

clothes, in the use of horses and carriages, in transit generally, and this cost contrasted with the rates, the balance will be in favour of smooth and clean streets.

SEWAGE IRRIGATION.—In conclusion Sir Robert says :—Broad irrigation with fresh sewage is the only economical mode of dealing with the fluid, as the entire volume may then flow over the land day by day without resting in the sewers or in tanks, and where this can be done disinfectants are not required, and, if used, they will only be injurious. In crude sewage there are minerals which will warp the land, and salts which will manure it. The weight of the solids to the fluid is only as 1 to 99—that is, about 1 ton of deposit to each 99 or 100 tons of fluid. In dry weather three-fourths of the fluid evaporates, and during hot dry summer weather the centre volume disappears, as no visible effluent leaves the irrigated land.

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#### AN INQUIRY INTO THE VALUE OF VARIOUS DISINFECTING APPARATUS—STEAM AND HOT AIR.

AT the request of the Municipal Commission of Hygiene of Copenhagen some very careful inquiries and experiments have been made in order to ascertain the real value of the various disinfecting apparatus. The experiments took some five months to carry through. Five varieties of apparatus, in use in the municipal hospital of Copenhagen, were put to the test, in addition to one of French manufacture. These represent all the principal forms suggested during the last few years. Ransom's apparatus disinfected by means of hot air; those of Ramsing and Seth by means of a mixture of hot air and steam. The cylindrical and rectangular stoves by Reck employ jets of steam, while the French system is based on the effects of steam under pressure. The experiments were made on wearing apparel and bedding as well as on microbe cultivations and the organisms of vegetable mould. The authors ascertained by these means that Ransom's apparatus, like those of Ramsing and Seth, were powerless to effect the destruction of any except microbes of feeble vitality. The only apparatus which gave satisfactory results were those of Reck and of Geneste and Herscher (the French) and the latter was by far the most reliable. While the French model effected complete destruction of all the germs present in twenty minutes, Reck's left a certain number living, even after an hour.

The latest invention brought to notice (Sanitary Record, August 15, 1888) provides for a current of steam passing through the chamber continuously, either with or without pressure, and at a rate of passage that can only be obtained by assistance; hence we are led to infer that a more perfect penetration is made through the materials under operation, and the desired results obtained in less time. But, beyond this, the new invention provides for the admission and penetration of hot air at equal speed, which will naturally leave the materials perfectly dry and free from that odour usually given to clothing exposed to steam; indeed the blowing of