influence of an anaesthetic. Data are wanting by which the relative value of the different methods of handling a patient can be assessed.

Treatment

In addition to such points as have already been mentioned note should be kept of all drugs given, the dose and time being recorded—for example, A.T.S., morphine, atropine, oxygen, sulphanilamide. A record should be kept of all fluids administered, whether by mouth, rectum, or vein. When blood or plasma is given the rate of transfusion should be noted. Any difficulty in entering a vein with a needle or cannula or of getting the fluid to enter the vein should be recorded. Note the temperature of the fluid administered: rigors may follow the intravenous administration of cold fluids. It is of value to note whether varying the rate of transfusion appreciably alters the patient's state. It has been found, for example, in some cases that blood pressure falls when the rate of transfusion is reduced; in others that nausea, restlessness, and respiratory distress accompany speeding of the transfusion.

Operative treatment, the anaesthetic employed, and the progress of the patient while he is in the operating theatre and subsequently, all require description. An attempt, too, should be made to follow the progress of the patient if he is transferred to another hospital. In the event of death the manner of death should be recorded and every effort be made to obtain a post-mortem examination. Fat emboli should be looked for.

It is of value also if during the course of the case and at the end the observer gives his general impressions. For example, he may state that judging by the rise of blood pressure the patient now seems fit for operation; that the case appears to be one mainly of loss of blood; that he is surprised at the turn events have taken. In this way he is led to learn from his observations and to look for further evidence in future cases to support or correct his impressions.

Medical Memoranda

Sulphonamide in the Treatment of Corneal Ulcer

Sulphonamides have in recent months been used locally in various surgical and skin conditions. The suggestion arose to try this method in seriginous ulcers of the cornea, and since October, 1940, we have treated these cases with prontosil applications. The following preparation was used:

Prontosil soluble 5% 5 c.cm.
Paraffin. molle ad 1 oz.

It was inserted into the conjunctival sac twice daily for prolonged periods. No other disinfectant was used.

In judging the results of any treatment of seriginous ulcer it has to be borne in mind that we are dealing with a disease which has to be attacked from several sides, since almost always there are complications, with their special features and dangers, which may influence the course of the disease. Iritis, invariably present, has to be held in check by mydriatics and by the application of heat; increased ocular tension often necessitates surgical intervention in the form of paracentesis; a diseased lacrimal sac has to be excised.

In any given case it is difficult to say to which of the various factors of treatment success or failure has been due; and it will be understood, since prontosil replaces only one of the weapons used, that a conclusion as to its efficiency can be arrived at only by comparing a series of cases in which it has been used with a corresponding series in which other anti-bacterial agents have been employed.

COMPARISON OF RESULTS

Two series of cases are considered: (1) the prontosil series, comprising all patients so treated who have been discharged from hospital two weeks or more; and (2) the "previous" series, consisting of the first 20 cases of seriginous ulcer treated in 1940, in which either argyrol or mercurochrome had been used. The latter series contains a number of cases in which the cautery had been employed, when the ulcer could not be prevented from spreading. No form of cautery, chemical or heat, has been used in the prontosil series, but in 9 cases treatment was supplemented by local irradiation with ultra-violet light (Duke-Elder's mercury vapour lamp). This subsidiary treatment was chosen for two reasons: (1) In cases in which the ulcer did not come to an early standstill it did not seem justifiable to resort to an experimental drug only. (2) On theoretical grounds local irradiation appeared well fitted to supplement the bacteriostatic action of the drug. Since ultra-violet light acts more in the nature of stimulating the tissue to anti-bacterial activity than as a direct bactericide, it only partly overlaps the effect of prontosil.

The table shows that the results of treatment with prontosil, as judged by the visual acuity remaining when the ulcer had healed, compare favourably with those of the orthodox treatment. The most striking feature of the prontosil series was the transparency of the resulting scar of the cornea, even in many cases in which the infiltration had gone very deep into the corneal tissue. Perhaps this was mainly due to the fact that the cautery was never

Visual Acuity of Affected Eye on Last Visit to Out-patient Dept., with Refraction Corrected	Prontosil Series	Previous Series
6/6 or better	6	1
6/6 to 6/18	7	8
6/18 to 6/60	5	3
Less than 6/60	2	6
Eye lost	0	2

required to arrest the spread of the ulcer. The rapidity of healing was the same in the two series, the average period of in-patient treatment being 10½ days in each.

Summing up we would say that the results of treatment of seriginous ulcer of the cornea by the application of prontosil ointment are encouraging, especially when used in conjunction with local ultra-violet light. It might prove a valuable addition to our therapeutic weapons against this dangerous affection of the eye.

We would like to express our thanks to Mr. Alexander MacRae for allowing us to treat these cases and for his encouragement and advice.

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Renal Complications of Sulphapyridine

After reading the article by Mr. Leedham-Green (*Journal*, 1941, 1, 586) I am prompted to record the following case.

CASE REPORT

The patient, a boy aged 5, had had three attacks of tonsillitis during last winter. Two of these were followed by mild otitis media, the first attack being treated with sulphanilamide. The second attack occurred a week after the tonsillitis, and as there was considerable injection of the malleus region of the ear-drum, with a temperature of 101°, I decided to give sulphapyridine. He had an initial dose of 1 gramme in the morning. About four hours later he began to vomit, and vomited several times during the afternoon. He refused to take fluids on account of the vomiting which they almost immediately initiated. He passed no urine from about midday until evening, when a small quantity was voided; this was not measured and was not seen by me. That evening he seemed better, but as the temperature was 99.6° another 0.5 gramme of sulphapyridine was given, also a small drink of water—all he would take.

The next morning he complained of abdominal pain centred round the umbilicus and spreading laterally towards the flanks. He vomited about 6.30 a.m. and again shortly afterwards, and voided a small quantity of thick cloudy urine, which was not

saved for me to see. I examined him about 8 a.m. for the abdominal pain, and thought it was probably colic, as he had had no bowel action the previous day. His ear-drum looked better and his temperature was normal. He was given an enema with a good result, but so far as could be ascertained he passed no urine. The enema relieved his pain, and he seemed better. He had had an appendicectomy at the age of 12 months, so appendicitis was ruled out. Nothing of note could be felt in his abdomen, and no loin tenderness was observed.

At 2 p.m., after voiding no urine since 6.30 a.m., he passed about half a pint of very heavily blood-contaminated urine, almost pure dark blood; I saw this, but through a misunderstanding it was thrown away. About an hour later he voided 6 oz. of urine; this was very much better, but it still contained obvious macroscopic blood. Laboratory examination showed red blood cells only; no casts or crystals were noted. About 5 p.m. I catheterized him. Macroscopically the specimen contained only faint blood; microscopically red blood cells were seen, but no casts, and a culture was sterile. He had been drinking well all day, had had no pain since early morning, and his temperature was normal. He continued voiding urine with progressively less blood, and the last night specimen, about 10 p.m., was only very faintly hazy.

The next morning his urine was crystal clear and chemically contained no albumin. For the rest of the week it remained the same, fluids being forced, but no more specimens were microscopically examined. Beyond looking rather pale for a week, during which time he was kept at rest, he has remained perfectly well, and a subsequent radiograph (plain abdominal) revealed no opaque calculus in the whole renal tract.

The diagnosis seemed initially to rest between sulphapyridine haematuria, acute haemorrhagic nephritis, and renal or vesical calculus. The sudden onset of haematuria, with abrupt clearance of the urine within twenty-four hours, and the complete absence of casts made nephritis very unlikely. No opaque calculus was seen radiographically, and he had never had any symptoms of calculus.

COMMENTARY

The interesting feature is the onset of haematuria after 1.5 grammes of sulphapyridine. This I am inclined to think was caused by the dehydration produced by vomiting and the inability to take fluids. Tsao *et al.* (1939) pointed out that the dosage does not seem to be an important factor. Their lowest dosage totalled 3.5 grammes in a child of 11 years. All that is necessary in a mild case such as the above is the withholding of sulphapyridine and the forcing of fluids to dissolve the concretions, which are composed of acetyl-sulphapyridine, and which are readily soluble in water. In severe cases of anuria, with complete ureteric obstruction caused by concretions which lodge mainly in the ureteric orifices of the bladder—that is, cases of calculous anuria, the calculi being composed of acetyl-sulphapyridine—the treatment has been to insert ureteric catheters up to the kidney pelves and actually to lavage the pelves and ureters with sterile water or saline until the concretions have dissolved.

Carroll *et al.* (1940) and Sadusk *et al.* (1940) reported two such cases that were cured by this means, although one patient died later from the cerebral injury for which he was given sulphapyridine. The pyelograms which they publish tend to show that it is not the ureteric orifices alone which are affected, but that the whole collecting apparatus—calices, pelves, and ureters—is full of concretions, which cause a very poorly defined radiograph of the renal pelves, etc., after injection of the pyelographic media through the catheters. Following lavage for half an hour or more a clear picture is obtained, and the urine, which after insertion of the catheters emerges very scantily and heavily blood-stained, quickly clears and appears almost normal in colour. It also drips rapidly from the catheter. Hence it seems necessary not only to insert catheters up to the renal pelves, as was originally suggested by Tsao *et al.*, and mentioned by Leedham-Green, but, in addition, to wash away these soluble concretions by repeated lavage.

Acton.

H. G. LETCHER, M.B., F.R.C.S.

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Reviews

WARTIME FEEDING

Food Values in War-Time. By Violet G. Plimmer. (Pp. 80. 1s. net.) London, New York, Toronto: Longmans, Green and Co. 1941.

Mrs. Plimmer has turned her wide knowledge of food and diets towards the solution of the difficulties of wartime feeding. Our information on food values is far greater to-day than it was during the last war, and if only we were intelligent enough to accept and apply the recommendations made by the people who know about these things we should be in a better physical condition at the end of the war than we were before it. Unfortunately many people look upon these recommendations as merely war measures, and will return to their previous diets as soon as possible. Mrs. Plimmer's book seeks to explain these recommendations and does so clearly and forcibly. We are left in no doubt as to why wholemeal and even the national wheatmeal bread are better than white bread. It is deplorable that such a large proportion of the public refuses to give up white bread that the Government has to help that part of the public in spite of itself. Vitamin B₁ and extra calcium will be put into white flour, but this cannot make it equal to wholemeal, which contains in addition vitamins B₂, A, and E, essential minerals, and better proteins. Mrs. Plimmer's plea throughout her book is for *whole* foods, which may be ground as finely as one may wish, but nothing must be taken from them. No addition of vitamin concentrates (least of all the pure or nearly pure ones) can make up for what is taken away in certain processes of manufacture, for we do not yet know every constituent of the parts removed, and some of them may be at least as important as those we know. Only one sentence in this book would we change. For "What the civilian loses in protein he gains in vitamins and minerals" (p. 39) we would substitute, "The civilian loses in protein but gains in vitamins and minerals," and on page 68 the word "variable" should come after the vitamin D content of butter, not of margarine, for the vitamin D content of all margarine nowadays is far more constant than that of butter.

The whole book is most readable and instructive, and concludes with some valuable tables of amounts of various foods which on the average will supply the necessary daily amounts of each of the vitamins. It is worthy of a better binding, but that would have made it more expensive and probably therefore have restricted its distribution.

SURGICAL ASPECTS OF HEART DISEASE

Surgery of the Heart. By E. S. J. King, M.D., M.S., D.Sc., F.R.C.S., F.R.A.C.S., Major A.A.M.C. (Pp. 728; illustrated. 50s. net.) London: Edward Arnold and Co. 1941.

Books and journals devoted to the study of heart diseases from the medical point of view are abundant, but those dealing with the same subject from the surgical aspect are few and far between. For this reason *Surgery of the Heart*, by E. S. J. King of Melbourne, is a notable monograph. Its matter consists of an expansion of the Jacksonian Essay submitted to the Royal College of Surgeons of England in 1938. In the preface the author explains that the contents include observations made on pathological material collected over a period of several years, experimental work carried out during the last four years, and clinical cases, some of which were treated a number of years ago but the majority being relatively recent. Study of the book reveals that a more descriptive title would have been, "Diseases