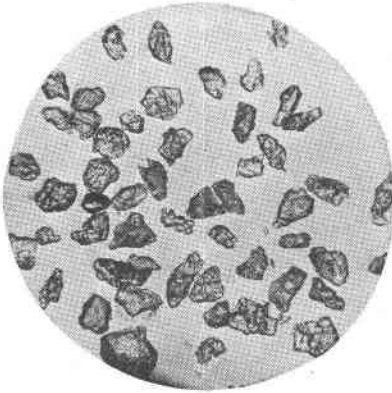


NOTES AND NEWS

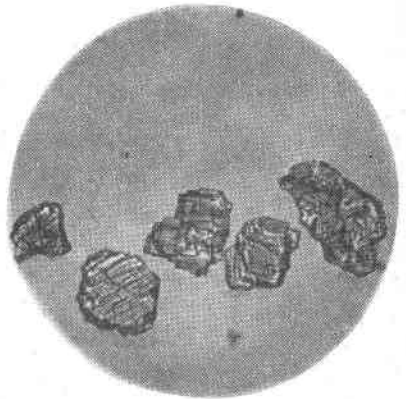
NATURAL ETCHING OF DETRITAL GARNET

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Detrital grains of garnet in sandstones very commonly show a peculiar surface feature that has been observed by a number of workers in sedimentary petrography, but it has been only briefly mentioned in the literature as an unusual condition and generally misinterpreted. Actually the peculiarity is very common and therefore merits more consideration. In the Tertiary strata of Venezuela garnet of this type is especially abundant and beautifully developed, being quite characteristic of certain formations. Since becoming interested in this material from Venezuela, the writer has observed it commonly in sediments from various localities. Several British petrographers have mentioned garnet that is evidently of this same kind but have considered the peculiarity as a cleavage developed in the garnet. However, Mackie¹ noted its occurrence in the sandstones of Scotland and correctly attributed the result as due to etching.



Magnification 24x



Magnification 62x

The accompanying illustrations are of this garnet from the Tertiary of Venezuela. It is somewhat difficult to show the etched condition well in photographs, as the thickness of grains makes the focus sharp on only a small part of the grains. The appearance is very similar to a well developed cleavage, but a cleavage is not characteristic of garnet which breaks with a sub-conchoidal fracture. That it is not a cleavage is evident when the grains showing this feature are crushed, for they do not part along these surfaces but break with the usual conchoidal fracture. The effect is actually confined to the surfaces of the grains. Certain garnets do show a fairly well developed parting, but such garnet when tested by crushing was found to break with irregular to conchoidal surfaces, and gave nothing resembling the effect under discussion.

¹ William Mackie: The Principles that regulate the Distribution of Particles of Heavy Minerals in Sedimentary Rocks, as illustrated by the Sandstones of the North-East of Scotland. *Trans. of the Edinburgh Geological Society*, Vol. XI, pp. 147-148, 1923.

Since it is obviously not a cleavage, there seem to be only two other possible explanations. Either it is a crystal growth of a secondary nature or it is a result of etching. It does not appear probable that it is a crystal growth, as there is no tendency to develop the typical crystal forms of garnet, nor have the rocks as a rule suffered any considerable metamorphism to initiate such recrystallization. The very sharp faces and angles as contrasted with the abraded shapes of associated mineral grains suggest that it is an authigenic effect, produced since transportation and deposition of the sediments.

Some ordinary garnet was crushed and treated with hydrofluoric acid. After several days of treatment in this acid, an etching of the surface of the grains was produced that is identical with that observed in the natural grains from sedimentary rocks. It seems, therefore, evident that this type of detrital garnet is a result of etching. Just what acid or alkaline solution in nature has produced the result is not known, but in many cases at least it is obvious that it is an authigenic change. Some of the grains are etched down by this natural process to delicate almost skeletal forms. It is thus probable, as pointed out by Mackie, that much garnet disappears from sedimentary rocks with sufficient time under certain conditions that are not uncommon.

NOMINATIONS FOR OFFICERS OF THE MINERALOGICAL SOCIETY FOR 1930

The Council has nominated the following officers of The Mineralogical Society of America for the year 1930.

PRESIDENT: Herbert E. Merwin, Geophysical Laboratory, Washington, D. C.

VICE-PRESIDENT: John E. Wolf, Pasadena, California.

TREASURER: Albert B. Peck, University of Michigan, Ann Arbor, Michigan.

SECRETARY: Frank R. Van Horn, Case School of Applied Science, Cleveland, Ohio.

EDITOR: Walter F. Hunt, University of Michigan, Ann Arbor, Michigan.

COUNCILOR: 1930-1933, Paul F. Kerr, Columbia University, New York City.

The tenth annual meeting of the Society will be held December 26-28, 1929, at the Wardman Park Hotel, Washington, D. C. It is planned to publish in the December issue of the Journal a *preliminary* list of titles of papers to be presented before the Society at its annual meeting. In order to appear on the advance program titles of papers should be in the hands of the Secretary by *November 10*.

FRANK R. VAN HORN, *Secretary*

Mr. Lloyd W. Fisher has received the Ph.D. degree from Johns Hopkins University and has been appointed head of the Department of Geology at Bates College, Lewiston, Maine. The subject of his dissertation presented for his doctorate was "Chromite—its mineral and chemical composition."

An illustrated booklet of more than passing interest has recently been issued by the Eastman Kodak Co., Rochester, New York, entitled "X-rays in Industry."