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## Origin of Pre-Cambrian Pseudo-Conglom-Erates From the Black Hills

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ORIGIN OF ANALCITE IN IGNEOUS ROCKS OF THE  
TERLINGUA DISTRICT, TEXAS

JOHN T. LONSDALE

Many of the igneous rocks of the Terlingua district in west Texas contain analcite as an important mineral. The analcite-bearing rocks generally are assemblages of andesine or labradorite, alkali feldspar, augite or aegirite-augite, olivine, iron ores, and analcite. Biotite is present in some types but absent in others. Important types are analcite syenogabbro, analcite trachybasalt porphyry, analcite trachydolerite, and analcite syenite. Analcite was formed in these rocks through an extended period from late magmatic to definitely post magmatic stages. Reaction between the analcitic liquid and earlier formed minerals resulted in a series of reaction products including analcite aegirite-augite, serpentine, albite, and zeolites.

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ORIGIN OF PRE-CAMBRIAN PSEUDO-CONGLOMERATES FROM THE BLACK HILLS

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Masses of rock strongly resembling pebbles and boulders of granite occur in the pre-Cambrian sediments of the Black Hills about four miles west of Custer, South Dakota. These pseudo pebbles and boulders range in size from  $\frac{1}{8}$  inch up to nearly one foot in diameter, have smooth surfaces, and are well rounded. Evidence is presented that they were formed from continuous thin layers of calcareous sediment within siltstone beds. These were pinched out into small lenses during folding and rounded by rolling along shear planes. Later they were partially replaced by feldspars, quartz and micas by contact action of an intrusive granite.

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