Correction to Section VI.2

In the second paragraph of the proof of the first theorem, the assertion

$$N_\varepsilon(x_n) \;\cap\; \Big(\bigcup_{i<n} N_\varepsilon(x_i)\Big) = \emptyset$$

does not follow from the preceding discussion, but fortunately all we need is the weaker statement

$$x_n \quad \not\in \bigcup_{i<n} N_\varepsilon(x_i) \ .$$

This assertion is enough to guarantee that that $\mathbf{d}(x_p, x_q) \geq \varepsilon$ if $p > q$ (and by symmetry if the inequality is reversed), and since the sequence consists of distinct points whose distances from each other are at least ε, it follows that $\{\, x_n \,\}$ has no Cauchy (hence no convergent) subsequence.

No changes are needed in the remainder of the proof.