

WHAT EVERY ONE OUGHT TO KNOW ABOUT GERMS.

By William C. Miller, M. D.
(Concluded from last week).

WHAT IS QUARANTINE?

Quarantine plays a tremendously important part in checking the spread of communicable diseases.

Among public health people a distinction is made between quarantine and isolation. The term "quarantine" is applied to the restrictions imposed on persons who have been exposed to disease and are liable to contract and later pass it on to others, and to carriers, who harbor in their nose, throat or intestinal tract, germs which, though harmless to themselves, may produce disease in others.

The term "isolation" applies to the restraints placed upon the actual victim of the disease.

Persons who have been exposed to communicable disease are quarantined until the period of incubation has passed, unless they are known to be immune or may be made so artificially.

For instance, the incubation period, or the time between contact with smallpox and its appearance is from 12 to 14 days. A person in contact with a case of smallpox, would be subject to the restraint of quarantine until that time had passed, unless he could show evidence of vaccination, or of having had the disease; but he might be released if he submitted to immediate vaccination, in which case his address would be taken and he would be kept under observation until there was evidence that the vaccination was successful.

In practically every State, the following diseases are subject to absolute quarantine: Bubonic plague, cholera, leprosy, smallpox, typhoid fever and yellow fever. This means that not only the patient, but all persons in the house are required to remain upon the premises until the quarantine period has passed and the house has been disinfected in accordance with State or local regulations.

MODIFIED QUARANTINE.

In most States modified quarantine is established in cases of: Anthrax, infantile paralysis, cerebro-spinal meningitis, chicken pox, german measles, glanders, diphtheria, malarial fever, measles, mumps, relapsing fever, scarlet fever, typhoid fever and whooping cough.

In some States, to these may be added venereal diseases.

Modified quarantine entails the perfect and complete isolation of the patient, but under certain circumstances, wage-earners in the family are permitted to continue their work.

To be explicit, in the case of scarlet fever or diphtheria attacking a child of school age, in a family of half a dozen, the following quarantine method would obtain:

If the father and other adult members of the family work outdoors and do not handle foodstuffs, they may continue to work, provided they do not enter the sick room, or travel in public conveyances, enter stores, theatres or any place where crowds gather, or mingle with children. If wage-earners are employed where they come in contact with children or handle foodstuffs or fabrics, they must remain in the quarantined home.

Children of school age may leave the quarantined home and remain with relatives or friends where there are no other children until the period of incubation has passed or, in case of diphtheria, until two negative cultures have been taken when they may return to school and mingle with other children.

The patient must be isolated in a room stripped of curtains, hangings, carpets and upholstered furniture, all of which harbor germs. Over the door of this room is suspended a sheet, dampened from time to time with a disinfecting solution, which is made by dissolving 30 grains of corrosive sublimate and one tablespoonful of common salt in a gallon of hot water. Because of its known corroding action on metals, it should be kept in a crock.

On occasions when it is necessary for the mother or nurse to leave the sick-room, she removes the cap and gown which she wears when near the patient and hangs them just outside the door, to be put on immediately upon her return.

She always washes her face and hands before leaving the room, and carries out faithfully the directions of doctor and health officials concerning disinfection, and avoiding contact with other members of the family.

DISINFECTION.

In referring to disinfection, public health people make a distinction between concurrent disinfection, which is carried on from day to day during the course of a communicable disease, and terminal disinfection, which takes place at the end of the disease and is the requirement for release from quarantine.

As in almost all acute communicable diseases, the danger of contagion is greatest at the beginning, when the mucous membranes are heavily charged with the virus of contagion. It follows that of the two, concurrent disinfection is perhaps the more valuable.

CONCURRENT DISINFECTION.

From day to day all secretions from the nose and throat should be caught in rags and burned. Excretory discharges should be disinfected with chloride of lime or some other equally effective agent and, if no sewer connections be had, they, together with all bath water and food refuse coming from the sick room, should be buried in a pit in the back yard.

The pit or trench should be 5 or 6 feet long, 2 feet wide and 4 feet deep. The dirt should be thrown to one side; at the other side several bushels of lime should be dumped. When waste material is thrown in, it should be covered with lime, afterwards with earth. Loose boards should be laid over the top of the pit to prevent animals from getting in.

A convenient and satisfactory disinfecting solution is made from chlorinated lime in the proportion of 6 ounce

es to a gallon of water. In such a solution, clothing, bed clothes, towels, napkins, etc., used by the patient should be immersed for at least two hours before leaving the sick-room for laundry purposes. It is needless to add, no laundry may be sent from the house until quarantine has been lifted.

All dishes and utensils used by the patient and the nurse should be properly disinfected before leaving the room. This can be accomplished by immersing them in a solution of equal parts of chloride of lime and boric acid, in the proportion of one teaspoonful of the mixture to one quart of water. This combination, recently announced by Dr. John Laird, chief of the Pennsylvania Department of Health Laboratories, is also a valuable hand disinfectant and is commended for use in the sick room.

When convalescence has been established and the quarantine period is about to close, it has been, until recently, the custom to disinfect the premises by the gaseous method. Formaldehyde gas, by far the most popular, was required by law in many States. The procedure in gaseous disinfection of a room is to throw everything, including bedding, clothing and hangings, in disarray, so that every surface possible presents itself to the gas.

GASEOUS DISINFECTION.

All cracks about the windows, doors, even the keyholes, are sealed. The operator uses a heavy zinc can, usually with a flaring top, which is placed on bricks to protect the floor from the heat which will be generated; then into the can he pours measured portions of liquid formalin and permanganate of potassium, about 6 ounces of permanganate and one pint of formalin, for each thousand cubic feet of air space.

A room 15 feet square would have 15x15 or 225 square feet of floor space; if it have a 10 foot ceiling, there would be 2250 cubic feet. Deducting for the space occupied by furniture, you may calculate such a room as having about 2,000 cubic feet of air space.

The operator must retire hastily, for the gas is liberated rapidly. After the room is closed and sealed from the outside, it must not be opened for 6 or 8 hours. If properly done, there can be little doubt about its efficiency. Formaldehyde gas does not injure furniture or fabrics.

Sulphur dioxide is also widely used for gaseous disinfection, and again the room must be tightly sealed. It requires about five pounds of sulphur per thousand cubic feet of air space, for proper germicidal effect. This effect is entirely lost unless a very large amount of moisture be present. Hence the futility of burning sulphur candles in the dry air of a room.

The sulphur should be placed in a pot or pan which rests in a tub, partly filled with water. Ordinary flour of sulphur is best. It can be ignited by hot coals or by soaking a piece of cotton or waste in alcohol or turpentine and dropping it lightly into the pot.

One advantage of sulphur, if prop-

erly applied, is that it will not only destroy bacterial life, but any other thing that creeps or crawls. The objection to sulphur gas is that it corrodes metals and is destructive to colors.

SANITARY CLEANING.

Later experience, however, has proven that gaseous disinfection is not necessary for protection against future contagion. The greater number of States have dropped it from their regulations in regard to terminal disinfection, and have adopted what is known as sanitary cleaning.

Sanitary cleaning consists, first, of washing the floor and all the wood-work with soap and water, to which should be added creolin, one teaspoonful to the quart of water. The essential features are the soap and water and the vigor with which they are applied. After this, the same surfaces should be gone over again with a solution of chlorinated lime or a solution of creolin, 3 teaspoonfuls to the quart of water, or of any of the standard disinfecting solutions. The wall paper, unless of a highly expensive variety, should come off and the walls be washed with disinfecting solution. If left on, the paper itself should be subjected to the same treatment as the wall.

Windows should be taken out entirely so that the germicidal action of the air and sunlight may have full opportunity to do their share, which is a large one. Such clothing and bed clothing as can be moved should be taken outside and exposed to the sunlight and air. Solid articles of bedding which cannot be disinfected, should be burned. Books which were handled by the patient during his illness should be burned.

Carpets and rugs cannot be disinfected by sprinkling solutions over them. Should any person so far overlook the proprieties as to allow carpets or rugs to remain in a room where there was a case of communicable disease, at its termination they should take them out, thoroughly beat them and expose them to air and sunlight for two or three days, turning them over several times each day.

Terminal sanitary cleaning also applies to rooms which have been occupied by tuberculous patients.

Every parent, teacher and employer of labor should familiarize himself with State and local regulations. This knowledge not only protects the community from epidemics, but it frequently curtails doctor's and druggist's bills in the home, raises the standard of attendance and work in schools, and increases efficiency in industrial plants.

Send to your local and State health board for information concerning the prevention of communicable diseases. From this literature you will learn exactly how absolute and modified quarantine are applied in your State or community.

INFORMATION FOR MOTHERS.

When a communicable disease attacks any member of your family, notify and co-operate with your department of public health. Its representatives can save you money, time and

worry, and prevent mistakes which may be costly to yourself and the community.

For the benefit of mothers, the following information is given showing the period of incubation in diseases most common among children; also giving the regulations in one State covering the lifting of quarantine:

Measles, incubation period 9 to 14 days; lifting of quarantine, 16 days after disease develops.

German measles, 10 to 20 days; lifting quarantine 16 days after disease develops.

Scarlet fever, 2 to 7 days; lifting quarantine, 30 days, with an additional 10 days before the child having had scarlet fever may go to school. Children with running ears are held in quarantine until the secretion stops.

Whooping cough, 1 to 3 weeks; lifting quarantine; not until paroxysms of coughing stop.

Diphtheria, 1 to 14 days; lifting quarantine; 21 days. If anti-toxins have been used this may be reduced to 14 days provided two negative cultures be taken on two different days.

Mumps, 4 to 25 days; lifting quarantine 21 days after disease develops.

—The "Watchman" gives all the news while it is news.

Can Grow Potatoes Well in all Parts of Pennsylvania.

Proof that climatic and soil conditions practically all over Pennsylvania are generally adapted to the growing of potatoes is held in an announcement by Professor E. L. Nixon, plant disease specialist of the Pennsylvania State College, regarding high production for the last season.

In twenty-three counties of the State he found farmers who raised more than 350 bushels per acre, compared with the State average yield of 120 bushels. The remarkable feature of the ability to raise potatoes cheaply lies in the fact that the record counties are not grouped together on one general soil type, and they are not similar in climatic conditions.

"If we draw a line east and west through the exact center of the State we find eleven counties in the northern section where farmers last season produced 350 or more bushels to the acre, and eleven counties south where the same record was attained," says Professor Nixon. "Drawing a line from north to south through the center of the State, we find eleven counties east and eleven counties west where growers produced 350 or more bushels to the acre. Centre county in the middle also has growers who boast this record."

"The secret of this low production cost is therefore not so much in location as it is in a display of what we call 'potato mentality'—the proper preparation of the soil, the use of disease-free seed and up-to-date cultural methods including spraying for disease control every ten days or two weeks all through the growing season." It is estimated that over 25,000 acres of potatoes will be sprayed in Pennsylvania this coming season.

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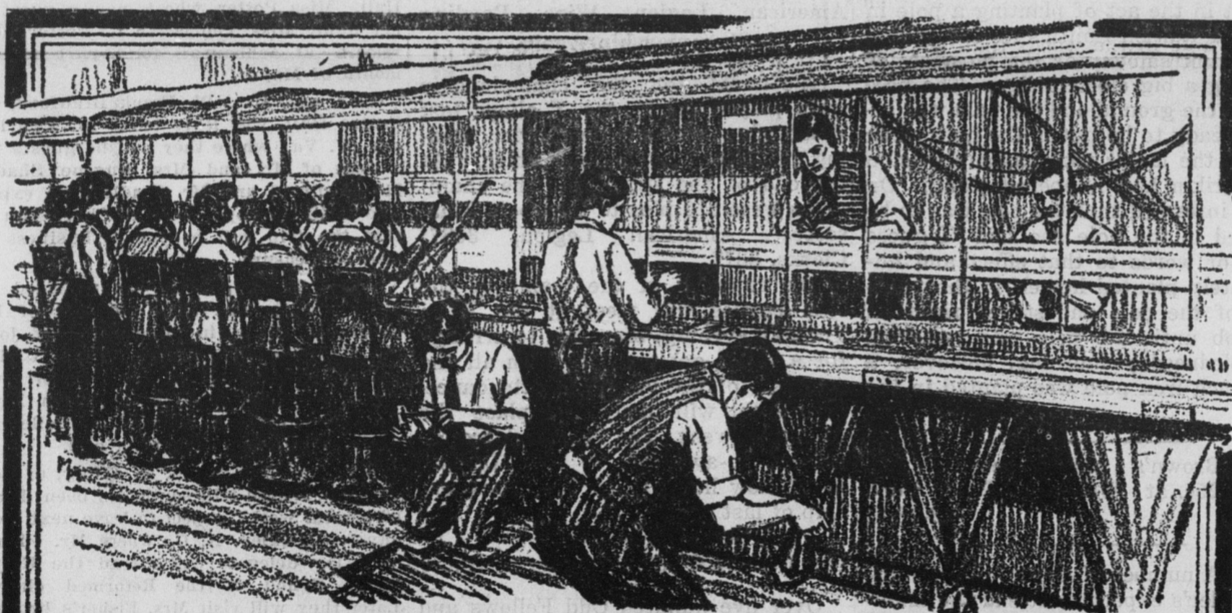
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