the southern wing of their party was a premonition of the general break-up of parties three years afterwards. In the senate Seward had at first but two pronounced anti-slavery associates. As anti-slavery feeling increased, and the Republican party was organized in 1855-56, he went into it naturally, for it was to him only an anti-slavery Whig party, and his pre-eminent ability made him at once its recognized leader. In the Republican convention of 1860 he was the leading candidate for the nomination for president ; and it was only by a sudden union of all the elements of opposition to him that the nomination was finally given to Abraham Lincoln, whose name was then hardly known outside of Illinois. It has been an almost invariable rule that American presidents have found their most irritating difficulties in dealing with the New York leaders of their respective parties ; Lincoln when elected removed any such possibility by offering Seward the chief position in his cabinet, that of secretary of state. Here, for at least four years, Seward did the great work of his life. His errors, whether of constitutional law, inter­national law, or policy, are more clearly seen now than they were then. In spite of them all the estimate of the value of his work must be very high, if we consider the chances in favour of foreign intervention at some time during a four years’ war, and his unbroken success in in­culcating on other Governments the propriety and wisdom of neutrality. Much of this success was due to circum­stances which he did not create, to his ability to rely solidly on the cordial friendship of the “ plain people ” (to use Lincoln’s common phrase) of Great Britain and France, and particularly to the change of policy induced by the emancipation proclamations of 1862-63; but much is still left to the credit of the secretary, whose zeal, acuteness, and efficiency brought the ship safely through the intricacies of international relations while the crew were putting out the fire in her hold. In the process of reconstruction which immediately followed the war Seward sided heartily with President Johnson and shared his defeat. The Whig element had been burned out of the Republican party by the war ; a new party had grown up, not limited by *ante bellum* notions, and it rapidly came to look upon Seward, its once trusted leader, not only as a traitor but as the main intellectual force which supported Johnson’s clumsy attempts at treason. At the end of his second term as secretary of state in 1869 he retired to his home at Auburn, broken by loss of health, by loss of political standing, and by the death of his wife and daughter. He spent the next two years in foreign travel, and died at Auburn, October 10, 1872.

Of Seward’s *Life ami Works,* in *5* vols., edited by George E. Baker, the last volume deals with his career during his first term as secretary of state.

SEWERAGE is the process of systematically collect­ing and removing refuse from dwellings. The matter to be dealt with may conveniently be classified as made up of four parts:—(1) dust, ashes, kitchen waste, and solid matters generally, other than solid excreta; (2) excreta, consisting of urine and fæces ; (3) slop-water, or the discharge from sinks, basins, baths, &c., and the waste water of industrial processes ; (4) surface water due to rainfall. Before the use of underground conduits became general, the third and fourth constituents were commonly allowed to sink into the neighbouring ground, or to find their way by surface channels to a watercourse or to the sea. The first and second constituents were conserved in middens or pits, either together or separately, and were carried away from time to time to be applied as manure to the land. In more modern times the pits in which excre­ment was collected took the form of covered tanks called cesspools, and with this modification the primitive system

of conservancy, with occasional removal by carts, is still to be found in many towns. Even where the plan of removing excrement by sewers has teen adopted, the first kind of refuse named above is still treated by collecting it in pails or bins, whose contents are removed by carts either daily or at longer intervals. It therefore forms no part of the nearly liquid sewage which the other con­stituents unite to form.

The second constituent is from an agricultural point of view the most valuable, and from a hygienic point of view the most dangerous, element of sewage. Even healthy excreta decompose, if kept for a short time after they are produced, and give rise to noxious gases ; but a more serious danger proceeds from the fact that in certain cases of sickness these products are charged with specific germs of disease. Speedy removal or destruction of excremental sewage is therefore imperative. It may be removed in an unmixed state, either in pails or tanks or (with the aid of pneumatic pressure) by pipes ; or it may be defecated by mixture with dry earth or ashes ; or, finally, it may be conveyed away in sewers by gravitation, after the addition of a relatively large volume of water. This last mode of disposal is termed the water-carriage system of sewerage. It is the plan now usually adopted in towns which have a sufficient water supply, and it is probably the mode which best meets the needs of any large community. The sewers which carry the diluted excreta serve also to take slop- water, and may or may not be used to remove the surface water due to rainfall. The water-carriage system has the disadvantage that much of the agricultural value of sewage is lost by its dilution, while the volume of foul matter to be disposed of is greatly increased. But it has been found that, even when the excrement of a community is kept out of the sewers, and subjected to distinct treat­ment, the contents of the sewers are still so foul that their discharge into streams is scarcely less objectionable than when the water-carriage system is adopted ; and, further, it appears difficult if not impossible to realize the agricultural value of excrement by any process of separate treatment that is not offensive or dangerous or inappli­cable to towns.

When, in the water-carriage system, the same sewers carry foul sewage and surface-water due to rainfall, the sewerage is said to be “combined”; the “separate” system, on the other hand, is that in which a distinct set of sewers is provided to carry off rainfall. Each plan has its advantages. In the separate system the foul-water sewers need be large enough to take only the normal flow ; they may thus be made self-cleansing much more readily than if their size were sufficient to carry the immensely greater volume to which (on the combined plan) sewage may be swollen during heavy rain. The amount of dangerously foul matter is also much reduced. On the other hand, the contents of the rain-water sewers are still too much tainted by the filth of the streets to render their discharge into rivers or lakes desirable ; and the complica­tion of two sets of mains and branches is a serious draw­back. Where old sewers are giving place to new ones it is not unusual to retain the old sewers for the carriage of surface-water ; but in new works a single system of sewers, provided with storm-overflows to relieve them of part of the rainfall during exceptionally heavy showers, would probably be preferred in nearly every case. @@1 Since sewers should, in all cases, be water-tight, they do not form suitable collectors of subsoil water.

@@@1 An exception to this remark may be made in the case of London, where the enormous area to be drained, as well as the difficulty of disposing of the foul sewage on account of its large volume, has led the Commissioners on Metropolitan Sewage Discharge to advise (in their Report of 1884) that “in new drainage works the sewage should be, as far as possible, separated from the rainfall.”