

Malaria: the 2000 year old killer, and the production of malarial treatments

Malaria remains a massive global health problem and is estimated to infect more than 200 million people annually of which nearly one million die. Mr Malcolm Cutler's fascinating and wide-ranging talk to a packed audience of the Cirencester Science and Technology Society on the 8th October covered the history of the disease as well as its manifestations and also the various measures that have been developed to treat it.

The speaker covered, briefly, some fascinating aspects of the impact of malaria in the past. It seems the word itself emanates from a corruption of the Italian words meaning "bad air" as this is a disease that afflicted the Romans and may even have contributed to the fall of Rome. Although we now associate malaria with the humid tropics the disease was recorded as a problem in the British Fens some 200 years ago and was also known to have infected Oliver Cromwell and Lord Nelson.

It is estimated that some 3.3 billion people, 40% of the global total, are currently at risk of contracting malaria which is considered the largest killer disease and accounts for 40% of public health expenditure in developing countries.

Of the 3,200 mosquito species known to exist it is the infected female anopheles that is the carrier whose bite can transfer the protozoan plasmodium falciparum into the blood stream and thence to the liver from where the infection spreads quickly if not suppressed.

Malaria disease control consists of a range of traditional preventive measures such as swamp drainage and chemical spraying of living areas with chemicals such as DDT to kill off the mosquitoes to the use of preventative drugs such as chloroquine. The more specific interventions intended to treat patients who have already been infected are usually aimed at killing off the parasites.

In this latter category one of the more effective medications is artemisinin, a natural derivative of the temperate plant artemisia (sweet wormwood), that is usually employed in conjunction with other drugs using artemisinin-combination therapies (ACTs). Mr Cutler explained in some detail the large amount of work in plant breeding, growing, harvesting and manufacture of artemisia-based therapies and the suitability of the crop to smallholder agriculture in developing countries. He also mentioned that the Gates Foundation is presently funding research in the UK into improving the productive potential of the plant.