

In Part III the authoress describes diseases of the respiratory system, pre- and post-operative physiotherapy for the surgical conditions and when and how to treat the medical conditions, both acute and chronic. A section on disorders of the nervous system, which includes a chapter on lesions of intervertebral discs causing sciatica and lumbar pain, is followed by one on diseases of the cardiovascular system.

Miss Cash states that in the treatment of cardiac disorders many eminent cardiologists make no use of physiotherapy; but she claims that whilst massage and exercises cannot cure a cardiac condition, the general musculature of the patient can, by specially graded exercises, be built up without throwing undue burden on the myocardium, so that gradually the amount of work to be done by the cardiac muscle is increased and the patient leaves hospital more able to resume normal activity. The congenital abnormalities of the heart and the appropriate treatment are described. Chapter 3 of this section describes diseases of the blood vessels and a comprehensive outline of treatment by physical means is given.

Part VI on Disorders of abdominal viscera and peritoneum is short. To quote the opening sentence: "Very few diseases of the abdominal organs are suitable for treatment by physical measures," and only three conditions are mentioned briefly, tuberculous peritonitis, for which actino therapy is advocated in the absence of active tuberculosis elsewhere, constipation and visceroptosis, for which the appropriate treatment is outlined. The last section is one on common diseases of the skin, which are treated by electrotherapy.

It is to be hoped that in the not too distant future Miss Cash will find time, amidst her onerous duties as Deputy-Principal of the School of Physiotherapy, The United Hospitals, Birmingham, to write a companion volume on Surgical Conditions for Physiotherapists, which she can be assured will receive as enthusiastic a welcome as her first volume.

A.C.C.

## PHYSIOTHERAPIST

### Chamber of Mines (Springkell) Sanatorium

Applications are invited from qualified Physiotherapists (Female) to carry out duties of physiotherapy and, in addition, to be willing to be instructed in and act as Radiographer.

The salary scale is £300 x £20 — £440 per annum, plus cost of living allowance (at present approximately £17 per month).

Annual leave of 30 days plus bonus leave of 70 days after 5 years' service.

Membership to the Chamber of Mines Pension Fund and Medical Aid Society is obligatory.

### MEDICAL SUPERINTENDENT,

#### SPRINGKELL SANATORIUM,

P.O. NORTH RAND, Tvl.

## Ultra-Sonic Waves and Treatment

EDITORIAL OF THE SOUTH AFRICAN MEDICAL JOURNAL, 22nd SEPTEMBER, 1951.

THE thermogenic effect of ultra-sonic waves is biologically not of much significance. More important is the property of inducing hyperemia and it has also been claimed that these waves have almost a specific mechanical effect upon the circulation of fluid in the tissue spaces, diffusion through tissue membranes and the chemical and structural conditions in the cells. It is on the basis of these properties that favourable therapeutic results have been claimed in the treatment of arthritic, neuritic, and fibrositic conditions. Reports have not been lacking about good subjective results in cases of "duodenal ulcer, abdominal adhesions, cholecystitis and neuralgia of the abdominal wall." The effect of ultra-sonic therapy has been ascribed to micro-massage of the cells as well as an increase in the temperature of the tissues and to colloidal changes.

While there can be little doubt that under experimental conditions these waves exercise a most profound effect on tissues, most of the reports claiming favourable therapeutic results tend to come from Western Europe. In English and American hands, the results have not been specific or unique and have not indicated that this form of treatment (which is not without its dangers) represents any advance of any kind on any of the existing methods in current use.

### DANGERS:

The ultra-sonic waves may, when directed to the brachial plexus, produce paroxysmal tachycardia and angina pectoris. Although it has been claimed to have good results in the treatment of ulcers of the leg, there is the ever-present danger of mobilizing regional thrombi. The waves can also, by their action on the gonads, produce sterility. They can interfere with the development of growing bones in children and place the operator of the instrument at risk. It is clear, therefore, that instruments for producing these waves must be regarded as highly dangerous. There can be no excuse for permitting their use by lay persons and it is desirable that even members of the medical profession should use the apparatus only under licence.

As it seems doubtful whether any special therapeutic virtue is inherent in the use of ultra-sonic waves and because no sound scientific case has yet been made out for giving these waves any therapeutic pre-eminence or specificity, we should be most circumspect about the introduction of these dangerous instruments into the Union and, in particular, their use by inexpert lay persons. Whatever claims are to be made should at this stage still be directed to the field of research rather than clinical practice.

<sup>1</sup> *Excerpta Medica*, 1951, Section VI (*Internal Medicine*), 5, 317.