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CORRECTION
NEPHELINE SYENITE AT BROOKVILLE, NEW JERSEY†

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The question of whether nepheline is present, or was ever present, in syenite adjacent to granophyre in a diabase intrusion of Triassic age near Brookville, New Jersey, has been a source of controversy. Documentation of nepheline in this syenite is of importance because of the unusual association of feldspathoidal syenite and tholeiitic diabase and because the locality is one of the few reported occurrences of nepheline in the eastern United States. The presence of nepheline at Brookville was reported by Ransome (1899) and Lewis (1908) and denied by Milton (1964). Barker and Long (1969) have tentatively identified nepheline in a float boulder collected by F. B. Van Houten of Princeton University. Recent study by Mrose and Hearn conclusively demonstrates that nepheline is present in Ransome's specimen (USNM 88856), the float boulder, and the syenite collected by Milton.

D. S. Barker of the University of Texas kindly sent Milton a thin section made from the float boulder. A fragment of probable nepheline removed from that thin section was examined by the X-ray precession method and yielded unit-cell data (hexagonal, $P6_3$, a $= 10.00 \pm 0.01$ Å, c $= 8.376 \pm 0.010$ Å) in good agreement with data for nepheline cited by Hahn and Buerger (1955). In addition, an X-ray powder diffraction pattern obtained from fragments that were removed from an optically homogeneous area of Ransome's original thin section (N. J. 2, USNM 88856) shows nepheline is present, along with minor analcime and sericite. Fresh nepheline also was identified in the portion of the thin section outside the field of view shown as plate 2 of Milton (1964), in which nepheline is represented only by pseudomorphs.

The following characteristics of the nepheline and host syenite are offered as an aid to future studies of rocks from the Brookville locality or perhaps similar rocks that occur at contacts of diabase against analcime-rich sedimentary rocks. In thin section, nepheline differs from feldspars by: (1) incipient alteration along its margins to brown fine-grained aggregates of sericite and other products; (2) generally interstitial habit and optical continuity of several separate areas within 1 to 3 mm; (3) lower birefringence; and (4) uniform extinction. Two color variants of syenite, gray and pink, both of which may be present in the same hand specimen, are apparently related to the preservation of nepheline. The gray areas contain fresh nepheline and less K-feldspar, whereas in the pink areas, nepheline is completely pseudomorphed by sericite and zeolites, and K-feldspar is relatively more abundant.

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A goal of further field studies should be to determine the *in situ* relations of fresh nepheline syenite and its pink altered variant with respect to the wall rock and the diabase and granophyre of the main intrusion. The alteration of the nepheline syenite at Brookville appears to be similar in some respects to that described by Pecora (1962) for sericitized syenite from nepheline syenite in the Rocky Boy stock, Bearpaw Mountains, Montana.

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