Now: **6 orbital systems**---1,3,5-hexatriene and cyclohexa-1,3,5-triene

Historical interlude:

Normal C-C = 1.54Å  
1,3-butadiene: 1.47 Å  
Normal C=C = 1.33Å
cyclobutadiene

cyclooctatetraene
tub conformer

Resonance picture:

MO picture: Frost Circle

Compare with 1,3,5-hexatriene and 3 ethylenes
Some of the first compounds shown to have benzene rings also had strong odors. A correlation was imagined between the benzene ring and odor—**aromatic compounds**.

"the aromatic region of the NMR spectrum"

"aromatic stabilization"------33 or so Kcal/mol

Minimum requirements:

1. cyclic
2. continuous set of p orbitals
3. planar
One more: Recall Frost Circle, consider other polygons