these rocks, though the description does not suffice to bring out the cause for this extra acidity.

No. 3, Kemp's Palmer hill rock, is exceptional for the region in that the feldspar is altered to scapolite, and it falls badly out of the series in several respects, notably in its low magnesia and its excess of potash over soda.

The rocks from which analyses 6, 7 and 9 were made, were selected to represent the mean and the extreme phases of the syenitic dikes. No. 6 is much more basic than any other of these rocks known in the region, a silica determination of the one which seemed to approach it most closely showing 59.2%. From this figure to the 68.96% of no. 9 there is apparently no break in the series.

This basic rock consists essentially of feldspar, a portion of which is microperthite and the remainder albite, biotite, apatite and a little magnetite, these in order constituting 61%, 33%, 4% and .5% of the rock. Except for the absence of quartz these are the same minerals which characterize the other dikes, thus indicating the genetic connection of this rock with the others.

No. 7 consists of feldspar, largely microperthite, chloritized hornblende, magnetite and quartz, with a little apatite and much hematite stain. There is about 10% of hornblende and somewhat less than that amount of quartz in the rock, practically all the remainder being feldspar. Except that in most of the dikes the hornblende is replaced by biotite, this is rather closely the average composition of all.

The rock of column 9 is composed of microperthite, quartz and specular hematite, with exceedingly slight amounts of chlorite and apatite. The feldspar makes a little under 80%, the quartz a little over 17% and the hematite a little over 3% of the rock. The feldspar is very typical microperthite or anorthoclase, composed of orthoclase and albite in the proportion of 2:3.

The likelihood that the material of these dikes was derived from the same magmatic source as that of the earlier great intrusions is strongly suggested by a comparison of analyses.

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| $SiO_2$ | 47.42 | 46.73 | 63.45 | 63.02 | 68.5 | 68.96 |
| $Al_2O_3$ | 17.34 | 16.66 | 18.38 | 14.87 | 14.69 | 15.25 |
| $Fe_2O_3$ | 4.91 | 3.56 | .42 | 6.53 | 1.34 | 3.28 |
| FeO | 10.22 | 8.45 | 3.56 | none | 3.25 | none |