

ANTIMALARIA OPERATIONS IN DELHI.

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The various investigations into the incidence of malaria in Delhi which began with Christophers' survey of Delhi immediately after the great epidemic of 1908 are summarized by Covell (1934). In 1912 Hodgson published a classical report after sixteen months' continuous and exhaustive observations and one far-reaching result of his investigation was that he brought out the extremely malarious character of the site originally selected for New Delhi. Apart from that, the adoption of his recommendations regarding the desirability of the closure of the Western Jumna Canal at Lohari Gate resulted in a spectacular reduction of malaria in the City Wards 1 and 2. In 1927, Senior-White carried out another detailed survey lasting one year, but his recommendations were only partially enforced. Thereafter, the problem of malaria assumed a backward position and there is nothing special to record except the energetic temporary control measures undertaken by Major Webb in 1929-30 and reports of the officers of the Malaria Survey of India on a few specific malaria problems including abnormally severe spring mosquito nuisances. This state of affairs continued till 1936 when in June that year the Government of India undertook to initiate a comprehensive malaria control scheme based on such of the recommendations in the previous surveys as were considered necessary in the light of existing conditions. Colonel Covell was placed in charge of the Antimalaria Operations and the speaker was posted under him as Special Antimalaria Officer, Delhi.

Briefly the chief causes of malaria incidence in Delhi are :—

1. Excessive canal irrigation, coupled with interference with natural drainage by railway, road, and canal embankments in the North-Western section.
2. Annual flooding of the Bela by the Jumna, leading to (a) heading up of water in the various storm-water drainage channels, and (b) formation of prolific breeding places as the flood recedes.
3. Presence of vast numbers of excavations throughout the area in the form of borrow-pits alongside railways and roads, and pits in brick-fields and quarries in the Ridge Area.
4. Presence of miscellaneous breeding places, such as temporary water collections around hydrants, ornamental waters, non-mosquito-proof cisterns, wells, and underground storm-water drainage system.

The measures enforced during the past year may be considered under two headings: (i) permanent measures, and (ii) temporary measures.

Permanent Measures.—The permanent measures have been directed chiefly towards eradicating breeding places caused through faulty storm-water drains, lack of adequate drainage of certain low-lying tracts, and over-irrigation in the area fed by the Western Jumna Canal. These measures can scarcely be looked upon as specifically antimalarial in nature but are rather designed to provide such surroundings for Delhi as can be easily controlled by the anti-malaria staff. In securing this objective the activities of the Antimalaria Organization have been intimately linked with those of the Delhi Improvement Trust and other programmes of sanitary improvements. The successful conduct of these measures has been greatly facilitated by the whole-hearted co-operation of the Civil and the Municipal Administrations and of the officers of the Central Public Works Department who have throughout placed all possible facilities at our disposal.

Temporary Measures.—These measures were concerned with the organization of the antimalarial staff of the various municipalities, the provision of oil, paris-green and other larvicides, and the institution of programmes for adequate weeding, minor filling and draining of small temporary collections of water. The central organization for the measures was supplied by the Malaria Survey of India and the striking benefit of such a central control was the elimination of much overlapping of work and the neglect of one sector to the detriment of an adjoining sector. The establishments for different areas have been varied to suit the demands imposed by the climatic requirements and the extent of the breeding sources.

In addition, as an experimental measure, the quarters of certain isolated communities in the Delhi Urban Area were regularly sprayed which have yielded very encouraging results. Similarly the practicability of spraying of paris-green from Aircraft was thoroughly tested; the results of this work were published recently (Covell and Afridi, 1937).

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