all legends may therefore be typed. The only disadvantages noticed were that, in blacking in areas, a fine dust sometimes forms and must be blown off to prevent smudging; and occasionally the lines may have to be gone over twice, especially if a hard smooth-surfaced paper is used.

EDGAR W. CLARK

Department of Zoology
University of California at Los Angeles

Electrophoretic and Chromatographic Studies of Purified Human Profibrinolysin[1]

BY A method previously described (*1*) it has been possible to prepare a human profibrinolysin that appears to be 100% pure electrophoretically. The starting material for this preparation was pyrogenic lyophilized human plasma (supplied by the Office of Naval Research). The one deviation in our current procedure from the previous report is in the first step. Instead of taking the precipitate from dialysis, the starting material is the residue from an acetic acid precipitation at pH 5.2 ± 0.1. In the electrophoretic studies the homogeneity of the single component was tested by reversing the current. The isoelectric point for this single component is pH 6.1; this would indicate profibrinolysin to be a gamma globulin according to reference electrophoretic curves (*2*).

By quantitative chemical methods profibrinolysin was found to be 13.4% nitrogen (micro-Kjeldahl) and 2.03% carbohydrate (orcinol).

Two-dimensional paper chromatograms with phenol and butanol-acetic acid water as developing agents, indicated the following 17 amino acids to be present: alanine, arginine, aspartic, cystine, glutamic, glycine, histidine, hydroxyproline, isoleucine, leucine, methionine, proline, serine, threonine, tryptophane, tyrosine, and valine.

EARL B. GERHEIM
HORACE M. FLOYD
ANDRE M. WEITZENHOFFER
JAMES OKUBO

Division of Research, School of Dentistry
University of Detroit

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[1] This study was aided by a grant from the Office of Naval Research.

Horizontal Migration Method of Paper Chromatography

THE method of horizontal migration, which is sometimes referred to as circular paper chromatography (*1*), is a distinct phase in the development of paper chromatography. The method of Rutter (*2*) as modified by Rao and Beri (*3*) involves the use of a circular filter paper on which a small rectangular "tail" is

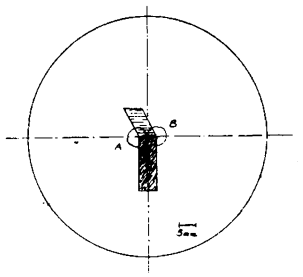

FIG. 1. *A*, the unknown substance (single or mixture); *B*, the known substance (single or mixture).

cut in such a way that its base lies on the diameter, and its sides are at equal distances from the center. The tail is folded back on its base so that it is perpendicular to the plane of the paper. The substance to be analyzed is introduced at the center as a microdrop. When the solvent rises up the tail and spreads as a halo on the horizontal filter paper, the substance migrates from its point of application and forms a ring and, if a mixture, separates into concentric circular zones. This method is more advantageous than the downward or the upward migration method in speed of development, ease of manipulation, and simplicity

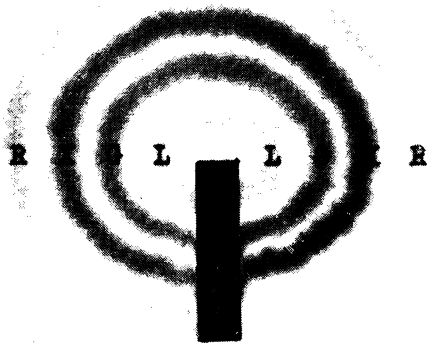

FIG. 2. R, rhamnose; X, xylose; G, galactose; L, lactose (with moist butanol as solvent).

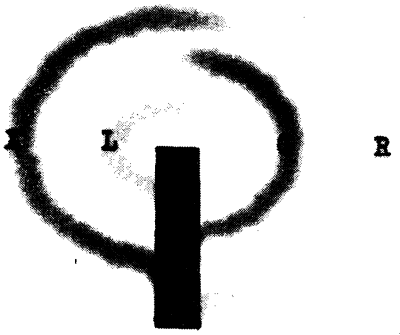

FIG. 3. X, xylose; L, lactose; G, galactose; R, rhamnose (with moist butanol as solvent).