The industrial nursing service is an essential part of an industrial medical service, and its efficiency determines in considerable measure the success of medical supervision in factories and other sections of industry. That industrial nursing is a growing branch of the profession is seen by the fact that some 9000 nurses are to-day employed in industry—about three or four times as many as in 1939. The contribution of A. J. Amor and Clare Sykes in this issue is therefore timely, emphasizing as it does the need for improving standards not only by better selection but by more adequate training and education of those nurses who chose industry as a career. It defines the widening scope of the industrial nurse, who in the past has often been considered less fortunate than her colleague employed in other branches of nursing. The authors show that the need for nursing services has developed rapidly and urgently since the war started, and they base their observations on work at the Ministry of Supply in their respective capacities as Chief Medical Officer and Chief Nursing Officer.

When we consider the field which has to be covered in any reasonable course of training for industrial nurses we may regret that such comprehensive training has not also been available for doctors. The more we look into this question of education the more complex does it appear, but with the new emphasis on social medicine and the recognition of the importance of industrial medicine by the Universities many of the difficulties should disappear in the post-war world. While the importance of a comprehensive academic background is recognized the writers of the article well point out that the fundamental education of the industrial nurse must take place within the factory, the ship-yard, the dock and the mine, and that those who are to teach must be those with practical experience of industry. The difficulty of obtaining teachers is recognized. Dr. Amor and Miss Sykes believe, however, that those who have done most to establish standards of practice in a new field are those who are most concerned with the education of its future practitioners. If the broad direction of training is left in their hands this will ensure that the practical requirements and problems of an industrial medical department are kept to the fore. With the development later of Departments of Industrial Medicine at the Universities part of the problem may be solved, but these departments themselves must be elastic enough, as the recent report by the Social and Preventive Medicine Committee of the Royal College of Physicians suggests, to incorporate among their teachers those with practical experience of industry. What this report says of the medical student applies equally to the nurse. She is not expected to become an expert in occupational diseases. It is much more important that in addition to technical skill in nursing she should acquire knowledge and understanding of the social problems relating to industry and be able to recognize, as part of a team with her medical officer, 'the mental and physical response of the worker to fatigue, overwork, monotony, unsuitable hours or type of employment.' She needs to know something too of home conditions, particularly in these days of imported labour and billeting difficulties. And all this must be backed up by a knowledge of processes and occupations in the factory. When a girl tells her that she works on a capstan or a drilling machine, or a man that he is a moulder or a stamper, she must know exactly what that means. These things tend all the time to make this type of nursing attractive, and there is much personal satisfaction in work which maintains a man at his job and prevents, in considerable measure, the hardships which result from interrupted employment.

We fully recognize the pioneer work of the Royal College of Nursing. But much of that work would have been ineffective without the co-operation of a small number of industrial medical officers, mainly in London, who from the start have devoted themselves to the development of their specialty. The training of industrial nurses is primarily the responsibility of the industrial physician, and the experienced nurse herself must also play her part in training her junior; but the major burden must be borne by the medical profession. In so far as it has been able the Association of Industrial Medical Officers, collaborating with the Royal College of Nursing and various Universities throughout the country, has organized refresher week-end courses for nurses already engaged in industry. That there is a great demand for such training is obvious. But something further is needed—namely, short intensive or even prolonged training of the new entrant before appointment. The College of Nursing, as Dr. Amor and Miss Sykes point out, has led the way. In 1934, in collaboration with the University of London they inaugurated a full-time course of one year's duration. Later, part-time, correspondence and other courses were also provided. The University of Birmingham, in conjunction with the Birmingham Accident Hospital, has also entered the field, and it will be interesting to watch this new venture, which, because of University backing, should do much to raise the status of industrial nursing.

A final word of warning is necessary. All nurses in industry cannot expect to occupy senior and responsible posts from the beginning. They must work up from the lower positions, many of them apparently dull and mainly to do with routine treatment of minor accidents and illnesses. In the interests of the working community these humbler jobs must always be done, and many nurses find a
true vocation in doing them. But the chance of promotion for the industrial nurse was never greater than it is now. The facilities for education and training are becoming better known and more widely available, and in time the highest posts will be open to all who are fitted to fill them.

WOUND INFECTION IN INDUSTRY

The treatment of minor injuries occurring at the place of work is an important part of the work of the industrial medical officer and his nurses. The higher the standard of treatment in the factory the less is the risk of sepsis, with its consequent absence from work and increase in permanent disablement. The treatment of major wounds is largely the responsibility of the hospitals, and with that side of the problem we are not concerned here. But the millions of minor injuries that occur daily are injuries that cause no loss of time—and with industry itself present a challenge to the medical officer. For many years he has worked alone in this field. He has frequently improved conditions because his standards are obviously far beyond those of the first-aid worker who dabbles in the subject—often as a hobby but so often to the detriment of the injured man. But in this matter of wound treatment he needs help, particularly from the bacteriologist; and he needs advice from his surgical colleagues, if only from one point of view—what to leave alone.

When we consider that even to-day most workpeople have no nurses and doctors to superintend the treatment of accidents at work the problem becomes serious in terms of manpower and production. S. A. Henry, in his recent Milroy Lectures, tells us that the actual number of reportable factory accidents in which sepsis supervened increased from approximately 21,212 thousand in 1939 to 22,492 thousand in 1942; the large increase in the numbers employed reduced the percentage figure from 11 to 10·3. It would be interesting to know the criteria upon which the diagnosis of 'sepsis' is made. Because of the apparent absence of definition this figure is unlikely to represent the true state of affairs, and it is an interesting fact that there is no obligation upon the employer specifically to report such cases. In many instances the diagnosis of 'sepsis' is left to the first-aid worker and the untrained nurse—and often to a welfare supervisor or an office clerk—who may be the main contact on such matters with the firm's insurance company or the Factory Department of the Ministry of Labour. But even so, it is one index of the incidence of wound infection in industry, an incidence which is probably higher than published figures suggest. It is to be hoped that more accurate figures will one day be available, not only from factories but from other industries such as mining, docks, construction, ship-yards, and the various transport services. But until we can get the facts we can do little more than guess at a figure.

Those who are engaged in industrial medicine therefore welcome the decision of the Medical Research Council to set up a bacteriological unit at the Birmingham Accident Hospital. Here the whole question of wound infection as it affects industry will be closely studied in conjunction with clinicians skilled in accident treatment, with industrial doctors and with nurses. In this issue we publish from the unit one of a series of studies on the problem by Gissane, Miles and Williams. It refers specially to the design of dressing stations. They tell us that many wounds are already septic when first seen in the factory surgery, and that a proportion of open wounds become septic during treatment. We would observe that, just because so many wounds are not seen by the nurses or the doctor in industry until they are in fact septic, health education and propaganda on the prevention of wound infection become a matter of the first importance. The difficulties of educating the great masses of workers are not always appreciated, nor indeed, is it the responsibility of laboratory workers or hospitals. But its significance in this particular problem is clear, and the results of a long-term research such as the Medical Research Council has inaugurated, affecting in one way or another the majority of our working population, must eventually be expressed in plain language. The help of such a body as the Central Council for Health Education might be enlisted for this. Simple rules must be laid down for first treatment, not only that to be carried out by 'the responsible person trained in first-aid treatment'—to quote section 45 of the Factories Act—but that which becomes the responsibility of the nurse and of the industrial doctor himself.

It is interesting to note that 'silent infection,' which may be present in up to 40 per cent. of the wounds treated at the factory, not only delays healing but also forms a reservoir of organisms capable of infecting clean wounds treated in the same surgery. The important point is made that an aseptic technique must therefore be designed to prevent cross-infection from these wounds already septic or 'silently' infected. The authors have wisely attempted to set their own house in order at the hospital and by doing this have anticipated criticism. Indeed the hospital problem, as the Medical Research Council has pointed out in a recent memorandum, is in itself one which needs looking into. This report showed that, while pyogenic organisms are found in only a small proportion of open wounds examined on admission to hospital (the figures have been 5-6 per cent. in the present war compared with 15-20 per cent. in the last war), the proportion of infected wounds may exceed 50 per cent. after a week's stay in hospital and increases with further residence. These findings have been confirmed in industry.

The difficulty of altering present conditions and of instituting aseptic technique is recognized. But

1 Lancet, Dec. 11, 1943.

2 War Memorandum, No. 6.