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FERRO-FERRI-NYBØITE FROM MONT SAINT-HILAIRE, QUÉBEC, CANADA: CORRECTION

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Abstract

The chemical composition and chemical formula for ferro-ferri-nybøite given by Lussier *et al*. (2014) are wrong due to incorporation of errors during preparation of the paper. The data given in the original IMA submission are correct and are given here: SiO_2 47.06, TiO_2 0.50, Al_2O_3 3.16, Fe_2O_3 12.43, FeO 22.37, (Fe_{tot} = 33.56), MnO 2.18, ZnO 0.06, MgO 0.23, CaO 1.03, Na_2O 8.15, K_2O 1.72, F 0.84, H_2O_{calc} 1.50, O ≡ F –0.35 sum 100.88 wt.%. The formula unit, calculated on the basis of 24 (O + OH + F) with (OH + F) = 2 *apfu*, is $(Na_{0.67}K_{0.35})(Na_{1.83}Ca_{0.17})(Mg_{0.05}Fe^{2+}_{2.96}Mn_{0.29}Zn_{0.01}Al_{0.03}Fe^{3+}_{1.48}Ti_{0.06})(Si_{7.44}Al_{0.56})O_{22}(OH_{1.58}F_{0.42})$.

Keywords: ferro-ferri-nybøite, new amphibole, Mont Saint-Hilaire, Canada, corrected chemical composition and formula.

Introduction

Lussier *et al*. (2014) reported on a new amphibole species from the Poudrette quarry, Mont Saint-Hilaire, La Vallée-du-Richelieu RCM, Montérégie (formerly Rouville County), Québec, Canada: ferro-ferri-nybøite, ideally $NaNa_2(Fe^{2+}_3Fe^{3+}_2)(Si_7Al)O_{22}(OH)_2$. Unfortunately, the chemical composition reported had two errors that crept in during preparation of the manuscript: (1) the $Fe^{3+}/(Fe^{2+} + Fe^{3+})$ ratio reported is wrong; the correct value is 0.333(4); (2) additional chemical analyses were incorporated into the chemical composition, changing it from the original reported composition. The correct chemical composition was given in the original IMA submission, and is reported here in Table 1. The corresponding chemical formula is as follows: $(Na_{0.67}K_{0.35})(Na_{1.83}Ca_{0.17})(Mg_{0.05}Fe^{2+}_{2.96}Mn_{0.29}Zn_{0.01}Al_{0.03}Fe^{3+}_{1.48}Ti_{0.06})(Si_{7.44}Al_{0.56})O_{22}(OH_{1.58}F_{0.42})$. The site populations need very minor modification and the new values are given in Table 2. The compositional

TABLE 1. CHEMICAL COMPOSITION (wt.%) OF FERRO-FERRI-NYBØITE

SiO_2	47.06
TiO_2	0.50
Al_2O_3	3.16
Fe_2O_3	12.43
FeO	22.37
MnO	2.18
ZnO	0.06
MgO	0.23
CaO	1.03
Na_2O	8.15
K_2O	1.72
H_2O	1.50
F	0.84
–O=F	–0.35
Total	100.88

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TABLE 2. SITE POPULATIONS (*apfu*) FOR FERRO-FERRI-NYBØITE

Site	Site population (*apfu*)	Site scattering (*epfu*) refined	calculated
T(1)	3.44 Si + 0.56 Al		
T(2)	4 Si		
M(1)	1.80 Fe^{2+} + 0.20 Mn	51.3(2)	51.8
M(2)	0.39 Fe^{2+} + 1.52 Fe^{3+} + 0.03 Al + 0.06 Ti	51.2(2)	51.4
M(3)	0.85 Fe^{2+} + 0.10 Mn + 0.05 Mg	24.7(1)	25.2
M(4)	1.83 Na + 0.17 Ca	23.2(2)	23.6
A	0.67 Na + 0.35 K	12.4(6)	14.0
O(3)	1.58 (OH) + 0.42 F	15.5	16.4

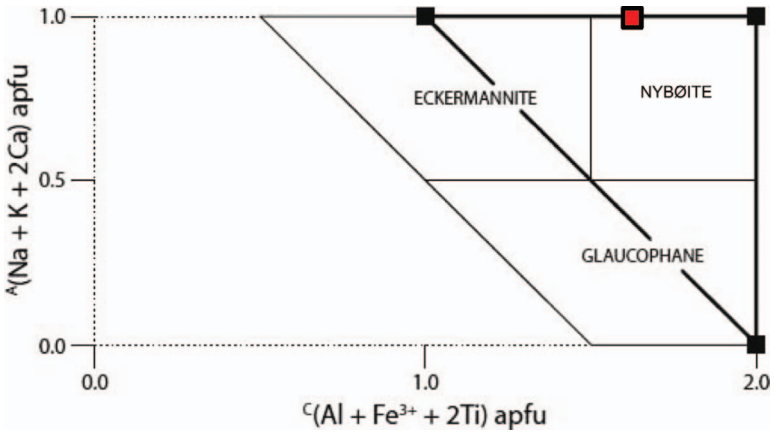

FIG. 1. The compositional fields for sodium amphiboles with $^{B}(Na + Li) / \Sigma B \geq 0.75$, $^{B}Na / \Sigma B > {}^{B}Li / \Sigma B$ (see Hawthorne *et al*. 2012 for more details). The composition of holotype ferro-ferri-nybøite is shown by the red square.

field of nybøite is shown in Figure 1 (from Hawthorne *et al*. 2012), together with the position of holotype ferro-ferri-nybøite.

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