A reservoir type Pasteur pipette is cut off squarely near to where the actual pipette is formed from the main butt, and this square-cut opening closed by melting the glass in a flame until it forms a strong thickened glass end with a pinpoint-sized hole in the centre. As it is narrowed by the heating the size of the aperture can be checked with a hand-lens, or, when the pipette is cool, by filling it with water and seeing how much comes out, when the pipette is touched on to a glass slide. If the hole is too large and fluid comes out too quickly, the water is shaken out and the glass re-melted to make the hole smaller. Before the saline pencil is put into use, the end opposite to that with the pinhole opening is heated in the flame until it is soft enough to be bent, so that the pipette becomes eccentric: this prevents the pencil from rolling when it is dropped back or placed on the bench.

When it is used the pencil is filled with 0.85% saline and the thickened end is used to tap a slide, on which it then leaves a small drop of saline.

The small wire loop is of 33 S.W.G. (0.01 in. in diameter) nichrome or platinum wire made into a 2 mm. loop. This thin wire is used because it cools very quickly after it has been sterilized and, also, its small size allows several portions of any colony to be removed.

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BOOK REVIEWS

Chromatographic Techniques. Clinical and Biochemical Applications. By Ivor Smith; Foreword by C. E. Dent. (Pp. xiii+309; illustrated. 45s.) London: Heinemann. 1958.

Chromatography has not been altogether neglected in the ever-increasing flow of new publications in biochemistry, but there has been a real need for a good practical book on filter paper chromatography to which the clinical biochemist can refer for guidance. Dr. Smith, with the assistance of several colleagues, has successfully remedied this deficiency and presents here a mine of information for the identification of many substances of medical importance. Much of it is new and hitherto unpublished material.

The first chapters are given to general principles of technique, and the author describes a simple "universal" apparatus for ascending and descending chromatography using 10 in. square papers. There is a good account of preparatory methods including the desalting techniques, viz., electrolytic desalting, ion exchange separations, and organic solvent extraction. The electrolytic desalter perfected by Dr. Smith and his associates is discussed in detail. Those who do not possess a desalter will find the alternative methods helpful, but the author has not applied them so much to body fluids so that a certain amount of preliminary testing is still required to secure optimum conditions before putting these into routine use.

Following chapters deal specifically with the analysis of amino-acids, indoles, imidazoles, guanidines, purines and pyrimidines, sugars, ketoacids, phenols, barbiturates, steroids, etc. In each case clear instructions are given regarding the choice of solvent and location agents, a general procedure is laid down, location maps are usually provided, and the clinical applications discussed. The sections on amino-acids, indoles, and steroids are particularly helpful. Some of the other sections are of necessity short, and their relation to routine clinical biochemistry is at the moment limited.

If there is any weakness in the book, it is in the clinical notes, which contain some unusual statements, e.g., glycosuria is suggested as a possible guide to treatment and progress of renal tubular necrosis, and a distinction is drawn between cystinosis and the Fanconi syndrome. Crystals of cystine are said to have a "characteristic octagonal shape."

These sections will require revision in any future edition, but the real value of the book lies in its wealth of technical detail not readily available elsewhere, and for this reason it is likely to become a standard manual in its field.

W. H. R. AULD.