Algorithm 1 Strict Consensus Merger

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1: function SCM(tree $T_1$, tree $T_2$)
2:     $X \leftarrow \mathcal{L}(T_1) \cap \mathcal{L}(T_2)$
3:     if $|X| \geq 3$ then                        ▷ Otherwise, the merged tree will be unresolved.
4:         calculate $T_{1|X}$ and $T_{2|X}$
5:         $T_X \leftarrow$ STRICTCONSENSUS($T_{1|X}, T_{2|X}$)
6:         for all removed subtrees of $T_1$ and $T_2$ do
7:             if collision then   ▷ Subtrees of $T_1$ and $T_2$ attach to the same edge $e$ in $T_X$
8:                 Insert all colliding subtrees to the same point on $e$.   ▷ creates polytomy
9:             else
10:                Reinsert subtree into $T_X$ without violating bipartitions in $T_1$ or $T_2$.
11:            end if
12:        end for
13:        return $T_X$
14:    end if
15: end function
```