XIV. EXPERIMENTAL RESULTS ON THE STRUCTURAL RELATIONS OF BEDS THAT ARE SEPARATED BY CONVERGING STRATA.

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The apparatus for this work consists of a pressure box with blocks for varying the type of pressure and lead shot for the overload. The model strata were made of paraffin, tar, beeswax, and putty and were shaped into layers of varying thickness and lensing in one direction or another.

The work has been very largely of an experimental nature, attempts being made to duplicate every type of convergence and to observe the behavior of the beds upon the application of lateral and vertical stress of varying intensity and methods of application. There seems to be little question but that convergence along the surface of the unconformities is an important factor in the localization of folds, the resultant folds occurring not far from the termination of the lower bed. In cases where an eroded anticline was covered by younger sediments, folds developed in the upper beds corresponding to the two limbs of the anticline when lateral stress affected the entire mass.

There appears to be a definite relationship between the axial plane of the folds and the direction of the convergence, although further work needs to be done to establish a definite relationship. Difference in strength of layers used appeared to determine the disposition of the folds in a series of converging beds, the folds being found above the termination of the competent layers. When convergence was present by a thickening and thinning of intermediate beds between two more competent layers this convergence was accentuated by continued lateral stress.

A distinctive diminution in size of the folds away from the direction of the greatest thrust was observed even under conditions of convergence.