description I wrote: "So far, then, we could assure the authorities that the manifestations were not due to any defect in their physiological theory or practice—an important matter to them. That physiologists welcomed the psychological explanation is perhaps . . . unique." I cannot help thinking that these are the cases referred to by Dr. Donald, and in the interests of psychopathology I proffer this addendum.

London, W.1.

MILLAIS CULPIN.

The Measurement of Human Skill

SIR,—Prof. F. C. Bartlett's Oliver-Sharpey lectures on "The Measurement of Human Skill" published in the *Journal* of June 14 (p. 835) and June 21 (p. 877) prompt me to put down a few observations on clinical diagnosis which I believe to have a sound scientific basis. As is stated, investigation proceeds step by step, the fitting of one set of responses to another, until the diagnosis is completed. Here the conscious mind cal's on the stored knowledge of the deeper subconscious levels, and between them the mystery is solved.

Now, in protective muscular reactions such as the sudden application of a car's foot-brake, closure of the eyelids, or the placing of a hand in front of the face the conscious mind has not functioned except to receive the receptor impulses. The very complicated mechanism involved in the effector response has performed its work subconsciously. Similarly in mental reactions, immediately after the receipt through eyes, ears, or fingers by the brain of a skilled clinician, the correct diagnosis may thrust itself into consciousness: the step-by-step route has been short-circuited. Before seeing the patient he is heard to cough, and in a flash "pneumonia," "basal congestion," or "tracheitis" obtrudes itself. The hand placed indiscriminately on the abdomen before inspection or the history questioned—an unorthodox but very valuable procedure—may give rise to "appendix" or "acute abdomen." And in general practice these conditions are very rare in comparison with the number of abdomens examined, and reference here is only to obscure cases, not to those where a reasonable prediction can be made before examination. A fleeting glance at a head above the bed-clothes brings out "perforated gastric," and innumerable times a glance brings forth a sense of immediate urgency, when a subsequent more careful inspection reveals nothing startling.

It must be emphasized that these are not snap diagnoses, nor is any attempt being made to produce quick results, the performance of which is much slower and due to a completely different mechanism. Further, such practices produce a far greater percentage of error than the events described, which are almost invariably correct. These immediate effector responses occur comparatively infrequently and very erratically, but are so uniform in their characteristics as to leave no doubt as to their definite entity as a class. Their appearances bear out the statement that often the participation of the conscious mind slows down the reaction time. It is an essential that the mind be almost or entirely dissociated from the patient, in fact "wool-gathering," for the diagnosis to be presented with such precipitance.

How to measure this skill must be left to others. Its use in a busy general practice is to focus attention on a patient who needs the most thorough investigation by oneself and, if the results are not conclusive, by the appropriate consultant.—I am, etc.,

Hove, Sussex.

FRANK PORTAS.

Citrate in Urinary Infection

SIR,—Recent discussion on the use of citric acid drinks with sulphonamide therapy reminds me of the use of citrate in another sphere, whose full implication is not, I think, generally realized. Diabetics not infrequently suffer from a urinary tract infection and receive in consequence large doses of alkaline citrate. Now citrate is fully absorbed and fully utilized ("oxidized") in the body in a similar manner to carbohydrate. The method by which this occurs is, briefly, believed to be as follows: citric acid is converted to aconitic acid, which enters the "tricarboxylic acid cycle," and is converted through several stages to oxalo-acetic acid, losing two carbon atoms as carbon dioxide and releasing energy. Oxalo-acetic acid may be further decarboxylated to pyruvic acid, which may actually

be converted into glycogen, or which may condense with oxaloacetate, losing another carbon atom by decarboxylation in the process and re-forming aconitic acid, thus completing the cycle.

Now whether citrate is pictured as being converted into carbohydrate via pyruvate or as being fully oxidized in the tricarboxylic cycle is immaterial—the point being that all six carbon atoms in the citrate molecule are readily available for full utilization for the production of energy by complete oxidation, so replacing and "sparing" an approximately calculable amount of carbohydrate.

Now the two full oxidation equations for glucose and for citric acid are:

so that, taking the amount of oxygen consumed to be equivalent to the energy liberated, we have:

1 gramme-mol. citric acid $\equiv$ 3/4 gramme-mol. glucose.

$\therefore$ 213 g. sodium citrate $\equiv$ 3/4 $\times$ 180 g. glucose, or

1 g. sodium citrate $\equiv$ 0.6 g. glucose (approx.).

Assuming our patient to be getting the rather large dose of 60 gr. (4 g.) 4-hourly (which may well be needed for urinary alkalization), this means that he is having the equivalent of some 12 g. of extra sugar per day. Admittedly this is not very much when spread out over the day, but it should theoretically be taken into account in adjusting the dietary requirements of the diabetic.

This idea of the availability of citrate has other points of interest (at least in theory), such as the additional energy it presumably supplies to the ill febrile patient with anorexia who is being treated, for example, with sulphonamide, accompanied by the routine citrate; its theoretical action in checking a hypoglycaemic attack; the likelihood (on present theory) of its utilization in severe diabetics without insulin, in whom sugar is of no value.

I am very grateful to Dr. E. Baldwin, of Cambridge, for his help in regard to the biochemistry in this letter.—I am, etc.,

Wolverhampton.

W. P. U. JACKSON.

Pethidine in Labour

SIR,—I have read with interest Dr. J. H. P. Giff's letter (June 21, p. 901) stating that his experience shows the action of pethidine in labour to be unreliable. Dr. Giff does not state at what stage of labour he commences to use this drug, or any information regarding dosage, while I find that the time at which it is used is a most important factor in obtaining a successful result.

My experience with the drug, based on a very considerable and extensive usage over the past two and a half years, is the exact opposite to that of Dr. Giff: I have found the drug most reliable. The effects of pethidine in labour are helped by the previous administration early in labour (where the os is 1–2 fingers) of "seconal" 3 gr. (0.2 g.), though I have found that about 15% of patients vomit this unchanged, and I find, on short acquaintance, that "tuinal" is better.

Pethidine itself is administered hypodermically in doses of 100 mg. when the os is about 1/3 to 1/2 dilated, this dosage being repeated

if necessary hourly for three doses. If 300 mg. has no effect, I find it useless to administer more.

The administration at this stage does slow down labour for about 30-40 minutes, giving the mother rest and some sleep, after which the pains get stronger and labour is shortened, the mother being completely relaxed, and possibly asleep, between pains, but able to understand and co-operate during pains. It is worthy of note at this point that pethidine used in cases of "rigid cervix" exerts an effect which can only be described as dramatic. I have found that pethidine may safely be administered up to an hour before delivery with no adverse effects on mother or child, and after its birth, provided the cord is not cut until pulsation has ceased completely, there is no interference with the child's respiration and no cause for anxiety. If, however, it is necessary for the mother to have a general anaesthetic within this period, the induction of anaesthesia is prolonged owing to the maternal respiration being shallower than normal.

The administration of pethidine as outlined above eliminates in most patients the necessity for the Minnitt gas-and-air apparatus, which I find, even with a properly fitting individual facepiece, a most unsatisfactory and unsatisfying form of analgesia in about 55-60% of patients. In my experience pethidine used as above with premedication is eminently satisfactory in about 95% of patients and useless in the remaining 5%. There are occasionally nausea and even vomiting during administration late in the first stage, though this may be due to the onset of the second stage. There are no effects after parturition on either mother or child, and the maternal comments are most favourable and gratifying.—I am, etc.,

London, S.W.14.

A. B. WATERS.

Physical Therapy of Mental Disorder

SIR,—The recent correspondence on physical therapy in mental hospitals (June 14, pp. 861-2) has prompted me to draw to the attention of the profession a matter which, although serious and sinister in its implications, does not appear to be generally known among medical men who are unfamiliar with present-day mental hospital conditions. I refer to the increasingly common practice of inflicting on unwilling certified patients certain unnecessary and mutilating surgical procedures, particularly indiscriminate leucotomy and tooth-pulling, in a manner which is unpleasantly reminiscent of the practices of the Nazi concentration camps. The type of case in particular which I have in mind is the chronic psychotic patient under certificate in whom volition and ability to give or withhold consent are unimpaired by the disease present. In the course of several years' mental hospital experience I have seen a number of such unfortunates subjected against their will to procedures of the kind just described.

Such a practice, in my opinion, constitutes an inexcusable violation of fundamental human rights. It was pronounced to be a crime against humanity by the Nuremberg tribunal, a court composed of judges of the highest legal standing, and at the subsequent trials a number of German doctors convicted of such practices received the death sentence. The fact that the patient happens to be certified, and a form of consent is obtained from a "responsible relative," cannot, in my opinion, justify the forcible infliction of such operations on any human being; since, in my experience, the relatives of patients of the mental hospital class are as often as not even more lacking in insight and intelligence than the patient himself. In this connexion it is worthy of note that, in this as in all civilized democratic countries, even the convicted criminal is protected by law from such violation of his person.

Let it not be supposed for a moment that I am opposed to the use of physical therapy in mental disorders. My views on this subject were made clear in a previous letter in this *Journal* (May 31, p. 778). What I am opposed to is the abuses of such treatment just described, which in my opinion constitute an attack not on the problems of mental disorder but on the rights and liberties of the individual, and have contributed more than anything to bringing discredit on a new and promising form of therapy. I do not doubt for a moment that such practices are motivated by misguided therapeutic zeal rather than by wilful cruelty. Nevertheless, their sinister implication remains, and one can only conclude that they are only one more aspect of the insidious attack which is being made to-day from certain

quarters on individual rights and liberties. The German war-crime trials received sufficient publicity at the time to make a profound and shocking impression on the public conscience; yet their lesson and implications seem to have been only too speedily forgotten. Let us therefore take warning before it is too late. *Facilis descensus Averno*.—I am, etc.,

London, S.E.6.

G. TAYLEUR STOCKINGS.

SIR,—It appears that the important issue which your correspondence reflects is whether psychiatrists are going to take psychology seriously or whether they are instead going to side-step the body of analytical knowledge which has been accumulated. By confusing quick, dramatic (psychologically magical) effects with real results, they go some way at least towards disregarding the developments of the last fifty years or so. Beside this question the rest of the discussion is relatively unimportant, for if psychiatry really substituted magic for knowledge the long-term results would be disastrous to the cause of humanity.

At the present time, when most psychiatrists contrast physical therapy with psychotherapy, they are comparing a method which is familiar to them with one of which they can speak only as more or less talented amateurs. By this I mean that on the whole psychiatrists are untrained and unqualified psychotherapists (I hasten to add that there are a growing number of exceptions). It is not, however, their fault that they are untrained, since training is available only in certain regions of the country. But this should not blind us to the realities, which are very well illustrated by the assessment of results from physical methods of treatment. These are always couched in psychological terms which, to the analyst, are naive and unconvincing in the extreme. If psychiatrists unqualified as psychotherapists would openly state their lack of training or even tacitly admit it, then we should know that they are giving an untrained opinion, and we should be more tolerant of their inability to differentiate knowledge from speculation. As matters stand, there are almost bound to grow up two hostile camps in psychiatry.

As one who has seen nothing but a few bad results from physical methods of treatment, I regard myself as unqualified to make any statement about them which is not prejudiced. I will dare to say that I know more about medical and surgical methods than most psychiatrists know about psychotherapy, so that I am likely to treat these methods with the respect due to them. I invite psychiatrists to exercise a similar caution when discussing a subject they do not understand. Their lack of caution only induces feelings of disrespect and even contempt towards them, not only among our own profession but also among the better informed lay public, many of whom are able to understand the significance and value of psychotherapy in a realistic and objective way.—I am, etc.,

London, N.W.1.

MICHAEL FORDHAM.

SIR,—The letters on this subject in your columns are interesting and remarkable in displaying the prevalence of a lack of charity for the other fellow's point of view and so of an inability to understand and appreciate it. It is not surprising that the correspondence degenerates at times into an attack on mental hospitals, so that their liquidation is demanded by Dr. T. Gladstone (June 28, p. 942). Dr. Clifford Allen (p. 942) throws much light on the controversy by pointing out that practising psychiatrists for the most part see either psychotics or psychoneurotics according to the method of treatment they have become familiar with and, let us assume also, proficient in. Patients who have failed to respond to one line of treatment do tend to pass into the hands of practitioners of the other cult. There is thus a tendency for each other's failures to be seen, and a false conclusion may be readily drawn as a result.

A few of us have been fortunate enough to escape these unfortunate limitations in experience, and as medical director of an out-patient psychiatric and child guidance service and medical superintendent of a mental hospital I am responsible for providing for the needs of both groups of patients. I am associated with practitioners familiar with both lines of therapy and am in daily contact with patients undergoing both forms of treatment. Owing to the war our in-patient mental hospital side is still very greatly reduced in numbers, and although we have seriously considered leucotomy in some cases in no instance has