

Artemisia cures malaria: WHO cares?

Imagine there was an herb that would defeat the malaria parasite and save a thousand lives per day, every day? One that you could grow in your backyard, which costs next to nothing, and could be easily available for everybody in need.¹

Sweet wormwood and malaria

Malaria is one of the most destructive infectious diseases in the world. It is caused by four species of the single-celled parasite *Plasmodium* that are transmitted through infected *Anopheles* mosquito bites. It affects mostly people in poorer parts of the world, mostly children under the age of five. Today, every day, thousands of children will suffer and die from malaria in sub-Saharan Africa; most of these young deaths could have been avoided if their families and local communities had been supported by adequate health services, which either supplied them with locally grown medicinal plants, or encouraged and helped them to grow their own, in their own backyards. Malaria is treatable and can be cured without the use of pharmaceutical drugs using the herb *Artemisia annua*, known as Sweet Wormwood. The *Artemisias* have been described by herbalist Matthew Wood:



The Artemisias or Wormwoods are a distinctive clan belonging to the Aster or Composite family. They are generally very bitter, harsh tasting plants with a grey fur on the leaves, which usually look gray, silver, or dark green. They tend to grow in wastelands, deserts, and areas which have been devastated, such as road-cuts, quarries, and overpastured grassland.....they are nature's promise that out of devastation life will spring up anew.²

¹ Weingartner, K. 'The Fever': Questioning Malaria Management as a Colonial Legacy. *Development* 63: 312 (2020). <https://doi.org/10.1057/s41301-020-00270-0>

² Wood, M. *The Book of Herbal Wisdom: Using Plants as Medicines*. Berkeley, California: North Atlantic Books, 1997: 153.

For centuries *Artemisia annua*, has been used as a medicinal herb, as infusions or powders, to treat malaria and worms. As well as Sweet Wormwood, it is known as Sweet Annie, and as *qinghao* (the blue-green herb) in Traditional Chinese Medicine, where it had been part of the Chinese *materia medica* for thousands of years for the treatment of ‘fevers.’

The rediscovery of *qinghao*

The properties of *qinghao* as an anti-malarial herb were rediscovered more recently at a time of political upheaval when the world was in the throes of war and revolution: China was at the height of the Cultural Revolution (1966-1976) and the Vietnam War (1955-1975) was still raging on. While American soldiers took chloroquine, a synthetic derivative of quinine, to treat malaria, the Viet-Cong were losing many soldiers to mosquito bites, especially in the swamps and rain forests of North Vietnam and Cambodia. Their prime minister, Ho Chi Minh, asked his Chinese neighbour and ally, Chairman Mao Tse-tung, for help to combat malaria. Mao agreed to help and approved a secret project, known as project 523 (named after the date it was launched). On 23 May 1967, about six hundred scientists convened, and a team, including practitioners of both Western and Traditional Chinese medicine, was instructed to scour the archives for a remedy. More than 380 herbal extracts were evaluated by the Chinese scientists. They discovered that in one region of China people rarely became infected with malaria. *Qinghao*, sweet wormwood, was their choice of treatment at the first sign of infection, and of all the herbal extracts the scientists examined *qinghao* was found to be the most active against malaria. As Oxford University anthropologist, Elisabeth Hsu, points out:

The success of the ‘task of combating malaria’ (*kang nüe ren wu*), sometimes known as ‘task number five hundred and twenty-three’, depended crucially on modern scientists who took seriously knowledge that was recorded in a traditional Chinese text, *Emergency Prescriptions Kept up one’s Sleeve* by the famous physician Ge Hong (284-363).

Tons of the herb were delivered to Vietnam and consumed by the Viet-Cong soldiers, with remarkable results. Some see the war as being won by the rediscovery of *qinghao*, and Elisabeth Hsu suggests further that:

Ultimately...the unusual political climate and institutional set-up in the People’s Republic of China in the 1960s facilitated the modern scientific demonstration of the antimalarial properties of the traditional medicine *qinghao*.³

In his ancient, traditional Chinese text, Ge Hong recommended that sufferers drink the raw juice wrung out of a fresh plant of *qinghao*, which prompted Hsu to comment:

In that case, *qinghao*’s importance for the future of medicine may not lie so much in its effectiveness as a modern pharmaceutical but in its potential to revolutionize the organization of antimalarial healthcare in those areas where malaria is endemic and *A annua*...can grow in people’s backyards.⁴

³ Hsu E. Reflections on the ‘discovery’ of the antimalarial *qinghao*. *Br J Clin Pharmacol*. 2006;61(6):666. doi:10.1111/j.1365-2125.2006.02673.x

⁴ Hsu E. Reflections on the ‘discovery’ of the antimalarial *qinghao*: 668.

A conflict of ideologies

Herbal infusions of sweet wormwood, *artemisia annua*, and also of *artemisia afra*, a close relative native of Africa, have long been used as folk medicines for malaria. They can and do save lives. Over the last two decades clinical trials in several countries have had convincing results: these artemisias have been shown to be effective for treating and curing both children and adults suffering from malaria and other parasitic diseases (see, for example, the impeccable work of biologist Pamela Weathers and her team at Worcester Polytechnic Institute (WPI) in Massachusetts, USA).^{5,6}

Yet the World Health Organization (WHO) has published warnings since 2004 about the use of the plant *Artemisia* as a herbal medicine, effectively suppressing its use. In a number of position statements – for example, in June 2012, and again in October 2019 – they have more or less recommended banning the use of *Artemisia* as a herbal medicine: ‘WHO does not support the promotion or use of *Artemisia* plant material in any form for the prevention or treatment of malaria.’⁷

Local, self-help using *Artemisia* plant material has been suppressed in favour of using costly drugs researched and manufactured by Western pharmaceutical companies. Many of these drugs, when they finally reach the families who can afford them, cause the young children in need of treatment to vomit and the treatment fails. Many other drugs sold are counterfeit and useless, with the same outcome. The children die. As herbalist Steven Harrod Buhner points out:

‘...there is a conflict between two ideologies in health care and medicine: 1) sustainable, affordable health care that empowers the people who use it; and 2) health care controlled by corporations for their own profit, a model that is designed to keep the people who use it dependent on specialists and corporate manufacturers. There is no way to avoid encountering, or dealing with, this conflict in some form if you explore the use of herbal medicines for your own health.’⁸

Health a fundamental right

The World Health Organization was established in 1948 with a Constitution stating the principles which are ‘basic to the happiness, harmonious relations and security of all people.’ One of these principles states: ‘The enjoyment of the highest standard of health is one of the fundamental rights of every human being *without distinction of race, religion, political belief, economic or social condition.*’ Another of these principles states: ‘*Healthy development of the child is of basic importance*; the ability to live harmoniously in a changing total environment is essential to such development.’⁹ (*emphasis added*) Yet they fail to uphold these principles when they recommend against using local herbal treatments for malaria.

When it was founded, the WHO relied on funding from its member states; their contributions were assessed based on their national income and population. The funds were not earmarked for any particular policy. In those days, the WHO was an independent organization. But over time, the

⁵ Dorsey, M.W. Tea infusions of wormwood plant cured schistosomiasis faster than commonly used drug in clinical trial. 2018, Worcester Polytechnic Institute. <https://medicalxpress.com/news/2018-12-tea-infusions-wormwood-schistosomiasis-faster.html>

⁶ Gruessner BM, Weathers PJ. *In vitro* analyses of *Artemisia* extracts on *Plasmodium falciparum* suggest a complex antimalarial effect. PLoS ONE 16(3): e0240874 (2021). <https://doi.org/10.1371/journal.pone.0240874>

⁷ The use of non-pharmaceutical forms of *Artemisia*. Geneva: World Health Organization; 2019, v.

⁸ Buhner, S.H. *Herbal Antibiotics: Natural Alternatives for Treating Drug-Resistant Bacteria*. North Adams, Ma: Storey Publishing, 2012: 154.

⁹ Basic documents: forty-ninth edition (including amendments adopted up to 31 May 2019). Geneva: World Health Organization; 2020: 1.

WHO leadership traded its independence and with it, its integrity, for big money. In 1988, Halfdan Mahler, Director General of the WHO from 1973 to 1988, warned the world against the power wielded by the pharmaceutical industry over the WHO. He stated, in a Danish daily newspaper (Politiken): “this industry is taking over WHO”. Unfortunately, no one at that time believed him. The take-over intensified with Big Pharma dictating global public health policies that the WHO initiates and promotes. Those policies have vastly enriched Big Pharma, and the WHO has been generously rewarded for its service.

The moral decline of WHO

In his historical account of WHO’s globally changing ideas on control and elimination of malaria between 1948 and 2020, retired WHO senior scientist, Socrates Litsios, charts the moral decline at WHO under successive leading personalities. Critical of the overemphasis on management and technology, he argues that insufficient attention was paid to strengthening health services and specialized human resources; that ‘*solving poverty in rural areas and paying attention to human resources* rarely received the attention they deserved.’¹⁰ (*emphasis added*)

Here we have someone with integrity and indepth, first-hand experience of the World Health Organization highlighting its failure to allocate resources where they were really needed. This is in line with Katharina Weingartner’s comment: ‘It is absurd that 90% of the research money stays in North America and Europe when 90% of real cases of the disease are located in sub-Saharan Africa.’¹¹ Instead, WHO has backed the hubris of pharmaceutical companies diverting vast resources into dead-end technomedical ‘solutions,’ many of which never even reach those in need because they cannot afford the drugs. As Litsios says: ‘I cannot help but express today my great disappointment, and even dismay, at how little of the global funding in existence today has been used to strengthen the ability of health services to control malaria.’¹²

‘As we hunt for molecules’¹³ (children are dying)

Over a decade has passed since the announcement by the WHO and the Bill & Melinda Gates Foundation of the long-term goal to eradicate malaria globally. In a recent article published in *Malaria Journal*, leading malaria scientist Professor Sir Nick White, delivered a withering critique of current malaria research that seeks to “cure all malaria in a single dose.” Like the search for a magic bullet that eliminates the enemy with one shot, this new solution for malaria is called Single Encounter Radical Cure and Prophylaxis (SERCAP). White observes, this target product profile (TPP) ‘has dominated anti-malarial drug discovery and development over the past decade.’¹⁴

Massive funding has gone into this research which could otherwise have been used to help create adequate local health services for people in parts of the world living in poverty with children dying daily from malaria.

White continues: ‘The demanding aspirational target may have hindered anti-malarial drug development.’ In other words these vast sums of money going into what Professor White calls “idealistic” Western research and development may have been an utter waste of money. He

¹⁰ Litsios, S. The World Health Organization’s changing goals and expectations concerning malaria, 1948-2019. *Hist Cienc Saude Manguinhos*. 2020 Sep; 27(suppl 1): 161. <https://doi.org/10.1590/S0104-59702020000300008>

¹¹ Weingartner, K. ‘The Fever’: 314.

¹² Litsios, S. *op cit*.

¹³ MMV: Medicines for Malaria. Developing antimalarials to save lives. <https://www.mmv.org/about-us/what-we-do/our-strategic-focus-2017-2021-treating-and-eradicating-malaria>

¹⁴ White, N.J., Nosten, F.H. SERCAP: is the perfect the enemy of the good? *Malar J* **20**, 281 (2021). <https://doi.org/10.1186/s12936-021-03821-z>.

concludes: ‘We cannot say with certainty that the SERCAP TPP has been counterproductive, only that we suspect it may have been.’¹⁵

‘Plants, the finest chemists on Earth.’¹⁶

The power of plants lies in their inherent intelligence and life force. They synergise multitudes of compounds, and because of this blending of forces, they resist resistance to their healing effects. Medical science has focused on isolating what it consider to be the essential, active compound in a plant, which quickly exposes its potential healing effect to resistance by bacteria and viruses. Diseases once thought cured, like tuberculosis (TB) are returning: ‘Cholera has also learned resistance to a number of antibiotics through improper dosing by physicians.’¹⁷ The mind of nature may be wiser in many ways than the human mind, and *Artemisia annua* is reappearing today as a great helper for many human diseases, not only malaria but also TB and Covid-19.¹⁸ (*to be continued*).

¹⁵ White, N.J., Nosten, F.H. *op cit*.

¹⁶ Buhner, S.H. *Herbal Antivirals: Natural Remedies for Emerging & Resistant Viral Infections*. North Adams, Ma: Storey Publishing, 2013: 123.

¹⁷ Buhner, S.H. *Herbal Antibiotics*: 24.

¹⁸ Nair MS, Huang Y, Fidock DA, Polyak SJ, Wagoner J, Towler MJ, Weathers PJ. *Artemisia annua* L. extracts inhibit the *in vitro* replication of SARS-CoV-2 and two of its variants. bioRxiv [Preprint]. 2021 Feb 24:2021.01.08.425825. doi: 10.1101/2021.01.08.425825. Update in: *J Ethnopharmacol*. 2021 Jun 28;274:114016. PMID: 33442683; PMCID: PMC7805440.