

**REPORT ON THE IMPORTANCE  
AND ECONOMY OF SANITARY  
MEASURES TO CITIES.  
NOVEMBER 28, 1859;  
DOCUMENT NO.20**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649129089

Report on the importance and economy of sanitary measures to cities. November 28, 1859;  
Document No.20 by John Bell

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**JOHN BELL**

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REPORT  
ON THE  
IMPORTANCE AND ECONOMY  
OF  
Sanitary Measures to Cities:

BY JOHN BELL, M.D.,  
OF PHILADELPHIA.

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BOARD OF COUNCILMEN,  
November 28, 1859.

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RA425  
B43  
1860

**DOCUMENT No. 20.**

NEW YORK:  
EDMUND JONES & CO, PRINTERS TO BOARD OF COUNCILMEN,  
No. 26 JOHN STREET.  
1860.

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Board of Councilmen, }  
NOVEMBER 28, 1859. }

The following report, on the Internal Hygiene of Cities, was received, laid over, and subsequently adopted, November 28, 1859, and ordered printed in document form.

G. T. McCLENACHAN,  
*Clerk.*

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## REPORT.

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This is one of the subjects to which the Committee on the Internal Hygiene of Cities has been specially instructed to direct its attention. It is that on which, in the division of labor, I am required to be the reporter. The materials for the purpose are ample, and it only requires the labor of selection and arrangement to make them available for immediate instruction and guidance in the work of sanitary reform. History, notwithstanding its imperfect notices of the real condition of the people of the different countries whose progress it professes to narrate, furnishes, when read and studied in a proper sense, large contributions. More especially is this true with regard to contemporary records, which, while they manifest awakened attention to existing evils, point out at the same time the means of amelioration and improvement. In the use to be made of the knowledge obtainable from so many sources, and to be brought to bear in aid of sanitary reform, it will be safer to incur the charge of iteration rather than of failure to impress the public mind with the vast importance of the questions involved in the discussion, and with the pertinency and force of the facts adduced in elucidation of principles. We must not imagine that a knowledge of sanitary matters, possessed by a small number of intelligent and inquiring minds, is at all indicative either of the knowledge or the zeal of the public at large. Our reform, like every other that has been successful, requires iteration, and again iteration.

*Ancient Egyptian Hygiene.*—The mere mention of ancient Egypt suggests to the minds of all readers her pyramids and obelisks, with their hieroglyphics, the splendor of Thebes and

Memphis, the superstitious observances of her people in their alleged worship of animals, and of their embalming the dead, both of their own and the brute kind. The annually overflowing and fertilizing Nile, with its innumerable canals for irrigation, is also a theme for admiration. But the wise sanitary measures which secured health to the inhabitants, and their protection from pestilence, by a system of irrigation and methodical distribution of the waters of the great river, and the practice of embalming the dead, under religious sanction, are scarcely deemed to be worthy of notice by the historian; certainly they are not impressed on the minds of the youthful student in such a manner as is called for, both by the importance of the facts themselves, and as suggestive of the duty of a government to exercise unceasing vigilance in all matters that relate to public hygiene. Unless the process of converting the dead bodies, not only of men but of animals also, into mummies, had been in a great measure universal, it would have been difficult to prevent putrefactive exhalations from continually filling and poisoning the air, owing to the difficulty, not to say impossibility, of securing deep and permanent burial for the dead in a land like that of Egypt, the soil of which is undergoing continual changes of surface by the annual overflow and washing of the Nile. With a similarly wise provision of means best calculated to preserve the public health, one, if not more of the ancient kings, made those great artificial excavations, the lakes of Mœris, the effect of which was protection against the impetuous flow of the Nile at its rise, or the too persistent delay of its waters at its fall; and, in either case, to diminish, if not entirely prevent, an exposed marshy surface with its deleterious exhalations.

*Carthaginian Hygiene.*—We are all familiar with the memorable incidents of the wars growing out of the rivalry between the Romans and the Carthaginians; but few are

aware that paving the streets was first practised in Carthage, and that the example was followed by the Romans, or that a copious supply of water for the use of the inhabitants of that city, was brought, after immense labor and expense, by an aqueduct more than fifty miles in length, and of such dimensions that a man could stand erect in it. The cisterns for the reception and distribution of the water through the city were of corresponding magnitude; and even now in rowing along the beach, the mouths of common sewers are frequently discovered. In a like spirit of regard for the public health, the Carthaginians set apart ground for a public cemetery, beyond the suburbs of the city, which became a true Necropolis, a city of the dead, of which notice will be taken when we come to treat of the evils of intramural interments.

*Public Hygiene of Ancient Rome.*—Favorable as the site of ancient Rome, extending over her seven hills, might at first appear for early habitation and defense, it may be safely said that we should never have heard of the eternal city, never would she have become mistress of the world, if her rulers and people had not early felt the importance of sanitary measures, and carried them out with a persistence and an ability which should serve as models for all succeeding ages. Much of the ground between the hills was little better than a swamp, owing to the trickling down of the small springs from above, and to the frequent overflowing of the Tiber. Unless, therefore, the ground could have been thoroughly drained, it must have remained, in a great measure, uninhabitable; and the seven hills would have continued to be the seat of merely so many separate villages, the abode and refuge of a half-shepherd, half-robber population, who had the Capitoline hill for their citadel, and Rome would have barely acquired the rank of an inferior Latin city, under the rule of her neighbor and subsequent rival Alba Longa.