If whole blood were inoculated into guinea-pigs and rats after the seventh or eighth day no reaction or a delayed one might be obtained, but if the blood were allowed to clot and the serum taken off a reaction could be obtained. The rickettsia could sometimes be isolated throughout the febrile period and also during the whole of convalescence. In the Balkans it had been found that there were people apparently in perfect health from whom it was possible to isolate the rickettsia, although they had never shown any symptoms of the disease. There were numerous other tests. Biopsy was at one time favoured, but that had been given up now in ordinary typhus. Recently an intradermal test in the rabbit had been worked out. Serological diagnosis chiefly resolved itself into the Weil-Felix reaction, which usually became positive at the end of the first week. An important point in this method was to show that there was a progressive increase in the titre. There was some relation between the severity of the disease and the highest maximum titre reached, but, on the other hand, there might be very low reaction in cases of typhus.

No drug treatment was employed in typhus with success. The sulphonamides were entirely without action on human typhus. The use of immune serum had been suggested, but the majority of observers had found it useless; that was the experience in Spain last spring. More promising results had been obtained with hyperimmune serum, either from horses or rabbits. As to the response of rickettsia apart from the louse, in the tissues rickettsiae were not very resistant. They were destroyed almost instantaneously at a temperature of 100° C. A very large number of vaccines had been attempted, but at present it must be admitted that the attitude on vaccine prophylaxis against this disease must be pessimistic.

Prof. P. A. BUXTON raised the question of the risk of typhus in this country. If some person came over in an aeroplane from Lisbon and went down with typhus it would result in only a primary case so long as the surrounding community were free from lice. In a clean community, with adequate facilities for washing of the person and, at frequent intervals, washing of underclothes, the body louse could not exist. The body louse was common at present in the tramp community, and he thought it was also more common than was generally suspected in labour camps, among men employed in building jobs and the like, where washing facilities might be small. On the subject of head lice, K. Mellanby had collected statistics obtained in fever hospitals in all the big cities of the country which showed that in schoolgirls in cities infestation was as high as 50%, among boys it was never quite so high, while among adolescents the rate remained high in girls but fell away among boys. Opportunities had recently arisen of collecting large bodies of fact with regard to young women going into certain types of employment, and the results were consistent with Mellanby's figures. It was known that there were many cities and industrial areas in this country where the rate among girls and young women was not far short of 50%. The relation of the head louse to typhus fever was not known, but the head louse could not be satisfactorily distinguished from the body louse. Entomologists would say that the head louse and the body louse were very closely related, that they interbred and produced fertile offspring. In considering the transmission of typhus the safe line to take would be to suppose that the head louse might be dangerous, though perhaps not as dangerous as the body louse.

Dr. A. FELIX could not agree with Dr. Findlay's pessimistic view of typhus vaccination. He believed that more recent methods of growing rickettsia in the tissues of animals would shortly yield successful methods of prophylaxis.

*Corrigendum*

Our attention has been drawn to an error in condensation of the reported remarks of Group Captain Dalziel Dickson in the Section of Laryngology in the *Journal* of November 22 (p. 744). He was reported to have said that the "regional specialist" supervised all researches in so far as they concerned his specialty and that he or his deputy visited every hospital centre. The officer to whom Group Captain Dickson was referring was not the "regional specialist" but the "R.A.F. consultant in the specialty at the Central Medical Establishment in London."

# Correspondence

## "Crush Syndrome" in Obstetrics

SIR,—Since E. G. L. Bywaters and D. Beall published their account of the crush syndrome in this *Journal* (March 22, 1941, p. 427) we have studied two cases in the obstetric department of the British Postgraduate Medical School in which an apparently similar condition followed the trauma of labour. The first was a woman who, after a difficult labour lasting twenty-three hours, rallied from severe shock only to die eight days later with renal failure, the blood urea reaching 388 mg. per 100 c.cm. before death. The chief histological lesions were found in the kidney and resembled those described by Bywaters and Beall—namely, marked tubular degeneration with "haematogenous casts" in the tubules. In the second case, after a difficult labour lasting fifty-eight hours, marked oliguria developed with a blood-urea reading of 79 mg. per 100 c.cm. There was no shock, the lowest blood pressure being 136/88. Recovery was rapid.

These cases suggest the existence of an apparently hitherto unrecognized clinical entity in obstetric practice. The conditions leading to its development being such as can in general only rarely occur in any one maternity hospital, this letter is written in the hope that the collection of an adequate group of fully investigated cases in different centres may throw light on such questions as incidence, genesis, clinical pathology, and morbid anatomy. A further question which calls for concerted study is the new light which the crush syndrome may throw on the hitherto baffling problem of "obstetric shock," in which trauma of the soft pelvic tissues has long been known to play an important part. The view of some obstetricians that obstetric shock is due to the flooding of the circulation with toxic elements elaborated in the crushed tissues adds further relevance to this question.

The Medical Research Council subcommittee which has been set up to co-ordinate research on the "crush syndrome" would be glad to receive any data which are available. They would also keep investigators informed of the progress of work in this field. Brief records may be sent to Dr. A. N. Drury, Medical Research Council, London School of Hygiene, Keppel Street, W.C.1.—We are, etc.,

JAMES YOUNG.
JOHN MCMICHAEL.

British Postgraduate Medical School, London, W.12, Dec. 5.

## Sulphonamides for Ophthalmia Neonatorum

SIR,—Dr. W. J. Clancy says (November 22, p. 749) that the treatment of ophthalmia neonatorum has been "greatly simplified" by the sulphonamide group of drugs. I do not think that it can be too strongly emphasized that since the introduction of these drugs the treatment of ophthalmia neonatorum has been revolutionized. It is now of little importance to investigate the bacteriology of the condition, and I am in complete agreement with Dr. Clancy regarding the relative unimportance of local treatment.

The routine treatment I use now is to give 0.125 gramme of sulphapyridine with each feed hour-hourly for 48 hours and then discontinue. I do not consider that continuing treatment after this time is of any value. By now the oedema will have gone, the discharge almost ceased, and the eyes be on a fair way to full recovery. Local treatment merely consists in frequent swabbing away of mucopus and the instillation of an oily drop.

As I have never seen sulphapyridine when used in this way cause any complications, and have never known the condition resistant to this treatment, it is my teaching in the Rotunda Hospital that failure to administer the sulphonamide group of drugs immediately ophthalmia neonatorum is recognized amounts to criminal negligence.—I am, etc.,

L. B. SOMERVILLE-LARGE.

Dublin, Nov. 28.

## Combined Active and Passive Immunization against Diphtheria

SIR,—In the second of the very interesting articles on combined active and passive immunization against diphtheria (November 29, p. 759) figures were given showing conversion