died on the twelfth day. It is impossible to say how the infection occurred. If it was the fault of any of the preparations it is probable that the cases operated upon at the same time would have been affected. The ligatures used were catgut, prepared after the method of Sir William Macewen.

Suspicion was directed against catgut by Mr. W. G. Richardson in the *BRITISH MEDICAL JOURNAL* of April 17th, 1909. In the *JOURNAL* of May 29th, 1909, I reported a case of tetanus which occurred in a man eighteen days after an operation for varicose veins. The wounds had all healed per primam, and I was unable to account for the infection. I feel now, as I felt then, that there is no proof to connect them. The fact that this man was in a poor state, with a mouth full of decaying stumps, may have been, at any rate, a contributory cause.

Two or three other operations were performed the same morning under precisely similar conditions, including the excision from a man's neck of a huge carcinomatous mass, which necessitated the removal of the sterno-mastoid muscle and the deep jugular vein—a large dissection, lasting an hour and three-quarters. It healed up perfectly, and the stitches were removed on the eighth day, and he went home within a fortnight.

Besides septic and clean cases there are a considerable number which cannot be placed in either category. In such cases as appendicectomy and gastro-enterostomy, with the possibility of infecting the wound from the opened viscera, the skin preparation could not be blamed. Fortunately all these cases were successful and can be quoted in support of the method.

In cases such as circumcisions, where it is practically impossible to keep an aseptic dressing applied, healing occurs more quickly and there is less inflammation. Casualty wounds which have all been exposed to infection have in most instances healed perfectly. There were two failures—one a gunshot wound of the thigh which was followed by tetanus, and one a wound into the knee-joint followed by gangrene.

I tried the treatment in one vaccination, and I asked my friend Dr. O. C. P. Evans, the Public Vaccinator, to try it also. Our experience was very similar. It was too effective because it destroyed the lymph and there was no result, in spite of the fact that I allowed the iodine to dry on before performing the operation.

A former house-surgeon informs me that he finds the method useful for sterilizing his fingers in midwifery cases.

In this connexion arise the questions of staining, desquamation, and dermatitis. The staining does not persist, and I find that by the time most operations are completed all the colour has disappeared. If my hands become stained, as they often do, it is easily removed by washing them in a 1 per cent. solution of cyllin (3 per cent. carbolic solution is equally efficient), and towels are cleaned by soaking in a similar solution. There is no desquamation as a rule. I have seen it in one case, due, I think, to the solution being too strong, owing to exposure during a long operation and consequent evaporation. It should always be stored in a stoppered bottle, and only sufficient for use poured out. I prefer to use it direct from a wide-mouthed bottle. It can be applied with a sterilized swab or brush.

I am informed by several members of the profession that they are familiar with cases of acute dermatitis following the application of tincture of iodine, but personally I have not come across one. I have never heard any complaint of pain, and one house-surgeon who applies it freely to all casualty wounds informs me that there is no complaint.

My experience is that it is absolutely unnecessary to shave the skin, and this is an important advantage. Of all the preparations a lady has to undergo prior to an abdominal operation the shaving is the most repulsive, and during the period of convalescence the irritation of the growing hair causes great discomfort.

The only disadvantage I have discovered is lacrymation, to which some assistants are more susceptible than others. The tincture made with rectified spirit is far less irritating than that made from methylated spirit, and can be tolerated by most people. I still use the methylated spirit solution for the primary painting, which is performed immediately before the patient is anaesthetized. The second painting is done with the tincture when anaesthesia is complete, and the final when the operation is finished, with methylated. The tincture is of course suitable for all these purposes, but the increased cost is a factor which

has to be considered in hospital administration. To prepare a patient properly by my former method necessitated at least three days' residence in hospital prior to an operation. It occupied the house-surgeon or a nurse for periods varying from one to several hours, and besides all the chemical materials, at least two sets of aseptic dressings were required. The cost to the hospital on each case was considerable. On a large number a good round sum is saved in a year. What is still more important, the patients are saved the misery caused by these preparations. What is most important is that it is an efficient and reliable method, and the surgeon can always be certain that it has been thoroughly performed.

REFERENCE.

¹ *BRITISH MEDICAL JOURNAL*, 1909, ii, p. 368.

THE SCIENCE COMMITTEE OF THE British Medical Association. REPORT CXXII.

A SOURCE OF FALLACY IN COUNTING RED CELLS.*

By CECIL PRICE JONES, M.B.

(From the Pathological Department, Guy's Hospital, London.)

It seems desirable to record some observations in connexion with red cell enumeration and the estimation of colour index, from which it is clear that the employment of Toisson's fluid for red cell counts is apt in some anaemic conditions to give very fallacious results.

I have prepared Toisson's fluid according to the following receipt: Distilled water, 160 c.cm.; glycerine, 30 c.cm.; sodium sulphate, 8 grams; sodium chloride, 1 gram. To the completely dissolved mixture I have added a few drops of a saturated aqueous solution of methyl violet to obtain the desired tint.

When counting the red cells of a rabbit which had been bled from the auricular vein on three successive days, I noted that the field contained, besides the usual red cell appearances, a number of very pale red cells, many of which were very difficult to see and readily escaped being counted, the result being an erroneously low red cell count and a correspondingly raised colour index. The number of these pale cells was increased with the interval of time after the mixing of the blood and Toisson's fluid in the counting chamber, and many cells became quite invisible with any ordinary methods of illumination.

The phenomenon was absent from normal rabbits' blood, but was observed in the blood of rabbits which had received phenylhydrazin subcutaneously. Table I gives some examples of this.

TABLE I.

Nature of Case.	Hb. per Cent.	Red Cells per c.mm.		Toisson per Cent. of Hayem.	Colour Index.	
		Toisson.	Hayem.		Toisson.	Hayem.
Rabbit X (normal) ...	69	5.49	5.61	98	0.63	0.61
Rabbit X after phenylhydrazin	32	1.20	1.60	75	1.34	1.0
Rabbit 27 (normal) ...	80	6.63	6.03	110	0.60	0.66
" " ...	78	6.47	6.49	100	0.60	0.60
Rabbit 27 after phenylhydrazin	34	1.34	1.92	70	1.30	0.89
" " "	50	2.09	2.60	80	1.25	0.96
Rabbit 29 (normal) ...	84	7.05	7.06	100	0.6	0.6
" " ...	86	7.27	7.07	103	0.59	0.60
Rabbit 29 after phenylhydrazin	28	1.06	1.49	71	1.3	0.96
" " "	38	1.53	2.11	72.5	1.26	0.90
" " "	48	1.99	2.40	83	1.23	1.0

* Towards the expenses of this research a grant was received from the Science Committee of the British Medical Association.

The phenomenon was found to occur in several cases of human pernicious anaemia, and one case examined of anaemia from malaria, but it was absent or only existed to a very slight and negligible extent in normal human blood, and was not noted in single cases of chlorosis, scurvy, or rectal haemorrhage, and was absent also in one case of pernicious anaemia.

Table II shows examples of these counts.

TABLE II.

Nature of Case.	Hb. per Cent.	Red Cells per c.mm.		Toisson per Cent. of Hayem.	Colour Index.	
		Toisson.	Hayem.		Toisson.	Hayem.
Normal man	96	4.78	4.82	99	1.01	1.0
" "	94	4.66	4.75	98	1.01	0.98
" "	100	5.56	5.78	96	0.90	0.86
" "	102	5.86	5.93	98	0.87	0.86
Pernicious anaemia (1)	23	0.61	0.86	71	1.8	1.3
" " (2)	35	1.06	1.52	70	1.66	1.16
" " (3)	58	2.37	2.76	85	1.2	1.05
" " (4)	40	1.36	1.32	103	1.50	1.53
" " "	42	1.35	1.40	96	1.53	1.50
Malarial anaemia ...	62	2.98	3.55	84	1.0	0.8
Chlorosis	60	4.33	4.23	102	0.69	0.71
Scurvy	66	3.82	3.90	97.9	0.86	0.84
Haemorrhage from rectum	82	4.92	4.99	98	0.83	0.82

To obviate this production of pale red cells, Toisson's fluid was replaced by Hayem's solution, which was prepared according to the following receipt: Distilled water, 200 c.cm.; perchloride of mercury, 0.5 gram; sodium sulphate, 5 grams; sodium chloride, 1 gram. The phenomenon now no longer appeared.

Toisson's fluid does not haemolyze the red cells, as may be shown by adding normal and anaemic blood to Toisson's fluid in bulk and subsequently centrifugalizing. The pale cells seem to have acquired a refractive index identical with the solution, and thereby to have become invisible. It is suggested that the cells having this character are new formed cells, and that it may be possible from this observation to estimate the rate of regeneration of red cells in these anaemic cases.

It is, however, manifest that Toisson's fluid, as prepared above, is apt to give very unreliable and fallacious results, and should not be used for counting red cells, unless a control is simultaneously made with Hayem's solution.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF PROLONGED ABSTINENCE.

A WOMAN, aged 66, was seen by me on March 18th last. She complained that "for three days she had not been able to keep anything down." Examination disclosed a cancerous mass in the rectum. Matters were fully explained to her and her husband, but she deliberately refused all operative treatment from the first visit, and towards the end declared she did not regret her decision. She died on May 10th.

There was complete stoppage of the bowels throughout the duration of the case, nothing passing but a little foul discharge.

Vomiting took place after the drinking of even a mouthful of fluid but at no other time. The abdomen became distended but caused her very little distress. Occasional pains in the back were relieved by hypodermic injections of morphine, and during the last month these were given every six hours. She became very emaciated and

developed a bedsore over the sacrum. Her mind was clear all through and she recognized and talked to her son five minutes before she breathed her last.

For fifty-six days she had been absolutely without food and, one might add, drink, as everything in the way of fluid was always immediately rejected. This period seems to be about the limit to which life may be prolonged during complete abstinence. Drs. Guy and Ferrier mention a case of voluntary starvation which lasted sixty-one days, but this person took water and lemon juice at intervals, whereas in my case the abstinence was complete. Considering the presence of the cancer and the bedsore, one must regard this case as remarkable and unusual.

West Mersea, Colchester.

B. HALL, M.B.Lond.

UNITED FEMALE TWINS.

IN the BRITISH MEDICAL JOURNAL of April 30th, 1910, p. 1050, Surgeon R. M. Riggall, R.N., gives an interesting account, with a

photograph, of a case of united male twins, possessing a common rectum and anus, which he considers unique. When on the Malabar Coast of India, I was given the accompanying photograph, with a full account in pencil, by the native photographer who took the picture. It shows two female infants, united to one another in a very similar manner to the case recorded, possess a common anus and vulva (common cloaca); but the exact anatomical relations of the vaginae and urethrae are not known to me, as I did not personally see the twins. (The original photograph shows the infants sitting on their maternal grandmother's right hand, the grandmother merely wearing a loin cloth, as is the custom with women in those parts.) These twins were born on September 22nd, 1906, to respectable local native parents, who exhibited them for money, and in this way are said to have made a good deal, since over 400 persons visited them daily in connexion with a superstition of a "devil's birth," for they were born in a locality called "Bhootapara" or Devil's Rock, which is believed to be haunted. The twins, I have heard, are no longer living.

Newport, Mon. D. G. CARMICHAEL, M.B. (Capt. R.A.M.C.).

PRACTICAL POINTS IN THE TREATMENT AND CLINICAL HISTORY OF SYPHILIS.

To the excellent article on syphilis by Dr. Coates in the JOURNAL of May 7th, page 1093, the following facts may be added: that a woman may develop a primary sore from a syphilitic man who has no cutaneous lesion.

CASE I.—A man, aged 30, contracted syphilis two years before his marriage; he underwent only about six months' treatment. I saw him just before he married. He was free from all eruptions—no sore throat nor white patches in the mouth, no sores on the genitals, no sign of gonorrhoea. He married against my advice. A few weeks after the marriage his wife came to see me, complaining of vaginal discharge. I could find nothing to account for it but a hyperaemic patch at the posterior fourchette; no induration. I advised her to use some disinfectant. A fortnight later this hyperaemic patch was showing signs of erosion, but as yet no induration. I forgot to notice