THE RADIOLOGY OF PULMONARY TUBERCULOSIS.

"The Radiology of Pulmonary Tuberculosis", by J. E. Bannister, is a handy and concise little book which deals in a clear manner with the modern radiological aspects of pulmonary tuberculosis and, in addition, contains an excellent chapter on the clinical aspects of the disease by Dr. Diamond, senior tuberculosis officer, Hull. The various chapters deal with the normal lung, technique of examination and the radiological appearances of childhood and adult tuberculosis; differential diagnosis, pneumonokoniosis and collapse therapy also receive consideration. The author stresses the necessity for good films, and recommends the postero-anterior film, taken at six feet distance, as being the most useful; oblique and lateral films are necessary only to clear up some obscure point. High milliamperage produced, without any retouching. Early tuberculous lesions in a clear manner with the modern radiological aspects of adult tuberculosis; differential diagnosis, pneumonokoniosis and collapse therapy also receive consideration. The author chapters deal with the normal lung, technique of examination and the radiological appearances of childhood and adult tuberculosis; differential diagnosis, pneumonokoniosis and collapse therapy also receive consideration. The author stresses the necessity for good films, and recommends the postero-anterior film, taken at six feet distance, as being the most useful; oblique and lateral films are necessary only to clear up some obscure point. High milliamperage (200) at 60 to 55 kilovolts for one-tenth of a second gives excellent pictures; higher kilovoltages give less contrast. Films are taken in deep inspiration. Tomography is of help in some cases after the particular lesion has been localized. The normal lung and the difficult hilar regions, with descriptions of the positions of the lobes, are dealt with in detail. The various inflammatory lesions are grouped under three headings: (a) exudative and proliferative, (b) fibrotic, (c) destructive; each gives a characteristic X ray appearance. The various skiagrams used to illustrate these conditions are very well reproduced, without any retouching. Early tuberculous lesions may be demonstrated long before there are any clinical manifestations, and when no tubercle bacilli are found, repeated X ray examinations will exclude the possibility of tuberculosis. Early foci may be missed and incomplete infective processes may cause confusion. The author sees no advantage in the use of the fluoroscopic screen. Primary infections (childhood type) are surrounded by exudative lesions, whereas secondary infections (adult type) are characterized by productive and fibrotic lesions, according to the state of allergy existing. Childhood infections are air borne and involve the alveoli, with resulting inflammatory reactions; a bronchopneumonic condition follows, with later fibrosis. The size of the lesion depends on the virulence of the infection. The tracheo-bronchial lymph glands are involved. Healing occurs, with calcification and encapsulation. Once calcification occurs any further infection must be of the adult type. Calcified areas may break down in later life and cause reinfection; in the adult type productive, exudative and fibrotic lesions are present. Adults show more pronounced constitutional signs than children. The author points out that in most cases a radiological diagnosis can be made, but that it is always better to combine radiological evidence with a thorough clinical examination. Tuberculous lesions have a tendency to calcify and show patchy distribution. The author states that no lesion should be considered as healed unless repeated X ray examinations over many months have been carried out; in fact, it is always better to refer to a lesion as being "arrested" rather than as being "healed". The degree of activity can be stated from the radiological examination alone.

The differential diagnosis is considered in Chapter VI, while Dr. Diamond's contribution on the clinical side should be read carefully by both radiologist and clinician. Dr. Diamond issues a warning against the giving of a positive pathological report of tubercle bacilli when only a few bacilli are noted; repeated examinations (at least three) should be made in all cases. A chapter on pneumonokoniosis is included, but contains no new matter; the author still leans to the possibility of Jones's sercite as being a cause of silicotic fibrosis. Collapse therapy under radiological control is of great value in selected cases.

This small book is the best on the subject that has been published for some time, and should be in the hands of every radiologist and every physician who deals with pulmonary tuberculosis.

BIOCHEMICAL METHODS.

If the number of text-books which are published from year to year is any indication, continually increasing importance is being attached to the instruction of medical students in biochemistry. Professor F. C. Koch's manual on practical methods was originally prepared for use concurrently with Mathews's "Textbook" and his later "Principles of Biochemistry". The manual is divided into three main parts: the chemistry of the cell constituents, the chemistry of digestion, and the chemistry of the blood and urine. The greater bulk of the book is devoted to the last part, which is mainly concerned with quantitative methods.

The first section consists of qualitative experiments on the carbohydrates, lipides and proteins. Rather a wider range of tests than usual is described. The instructions are distinguished by precision of detail. It is surprising to find no mention of the inorganic constituents of the cell in this section.

The section on digestion deals very fully with methods for the demonstration of the activity of the digestive enzymes. The conventional methods for the analysis of the gastric contents are described, but the fractional test meal is not mentioned.

The qualitative part of the section on blood and urine is disappointing. Among the blood pigments, for example, sulphhaemoglobin is not mentioned, although its detection is now of some importance. The scheme adopted to show the relation between the blood pigments is an obsolete one. Among the tests for the detection of blood the now widely used Takayama reaction is not even mentioned. The qualitative section on urine is also disappointing. No methods of examination of urinary deposits and calculi are described.

The quantitative portion of the section dealing with the blood and urine is more comprehensive. The fact that a large amount of work in this part is far beyond the scope of a student taking the ordinary medical course. Many of the methods described require a greater experience of biochemical technique than can be expected of the third-year medical student. This portion of the work is much more advanced than the rest. The descriptions of the methods are very clearly given. A number of these methods, it should be noted, have been developed in the author's laboratory in Chicago. He states in his preface that in this, the second edition a number of duplications of methods have been eliminated. Further improvement in this direction is desirable. For example, a description of Van Slyke's volumetric methods of gas analysis seems unnecessary when his more recent manometric methods are given in detail.

A full appendix supplies all the necessary data for the preparation of the reagents used in the various experiments. The manual should prove useful to students taking a course of biochemistry more advanced than is possible in the present medical curriculum.

1 "Practical Methods in Biochemistry", by F. C. Koch; Second Edition; 1937. London: Ballière, Tindall and Cox. Super royal 8vo, pp. 311. Price: 15s. net.