ERRATA

CORRIGENDA TO "NEW SEMIGROUPS OF BINARY RELATIONS" BY KAREN CHASE

This paper appeared in Vol. 18 No. 1 of this journal. Lemma 1 is false, but this does not effect the rest of the results in the paper. The forward implications are correct, and in fact $A \overset{L}{\underset{R}{\sim}} B$ implies $A \overset{L}{\sim} B$ (similarly for R , $\mathcal{D}$, J and H). Since Plemmons and West have characterized Green's relations in B_X , the contrapositive of these statements may give information about Green's relations in $B_X(R)$ for specific relations A and B . The converse of Lemma 1 is not true in general as the following example shows. We use Boolean matrix representation for relations.

EXAMPLE. Let $X = \{x_1, x_2, x_3\}$ and

$$R = \begin{pmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{pmatrix} \quad A = \begin{pmatrix} 0 & 1 & 1 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \end{pmatrix} \quad B = \begin{pmatrix} 1 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 0 \end{pmatrix}$$

We illustrate for part (i) of Lemma 1. That is $RA \overset{L}{\sim} RB$ does not imply $A \overset{L}{\underset{R}{\sim}} B$. Since $RA = RB = R$, then $RA \overset{L}{\sim} RB$. However, for any relation C we have $C*B = CRB = CR$. Since all nonzero columns of CR will be the same, then for all relations C we have $A \neq C*B$. Similarly we cannot have $B = D*A$ and so we do not have $A \overset{L}{\underset{R}{\sim}} B$. These same relations R , A and B also provide a counterexample for the statements involving R , $\mathcal{D}$, J and H .

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