more that the spirit we are proud to associate with the British race is still present in the highest degree. While all performed their duties so well, I must make special mention of the following:

Sister R. Lowe, who, after a nerve-racking experience in Robjohns Ward, and heroic efforts to rescue her patients, worked almost without ceasing for thirty-six hours at the racecourse hospital; Dr. T. Gilray, for his splendid work in the town; Dr. A. G. Clark and Dr. F. A. B. Sheppard, for their initiative and the very valuable work in the Botanical Gardens on the first day—they were ably assisted in their operations by Sister M. Read and Nurse F. Chesterman; Sister L. Bull and Dr. F. Birkinshaw, for their great help and unceasing labours, also in the Botanical Gardens (Dr. Birkinshaw proved his ability and aptitude later in his organization and work in the refugees' camp in Palmerston North, where he dealt with from 1,200 to 1,500 people); Dr. H. Barnett and Sister M. Wellock, for their work in McLean Park under great difficulties; Dr. Leahy, with the assistance of Dr. Harvey, for the excellent work of the dressing station in the refugees' camp in Nelson Park; Mr. Colvin, the dental surgeon, for his great help in all directions throughout the day, and in particular for his courage in getting the operating tables and other gear out of the hospital theatre and outpatient department.

PREGNANCY DIAGNOSIS STATION REPORT ON SECOND YEAR'S WORKING

BY

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The first report on the working of the Pregnancy Diagnosis Station, which was published in the *Journal*,¹ dealt with the cases diagnosed up to the end of January, 1930. The present report embodies all cases dealt with from February, 1930, up to the end of January, 1931. There was no essential alteration in the organization of the station. It might be mentioned that this report omits all cases that were examined for purely scientific reasons (that is, without a diagnosis being requested); it includes only the results obtained with samples submitted by private practitioners and hospitals. Thus the report does not refer to tumour patients of either sex, etc.; in some of these cases a positive result was obtained although pregnancy could be excluded. The results of the examinations of such cases will be communicated separately as soon as a sufficient number have been collected.

TECHNIQUE OF TEST

Only one change in the standard technique of the test has been introduced. It had been observed by the originators of the test that a considerable percentage of the samples of urine were toxic to the mice, and a similar observation was made in this station during the first year of its working. In consequence of this no result could be returned (during the first year) in twenty-four cases on account of the toxicity of the urine. Since then a method has been published for the detoxication of the urine (Zondek, 1930), but the experience with this method in this station was not quite satisfactory. It has been found, however, that sulphosalicylic acid can serve as a detoxicating agent in most cases. This acid, which acts as a protein precipitant, has been used extensively in the preparation of gonadotropic hormones; it does not precipitate these hormones in the absence of proteins, and removes only small fractions of the hormone from solutions in which proteins are present. The following procedure has been adopted:

To each 25 c.cm. of urine 1 gram of sulphosalicylic acid is added immediately after arrival at the station. The urine is allowed to stand for thirty minutes, with occasional shaking. It is then filtered through a paper filter; the filtrate is

adjusted with sodium bicarbonate to approximate neutrality (B.D.H. universal indicator—green); it is then used for injection. The same quantities of urine and the same number of mice are used as in the original Aschheim-Zondek reaction.

It has been the practice of the station to ask for a second sample in all cases where the first test did not yield a completely clear result. However, it is doubtful whether this practice will be made a permanent one, since the repetition of tests has, as a rule, not led to much clearer results than are obtained in the first.

The mice used in the station were again procured from a commercial breeder (The Mousery, Rayleigh), and varied in weight from eight to twelve grams. In some cases mice from another source were used; however, they proved to be of a very early maturing, but slowly growing stock. Three errors were due to the use of the latter stock; in these cases a positive result was returned, spontaneous puberty in one or two mice in each of these groups being mistaken for a positive reaction.

RESULTS

In all, 835 cases have been dealt with in the period covered by the report. In 387 cases a negative result was obtained; in 433 cases the diagnosis was positive; in 15 cases the result was either doubtful and we did not obtain a second specimen although it was asked for, or else "no result" was returned because of toxicity of the urine (these latter cases occurred before the introduction of the treatment of the urine with sulphosalicylic acid). Four hundred and fifteen cases have been controlled so far by the clinical diagnosis; in 400 cases the diagnosis as returned by the doctor agreed with the diagnosis given by the station. In 15 cases the clinical and the biological diagnosis differed, thus resulting in an apparent error of 3.25 per cent., as compared with an apparent error of 3.04 per cent. during the first year.

In the first report it was pointed out that the pregnancy test by means of the Aschheim-Zondek reaction represents a test for the presence of a fully functional placenta or of placental derivatives. Therefore a positive reaction is not necessarily proof of the presence of a foetus. It has also been emphasized in the first report that a positive reaction was found in cases of retained adherent fractions of the placenta, incomplete abortion, hydatidiform mole, and chorion-epithelioma. Moreover, the test remains positive for a few days after parturition or abortion, whereas, on the other hand, the presence of a degenerating placenta is not associated with the excretion of gonadotropic hormones. If one examines the fifteen apparent errors from this point of view it is found that in at least two cases the test in reality was correct. In these the error was due to a fault in technique (use of inadequate stock; see above). The percentage of real error is therefore 2.41 per cent.

Among the "apparent errors" there was again a case of a negative diagnosis in the presence of other clinical symptoms of pregnancy, where the foetus proved to be dead and was aborted shortly after the sample of urine had been taken. On the other hand, during the last year a negative test was obtained in three cases where an advanced pregnancy existed (fourth to sixth month) which proceeded normally at least up to the time when the station received the report of the doctor.

While the available evidence is not yet sufficient to draw any definite conclusions, there are nevertheless obvious indications that a negative test returned in cases where the clinical symptoms of pregnancy are present should be of particular interest. Pooling the results of the first and second year one finds twenty-two cases in which a negative Aschheim-Zondek reaction was obtained, while later observations showed that a pregnancy existed at the time; but in at least seven of these cases pregnancy terminated prematurely.

¹ *British Medical Journal*, 1930, ii, 662.

It seems thus advisable to keep under careful observation cases in which a negative diagnosis was returned in spite of the presence of the clinical signs and symptoms of pregnancy, since the prognosis for uneventful termination of pregnancy does not seem to be very favourable in these circumstances.

The station has received, on several occasions, samples of urine taken shortly after an abortion; it was asked whether the abortion could be regarded as complete. However, since normally gonadotropic hormones seem to occur in the urine as long as nine days after complete abortion, the test cannot be of great clinical help before that period has elapsed. Only if samples of urine are found to be positive later than nine days after abortion can it be concluded that placental tissue or derivatives of normal placental tissue are still present in a functional state.

It is also of interest to note that in two cases of very early pregnancy, and in three cases of advanced pregnancy, the test proved originally negative. In two of these cases the test did not become positive until the sixth and the seventh month respectively. If the quantity of hormones excreted in the urine be taken as an indication of the quantity produced, then one must conclude that in many cases where the secretory level is very low, pregnancy ends in abortion whereas in other cases it reaches full term.

EXPERIMENTS IN RAPID TESTING

The originators of the test have shown that in certain cases the time required for the test can be shortened by injection of concentrated urine so that a diagnosis can be made after three days, which is, however, reliable only in cases where the test is positive. The experience of the station with this modification is as yet too small to warrant any judgement. During the last year an attempt has been made to apply certain observations made by Friedmann to the elaboration of a rapid test for pregnancy. This author, basing his experiments on the previous work of Aschheim and Zondek and Hammond, has shown that the intravenous injection of pregnancy urine in rabbits can cause an enlargement of the follicles similar to that which normally occurs after coitus. He suggested that these observations might be made the basis of a pregnancy test. Experiments were carried out during the last year in a number of cases which were at the same time controlled by the standard method. The rabbits were injected with pregnancy urine after it had been deproteinized with sulphosalicylic acid and neutralized with bicarbonate, receiving two to four intravenous injections of three cubic centimetres each within twelve hours. Fourteen to sixteen hours after the first injection the rabbits were killed and examined for ripe and/or haemorrhagic follicles; the presence of the latter was regarded as a "positive reaction." It was found that all urines that gave a negative reaction with the Aschheim-Zondek test also gave a negative result in the case of rabbits. However, some urines that gave a positive reaction in mice did not give a positive rabbit reaction.

On informing Dr. Aschheim of these experiments we learned that he had attempted similar experiments, but was, like the writer, not yet satisfied as to the possible practical application of the test. Dr. Aschheim demonstrated his experiments at a scientific meeting in Berlin in November, 1930. It is far too early at present to determine the practical value of this test; if it should prove satisfactory it would in many cases reduce very considerably the time required for arriving at a diagnosis (sixteen hours instead of three to five days). Very much more experience is necessary in order to arrive at any conclusion; it is hoped, however, that next year's report will contain results of a greater number of cases tested by this method.

The fees charged by the station are 10s. for tests required by private practitioners and 3s. for tests asked for by hospitals, public health authorities, etc. These fees serve to cover the expenses of the station incurred in the purchase of animals, food, etc. The station will continue its work, being financially secured against deficit by a guarantee from the Medical Research Council.

France

[FROM OUR OWN CORRESPONDENT.]

The B.C.G. Controversy

The question of B.C.G. vaccine has been discussed again in the Academy of Medicine. It seems that the international inquiry into the Lübeck accidents has proved that Professor Calmette's vaccine was not to be blamed, for he cannot be held responsible for the technical mistakes that were made. It is the general principle that has been persistently attacked by Professor Lignieres. The discussion seems as though it would never come to an end, and the learned assembly became somewhat agitated when Professor Vaquez stood up, and to the great relief of the audience, summarized the whole problem in one simple short question: "Are there any circumstances, either experimental or clinical, under which the B.C.G. may recover its virulence?" It was Professor Calmette's opportunity to reply, and he replied with facts. In France 320,000 children have been vaccinated, in Rumania 75,000, in Spain 10,000, in Sweden 5,000, and in the Far East 120,000. About one million cases are on record. Where are the accidents? If an overdose is injected into a calf, or a guinea-pig, the animal develops a fever that might be called "B.C.G.-itis," with polyadenitis, which always ends favourably, leaving the organism immunized against B.C.G. Professor Calmette said that it was time that unfounded apprehensions should be eased, and that insinuations should be stopped. The only way out was for the Academy to set up a commission to investigate all facts and all cases, and to insist that the conclusions, whatever they might be, should be published. A commission, headed by Professor Chauffard, including our most prominent clinicians and scientists, was appointed. It is to be hoped that this official commission will be able to meet the objections raised against Professor Calmette's vaccine by Professor Lignieres of Buenos Aires. It is expected that all doubtful cases will be openly discussed, and that definite conclusions will bring a long controversy to an end.

Antitetanic Serum

The Academy of Medicine was asked to decide in what cases of wounds it was obligatory to use antitetanic serum. A physician was sued for damages because he had not given an injection and the patient died of tetanus. The judgement was against him, and high damages were accorded to the plaintiff. It seems evident that if he had given the serum and the patient had developed peripheral neuritis he would have had the same responsibility to face. A unanimous vote supported the conclusion of Professor Gosset that serum was not to be used in superficial wounds easily cleaned out and in neat cuts not soiled by earth. This seems to leave a beautiful field open to patients, magistrates, and lawyers alike. It may be that prophylactic vaccination with anatoxin, as Professor Carnot suggested, will keep the question out of the courts altogether.

Actions for Malpraxis

It is becoming quite the thing to do—to sue the physician for malpraxis. Over a million francs damages were claimed from two prominent medical men because they gave blood transfusion too late and the patient died. This time the claim was so manifestly unfounded, and