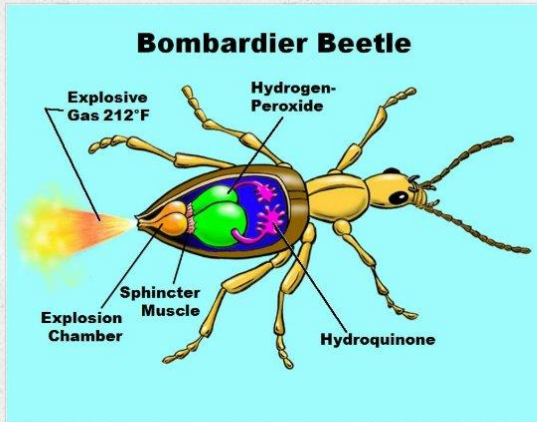
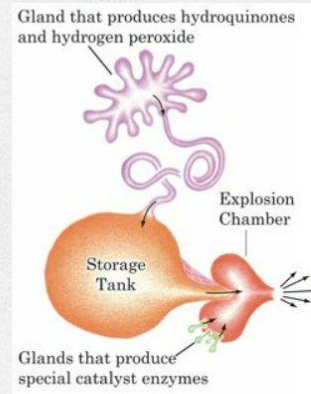


The Bombardier Beetle

PHYSIOLOGY



Stylised diagram of the pygidial glands within a Bombardier Beetle



Stylised diagram of a Bombardier Beetle's pygidial gland

The anatomical feature responsible for this amazing defense mechanism is the pygidial glands. Pygidial glands are found in all Carabidae although the structure and chemicals produced can vary (Kanehisa & Murase 1977). They can produce a variety of defensive chemicals such as organic acids, aldehydes, ketones and quinones which are what Bombardier beetles produce (Commonwealth Scientific and Industrial Research Organisation [CSIRO] 1991). This spray mechanism is well understood and varies little between different species of Bombardier beetles. The pygidial glands of Bombardier beetles are different to those of other carabid glands in that they have two chambers: the much larger reservoir and the smaller reaction chamber (Eisner, Eisner & Siegler 2005).

