

Lamprophyres.

The number of fine-grained dark dykes is large and specimens have been taken from a comparatively small number of those whose macroscopic appearance is quite uniform. Dark dykes
Fine-grained.

Plagioclase feldspar appears in all with one or more of the ferromagnesian minerals. Hornblende usually predominates, but both augite and biotite are in some cases prominent essential constituents. Consequently the chief type that is clearly distinguishable is camptonite, although it is probable that a microscopic examination of all the dykes would reveal the presence of allied mica-bearing and augitic types.

Theralite.

The dykes referred to this class (Nos. 104, 107a, 175 *et al*) consist of feldspar, (plagioclase), nepheline, hornblende, biotite and augite, with accessory sphene, magnetite and apatite. The plagioclase has low extinction angles measured on the albite twinning lamellae. I am indebted to Dr. A. E. Barlow, petrographer of the Geological Survey, for the following gravity separations of the feldspars, as well as for certain other assistance with the dykes of this class. Coarse-grained.

The first feldspar that appears in the separation is in composite grains with a heavier constituent, which fell in large quantity when the density of the Thoulet solution was 2.714. On this being reduced to 2.699 a large number of composite grains fell and also a much smaller number of clear feldspar, presumably labradorite. After a further reduction of the solution to 2.651, the proportion of clear grains that appear is greater. Hence aenesine is the chief feldspar present, as at 2.62 very little material fell, and that chiefly in composite or turbid grains. Feldspars.

The *Hornblende* is frequently light brown with a darker, or greenish rim, but both portions in such cases extinguish simultaneously. It is trichroic, the scheme of absorption being $c > b > a$. The maximum value observed for $c \wedge c$ was 13° . Hornblende.

The *Nepheline* has crystallized rather later than the feldspar and is thus the last mineral constituent to form; consequently its outlines are almost wholly allotriomorphic. Much of it is decomposed, the alteration product of which Dr. Barlow has determined to be 'an aggregate consisting of a radiating zeolite which possesses the optical properties of natrolite, in association with which there is also a con-