

ABOUT MODERN SEWERAGE SYSTEMS.

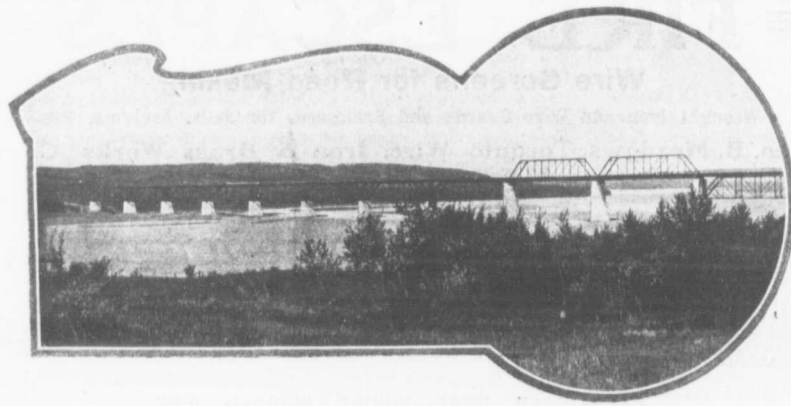
The following extract from an article on "The Bacterial Purification of Sewage," in a recent issue of the *Scientific American*, contains information of considerable interest to municipalities.

In 1895 Donald Cameron, of Exeter, England, brought the septic tank into prominence. This consists of a large tank, in which sew-

certain amount of decomposition takes place in the sludge at the bottom. When the tanks are large, sludge accumulates very slowly at the bottom. At a septic tank at Mansfield, Ohio, only a few inches of deposit were drawn off after it had been in use for a year and a half.

The septic tank has proved a most useful factor in sewage purification. It is used extensively as preliminary treatment for contact

of sewage disposal is the combination of the septic tank and the contact bed. The contact bed system was devised by W. J. Dibdin, who installed the famous bed at the town of Sutton, England. In this system sewage is first passed through a screen, to prevent the floating particles from blocking the interstices of the bed. It is then passed over a coarse-grained bed three feet deep filled with broken



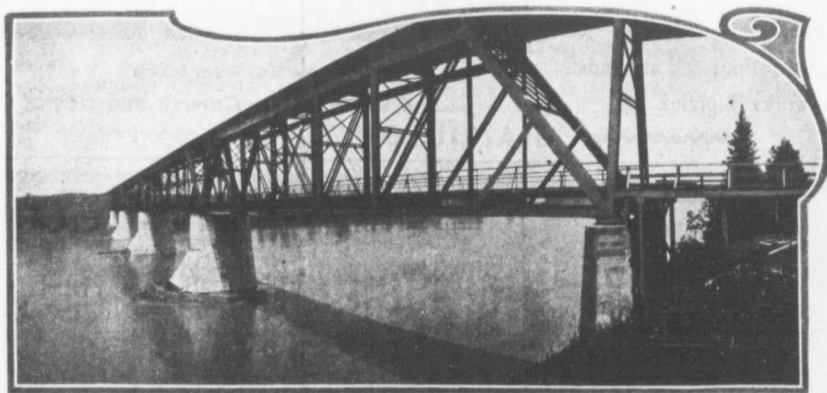
CANADIAN NORTHERN RAILWAY BRIDGE AT NORTH BATTLEFORD, SASK.
It has eleven 170 ft. spans. Total length of steel, all made in Canada, 1,870 ft. Built on concrete piers. Height from low water 70 ft.

age is allowed to remain, where it is acted upon by anaerobic bacteria—micro-organisms that live without the presence of air. Sewage contains a considerable portion of solid matter in suspension. By means of anaerobic action part of it becomes liquified and goes into solution, part rises to the top as

beds and percolating filters. It cannot, however, be considered by itself as a system of purification; it can be used successfully only as part of one.

There are some small towns in this country, however, where septic tanks alone have been used. The results in these places have invari-

stone, coke, burnt ballast, or other suitable material not more than three inches in diameter. It is supplied with under-drains, so that it can be easily emptied. The sewage is allowed to enter the bed until the level of the filtering material is reached. This consists of a tank ed. The inlet is then closed, and



CANADIAN NORTHERN RAILWAY BRIDGE AT FORT SASKATCHEWAN, ALBERTA.
Consists of four 190 ft. spans and two 65 ft. girders. Total length of steel, 890 ft. Built on concrete piers. Height from low water, 82 ft.

scum, while part descends to the bottom as sludge. The inlet and outlet of the tank are placed below the surface, so that the sewage may pass quietly through with as little commotion as possible. The scum which rises to the top becomes oxidized after a time, and passes off into the air as harmless gas. A

ably been very poor. The septic tank by itself is regarded by sanitarians as little better than an apology for a sewage disposal plant. In some cases, when only a low degree of purification is needed, such as when sewage is put into the ocean, septic tanks have proved useful.

Perhaps the most practical method

the sewage is allowed to remain standing "in contact" for a certain length of time. During this period the aerobic bacteria do their work. They oxidize the organic matter in solution, and in their search for food they decompose a considerable portion of the impurities. Further-

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