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## Editorial.

### THE A. B. C. SEWAGE PROCESS.

What to do with the various forms of matter, included in the term "Sewage," has for many years puzzled the minds of scientific as well as practical men in many of the larger towns and cities of the old world; and it is a question that has lately been earnestly asked in several places of the new. Whether regarded in a purely economic or sanitary point of view, or both enjoined, it is a question of immense importance, one in which the average length and happiness of human life are deeply involved. It has been found practically that irrigation by town sewage over the surface of grass land is in certain localities a cheap and efficient way of using the material, and even to arable land it has in some instances been used with signal advantage. But in too many instances it has been found that extensive use of the ground thus irrigated have been rendered insalubrious, and the people residing in or near such localities have been peculiarly liable to ague and other forms of fever. The precipitation of the solid matter held in solution in sewage by chemical means has hitherto been an expensive and somewhat unsatisfactory process; the amount of water generally in all sewage having so large a proportion to solid matter possessing manurial value.

We have noticed just recently that a new and apparently most efficient and economical process has been devised, and practically carried out in a few places in England. At Hastings, a large and fashionable watering place on the Sussex Coast the improved method has been attended with signal success; the nature of the manure obtained promising to meet all current expenditure, and have a satisfactory profit in the capital invested; and thus securing the great sanitary object, improved health and consequently a prolonged average of life, with little if any extra expense to the inhabitants of cities. It would appear that the new process can be brought into working order without a very large outlay of capital, and within a very comparatively short period of time. The subjoined description of

the process is from Mr. Rock, a gentleman who has the management of the works at Hastings:—

"This process aims at extracting from the sewage, the fertilising matter which it contains, and reducing it to a dry and marketable manure, while the sewage water, when so treated, is so far purified as to admit of being discharged into a town river, or into the sea, without polluting it. This important change is effected by the addition to the sewage of what is known as the 'A. B. C.' compound, consisting of animal charcoal, blood, clay, alum, magnesia, and a few other chemicals, the alum, the blood, and the clay being the principal ingredients, and supplying, by their initials, the name which the process has received. This mixture being carefully prepared, its action upon ordinary sewage is most singular. It is itself of a darker colour than sewage, more muddy in appearance, and perfectly opaque. On being added to the sewage, however it is seen to break up the whole mass of it into flakes, which are said to assume a certain regularity of forms easily recognisable. The compound being well agitated, and then left to itself, a precipitation of the flakes immediately takes place, and in the space of about two minutes a stratum of black, muddy substance, is formed at the bottom of the vessel, which is afterwards converted into the manure sold by the company, while the supernatant fluid is bright, and almost free from colour and offensive smell. The sewage brought by the sewer is received into a deep chamber, 12 feet square, where it is acted upon by a powerful agitator. The flow of the sewage is then checked, and during this slight detention, the addition of the 'A. B. C.' takes place. It then flows onward into a reservoir of about half an acre in extent, where the process of precipitation takes place in consequence of the admixture of the 'A. B. C.' The precipitation could take place in an hour, but six hours on an average is allowed, because the tide must be allowed to fall to a certain level before the effluent water can be let off. The letting off of this water is a matter of great care and delicacy, and is conducted by means of an elaborate system of penstocks set in transverse walls in the reservoir, by means of which the depth of the deposit can be adjusted according to circumstances, and the water let off in any required degree of purity. The deposit is pumped up into a building, where it is conveyed into centrifugal drying machines, of which there are eight, six of which are constantly at work. There being at the rate of 1,600 revolutions a minute, the water held by the mud is almost all driven out of it. The expelled water is returned into the sewer, or employed in making 'A. B. C.' according to the state in which it is found to be. The nearly dried mass of solid matter is then sprinkled with sulphuric acid, and forced through a machine constructed like a brick machine, by which the acid is brought into imme-