EDITORIAL

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The control and management of pulmonary tuberculosis has undergone much change during the first half of the present century. At the close of the Victorian era the optimism engendered by the discovery of the causative bacillus was beginning to wane; tuberculin was being used as a method of active treatment by a slowly dwindling band of advocates; collapse therapy was passing through its teething troubles in Italy; drug treatment was to all intents and purposes confined to the relief of symptoms. For the average worker in this field, with his clinical sense attuned by the times to a bacteriological approach towards disease, it was a period of despondency.

Yet the gloom was not wholly unenlightened. In Edinburgh, Robert Philip was planting the seeds of the preventive approach to the disease and, in the Black Forest, Otto Walter was actively putting into practice the doctrine of the 'open-air' treatment of tuberculosis, first preached fifty years previously by an Englishman, George Boddington of Gloucestershire. From neither of these has there been any turning back. Philip lived to see his work attain fulfilment in the tuberculosis services of this country, while the principle of the open-air treatment has evolved, through the pioneer guidance of Vere Pearson of Mundesley and Jane Walker of Malting's Farm, into the sanatorium and the 'sanatorium régime.' Much has happened since, in diverse directions, but these two developments have withstood every challenge.

Collapse therapy has achieved world-wide popularity as an effective means of cavity closure, and thus of converting sputum. The artificial pneumothorax, from rather crude and uncertain beginnings, has developed a delicate precision in

selective and concentric relaxation of the affected area of lung. Surgical measures have been understandably slower in reaching maturity, but the modern thoracoplasty, modelled upon the pneumothorax, can now effect a limited, selective, concentric collapse of the diseased apex, and can do so with a very low mortality rate. Resection of lung substance is also being more frequently carried out.

The importance of *early diagnosis* is now clearly appreciated and has been much simplified by the development of mass miniature radiography of large numbers of the population, at first in military units but later in the industrial areas.

The post-war revival of *preventive inoculation* with B.C.G. is still a subject for discussion, but evidence derived from the experience of other countries lends encouragement to the view that it may prove invaluable in limiting the disease. It is being widely practised.

Domiciliary management of the disease in the early stages, forced upon us by economic necessity, has been made possible by advances in chemotherapy, the use of postural treatment of the cavity combined with rest, and the relative safety of the pneumoperitoneum in association with phrenic paralysis. In the hands of those who have so capably conducted it in the last few years it has produced results beyond expectation and, in bridging the gap between the number of sanatorium beds available and the great demand for those beds, it has made an invaluable contribution to the management of the disease in these post-war years. For complete success, however, it depends largely upon its ability to bring into the very homes of the sufferers the sanatorium principles of graduated rest, fresh air, sound

nutrition and education in matters of hygiene and in the art of personal discipline. Unfortunately it is not always possible to apply these principles fully in the home today and, at the same time, to break contact between the patient and his susceptible relatives.

In the wake of treatment follows the complicated problem of the economic future of the patient of which a solution has been earnestly sought in recent years. The early work on *rehabilitation* of Varrier-Jones at Papworth has been extended, and from the village settlement principle has sprung the sheltered workshop, the provision of home work for the tuberculous, and the acceptance by the State of tuberculous patients for the retraining scheme for the disabled.

It is, however, in the sphere of *chemotherapy and antibiotic treatment* that the most significant advance in recent years has been made. This forms the subject of our leading article. Having passed through the stage of empirical assessment by processes of trial and error, as was the case when the gold salts were at the height of their fame, we have now reached the stage of scientific evaluation by controlled clinical trials. Dr. Scadding discusses in sequence the investigations which have been undertaken by the Medical Research Council into the value of streptomycin and para-aminosalicylic acid in tuberculous disease of various types, starting with acute miliary tuberculosis and tuberculous meningitis in 1947 and continuing to date with the minimal effective dose of PAS which will delay the emergence of resistant strains of bacilli. The conclusions drawn from these trials lead logically on to the indications and contraindications for the use of streptomycin, and the predominant impression left in the mind after reading Dr. Scadding's excellent account is how widely the drug can be applied in

pulmonary and extra-pulmonary disease, yet how great is the caution needed in its use.

For the future, research into anti-bacterial substances is being pressed forward in many lands, and newer antibiotics are constantly being extracted and tried. We have not yet attained finality in this field.

If there is a practical lesson to be learned from this short survey of past and present effort it seems to the writer to lie in an appreciation of the need for *integration* in the management of tuberculosis and the tuberculous patient. In only a few exceptional instances will one method by itself suffice. The specialized forms of treatment must be combined and harmonized appropriately if the best results are to follow. The use of anti-bacterial substances is a good example. In large measure the therapeutic effect of streptomycin has found practical expression in conjunction with collapse therapy and surgical procedures either in the preparation of the patient or for the control of complications which may result. It is not an exaggeration to state that the application of lung resection to tuberculosis could hardly have been possible without the antibiotic 'cover' which made it safe. But integration extends beyond the confines of specific measures: it is not enough to treat the lesion and neglect the individual. Streptomycin is bacteriostatic and cannot rid the body of bacilli. At the same time as the local lesion is being brought under control the individual resistance of the patient must be enhanced and maintained at a high level; collapse therapy and chemotherapy must be firmly allied to rest and improvement in the environment of work and leisure. Tuberculosis is a social disease and its ultimate extinction depends as much upon social policy as upon laboratory research.

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