model results, have been carefully estimated to contribute uncertainties of ± 15 percent. Approximately two-thirds of all results fell within this range of experimental error.

Results of this critical experiment indicate that a quantitative theory accurate to approximately ± 15 percent for body surface potentials produced by normal ventricular depolarization may be based on the assumptions of a fixed-location equivalent dipole and a homogeneous, linear, resistive conducting medium. Torso shape and, more important, dipole location are critical factors that cannot be ignored. Although the results pertain to only a single subject, they are nevertheless suggestive that three-dimensional homogeneous torso models may be surprisingly pertinent for the establishment of an accurate, quantitative basis for human electrocardiography.

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References and Notes

1. Work was supported in part by grant H-339-C, United States Public Health Service. The active participation and interest of C. Kay, G. Seiden and R. Keisman are gratefully acknowledged.
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8 April 1955

Compositional Lineation and Its Relation to Complex Folding

A three-dimensional study has been made of the form and relationships of compositional lineation in gneisses of several types.

Most of the linear units are composed of several or more grains of a mineral or minerals that form miniature chemical concentrations. As these mineral masses increase or decrease in number and size, the composition of the rock changes. They are approximately parallel to the plane of foliation or mineral layering.

Quartz, the latest mineral in the gneisses, forms linear masses in the plane of foliation that appear to be separate and scattered. Study in three dimensions,

however, shows that these linear masses form a connected network of curving veins along small folds and also along curved fractures.

It is believed that the linear units were formed by metasomatism, with little or no change in volume along deviations of planar features undergoing movement of one wall or surface in relation to an opposite wall or surface (1). The thickest parts of the quartz veins are believed to have formed in the deviations nearest the tensional direction of the shear fracture, and the thinnest parts are believed to have formed in the deviations farther from the tensional direction. Such a vein may continue into parts of the planar feature that contain little or no quartz. The end of the vein is probably nearest to the theoretical position of the shear plane. The introduction and removal of minerals is believed to be synchronous with folding.

Oriented specimens of gneiss were mounted in brass cylinders, and photographic enlargements were made of many surfaces cut 1 mm apart. Tracings of the quartz veins or masses were made on transparent film. The resulting maps of these levels give information that is used to determine the relative direction of motion of the layers in the rock during its folding. Such determinations agree with results obtained by three other new methods that I have devised.

Synchronous folding of layered rocks along axial directions at large angles to one another appears to be common. Generally the folding on one axial direction has a relatively small radius of curvature around a large element of arc, whereas the folding on the other axial direction has a relatively large radius of curvature around a small element of arc (arcuate fold). Since folds are rarely analyzed and discussed in three dimensions, the folding that is related to the axis of relatively large radius of curvature around a small element of arc is usually neglected. Plane sections that are made to display the folding in an area are generally made transverse to the principal axis.

Compositional lineation and the axes of small drag folds appear to be perpendicular to the local line of slip. Therefore, these features are "approximately parallel" to the principal axial direction of folding where, as is described in the preceding paragraph, the effect of cross-folding is small.

The compositional lineation and axes of small drag folds are only in a small part approximately parallel to either of the two axes where the synchronous folding is pronounced along two crosswise axial directions. Generally these linear elements are markedly nonparallel to either of the axial directions.

The resultants of the vectors of slip have been used on models of cross-folds to analyze such deformation for orientation of compositional lineation and the axes of drag folds. Such diagrammatic models have been constructed for each of the several extreme structures. They can be used to bracket a natural example, after which a model can be made to show the variability of lineation orientation, the position of the main fold axes in relation to the lineation, and the direction of slip on certain parts of the fold.

Vectors have also been used on the planar features in the three-dimensional study of folding. The relative attitude of a planar feature on a fold, such as gneissic layering, as well as the lineation, should be comparable in some significant way with the other planar and linear structures of the same kind. One type of correlation is briefly described here.

The attitude of a planar feature may be described by the horizontal bearing and plunge of the lineation that lies in the plane of layering or foliation and the plunge of a line (slip line) that lies in the same plane and at 90° to the lineation. These two plunge angles are projected onto the horizontal plane as line vectors. The value of their resultant (R), together with the lineation bearing—which also lies in the horizontal plane—permits graphic delineation of relative normal pressures on the planar features and also the position of the axes of cross-folding.

I have devised geometric methods to show whether folding is the usual "competent" type or is the type caused by flowage (2). The latter was present in some rocks examined.

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17 March 1955

Interaction of Reserpine, Serotonin, and Lysergic Acid Diethylamide in Brain

We have previously demonstrated that reserpine, a tranquilizing agent widely used in the treatment of psychotic states, potentiates the hypnotic effects of hexobarbital and ethanol in mice by a central action (1). 5-Hydroxytryptamine (serotonin), a normally occurring substance suspected to be implicated in brain function (2), was also observed, in large dosage, to depress mice and to potentiate the action of hexobarbital in these animals (3). This potentiating action of serotonin