East African tradition as a source of new antimalarials

Derivatives of quinine and artemisinin have prevented millions of deaths due to malaria, and these drugs have likely been used for thousands of years in the traditional medicine of South America and China, respectively. In a new report by the World Agroforestry Centre (ICRAF) and Kenya Medical Research Institute (KEMRI), a collaboration between traditional medicine practitioners and scientists identifies 22 plants used in east Africa with possible antimalarial properties.

Reported therapeutic use of plants by some non-human primates suggests that the use of medicinal plants may stretch back into our prehuman history, and many of the drugs used widely in western medicine today have their origins in plants.

Najma Dharani of ICRAF and Kenyatta University (Nairobi, Kenya) explains that the main aim of the report “was the documentation and dissemination of local knowledge together with scientific information, including descriptions of 22 plants used for centuries by different local east African tribes”.

The trees and shrubs produce a range of potentially active chemical compounds including alkaloids, terpenoids, and flavanoids that have activity against malaria parasites. And some, such as Warburgia ugandensis and species in the genus Erythrina are already under investigation.

But, Dharani says, more funds are needed to investigate the other plants on the list. “For example, Zanthoxyllum species are potentially highly antimalarial, and have potential for other diseases, but we don’t have enough funds to do research on species of this genus. National and international donors and pharmaceutical companies should provide funds for scientific research.”

In addition to the species identified in the report, many more plants might possess antimalarial properties. “Compounds from botanical origin remain interesting for the discovery of new leads with original structures”, says Joëlle Quetin-Leclercq, Louvain Drug Research Institute (Belgium).

Each plants’ entry also includes details on cultivation and conservation. As pressures of population, agriculture, use of wood and charcoal as fuel, and habitat destruction increase, efforts to protect these potentially useful species and those in other threatened environments worldwide, will be needed.

“As only a small part of plants and trees have been studied, it is evident that deforestation will lead to the loss of potentially active compounds”, warns Quetin-Leclercq.

Peter Hayward