

## SOME METAMORPHIC TERMINOLOGY

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Although the science of petrography already possesses a rich and varied nomenclature, it is the purpose of the following brief notice to present some additional petrographic terms.

TABLE 1

Distinct mineral body	Texture or structure	Rock type(s)
<i>PHENOCLAST(S)</i> Porphyroblast(s) Blasto-phenocryst(s) Augen, "eyes"	PORPHYROCLASTIC Blasto-porphyritic Pseudo-porphyritic	PORPHYROCLAST(S) Cataclasite Porphyroid
<i>PHENOBLAST(S)</i> Porphyroblast(s)	PORPHYROBLASTIC Pseudo-porphyritic	PORPHYROBLAST(S) Garnet mica schist
PHENOCRYST(S)	PORPHYRITIC	PORPHYRY(S)

Table 1 shows two proposed metamorphic terms to be known as *phenoclast* and *phenoblast* with accompanying textural or structural and rock type terms in contrast to the term phenocryst and corresponding terms applied to porphyritic igneous rocks. Besides being self-explanatory and hence comparatively simple, these two terms make for complete uniformity and consistency in the terminology as shown in the table. Likewise, they are etymologically sound.

The term phenoclast (meaning a distinct fragment in Greek) would apply to the larger of surviving fragments of original minerals in cataclastic rocks which simulate a porphyritic appearance. As such, they may be remnant phenocrysts or the larger of surviving mineral fragments, spared by intense shearing of non-porphyrific rocks such as crystal-, crystal-vitric-, and vitric-crystal-tuffs.

The term phenoblast (meaning a distinct sprout in Greek) would apply to idioblastic crystals which occur in thermodynamically metamorphosed rocks having a pseudo-porphyrific appearance.

Table 2 shows several proposed petrographic terms for metamorphic rock structures and their relation to some existing terms. These terms are etymologically sound and apply specifically to rock structures where crushing, micro-brecciation and *clastic flow* has been the chief mode of adjustment of the mineral constituents. This process is in direct contrast to structures in metamorphic rocks resulting from mineral adjustments by plastic flow.

The term *schistoclastic* (meaning divided by breaking, in Greek) is proposed for the structure of pseudo-schistose rocks resulting from cataclasis. It should fulfill a need for such a term.<sup>1</sup>

<sup>1</sup> Grubenmann-Niggli, *Gesteinsmetamorphose*, I, p. 451, 1924.

The term *granoclastic* (meaning granular by breaking, in Greek) is proposed for the structure of granulose rocks resulting from cataclasis.

TABLE 2

Structure	Grade of metamorphism	Name according to metamorphic zone
PORPHYROCLASTIC	CATACLASTIC METAMORPHISM (Cataclasis)	
SCHISTOCLASTIC Pseudo-schistose	↓	EPISCHIST(S) Mylonite-Schist(s)
GRANOCLASTIC Granulose	↓	
GNEISSOCLASTIC Pseudo-gneissose	↓	EPIGNEISS(ES) Mylonite-Gneiss (es)
SCHISTOSE	DYNOTHERMAL METAMORPHISM	
GNEISSOSE	↓ PLUTONIC METAMORPHISM	KATASCHIST(S) KATAGNEISS(ES)

The term *gneissoclastic* is not precise as to word origin from the Greek as the term gneiss is of Slavonic origin meaning "rotted" or "decomposed." However, on a basis of analogy to the foregoing terms, it should be worthy of recognition. This term would apply to the structure of pseudo-gneissose rocks resulting from cataclasis and for which a term has been needed.<sup>2</sup>

The terms *epischist* and *epigneiss* would designate schistoclastic and gneissoclastic rocks developed in the epizone of metamorphism as compared to ordinary schists and gneisses developed in the katazone of metamorphism.

<sup>2</sup> *Op. cit.*, p. 454.

Dr. Raymond J. Leonard, Dean of the Graduate College and Professor of Geology at the University of Arizona, died November 20, 1937, at Tucson, Arizona.

Dr. Balthaser Gossner, Professor of Mineralogy and Director of the Mineralogical Institute and of the Mineralogical Collections at the University of Munich, died on Nov. 7, 1937. He was born Jan. 3, 1877.

Dr. Friedrich Klockmann, Professor of Mineralogy, Petrography and Economic Geology at the "Technischen Hochschule" in Aachen, died on Nov. 17, 1937, in his eightieth year.

Professor Paul F. Kerr of the Department of Mineralogy, Columbia University, has been selected as the Orton Memorial Fellow Lecturer. His subject, "A Decade of Research on the Nature of Clay," will be given at the fortieth annual meeting of the American Ceramic Society to be held at New Orleans, Louisiana, March 27-April 2, 1938.