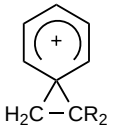
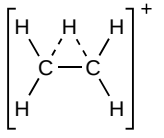
bridged carbocation

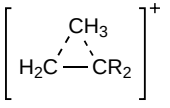
A *carbocation* (real or hypothetical) in which there are two (or more) carbon atoms that could in alternative *Lewis formulae* be designated as *carbenium centres* but which is instead represented by a structure in which a group (a hydrogen atom or a hydrocarbon residue, possibly with substituents in non-involved positions) bridges these potential carbenium centres. One may distinguish 'electron-sufficient bridged carbocations' and 'electron-deficient bridged carbocations'. Examples of the former are phenyl-bridged ions (for which the trivial name 'phenonium ion' has been used), such as (A). These ions are straightforwardly classified as *carbenium ions*. The latter type of ion necessarily involves three-centre bonding. Structures (C) and (D) contain five-coordinate carbon atoms. The 'hydrogen-bridged carbocation' (B) contains a two-coordinate hydrogen atom. Hypercoordination, which includes two-coordination for hydrogen and five- but also higher coordination for carbon is generally observed in bridged carbocations.



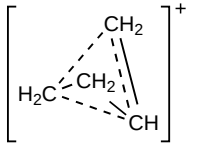
(A)



(B)



(C)



(D)

See also *carbonium ion, multi-centre bond, neighbouring group participation.*

1994, *66,* 1090