hypertension. Occasional successes were obtained with thiocyanate, but in the majority of cases thiocyanate was either too toxic or too disappointing to be any solution of their problems as a whole. The hypertensive patient must be taught to live slowly: a "forty-hour week" should be prescribed for the heart. By judicious advice much could be done to delay the progress of cardiac enlargement and the onset of heart failure. As for surgery, it was most difficult to assess the results from the statistics. It was unfortunate that results were given in terms of reduction of diastolic pressure, which meant very little. In terms of the humoral theory of hypertension surgery was an irrational procedure, but it might still be an effective one. It was not a cure for hypertension, but at the best it could lower, sometimes appreciably, the blood pressure level and diminish the burden on the heart.

Mr. DICKSON WRIGHT said that the incidence of clotting in the eyes or brain after these operations of sympathectomy had been low, and rather comparable with the incidence of femoral thrombosis after abdominal operations. He had not yet thought of giving heparin. It was the load on the heart which killed the patient. They were too prone to think of cerebral haemorrhage, but the real mischief was the slow wearing out of the myocardium.

MEDICAL PHOTOGRAPHY

A meeting of the Medical Society of the L.C.C. Medical Service was held at County Hall on April 3 to discuss the uses of photography in medicine.

Dr. J. E. MCCARTNEY stressed the value of accurate and immediate recording of medical cases. Lesions were often fleeting, appearances changed rapidly, patients might recover or die, and information not recorded at the time might be impossible to get later. In a written record the clinician put down only what he saw. A sketch might add a few more details, but a photograph would reveal not only all the clinician saw at the time but perhaps further information for other observers. Accurate photographic records were valuable both for present and for future investigations. Medical photography should be taken seriously. It required adequate modern equipment and a skilled staff. Medical photography was so specialized and involved such varying conditions of work that it was imperative to employ a first-class, well-trained, well-paid photographic technician.

Each patient presented a different problem, and special pieces of apparatus and a number of different lenses and cameras were necessary to cover the whole range of clinical photography. Special equipment was again required for biopsy or post-mortem specimens. To show the correct dimensions of the specimen a centimetre scale or similar measure should be placed beside it. Miniature photography was useful for recording case-papers, documents, reprints, books, etc. This had been specially developed in America with elaborate and costly apparatus.

Dr. McCartney went on to say that in America, during his recent visit, he had seen the latest developments of colour work and printing. Illustrations demonstrating the value of coloured backgrounds for throwing the subject into relief were shown. Cinephotography was invaluable for recording movement, such as gaits and the progress of orthopaedic and similar cases. The use of colour in the cinephotography of operations was demonstrated, and the value of sound film for teaching purposes was stressed. A 16-mm. film showing parts of various medical films, in black and white and in colour, made by Mr. J. E. Andrews, the L.C.C.'s medical photographer, was then demonstrated.

Dr. GUNN emphasized the value of cinephotography for teaching students, but thought it should only be considered in the case of operations or manipulations, as an adjunct to direct clinical teaching. Mr. MATHESON remarked that though colour photography had considerably improved films of operations, it was still very difficult to see important details, owing to the shiny appearance due to reflection of light from the tissues.

Dr. MCKEITH, raising the question of film-strips, suggested that for teaching purposes film-strips were more useful than actual moving films as they could be arranged beforehand to show all the points, and only those points, which the lecturer desired to stress. He also questioned the value of taking films

of operations. It was impossible to learn to operate from the film, and, while it might make a pretty picture, there were many other aspects of medicine in which a film could be of much greater value.

Mr. PIERCEY, admitting that part of the film shown was of himself doing a thyroidectomy, said that the reason for having this film taken was to preserve a record of Mr. C. A. Joll's technique and particularly of his exposure and ligature of the inferior thyroid artery. He thought that films of operations showing special technique were of great interest to surgeons and others. Mr. ANDREWS said it was quite easy to get film-strips made by commercial firms. The cost was about 1s. a picture and projectors were available from about £8 upwards. He thought that slides were more generally useful. The order of showing them could be altered and they stood up to heat much better than film-strips.

Correspondence

State Medical Service in New Zealand

SIR.—New Zealand has enjoyed a partial State Medical Service for the past 10 years. In the current issue of *St. Mary's Hospital Gazette* Mr. A. E. Porritt—a New Zealander coming to England as a Rhodes Scholar to study medicine 23 years ago—gives a "dispassionate review on things medical in New Zealand" which he observed during a recent visit to that country. He remarks that although New Zealand is one of the most beautiful and naturally endowed countries in the world to-day "it is even more full of petty restrictions in its administration than this country." He sums up his conclusion on the medical services in these pregnant sentences: (a) A slightly improved all-round service for the public—during business hours. To get a doctor in New Zealand after 6 p.m. and over week-ends is not an enviable task. (b) A definite falling off in the standard of medical practice from both ethical and clinical viewpoints. This is a consensus of opinion from all branches of the profession. (c) A growing and already appreciable dearth of specialists—and this in a country where the proportion of men taking higher degrees was previously exceptionally high.

We have been warned!—I am, etc.,

London, S.W.1.

E. GRAHAM-LITTLE.

Reiter's Syndrome

SIR.—I am particularly interested in the claim made by Dr. R. R. Willcox and his collaborators (April 12, p. 483) that gold salts (myocrisin) were curative in two of their cases of Reiter's disease. As reported in an address to the Medical Society for the Study of Venereal Diseases in May, 1944, I was at that time carrying out treatment with myocrisin on a typical case of Reiter's disease with non-gonococcal urethritis, bilateral conjunctivitis, polyarthritis, and keratoderma blennorrhagica (Case 20 in the series) in spite of the fact that no pleuropneumonia-like organisms had been cultivated from the urethral, conjunctival, or skin lesions. I had read the paper of Findlay *et al.* in which it was stated that organic gold salts protected rats and mice from developing arthritis after injection in the pad with pleuropneumonia-like organisms, and the drug was prescribed on the supposition that the inclusions seen in my cases may have been the granular phase in the development of these organisms. No beneficial effects followed gold therapy in this and two further cases under my care. King in the treatment of Reiter's disease with the Simpson-Kettering hypertherm gave several cases injections of myocrisin during fever and the results obtained were no better than with fever alone. I was interested to note that in Case 1 of the authors' there was a fall in the blood sedimentation rate during treatment, as in none of my cases has this ever been observed; in fact I find the test of little value in the assessment of progress. In one apyrexial case now under my care that has already received five injections of myocrisin the B.S.R., which was originally 30, has risen steadily each week and is now 41.

It is possible that the beneficial effects of gold therapy in the cases recorded by Willcox *et al.* were non-specific and due to the rise in temperature which sometimes occurs after the

injections. This was definitely so in my cases, for which hourly temperatures are recorded for 12 hours after each injection; in the apyrexial case to which reference has already been made the temperature registered 101.6° F. (38.7° C.) three hours after the first injection, 102° F. (38.9° C.) ten hours after the second, 99.6° F. (37.5° C.) seven hours after the third, 99.2° F. (37.3° C.) nine hours after the fourth, and 99° F. (37.2° C.) eight hours after the fifth. A further patient who has just started a course developed a temperature of 100.2° F. (37.9° C.) three hours after the first injection. All the temperatures returned to normal in an hour or just over an hour and could have been overlooked with a 4-hourly chart. I have observed on several occasions that mild fever induced by intramuscular injections of "aolan" effects rapid cures in these cases.

The aetiology of the disease is still uncertain. Pleuropneumonia-like organisms have been cultivated in the urethral discharge of 14 out of 84 men suffering from uncomplicated non-gonococcal urethritis, in the cervical secretion of 10 out of 42 women with cervicitis, and in only 3 of 30 of my cases of Reiter's disease. Urethral cultures were also positive in my first case treated with gold eighteen months after apparent cure, and it is worth noting that there had been no subsequent sexual exposure. An examination carried out before the first morning micturition did, however, show the existence of a mild residual abacterial urethritis which may have persisted since the original illness. Cultures were negative in the synovial fluid of two and in the conjunctival secretions of three of my cases. Examination of female contacts of 5 cases in which pleuropneumonia-like organisms were isolated in the urethral discharge yielded negative cultures, but elementary bodies were seen in two. The majority of my cultural examinations have been carried out by Henderson-Begg and Edward.

It is possible that the disease, as I originally stated, is due to a virus. Primary herpetic stomatitis of infants and young children is caused by the virus of herpes simplex, and a virus has recently been shown by Buddingh to be responsible for a similar disease associated with diarrhoea in children. Strains of the virus are maintained by serial passage from cornea to cornea of rabbits, but, unlike primary herpetic stomatitis, no inclusions have been found. In the discussion following Buddingh's paper on this subject Sabin stated that these inclusions would probably be demonstrated in serial sections. On this occasion Dodd also reported that she had obtained positive corneal inoculations in rabbits with vaginal swabs taken from the mothers of the children suffering from the disease. Buddingh had observed similar results with the urethral discharge and oral and conjunctival secretions of a typical case of Reiter's disease.

There would seem, therefore, to be definite room for doubt whether pleuropneumonia-like organisms are the aetiological factor in Reiter's disease. I consider, too, that the efficacy of gold therapy in the treatment of this disease requires further investigation. In view of its dangers I have not used this form of therapy in the treatment of uncomplicated abacterial urethritis (usually a very mild disease) in which these organisms have been isolated.—I am, etc.,

London, W.1.

A. H. HARKNESS.

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"Sulpha-Combination"—A New Chemotherapeutic Principle

SIR,—In the article on "'Sulpha-Combination'—A New Chemotherapeutic Principle," by Drs. A. Rune Frisk, Gösta Hagerman, Sture Helander, and Bertil Sjögren (Jan. 4, p. 7) reference is made to my work on the same subject in a form which creates the erroneous impression that I have suggested only the use of a mixture of sulphathiazole and sulphadiazine. I therefore take the liberty of bringing the following facts to your attention.

My publication to which reference is made by the Swedish investigators appeared in print in January, 1945—that is, one year and three months before these authors published any of their experimental or clinical results with a combination of three sulphonamides; and two years before their article appeared in your *Journal*. The title of my publication—"Inhibition of Drug Pre-

cipitation in the Urinary Tract by the Use of Sulfonamide Mixtures. I. Sulfathiazole-Sulfadiazine Mixture" (*Proc. Soc. exp. Biol.*, N.Y., 1945, **58**, 11)—clearly indicates that the general principle of "sulpha-combination" was investigated and that the sulphathiazole-sulphadiazine mixture represented only the initial phase of this work. This point is further emphasized in Table I of my paper, containing solubility figures of *seven* different sulphonamide combinations, one of these consisting of as much as *four separate constituents*. In addition, several statements in the text of this publication leave no doubt about the recognition of the general principle and the direction of further research.

I quote: "Since even closely related sulfonamides, when present simultaneously in the same solution, do not influence each other appreciably with regard to their particular solubilities, the danger of intrarenal drug precipitation from the sulfonamides comprising the mixture should be only as great as if each compound had been administered alone, and in the partial dosage contained in the mixture. . . . Sulfathiazole and sulfadiazine were selected for the initial series of experiments, because these compounds are at present most frequently employed, have almost the same therapeutic indications, and cause renal complications in about the same percentage of cases. . . . The findings of the solubility study summarized in Table I indicate that many other sulfonamide combinations should be investigated as to their ratio of renal toxicity and bacteriostatic activity." Since then I completed experiments on the combinations of sulphadiazine-sulphamerazine, and sulphadiazine-sulphathiazole-sulphamerazine early in 1946, and submitted my work to the American Medical Association in February, 1946, for presentation at its 95th Annual Session at San Francisco on July 3, 1946. The title of this presentation was "The Prevention of Renal Complications by the Use of Sulfonamide Mixtures" (Announcements: *J. Amer. med. Ass.*, 1946, **131**, 306, and *ibid.*, **131**, 1141).

Further references to the general principle of sulphonamide mixtures can be found in three clinical publications. In the *Journal of Urology*, 1946, **55**, I stated on p. 565: "With regard to its potentialities and to possible future developments, however, treatment with sulfonamide mixtures seems to hold the promise of an efficiency which might dispense with the necessity of any other preventive measure." In the *Journal of Pediatrics*, 1946, **29**, we explained on p. 284: "Experimental work and preliminary clinical trials suggest that for the treatment of meningitis, sulfadiazine should be combined with a sulfonamide, such as sulfamerazine, which diffuses better than sulfathiazole through the hematocephalic barrier. . . . Our results suggest that the simultaneous employment of two or more sulfonamides should replace the use of single compounds, since mixtures combine a high therapeutic efficacy with a significantly lowered toxicity."

Flippin *et al.* published "An Evaluation of Sulfonamide Mixtures and Various Adjuvants for Control of Sulfonamide Crystalluria" in the *Annals of Internal Medicine*, 1946, **25**, 433. I quote from the discussion of this paper: "An alternative method, proposed by Lehr^{14,15} avoids exceeding the critical concentrations at which crystallization will occur by using two or more sulfonamides simultaneously. Our preliminary observations indicate that this approach is as effective as the administration of sodium bicarbonate at the rate of 12 grams per day."

In summary then: The use of sulphonamide mixtures for the prevention of renal complications was conceived independently in our laboratory as the result of extensive animal experimental investigations on "Methods which Inhibit or Prevent Intrarenal Precipitation of Compounds of the Sulfonamide Series" carried out since 1941. I published complete experimental proof for the validity of the sulphonamide mixture principle one year and three months before the Swedish investigators announced their "new chemotherapeutic principle" in *Nordisk Medicin*, 1946, **29**, 639, based on their first animal experimental study. Previous to this publication the authors, according to their own statement, had done only preliminary clinical work with a mixture containing equal parts of sulphathiazole and sulphadiazine. Even if my publication, to which reference is made by the Swedish authors, was the only one available to them when their article was written, they must have been aware of the fact that I did not merely suggest the use of a sulphathiazole-sulphadiazine mixture, as the reference in your *Journal* implies, but that I had offered valid animal experimental proof for this new concept of sulphonamide therapy. On the basis of the evidence presented I am forced to conclude, with regret, that the Swedish authors, in quoting my publication, did not cite the facts properly and completely. Hence, they have failed to give due credit to my work in this field.—I am, etc.,

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