MUNICIPAL DEPARTMENT

THE LAYING-OUT OF PARKS, RECREATION GROUNDS AND OPEN SPACES.

(Concluded.)

The greatest mistake that is usually made in forming shrubberies is too close planting, and in this respect nurserymen err very largely. In shrubberies the knife should be rarely seen; it is far better to give plenty of room between each shrub, and the spaces filled up here and there with, say, a clematis growing over an old trunk of a tree, a strong-growing rose such as a Gloire de Dijon or Ayrshire rose, a clump of tiger lillies, a tree peony, or other tall-growing herbaceous plants, and all shrubberies should have a small width left for a border. Where the edge comes into contact with grass there is probably no more effective plant for a line of colouring than a good strain of white or yellow violas.

It is with the judicious planting of shrubberies and single trees on grass that the best effect is given to a site. The edges of shrubberies generally conform to too geometrical curves. Little nooks should be made here and there, while in another place the edge should jut out into the adjacent turf like a peninsula—in fact, the less the artificial appearance the better the effect.

A lake forms a very valuable adjunct to a site if there is a small feeder running through the latter; and if a small lake can only be obtained its size can be easily disguised by making an island or two, or forming juts of land covered with trees or shrubs, so that only a narrow view can be obtained from one end to another, and patches of shrubberies made along its banks with an interval of grass sloping to the water. In this, as in shrubberies, as natural an appearance should be given to a sheet of water as possible, and all geometrical or formal lines avoided; a weeping willow or birch might be planted here and there, and also bulrushes and the common yellow iris along the water's edge. These latter would have to be avoided if any public boating is done.

It is, perhaps, in exposed positions at the seaside where the greatest difficulties are to be met with in laying out open spaces, on account of the limited species of shrubs or trees that will withstand the strong winds and the saline properties with which the air is impregnated. In such positions it is, perhaps, best to form a screen with some of the hardiest kinds of shrubs and trees, make the paths in the positions they will eventually be required, and lay down the whole of the remainder with grass until the screen has attained a sufficient growth for protection, when the planting of shrubberies with less hardy plants may be proceeded with, as by so doing success is doubly assured. Of shrubs, the tamarisk, Japanese euonymus, and sea buckthorn, planted closely together form a good screening hedge, and if a row of either the Austrian, Corsican, or maritime pines, or of deciduous trees the mountain ash or sycamore, be planted closely together behind the hedge, a screen of 10ft. in height would soon be obtained, when the planting of the remainder of the shrubs and trees of a more delicate constitution can be proceeded with.—The Contract Journal.

PURIFICATION OF WATER BY METALLIC IRON.

This process was suggested about ten years ago by Sir Frederick Abel, and was first practically applied at Antwerp, where foul water, drawn from a source a little better than a sewer, has been converted into a drinking water—bright, clear, and wholesome; and this explains why Antwerp has been so free from epidemics of cholera and other diseases since these works have been in operation. This method of purifying water can no longer be considered as in the experimental stage; it has been installed in some of the important cities of Holland, France, Turkey, and India, and has been recommended for improving the water supply of Florence, Italy, by Sir Douglas Galton, the eminent English engineer and sanitarian. While it cannot be said that the process gives a perfect water, it certainly gives one which is wholesome, as has been shown in many continental towns.

When the process was first introduced at Antwerp, its original birthplace, by Dr. Anderson, who designed the mechanical appliances for agitating the water with scraps of iron, it was considered that the iron had a more or less pronounced chemical action upon the dissolved organic impurities of the water, but it now seems that the real action is one of coagulation, the formation of a precipitate in the water tending to throw out of solution the dissolved organic substances, and this view of the process applies equally well to its action upon microbes, which become entangled in the gelatinous precipitate, and either subside with it to the bottom of the settling tank, or remain behind on the surface of the sand filter through which the water is passed.

After being agitated with the metallic iron, Dr. Dupre examined water where there was only sand filtration and found the microbes were from 1,300 to 3,000 per cubic centimetre, but directly the iron process was applied, the number sank to 100, they very rarely exceeded that, and sometimes went down as low as 5. The effect of filtration of water by this process is not so much to remove chemical substances as to remove microbes. It is true that water may be foul and objectionable irrespective of microbes, out the main advantage of the iron process is that it removes the microbes so completely. Dr. Dupre says:—"This can only be done by very perfect sand filtration at the rate of 4 in. per hour; but if the rate is varied by ½ in. per hour, or an inch, the whole process breaks down, and you jump at once into hundreds of microbes. With the iron process, you may vary the rate from 4 in. to 20 in. without apparently affecting the numbers at all. The film of iron which is formed is such a perfect medium that even continued disturbances in the rate does not seem to affect the result."

The apparatus for purifying the water is a hollow cylinder, either of cast-iron or built up of plates like a boiler, supported horizontally upon hollow trunnions, through one of which the water to be purified enters; after traversing the cylinder, it leaves by the other trunnion. The cylinder is caused to rotate about its axis by means of a gearing, which is driven in any convenient way. Fixed inside the shell of the cylinder, and running longitudinally, are six shelves, five of which are curved in the direction of the motion of the cylinder. The sixth shelf is not curved, but is formed of a number of square flat plates arranged en echelon to insure a more continuous and regular action of the apparatus.

The cylinder is charged with a certain quantity of metallic iron, according to size —a purifier capable of treating 1,000,000 gallons of water in twenty-four hours requiring a charge of two tons or more. The iron may be in any convenient form, but that most commonly employed in practice is burrs or punchings from plates. Cast-iron borings are very efficient, and, weight for weight, much cheaper. The charge of iron, in whatever form, is spread evenly along the bottom of the cylinder before commencing the work.

(To be Continued.)