REVIEWS.

BOOKS ON WAR SURGERY.

War-Surgery from Firing-Line to Base. By Basil Hughes, D.S.O., M.A., M.B., B.Sc., F.R.C.S., Temporary Major R.A.M.C. (T.F.), and H. Stanley Banks, M.A., M.B.Glasg., D.P.H. Cantab., Captain R.A.M.C.(T.F.) London: Baillière, Tindall & Cox. 1918. (30s. net.)

This is a large work of over 600 pages, well-written and well-illustrated. Some books, and many articles, on surgery are more remarkable for quantity than quality; but such a criticism cannot be made of this work. Save in one respect, and that a minor one (to be referred to later), it is full, and adequate to the great task of dealing with the surgery of the world-war. It is unacademic, original in outlook, and shows great powers of observation and industry. For four years the authors have been in touch with all varieties of surgical activity from trench-line to base-hospital; they are apt surgeons and expert bacteriologists, and never lose a chance of checking their findings by post-mortem examination, even in the firing line, e.g.—

“What is the special nature of the damage done to muscle in a war wound? One of us had the opportunity while in the line of securing a number of specimens of muscle within a few minutes of the infliction of the wound. These specimens included the part of the muscle actually penetrated by the missile, the varying lengths of the muscle above and below the wound which did not contract or bleed, and a certain amount of healthy living muscle in the parts distal to the latter. The specimens were cut off with a sharp scalpel and immediately placed in 75 per cent spirit. Subsequently the tissues were dehydrated, embedded, and cut. The sections showed the appearances illustrated in Plate II.”
The plate that follows is beautifully drawn and coloured; and the point as to the disruption of fibres by the "cartridge" of air in front of the bullet, before the gas from the *Bacillus perfringens* has time to vacuolate the tissues, is proved at once.

This is the spirit that animates the book—that of personal observation and experiment; and conjoined with this is a width of view over all the factors at work in the battlefield, and a sympathetic understanding of the soldier's life in its every aspect. The correlation of these elements with the specific surgical work of the writers gives the medical reader a picture of the war far more realistic than he will find even in a novel like Barbusse's *Le Feu*. The reviewer has read much war-journalism, spoken with many soldiers, and done some war-work in France, but nowhere has he come across anything that has approached the depiction of the essence of the truly terrible in war so closely as this work. Yet nothing of this kind of history is consciously aimed at—it arrives, as it were, only in the by-going; for the authors are concerned only with a full scientific record of their special field of activity. It is this fulness of their personal record that gives the vivid picture we speak of.

One great advantage of the book is that its subject-matter is focussed by the fact that the authors, after prolonged trial of many systems of war-surgery technique—have selected one as easily first (the Carrel-Dakin), and deal fully with it in all their details of work done. This gives this manual a unity lacking in other works, where brief accounts are given of many methods with which the authors have made incomplete acquaintance, with no whole-hearted personal experience of any.

The first half of the work deals mainly with the vast field of the bacteriology of war-wounds. One knows how dreary such a subject may be; but here the account is so fresh and illuminating that it reads as easily as a novel, ghastly though the subject is. The writers had eyes and used them; and in such surroundings they had abundance of material for new observations. Here are some examples:

1. *Anaerobes.*—"Erroneous and contradictory statements were made in the pre-war literature on the anaerobes—a literature which was based on an experience infinitesimally small compared to that which has recently been gained. It was, of course, known that these organisms were of faecal origin, and the
reactions of a considerable number of them had been investigated. But the whole question was academic, and no practical classification was then possible” (p. 65).

2. Maggots.—“Maggot-infected wounds are extremely offensive to smell, yet the presence of these creatures in a wound has proved to be a not unmixed evil, for there is not the slightest doubt that they do in some way exert a strong inhibitory action on the growth of the more virulent bacteria. It is a noteworthy fact that gas-gangrene and maggots do not exist together in the same wound, and that maggots survive at the expense of gas-gangrene. Of the many maggot-infected wounds seen during the Somme fighting it was a most striking fact that these wounds did well. There was in these cases no gas-gangrene and no tendency for the infection to spread locally” (p. 93).

“We have already quoted cases in which gas-gangrene infection of the wounded tissues has subsided with the appearance of maggots. We can also quote cases to prove the converse.

“A good instance is that of Private ——, 5th West Yorks Regiment, who was severely wounded in the right leg. Both bones of the leg were fractured and comminuted, and the wound was literally crawling with maggots. There was no active gas-gangrene present. The maggots were washed away with 1 in 20 carbolic acid. Upon their disappearance from the wound gas-gangrene set in. This happened on more than one occasion, and is, we think, further proof that these two conditions rarely, if ever, exist in a wound” (p. 146).

“Whether or not these creatures might not be useful as a means of treating extensive gangrenous wounds in the early stages is a point to be settled; for, horrible as the idea may at first seem, yet these maggot-infected wounds could not be any more offensive than similar wounds that were treated with the salt-pack” (p. 94).

3. Symbiosis and infection-control.—“When flavine is employed on severely infected wounds the number of cells and organisms in the exudate diminishes markedly for the first three to five days, but after that time the number of organisms increases, and does not show the tendency to gradual and rapid fall which is seen in the case of wounds treated by the Carrel-Dakin method. The organisms which reappear in the discharge are not mainly coci, as in the later stages of the latter method,
but include a goodly proportion of spore-bearing anaerobes and of coliform bacilli. Thus, the effect of flavine on the organisms in the wound, as judged by smears, is quite different from that of the hypochlorite solutions, and hence by the combination of antiseptics in the sterilization of a wound, it is possible to break up the symbiosis of the organisms, and so produce a more rapid sterilization. . . . This, however, complicates the procedure, and we prefer the Carrel-Dakin from the commencement, except in non-gangrenous wounds in which complete or almost complete excision appears to be possible" (p. 115).

One could quote more of equal interest, but space is limited. Attention may be drawn to many practical points, however, viz., the relation of fatigue to gas-gangrene; the relation of gas-gangrene to abdominal wounds (hardly ever present); the need for avoidance of A.T. serum in large joint wounds (subsequent effusion into these); as regards the movement of abdominal cases from firing-line to base (rest for several hours first of all, then saline and morphia).

One important conclusion must, however, be given in full:—

"We would like once again to emphasise the important observation taken now over 2,000 consecutive cases of severe wounds, especially compound comminuted fracture of the femur and the like, where Carrel's treatment had been commenced early at the casualty clearing station, limbs and lives were saved; but in all cases where rush of work prevented the Carrel-Dakin treatment from being carried out, such limbs were gangrenous by the time the base hospital was reached, and had to be sacrificed, and in a considerable number of cases lives were lost" (p. 322).

As to the cost of this system:—

"We have found that the Carrel-Dakin system, when its continuity is not broken, is not only rapid and efficient but is easily carried out and cheap to the State. The cost of material per patient over our own series of 2,000 cases, from the time of infliction of the wound up to the time of healing and the patient getting about, works out at seven shillings (pre-war catalogue prices") (p. 236).

The reviewer's own experience of 1,000 Carrel cases of his in France bears out the claims of these two last excerpts.

The only omission in this important work that is of moment
is that of any reference to work on extraction of projectiles under the direct use of the x-rays in a dark room, or in the light with the x-ray operator wearing a bonnet-fluoroscope and wielding a sterile indicator.

This book will certainly take a foremost place in all future war surgery.

Surgery in War. By A. J. Hull, F.R.C.S., Lieutenant-Colonel, R.A.M.C., Surgeon B.E.F. Second Edition. London: J. & A. Churchill. 1918. (25s. net.)

The edition is more than twice the size of the first and the illustrations are correspondingly increased. There is much new matter, and no padding; it is thoroughly sound work in the way of registering the methods of 1918 in British war surgery.

In the 1916 edition it is to be noted that there is no reference to the Carrel-Dakin method; but in this of 1918 there is allotted a moderate space towards describing it, and its later developments up to Dichloramine-T. In the section entitled "Treatment of Wounds" in 1916 most space was given to the hypertonic saline regime; in 1918 the Carrel-Dakin technique and Dakin's later work receive the biggest share of attention. Flavine and other new antiseptics are more fully dealt with than formerly. This redistribution of matter reviewed is significant of much—the line of progress is really towards the newer antiseptics; and Mr. Bernard Shaw—as was recognised by many of us—was a day behind the fair in his attack ("What shall we do with the Doctors?" English Review, 1917) on the medical profession when he used the saline irrigation method as his chief weapon of offence.

The criticism quoted from an American journal in this edition, emanating from Dakin and others as to the Carrel-Dakin method "being elaborate and expensive of material and personnel," is easily answered by a reference to the quotation in the preceding review from the work by Hughes and Banks. Seven shillings per head is not a high figure for material for a wounded soldier's dressings. And Dakin is a research chemist, not a surgeon. If the budgets are high at Compiègne, is it not because Rockefeller runs the Institute there? If high at Le Pan,
would they have been so high had Le Pan depended purely on State funds?

Hughes and Banks’ experience agrees with that of the reviewer as to cost; as to personnel, the reviewer has been to Compiègne, and recognises that a demonstration-clinique run by a multi-millionaire might be expected to have nothing lacking on this aspect. The true test as to figures should surely be taken from the work-a-day world of the average French hospital—such as Chaumont; or from Hughes’ Balkan unit, and not from “star-turns.” We have dwelt on this because without some challenge of the kind much harm to a good cause might result. A third edition of this useful manual, perhaps, will show a better balanced review of the Carrel-Dakin system by excision of this partisan quotation.

A special word of commendation must be given to the excellent skiagram reproductions in this volume.

Military Surgery of the Zone of Advance. By George de Tarnowsky, M.D., F.A.C.S., Major, M.C., U.S.A., American Expeditionary Force. Philadelphia and New York: Lea & Febiger. 1918. ($1.50.)

A concise vade-mecum on the treatment of war wounds. There is a short chapter-summary of Carrel-Dakin technic among much else that is valuable; and a good account of Roentgenology in war surgery, with a special section on fluoroscopic assistance during operation. A useful little book.

The Soldier’s First-Aid. By R. C. Wood, Q.-M.S., Army Medical Corps. Toronto and London: Macmillan & Co., Limited. 1917. (2s. 6d. net.)

A handy pocket-manual, well-written. A special feature is the profusion of good, clear photographs (instead of the old-time diagrams) of first-aid treatment to soldiers.