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Some Corrections on My Paper "Some Connections between Heyting Valued Set Theory and Algebraic Geometry-Prolegomena to Intuitionistic Algebraic Geometry"

By

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(1) In the definition of a morphism of locally ringed cHas (p. 506), it is not $f^{\#}: \mathcal{O}_{\Omega} \to f_{*}\mathcal{O}_{H}$ but its left adjoint ${}^{\#}f: f^{*}\mathcal{O}_{\Omega} \to \mathcal{O}_{H}$, regarded as a homomorphism of rings in $V^{(H)}$, that should be required to be a local homomorphism of local rings. Due modification should be made wherever this notion is concerned.

(2) In the proof of Theorem 4.3 (p. 513), since the degree $\partial(f)$ of a polynomial f is not available in intuitionistic algebra generally, $h_{\mathfrak{a}}$ should be defined to be the homogeneous ideal generated by the following set:

$$\{x_0^{m+1} f\{x_1 x_0^{-1}, \dots, x_n x_0^{-1}) \mid x_0^m f(x_1 x_0^{-1}, \dots, x_n x_0^{-1}) \in A[x_0, \dots, x_n],\ f \in \mathfrak{a},\ m \geq 0\}.$$

(3) Our definition of a local ring and that of a local homomorphism of local rings are the familiar geometric ones, for which the reader is referred, e. g., to Scott [12; 3. 4].

(4) In the definition of Čech cohomology groups $H^n(\Omega, \mathscr{F})$ of a cHa Ω with sheaf coefficients $\mathscr{F}$ in § 5 we consider only those coverings $\mathfrak{U} \subset \Omega$ such that

$$\mathfrak{U} = \{p \in \Omega \mid \exists q \in \mathfrak{U}(p \leq q)\}.$$

The preorder among these coverings is simply the set-theoretic inclusion and a refinement mapping for coverings $\mathfrak{V} \subset \mathfrak{U}$ is always the inclusion mapping. Thus there is no danger that the axiom of choice sneaks into our discussion.

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