

## **Infectious diseases of school children : a manual for the use of teachers.**

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# INFECTIOUS DISEASES

OF

# SCHOOL CHILDREN



A Manual for the Use of Teachers

Published by  
THE STATE BOARD OF HEALTH  
Hartford, Conn.

1908

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## INFECTIOUS DISEASES.

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This pamphlet is issued for the instruction and guidance of school teachers in aiding them to recognize early the signs of infectious diseases among their pupils. It is prepared for distribution by the town health officer in order to secure a more intelligent coöperation in the school in guarding the health of the community. The school is an active agent in the spread of disease, but a watchful teacher may prevent much of it. The health of her charges and the welfare of the home depend greatly upon her close scrutiny and watchfulness, and the faithful carrying out of these suggestions.

All cases of infectious disease in the home and school, and even suspicious cases, should be reported to the health officer without delay, and the health officer must reciprocate by reporting to the school all cases in that district coming to his notice. In this way many serious epidemics may be avoided.

### SANITATION.

Cleanliness, fresh air and sunshine are important health preservers and germicides. The schoolroom should have plenty of space,—a plentiful and constant supply of pure, fresh air, without drafts, and a good exposure to sunlight for a reasonable period each day. Schoolroom and toilets must be maintained in a state of strict cleanliness. Sweeping and dusting must be done in a manner calculated to get rid of the dirt—not to scatter it about the room in a more favorable way to do harm. Dust preventives should be used. Wet garments should be removed if possible. Cleanliness of person insisted upon. Unclean habits, skin, hair or clothing must not be tolerated. Expectoration must be prohibited. In these various ways the germs of tuberculosis (consumption), scarlet fever, diphtheria and other diseases are conveyed from one pupil to others. Contagion

is conveyed through common use of drinking cups, pens, pencils, books and close contact in study and play. Suspicious cases must be sent home at once and referred to the health officer—who renders his services to the family gratuitously in this work and is paid by the town to do it. Upon him all responsibility may be thrown. They should not return to school without his certificate. Skin eruptions, sore throats, red eyelids and discharges from the ear and nose should be watched—and such pupils excluded from school.

*Premonitory or early symptoms* of most diseases are dullness, stupidity, gaping, inability to apply to study, headache, crossness, sore throat, sick stomach and drowsiness. All such should be carefully inquired into.

Characteristic symptoms of the following infectious diseases should be borne in mind and will prove helpful:

#### CHICKEN-POX.

*Cause.*—Chicken-pox, like measles, is a very contagious disease, and is usually contracted by exposure to another case, rarely through a third person. It attacks children of all ages, one attack being, as a rule, protective. The period of development is from ten to fifteen days.

*Symptoms.*—The eruption is generally the first and often the only symptom. It usually appears first on the face, scalp or shoulders, as small, red, widely scattered pimples, and may spread slowly over the trunk and limbs. These pimples soon fill with serum and become little, white, shiny blisters called vesicles; the vesicles in turn dry up and crust over. The eruption of chicken-pox appears in crops. After an interval of some hours, usually a day or so, a second crop appears and then a third; this continues for four or five days, or a week. The eruption therefore being of different ages, all stages may be present at the same time in the same region. This multiformity is one of the most distinguishing features of chicken-pox.

*Precautions.*—The teacher will usually notice only the presence of a few isolated pimples on the face. The disease may be conveyed as long as the crusts are present.

Children affected with chicken-pox should be kept at home, but quarantine in the home is not necessary. It is better that a child should not be sent to school for at least two weeks from the recovery of the last one affected in the home.

### CROUP.

Membraneous croup should be regarded as diphtheria.

### DIPHTHERIA.

*Cause.*—Diphtheria is an infectious disease, due to a definite bacillus. Every case is contracted from a previous case, directly or indirectly. Persons who have been exposed may, in rare cases, carry the disease to others, although they themselves may remain unaffected. Bacilli remain in nose and throat for an indefinite period after recovery and these latent discharges are common sources of infection.

The usual period of development is from two days to a week.

*Symptoms.*—The tonsils usually show patches of membrane, which is usually grayish, but sometimes of a dirty brown color. There are cases of catarrhal diphtheria, which occurs especially in the nose, in which no membrane is seen. The onset of the disease may be very gradual or abrupt.

*Precautions.*—The teacher would notice one of three things:

1. Languor, headache, fever, difficult and painful swallowing.

2. Membrane on the tonsils.

3. Enlarged glands at the sides of the neck.

It is impossible to tell before the third or fourth day how severe an attack may be. A physician should be consulted at the first discovery of symptoms. Serious complications may arise at any time. Rooms should be thoroughly disinfected after a case of diphtheria; also clothing, utensils, schoolbooks and the like. In time of epidemic, schoolchildren should be carefully watched, and any case



of sore throat or other suspicious symptoms should be immediately reported. Children should be cautioned, especially in the matter of drinking cups, exchange of pencils, chewing-gum, "taking bites," etc. Attendance at school should not be permitted to any child in whose family diphtheria exists.

## SCARLET FEVER.

(SCARLATINA—SCARLET RASH.)

*Cause.*—Scarlet fever is probably due to a micro-organism. Children under five years take scarlet fever more readily than do older children. The period of development is rarely over seven days. Infection is readily conveyed by clothing or articles from the sick room. Sometimes the disease is spread by food, especially milk. The disease may be communicated from the time of the first symptoms until the cessation of peeling, which is usually a period of six weeks. It is least contagious for the first two days of the eruption, and most contagious during the period of scaling or peeling of the skin.

*Symptoms.*—As a rule, the early symptoms are vomiting, headache, rapid rise in temperature and soreness of the throat, often redness of the tonsils, sometimes a few spots on the throat, and rarely membranous patches. The eruption appears from twelve to thirty-six hours after the first symptoms are seen. It is a fine, red rash upon a background of a generally flushed skin. It is best seen upon the upper part of the chest and neck. The peeling of the skin begins at about the end of one week, and may last five or six weeks.

The early symptoms, including the rash, are often very mild, so that the child may not be noticed to be ill until he is found to be peeling upon the hands or neck. Should such peeling be observed in any child, he should be sent home, and a physician called. It is often from such mild and unrecognized cases that epidemics in schools are started.

*Precautions.*—Evidences of sudden high fever, with reddened throat and swollen papillae of the tongue, should

warn the teacher of possible scarlet fever. Even the mildest case should be isolated for six weeks or until peeling is complete. Sulphur fumigation is not enough for safety. Every article in the sick room should be thoroughly disinfected. If children not affected are immediately removed from the house, they may be allowed to return to school after seven days; and then only on certificate of health officer.

### MEASLES.

*Cause.*—Measles usually occurs in epidemics, is the most contagious of all diseases, and may be transmitted even before the appearance of definite symptoms in the one affected. One attack does not always confer immunity.

The period of development is from ten to fourteen days. The cause of the disease is unknown. The period of infection is from the earliest symptom to completion of recovery.

*Symptoms.*—The development of measles is gradual, beginning with watering of the eyes, sneezing and nasal discharge. There is usually a cough for several days before the rash—sometimes sore throat. The rash appears about the fourth day, usually on the back of the neck or forehead, as small, dark-red spots. The average duration of the rash is four days. Peeling of the skin in fine scales lasts from five to ten days.

*Precautions.*—During an epidemic, the teacher should be constantly watchful for running from the nose or eyes. In older children measles is usually mild, but in infants, severe, because of the complications. Children who have been exposed should be kept from school for two weeks, as they either may carry infection from the case to which they have been exposed, or themselves may be coming down with the disease.

### WHOOPIING-COUGH.

(PERTUSSIS.)

*Cause.*—Whooping-cough has recently been proven to be due to a definite micro-organism. The disease may be contracted in the open air as well as within doors simply

by going near a patient. It is rarely conveyed by a third person. The period of development is usually from seven to fourteen days. Infants more easily take this than any other disease, and with them it is often fatal.

*Symptoms.*—The disease has three stages,—the catarrhal, spasmodic and the stage of the decline. The first lasts about ten days, and cannot be distinguished from an ordinary cold. The spasmodic stage lasts usually about one month, and is accompanied by all the signs of whooping-cough. The stage of decline may last for months during the winter. Characteristic symptom is the paroxysmal cough, followed by the crowing inspiration, and often accompanied by the expulsion of thick mucus, vomiting, and bleeding from the nose.

*Precautions.*—Any cough of a spasmodic nature should warn the teacher of its possible contagiousness. The patient should be quarantined about six weeks, or so long as the characteristic paroxysms of coughing continue and for a few days after they have ceased. Owing to the gravity of the disease in infants, they should be most carefully protected against it.

## GERMAN MEASLES.

(RÖTHELN—RUBELLA.)

*Cause.*—German measles is less contagious than either measles or scarlet fever, and is often confounded with mild cases of the latter.

The period of development is from one to three weeks; usually two weeks.

*Symptoms.*—A rash is often the first symptom to be noticed; sometimes there is catarrh and slight fever. More severe symptoms are unusual. Few diseases are so free from danger as is German measles. Quarantine is not required. It is wise that children, in whose families there are cases of German measles, should be kept from school for a week or ten days.

Many cases diagnosed as German measles are really cases of mild scarlet fever, and, as the consequences of a mild

scarlet fever may be grave, the home diagnosis and treatment so common in this seemingly harmless condition are to be discouraged. German measles do not protect against measles or scarlet fever.

## INFLUENZA.

*Cause.*—Influenza is an infectious and contagious disease, due to a bacillus. It usually prevails as an epidemic during the winter and spring.

The period of development is from one to seven days.

*Symptoms.*—Chill, fever, cold in the head, prostration, are the usual symptoms. The onset is more sudden and the convalescence longer and slower than in common colds.

*Precautions.*—The teacher should send home a child with a fresh, sneezing cold. Children from two to ten years are very frequently attacked, and those with a tendency towards tuberculosis should be carefully guarded.

## MUMPS.

*Cause.*—Mumps is a highly infectious disease, which attacks the parotid gland, close contact being usually necessary for communication. It has been known to have been carried by a third person. Children between four and fourteen years are most susceptible. The period of development is from fourteen to twenty days.

*Symptoms.*—The characteristic symptoms are aching, tenderness and swelling beneath the lobe of the ear on one side. As the disease progresses the swelling extends forward upon the cheek and downward upon the neck. Chewing is painful. In a day or two the other side may become affected. Complications are more to be feared than the disease itself. After persisting from seven to ten days the swelling gradually subsides.

*Precautions.*—It is supposed that the infectious material is contained in the saliva, therefore handkerchiefs and other articles that have come in contact with the mouth should be disinfected. Children with the disease should be excluded from school.

## TYPHOID FEVER.

*Cause.*—Typhoid fever is an acute, infectious disease due to a specific germ, which is abundantly present in the intestinal discharges of affected persons. It is invariably contracted through water, milk or food, or by the placing in the mouth of some substance which has been contaminated by contact with such discharges. The period of development varies from five days to three weeks.

*Symptoms.*—Slow onset of fever with persistent frontal headache, vomiting and prostration is the common type; characteristic of the disease is the long fever, stupor and prostration without obvious local cause.

*Precautions.*—The water supply of a school should be carefully selected and guarded against contamination by sewage. When a case occurs in a school or in a family, the source of the infection should be carefully determined and the conditions corrected. Immediate and thorough disinfection of body discharges and bed linen prevents the spread of the disease. The greatest care should be exercised to prevent contamination by contact with the patient of any article, or portion of the person, such as hands, which might be carried to the mouth or might infect the food.

## VACCINATION.

When vaccination is done, cow-pox or vaccina is communicated to the patient inoculated. This disease protects from small-pox. No unvaccinated child should be allowed to attend school. Vaccination should be performed during the first year of life, and it is wise to repeat the operation every seven years, particularly in localities where small-pox is prevalent. No vaccination is protective unless it "takes" and goes through the usual course. The failure of vaccination to take does not mean immunity from small-pox. Vaccination should be performed by a competent physician with all necessary precautions, and when it is thus done it is free from danger.

## TUBERCULOSIS.

(CONSUMPTION.)

*Cause.*—Tuberculosis is an infectious disease due to a definite bacillus. It may be local or general, and it may affect any organ or structure of the body. A feeble constitution is especially susceptible to this infection, which most frequently takes place through breathing in the germs in the air. These bacteria are present in great numbers in the air, and are often found in the bronchial passages of healthy persons.

*Symptoms.*—The symptoms of consumption are general rather than special. There is usually a cough, but the cough is in no way peculiar; it may be dry or with expectoration, hard or loose, paroxysmal or non-paroxysmal. Some patients do not cough at all. There is usually emaciation and general weakness. The lungs and sputum of the suspected cases should be carefully and repeatedly examined.

*Precautions.*—The prohibition of all expectoration is of first importance in controlling the spread of tuberculosis. The great preventive and cure of consumption is fresh air and diet. Children should be protected from exposure arising from contact with patients suffering from tuberculosis, especially from the habit of kissing. No employee, a victim of this disease, should be allowed in school buildings. Careful attention should be given to the ventilation of schoolrooms. Overheating is to be particularly avoided.

## PINK EYE.

(EPIDEMIC CONJUNCTIVITIS.)

*Cause.*—The cause of this disease is a micro-organism. It is conveyed by anything that comes in contact with the discharges from the affected eye.

*Symptoms.*—At first the eyes and the lining of the lids are red and discharge a watery fluid, which soon becomes thickened and purulent. There is pain, headache, and sensitiveness to light.

*Precautions.*—The great danger of transmission lies in the use of a common towel or in the loaning of handkerchiefs.

Children affected should not attend school until well. All articles which have been in contact with the patient should be thoroughly sterilized. All inflammatory conditions of the eye, while not necessarily contagious, should be placed under a physician's care as soon as noticed.

### TRACHOMA.

This is an infectious disease of the eyelids, which may extend to the eyeball. It is caused by a specific bacillus and has been more common in this country during the past ten years, having been brought here by immigrants of a low class, and is likely to be found in such families. In addition to pain and other troubles it may produce serious impairment of vision and is tedious to cure.

*Symptoms.*—Early symptoms are similar to those of pink eye, but more severe. The lining membrane of the eyelids, besides being red and thickened, is granular in appearance from the presence of little white sago grain elevations.

*Precautions.* All secretions of the eye (tears, pus, mucus) are infectious. The infection is not conveyed by the air. Avoid touching the face, hands, clothing or utensils used by the patient. Children with this disease should be excluded from school and placed under the care of a physician.

### SKIN DISEASES.

There are certain diseases of the skin that are infectious, and among these we should mention:

#### RINGWORM.

*Cause.*—Ringworm is caused by a parasite and is easily communicable. It is found particularly in those who are dirty and neglected, but may attack children who receive the best of care.

*Symptoms.*—Ringworm produces different appearances as it affects different portions of the body. The two forms most commonly met are those of the body and scalp. Ringworm of the body is often seen on the hands and faces of children. It is characterized by the development of a

small, red spot which enlarges peripherally with considerable rapidity, so that in two or three weeks it may attain the size of a circle half an inch or more in diameter; as it increases at the border, it has a tendency to clear in the center. The margin is sharply defined, slightly raised, of a well-marked red color, while the center of the patch may be covered with a small amount of easily removed scales.

Ringworm of the scalp is not always easy of recognition. The teacher's attention is usually attracted to it by bald spots, on which is a stubby growth of broken and diseased hair. These spots vary in diameter from half an inch upwards and are covered with a dirty grayish scaling, sometimes by crusts.

*Precautions.*—Children affected should receive careful treatment until all trace of the disease has disappeared. They should not be allowed to use the same toilet articles that others use. Exchange of wearing apparel, particularly hats, among children, should be prohibited. When a case of ringworm is observed in school, the parents should at once be notified, and the case referred to a physician.

#### SCABIES (ITCH).

Scabies is caused by a female parasite, which bores into the skin or rather beneath the epidermis for the purpose of laying her eggs, which may be found in a little track or furrow which she leaves behind her. This little track forms the characteristic sign of the disease and consists of a minute, brownish-black line, generally curved, which may terminate at a point of inflammation, such as a papule, vesicle or pustule, and is caused by the presence of the insect. In addition to these lesions there are also numerous scratch marks and crusts, all of which vary greatly according to duration and the condition of the individual in regard to health and cleanliness. The disease has a partiality for certain places, which aid greatly in recognizing it. The first is the region between and about the base of the fingers; next on the inner surface of the wrists, also about the ankles.



*Precautions.*—Children with itch should be excluded from school and placed under the care of a physician. They should be cautioned against wearing the clothes of others, hat, gloves, baseball mitts, etc., and should not be allowed to take hold of hands in ring games or to use books in common with others.

### IMPETIGO CONTAGIOSA.

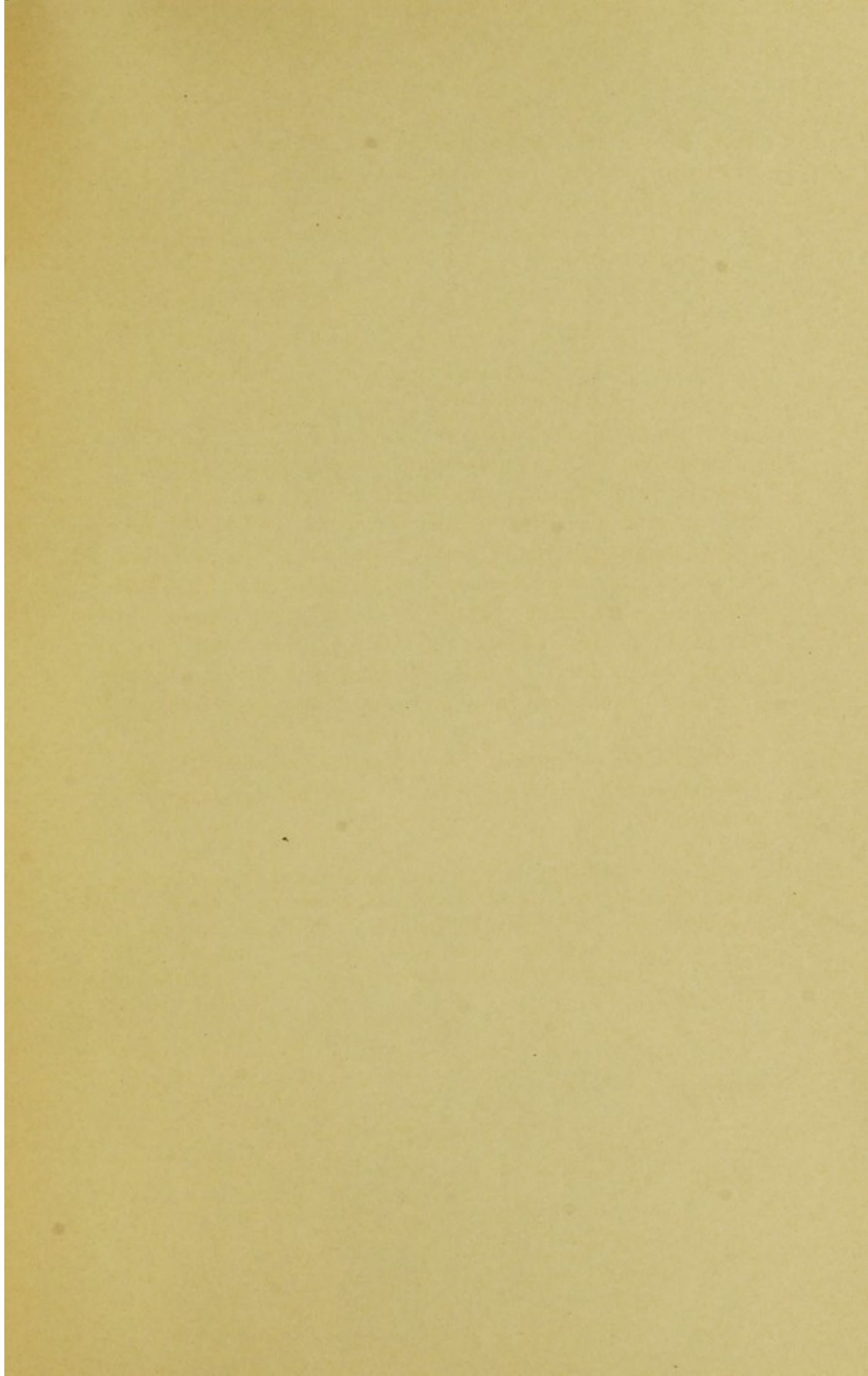
*Cause.*—This is a disease caused by inoculation with a contagious pus or matter and is especially liable to attack spots where the skin has been broken.

*Symptoms.*—The eruption consists of flat vesico-pustules or boils, which are separate, superficial and small, with very little inflammation surrounding them and tend to dry into yellowish brown crusts, healing without a scar. In size they vary from that of a small split pea to that of a finger nail, and when close together, as often noted about the mouth and chin, coalesce and form one or more large, rough, scabby sores. The most common locations are the face and hands, but any portion of the body may be attacked.

*Precautions.*—Children affected should receive the same instruction and treatment as were suggested for ringworm and itch.

NOTE.—This pamphlet was prepared by a committee of the New Haven County Public Health Association, consisting of Dr. W. H. Donaldson, Dr. C. W. Gaylord and Dr. J. H. Townsend. In its compilation use has been made of the works of Bulkley, Holt, Morrow, Sternberg, Welch and of the manual compiled by George Ellsworth Johnson.









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