A DIRECT SCANNING APPARATUS FOR READING ELE...
The stained electrophoretic strip is rendered translucent and is placed between two glass strips which are 3 x 12 in. These are kept in apposition by "cellotape" and the glass is placed between the guide rails. A portion of the paper strip which has no protein bands is placed in front of the slit and the galvanometer adjusted to 100% transmission or zero by aid of the 20k potentiometer. Two revolutions of the handle move the paper strip 1/10 in. The deflections of the meter are recorded for each movement of 1/10 in. The graph is then plotted and measured by the usual technique. Similar scanners have been constructed with different screw-threads and consequently different slits. In all, slits of 1/32, 1/16, 1/20, 1/10, and 1/12 in. have been used. No advantage has been found from using a very narrow slit. 1/16 in. was found to give an excellent graph which was easy to analyse and to measure but suffered from the slight disadvantage that the size of the graph does not correspond with the separation of the bands when plotted on the usual 1/10 paper. With a 1/10 in. slit the length to be scanned as measured on the built-in rulers corresponds exactly with the graph, and this size of slit has been adopted as standard in this laboratory.

Figs. 1a and 1b show the construction. None of the dimensions is critical except that the size of the slit must be an exact multiple of the pitch of the screw.

Fig. 2 is an example of the scanning of a typical strip from a case with increased gamma globulins.

With this apparatus one person can record and plot 100 to 150 points in 10 minutes, and it can be operated by a relatively unskilled worker with ease and accuracy.

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REFERENCES
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