

**A SANITARY SURVEY OF ST. LOUIS:
BEING A SERIES OF SHORT PAPERS
ON LEADING PUBLIC HEALTH TOPICS
CONTRIBUTED BY CITY OFFICIALS
AND LOCAL SANITARIANS**

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A Sanitary Survey of St. Louis: Being a Series of Short Papers on Leading public health topics contributed by city officials and local sanitarians by George Homan

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SANITARY SURVEY OF ST. LOUIS:

BEING A SERIES OF SHORT PAPERS ON LEADING PUBLIC HEALTH TOPICS
CONTRIBUTED BY CITY OFFICIALS AND LOCAL SANITARIANS.

WITH AN APPENDIX.

EDITED BY GEORGE HOMAN, M. D.

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NOTE. Dr. J. P. Kingsley, Professor of Physiology and Diseases of Children in the Missouri Medical College, was unfortunately unable to complete the promised paper for the local series on "The Infant and School Populations, and existing Causes unfavorable to their Health," the absence of which from the collection is much to be regretted.—Ed.

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I.

THE SITUATION, SURROUNDINGS, AND SOIL OF ST. LOUIS, CONSIDERED FROM A HYGIENIC STAND-POINT.¹

By GEORGE HOMAN, M. D.

Situated on the west bank of the Mississippi river, and partially embraced in a gentle curve of that stream as it bends toward the east,—located in a territory whose confines are bordered by the Missouri river on the north and north-west, and remotely by the Meramec river on the south-west, while the area thus included is bisected by the river Des Pères, whose course lies for some distance within the municipal limits,—scated on a series of terraces that rise successively from the river front westward to a height of one hundred and sixty feet at a point about three miles distant from the water's edge, the city of St. Louis may be said to possess altogether commanding natural and primary advantages when viewed from a public health stand-point.

The ridges which form the benches or terraces mentioned, and which follow somewhat closely the general course of the river for some miles in the central front of the city, disappear about midway of the town in a narrow depression lying east and west, known as Mill Creek valley, which was and still is the drain-way for surface waters gathered in the outlying western middle parts of the city.

Near the north end of the town, where the heights are crowned by the two largest cemeteries in the city, a considerable tract of flat land of alluvial formation lies between the foot of the bluffs and the Mississippi, and through this bottom land several small streams find their way to that river. The principal ones, Harlem and Maline creeks, pierce the upland range respectively about four and a quarter and six miles north of the Mill Creek depression, and afford outlet for the surface waters of a considerable area lying in the north and north-western parts of the city and suburbs.

The water-shed of the rearmost portion of the city territory is toward and into the valley of the Des Pères, which stream skirts the western limits and forms the southern boundary of the city at its entrance into the Mississippi at South St. Louis. At this point the bluffs approach closely to the edge of the larger stream, and reach a height of about one hundred

¹ It was the original design to have this topic treated by Henry Flad, C. E., President of the Board of Public Improvements, but circumstances prevented the performance of the task by him as intended.—Ed.

feet. The original surface of the town site was rarely broken abruptly at any point, being usually gently undulating in character; and this remains a feature of the present suburban topography.

The capacity of the site and surroundings of St. Louis for perfect surface drainage may be said to be unsurpassed by any city of nearly equal size wherever situated, and this natural capacity and advantage have been skilfully supplemented and strengthened by artificial means.

The country adjacent to St. Louis on the west, presenting as it does a succession of swells and vales whose water-ways all tend southward, is largely devoted to market gardens and farms, while growths of hardwood timber frequently appear on hillsides and along water-courses. The healthfulness of this region, reaching on the one hand to the Meramec river and on the other to the Missouri river, is undoubted, while the soil is fertile in cereals and fruits, and richly rewards efficient cultivation.

Opposite the front of the city, in Illinois, lies the well known American bottom, an alluvial plain some seven miles in its greatest breadth, and many miles long, now quite extensively cultivated; and while still subject in part to overflow during high water,—which usually occurs in the spring and early summer seasons,—has somewhat outlived its former notorious reputation for malarial unwholesomeness. But whatever ill effects the damps and miasms from this low ground exerted in earlier times upon the public health of St. Louis, they have long since ceased to be felt in the slightest degree.

There seems little reason to doubt that the river has at all times exercised a protective or screening influence upon the west bank in this respect; and the infrequency of local east winds has been a further advantage to the dwellers on this side of the stream.

There are no marshes or stagnant flats and shallows connected with the rivers near St. Louis, that are close enough to have any influence for evil on the health of her people. As before stated, her superficies as well as her surroundings are exceptional in this respect; while the character and quality of the soil upon which her foundations rest in no wise detract from her inherent hygienic integrity.

The blue-grass which appears here spontaneously and luxuriantly testifies to the good quality of the humus and mold which everywhere overlies a bed of usually dry, sound, compact yellow clay, which varies in thickness from ten to thirty feet. When incorporated with water, this substance is tough and sticky, making a brick of unusual excellence; but the contour and water-shed of city and suburbs are such that no plateaus or levels of any considerable extent appear where injury results from wetness of soil, or from standing water due to resistance to percolation of the underlying clay. Along the river front, and for some distance back, the clay formation rests upon limestone strata of varying thickness, while in the extreme western limits and in St. Louis county coal measures of good quality occur, beneath which are found extensive deposits of fire clay of great commercial value.

A peculiarity of the terrain of St. Louis and vicinity is the numerous

occurrence of circular basins or conical sink-holes ranging in size at the surface from ten to one hundred feet in diameter, and often twenty or thirty feet in depth. Their formation is explained on the supposition that in prehistoric times, when the surface of the land was submerged or was emerging from the flood, and while the clay deposit was still soft or plastic, these pits marked the sites of fissures in the underlying rock through which the waters drained away, the circular form being caused by the action of the water as it passed off through the opening beneath.

While much has been done by the people of St. Louis, through deliberation, inattention, or ignorance, to their own detriment and discomfort in a public-health sense, still such acquired drawbacks do not nearly outweigh the conspicuous advantages already briefly alluded to, and which may be summarized as follows:

1. The generally elevated character of the municipal site.
2. The present dryness and sanitary safety of the soil on which the city rests.
3. The almost perfect system of general drainage provided by both nature and art.
4. The instant removal and speedy destruction of the outpouring wastes and refuse thus collected, by the vast volume of the Mississippi, whose waters, turbid with suspended clay and sand, exert a purifying influence upon foul liquids mingled with them, independent of the effect of oxidation.
5. The soundness and safety, as regards freedom from organic admixture, of the public water-supply.
6. The salubrity of the surrounding country in respect of absence of swamps or marshes, with their accompanying malarial exhalations.