The title compounds were synthesized at a temperature of 775 K via reaction of Fe$_2$O$_3$ with elemental cesium and rubidium alone or in combination with their hyperoxides AO$_2$ where required by stoichiometry. The structures of the dark-red crystals have been determined by single crystal x-ray diffraction (Cs[FeO$_2$]: cubic, space group $Fd3m$, $a = 839.2(2)$ pm, $Z = 8$, $R_1 = 0.0547$ and A$_5$[Fe$_3$O$_6$] (A = Cs: orthorhombic, space group $P2_12_12_1$, $a = 861.8(2)$, $b = 870.7(2)$, $c = 1658.7(3)$ pm, $Z = 4$, $R_1 = 0.0617$ and A = Rb: tetragonal, space group $I42d$, $a = 862.01(8)$, $c = 1504.7(2)$ pm, $Z = 4$, $R_1 = 0.0334$). These three compounds contain three-dimensional networks [FeO$_2$], in the case of the ideal stuffed cristobalite composed of corner-sharing tetrahedra [FeO$_4$/2], in the case of the new mixed valence compounds A$_5$[Fe$_3$O$_6$] formed by corner-sharing of tetrahedra [Fe$^{III}$O$_4$/2] and triangles [Fe$^{II}$OO$_2$/2] in a 1:2 ratio. The crystal structure of the cation rich compound Cs$_8$[Fe$_2$O$_7$] (monoclinic, space group $P2_1/c$, $a = 722.32(12)$, $b = 1789.0(3)$, $c = 733.88(12)$ pm, $\beta = 118.976(3)\,^\circ$, $Z = 4$, $R_1 = 0.0287$) exhibits di-ferrate anions [Fe$_2$O$_7$]$^{6-}$ composed of two corner-sharing [Fe$^{III}$O$_4$] tetrahedra with a linear Fe-O-Fe bridge.

**Key words:** Ferrates, Oxoferrates