

**RUDIMENTARY TREATISE FOR STUDENTS  
OF AGRICULTURE. OUTLINES OF  
MODERN FARMING.  
VOL. V. UTILISATION OF TOWN  
SEWAGE. - IRRIGATION. -  
RECLAMATION OF WASTE LAND**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649666065

Rudimentary Treatise for Students of Agriculture. Outlines of Modern Farming. Vol. V.  
Utilisation of Town Sewage. - Irrigation. - Reclamation of Waste Land by Robert Scott Burn

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Cover @ 2017

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**ROBERT SCOTT BURN**

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RUDIMENTARY TREATISE FOR STUDENTS OF AGRICULTURE.

OUTLINES  
OF  
MODERN FARMING.

BY  
ROBERT SCOTT BURN,

EDITOR OF THE "YEAR BOOK OF AGRICULTURAL FACTS AND ANNUAL RECORD  
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CULTURAL TOUR IN BELGIUM, HOLLAND, AND ON THE RHINE."

VOL. V.

UTILISATION OF TOWN SEWAGE.—IRRIGATION.—  
RECLAMATION OF WASTE LAND.

With



Illustrations.

LONDON:  
VIRTUE BROTHERS & CO., 1, AMEN CORNER,  
PATERNOSTER ROW.

1885.

191. R. 7<sup>#</sup>



## INTRODUCTION.

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THE reader interested in the utilisation of town sewage—if not the most interesting, at least one of the most widely discussed questions of the day—must not expect to find in the division of the present work which discusses it an approval of the *popular* view respecting it. That view is one which, insisting upon the “enormous value”—we quote here a popular phrase much used in discussing the question—of our town sewage, maintains that our agriculturists are guilty of a gross absurdity in obtaining manurial agents from foreign countries, or in manufacturing them from special sources, at a high cost, while an agent as valuable is met with in abundance, and within their easy reach; that agent being town sewage in its ordinary or normal condition. We have always maintained, and see no reason in the present aspect of the question why we should cease from maintaining, that this view is not based upon correct facts, neither is it altogether a generous one; for it is clear enough that the agricultural body are not interested in the non-success of the utilisation

of town sewage, nor so prejudiced in favour of other manurial agents—such as guano—as to prevent their using town sewage. They have no interest, as some unfairly would assume that they have an interest, in preferring one before another; with them it is, as with other business men, a mere question of paying consideration, a matter of pounds, shillings, and pence. If town sewage is so valuable as some maintain it to be, the farmers will gladly use it. But even if convinced of its thorough value, it is clear that it must be taken to them before they can so use it. Yet this has never been done on any scale sufficiently large to justify the conviction that those who talk and write so much about its “enormous value” believe practically that it possesses this. Else how is it that the principle of political economy, which we hear so much of now-a-days connected with “supply and demand,” does not regulate this as it does other matters, where one party has something to sell which is said to be valuable, while another not only is in want of this something, but can afford to pay for it? Capitalists are not usually a retiring class of men; on the contrary, they are eager to rush into speculations which afford even the smallest margin of profit. So that, after all the talk that has been made about the value of town sewage, as to the mine of wealth which lies locked up in it, one is somewhat disposed to believe that there must have been some over-statement of this value, since we see that capitalists, with a few solitary exceptions, have shown no desire to avail themselves of this so-called mine of wealth connected with it. We



to not ignore the fact that town sewage is valuable— all that we would here insist upon is, that it is *not so valuable* as some positively maintain it to be; and apart from the chemical and agricultural considerations which the reader will find discussed in the following pages—which prove abundantly, we think, that this value has been popularly over-estimated—does it not, we ask, afford a further proof of the above statement when we see that very little practically has been done in the way of utilisation of sewage? Our numerous towns offer, but offer in vain, what some say are sources of great wealth, yet this is suffered to remain as a rule unappropriated. A substance may be valuable, but it may be presented in such a way as to render its utilisation impossible in a paying sense,—there is such a thing as buying gold too dear; we may crush the quartz which contains it, yet find after all that we have obtained by no means a sufficient quantity of gold to pay for the operation. Now, a consideration of this sort has a close bearing upon the subject we are discussing. Town sewage does assuredly contain elements of high agricultural value; but it by no means follows that these elements are present in that readily and universally available condition, as to give the sewage which contains them such a pecuniary value as will afford a profit upon any scheme which conveys it from our towns to the districts in the country where it can be used. A number of points, as bulk, applicability to various crops, &c., have to be, and must be, considered before the real value it possesses can be decided upon; a full discus-

sion of these the reader will find in the following pages. In the meantime, we point out that the agricultural body have really no interest in setting themselves against the use of town sewage. They wish, in fact, an abundant supply of good manure, and would be delighted to be ensured this, not troubling themselves with the fact as to whether it was of foreign or of home origin. The main point with them is, indeed, to get a useful manure as cheap as possible; but they surely do not claim too much when they claim the right to know better than others who are not farmers, whether a manure offered to them is worth as much as those offering it to them claim it to be worth. This is, in truth, what English farmers do in this question, and it is simply a statement of a fact that they have, as a body, come to the conclusion that town sewage is *not* possessed of the extremely high value which some say it has, and that, moreover, the value, such as it is, is limited by the fact, which is nearly the universal belief of the British farmers as a body, that it is *not applicable to all the crops of the farm*. The reader will find all these points connected with the subject fully discussed in the following pages; but since they passed through the press, one or two documents have been published which, bearing closely upon the question, require to be noticed here. We have said just now that it is the general belief amongst British farmers that town sewage in its usual condition is not applicable to *all* crops, and that its value is not to be taken as equivalent to the value of human excreta, which go

to make up part of its constituents, and which excreta are *otherwise* doubtless highly valuable in a manurial point of view; and this because the town sewage in its ordinary condition contains a very large amount of worthless materials, of which water is the principal. The bearing upon the whole question which these considerations have, will be seen in the following extract of a Report about to be authoritatively published, and to which, at a recent meeting of the British Association, distinct reference was made by Dr. Gilbert, the celebrated agricultural chemist:—

“ There is, of course, no question that if the manurial constituents resulting from the consumption of the corn and meat sent into our towns could be returned into the land from whence they came, its produce would be considerably increased; for with the mineral constituents there would always be associated nitrogen, in amount which would serve to render effective a considerable portion of all, if not the whole, of some of these constituents. If, however, human excretal matters continue to be diluted with water to the extent recognised by the growing system of urban defecation, and if dilute liquid sewage cannot be distributed in small quantities over large areas at a much lower cost to the farmer than has yet been proposed, there is little hope that the manurial constituents derived from the human food sent into our towns can be re-distributed over the area from which they came. Indeed, having regard to the inapplicability of dilute liquid sewage to arable land, except in small quantities and in particular