

Part II.—Reviews.

A Study of Hypoglycæmic Shock Treatment in Schizophrenia. By ISABEL G. H. WILSON. London: H.M. Stationery Office, 1936. Pp. 74. Price 1s. 3d.

In 1930 Dr. Manfred Sakel, of Vienna, found that deprivation symptoms in the treatment of morphia addicts do not occur if limited doses of insulin are given. In the experimental stages of this therapy states of hypoglycæmia now and then occurred, and the psychological response of certain patients to such states suggested to Dr. Sakel that hypoglycæmia was likely to prove beneficial in actual psychoses. Having enlisted the support of Prof. Poetzl, who is the successor to Wagner-Jauregg as head of the Vienna University Psychiatric Clinic, he began there the hypoglycæmic treatment of schizophrenics late in 1933. This form of therapy has since spread to most continental countries, particularly Switzerland, as well as to Japan and U.S.A.

Attention having been drawn to this in the 1935 report of the Scottish Board of Control, and the method having been introduced at Edinburgh, Dr. Isabel Wilson was instructed by the English Board to investigate the therapy in Vienna and at Münsingen, Switzerland. During her stay she was able to observe all the aspects of the treatment in 30 patients, and to examine 27 patients discharged after treatment. She also had opportunities of gathering the opinions of authorities in Vienna and elsewhere, some of which were favourable, and some critical. Dr. Wilson's report is far more than a review; it sums up admirably the whole controversial matter, and is a mine of information as well as a manual of actual treatment. It contains chapters on technique, clinical observations, theories, results, etc., together with several tables and a complete bibliography.

As is now generally known, the method consists of repeatedly producing, by means of one daily intramuscular injection of a graduated quantity of insulin, a state of hypoglycæmic coma. Beginning with 15–20 units, the dose is increased daily until the dose producing coma is reached. Once the coma dose has been reached, it is repeated daily (Sunday excepted), so long as active treatment is necessary, the usual period being from 4 to 6 weeks. The average coma dose is 80–100 units. The dose is then much reduced (stabilization phase), and eventually stopped.

An intragluteal injection is given to the fasting patient at about 8 a.m. The first hypoglycæmic symptoms set in from 1–1½ hours afterwards. The patient's general condition remaining satisfactory, hypoglycæmia is terminated when it is considered on therapeutic grounds to have lasted long enough (on the average about 4 hours after the injection), by giving a glucose solution by the nasal tube. In emergencies an intravenous injection of glucose is given, which must be followed by the full glucose feed. Epileptiform attacks indicate that hypoglycæmia should be terminated at once. This is effected by an intramuscular injection of adrenaline, which is followed by intravenous glucose and

the glucose feed by mouth. Treatment is over by 1 p.m. While under treatment the patient requires to be under constant observation of a doctor trained at one of the centres, and of selected nurses, and everything needed for terminating hypoglycæmia must be close at hand. With such precautions treatment does not appear to be unduly dangerous, though it is not entirely possible to avoid risk to life.

Three deaths occurred during the treatment of the first 200 cases in Vienna, but none occurred in Switzerland. The first death occurred in the experimental stage, when the necessity for supplementing the intravenous glucose by the feed was not realized. The second death was due to coronary sclerosis, and it is now recommended that every patient should have an electrocardiogram done before treatment. Electrocardiograph investigations during treatment have shown alterations of the T-wave; these have disappeared within a few hours. The third death was due to pancreatic necrosis; this is a possible risk, although similar animal experiments have shown no changes in the pancreas. Practically all patients, however, gained weight and improved physically, and in the opinion of independent observers did not suffer in any respect from the treatment.

As insulin begins to act, the psychological effects take place in the following order: quietness, somnolence, sleep, coma. The behaviour of individual patients, however, varies greatly. Many show great restlessness and excitement before reaching coma, while others go into coma perfectly quietly. The physical effects appear more or less in the following order, and here again wide individual variations exist: A sebaceous exudate on the forehead, soon followed by copious sweating. The pulse-rate, generally speaking, tends to increase. Muscular movements are very common. They begin with purposive movements of the hands and arms; then, suddenly, psychomotor excitement may set in; eventually the patient lies practically motionless in coma. Finally, movements of an entirely different type may set in: isolated twitching and jerking, beginning in the forearm and spreading to the head and body. These movements may, though not necessarily, merge into generalized epileptiform convulsions.

About 5 minutes after the glucose feed the patient shows the first signs of waking, but he is not fully awake for another 10–15 minutes. During this period the patient manifests the earlier psychological reactions, but in the reverse order. Dr. Sakel speaks of the cerebral functions gradually disappearing, level by level, as the hypoglycæmia deepens, and their rapid return during waking. As the patient awakes, there may be a short phase of psychomotor excitement, followed by one of confusion. Before speech, which at first is disarticulate and paraphasic, returns, the patient understands questions and replies by nodding or shaking the head. Later, patients may resemble persons under the influence of alcohol; they talk in an unconcerned and playful manner for a short while, after which, in those responding, thoughts become ordered. Most patients have amnesia for practically the total hypoglycæmic period until full waking, and in certain cases of prolonged coma there is retrograde amnesia. These hypoglycæmic effects on the higher nervous functions and the various neurological phenomena of hypoglycæmia invite further study and research.

The most striking effect of the therapy is the occurrence of a period of lucidity after injection. Lucidity "does not by any means always occur, but when it does . . . it makes on the observer and sometimes on the patient a very strong impression that something in the nature of a direct

attack on the basis of the psychosis is going on". Dr. Wilson quotes, in the patient's own words, a strikingly clear and reasonable account of such feeling experienced, and goes on to say that if insulin can in certain circumstances produce such clearness, its possibilities should be explored. At the beginning of treatment lucidity usually does not last longer than the hypoglycæmic period, and for the rest of the day the patient presents his usual appearance. As treatment goes on, however, in a case responding satisfactorily, the lucid periods gradually become longer, extending well into the afternoon, until finally the normal periods have spread over the whole day and the patient is free of symptoms. Temporary lucidity is not difficult to obtain, even in quite chronic cases; the difficulty, however, is to make such periods coalesce, and even a promising start does not necessarily lead to success.

In the beginning of the stabilization phase, what Dr. Sakel describes as "reversed action" of insulin or "reactivation" of the psychosis may occur. That is to say, the patient now shows no signs of his psychosis except during the hypoglycæmic period. It appears that hypoglycæmia, which, in Dr. Sakel's words, inhibits that which is functioning (ordinarily the psychosis) and activates that which is latent, now brings to light what has remained of the psychosis. This is looked upon as favourable, hence the stabilization phase. It is continued until the activated symptoms have gradually subsided, when the patient presents the same appearance within hypoglycæmia as without. Dr. Wilson's own impression is, however, that such reversed action is more apparent than real.

Equally remarkable is, in successful cases, the friendly spirit among patients and the insight they have after treatment. Dr. Müller, of Münsingen, is quoted: "The contact we have with patients treated with insulin is quite a different thing from that with spontaneous remissions. The patients are much freer, more natural, more spontaneous; they make friends with each other when they come to visit and write cards and letters to the doctors. Their outlook towards their illness is a natural one and they can often talk it over without harm."

In a further chapter the rationale is discussed, about which little is known. Clinical observation and experience have been considered of primary importance, and the theoretical foundations may be discovered later, as happened in malaria therapy. The lethargy and sleep produced is not the therapeutic agent, nor the additional attention devoted to the patient, so far as controls can be relied upon. A case is quoted to show that non-specific shock is not the basis of the method, neither is it emotional shock. The insulin effect appears to be sympathetotonic rather than vagotonic. Investigations into hypoglycæmia and the endocrine balance are being carried out in Switzerland. As quite a number of patients recover without reaching the shock stage, it seems evident that hypoglycæmia rather than shock proper is the therapeutic agent, and Dr. Wilson aptly suggests that "high-dosage insulin treatment" would be a more appropriate title. The effects of large doses of insulin cannot be solely due to the lowering of the blood-sugar. Contrary to expectation, the depth of coma does not necessarily coincide with the lowest blood-sugar value, and coma has occurred with the blood-sugar curve actually rising.

The published results are not easy to interpret, statistics over a sufficiently large number of cases not being available at the time when the report was published. Another difficulty is that the duration of illness plays an important role, those cases with a short history (not over $1\frac{1}{2}$ years' duration) responding very much better than those of longer duration. While agreeing that alleged

results in these recent cases must be assessed with special care, because of their tendency to spontaneous remission, this should not, in Dr. Wilson's opinion, be allowed to weigh too heavily against the claims made for the method; after all, the chronic schizophrenics constituting the bulk of the mental hospital populations have at some time all been early cases. The results then published from Vienna and Switzerland, being the first 101 and 70 concluded cases respectively, are reviewed in detail, and a small number of cases from other sources. While stating from her own observation that the association between insulin treatment and clinical improvement is occasionally very striking, Dr. Wilson wisely regards the published statistics as tentative only. The Swiss method of assessment, by which no undue importance is attached to the percentage of cases "improved", is to be recommended. They prefer to distinguish between cases of complete remission (i.e., discharged free from symptoms, with insight, and at work in their former occupations) and unchanged cases, by which they signify no improvement, or temporary improvement only. Looking at the results from Vienna and Switzerland arranged accordingly, complete remission was obtained in 68-80% of cases of not over $\frac{1}{2}$ year's duration, while 13-21% remained unchanged. The chance of complete remission diminishes progressively the longer the illness has lasted before treatment. According to a Swiss table included in the report, the figures for complete remission are as follows: Duration not over $\frac{1}{2}$ year, 80%; from $\frac{1}{2}$ -1 $\frac{1}{2}$ years, 60%; over 1 $\frac{1}{2}$ years, 4% only. Conversely, cases remained unchanged: duration not over $\frac{1}{2}$ year, 13%; from $\frac{1}{2}$ -1 $\frac{1}{2}$ years, 15%; over 1 $\frac{1}{2}$ years, 42%. It is not possible to arrange the Vienna figures similarly, as two groups only were recorded—under $\frac{1}{2}$ year's duration and over—but their trend is the same. No relapses occurred in Switzerland, where the period reviewed is 9 months, and 15 occurred in Vienna, where it is 2 years. Several of the relapses remitted or improved after a second course of treatment; in the appended table, however, all relapses, regardless of the subsequent outcome, have been recorded under the heading "unchanged". Such grouping makes the Vienna figures appear less favourable than the Swiss, but such possible understatement is to be preferred.

Taking together the cases regardless of their duration, complete remission was achieved at both centres in 45-50% of the cases, and if to these are added the improved (most of whom were able to return home and work), positive results have been obtained in about two-thirds of the cases. This compares favourably with figures for spontaneous remission, which Dr. Wilson quotes as "all researches taken together—20-30% at most. The acute cases rise over 50%, the old ones are under 10%". As regards the permanence of results, all that can be said is that recoveries which took place in autumn, 1933, were maintained, although this is a relatively short period in the light of Kraepelin's statement that in his time "12.6% of the improvements bore the stamp of complete recovery, which, however, seldom lasted longer than 3-6 years".

Dr. Wilson concludes that the method merits ample clinical trial, and advises that this should be begun in a single public mental hospital, rather than in several simultaneously. The doctor in charge would do well to visit both Vienna and Switzerland to see the method at first hand. Later on, doctors of other hospitals could learn the method from him. Treatment should not be initiated by those who have only read of the method. The arrangement of an insulin ward, apart from other patients, is recommended, and until further experience is gained, it would be wise to limit the number of cases to 6 or 8. One doctor should be responsible for the treatment, and should have

a guiding hand in all that is done to his patients. He must remain in the insulin ward until the last patient is out of hypoglycæmia. At about mid-day, the approximate time for terminating hypoglycæmia, it is a great advantage to have other doctors within call. Experience is just as important for the nursing staff as for the doctors. The nurses should be carefully selected, and taught by written, verbal and practical instructions. Treatment should be carried out confidently, as it would be a pity to miss the chance of promoting improvement by allowing patients or those in charge to become disheartened. Full records should be kept, and contact maintained with discharged patients for at least five years, preferably ten.

H. PULLAR STRECKER.

An Enquiry into Prognosis in the Neurosis. By T. A. Ross, M.D., F.R.C.P. Cambridge University Press, 1936. Price 10s. 6d.

This is an admirable book. It has three outstanding virtues: (1) It is factual and gives figures, showing, not what is presumed to have happened, but what actually has happened to a large number of cases which were treated at the Cassel Hospital; (2) it displays an excellent combination of common sense with an adequate understanding of psychopathology—an unusual combination; (3) it reveals Dr. Ross's nationality through his style, which is terse and to the point.

The tables of results are interesting and full—too full to be discussed at length here. The total results are 45% well, 25% improved after 1 year, a figure falling to 34% and 6% after 5 years. The figures correspond roughly to the few sets of figures published. They certainly should give grounds for satisfaction, seeing the severity of the cases treated.

Dr. Ross goes into the pros and cons of hospital versus out-patient treatment, and briefly discusses various types of treatment. He favours analytical psychotherapy, in which analyses of various depth (though never so intense as the Freudian psycho-analysis) are combined with a certain degree of persuasion. He emphasizes the importance of the "moral influence" of the therapist in the Weir-Mitchell treatment, and points out how this, the most important adjuvant, is forgotten by many writers in describing this form of treatment. Hypnotism he does not care for, as its cures are largely symptomatic, and he draws a comparison to the happy, immediate, but nevertheless undesirable results of alcohol and morphia in relieving neuroses.

This is an altogether valuable book, both for the psychotherapist and the practitioner who wants guidance as to what the outcome of neuroses is likely to be.

W. L. NEUSTATTER.

Inhibitions, Symptoms and Anxiety. International Psycho-analytic Library, No. 28. By SIGMUND FREUD. London: The Hogarth Press and the Institute of Psycho-analysis, 1936. Pp. 179. Price 6s.

Ernest Jones has said that anxiety is the most important single symptom in psychopathology. Prior to Freud, psychiatry had hardly approached the subject, and any knowledge we now possess upon it is to a large extent due to his pioneer work. It was Freud who first isolated and stressed the importance of the anxiety syndrome. Again it is due to his teaching that we have learnt