or insurance companies therefore often submit open-eyed to imposition, and settle cases with lump sums rather than risk expensive and very unpromising lawsuits.

6. Workmen are often afraid to start working because they fear that they will find themselves unable to continue, and they wrongly imagine that compensation which ceases if they start work cannot be obtained again if they are obliged to give up.

7. There are doctors who, ignorant of the provisions of the Workmen's Compensation Act, frequently urge their patients to insist on their imaginary "rights" and get full wages, lump sums and so forth, and will not allow them to go back to work when they should do. One of my cases, recorded below, was recently offered work by his employers which he could have done in absolute safety, but he was unwilling, and said he would consult his doctor; his doctor refused to allow him to begin. This man is partly neurasthenic, but certainly physically able to do the work, and it would be best for him. In my opinion, the actions of these medical men are not in the best interests of their patients.

Apart from these contributory causes, however, there are many cases in which disability is genuine; some cases are inevitably crippled for life, but there are others in which it is possible that better methods might give better results; fractures of the thigh are notably unsuccessful, and fractures involving the ankle-joint give very poor results, tendon and joint stiffness usually being responsible. It is not my object to point the way. Others well qualified by experience and position have done and

are doing so; but are the present methods as employed in the great hospitals satisfactory? One great defect in the present system is that fractures are "no man's cases." They are usually first admitted into a ward, but as soon as possible they are fixed in a plaster-of-Paris splint and transferred to the out-patient department under a fresh surgeon; after a series of junior house-surgeons or clinical assistants the patient is apt to tire of a succession of doctors who "don't know his case," and gives up attending; he then often goes on for months visiting a private or club doctor occasionally, chiefly for the purpose of obtaining a certificate.

I would suggest that a good change would be for the surgeon in charge of beds to make a point of seeing his fracture cases in the wards once a month till cured (if susceptible of cure); they could be sent to special departments for special treatment; facing the "calamities" monthly would be a fine stimulus to fresh efforts to obtain better results. There is good surgery to be done in the treatment of fractures, as there is in major operations, but do the fracture cases get their fair share of it? It would be very interesting if a surgeon would bring forward a series of fractures of the femur treated by some special method of his own with the result of no deformity, the patient being fit for work in four months, or a series of Pott's or Dupuytren's fractures with the same good results obtained, say, in two and a half to three months. Massage departments in hospitals are unfortunately overcrowded, and there is a tendency for patients to get too little of it or too infrequent applications to derive full benefit. I do not think I am unfair in saying that the majority of cases give themselves all the massage they get, using liniment supplied by the hospital they attend.

I append a list of cases of fractures of the limbs, with results so far as I have been able to obtain them. One or two I have not been able to follow up, and others are still incapacitated after various periods. I have as far as possible named the hospitals at which they were treated and the treatment adopted; for this I have had to depend on the patients' statements, so there may be inaccuracies. My numbers are not sufficient to be of value for statistical purposes, but they show some things.

Of 10 patients who suffered fracture of the thigh only 3 are likely to do their own work again; of these 3, 1 was an impacted fracture and another of doubtful nature, probably a splintering of the bone.

The 23 patients with leg fractures examined under the Workmen's Compensation and Employers' Liability Act show 11 incapacitated for various periods exceeding a year, and 1 settled with a lump sum after forty-five weeks' half wages. Among the others there are several in which the final result is not yet known.

It is noteworthy that the police cases show much better results. They are mostly fractures not involving joints; they are picked healthy men of good type; there is no wages question; they are under one surgeon during their incapacity; there is no shortness of food and worry about ability to maintain homes and families, and most of them get a period of residence at a convalescent home, and on their return to duty they can, if necessary, be spared from work which is too trying for their condition.

More than half of the 14 patients with fractures of the arm show incapacity extending for six months and upwards, in some the impairment is probably permanent. Prolonged and even permanent incapacity is very common after shoulder injuries, especially when the patient is anything over middle-age.

My list shows that the plaster-of-Paris splint, severely condemned by the "new school," is not dead yet.

1. J. G., aged 50. Fracture of the lower third left thigh; there was 1½ in. shortening, knee weak, and capsule loose. He had been three weeks in King's College Hospital, and had worn a plaster-of-Paris splint; was still receiving half wages fourteen months after accident; prognosis doubtful.

2. A. C., aged 31. Fracture of lower third thigh; there was no shortening, but he could not flex knee or climb ladders; he had been six weeks in Rochester Hospital, wore plaster-of-Paris splint four weeks and back splint five weeks; twenty months after accident he was still on half wages, and was not likely to do his work again.

3. C. A., aged 30. Fracture of right thigh, with "several breaks in several places; x rays showed fractures at neck and lower down"; there was 1½ in. shortening, and lump felt at upper third anteriorly; he had been in the Metropolitan Hospital for eight weeks; still on half wages twenty months after accident.

4. J. S., aged 56. Fracture of the lower third left thigh, compound fracture above ankle-joint, and other injuries; 2 in. to 3 in. shortening; swelling and ulceration at ankle six months after the accident; he was in Guy's Hospital for eleven weeks; three and a half years after the accident was still on half wages.

5. M. O., aged 24. Fracture of the right thigh (no evidence); patient said that a splinter of thigh was removed; fractured skull. No shortening or deformity; if there was a fracture it was probably incomplete; he had been in Charing Cross Hospital; walked with support thirteen days after accident; head symptoms predominant; twenty-one weeks' half wages and a lump sum.

6. A. W., aged 34. Impacted fracture neck of the left thigh; ¾ in. shortening five months later; hip movement very limited; he had been in the London Hospital; twenty-four weeks' half wages and a lump sum equal to twenty more.

7. H. O., aged 53. Fracture of the upper third of the left femur; 1½ in. shortening; large antero-external lump; one year after accident could walk two to three miles with a stick; he had been in Greenwich Infirmary for ten weeks and three days; fifty-two weeks' half wages and good lump sum in settlement; he was not likely to do his own work again.

8. W. M., aged 39. Fracture of left thigh (middle), and concussion; no shortening; lump felt at middle of bone; one year after ¾ in. wasting of thigh, and no confidence to use it. He had been in Middlesex Hospital for eight weeks; plaster-of-Paris splint removed eleven weeks after the accident; fourteen months after accident still half wages; should get well.

9. W. J., aged 44 (window cleaner). Fracture of right thigh near trochanter, fracture of humerus and (?) dislocated shoulder. ½ in. shortening sixteen months after accident, very little shoulder movement, limited hip movement; he was in St. Mary's Hospital for six weeks; plaster-of-Paris splint; seventy-eight weeks' half wages and lump sum; never likely to be fit for old job, partly on account of shoulder.

10. W. C., aged 40. Compound fracture of the left thigh (middle) comminution, 1½ in. shortening, big lump hampering quadriceps action, knee-joint swollen; he had been in St. George's Hospital; patient said it had been wired; six months after accident could hardly bend knee; not likely ever to do ladder work again.

11. W. J. W., aged 34. Fracture of the left ankle, position good; he had been in St. George's Hospital, in bed fourteen days; had plaster-of-Paris splint five weeks; he had nineteen weeks' half wages.

12. F. B., aged 48. Fracture of right fibula (?). Nine weeks later swelling and pain at ankle; no deformity; no splints; he was in St. Bartholomew's Hospital for sixteen days, and after that looked after himself; four months later he was still on half wages.

13. W. H. M., aged 56. Fracture of the right os calcis and (?) external malleolus; no deformity; he had been in Westminster Hospital; plaster-of-Paris one month; six months later on half wages; could walk well, but (?) ladder work.

14. H. N., aged 42. Fracture of the ankle (? internal malleolus), through ladder falling across his ankle; eight months after the accident said he could not work; rather neurasthenic; he was treated at St. Mary's Hospital, bound up ten days and had massage; had crutches for seven weeks; eleven months after the accident was still on half wages; I thought he should be at work.

15. M. W., aged 60. Compound fracture of the right ankle, fractured skull, and other injuries; seven months after the accident using stick and no confidence in ankle, fair movement but some swelling; other injuries make it unlikely he will be able to do his own work again.

16. C. G., aged 52. Both ankles fractured, Dupuytren; injury to right hip; both feet everted, left flat, right less so, lot of swelling in the right; treated at King's College Hospital; he was permanently crippled; employer's liability action.

17. W. F., 46. Fracture of bones in foot; a year afterwards said his foot was very painful; there was no deformity; treated at Seamen's Hospital, and later at St. Thomas's physical exercise department; fifty-four weeks after accident, still on half wages; ? genuine.

18. J. M., 40. Pott's fracture; good position; one year after accident very limited ankle movement; treated at London Hospital; sent home in back and side splints and footpiece four weeks; plaster-of-Paris splint six weeks; fifty-nine weeks' half wages, and final settlement equal to fifteen more; was not a trier.

19. A. R., aged 32. Fractured tibia just below right knee; good position; treated at Lewisham Infirmary; splints at first, plaster-of-Paris splint five weeks; ten weeks after accident looked like being about two months; lost sight of.

20. T. W., aged 65. Fracture of right fibula near ankle; albuminuria; nine months later ankle stiff and swollen; fourteen months later (?) good bony union, fibula spring deficient; treated at St. Bartholomew's Hospital; plaster-of-Paris splint eight weeks and three days, then fresh plaster-of-Paris splint three weeks and three days; twenty-five months after accident still on half wages.

21. W. C. Fracture of os calcis, left, and concussion; no deformity; twenty weeks after could not walk far for pain; was inclined to neurasthenia; treated at St. Mary's Hospital for eight days; plaster-of-Paris splint five weeks; massage later; twenty-three weeks half wages and lump sum; foot not right when examined, but head symptoms predominant.

22. G. T., aged 34. Fracture of left ankle, tibia (?), just above ankle; external malleolus enlarged; outward displacement of

foot: ten months later very limited ankle movement; treated at Croydon General Hospital for three weeks; plaster-of-Paris splint (? time); forty-five weeks half wages and lump sum; not a good result; bad fracture; not likely to do own work again.

23. G. C., aged 43. Fracture of left ankle (? tarsal bones); swelling of foot; no bony deformity noted; treated at St. Thomas's Hospital; plaster-of-Paris splint seven or eight weeks; twenty-six weeks' half wages, and lump sum equal to more than that.

24. A. R., aged 56. Fractured tibia just above left ankle; slight concavity just above ankle; good ankle movement; in Guy's Hospital eleven days; out-patient about five months; fifty-five weeks half wages, and settlement by lump sum; would not try.

25. H. A. P., aged 39. Fracture of right ankle, good position; six weeks after accident there was pain on moving the joint; treated at St. Thomas's Hospital; sent home in splints; splints three weeks; lump sum paid under employer's liability; lost sight of.

26. M. Pott's fracture; not fit for work fifteen months after accident; position good; ankle stiff; examined in court under employer's liability.

27. C. O., aged 40. Compound fracture right tibia and fibula just above ankle; left leg at ankle (? Dupuytren); right: deformity above ankle; left: inward displacement of foot; malleoli widened, very little movement; treated at St. Bartholomew's Hospital; plaster-of-Paris splints removed about three months after accident; seventeen months after accident using two sticks; left foot not likely to get good enough for work.

28. J. S., aged 35. Fractured tibia and fibula, just above ankle, fairly good position; treated at London Hospital, in bed twenty-four days; plaster-of-Paris splint forty days; twenty-six weeks' half wages.

29. A. H., aged 34. Fracture of left leg above ankle; position good; could not feel fracture site; treated at Royal Free Hospital three weeks; plaster-of-Paris splint on a month; fifteen months after the accident still on half wages; nine months after leg fit at any rate for ground work, but patient neurasthenic.

30. R. W., aged 49. Fracture right fibula about ankle; position good; eleven months after good movement, some pain; should do ground work; in St. Bartholomew's Hospital fourteen to twenty-one days; plaster-of-Paris splint six weeks; eighteen months after accident still on half wages.

31. G. F., aged 40. Fractured patella; good result; treated at Hampstead General Hospital; wired; twenty-eight weeks' half wages and lump sum.

32. J. B., aged 46. Fracture of right ankle (? compound); position good; limping badly and using stick sixteen months later; treated at St. Mary's Hospital; splints (anaesthetic); in bed five weeks and three days; plaster-of-Paris splint six weeks; sixteen months after accident on half wages, and likely to be some long time.

33. A. E. H., aged 30. Fracture of right ankle; thirteen months later wasted leg and thigh muscles; both feet flat; treated at St. Bartholomew's Hospital; fracture (?) diagnosed by x rays eleven months after accident; ? tubercle in ankle and tarsal joints; using crutch and stick thirteen months afterwards and foot very painful.

34. Constable P. Fracture of right tibia and fibula just above ankle; treated at St. Bartholomew's Hospital; plaster-of-Paris splint at once and then police hospital; two days later plaster-of-Paris splint removed and back and side splints applied; off duty eight weeks and two days.

35. Constable S. Fractured tibia and fibula half way down shaft; ankle joint not involved; wrestling accident; treated at police hospital, back and side splints; off duty sixteen weeks and three days.

36. Constable F., aged 29. Fractured tibia and fibula 2 to 3 in. above ankle; tibia oblique sharp point under skin on inner side above ankle; treated at the police hospital; off duty thirteen weeks, then went to full duty, but allowed to sit down for a few minutes occasionally for first two months.

37. Constable B. Fractured fibula, external malleolus; wrestling accident; treated at police hospital; massage from second day, passive movement from fifth; plaster-of-Paris splint from fourteenth day for three weeks; off duty eleven weeks.

38. Constable P. Fracture of upper third of fibula; wrestling accident; treated at police hospital; back and side splints; off duty nine weeks and four days.

39. Constable T. Fractured tibia and fibula, lower fifth; first treated at Guy's Hospital, then police hospital four days, then convalescent home, and again police hospital fourteen days; off duty twelve weeks and six days.

40. Constable M., aged 44. Compound fracture of tibia and fibula, lower third; wound just behind tibia; run over by cab; treated at the police hospital; off duty thirteen weeks but not doing quite full ordinary duty till eleven months after accident.

41. Constable M. Fracture of middle shaft of tibia; horse fell on him, fibula not broken; treated at police hospital, back and side splints; off duty thirteen weeks.

42. A. H., aged 51. Fracture of neck of humerus; no deformity noticed; full passive movements painful three months after accident; treated at Guy's Hospital for two months, then massage; thirty-two weeks' half wages.

43. F. J., aged 49. Fracture of "cup of right shoulder"; no deformity; two months later wasting of muscles; full passive, but little active movement; treated at St. Bartholomew's

Hospital; passive movement commenced at five weeks; twenty-six weeks' half wages.

44. C. P., aged 48. Compound fracture of right arm; callus felt middle of forearm; slight concavity forwards; treated at Middlesex Hospital; splints six to seven weeks; surgeon told him to do light work at the end of three months; twenty-three weeks' half wages and lump sum.

45. G. M. Fracture internal condyle humerus and at wrist; tendons cut; left arm; some outward displacement of the hand; treated at Middlesex Hospital; gas twice for elbow movement; twenty-five weeks' half wages and lump sum; fit for light work.

46. E. M., 40. Fracture of left wrist "bone cracked," x rays; no bony deformity, but severe injury to soft parts; lot of swelling and pain; treated at St. Mary's Hospital; six months after wrist rigid; no pronation and supination; looked hopeless; fifty weeks' half wages and big lump sum.

47. H. W., aged 36. Fracture of part of head of radius; x rays; only capable of being diagnosed by radiography; treated at St. Thomas's Hospital; mobilization and massage; seen eleven days after accident; hospital people thought five or six weeks; employer's liability settlement.

48. C. D., aged 64. Fracture of neck of humerus; union good; some grating in the shoulder sixteen months after the accident; no deformity; could not use it; treated at Westminster Hospital, then the London; eight months' massage and a machine and movement; last three months, letting it go when seen by me; seventy-nine weeks' half wages and a good lump sum.

49. J. K., aged 38. Fracture of scapula; seven weeks after accident very poor shoulder movement; treated at Great Northern Central Hospital; eleven weeks' half wages, and lump sum equal to ten more.

50. B. H., aged 39. Fracture of lower end of right forearm by direct violence; fairly good position; three months after, some swelling about wrist, and wasting of forearm muscles; treated at St. Bartholomew's Hospital; Carr's splint four weeks, massage afterwards; seventeen weeks' half wages and lump sum equal to thirty more; work involves using heavy hammer for breaking concrete.

51. F. W., aged 43. Fracture of lower end of left radius; position good; five months later pronation and supination good; flexion and extension limited by pain in tendons; treated at West London Hospital; back and front splints; twenty-two weeks' half wages.

52. T. L., aged 48. Fracture of left humerus; ten months later no deformity; muscles good; limited shoulder movement; no treatment last six weeks; treated at Great Northern Central Hospital; forty-four weeks' half wages, and lump sum equal to at least twenty more.

53. W. G., aged 40. Colles's fracture; typical displacement; treated at St. George's Hospital; ether for setting; Carr's and back splints; mobilization and massage after third day; seven months later still on half wages; probably some permanent weakening.

54. Constable J. Fracture of forearm; both bones broken; treated at police hospital; went first to (?) St. Bartholomew's; seven weeks off duty.

REFERENCE.

¹ *Clinical Journal*, November 10th, 1909, p. 65.

ON THE FUTILITY OF THE OFFICIAL TESTS FOR COLOUR BLINDNESS.

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For the past twenty years or more Edridge-Green has pointed out the utter inadequacy of the official tests for colour blindness, and his efforts have been seconded by many other ophthalmic surgeons both in this country and on the Continent and in America. In Germany, Nagel, who was colour blind, repeatedly stated that from his own personal experience he knew how easy it is for an intelligent man to defeat many of the tests which to the lay mind appear to afford conclusive evidence of the presence or absence of defective colour vision.

The result of these efforts is so far very disappointing. Holmgren's woools are still scheduled as the official test both by the Board of Trade and by railway companies, and the examinations are practically always conducted by men who have no special knowledge of the physiology and pathology of colour vision. It is true that if a seaman is rejected he can appeal to a special court of examiners which includes a physicist possessing expert knowledge of colour vision, but what if he passes the tests conducted by laymen by inefficient methods?

The practical working of the system is a matter of common knowledge to all who have had opportunities of investigating the question. Signals are frequently over-run by engine drivers, and it is well known that the