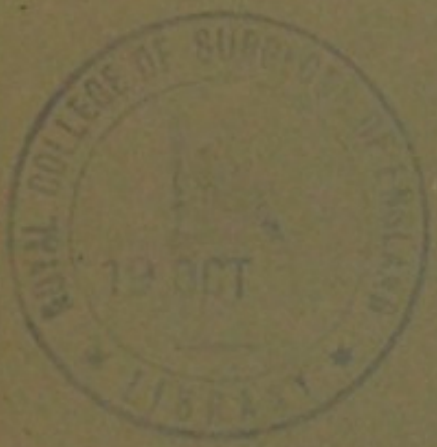
Sanitary state of Cape Town / by W.T. Black.



SANITARY STATE
OF
CAPE TOWN.

BY

W. BLACK,
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FROM
"SANITARY RECORD,"
1877.

ON THE

SANITARY STATE OF CAPE TOWN.

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W. J. BLACK, F.R.C.S.E., S.M.

From "Sanitary Record," August 17, 1877.

THE forthcoming International Exhibition of South Africa will soon be drawing the attention of correspondents and news-readers to the capital city of the British colony, Cape Town. It is to be hoped, likewise, that the attention of some travelling sanitarians and hygeists will be attracted to the city at the same time, but for a different purpose. Late reports in the *Times'* correspondence state that the statistics of mortality have now attained the exceeding high figure of 68 per 1000 per annum for March 1877—quite as bad as the ancient mortality of the British army in Bengal, of 69 per 1000 per annum, previous to the introduction of modern sanitary improvements by the medical department after the mutiny of 1857–58.

Cape Town has become in the last ten years much isolated from the general progress of the civilised world, since the opening of the Suez Canal in 1867, and so has become withdrawn from the influences of cosmopolitan inspection and criticism by travellers, tourists, and correspondents. This defect has not even yet been attempted to be rectified by the laying of telegraphic connection with contiguous countries east and west. It is only a few years (1867–68) since, that a serious endemic of typhoid fever raged in Cape Town, and slew a large number of its inhabitants—from 1000 to 1100, in addition to the ordinary mortality of about 800 per annum—during its prevalence of seven months, July 1867 to January 1868; thus raising the ordinary rate of 27 deaths per 1000 per annum to an amount varying from 60 to 63 per 1000 per annum. The causes of this unexceptional mortality have never been difficult to discover, and have been reported on year after year by the medical officers

of the garrison to the director-general of the department in London, and but little or no action has ever been taken on them by the civil managers of the town.

Blue books of the medical branch of the army for the last twenty years have generally contained some critical remarks on the low hygienic condition of Cape Town, and the inaction and inability of its inhabitants in not ameliorating its condition. This may be partly explained by a large proportion of its mercantile classes being of a migratory and non-naturalized class, and therefore not disposed to consider such reforms as of serious personal interest. There would be little difficulty in the present day in its governing body raising a respectable loan of £100,000 in London at 5–6 per cent. interest, as many other colonial cities have done, and expending it in various ways for the sanitary improvement of the place and the reduction of its excessive mortality.

The population of Cape Town has been of very slow growth, and sometimes even stationary; the numbers in 1808 were 18,000, in 1831–32 were about 20,000 in the census then taken, and 10,000 of these were Europeans; in 1840 about 20,000; about 1856 it is stated at 25,000, about 1865 at 28,500, and since 1870 at 29,000, and by the census of 1875 at 32,907. Now all this is considerably below the rate of increase of most colonial cities in Australia, New Zealand, and Canada, and even of our own seaports in England, hampered as their growth is by vested interests, price of land, and administrative restrictions. The population is of a very mixed nature,—British, Dutch, Malay, Negroes, and Hottentots,—respecting the proportionate numbers of which there are no recent statistics, except for 1865, which estimates the Europeans at 15,118. Each have their own ways of living, good, bad, and indifferent, and some by no means suitable to the health or comforts of the other nationalities living contiguous to them, and these dependent on want of personal ablution, the washing of soiled clothes, the cleansing of their lodgings, the primitive style of cooking, and the disposal of excreta and organic refuse of their dwellings.

The rates of mortality for Cape Town have been variously estimated, and the data themselves have been subject to doubt, as the returns have not been accurately kept, nor for many years have been at all available for reference. The generally received information had placed the number of deaths in ordinary times at 800 per annum (Ebden), at the rate of 27 per 1000 per annum for a population of 30,000 on the average, but the mortality for 1876 is estimated as high as 33 per 1000 per annum (Landsberg, January 1877), and during part of that time, December 1876, it was as high

as 44 per 1000. All these estimations tend to place the health of the city in much the same category, as to rates and causes, as Liverpool, Glasgow, and Dublin, in this country, with their rates above 30 per 1000 per annum, and causes, a mixed shipping population and seaport.

The mortality has been generally larger among the children of all races, and the coloured people generally, as the former are more susceptible to insanitary conditions of climate and life, and the latter because they are more numerous and poorer, and their houses and huts more squalid and dirty.

The position of the city cannot be complained of, as it lies on a sloping plain of two miles wide, or about four square miles in extent, descending from the foot of Table Mountain Range, 3582 feet high, to the shores of Table Bay, on its northern aspect, and so drainage should be fully provided for. The town is open to the equatorial winds from N.W. to N.E. and E., but is sheltered on the W., S.W., S., and S.E. aspects from the cooling Polar winds by the range of Table Mountain, Devil's Peak, and Lion Mountain, forming three sides of a basin, of about three to four miles diameter, and this exclusion is a great disadvantage during the hot summer months of December, January, and February. The main streets of the city are of good design, wide, straight, and at right angles to each other, and the houses were originally of fair Dutch construction as to structure; but the lower class of them have now become deteriorated by time—100 to 200 years old—and occupancy, and also saturated by exhalations from squalid tenants and pythogenic diseases. The scavenging has always been a source of complaint for years, dirt and exuviæ of all descriptions being often left in some of the back streets for days, and the conservancy of the excreta being still effected by the old-fashioned system of house-tubs and buckets. The removal of their contents is done by a nightly service of stercus carts and waggons, which proceed to the beaches of Table Bay from the houses through the streets, exhaling a noisome effluvia. They discharge their contents into the sea on the margin of the Bay, and not into its middle as ought to be done, by means of barges towed from two to three miles out.

The water supply of the town has now become of a very meagre and inferior description for many reasons, and is now totally inadequate to the various wants of a metropolis and seaport, with its manufactures and labour markets, docks, railways, steamers, and ships, and all these pulling on the diminutive reservoirs of thirty years ago. There is no river to get water from for the

washing of streets, houses, carriages, stations, warehouses, ships laundries, &c., and so the drinking water supply is laid under contribution for purely hygienic and industrial purposes. In consequence of the extension of the habitations of the lower class of the labouring population towards the precincts or behind the city, the surface ground of that district towards the base of the mountain is becoming defiled by their washings and excreta. The pluvial drainage, from this part, therefore, is liable to be soiled and impregnated with organic exuviæ, which a meagre rainfall of only twenty-four inches per annum scarcely suffices to thoroughly cleanse.

The upper part of this area has continued to be one source of the supply of water for filling the town reservoirs, also those situated near the Kloof Roads, and in which, however, floating adventitious matters now get but little spare time to settle down or become oxidised. Another part of the supply is derived from springs at the base of the mountain, above Platte Klip, emerging from the junction of the horizontal sandstone and the underlying beds of granite, and these are probably fed by the mists and rains falling on the plateau on the summit.

Another insanitary condition, as already stated, is defilement of the beaches in front of the city, and the sea itself of Table Bay, by the deposition of the excreta on to them, and into it, which matters are washed back again by the next flowing tide and re-deposited. This has rendered the site of the military hospital on the coast near Papendorp almost untenable, and it is only saved from pythogenic pollution by the general prevalence of south-east winds blowing the effluvia from the shore to seawards in the bay in front. These beaches are further defiled by throwing on them the offal and refuse of the city abattoirs, which ought to be removed from the north side of the Grand Parade to the coast further east, beyond the Salt River.

The well-to-do portion of the mercantile classes have taken up their residences now in the suburbs outside the basin of Table Bay, where they get more exposure to healthy winds and cooler climates. Some frequent the villages of Mowbray, Rondebosch, Claremont, and Wynberg to the east and south, to which there is access by railway, and others prefer Sea and Green Points round to the west, and accessible by tramway.

Two sanitary defects, however, still continue to follow them even there, the defective drainage and sewerage, and the scanty fresh water supply. Those districts have still no fresh water rivers, or streams, with permanent supplies, but only gullies or nullahs, whose intermittent waters get dried up in summer, as was ex-

perienced at the Wynberg Sanitarium, and impaired its efficiency for invalid purposes. The scarcity of natural springs round the flanks of Table Mountain Ranges, is a serious permanent defect, owing to the horizontality of the sandstone strata, and schemes for new fresh water supplies are thus left mainly to depend on the rainfall being impounded in reservoirs in the hill-side ravines. It should be considered necessary, also, that the area of the existing rainfall drainage should be fenced in all round at the base of the mountain behind the city, so as to exclude the wandering natives using them for camping, squatting, woodcutting, or washing purposes.

The system of depositing the sewage matters of the city into the sea on the beaches, has become more objectionable to health and amenity since the construction of the new breakwater and docks in Table Bay from 1860 to 1870, when they were opened for use. This jetty has contributed to place an obstruction to the ingress of the tidal currents, which circulate round the bight of the bay from W. to E., as it is built straight out into the sea from S.W. to N.E. from the Mouille Point shores. In any future schemes of drainage and sewerage, the outlets of the conduits would have to be placed, in consideration of this obstruction, further along the shores towards Blauberg, on the east side of Table Bay. Another suitable outlet, it is suggested, would be into Camps Bay, on the south-west side of the city behind the Lion's Head, to which these conduits might be led by a small tunnel three to four miles long under the Kloof Neck or Pass; but this, however, is not of a very feasible engineering character.

There is no reason why Cape Town should not be perfectly salubrious, with a rate of mortality of 20 per 1000 per annum, as it has a fine dry climate, with a temperature of annual average of 68° and mean range of 38°, and plenty of sunshine and wind; and has a dry rocky soil, good building materials, and no wet or clay marshy lands round its margins. For the attainment of this object one has but to recommend previous suggestions, a good system of sewerage and scavenging, and the establishment of new reservoirs for additional supplies of fresh water. As the former might only be able to be achieved by the aid of the latter, these then become of vital necessity for the continued good health of the city. It would be requisite to trace out fresh and better rainfall areas on the east and south sides of Table Mountain, where there is a larger rainfall of 39 to 44 inches per annum than at Cape Town, due to the Wynberg side being better wooded and planted originally by the early Dutch farmers. These sites should be well

planted and fenced in, new catchment reservoirs built about Wynberg, then conduits carried thence round the flanks of the Devil's Peak, to supply other tanks placed above the level of the city for distribution of the water for public and private use. There remains, however, still the uncertainty of obtaining a sufficient amount of water to serve the purposes of both flushing the sewers when constructed, and for domestic and industrial uses; and if this should turn out to be the case, then removal of excreta will have to be carried out by other means. In contradistinction to the present system, it may be suggested that desiccation might be tried, the mass of sewage might be removed to drying tanks outside the town on the Flats, and there dried by the heat of the sun and the dryness of the air, and converted into guano, and then sold to the agriculturist for manure.

In this country, in many places, water may be got from deep wells and borings to supplement public supplies, but there seems but little probability of getting such an addition at Cape Town in consequence of the geological formations under it being unfavourable. There are no continuous beds of tertiary strata to act as sponges to absorb the rains, and the sandstone strata of the Table Mountain Ranges lie horizontal, so that they give no inclination to guide gravitation of water, and they lie unconformably on the edges of the older silurian slates and shales, except where sheets of granite lie interposed. Further, there are no water-bearing rocks in Cape Town corresponding to the chalk, clays, and green-sands of the south-eastern, or the lime-stones, oolites, and red sandstones of the western districts of England, to give origin to springs.

Sewage farms have been proposed to be laid out and planted on the Cape Flats five to six miles distant to the east, for the reception of the organic exuviæ of Cape Town, and its conversion into agricultural produce. These, however, under present conditions of scarcity of water, could not be worked on the irrigation principle, as at Aldershot and Cheltenham, because there is no surplus water in the mains to carry the sewage from the city to the Cape Flats. These are a dry sterile common, lying between Table Bay and False Bay, about fifteen miles' interval, composed of sandy ridges and hillocks, and iron-stone gravel or clay in the hollows, and sprinkled with heath and a stunted vegetation, and devoid of surface-water or springs.

Portions of these flats, however, could be better utilized for the formation of new cemeteries for Cape Town somewhere conveniently situated along the lines of railways, instead of the old ones within

the basin of Table Bay, which have now become a sanitary nuisance. The old ones are situated round the flanks of the Lion's Mount to the west of the city, facing Green and Mouille Points, and they are now full, and their drainage will gravitate down to the city near the New Docks and Breakwater, Convict Station, and General Hospital. The oldest have been in use for one or two centuries for all classes and races of the inhabitants, and have received the victims of the various epidemics that have previously ravaged the city, so that the time has nearly arrived for their closure, and the removal of interments to a more suitable locality.

It may be wondered at that the mortality is not greater than it is, considering the numerous materials existing to deteriorate the health of the city. This anomaly can only be explained by the beneficial action of the ozoniferous Polar winds and breezes from the Southern Ocean. These prevail from east to south inclusive for eight or nine months out of the twelve of the year, and for 812 times out of 1822 times of observation during the year (Maclear). The most violent of these, during the summer months, blow clouds of dust and sand into the sea of Table Bay, and are commonly called "Cape Doctors," from their known salutary influence. These south-easters have a curious clarifying effect upon the sea of the bay, over which they blow from the land, and it may be seen to be rendered perfectly transparent to great depths, notwithstanding the dust. It may, therefore, be reasonably conjectured that they have a like beneficial action on the atmosphere of Cape Town, and rinse out of it all the previously accumulated noisome exhalations and miasmata.

Finally, I might add that a full supply of fresh water for the city would perhaps leave sufficient margin for the establishment and maintenance of public baths and washhouses by the municipality, which is a great and urgent want in a metropolitan city and seaport, especially in a hot and dry climate like that of the Cape. I am doubtful even if any means have yet been taken to utilize the sea-water of Table Bay, with the view of affording ablutionary means for the public, either of the European or native communities. These would certainly be a powerful auxiliary to health and cleanliness, and contribute a considerable quotum to precautionary measures against the origin and spread of diseases in the labouring and industrial population of Cape Town.

(Signed) W. J. BLACK.

1860, p. 275.—The ditch round the Grand Parade must be regarded sanitarily as of a most objectionable character, owing to its exposed burthen of putrescent mud. With respect to the other similar superficial street drains, the practice of scraping up the foul deposit in them into heaps along the streets should be prohibited. They are left then to dessicate in the sun, and be dispersed by the wind instead of being removed at once. Regulations should be established for the removal of all dead dogs, cats and rats, and ordure and refuse of all sorts at once, instead of their being left exposed to decay in the public streets. The sewerage and drainage of Cape Town is of the most primitive description, consisting only of large open ditches paved with rough stones, and smaller gutters along the pavements of the streets coalescing with larger ones. There is no underground sewerage, and the sewage is allowed to find its way down these channels, except such as is removed in the house tubs, and to be treated as described above.

1861, p. 269.—Repeated protests have been made by the Inspectors-General against the superficial drainage and sewerage of Cape Town, particularly of a main open channel that passed actually into the ditch of the Castle Barracks, which was very inimical to the health of the troops there quartered.

1862, p. 263.—The streets around the Main Barracks in Cape Town are again denounced and commented upon in strong terms. The evil of the existing superficial sewerage and drainage of the city is mitigated by rains in the winter months, and the foulness of the sea-beach is periodically cleared away by the storms of that season which create strong currents moving from W. to E. round the Bay.

1867, p. 97.—Report on Epidemic of Typhoid Fever in Cape Town. There appears to be no doubt but that the insanitary condition of the localities, the deficiency of water supply, the imperfect drainage of the town, the overcrowding of the tenements, and the insufficient supply of food for the poorer classes, contributed important factors to the origin and spread of the epidemic of fever.

Postcript, 1900.—Since this Report, new water works and reservoirs, and new drainage and sewerage tanks have been constructed.

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