10,000 population. They are rarely able to visit a family more than once a fortnight, and considerable transmission of the disease can take place before they locate a case.

But the CHW is always present in the village. Dr S.M. Pattnayak, Director of NMEP, claims that in parts of Gujarat each CHW has reported 40 malaria cases a year through the blood slides he has collected, whereas the other health worker reported only 30. The CHWs also distribute chloroquine tablets as a presumptive treatment — anyone with fever first gets chloroquine. By launching this massive holding operation to control malaria, NMEP has been able to reduce the incidence from 6.4 million cases in 1976 to 4 million in 1978.

The Ministry of Health officials claim that CHWs have also been particularly useful in providing treatment for minor ailments like scabies, cough, fever and diarrhoea; in distributing eye ointments; in disinfecting drinking water wells by chlorination; and, in some areas, in motivating couples to use family planning methods. They turned out to be very useful in West Bengal and Bihar during the major floods of 1978, claim ministry officials.

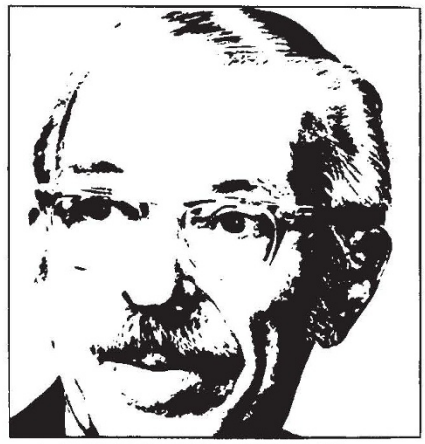
## Harmful side-effect of free medicine

Professor Banerji says that critics must appreciate even this limited usefulness of CHWs. According to him, the Indian CHW programme, despite its limitations, is "an even more pioneering effort than that of China. The Indian bureaucracy itself has provided an unprecedented opportunity to bypass the medical establishment, break its stranglehold, and reach the people directly. That became possible in China only in the post-revolutionary period. Here, this has happened in the pre-revolutionary period itself." Interestingly, Dr Banerji still remains an important critic of the scheme. His initial criticism had even prompted the Indian government to request the World Health Organisation to keep him off its expert committees.

The future of the CHW scheme, nonetheless, remains open. Dr Bose fears that the CHWs' success as pill-pushers could prove to be their undoing. The more successful they are in distributing free medicines, the greater will be the demand for them. The government will then be expected to supply more free medicines, or else risk disappointment with the CHWs. But not even the richest government — least of all the poor Indian government — can afford to distribute free medicines to its entire population. CHWs will then have to get the community to contribute at least partially towards their own health care. But will they? The NIHFW survey shows that nearly two-thirds of the CHWs believe that the village councils will not be prepared to do so. The annual cost to the government of just maintaining the current meagre honoraria and supply of medicines will be substantial once the scheme is complete, amounting to over Rs650 million.

There will always be powerful lobbies to see even this expenditure reduced. In fact, if pressure on the central government to allow states greater autonomy in financial allocations succeeds, the CHW scheme could suddenly find itself in trouble, for many state governments remain lukewarm towards it. A recent report in the *Times of India* quoted a senior Punjab government official as saying that his state would soon stop the CHW scheme. The statement was later denied, but this incident does show that financial decentralisation, though a good development in itself, could pose a threat. The end of the CHW scheme would indeed be unfortunate. As 'critic' Dr. Bose put it: "where is the alternative to it?" □

# Politics of popping pills



THOMAS H. JUKES

After each vitamin was discovered, the obvious task lay ahead of finding out how much of it was needed per person per day. These evaluations have continued through the years, and have included consideration of individual variation in needs. One would not expect the requirement to exceed greatly the amount of the vitamin obtainable from a diet containing a wide variety of typical foods. My early rule-of-thumb, in the 1940s, was that the daily requirement of a vitamin for a human being was roughly in the range of the amount needed per kilo of diet by young animals for maximum growth. For example, this amount is about 1.5 mg for thiamin and 2.5 mg for riboflavin. A percentage may be added to take care of a higher need by some people because of normal biological variability in populations.

Refined methods of measurement, including studies of blood levels, tissue saturation and excretion rates in human subjects are used by the Committee on Recommended Dietary Allowances of the Food and Nutrition Board, US National Research Council, in making recommendations. In it Report, issued every four years, the recommended allowances are defined as the levels of intake adequate to meet the known nutritional needs of practically all healthy persons. The allowances therefore exceed the needs of most people. The Report is useful and valuable as a condensed treatise on nutrition.

In recent years, self-dosage with vitamin pills has become a way of life for many American consumers. The practice is believed by some to produce 'super-health'. The head of the US National Cancer Institute was quoted in *Medical Tribune* recently as saying that he took 'a multiple vitamin preparation' to prevent cancer. No scientific justification was offered for this act of faith. Indeed, certain sceptics, including myself, think that the main effect of such dosage is to enrich urine with vitamins, and to line the pockets of vitamin sellers with dollars. The money involved has led to vitamin pills becoming a political issue. Legislation was specificically enacted by Congress in 1975 to prevent the FDA from restraining the sales of over-the-counter high potency vitamin preparations.

High vitamin allowances were criticised recently in a book by Dr David Reuben, a physician whose biography lists his professional background exclusively as psychiatry. He described the National Academy of Sciences as 'just a nifty little private business, organized and owned by food manufacturers and vitamin sellers. It hires professors of nutrition to decide how much vitamins and minerals they think we should be gobbling and then pays them big salaries'. On 20 July, the Academy, unamused, filed a libel suit against Reuben and his publisher, Simon and Schuster. One wonders how Reuben came to be accepted by Simon and Schuster as an authority on the origin of recommended allowances for vitamins.

If indeed the Food and Nutrition Board had proposed overly *high* allowances, this would certainly have benefited vitamin manufacturers, who are currently enjoying the bonanza that has followed the high-vitamin-C boom. But the Board has been repeatedly accused by the 'health food' industry and other megavitamin enthusiasts of setting the allowances too *low* as a niggardly attempt to hold back the benefits that are alleged to result from high dosage with vitamins. How sad that the conscientious efforts of scientists should be denigrated by venal and incompetent critics! Gloomily, I await the fulfilment of the axiom that any publicity is better than no publicity, and the effect thereof on the sales of Reuben's output.

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