

This strict diet is maintained for from two weeks to a month. At the close of this period, there is a gradual resumption of general diet, but on an intermittent basis. At first, an unrestricted diet may be allowed for one meal or for one day in the week. The second week there may be two days of unrestricted diet, and in the third progressive week the patient may arrive at unrestricted diet every second day. It is unlikely, however, that the over-reactive patient can ever profitably take unrestricted diet on continuous days for any great length of time without suffering harm from excessive chemical stimulation, since in these patients there very frequently exists an intestinal abnormality such as ileal regurgitation, which complicates the normal method of disposition of the end-products of digestion.

#### b. *Exercise.*

A very direct method of raising the action of the control mechanism toward normal, is the employment of a special type of physical exercise which has for its immediate object the sharpening of muscle sense perception in especial relation to balance and physical poise. Exercise utilized for this purpose is carried out at the very slow rate of about ten seconds per linear foot of distance. One simple exercise for each main muscle group has been developed, and in the Army a routine was employed on my Convalescent Service at the Walter Reed General Hospital, which took for its full completion about one hour of time. The same routine has been utilized for private patients, with very considerable success. Parallel with the increasing power of physical control, comes a noticeable increase in mental poise.

Patients become able to pass without excessive mental distress through small crises in their lives which would have previously left them prostrate. This gain in mental poise is certainly greatly appreciated by the patients. A secondary result, of which patients almost always speak, is the evaporation of mild phobias. These phobias seem to have been for the most part based upon fear. The fear is possibly due in part to inability to handle properly the locomotor mechanism, involving a partial loss of the sense of balance with the consequent uncertainty of action and added mental strains which must result.

The two most usual phobias observed have

been the fear of high places and the fear of crossing streets in city traffic. In addition, there are, of course, such small phobias as the fear of meeting people, and the fear that the ordinary daily routine cannot be completed without excessive exhaustion. These also tend to disappear.

#### *Summary.*

1. The world is full of persons, mostly chronic invalids, who react excessively to sensory stimuli of both mental and physical origin.

2. One obvious ultimate result of this continued over-reaction to sensory stimuli is chronic fatigue. The patient will not recover until the chronic fatigue is relieved.

3. In order to relieve the chronic fatigue, its cause must be attacked.

4. In Diet and Exercise, we have available two valuable but apparently too little appreciated active therapeutic procedures for an attack upon the problem of over-reaction to sensory stimuli. Some details of the use of these two procedures have been presented.

#### *Conclusions.*

1. The chronic invalid often suffers from chronic fatigue,

2. Recovery of the patient who suffers from chronic fatigue depends in large measure upon the possibility of decreasing or eliminating over-reaction to sensory stimuli.

3. Diet and Exercise, properly used, are valuable factors in

- a. Decreasing over-reaction to sensory stimuli.

- b. Eliminating chronic fatigue.

- c. Promoting a return to health of the chronic invalid.

### A CASE OF INFECTION OF THE KNEE-JOINT TREATED BY EARLY AND CONTINUOUS ACTIVE MOTION.

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INFECTION of the knee-joint has, in the hands of the majority of surgeons, caused much trouble and anxiety. At best immobilization has had to be continued for a long time and, combined with infection, inflammatory swelling, and formation of scar tissue, has fre-

quently resulted in permanent adhesions and a stiff knee. In severe cases the transverse incision across the patella tendon in front of the knee-joint has sometimes been required. So many cases of infected wounds of the knee-joint resulted from the war that the military surgeons had an experience which led to great improvement in the treatment of knee-joint wounds. Immediate suture without drainage after thorough cleansing and excision of the wound, so-called debridement, led to great improvement in results. After infection took place and the surgeons had actual suppuration in the joint to deal with the results were not so good.

McWilliams and Hetzel gave, in the *Annals of Surgery*, September, 1919, a very interesting resumé stating that in seventy-three cases of war wounds of the knee-joint sixteen became infected. In thirteen of these sixteen cases, in the final showing, three had had amputations, one resection, four resulted in ankylosis and four died. These were all treated by modified old plan, *i.e.*, with somewhat earlier motions. These authors believe that the Willems treatment would have produced a very much better result than this. Willems in one hundred cases, eighteen of which were accompanied by purulent synovitis of a virulent type, chiefly streptococcus, had no deaths and no amputations. There was one resection and two stiff joints. To the McWilliams paper the reader is referred for the details of treatment.

To the courage of Dr. C. Willems, of Ghent, Belgium, Director of the Hoogstade Military Hospital, we owe our present knowledge that it is possible in certain cases in healthy young adults such as soldiers, to treat infections of the knee and other joints, after incision for drainage, by immediate active motion. By this method excellent results may be obtained in very much less time than by the older procedures. Motion of the joint results in actual expression of the pus every day and adhesions are not allowed to form. I wish to present a case with photographs showing the results attained in an infection of the knee-joint following a bullet wound, by immediate and continued active motion, after incision for drainage.

On December 7, P.M., an adult, 43 years old, received a bullet wound in the occiput, and the right popliteal space. X-ray showed a flattened bullet in the back part of the knee-joint,

apparently located in the capsular ligament. The wounds were shaved and cleaned and dressed at the relief station to which he was admitted, and a day later he was taken to the City Hospital, where he remained four days. His temperature rose to 100. There was some reddening of the skin and evidence of fluid in the knee-joint. On the twelfth of December an incision an inch and a half long was made on either side of the patella and a large amount of seropurulent fluid escaped. A three-inch incision was made in the mid line of the popliteal space and the dissection carried down to the inner side of the popliteal vessels and after considerable difficulty the bullet was found in the capsular ligament projecting into the knee-joint. A rubber tissue drain was placed in the popliteal space and a dry sterile dressing applied. Active motion was started the next day. The patient coöperated very well in this and was quite proud of the amount of motion in his damaged leg. This was regularly continued daily, the temperature gradually going up, until January 3, when the collection of pus in the upper part of the popliteal incision was drained by the insertion of forceps, and a rubber tube put in. On January 9, a pus pocket above the upper end of the wound in the popliteal space was opened. At this time the active motion was not as free as it had been on account of the swelling and tenderness in the



FIG. 1.

FIG. 2.

popliteal space. He was then put under Carrel-Dakin treatment under which the amount of pus gradually diminished. The active motion was continued though not quite to the same extent as at first. Through the month of March the active motion was still kept up and on April first he was up on crutches with 45° of flexion and perfect extension. The photographs (Figures 1 and 2) show the amount of flexion and extension on the date of discharge from the hospital. He was then walking freely and actively without the slightest limp. There can be no question in this particular case that active motion from the first gave an excellent result, although recovery was delayed by the complication of the abscess in the popliteal space. The man was a strong, active fellow and coöperated very well. In feeble or nervous patients it would be difficult to accomplish as much. While it may not be possible in all cases of infected knee-joint to bring about this happy consummation, there is no question that early mobilization and active motion will in many cases greatly shorten treatment and improve the final result. To one who has known the time-consuming and exhausting difficulties and dangers, as well as the permanent stiffness of the knee which have usually followed supuration, the recovery of this patient seems really remarkable. Something has certainly come out of the war in regard to our treatment of suppurating joints.

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### Book Reviews.

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*Surgical Aspects of Typhoid and Paratyphoid Fevers.* By A. E. WEBB-JOHNSON, D.S.C. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, Warwick Sq., E. C. 1919.

In this little book of less than 200 pages, the author has covered a large series of cases observed under most opportune circumstances. As an amplification of the Hunterian Lecture for 1917 the book is of especial interest historically in tracing the early records of typhoid fever made by investigators since the disease was first evidenced in 1643 during the Civil War in England. During the present war the knowledge of typhoid and paratyphoid fevers has been greatly increased. It has been suggested by Prof. Webb-Johnson that the

spleen is an important feature to be considered in the "carrier" problem, and many other interesting ideas, formulated as a result of modern practice, are clearly explained to the reader. The subject-matter with reference to these groups of infections is arranged under the following headings: Historical Sketch and Introduction; General Review of Surgical Complications; The Alimentary Tract; The Spleen; The Liver, Biliary Passages, and Pancreas; The Cardio-Vascular System; The Urinary System; The Genital Organs; Parotitis; The Respiratory System; Joint Complications; The Muscular System; Bone Complications; Miscellaneous Abscesses; Eye and Ear Complications; Surgical Aspects of the Carrier Problem. For the surgeon who may be called upon to deal with any one of these diseases, the last chapter is one which will attract considerable attention. The book is well written, splendidly illustrated, and is a valuable addition to the present knowledge of the subject of typhoid and paratyphoid fevers.

*The Practical Medical Series.* Vol. IV. By BERNARD FANTUS, M.F., and WILLIAM A. EVANS, M.D. Chicago: The Year Book Publishers. Series 1918.

This book is one of a series of eight volumes published at monthly intervals during 1918, covering an entire field of medicine and surgery. This arrangement of publication makes it possible for the physician to secure the entire series or any one particular review, should he desire only consideration of a certain branch of medicine or surgery. Volume IV. of this series of books deals with pharmacology and therapeutics and with preventive medicine. Under each of these headings much that is of value to the general practitioner and to the specialist as well, is summarized in a clear and concise manner. Both authors have handled a vast amount of material and presented in an intelligent way only what was deemed to be of primary importance. The technique of the administration of a particular prescription is emphasized especially in the section on Pharmacology and Therapeutics. A chapter on War-Time Prescribing is very pertinent and the subjects of Electrotherapy, Restorative Therapy, Functional Therapy, Toxicology and Non-Pharmaceutical Therapeutics are each clearly treated. Under Preventive Medicine, chapters on Medical Sociology, Sanitation, Food, Personal Hygiene, Hygiene of School Children, Contagious Diseases, and Industrial Hygiene receive an appropriate share of attention. A great many references from foreign journals, as well as from our American journals, are quoted in both sections of the book.