

In September, 1947, Mr. Watkins retired from the position of Engineer to the Metropolitan Board, and in January, 1948, Mr. J. P. Porter, who at that time was employed by the London County Council as the Principal Assistant in charge of design of the post-war programme of works for sewage treatment, was appointed in his place. This appointment was made on the recommendation of Mr. Peirson Frank, a former president of the Institution of Civil Engineers, and a panel of engineers nominated by the Metropolitan Board. On his appointment, Mr. Porter received instructions to investigate modern methods of sewage treatment and sludge utilization before leaving England, and he was furnished with the various reports which had been made on the drainage problems of Auckland, including those made by Mr. Watkins, and also with certain pamphlets which had been published by the Drainage League. Mr. Porter studied these documents and inspected several sewage-disposal works. In addition, he made extensive inquiries into modern methods of sewage-treatment and sludge-disposal methods and their application to Auckland. He arrived in New Zealand in May, 1948, and took up his duties on the 1st June.

23. On the 28th July, Mr. Porter submitted to the Board a report on his investigations in Great Britain and his study of the Auckland problems, and we think it will be of assistance to summarize here his principal conclusions :—

- (1) As there are several distinct catchment areas in the Metropolitan District, the provision of separate disposal works for each area should be considered.
- (2) The treatment of sewage at Motukorea appeared to be the most practical and economical method for the northern part of the isthmus.
- (3) The discharge of sewage and trade wastes from the southern part of the isthmus to Motukorea would probably involve secondary treatment to a high degree, and therefore the provision of another treatment-works on the Manukau Harbour should be considered.
- (4) Investigation should also be made into the costs and technical problems of a scheme for treating all sewage from the isthmus at a site on the Manukau Harbour.
- (5) For technical reasons it appeared to be advisable that the main scheme for the isthmus should not include provision for the sewage from the Upper Waitemata (western) part of the district, and a decision on this point was required before a scheme or schemes for the isthmus could be prepared.
- (6) Post-war costs of disposal of sludge at sea indicated the necessity of considering alternative methods of sludge disposal.
- (7) Sludge disposal by digestion air-drying and pulverization to produce organic fertilizer, which could be sold to fertilizer-compounding undertakings or used as a compost activator, appeared to be the most suitable and economical method for Auckland.
- (8) The preparation of compost from liquid sludge and town refuse would be less efficient and more expensive.
- (9) The possibilities of the cultivation of water-hyacinths for composting were too uncertain to justify the postponement of the construction of new sewers and treatment-works while experiments are carried out, but consideration should be given to the making of such experiments after the main works are completed and sewage effluent is available.
- (10) Standards of purity comparable with those to be imposed on the Metropolitan Board should be imposed on other authorities and industries discharging sewage and trade wastes to the harbours.
- (11) Methods of treatment should be designed so as to eliminate within practical limits all risks to public health from the discharge of effluents to the harbours.

The Board considered Mr. Porter's report and instructed him to make further investigations into the matters mentioned in subparagraphs (2), (3), (4), (5), and (7).