

1,3,5-Triphospha-1,4-pentadiene-2,4-diamine reacts with $[M(CO)_4L]$ ($M = Mo$, $L = nbd$ (norbornadiene); $M = W$, $L = 2 CH_3CN$) to give the chelate complexes $[M(CO)_4(PMes\{C(NHCy)PMes\}_2-\kappa P^1, P^3)]$. In contrast, an unusual intramolecular rearrangement occurred with $[Cu(CH_3CN)_4]PF_6$ leading to the dimeric copper(I) complex $[Cu(CNCy)\{PMesPMesC(NHCy)PMes-\kappa P^1, P^3\}]_2(PF_6)_2$. The mechanism of the rearrangement was supported by quantum mechanical calculations. The transition metal complexes were characterized by multinuclear NMR spectroscopy, mass spectrometry, infrared spectroscopy and X-ray crystallography.