

to the preventible causes that are concerned in repropagating specific kinds of disease. These causes are:—

"1. The specific infectious property or substance of any one of the pestilential disorders.

"2. The local impurities and moisture of the house and grounds where the outbreaks of disease have occurred, or are liable to occur.

"3. The foul exhalations and atmospheric impurities which injure health or help to propagate pestilential epidemics.

"Experience has proved that it is possible by certain chemical agencies wholly to destroy or prevent the operation of the specific infection or contagion of any disease; but, to do this, it is necessary that precise rules should be observed in applying the disinfectants, and, as regards cholera and typhoid fever, it is especially important that the infective discharges from the sick should be disinfected as soon as voided from the body, and that whatever clothing or surfaces may have been soiled by such discharges should be disinfected as soon as practicable. The fact should also be borne in mind, by all persons who have charge of infected things, that the infective property or virus of some diseases, and of cholera especially, is capable of rapid increase in filthy places, and in a foul, damp atmosphere. Therefore, the cleansing and disinfection of such places should, if possible, precede the arrival or outbreak of any such pestilential infection. Every unclean and damp place about dwelling-houses, warehouses, factories, places of assemblage, passenger vessels, railway dépôts, and hotels, should be made and kept perfectly clean and dry. All drains, privies, and water-closets should be kept as clean as possible, and should be thoroughly purified before cholera comes into the neighborhood. Such cleansing and disinfection give the surest protection against all epidemics.

"*Quicklime*—to absorb moisture and putrid fluids.—Use fresh stone lime, finely powdered; sprinkle it on the place to be dried, and in damp rooms place a number of plates or pans filled with the lime powder. Whitewash with pure lime.

"*Charcoal Powder*—to absorb putrid gases.—The coal must be dry and fresh, and should be combined with lime; this compound is the 'calx powder,' as sold in the shops.

"*Chloride of Lime*—to give off chlorine, to absorb putrid effluvia, and to stop putrefaction.—Use it as lime is used, and, if in cellars or close rooms the chlorine gas is wanted, pour strong vinegar or diluted sulphuric acid upon your plates of chloride of lime occasionally, and add more of the chloride.

"*Sulphate of Iron (Copperas) and Carbolic Acid*—to disinfect the discharges from cholera patients, and to purify privies and drains.—Dissolve 8 or 10 pounds of the copperas in a common pailful of water, and pour this strong solution into the privy, water-closet, or drain, every hour, if cholera discharges have been thrown in those places; but for ordinary use, to keep privies or water-closets from becoming offensive, pour a pint of this solution into every water-closet pan or privy seat every night and morning. If there is cholera in the house or in the district, let carbolic acid be added to this iron solution: one-half pint of the fluid acid to 5 gallons of the solution. Bed-pans and chamber-vessels are best disinfected with this mixed solution, using a gill at a time.

"*Permanganate of Potassa*—to be used in disinfecting clothing and towels from cholera and fever patients, during the night, or when such articles cannot be instantly boiled.—Throw the soiled articles immediately into a tub of water in which there has been dissolved an ounce of the permanganate salt to every 3 gallons of water. Boil the clothing as soon as it is removed from this colored solution.

"*Carbolic Acid (fluid)*—may be diluted at the rate of from 40 to 100 parts of water to 1 of the fluid acid. Use this solution for the same purposes as copperas is used; also to sprinkle upon any kind of garbage or decaying matter, and on foul surfaces, or in drains.

"When used to disinfect clothing, carbolic acid of good quality should be thoroughly mixed with its own quantity of strong

vinegar, and next be dissolved in 200 times its own quantity of water, before the clothing is immersed in it. This mixture with vinegar insures such complete solution of the carbolic acid that the clothing will not be 'burned' by undissolved drops of acid when disinfected in the carbolic water. This weak solution (1 part to 200) will not injure common clothing. But to destroy clothing, as well as infection, instantly, use the acid diluted only 10 to 30 times its own quantity of water.

"The disinfecting and antiseptic power of good carbolic acid is so great that 1 part of it to 50 or 100 parts of water is sufficient for ordinary purposes.

"For drains, sewers, foul-heaps, stables, and privies, the cheap 'dead oil' of coal tar, or the crude carbolic acid, answers every purpose when freely applied. Coal tar itself is available as a disinfectant to paint upon the walls of stables, privy vaults, and drains. By mixing with sawdust or dry lime, coal tar or crude acid may be used on foul grounds or heaps of refuse.

"*Boiling or high-steam Heat*.—Whenever foul clothing and infected things can be boiled, or have a boiling heat steadily applied and kept up for an hour, this is one of the simplest and best modes of disinfection. But until such high heat is actually applied to the infected things, some one of the disinfecting solutions must be used. A common steam tub (in a laundry or elsewhere) with a tight cover is a good disinfecting vat."

Annual of Scientific Discovery.

Another Observatory at Quebec.

The authorities of the Laval University are having an observatory erected upon the flat roof of the large building, for astronomical purposes. The construction of this observatory will be such, that, with the assistance of rails, it will be moveable and offer many additional advantages to the explorers of the heavens. The fine telescope imported last year from Europe, by the Rev. Mr. Bolduc, will be mounted in this observatory in a few weeks hence; and with its aid we may hope that to Quebec shall yet belong the honor of adding something new to the discoveries in astronomy. This splendid instrument has a magnifying power of 840 times. The reflector is of silvered glass, of the highest degree of polish attainable, and its curve, which is parabolic, was traced on the principles indicated by the Foucault system. Its diameter is sixteen and a quarter inches; the focal length of the tube is about two feet; and it is supplemented by a smaller telescope, technically called a "Finder," being used to search out heavenly bodies before the minuter examination is entered upon. The University telescope is of the equatorial kind, having two axis of motion at right angles to each other, one of which is parallel to the axis of the earth, both axis being illustrated by graduated circles in metal. The mechanism of this telescope is of the most solid kind, though as intricate as clock-work; and by its aid, when fixed upon a star, it can be set in motion and made to move so steadily and uniformly round its terrestrial axis as to keep constantly in view the heavenly body under examination. The site of the University is said to be well adapted for observation, affording a clear view from the north-western promontory of Quebec across the valley of the St. Charles and the harbor, for at least five-eighths of the horizon, and by its great elevation dominating that portion of the view covered by the city and suburbs. The Laval University merits the gratitude of every citizen, for this latest of a series of acts beneficial to science and lending lustre to our ancient city.—*Mercury.*