

men per annum, and for the decade, 40,500 men; or in money, £100 per man, £40,533; and in sickness, £41,680, an equivalent sum of £100 per man. The saving in life by sanitation is immensely greater than the losses of life by war.

At this time a further reduction has been made from the 26 per 1000 of the last decade to about 14 per 1000, and further advances may yet be made in the sanitation of the Indian army. A strong party has been formed in India to obtain the application of the experiences of the successful sanitation in the army to the relief of the civil population of India, and, moreover, to apply those experiences to large tracts of unoccupied but fertile land, capable of permanent military settlement, or of the civil settlements of a population much greater than the present population of all India. My aid by exposition of sanitary administrative principle has been besought for this movement.

So much for our own empire; but a still greater advance in army sanitation has been made in the German army, where the death-rate has been reduced to 6 and even to 5, in a 1000, with an increased value of 30 per cent for civil work after three years of military service. We have not yet attained to that increased value of labor although I have been informed of the value of the labor of the volunteers being increased by five shillings a week by the aptitude imparted by the drill. The foremost sanitation of the German army is largely advanced by a factor which is new to us but which is extensively available for civil as well as the military population.

WASHING 200 SOLDIERS FOR 9 PENCE AND
TEN SCHOOL CHILDREN FOR A PENNY.

Mr. David Grove, the eminent sanitary engineer of Berlin, applied a means of washing constantly half a million of soldiers, with tepid water, at the cost of a shilling for every two hundred men. But I find that we now improve upon that sanitation, and can effect it better for ninepence per two hundred men. Now, also in our schools and district institutions about ten children can be washed with tepid water for about a penny,

soap and towel included, at a rate of time of three minutes per head—much more cheaply and effectually than they can be washed at home. Trained nurses devoted to the care of patients with the most infectious diseases, have long protected themselves by a double washing, head to foot, daily, with tepid water and a change of clothes, and experienced sanitary officers use the same precautions on the occurrence of extraordinary visitations of epidemics. Populations may now be trained to do the same.

TO BRING DOWN THE PURE AIR FROM ABOVE.

Let me state one large gain in sanitation which I now believe to be attainable for the satisfactory ventilation of public buildings, and of large schools and workshops.

I have for a long time collected observations of the height of attacks of epidemics on the population of tall buildings, and have found the attacks to be generally confined to the cellar dwellings or the lower floors, while the occupants of the upper floors have been distinctly exempted from them, that is to say, the occupants of dwellings above the range of the visible fogs, made up of the heavier, low-lying, and visible fogs. Mr. Glaisher, the experienced aeronaut, gives me his testimony that the visible fogs are low and close lying to the land. From the height at Highgate or Hampstead, fogs are seen covering London like a heavy white blanket, out of which the upper and bright portion of the dome of St Paul's Cathedral is seen bright and clear above it. By tubular arrangements (largely economical in result) intakes may now be opened into the purest superior strata of air, and it may now be pumped down and delivered, at a rate required, into public edifices, into the larger schools and workshops, warmed in cold weather, and cooled in hot weather. Had this new means of sanitation been understood at the time of the erection of the new public offices, two sets of officers might have been enabled to work well, where one now works ill, and not with comfort, above half a day, in the large, ill-ventilated rooms, which are reservoirs of impurity, from which Ministers of State have declar-