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The bicyclic semigroup $C = \langle p, q \mid p \cdot q = 1 \rangle$ is well known in semigroup theory. For each pair of nonnegative integers m and n , we consider the semigroup $(C_{m,n}, *_{m,n})$ with the same underlying set as (C, \cdot) and with operation $w *_{m,n} v = w \cdot q^m p^n \cdot v$. These are precisely the semigroups that interassociate with C , that is, those semigroups for which $w \cdot (v * z) = (w \cdot v) * z$ and $w * (v \cdot z) = (w * v) \cdot z$. We show that no two of these semigroups are isomorphic. (Received September 22, 2010)