1. The gneissic character of the microstructure as traced from the coarse grained through the ellipsoidal to the streaked varieties. The augen-structure represented in specimen number 160 is clearly typical of the results usually credited to dynamic movements. Inasmuch as this appears to be merely a special development of a portion of the rock having little or no augite, it would not seem unwarranted to infer that the agencies operating here affected other portions of the rock as well, and hence that the development of the gneissic structure was in both cases referable to the same agencies.

2. The evidence of recrystallization of the granular areas. This appears not only in the irregular interlocking outline of adjacent grains, but the frequent presence of fresh plagioclase feldspar as a cement for the other constituents and the development of hornblende in idiomorphic forms in the more gneissoid rock.

3. The indication of dynamic action as shown (*a*) by the fracturing of the augite and microcline grains, and (*b*) the indication of strain appearing in the bending of the microcline lamellæ, accompanied by undulatory extinction and the development of polysynthetic twinning of the pyroxene. These phenomena are chiefly confined to the coarse grained rock, and even here are not pronounced. It may be that some of them are due to movements subsequent to the development of the gneissic structure. The appearance of strain in the microcline, however, in certain cases (page 116) seems rather to be connected with the production of the gneissic structure. This is true also in certain cases in the breaking of the pyroxene grains, but in general neither pyroxene nor microcline furnish any evidence as to what proportion, if any, of the granular materials represent fragments of the original minerals.

4. The character and relations of the inclosed apatite. The significance of these deposits lies in their generally crushed condition. The crushed appearance of the apatite is more pronounced, so far as the limited data at hand shows, in the deposits occurring in the streaked gneiss than in those in the coarser rock. In places where the gneissic structure of the rock is imperfectly developed, the crushing of the apatite likewise appears incomplete. The mass is made up of rather coarse fragments, with granular apatite filling the interstices. In some cases (page 107) the mass is intersected by thin seams of feldspathic material extending in from the walls and continuous with the surrounding layer. Often the deposit is reduced almost wholly to a granular condition. These granular deposits, called sugar apatite, are sometimes of considerable extent, as noted by Professors Penrose* and Harrington.†

Professor Penrose says: "The granular variety known as sugar apatite is of a white or pale green color and looks like coarse sand, more or less coherent. * * * It is one of the purest forms of apatite mined. It is uncertain what could have caused the apatite to assume this granular condition."

Professor Harrington states that "though at some localities the apatite occurs chiefly in crystals, at others it is wholly or almost altogether massive, varying from compact or crypto-crystalline to coarse granular. Frequently also it exhibits a distinct lamellar texture. A friable saccharoidal variety is very common and often termed 'sugar phosphate.' When white it is sometimes difficult to distinguish by the eye from some forms of quartz sandstone. * * * Crystals are sometimes imbedded in this granular apatite, and frequently also rounded masses of apatite

* R. A. F. Penrose: Bull. 46, U. S. Geol. Surv., p. 38.
† B. J. Harrington: Geol. Survey of Canada, p. 14 G.