

Colin W. Wright, *Artemisia*

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From a pharmaceutical and economic point of view, *Artemisia annua* became a very attractive botanic species in 1972 when Chinese researchers isolated its active principle, artemisinin, one of the most potent, fast and safe antimalarial drugs currently in use.

For centuries, in Chinese Traditional Medicine, infusions of *Artemisia annua* (Qing Hao in Chinese), mixed with other herbs, were used to cure fevers and were reported to possess antimalarial activity. Artemisinin or quinhaosu, which means derived from Qing Hao, is a novel sesquiterpene lactone with an unusual endoperoxide moiety, crucial for activity. It shows rapid parasitocidal effects against both chloroquine-resistant and chloroquine-sensitive strains of *Plasmodium falciparum* and remarkable low toxicity. This renders artemisinin and derivatives practically the only available drugs to treat chloroquine-resistant parasites, whose distribution is worldwide. Luckily, a stable artemisinin-resistant phenotype has not emerged, yet. For this reason, artemisinin is the main stay of malaria combination therapy: as a fast acting schizonticidal drug, artemisinin or its derivatives are used together with a slow-acting traditional antimalarial in chemotherapy protocols which include mefloquine in South-East Asia, sulfadoxine/pyrimethamine or amodiaquine in different parts of Africa. Treatments are kept under control to avoid the emergence of resistance and to increase efficacy. The chemistry of artemisinin is complex and its final mechanism of action still needs to be fully elucidated.

All this information and much more has been nicely assembled and can be found in this book, edited by C. W. Wright. It is part of a monographic series dedicated to Medicinal and Aromatic Plants, which brings together information to industry and academia on the major plants

of industrial importance. Several chapters of the book are focused on *A. annua*, pharmacologically considered the "chief" among the approximately 400 species of the genus *Artemisia*. Detailed information is provided on its cultivation, extraction of the active principle, quality controls and phytochemistry, as well as clinical regimens. The contributors are outstanding researchers of the field and this renders the book particularly attractive and updated. The large amount of data presented is well documented; the bibliography is exhaustive and helps anyone who is interested in a deeper analysis. Difficulties may arise for readers with different expertise in those chapters covering distantly related topics i.e. cultivation of *A. annua* or mechanism of action of artemisinin for pharmacologists or botanists, respectively.

The initial chapters of the book dealing with *Artemisia* species, other than *A. annua*, apparently are redundant and divert the attention from what appears to be the main topic of the book, the pharmacotherapeutic properties of *A. annua*. However, these chapters are helpful for a comprehensive overview of the genus *Artemisia* in its multifaceted applications: *A. absinthium* for liqueurs and vermouth, *A. dracuncululus* as a culinary herb, *A. pallens* as perfume, etc. It is important to have access to all this information at once, just in one book.

The editor has to be congratulated for providing a comprehensive and up-dated text on *Artemisia* species, which will be of value to those in research or industry who are using these plants.

Lastly, people from the northern hemisphere will derive an additional benefit from this book. It may help in identifying and treating with appropriate respect some of the most common flowering plants and shrubs that grow wild along roadsides in a temperate climate. For this purpose, one or more colour pictures of the most common species would have been useful.

The history of *Artemisia* species (and its pharmacological, ornamental and cosmetic applications of their derivatives) outlines the intimate contact and reciprocal advantages that have occurred between man and *Artemisia* along thousands of years of co-evolution. This book offers a good opportunity for reconsidering different aspects of this long story.