

Treaty, extending to all navigable boundary waters as defined by this treaty,—and the South Sault channel is a navigable boundary water—supersede or at least absorb the prior and incomplete navigation provisions of the Webster-Ashburton Treaty of 1842. It is sufficient to simply state these questions to show that they should not be hastily decided, but only after the most exhaustive argument and the fullest consideration.

"Time was wanting for this full consideration. A sudden emergency had arisen. The Secretary of War of the United States, in a letter dated August 23, 1918, and addressed to the Commission urged that the permit he had granted to the applicant be approved. He stated that 'the War Industries Board is apprehensive that the supply of aluminium will not be adequate for the requirements of the Government and of our Allies, and is therefore wisely encouraging the increase of output. The War Department is, I need not say, vitally interested that there shall be at all times an adequate supply of this product to meet the requirements of our military program and the program of our Allies.'

"The uncontradicted evidence showed that this weir had to be immediately commenced, and that if the authority to construct it should come later than the 15th of September, it would be very doubtful whether it could be completed this year. Under these circumstances the Commission had to take the responsibility of acting immediately so as to cope with this sudden and very urgent emergency. It is confident that while discharging its duty so as to fully provide for this emergency, it has so framed its order of approval that no rights of either country or of any of its citizens can possibly be jeopardized by its action."

GENERAL PHASES OF STREET CLEANING*

FROM the economic or theoretical engineering side we should know whether we are cleaning streets for public convenience, for aesthetic reasons or for protection of the public health; or otherwise for what definite purposes these expenditures are made.

Undoubtedly the primary reason for street cleaning is for the promotion of public comfort or convenience. The annoyance of dust to the users of the highway and to those adjacent, as well as damage to property, may well be considered primary, especially if coupled with its wet condition as mud.

The second consideration, the aesthetic, may well have its weight, especially in elimination of rubbish, waste paper and larger debris which so offend our sense of propriety, but have little bearing on either health or comfort.

Clean Streets and Health

The third consideration, that of health, may be one which should warrant extensive and expensive work in this line. The Street Cleaning Committee of the American Public Health Association, Samuel Whinery, chairman, in its report of about two years ago, after diligent inquiries and collection of practical evidence, strongly inclined to the opinion that, while theoretically there might be much danger from unclean streets, from the health viewpoint, there was little or no positive evidence of such. This opinion was largely based on lack of definite information that those engaged continuously in street cleaning and similar work suffered any ill effects from what

might be considered an abnormal or excessive exposure to those conditions supposedly deleterious to health from street dust and similar influences. At least one member of your committee, from experience with local spring and fall epidemics of influenza and bronchial affections when street cleaning in northern cities is interrupted, is firmly of the opinion that the consideration of health may be well ranked as the most important factor in determining the extent of such work. Lacking, as yet, any definite conclusive evidence, it may now be assumed that cleaning, such as to remove fine dust and mud which may cause such, offers a reasonable task in street cleaning for comfort and health. The aesthetic considerations in removal of unsightly litter, unless the same be considered a source of dust by pulverization, may be given consideration to the extent which the locality may warrant in expenses.

The change from dry to wet methods of cleaning, now so increasingly evident, has a material bearing on the above considerations.

Use of Motor Vehicles in Street Cleaning

From the practical or operative end of street cleaning two phases stand out prominently as modifying practice; the substitution of motor vehicles for animal power and of flushing for dry sweeping.

The use of motor vehicles both for actual cleaning and for collection and hauling of municipal waste is but a phase of the general and increasing use of such vehicles, and must largely be a local question of economics, dependent in desirability of change from horse-drawn vehicles, upon loss of investment in existing equipment, length of haul, available funds and other local conditions. Apparently all plans for future development should contemplate the large ultimate use of motor vehicles.

The same change to serviceable motor vehicles has largely increased the practicability of flushing in cleaning. There were certain limitations to obtaining and maintaining adequate flushing pressure in horse-drawn vehicles.

In many cities the functions of street cleaning and sewer cleaning or sewage disposal are under somewhat separate supervision, and where such is the case there may well be required closer joint study of the problem as a whole for ultimate economy. Where no systematic gutter cleaning follows flushing, either the heavy street detritus is left in the gutters or is flushed into catch basins, and much of it ultimately into the sewers. We may, therefore, well bear in mind that this successful cleaning method may demand some modification in catch basin practice for protection of sewers. In combined sewerage systems we may reasonably expect some added expense in sewer cleaning, but where ultimate sewage treatment is given or required, as it soon will be in many cities, the question of the effect of the added burden on the detritus tanks or on the general operation of the whole plant must be given close study.

Dry Cleaning Also Expensive

One engineer of a large city says: "Cities having sewage disposal works find that the detritus from the streets somewhat complicates the question of sewage disposal. All of it cannot be handled in detritus chambers, except at very great cost." While such cost may be a material added burden to sewage treatment it is equally true that the cost of gutter sweeping or the dry removal of street dirt is a very large expense in dry street cleaning, and the engineering determination of an absolute combined minimum in expense presents one of those nice problems which we must solve. The solution is only possible

*From report to American Society of Municipal Improvements, by G. H. Norton, Rudolph Hering and R. C. Harris.