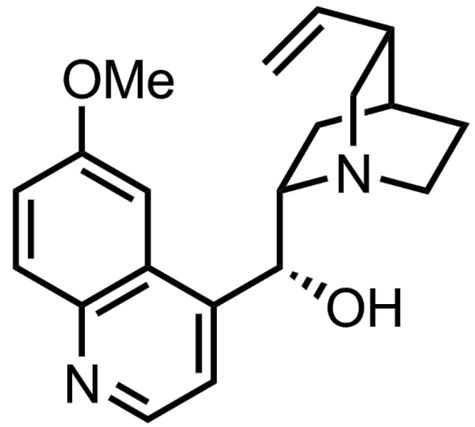
Malaria and Quinine

Malaria is estimated to have caused 5% of all human deaths in history. Quinine, extracted from the bark of the cinchona tree, was the first effective antimalarial drug, brought to Europe in 1630 from South America.

Use of antimalarials has dramatically reduced death rates from malaria, but also enabled European colonisation of tropical regions of Africa and Asia where malaria is endemic.

Inequity of access to simple treatment means malaria still causes ca. 600,000 deaths a year, mostly in sub-Saharan Africa, at a cost of $12bn to the economies of affected countries.



Above: Quinine is fluorescent and still used in tonic water. An economic total synthesis of quinine remains elusive, and it is still mostly extracted from tree bark.

Below: Tu Youyou discovered artemisinin, which is the basis of modern antimalarials, after investigating ancient Chinese medical texts. She was awarded a Nobel Prize in Medicine in 2015 for this work.