CORRIGENDUM

CORRIGENDUM: A COMPLETION FOR PARTIALLY ORDERED ABELIAN GROUPS

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It has come to my attention that the proof of Theorem 2.8 in my article (Semigroup Forum Vol. 28 (1984), 273-290) is not correct. It is claimed that if $(\underline{W}, H)$ is a semicontinuous closed poset and if $G \xrightarrow{f} H$ is a Scott continuous homomorphism of partially ordered abelian groups, then if $w \in W$, the set $\gamma(w) = \{a \in G \mid f(a) \leq w\}$ is Scott closed in G . This need not be true, if sups in H are not preserved when computed in $\underline{W}$. The proof can be amended by changing the definition of semicontinuous closed poset as follows. A semicontinuous closed poset is a pair $(\underline{V}, G)$ satisfying Definition 2.6 (pg. 284) together with the requirement that the inclusion $G \hookrightarrow \underline{V}$ preserve directed sups. This additional assumption does not affect the primary example considered in the paper.

Now, if $G \xrightarrow{f} H$ is an order preserving Scott continuous homomorphism of partially ordered abelian groups and $(\underline{W}, H)$ is a semicontinuous closed poset, then if $w \in \underline{W}$, $\gamma(w) = \{a \in G \mid f(a) \leq w\}$ is Scott closed. If $a = \sup_G D$ where $D \subseteq \gamma(w)$ is directed, then $f(a) = \sup_H f(D) = \sup_W f(D)$. If $d \in D$, then $f(d) \leq w$ since $d \in \gamma(w)$, therefore since $f(a) = \sup_W f(D)$, then $f(a) \leq w$ and so $a \in \gamma(w)$. Thus, $\gamma(w)$ is Scott closed. The rest of the proof of Theorem 2.8 now follows.

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