

much later than the Bundelkhand granite, and in Sone Valley these granophyres are of slightly later age than the basic Gwalior lavas, being much later than the Bundelkhand granite.

The detailed study of the Bijawars of Sone Valley and of Bundelkhand and of other areas

in Northern India will shortly be published in detail.

1. Dubey, V. S., and Pathak, B. D., *Proc. Ind. Sci. Congress*, Patna, 1948. 2. Holmes, The age of the earth (*Bullet. Nat. Res. Council U.S.A.*), 1931, p. 415.

WHO ON THE USE OF STREPTOMYCIN

THE Standing Technical Committee of the Tuberculosis Association of India have resolved that the following recommendations of the Expert Committee of the World Health Organization on the use of Streptomycin be adopted in India :—

Streptomycin, while being useful in the treatment of several forms of tuberculosis, is, at its best, only a part of the general treatment in most forms of the disease and is partially dependent for its full effect upon other more common therapeutic measures, such as bed rest, pneumothorax or chest surgery. It is generally known that even under the best therapeutic conditions, severe toxic manifestations occur, some of them fairly frequently. Furthermore, tubercle bacilli in certain patients acquire resistance to streptomycin which eventually necessitates termination of specific therapy. It was, therefore, recommended that during the initial period of study and use streptomycin should be distributed by governments only to institutions and medical centres regularly concerned with the diagnosis and treatment of tuberculosis. With such safeguards, limited supplies will be beneficially employed under the supervision of physicians experienced in streptomycin therapy, aware of its dangers and contra-indications and prepared to carry on further research on the more precise use of this and other newly developed antibiotics against tuberculosis.

Type of Cases Suitable for Treatment.—Streptomycin was not found to be suitable for all types and stages of tuberculosis infections.

It was unanimously agreed that patients with tuberculous meningitis and generalized hematogenous or miliary tuberculosis should be given prior consideration, because of the extremely high mortality-rate among untreated cases and the lack of any other dependable therapeutic approach.

It appeared that fulminating types of bronchopneumonic pulmonary tuberculosis of recent origin, which have not progressed beyond the possibility of healing, may frequently be ameliorated by streptomycin; residual

lesions of a more chronic and destructive character may require other forms of treatment.

Some of the most distressing complications of pulmonary tuberculosis, especially tuberculous laryngitis and tuberculous enteritis, may be greatly benefited symptomatically by appropriate streptomycin treatment.

Finally, streptomycin was found to be particularly effective in the treatment of tuberculous sinuses and fistulae; less favourable results have so far been reported in renal tuberculosis and in tuberculosis of bones, joints and glands.

Regimens of Treatment.—Optimum streptomycin regimens for the different forms of tuberculosis have not been determined with sufficient precision to make exact recommendations possible at this time. At the present stage of knowledge, the medical practitioner cannot expect to be provided with a universally accepted formula, but will have to make his own choice from several regimens recommended by various research workers. The group of experts could therefore hardly do more than define certain general principles to be observed in the application of streptomycin therapy. Thus, it was suggested, among other things, that in certain cases when the disease changes for the worse or when a relapse occurs, a subsequent or second course of streptomycin may be indicated, provided that the tubercle bacilli have not become predominantly streptomycin-resistant. The indications for a second course of treatment cannot, in the present state of knowledge, be specified precisely, but must be determined after careful review of all clinical and laboratory data in each case. There was, in the opinion of the group, some evidence that combined therapy (streptomycin plus sulphone derivatives or para-aminosalicylic acid) may be more effective in some forms of tuberculosis than either drugs used alone. At the present time, combined therapy shows greatest promise in the treatment of miliary tuberculosis and tuberculous meningitis.