MALARIA RETOLD

A quirky blend of science, human rights, and international politics marks the writing of Sonia Shah, an investigative journalist and author of several critically acclaimed prize-winning books. Her latest book which has won rave reviews is called "*The Fever: How Malaria Has Ruled Humankind for 500,000 Years."* Her new book is a riveting read on the historical, sociological and anthropological underpinnings of how malaria has maintained a stranglehold on civilization down the ages. It is based on 5 years of meticulously researched evidence round the world including far flung places like Malawi, Panama and Cameroon. The book is peppered with colorful stories of malaria during the construction of the Panama Canal to how malaria plagued the Popes and poets of medieval Europe. It gives a fascinating account of the multiple facets of malaria, from our frustrating fight with anti malarial drugs, plasmodium's penchant for developing resistance, genomic attacks planned by Harvard researchers, activist attempts to rehabilitate the pariah insecticide DDT and the motley group of private charitable organizations working towards its eradication. Finally it is a gripping account of human ingenuity and progress, and it's heartbreaking limitations (*The New York Times 26 July 2010, Nature 466, 186-187; 8 July 2010*).

THE STORY OF ARTEMESININ

Chinese herbalists have been using artemisia which is derived from the wormwood tree for more than a 1000 years. In 1972, a chinese scientist, Tu Youyou isolated artemesinin from the leaves of the Artemisia annua (annual wormwood). The drug was called Qinghaosu. It was largely ignored by the western world for another 10 years till it was discovered that it cleared malaria parasites from our body faster than any other drug in history.

As resistance to other antimalarials has risen, the demand for artemesinin has shown astronomical escalation. To solve the problem of bulk production, scientists started toying with the idea of artificial substitutes. In 2006, a paper in Nature described a technique to produce artemisinic acid in genetically engineered yeast cells which could then be converted chemically to artemesinin. The Bill and Melinda Gates foundation gave a $ 42.6 million grant to commercialize the product but results are yet to be seen.

While this technology was under progress, farmers in China and Vietnam planted tens of thousands of hectares of *Artemisia*, and by 2007 the market was flooded. The price of artemisinin crashed from more than $1,100 per kilogram to around $200 per kilogram, putting some 80 processing companies — and untold numbers of farmers — out of business. However this year with rise in food prices, the incentive to grow artemesin is lower. The the floods in China and Vietnam may also reduce yields.

Meanwhile in Cambridge, UK, researchers are trying a new tack. They are producing new hybrid varieties of the plant which will yield 3 times more drug from the leaves. Finally to handle the agonizing fluctuations in demand and supply of artemesinin, an international initiative called the Assured Artemisinin Supply System (A2S2) initiative, has now been established to improve communication between farmers, processors and drug companies (*www.nature.com; 3 August 2010*).

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