The average formula for 13 analyses is $R^{1+}_{0.94}(R^{2+}_{0.96}R^{3+}_{1.04})(Si_{3.95}Al_{0.05})O_{10}(OH)_2$.

The committee defines *celadonite* as a dioctahedral mica of composition $KMgFe^{3+}Si_4O_{10}(OH)_2$ with a tetrahedral Al (or Fe^{3+}) range of 0.0 to about 0.2 atoms. Substantial octahedral variations from this formula can be described by adjectival modifiers, such as aluminian celadonite or ferroan celadonite. Further characteristics of celadonite are $d(060) < 1.510$ Å and sharp infrared spectra, as described by Buckley *et al.* There is an area of potential overlap of celadonite and glauconite analyses between about $Al^{IV} = 0.17$ to 0.20 (Figure 1). For compositions near this boundary and for cases where analytical errors or impurities are suspected, application of the other identification criteria are especially important.

Glauconite

Electron microprobe analyses have shown that glauconites are compositionally heterogeneous, even after careful purification and removal of expandable components. The core may be of somewhat different composition than the rind of the same grain, and one grain may be of different composition than another grain from the same sample. Nevertheless, Buckley *et al.* (1978) showed that with careful purification and with modern analytical techniques there is little or no overlap between glauconite and celadonite compositions and that they can be differentiated also by $d(060)$ and infrared spectra. The average of 18 analyses of unaltered and single-phase glauconites in their study is $R^{1+}_{0.91}(R^{3+}_{1.34}R^{2+}_{0.69})(Si_{3.73}Al_{0.27})O_{10}(OH)_2$. The tetrahedral Al range was 0.17 to 0.43 and octahedral $R^{3+} = 1.34 \pm 0.15$ atoms. $Fe^{3+} \gg Al$ and $Mg > Fe^{2+}$ (unless altered). See Figure 1.

The committee defines *glauconite* as an Fe-rich dioctahedral mica with tetrahedral Al (or Fe^{3+}) usually greater than 0.2 atoms per formula unit and octahedral R^{3+} correspondingly greater than 1.2 atoms. A generalized formula is $K(R^{3+}_{1.33}R^{2+}_{0.67})(Si_{3.67}Al_{0.33})O_{10}(OH)_2$. Further characteristics of glauconite are $d(060) > 1.510$ Å and (usually) broader infrared spectra than celadonite, as described by Buckley *et al.* (1978). The species glauconite is single-phase and ideally is non-interstratified. Mixtures containing an iron-rich mica as a major component can be called *glauconitic*. Specimens with expandable layers can be described as randomly interstratified *glauconite-smectite*. Mode of origin is not a criterion, and a green fecal pellet in a marine sediment that meets the definition for celadonite should be called celadonite.

4. The CMS Nomenclature Committee Reports for 1977 and 1978 were forwarded to the AIPEA Nomenclature Committee. At its July 12, 1978, meeting in Oxford the AIPEA Nomenclature Committee approved simplification of the chlorite nomenclature (as in the 1977 report) and the definitions for celadonite and glauconite (as in the 1978 report).

S. W. BAILEY (Chairman)
G. W. BRINDLEY
H. KODAMA
R. T. MARTIN

REFERENCES

Bailey, S. W., Brindley, G. W., Johns, W. D., Martin, R. T., and Ross, M. (1971a) Summary of national and international recommendations on clay mineral nomenclature: *Clays & Clay Minerals* **19,** 129–132.

Bailey, S. W., Brindley, G. W., Johns, W. D., Martin, R. T., and Ross, M. (1971b) Clay Mineral Society. Report of nomenclature committee 1969–1970: *Clays & Clay Minerals* **19,** 132–133.

Bayliss, P. (1975) Nomenclature of the trioctahedral chlorites: *Can. Mineral.* **13,** 178–180.

Buckley, H. A., Bevan, J. C., Brown, K. M., Johnson, L. R., and Farmer, V. C. (1978) Glauconite and celadonite: two separate mineral species: *Mineral. Mag.* **42,** 373–382.

Schaller, W. T. (1930) Adjectival ending of chemical elements used as modifiers to mineral names: *Am. Mineral.* **15,** 566–574.

(Received 3 January 1979)

ERRATUM

In the paper by Russell, Goodman, and Fraser (Volume 27, Number 1, pp. 63–71), the first sentence of the second paragraph of the Introduction should read as follows:

> These studies were limited in that they considered only two nontronites, a specimen from Grant County, Washington (Rozenson and Heller-Kallai, 1976a, 1976b) and one from Garfield, Washington (Roth and Tullock, 1973; Stucki *et al.*, 1976) and thus were unable to illustrate the full effect of composition on the reduction.

https://doi.org/10.1346/CCMN.1979.0270311 Published online by Cambridge University Press