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Correction to my paper: “Remark on locally fine spaces” [Comment. Math. Univ. Carolinae 16 (1975), 501-504]

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CORRECTION TO MY PAPER: Remark on locally fine spaces, Comment. Math. Univ. Carolinae 16(1975), 501-504.

Jan PELANT, Praha

In his review [MR 52#4242], J.R. Isbell pointed out a mistake in the main proof of my paper. The false step of this proof really begins on the page 503_9 by "We may suppose ... ". Fortunately, it is not difficult to improve the proof using a finite set J instead the one point set $\{i_0\}$ and to remove an oversimplification at that. The corrected part reads as follows:

"We may suppose that $\mathcal{W}$ is of the form ($i_0 \in J \subset m$, card $J < \omega_0$; $\mathcal{R} \in \mathcal{U}$ such that $\forall f: X \longrightarrow \mathcal{P}$ ($f(x) \ni x$ for each x) $\exists R \in \mathcal{R}$ card $f(R) \geq \omega_0$): $\mathcal{W} = \{\bigcap_{j \in J} \pi_j^{-1}(R^j) \cap \bigcap_{\substack{i \in I(\{R^j\}_{j \in J}) \\ T_i \in \mathcal{T}(\{R^j\}_{j \in J})}} \pi_i^{-1}(T_i) \mid R^j \in \mathcal{R}$ for each $j \in J$; for each $\{R^j\}_{j \in J} \subset \mathcal{R}$, $\mathcal{T}(\{R^j\}_{j \in J}) \in \mathcal{U}$ and $I(\{R^j\}_{j \in J})$ is a finite subset of $m\}$. Choose a mapping $F: X^m \longrightarrow \mathcal{X}$ such that $st(y, \mathcal{W}) \subset F(y)$ for each $x \in X^m$. Let us observe that $I(\{R^j\}_{j \in J}) \supset \{K([F(y)]) \mid y \in \bigcap_{j \in J} \pi_j^{-1}(R^j)\}$ for each $\{R^j\}_{j \in J} \subset \mathcal{R}$. Define $f: X \longrightarrow \mathcal{P}$ by $f(x) = [F(\xi_x)]$, $\pi_i(\xi \ ) = x$ for each $i \in m$. There is $R_0 \in \mathcal{R}$ such that card $f(R_0) \geq \omega_0$. As K is one-to-one, it holds: card $\{K([F(y)]) \mid y \in \bigcap_{j \in J} \pi_j^{-1}(R_0)\} \geq$ card $\{K(f(x)) \mid x \in R_0\} \geq \omega_0$."

Finally, let us remark that the fact that the Ginsburg-Isbell derivative of a separable metrizable uniform space forms a uniformity cannot contradict our theorem because each separable uniform space has a point-finite base (see e.g.: G. Vidossich: Uniform spaces of countable type, Proc. Amer. Math. Soc. 25(1970), 551-553).

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