Services during the war period. Recently, numerous appointments have been advertised in your columns, of chairs, lecturers, and demonstrators. The universities concerned go to considerable trouble and expense to select the most suitable candidate from the limited fields available. Having made their selection, the Central Medical War Committee on the recommendations of its Services Committee not infrequently calls up the selected candidate, regardless of the work and grave trouble they are causing to those responsible not only for medical education and university research but also for carrying out the recommendations of the Government.

We do not now desire to dispute the wisdom or the necessity of such decisions in the past. We do, however, most strongly urge that the change from war to peace in its first phase—namely, the phase of reconstruction—requires a different policy. The essential difference is that in this stage of the peace reconstruction and its needs take precedence over the fighting Services and their requirements. Among the needs of reconstruction the staffing of our universities and medical schools is not the least important, since it is only by attention to this aspect that a continuous adequate supply of well-trained medical graduates can be provided for the general-practitioner, consultant, and public health services. It must be noted that during the war not only has the establishment of the medical schools been depleted and stream-lined, but also the period of compulsory clinical training reduced from 3 to 2½ years. There is no peacetime justification for this policy, but rather for its immediate reversal in the interests of the community.

The needs of the universities and medical schools must, therefore, be regarded as having the same degree of urgency as the needs of other branches of civil medicine. This applies whether in determining the order of release of medical men and women from the Navy, Army, and Air Force or in allocating newly qualified practitioners between the Services and the various types of civilian medical practice. If the universities and medical schools are to play their part in giving the best possible training to students their needs in personnel must be fully appreciated not only by their own governing bodies but also by those Government Departments which guide the general policy of the University Grants Committee and the Central Medical War Committee.—We are, etc.,

A. ST. G. HUGGETT,
Professor of Physiology, University of London, St. Mary's Hospital Medical School.
ESTHER M. KILLICK,
Professor of Physiology, University of London, London School of Medicine for Women.

Trichlorethylene

SIR,—From a persual of your correspondence columns during the past six months it would appear that some misapprehension exists among occasional anaesthetists as to the effects and limitations of trichlorethylene. I should therefore be grateful if I might summarize the position very briefly.

It is now recognized that trichlorethylene is an admirable agent for the induction of general anaesthesia (preferably with nitrous oxide and oxygen) and for the maintenance of a light phase of narcosis when complete muscular relaxation is unnecessary—for example, for many dental and cranial operations, radical mastectomy, multiple excision of varicose veins, etc. The maintenance dose is much less than is often supposed and rarely exceeds a few minims per hour. The characteristic smell of the drug should be just perceptible in the inhaled mixture, and it may be difficult on some types of apparatus to give a sufficiently low concentration. When administered in this way respiration is quiet and slow while recovery is extremely rapid, with gratifyingly few after-effects as compared with ether. On the other hand, if attempts are made to "push" trichlorethylene in order to secure relaxation for upper abdominal or orthopaedic surgery, tachypnoea and other signs of overdosage will soon become evident and recovery may be delayed. Relaxation should be obtained by recognized methods, such as suitable nerve or field blocking, the intravenous injection of pentothal (probably soon to be ousted by curare), or by a change-over to some other inhalation anaesthetic such as ether. It is worth noting, with so many fire hazards in modern operating theatres, that trichlorethylene vapour can be regarded as non-inflammable under normal conditions in this country.

As a general analgesic the drug is probably unsurpassed in efficiency by any other in use at the present time. Two types of inhalers, using air as the vaporizing agent, are in common use. One is the "draw-over" type—e.g., Marrett's and Freedman's—and the other the "blow-through" variety, such as Hill's. Both can be used by the patient himself and are most efficient for many minor surgical procedures and in midwifery.

As regards post-anaesthetic toxic effects, nerve palsies have followed trichlorethylene given in a closed circuit with unsuitable soda-lime which became unduly hot. Under these circumstances a chemical reaction between the two substances can occur and toxic products be formed. To be on the safe side it is therefore recommended never to use a closed circuit with trichlorethylene. One case of suprarenal haemorrhage and liver necrosis has been reported after trichlorethylene had been given as an analgesic in labour. It is doubtful, however, if the drug played any part in the condition.

Arrhythmias are common during narcosis with trichlorethylene as with all inhalation agents. Recent work with the electrocardiograph suggests that the only arrhythmias to have much significance during anaesthesia are the multifocal ventricular type, which, in the case of chloroform, are known to be occasionally followed by ventricular fibrillation. Although this type of arrhythmia occurs in about 10% of patients anaesthetized with cyclopropane or with trichlorethylene, primary cardiac failure is almost unknown with either agent, so that it seems reasonable not to take pulse irregularities too seriously. After using trichlorethylene continuously for over 5 years I have yet to see any serious harm caused to a patient by it, but it is essential to recognize and respect its limitations.

May I conclude by suggesting that the occasional anaesthetist should at least read the literature relating to new drugs and methods before embarking on their use. Failure to do so results at best in disappointment and at worst in disaster.—I am, etc.,

Hill End Hospital, St. Albans. C. LANGTON HEWER.

Ludwig's Angina

SIR,—In cases of Ludwig's angina Major J. H. West (Sept. 15, p. 369) advocates nitrous-oxide–oxygen anaesthesia as a preliminary measure to facilitate the passage of an intratracheal tube. In the same communication he describes my warnings as to possible failure of intratracheal intubation as theoretical. I should like to assure Major West that my objection to any form of general anaesthesia in this emergency is the direct outcome of practical experience.

Regarding N_2O, many years ago my anaesthetist was severely reprimanded. The words of the coroner are engraven on the tablets of my memory: "Surely you now realize that nitrous oxide is a spasmotic anaesthetic, and should never have been given in a case of threatened obstruction to the air passages."

Since my communication in the *Journal* of March 17 (p. 384) I have received letters from three surgeons and a verbal communication from another describing fatal issues as a result of employing inhalation or pentothal anaesthesia in cases of Ludwig's angina. Consequently I feel impelled to plead that my advocacy for regional block anaesthesia in this condition is not, as has been suggested, an arm-chair theory, but so highly practical as to merit the term "vital."—I am, etc.,

London, W.1. HAMILTON BAILEY.

Sciatic "Neuritis"

SIR,—Dr. MacDonald Holmes and Mr. Sworn (Sept. 15, p. 350) quote my remark that in no case of sciatica had an inflamed and swollen sciatic nerve been visually demonstrated as the cause. At the time this was made I had been looking in the journals for some such observation, which I thought might have been recorded when one of the methods of treating sciatica was to mobilize the sciatic nerve after exposing it by operation. I could find no instance in which changes characteristic of active inflammation were described. My search was by no means complete, and I thought that my provocative statement might bring to light some case record which I had missed, but so far as I am aware none has been forthcoming.

Whether the statement for which I am responsible is correct or not, Dr. Holmes and Mr. Sworn err in applying it to the lumbo-sacral nerve roots. Congestion and swelling of the lower

lumbar or first sacral roots have been previously noted in cases of sciatica in which the roots have been exposed at operation. Dr. J. S. Barr (Dec. 17, 1938, p. 1247) drew attention to this finding in association with prolapsed disk, and I have seen it demonstrated, as Dr. Holmes and Mr. Sworn describe, when no protrusion has been discovered. Whether in these latter cases the congestion and swelling are due to oedema from pressure by a protrusion which is not apparent at operation or is of true inflammatory origin is a question which has not been finally settled.

However this may be, Dr. Holmes and Mr. Sworn are mistaken in supposing that they have observed a lesion which, in the paper to which they refer, I considered had not yet been seen by human eyes. Lumbo-sacral "radiculitis" would, I submit, have been a more appropriate title for their paper than sciatic "neuritis."—I am, etc.,

London, W.1. C. P. SYMONDS.

SIR,—I was interested in the article by Dr. MacDonald Holmes and Mr. Sworn on sciatica. I am an orthopaedic surgeon, but, in common with some others, I take a great interest in the physiotherapy side of our work, and thus I have not a confirmed surgical bias, and in the course of a year of both orthopaedic and physiotherapy practice I see and deal with a large number of cases of sciatica. I am not, myself, entirely convinced with the latest idea that all cases of sciatica are caused by a prolapsed disk. I was present at the Royal Society of Medicine meeting when Dr. Symonds and Mr. Pennybacker put forward the above views, which were later strongly criticized in subsequent correspondence in the *Journal*. Anyone who reads American literature would be led to assume that the diagnosis of the disk prolapse is easy, yet I find myself able to cure most cases of sciatica by manipulation or physiotherapy, though, as a surgeon, it would be equally easy for me to perform laminectomies. Thus it is with great interest that I note that Mr. Sworn found that in only 55% of the cases which he subjected to laminectomy was a prolapsed disk found. I think the explanation of the three cases that he describes, which certainly present the picture one would expect from a prolapsed disk and in which, upon operation, none was found, were cured because Mr. Sworn, in performing his laminectomy, had necessarily cut through the ligamentum flavum.

In an excellent article in the *Journal of the American Medical Association* in February of this year Mr. Keeghan describes a series of similar cases in which he noted that the free edge of this ligament in some persons may form a thickened band which may rub against the dural sheath of the outgoing lumbar spinal nerve. Mr. Keeghan ascribes the cure of numbers of his cases where no prolapsed disk was found to the fact that the surgical approach of itself cured the friction on the nerve. This article, and a previous one by the same writer in the *Journal of Bone and Joint Surgery* for April, 1944, are worth more notice in this country.—I am, etc.,

London, W.1. G. O. TIPPETT.

SIR,—In their article on sciatic "neuritis" (Sept. 15) Dr. J. MacDonald Holmes and Mr. B. R. Sworn have described the results of three cases of operation for ruptured intervertebral disks. While adhering to the belief that the most common cause of chronic pain in the distribution of the lumbo-sacral nerve roots is the result of a ruptured disk, they cite these cases as being instances in which a sciatic neuritis has occurred idiopathically and not in the presence of a traumatic lesion. Two of the cases described gave a history of severe strain at some time prior to the onset of the symptoms. The third, that of the housewife, could probably also have given a history of severe strain or, at any rate, of a series of lesser strains giving rise to a cumulatively traumatic effect.

With such histories it would seem correct to assume that some tangible lesion other than that of a ruptured or prolapsed disk had occurred. It is probable that this lesion was a simple minor rotatory displacement of the fifth lumbar vertebra on the sacrum; in other words, a lumbo-sacral strain had been produced. This would give rise to all the symptoms of a sciatic neuritis which could not be explained in any other way. Contingent on the injury, the vertebral strain, spasm of muscle bundles would take place, and, by pressure on the spinal nerves themselves, cause an inflammatory process ascending to the nerve roots. A radiculitis with its attendant symptoms would result.

The theory of the mechanical compression of a nerve root from narrowing of the intervertebral foramen offers no better an explanation for the causation of radiculitis following a vertebral strain than it does in the case of a ruptured or prolapsed disk. The spines of patients suffering from marked scoliosis show very appreciable diminution in the size of their intervertebral foramina on the side of convexity without the development of peripheral symptoms.

On the assumption that the three cases referred to were examples of lumbo-sacral strain the initial steps taken for their cure and for an accurate diagnosis might well have been manipulative rather than operative. In any event the label does not seem to matter very much. Clinically and radiologically the diagnosis of a prolapsed or ruptured disk is surmise. The diagnosis is only confirmed or negatived after operation. Radiologically the diagnosis of lumbo-sacral strain is also surmise. Clinically there are such guiding signs as tenderness to the affected side of the spinous process of the fifth lumbar vertebra and accompanying muscle tension. The suggestion is that, in order to establish a diagnosis and, more pertinently still, probably to effect a cure, a specific manipulation or series of manipulations if necessary should be carried out before operative measures are considered.

A brief description of the technique of the manipulation recommended has been given elsewhere ("Vertebral and Sacro-iliac Strain in the Soldier," *J. R.A.M.C.*, Jan., 1944). If the manipulative procedure succeeds, the diagnosis—that of sciatic neuritis due to lumbo-sacral strain—becomes apparent *post hoc*. If it is unsuccessful resort may have to be made to the hazards of laminectomy.—I am, etc.,

St. John's Wood, N.W.8. E. GORDON FLEMING.

Domiciliary Midwifery and the Family Doctor

SIR,—I read with interest the article on domiciliary midwifery and the family doctor (Sept. 1, p. 294). I fully realize that the sentiments expressed are strongly held by its authors, and also that their intention in writing it was to stress their disagreement with the report of the Royal College of Obstetricians and Gynaecologists. On the contrary, they put forward a detailed argument in favour of a scheme similar to that outlined in the Maternity Services (Scotland) Act, 1937. At the outset I would like to point out that I have no personal knowledge of the workings of this Act, and equally to stress that this letter is not written as a result of any preconceived prejudices of my own, but merely in a spirit of honest inquiry. I am rather surprised by some of the statements which they so confidently make, and in order to save space I have put my queries in tabular form.

"Doctors all over the country are perturbed."—What proof can they give that this is in fact the case? My own experience has been that a large proportion of medical men, in England at least, have little liking for midwifery, and are only too pleased that some of the burden should be taken from them in the manner suggested by the College.

"Increased hospitalization."—They imply that patients prefer to have their confinement at home. Most of my own private patients, on the contrary, express a strong preference for a hospital, and the main difficulty is to find sufficient accommodation.

"We have also tried to show that many of the adverse criticisms of our work as practical obstetricians have not the support of recent investigation."—I have most carefully read and re-read their article, but cannot find any proof of this statement. Such proof would require massive statistics, and without such support a statement of this sort loses its meaning.

"The family doctor has already realized that the more careful and skilful his ante-natal examination the less is the trouble he has at the confinement."—Surely this is the very argument in favour of ante-natal care being carried out by doctors with some extra training. I am firmly convinced that *adequate* ante-natal care requires much more practice than can be obtained by the average general practitioner.

"We contend that successful midwifery depends upon a sense of confidence and an absence of fear."—I find it difficult to see how such a state can influence the incidence of posteriors, breeches, transverse lies, toxaemias, ante- and post-partum haemorrhages, cephalo-pelvic disproportion, and so on. But surely it is these very conditions which so strongly influence the outcome for both mother and baby.