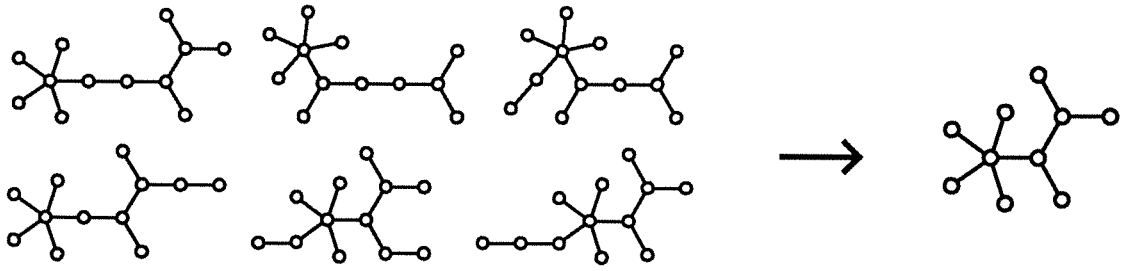
5
Homeomorphically Irreducible Trees ($v \leq 15$)

Homeomorphically irreducible trees are precisely the ordinary trees that have no vertices of degree 2. All other degrees are allowed. So? Why single these out? In many applications the distance between vertices is not a consideration. In cases like these a path of edges and degree-2 vertices is superfluous and might just as well be reduced to a single edge.

Most of these applications involve the *topology* of the graph — its spatial characteristics. The trees below are homeomorphic, since they can all be reduced to the irreducible tree at right.

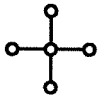


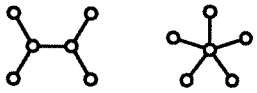
v = 1 

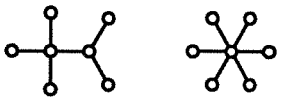
v = 2 

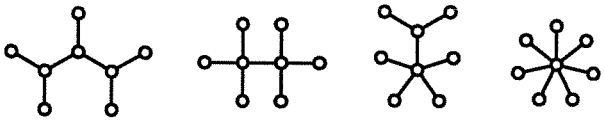
v = 3 none

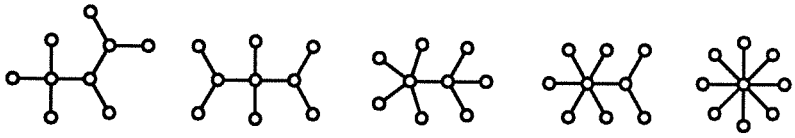
v = 4 

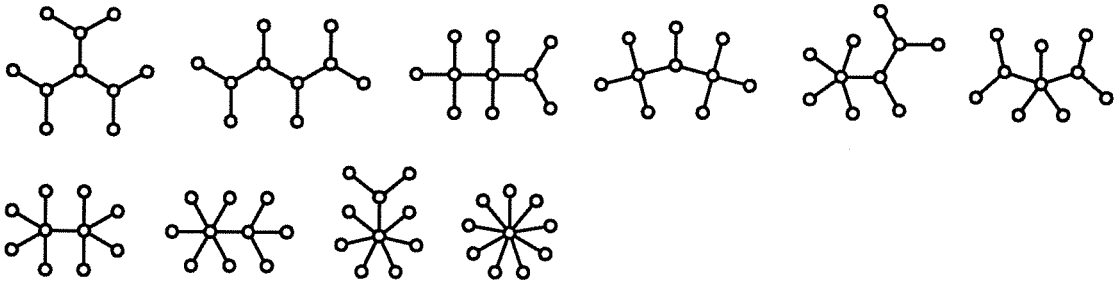
v = 5 

v = 6 

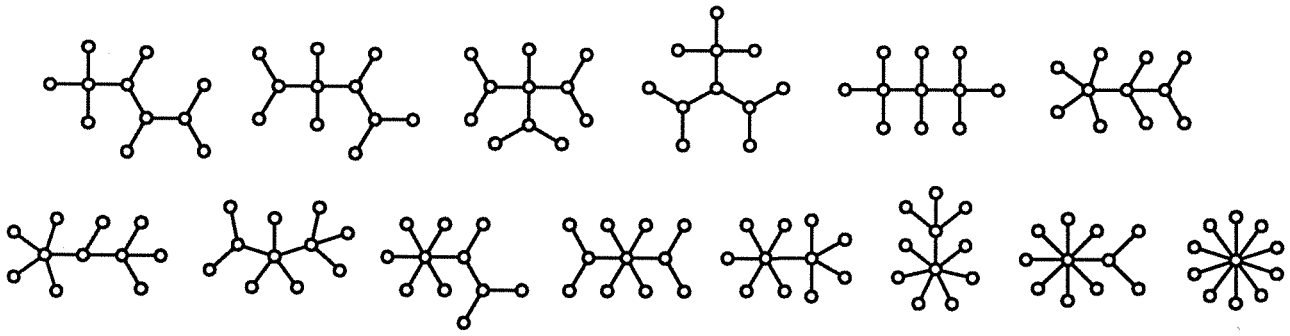
v = 7 

v = 8 

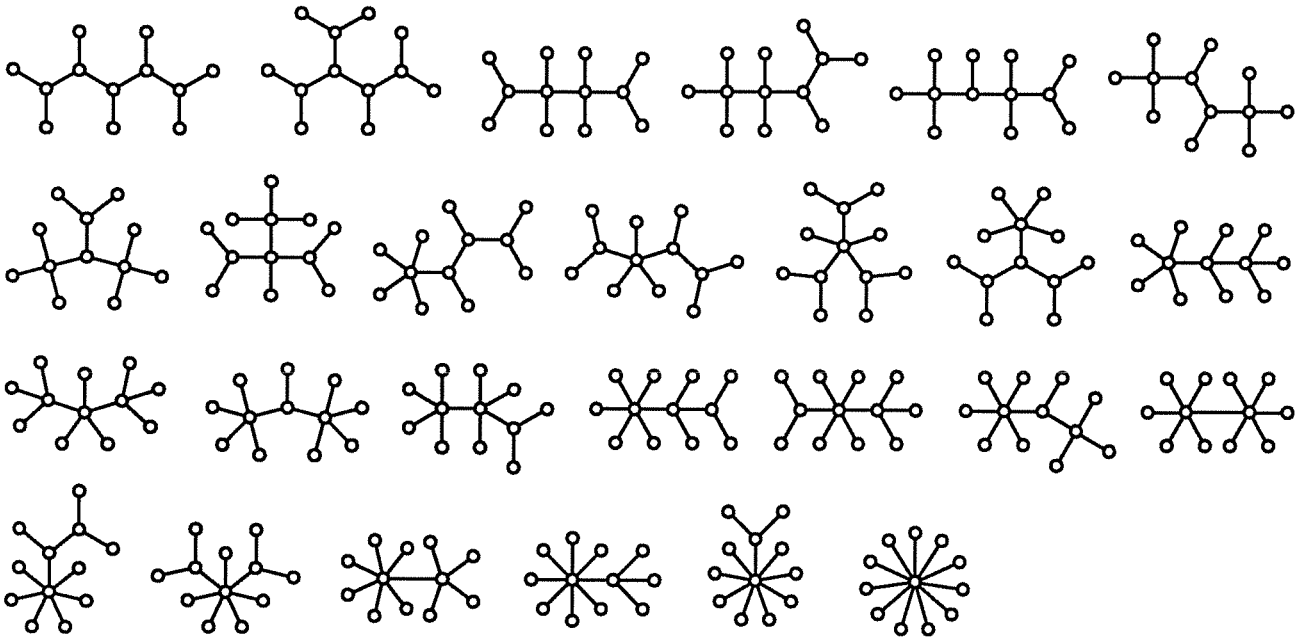
v = 9 

v = 10 

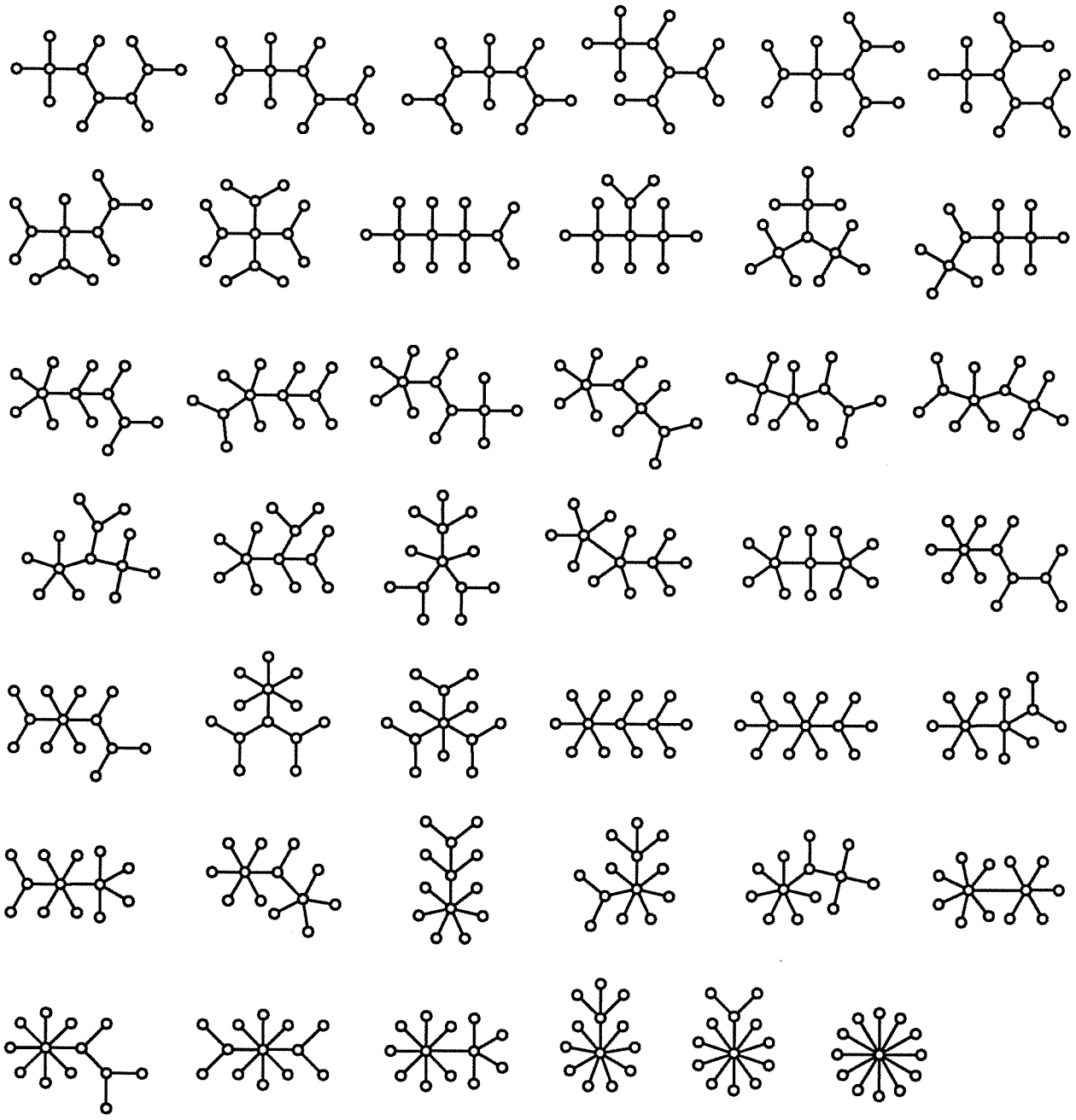
v = 11



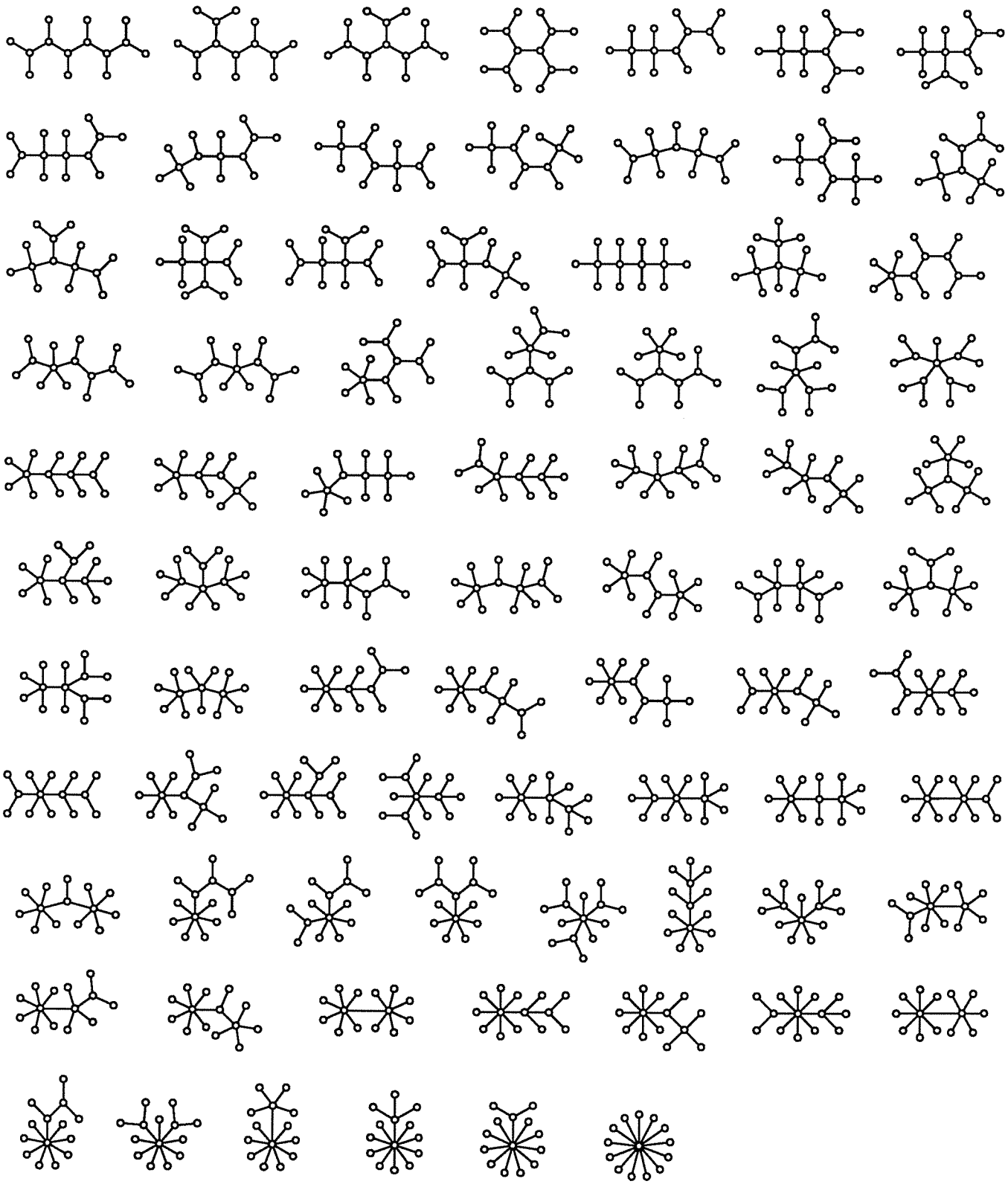
v = 12



v = 13



v = 14



v = 15