



Fig. 610.20 The Three Basic Structural Systems in Nature with Three, Four or Five Triangles at Each Vertex: There are only three possible cases of fundamental omnisymmetrical, omnitriangulated, least-effort structural systems in nature: the tetrahedron with three triangles at each vertex, the octahedron with four triangles at each vertex, and the icosahedron with five triangles at each vertex. If there are six equilateral triangles around a vertex we cannot define a three-dimensional structural system, only a "plane." The left column shows the minimum three triangles at a vertex forming the tetrahedron through to the six triangles at a vertex forming an "infinite plane." The center column shows the planar polyhedra. The right column shows the same polyhedra in spherical form.