(a)

(b)

Fig. 5—Equal-angle or Wulff stereographic net on the left and an
equal-area or Lambert-Schmidt net on the right.

reference point is marked on the paper over a corresponding point on the periphery of the net. Azimuths are read clockwise from north on the periphery, and angles from the vertical or horizontal are read along the equator. To plot the attitude of a line in space, the azimuth of the line is noted on the tracing paper. The paper is then rotated until the azimuth of the line coincides with the equator of the net. The plunge of the line from the horizontal or its deviation from the vertical is then marked off along the equator. Rotation of the paper back to its initial position permits one to visualize the attitude of the line in space. To plot the attitude of a plane, its strike line is noted on the tracing paper. The paper is rotated until the strike line coincides with the north-south diameter of the net. The dip is then plotted along the equator with respect to the lower hemisphere by either tracing the plane (a great circle) or plotting the normal to the plane. By working backward one can determine the azimuth and plunge of any line or the strike and dip of any planar element on a stereographic diagram.

Many other operations and graphical solutions are facilitated by use of the net--e.g., the determination of (1) the azimuth and plunge of the intersection of two planes, (2) the angle between two planes or two lines or a line and a plane (read along a great circle by rotating the tracing paper until the two corresponding points lie on the same great circle), and (3) the orientation patterns of many planes or lines that are plotted on the same diagram. Another important use of the net is to facilitate the rotation of fabric data from one plane of reference to another.[11]

Fabric orientation diagrams are amenable to statistical analysis only if the areal distribution of the data points at different locations on the diagram (different orientations) can be compared. The areal distortion inherent in the equal-angle or Wulff net is excessive. For example, a region bounded by 10 degrees of longitude and latitude near the center of the equal-angle net occupies a much smaller area than a 10-degree region near the periphery (Fig. 5(a)). To correct for this an equal-area or surface true net was devised by Lambert[24] for map projections and selected by Schmidt[25] for petrofabric analysis