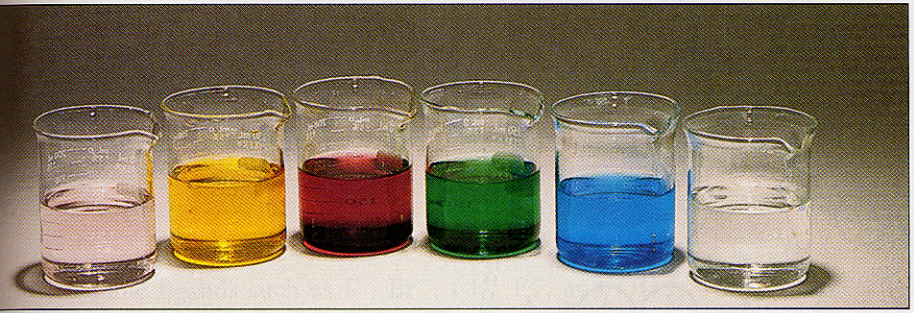

FIGURE 18.21 The colors of the hexaaqua complexes of metal ions (from left) Mn^{2+}, Fe^{3+}, Co^{2+}, Ni^{2+}, Cu^{2+}, and Zn^{2+}, prepared from their nitrate salts. Note that the d^{10} Zn^{2+} complex is colorless. The green color of the Ni^{2+} is due to absorption of both red and blue light that passes through the solution. The yellow color of the solution containing $Fe(H_2O)_6^{3+}$ is caused by hydrolysis of that ion to form $Fe(OH)(H_2O)_5^{2+}$; if this reaction is suppressed, the solution is pale violet. *(Leon Lewandowski)*

ransition metals with 4*d* and 5*d* valence electrons have larger crystal field splittings