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Chemoprophylaxis in malaria

Malaria, the most widespread of all the diseases prevalent in India, causes the greatest amount of morbidity and mortality in the country. The number of individuals that suffer from malaria every year, has been estimated at a minimum of 100,000,000 amongst which nearly one million die of it per year. For the interests of public welfare as well as for the general development of the country attention should be directed to the prevention of the disease in individuals. The growth of *Anopheles* mosquito that is responsible for the spread of malarial infection must be checked. This may be done by destroying the breeding centres and by killing the adult stage of the mosquito. Of course, these would take time to materialise. A chemoprophylaxis might then be a better method for controlling the infection throughout the length and breadth of the country.

Quinine is the common antimalarial and is in general use. But it must be taken in doses that would relieve symptoms. Taking this at a minimum of 45 grains, a rough approximation of the annual requirement for India would be $(100,000,000 \times 45)$ grains, or, approximately more than 6,00,00 lbs. The average production in India, however, comes to about 90,000 lbs. To this we may add the amount which India imports every year. This on average is found to be 1,10,000 lbs per year before the war. It thus appears that the consumption of this antimalarial is at best one-third the estimated requirement. From the report of Wilson and Mirchandani on the prospects of cinchona cultivation in India, it may be found that there are enough suitable land in India for cinchona plantation to meet the total requirement of quinine. It is difficult to understand why plantations are still not being started on an extensive scale. The cinchona plants take some years to mature and the maximum content of the alkaloid occurs in trees between the ages of seven and eleven years. In spite of new plantations which might immediately be started, we would have to depend on the imported quinine for years to come. But even then it is difficult to meet the heavy demand of the country with imported quinine from abroad, as the world production of quinine is believed not to exceed 2,000,000 lbs.—Java alone supplying 90 per cent of the above production. However, when this most valuable remedy in controlling the disease in man, is not yet available in sufficient quantities, we should search for other remedies to eliminate this evil. . . .

As no immuno-therapy is possible in the treatment of malaria, the most promising line of attack would be by means of chemotherapy. It would have been ideal if a compound would have been available that might have prevented the inception of an infection when a man has been bitten by an infected mosquito. No such compound is yet known and as such a true prophylactic measure cannot be followed. . . .

As it stands at present, there is no drug to prevent infection. Quinine and Atebrin compounds, however, are good schizonticides, and as such, are in heavy demand. The rate of production of quinine and its availability in India, as indicated above, cannot satisfy India's requirements. The only other immediate remedy lies in the production of the synthetic schizonticides. It is now well known how these can be produced. . . .

It is quite natural and possible that by producing the synthetic antimalarials and cultivating the cinchona plants wherever possible, we can supply enough materials for suppressing the malarial attack in every part of the country. In the meantime extensive investigations and co-operative research may be carried out throughout the various research institutes to find out a sporozoiticide that would be a true prophylactic, and prevent malarial infection in future.

NEWS

S. Ramaseshan Science Writing Fellowships

Current Science has introduced Science Writing Fellowships to promote the goal of accurately disseminating science to a broad audience. This new scheme is intended to honour the memory of Sivaraj Ramaseshan, who was Editor of this journal from 1989 to 2003. The fellowships allow the recipients to work for the journal for a maximum period of two years. Minakshi De (Kolkata), Monika Koul Moza (Delhi) and Mrinalini G. Walawalkar (Mumbai) are the first recipients of this fellowship, beginning August 2004.