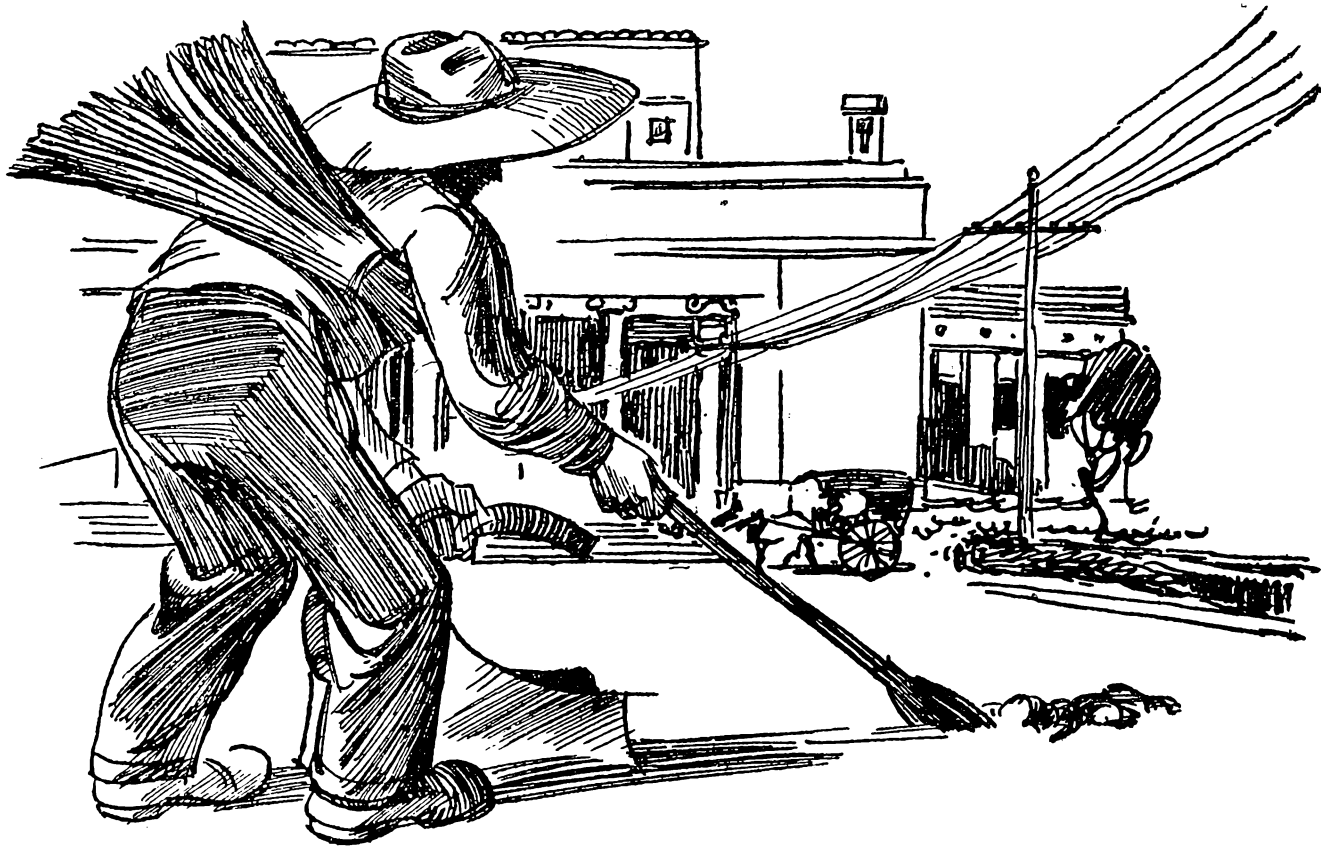


# ESTEROS IN MANILA

By ALEJO AQUINO

*City Engineer and Architect*



**D**URING rainy season frequently after typhoons which cause flooding of the City, oldtimers of Manila may be heard commenting that during the Spanish times, there were no such floods in Manila because then the esteros were deep and served the useful purpose of conveying the rain water to the sea. "Furthermore," they assert with certainty, "esteros were kept well free from obstructions and you could make your way in a banca from the mouth of the Pasig River to its far inland extremities."

This statement is usually followed by a general criticism of the municipal authorities, of their lack of interest in improving these esteros as a glaring example of inefficiency. Some of these men who have had the good fortune of visiting metropolitan cities in Europe and America, would draw a comparison between the clean drainage and free-water-channels in these continents, emphasizing their usefulness as things of scenic beauty in contrast to the malodorous, dirty and stinking esteros we find in Manila.

The writer as City Engineer and Architect of Manila will not contradict such remarks about our esteros. Though it is a fact that the maintenance and upkeep of these esteros fall under his daily functions as City Engineer and Architect, the writer cannot but agree to this criticism. For the enlightenment of the public in general and in the hope that he will awaken the interest of the municipal authorities, the writer welcomes the opportunity of writing this short article, hoping that after its perusal by competent authorities, something will be undertaken

in the way not only of improving the esteros of Manila as a means of transportation during these times when due to the war, transportation facilities have been affected most adversely, but also reducing their insanitary condition.

## **Legal Aspects**

Esteros in Manila are classified into the following:

(a) *Navigable esteros*.—Navigable esteros are those which due to their width and depth are navigated easily by small water conveyances, such as bancas, cascoes, launches and similar watercraft.

(b) Non-navigable esteros which due to their narrowness and shallow depth are only fit for drainage channels and for the navigation of small watercraft as bancas, etc.

According to section 1902 of the Revised Administrative Code and by virtue of an agreement between the City of Manila and the Insular Government effected since 1911, navigable esteros are under the supervision of the Insular Government, more specifically the Bureau of Public Works and the Bureau of Customs. These navigable esteros, which have a total length of about 15 kilometers, were well maintained by the Insular authorities before the war and they served their purpose as means of transportation and navigation. They were maintained by dredging once every two or three years. The Bureau of Public Works had one or two dredges mechanically operated and every portion of these esteros so classified as

navigable was dredged whenever it became shallow due to accumulated sedimentation as to become dangerous to navigation. However, since the inauguration of the present administration no dredging has been done and apparently the Insular Government is not in a position to continue with the maintenance of navigable esteros at their depth. Since they are within the limits of the City of Manila, their maintenance and upkeep by way of cleaning naturally have become the concern of the municipal authorities.

The second class of esteros, the non-navigable ones, measure a total length of about 28 kilometers, and according to law, should fall completely under the supervision and control of the City government. Many of the complaints received from the public concern this second class of esteros, i. e., non-navigable ones. Due to the failure of the past administrations, non-navigable esteros have received very little care in spite of repeated requests of the writer that sufficient funds be provided for their maintenance.

### *Present Condition of Non-Navigable Esteros*

**T**HE present condition of non-navigable esteros are, to say the least, deplorable. Some of them due to lack of care for some time have become crooked, partially filled with garbage, grass and sedimentary deposits which have been accumulated every time a flood occurs. There is, however, another undesirable characteristic of these esteros, namely, the foul odor that emanates from them. This odor is due not so much to the lack of care but rather to the following causes:

Inasmuch as Manila except in some districts lacks a sufficiently extensive sewerage system whereby human waste could be properly disposed of, in most cases waste matter is disposed of by means of septic vaults known as "pozo negro" from which an effluent liquid comes out which has an offensive odor. This liquid finds its way into the esteros and remains there with the water in stagnant condition, contaminating it and causing a characteristic foul odor to permeate the air in the vicinity. This is especially noticeable during low tide when there is little water in the esteros to dilute the effluent liquid, increasing its concentration. Furthermore, the banks of the esteros absorb the flocculent liquid and acquire its odor.

Another source of the foul smell of the esteros and its vicinity is the accumulation of dead animals, rubbish, debris and garbage as well as some forms of algæ. People living in the vicinity of esteros find it convenient to dump their garbage and refuse into the esteros.

In many places, such as Sampaloc, Pandacan, Santa Ana, Tondo, etc., the poor people living along the banks of the esteros dispose of their human excreta by throwing them directly into the esteros. One can see floating flakes of human waste in these places. During the low tide some of these particles settle on the banks which emit an obnoxious odor.

### *What the City is Doing*

**D**URING the past 10 years or more before the war, non-navigable esteros in Manila were maintained in a haphazard and inefficient manner. Short-term prisoners were assigned daily to clean the esteros. Sometimes these prisoners would number around 300. They were divided into gangs under the supervision of prison guards and were assigned in the cleaning of esteros to remove the weeds growing on banks, removing obstructions such as floating debris, water lilies, carcasses, garbage, etc. The materials collected were placed on the banks and whenever we had transportation facilities available, they were hauled to the dumping places of the City. The work was not done systematically. There were days when the convict labor force was small, so that little work was done. Furthermore, these prisoners are of truculent nature and prison guards found it difficult to enforce discipline. Consequently little effective work was actually accomplished. Since the beginning of the war, no convict labor has been available for the work.

There is no equipments for improving the channels of the esteros. No dredging work can be done nor any other work to improve the condition of these esteros, except an insufficient maintenance work with inefficient convict labor.

Time and again the undersigned requested that funds be provided so that a permanent labor force could be organized and improvement in the service insured by the employment of well-paid laborers in the same way that our streets are maintained. The undersigned recommended the purchase of cascoes so that the materials collected could be properly disposed of. Recommendations were submitted requesting for funds for the straightening and realignment of the channel ways as well as for dredging work. All these recommendations were never carried out due to lack of funds.

### *A Few Recommendations*

Improvement cannot be undertaken within a short time. The improvement of esteros involves several aspects which require a long period of adjustment. For immediate relief, it is obvious that we should detail a sufficient force of men to make a thorough systematic periodic cleaning of esteros. The practice of employing laborers for a few days or weeks is both costly and non-productive of beneficial results. Esteros just like streets need to be maintained regularly by employing laborers on a more or less permanent basis, who could learn the knack of doing the work efficiently. It is for this reason that the writer is not enthusiastic over the engagement of relief laborers for this kind of work.

As this article is for the enlightenment of the public as well as the municipal authorities on the subject of estero improvement, I should, therefore, submit a few concrete recommendations in concise form:

### **Maintenance Work**

For the daily maintenance and upkeep of esteros, we have at present a labor force of 38 laborers. Inasmuch as this number of laborers is very insufficient, we have recommended employment of 62 additional laborers. Evidently, we need more laborers than this number recommended, but due to the present financial condition of the city, the writer abstains from requesting for more men than are absolutely necessary. The city should acquire two cascoes for the proper collection and disposal of dredged and other refuse materials taken from esteros, as well as the necessary additional tools, such as forks, hovels, scoops, etc.

A more militant supervision on the part of sanitary inspectors and the police in order to stop or at least discourage the practice of dumping waste material and human excreta, dead animals, refuse and garbage on the esteros, will greatly help in the sanitary improvement of esteros.

Mass education of the public in avoiding the use of esteros as dumping places for carcasses, refuse and

garbage and strict enforcement of sanitary regulations prohibiting such practices, would contribute to a large extent to our efforts to keep our esteros clean.

### **Improvement Work**

A long range program of improvement should consist of the following:

(1) Dredging shallow portions in order to provide sufficiently deep channels for efficient drainage of rain water.

(2) Lining estero banks with concrete apron or similar material to prevent growth of weeds and erosion of banks and at the same time to produce a neat appearance. A yearly appropriation of ₱200,000 in a 5-year improvement program has been recommended.

(3) The sewerage lines of Manila should be redesigned so that the effluent from domestic sewage, which is the source of the foul odor emanating from esteros, can be properly carried through underground pipes and discharged into the bay where the odor would be dissipated and not felt by the inhabitants.

