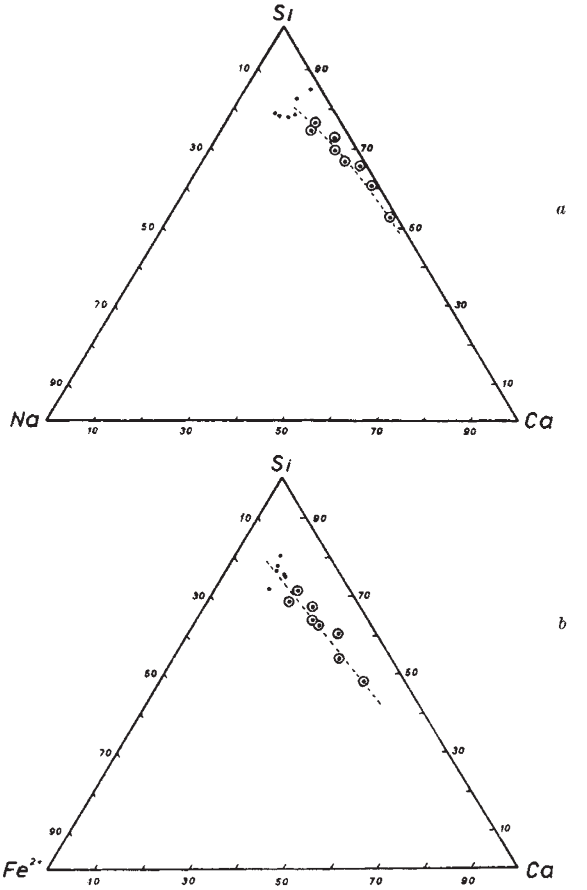
and clinozoisite-zoisite-calcite-axinite. Table 2 shows the major-element chemistry of some of the calcium-hornfelses from Tater-du, Land's End peninsula.

Figs. 1*a* and 1*b* show the antipathetic relationship of silicon and calcium for hornblende hornfelses and calcium-hornfelses (those with more than 15 calcium cations per unit cell of 160 oxygens). The trend is towards calcium enrichment, as later calcium minerals are seen to replace earlier, and also progressive desilication of the hornblende hornfelses.



Figs. 1*a* and *b*. Triangular variation diagrams showing the antipathetic relationship between calcium and silicon for hornblende hornfelses and calcium-hornfelses from the Land's End aureole, Cornwall. ●, Hornblende hornfelses; ⊙, calcium-hornfelses

It is rare in reports of metasomatic processes for the subtracted materials to be accounted for; however, in the present case, the silicon, which represents a major subtracted migrant, can probably be traced. At the Avarak, on the north-west coast of the Land's End peninsula, there is a localized area of siliceous and felspathic hornfelses, not far from the calcium-hornfels repository at Botallack, that is considered to represent the fixation of the migrating silicon cations[7].

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GEOCHEMISTRY

Possible Correlation between Classifications and Potassium-Argon Ages of Chondrites

According to Kirsten *et al.*[1] and Hintenberger[2], the frequency distribution curves of the potassium-argon ages of stone meteorites show two distinct maxima. One occurs at ages close to $4\cdot5 \times 10^9$ years, the other occurs around 1×10^9 years. However, if one classifies the chondrites into the Urey–Craig[3] *L*- and *H*-groups a relationship between classifications and gas retention ages is apparent (Fig. 1). The classification in *L*- and *H*-groups (that is, hypersthene-olivine and bronzite-olivine chondrites respectively) is based on the following chemical-mineralogical parameters: bulk iron[3], specific gravity[4], metallic nickel–iron[4,5], and Fe/Fe + Mg ratios in olivine and rhombic pyroxene[6,7]. Only well-classified chondrites have been included. Carbonaceous chondrites and enstatite chondrites have been excluded since they constitute separate groups[7]. Fig. 1 shows the frequency distribution of chondrites with well-known classification and well-determined age. The age values were taken from Anders[8] and Kirsten *et al.*[1]. The diagram shows that the substantial degassing, which leads to an apparent potassium–argon age of about 1×10^9 years, is, on the basis of the chondrites investigated so far, considerably more frequent for the *L*-group of chondrites than for the *H*-group. The uranium–helium ages are also plotted in the diagram, showing a similar effect. New potassium–argon age measurements[9] seem to yield some more *H*-group chondrites with low potassium–argon ages. However, recent uranium–helium measurements[10] again seem to support an age-classification relationship as indicated in Fig. 1. The purpose of this communication is to direct attention to the apparently more frequent, substantial degassing of *L*-group chondrites in comparison to *H*-group chondrites, and to emphasize the necessity for more potassium–argon gas retention age measurements of chondrites, for which the classification into *L*- and *H*-groups is well known.

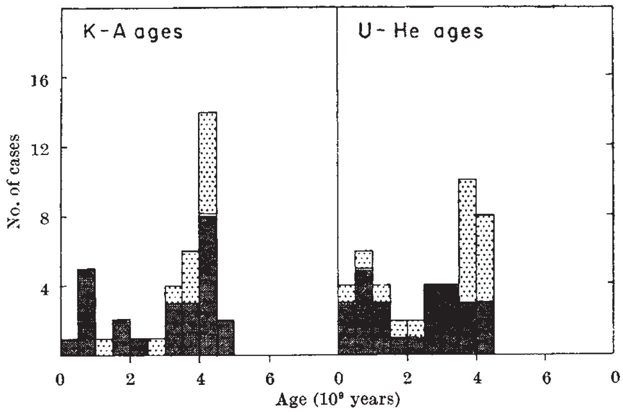

Fig. 1. Correlation between classifications and ages of chondrites. Dark shading, *L*-group chondrites; light shading, *H*-group chondrites

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