

6. We consider the process  $^{98}\text{Mo} \rightarrow ^{49}\text{Sc} + ^{49}\text{Sc}$ . The disintegration energy is  $Q = (m_{\text{Mo}} - 2m_{\text{Sc}})c^2 = [97.90541 \text{ u} - 2(48.95002 \text{ u})](931.5 \text{ MeV/u}) = +5.00 \text{ MeV}$ . The fact that it is positive does not necessarily mean we should expect to find a great deal of Molybdenum nuclei spontaneously fissioning; the energy barrier (see Fig. 44-3) is presumably higher and/or broader for Molybdenum than for Uranium.