Using the capillary tubes, place a small amount of each appropriate solution on its two positions along the line on the filter paper. Avoid getting the spot on the paper larger than about 2 mm in diameter. Let the paper dry a few minutes in air. Add a second portion of each solution to the two positions to make certain sufficient quantity of the sample will be present for good visualization when the paper is developed.

Roll the paper into a cylindrical form, and staple the ends together about a third of the way in from the edge (Fig. 3). Staple the paper in such a fashion that the ends of the paper do not touch or overlap each other--otherwise the solvent will flow more rapidly at that point and form an uneven front.

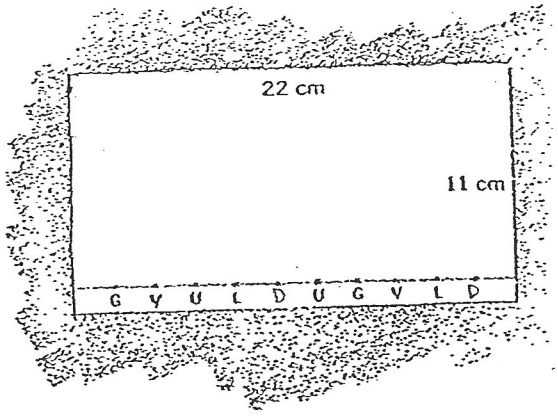

Fig. 2. Preparation of paper for chromatography of known and unknown amino acids.

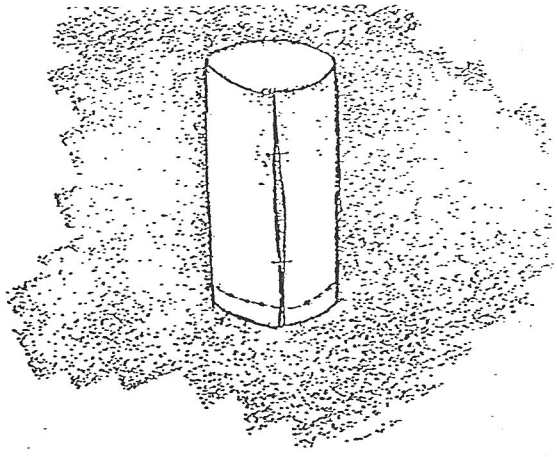

Fig. 3. Stapled paper for chromatography.

5. Separation. Place the cylindrical paper carefully in the beaker of solvent, and cover carefully and tightly with the plastic wrap. Make certain that the paper does not touch the sides of the beaker, and use care in keeping solvent from splashing onto the paper.

   Let the solvent rise up the paper for at least 1 hour. If the time is shorter, the components may not be sufficiently separated for easy identification. Remove the paper from the beaker and when most of the solvent has evaporated, open the cylinder by tearing it apart where it was stapled and blow it dry with a hot air gun. Mark the solvent front line with a pencil.

6. Visualization. Spray the paper lightly with a solution of ninhydrin. Place the paper in an oven at 100-110°C for about 5 minutes or until all the spots have developed.