THE AFTERMATH OF WAR IN MEDICINE.
An address delivered to the Royal Medical Society of Edinburgh,
BY
Major-General PHILIP H. MITCHINER, C.B., C.B.E., T.D.

[Received November 6, 1946.]

This is an attempt to carry out the difficult task of evaluating what medical science has achieved during the late war, an effort in fact to prepare a balance sheet between what has been gained and what has been lost. One has had the opportunity during the war of an enormous field of research and the facilities for following up the results of all our work in a manner which is quite impossible in peace conditions, and in this way the late war, like that of 1914-18, has proved a most valuable source of knowledge to the profession. One of the most outstanding features of Service medicine has been the development of a team spirit amongst all members of the profession, which has enabled the patients to achieve the full benefit of consultation between members of all branches of the profession, and the profession to benefit by contact with colleagues of various interests. This, to my mind, has been one of the most valuable assets arising from the war, both to patients and profession, and is one which augurs well for the future success of a State Medical Service.

PREVENTIVE MEDICINE AND HYGIENE.

The aim of the existence of the medical profession is primarily to benefit the human race and in this respect preventive medicine is far more valuable to our patients than the attempts to patch up and alleviate their established diseases, though such is the established civil practice; in the Services, on the other hand, prophylaxis has long held pride of place wherein Service medicine has been greatly in advance of civilian. In preventive medicine the war has undoubtedly provided an enormous advance. We have only got to consider the success of inoculations and the enormous diminution of epidemic diseases following their general use to realize the progress made in this field. It is not for me, a surgeon, to delve into the realms of medicine but my recollection takes me back to wars where the death-rate and decimation of the forces from epidemic diseases such as typhoid and diphtheria has far exceeded the casualties inflicted in battle and it is because of the efficiency of preventive inoculations that such a state of affairs has now ceased to worry our fighting forces.

It is true that improved hygiene has undoubtedly played a leading part in the prevention of all these diseases, which carefully considered hygiene and the prompt disposal of human excrement do so much to prevent. The advance of flying and free movement of peoples in all parts of the globe must unfortunately tend to increase the danger of epidemics and yet no such increase has occurred; a great tribute to the efficiency of preventative inoculations in typhoid, diphtheria, yellow fever, plague, typhus and similar conditions.

MEDICINE.

In medicine itself we have seen, to my mind, a revolutionary advance in the substitution of mepacrin and paludin for quinine in the treatment of malaria.
The Aftermath of War in Medicine

These drugs, so far as my experience as a surgeon allows me to judge, have proved of good value in the treatment and prevention of the acute forms of malaria but, like quinine, they seem singularly ineffective in the control of the benign tertian infection.

The introduction of sulphonamides and penicillin has had revolutionary effects in the treatment of such previously fatal diseases as meningitis and pneumonia; while, in the venereal diseases, gonorrhoea and syphilis particularly, the general use of chemotherapy has dramatically altered our outlook on their treatment though we yet await proof of permanent cure. Sulphaguanidine and its allies have removed much of the terror of bacillary dysentery.

Diet in the treatment of disease, as well as in the preservation of health, has been widely recognized as of great importance, and great credit is due to the administrative authorities, both lay and medical, in the various Services for the great improvements in cooking and dietary which have been carried out.

Graduated exercises in stabilizing fatigue-tolerance and preventing exhaustion have been well recognized in the preservation of general health and increased endurance, as well as in the prevention and treatment of such conditions as exertion angina.

Exertion angina is another field of medicine which has come very much to the fore during the late war and it has certainly been established that psychic disturbances are closely associated with this distressing condition. Though, it is necessary to note, from the surgical point of view, that in a small proportion of cases detailed examination has shown lesions such as dermoid cysts or substernal goitres to exist unsuspected in the mediastinum.

The discovery of D.D.T. has alleviated the discomforts and diseases due to body vermin and further developments must be watched with interest not untinged with anxiety as to the use of this insecticide in nature. D.D.T. has undoubtedly a great future but it is to be used with caution in the fields of parasitology and agriculture especially, for it destroys the useful with the dangerous and may well lead to disastrous and dangerous effects if used indiscriminately. It must be remembered that dermatitis is liable to follow the intensive use not only of D.D.T. but also the chemotherapeutic agents, especially the sulphonamides, and that whereas these agents are frequently primarily used for the cure of septic dermatitis, the condition may be aggravated and maintained by their over-zealous application.

Psychiatry has become firmly established and is undoubtedly of very great use if applied judiciously and properly in many fields; particularly in the selection of personnel for suitable employment in industry it has its greatest and most useful feature and it is surely not without its advantages in the selection of students for the particular university career which they can most profitably follow.

Surgery.

Transfusion.—Turning now to the realms of surgery, I think probably one of the most outstanding advances has been in the universal use of transfusion in the prevention and treatment of shock, and especially wound shock, with
consequent improvement in results of surgery in trauma. At the same time, a word of caution is necessary against the indiscriminate use of blood transfusion. One has seen a number of patients who have survived in spite of excessive transfusion. One has also seen and heard of still more patients who have not! It must be remembered that only in cases where fluid has been lost from the body is it justifiable to give excessive amounts in transfusion and here, in my experience, it is better to limit the amount of fluid introduced to that lost plus one or, at the most, two pints in excess, and where shock occurs without loss of fluid, not more than one or two pints of intravenous fluid should be administered. Furthermore it is essential to give this fluid slowly, except where great fluid loss is occurring and as a general rule a rate of 40 drips per minute is sufficient to ensure success. Moreover in certain conditions such as severe burns, where the loss is mainly serum, and severe crushing, where there tends to be a toxic degeneration of the liver and kidneys, it is far safer to give plasma or serum than whole blood which is frequently fatal in its results in such cases.

Wounds.—In order to meet the needs of mobile war and ensure dealing with the wound in the first six hours after its infliction as is necessary if the inevitable infection of all such injuries is to be eliminated and the prolonged sufferings and delayed healing averted, it was found necessary to move surgical facilities forward. This was achieved by the formation of mobile surgical units in which bedded wards with nursing sisters were included so as to retain patients for at least ten days after operation, a procedure which was found to be of the greatest value in ensuring their recovery after the earlier surgical procedures. It was further found that unless this retention of patients after operation could be ensured, it was, in the vast majority of cases, affording them a better chance of recovery if they were moved back before operation, even to the delay in this procedure and, for this reason, the surgical centres were usually attached to a casualty clearing station where beds were available for the retention of patients for several days after operation.

Though the war has finished, the appalling rate of road accidents makes the field of traumatic surgery a very fruitful source of practice and with the wounds runs the contemporaneous question of infections which invariably follow road and battle casualties. Chemotherapy has made enormous steps during the past six years and the introduction of the sulphonamides and subsequently penicillin has really revolutionized the treatment of infections but it cannot be stressed too strongly that these drugs are but adjuncts to supplement adequate and early surgery in removing all dead and damaged tissue from wounds, in evacuating pus, and removing dead tissue where gangrene has occurred either in septic osteitis from infection with gas organisms from damage to main blood-vessels. There is a tendency amongst the profession and public to-day to regard penicillin and the sulphonamides as panaceae. This is far from the case and undoubtedly many lives have been lost by using these drugs either in the presence of non-sensitive bacteria or where a localized abscess continues to spread locally in a vital organ in spite
of the chemotherapy and in the absence of the necessary surgical intervention. With penicillin administered systemically and locally, primary suture, where no tension exists and where no extensive muscle crushing and disruption are present, has become a safe and almost routine practice, thereby saving great suffering to the patient and ensuring a fairly short convalescence. In many other cases secondary suture can be performed in a few days, and many surgeons advocate this as a safer routine.

We have learnt that in severe crushing of the limbs the prompt application of a tourniquet and the amputation of the grossly damaged tissue before that tourniquet is removed is frequently a life-saving operation, as we have learnt that severe crushing, if not promptly isolated from the circulation, can cause acute toxic damage to the liver and kidney and often prove fatal.

Burns have been distressingly prevalent, both as a result of the type of warfare and the free and often injudicious use of petrol. Much doubt and many practices now exist in their treatment which proves that no satisfactory treatment has yet been arrived at and that there is much work to be done on this subject. As with wounds the importance of early and thorough surgical cleansing to eliminate infection is paramount. I would remind you that in all cases of severe burns the excessive loss involves serum only, with consequent hemoconcentration and that the replacement of this fluid must be by intravenous therapy with serum or plasma but never whole blood which frequently produces fatal congestion of the kidney and liver with excessive red cells. It must further be pointed out that there is a tendency on the part of the plastic surgeons to advocate treatment which will produce perfect results with little scarring, and lose sight of the essential of saving life in the earlier stages of severe and extensive burns where, unless the escape of serum can be prevented and replaced, a fatal issue will occur long before the case can come under the care of a plastic surgeon.

In the abdomen probably the greatest advance has been the exteriorization in all wounds involving the large bowel and rectum. As with all new practices, there is possibly a tendency to carry exteriorization to excess and my own experience leads me to support that school which advocates that wounds of the cæcum and ascending colon can be treated safely by primary suture in situ, as in the case of wounds in the small bowel, without exteriorization.

One has been greatly struck by the young age at which one has met with carcinoma, both of the stomach and of the rectum, it being no uncommon thing to see cases in men from 20 to 25 years of age. In this regard I would issue a word of warning, that the granuloma of amœbic dysentery has on more than one occasion been misdiagnosed and treated as carcinoma, a mistake which should never occur if careful examination of the faeces is made as a routine in all cases.

Orthopaedic surgery has become such a specialized subject that its practitioners embrace all surgery and have indeed almost reverted to the general surgeons from which they sprang. In the treatment of fractures in war conditions one must realize that the force of an explosive missile and even the exhausted condition of the muscles of the patient when wounded
produce a complete muscular relaxation and absence of pain which is never met with in conditions of civilian practice. This makes the manipulation and setting of fractures in war conditions far easier than we see in civil life. But inasmuch as nearly all these fractures are of an open type, sepsis and delayed union, often with sequestration, are not uncommon, though the use of penicillin has greatly reduced, if not eliminated, these complications. One of the striking things is the delay in union or shall one say the longer period necessary for union which has been noted throughout this war. It is customary to attribute this to the great disruption of the tissues due to the high explosives used in modern warfare but I cannot help feeling that it is partly due to the orthopaedic surgeon and his meticulous desire to over-manipulate the fractured tissues in order to obtain perfect and complete anatomical reposition of the damaged bone fragments.

*Internal derangement of the knees* has been seen in large numbers and it is increasingly obvious that operative interference even in the presence of a definite lesion of a miniscus is by no means curative and may, in a certain number of cases, cause deterioration in the joint, even when the operation is performed by the most skilful hands.

It is interesting to note that there has been a definite turn back to advocating *primary suture of nerves* even in the presence of sepsis. I have always advocated this practice and I feel that it is the right one for the results obtained are far better for the patient even in those cases where delayed secondary suture is ultimately carried out.

*Flat feet*, like the poor, are always with us and particularly common among the infantry soldiers but are not a condition which call for treatment unless giving rise to pain and disability.

*March fractures* involving the neck of the second metatarsal base of the fifth and upper end of the tibia are common in young recruits and in my opinion due largely to ill-fitting and heavy footwear and too sudden transition to strenuous training from a previously sedentary life.

**Rehabilitation.**

Rehabilitation is a subject which the fundamental necessity, with limited man-power, of returning every man and woman to duty in the shortest possible period has brought very much to the fore. This is, after all, only old wine in new bottles but it makes rather a reflection on the medical profession that it has been necessary to bring it so much to the fore and this leads me to mention the vital necessity of keeping in view the human element in our patients. They must be regarded as human beings suffering from a disease and not as so many cases of a certain disease, for we each of us, thank God, differ from our neighbour and we need slightly different humouring and this is a matter all too frequently lost sight of in these days, in spite of the popularity of psychiatry.

Lastly, in medical education the decentralization of the hospitals and disruption of the medical schools which was particularly notable in London, together with the departure of many of the teachers into the Services, lead,
as in all wars, to an inevitable throw back of the education of the rising generation of doctors, while the somewhat imperfectly aseptic and difficult conditions in which surgery has to be carried out lead to a falling off in the standard of asepsis and operative efficiency which reflects for many years on the surgery of the country.

I have endeavoured, and I hope succeeded, in showing you the gains and losses to the civil profession from the results of medicine in war conditions. I hope that I have reassured you and more particularly can reassure the lay public that the results of a national medical service in war have been such that the advent of a State service properly worked, with a spirit of professional independence on the part of the medical practitioner, can offer the public a service even better than it receives from the general practitioners and hospitals to-day, as instanced by the results achieved within the Medical Services of the fighting forces and in the E.M.S.

Finally, I hope I have convinced you that those members of the profession who have worked in the combatant Services have had every opportunity of seeing medicine in a variety of aspects and in many countries; and so they are not out of touch with either the preventive or clinical problems of their art as is so frequently thought by some of our colleagues who have stuck to their lasts at home.