EDITORIAL

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The Editor begs to offer hearty seasonal greetings to all readers of THE POSTGRADUATE MEDICAL JOURNAL. When the New Year concerned is so important a milestone as 1950, it is perhaps reasonable to use it as an excuse to pause for a moment and consider the progress of the medical sciences in the past 100 years, and to try to look forward into the remaining decades of the century.

The advances made in the sciences since the year 1850 have been so remarkable and their pace has shown so much acceleration that it would be difficult to attempt to predict whether the speed of medical progress will continue to accelerate, and perhaps whether even the speed of scientific research in general can continue to accelerate in the same almost geometrical way.

In 1850 it was only a year since Crawford Long had published his experiences with ether, though the anaesthetic properties of the drug had been known for some time. It was only four years since Liston had performed the first operation under general anaesthesia in London, with Joseph Lister, still an undergraduate, among his audience. In 1850 Lister had not yet qualified. Sir James Paget, though in practice, had not yet achieved a professional income of £100 a year. Medical therapeutics were in a state of infancy, and virtually no effective specific drugs were known for the cure of disease. Bacteriology had not yet been established as a science, nothing was known of the bacterial origins of disease and cellular pathology had still to await the genius of Virchow.

In short, medicine as a science and even as an art in the form which we understand it now, has developed only in the course of the past hundred years. Many times in that century surgeons and physicians have stood back in wonder and awe before their own contemporary achievement,

and have been led to the not very reluctant conclusion that medicine and surgery could advance no further. It might even seem to us now that, while there are a few little problems to be cleared up, the great discoveries in medicine and surgery belong to the past.

Prophets who have taken this stand in the past have invariably been shown to be lamentably wrong in the event. The same fate indubitably awaits a prophet adopting so self-satisfying an argument today.

In the 50 years which we now begin to face it is possible to predict with some degree of confidence along what lines medical science will advance. We may assume that great numbers of new medicaments of an antibiotic kind will appear and it is not unlikely that the number of drugs of this kind appearing will increase steadily from year to year; in fact, that zymotic disease will in due course be conquered by chemotherapy. We can gain in humility perhaps from remembering that the very success of chemotherapy develops new problems and that the bacterial world defends itself very competently against our therapeutic efforts. In the field of cancer it seems not unlikely that in the course of the next 50 years there will be a further understanding of the cellular metabolism of that disease, related in its complex way with viruses and genetics, and that the chemotherapy of malignant disease, which has at present been explored to an almost negligible extent, will by the efforts of the chemists and the biologists increase steadily, though with unpredictable speed, to cover a wider and wider field of cancer.

In the field of surgery the advances which have occurred in the last 100 years include anaesthesia, antisepsis, asepsis, blood transfusion, penicillin and so many other fundamental aspects of surgery that one might almost say that surgery as we know it is the product of this century. It is only when

we examine more closely what modern surgery means that we see in fact how relatively limited has been its scope. Surgeons have, in fact, learned to remove all the accessible organs, some of the inaccessible organs, and even great parts of essentially indispensable organs. It would be rash to say that surgery had now reached its peak when it is still so largely extirpative. We might reasonably claim surgeons have reached very close to the highest peak of extirpative surgery. The surgery of repair, the restoration of continuity to damaged nerves and bones for example, has been quite widely explored too, but little is to be expected from further techniques in this direction unless methods are discovered of hastening the rate of natural reparative tissue growth.

If further advances in antibiotics and in chemotherapy fulfil our expectations, and if all infection and all malignant disease passes out of the hands of the surgeons, these inventive fellows will be forced to find new scope for their dexterity. Thus put on their metal, it is not unlikely that exploration will proceed further in the direction of physiological surgery and the surgery of replacement.

Our surgeons pay tribute to physiological principles in surgery, but in fact few surgical operations have a purely physiological aim. Even those which are directed to a physiological end depend for their technique on the inevitable extirpation, removal of a prostate, for example, to improve renal function, or of a stomach to reduce secretion of acid. Purely physiological operations such as Blalock's operation for pulmonary stenosis and the various operations for the treatment of portal hypertension, are relatively few, and the physiological nerve interruptions which are performed for the treatment of hypertension and of peripheral arterial disease depend, like the great bulk of surgery, on extirpation.

Perhaps the future lies in the surgery of replacement. The construction of artificial tissue

has been limited to the replacement of bone and of certain fibrous and serous membranes, and to the elaboration of artificial surfaces such as that of the acetabulum. The transplant of living tissue from one individual to another has been restricted to relatively inert tissues such as blood and bone. There are still basic biological problems of enormous complexity concerned with protein chemistry, genetics and even the primary philosophical problem of individuality which bars us from the transplantation of even such relatively simple material as skin from one individual to the other. It is not too much to hope that the biologists will befriend the surgeons in opening to them this fascinating door.

To speculate in this way is possibly an idle pastime, but the dreams at the beginning of a half-century may be the science of 50 years later, and it is always wiser, more exciting and perhaps more profitable to regard ourselves constantly as standing at the beginning of an epoch, than to congratulate ourselves that we have reached a full cultural maturity.

Perhaps however, through no effort of the scientists, our future does not lie with science. In 1850, at the end of the hungry forties, the economic outlook in Britain and in most parts of the world was bleak. In 1950, again at the end of the hungry forties, the economic outlook in this country, and the economic and political outlook in the world as a whole is perhaps not altogether reassuring. We can console ourselves and prepare ourselves for the future with the words which passed between perhaps the two greatest figures in the medical firmament of the century that is passing, in the words of Pasteur to Lister at the opening of the Institut Pasteur in Paris in 1892. We must believe that, 'science and peace must triumph over ignorance and war, that nations will unite not to destroy but to instruct one another, and that the future will belong to those who have done most for suffering humanity.'

IAN AIRD.

The Frontispiece portrait of Charles Turner Thackrah in our December issue was reproduced by kind permission of the University of Leeds. The Editor much regrets and offers his apologies for the omission of due acknowledgment.