

NOTES ON THE OCCURRENCE OF ZEOLITES, ARDGLLEN,
NEW SOUTH WALES.

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(Plates xxvii-xxix; Figs. 1-3.)

Some years ago the New South Wales Railway Commissioners opened up a quarry of basalt, situated on the western side of the Great Northern Railway Line, about a quarter of a mile north of Ardglenn railway station. The "blue metal" is used by the Commissioners for road-making, ballast, etc. At the present time the quarry face is about a hundred feet high and seventy-five yards wide; from here the Museum obtained over two hundred and fifty specimens, more than half of which were collected by the Director, Dr. C. Anderson, M.A., the remainder being either presented by Messrs. A. Mitchell and H. Gosden or collected by the writer.

At least three distinct basalt flows have been recognised. The uppermost flow is columnar and is separated from the middle flow by an irregular band of very coarse volcanic breccia (Fig. 1). It has yielded only a comparatively few zeolites, the majority having been obtained from the tuff and the middle flow. It is remarkable that, while there is an abundant supply of zeolites, the range of varieties is small.

The Upper Flow (Pl. xxvii, fig. 1): It is impossible to estimate the thickness of this, owing to the eroded state of the surface, but its greatest would be at least a hundred feet. Columnar structure is very well developed; the columns are hexagonal in form and vary from one foot to as much as seven feet in diameter, the former measurement being by far the most common. Almost invariably they are separated from each other by a "selvage," which is in the main only a few millimeters thick, but is as much as ten centimeters in some cases. On the surface of the flow where the rock has been laid bare this "selvage" produces quite a curious effect; the appearance is that of a tessellated pavement, the light-coloured selvage emphasising the effect.

The thin selvage consists of a crystalline complex of calcite and natrolite with a very little admixture of clayey material. The character of the thick selvage is somewhat different, as it consists of a soft yellow clay which becomes more compact as the central portion of the selvage is reached. This central portion is often hollow and lined with acicular crystals of natrolite and, in a few cases only, small crystals of calcite.

Scattered irregularly throughout the flow are vesicles which are lined with crystals of natrolite and apophyllite, though the latter is very scarce.