

views arrived at are simply the result of an extended and detailed study of the phenomena observable in the field.

Apart from the chief object of the investigation—i.e. the mode of the occurrence of the phosphate deposits—it was intended to show the distribution of the rocks over a typical area which should include the chief mines of the district, and in this way it became necessary to attempt a delimitation of certain limestone areas, in doing which the following features were brought forcibly to light.

Their mode of occurrence was extremely indefinite and irregular. Although great pains were taken it was found impossible in most places to draw any very sharp line between the limestones and the surrounding rocks.

They contained inclusions of gneissic and other associated rocks in the form of bands, nodules, etc.

The proportion of this included rock in relation to the limestone proper was extremely variable so that whilst at some places limestone with inclusions might be a fitting designation, at others one would rather describe as gneiss with intercalated ribbons or bands of calcite. Thus, in passing from a limestone area on to another rock, it became a question of percentage as to where one would draw a line between the two and in the area of gneiss, etc., proper, one would often find little scattering patches of limestone.

These limestone areas show a very constant and more or less definite striping or parallel structure which always maintained a marked parallelism with that of the surrounding gneiss in all its variations of direction.

On close observation, the inclusions in these limestone areas, show some very interesting features. In shape they are varied. One exposure might show a number of contorted bands of gneissic material running parallel to each other, separated by limestone, and much thickened at the sharp bends by doubling. At other places these inclusions form a comparatively small proportion of the rock mass showing as detached nodules, of irregular shape. These nodules are very commonly roughly lenticular, showing a tendency to taper off at either end along the striping of the

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