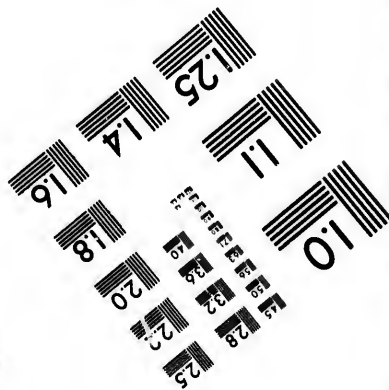
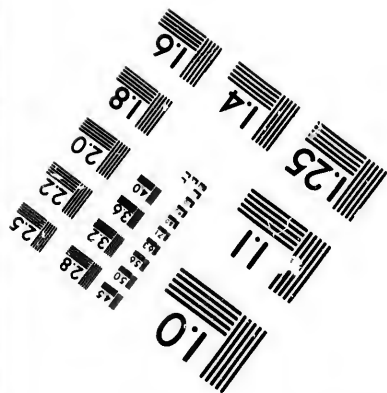
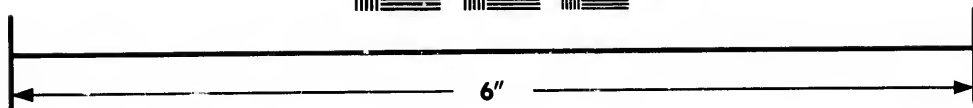
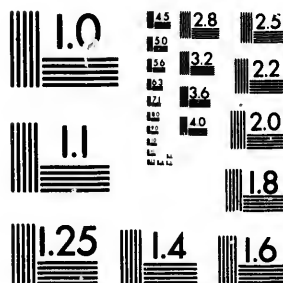


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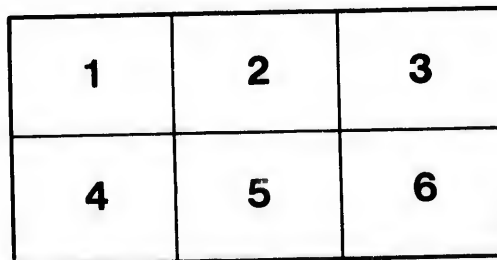
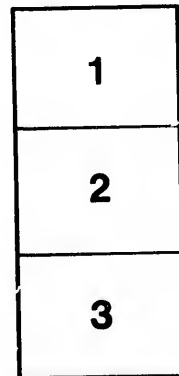
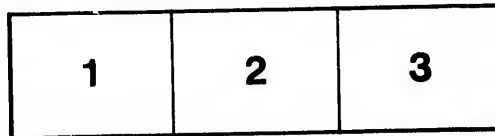
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MEDICAL SOCIETY OF NOVA SCOTIA. Halifax

REPORT

UPON

The Preventive Measures

TO BE USED IN

LIMITING THE EXTENSION

OF

DIPHTHERIA .

WITHIN THE PROVINCE.

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HALIFAX, N. S.:

ROBERT T. MURRAY, QUEEN'S PRINTER.

1879.

UNITED STATES DEPARTMENT OF HEALTH

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The Preventive Measures

Against the Epidemic

DIPHTHERIA.

BY DR. J. H. HAYES



WASHINGTON: GOVERNMENT PRINTING OFFICE, 1917

REPORT.

Recognising the great mortality caused by Diphtheria, and its continued existence in this Province, the Medical Society of Nova Scotia, as the representative of the regular profession of medicine, in the absence of any body legally authorized to enforce sanitary measures, deeming it to be its duty to furnish such recommendations as are desirable and necessary for the conservation of the public health, upon due consideration, by an unanimous vote passed at its Annual Session held in the City of Halifax, June 19th, 1878, appointed, and empowered a committee of its body to prepare, and furnish for the guidance of the Provincial Government, and of the general public, a special report, which would convey an authoritative expression of the society's opinion, as to the direct contagiousness of Diphtheria, and of the measures which it recommends for adoption, in order to mitigate the severity, and if possible limit the extension, of the disease.

In furtherance of this object, after due consideration upon many questions relating to the natural history, propagation, and treatment of Diphtheria, having also taken a comprehensive review of the sanitary measures which may modify or arrest its spread, the committee prepared and now submit the subjoined report:—

Diphtheria is like smallpox, a contagious disease, and is propagated by the contact of healthy persons with those who are affected. The contagion of diphtheria, like that of small pox, attaches itself to clothing, bedding, furniture, and other articles, rendering them capable of conveying the disease.

Contagiousness.

It may be communicated also by attendants, or visitors who neglect taking the necessary precautions for the purification of their clothing or persons after contact with the disease.

Means of conveyance.

It must be remembered also that persons who have had diphtheria, may during their convalescence communicate the disease to those who are in health.

Danger from convalescents.

Causes that increase the spread. The spread of diphtheria is favored by such insanatory conditions, as the contamination of drinking water, by leakage or soakage from drains, privies, sinks, and other places for the reception or carrying away of filth, into springs, streams, wells, or other sources of water supply.

Contamination of drinking water. Also by the breathing of air impregnated with effluvia from decomposing vegetable and animal matter, in sewers, cess-pools, slaughter, houses, barn-yards chip-yards, cellars, etc.

Contamination of air. In cities and towns by the over-crowding in tenements, by imperfectly constructed water closets, untrapped and un-ventilated house drains admitting the return of sewer

Overcrowding. gases into dwellings and apartments. Finally it may be remarked, a possible means of contagion may be found to exist in milk supplied from sources where diphtheria is prevalent. The following recommendations are deduced from the foregoing, and must be regarded as being both simple and practicable when compared with the evil which

Sewer gases. their object is to counteract.

Contamination of milk, etc.

No specific. As there is no medicine or drug possessing or known to possess a specific curative effect upon diphtheria, and as each case may develop in its course symptoms more or less peculiar to itself, "which will require special observance and care," it becomes the first and most obvious duty of all heads of families etc., upon the least suspicion of an attack, to avail themselves at once of the services of their medical adviser, and not as is too often the case, delay calling upon him until the disease has had time to attain such progress as to elude his skill.

The necessity for medical opinion

Separation of the sick. Recognizing the contagious nature of diphtheria, persons attacked with the disease must be immediately separated from those in health. Where practicable a large well-lighted upper room should be selected for their reception, and carpets, bed, and window curtains, with other unnecessary furniture, should be removed.

Furniture.

Ventilation. Heating. The air must be constantly changed by the admission of fresh supplies through open windows. This must be done in winter as well as in summer, and is never attended with danger when the room is kept warm and the patient protected from draughts.

Cleanliness. The sick should be kept clean, and sheets and body-linen frequently changed.

Destroying articles used about the sick. All cloths, rags, brushes and other articles used for cleansing the diseased surfaces of the patient, or for receiv-

ing discharges therefrom, must be destroyed by being burnt. This should be enforced with great rigidity, as such articles can spread the disease.

All excreta must be removed at once from the sick room and in no case should these discharges be emptied into sinks, cesspools, drains, ash heaps, or upon the ground, without being thoroughly disinfected.

Young persons, being more liable to take the disease than those of middle or advanced age, should not be selected as attendants.

Attendants or nurses should take extra care in regard of cleanliness, food, and rest, that it may enable them to resist an attack. They should refrain from visiting friends, etc., and from attending churches or public gatherings. When going out for exercise, etc., they should previously take extra care so to purify themselves from contagion as not to be the media for infection.

Members of the family or friends not required to act as nurses, should be excluded from the sick room.

Convalescents or persons recovering from the disease being for a variable time liable to infect persons in health, communication should not be allowed until deemed safe by the medical attendant.

When death from diphtheria occurs, the body should be speedily interred. The visiting of remains and holding wakes require strict prohibition.

Wearing apparel, bedding, furniture and utensils used in the sick room, should be cleaned and disinfected before being used. The room should be also cleansed, disinfected, ventilated and unoccupied for some time.

These precautions are chiefly applicable to the cases of disease occurring in families, and if followed faithfully will limit its spread. Heads of families should also take steps to remove from their dwellings, etc., all the insanatory conditions that favor the spread of this disease. As however there are in all communities persons who, either from ignorance or carelessness, will not observe the sanatory obligations which they owe to their neighbors:

It becomes the duty of the governing bodies both general and local to take upon themselves the supervision and enforcement of all measures which are necessary for the

Treatment of excreta.

Attendants age, etc.

Carefulness on part of nurse required.

Visitors to sick.

Conveyance by convalescents.

Cases of death, disposal of body.

Disposal of furniture, etc.

Steps which should be taken to remove insanatory conditions.

Duty of government general and local.

- protection of the public health. It is therefore recommended that such bodies, in every instance where diphtheria has attacked or threatens to attack a community or district, do institute a searching investigation into their drinking water for evidences of pollution. The topographical relations of wells, streams, springs, etc., to such possible sources of contamination as leakage, soakage, or overflow from drains, privies, compost heaps, slaughter houses, or from pastures or manured lands, should be enquired into. If pollution is discovered, everything practicable should be done to prevent its continuance, or if it cannot, the water so contaminated should not be used either for culinary or drinking purposes.
- Enquiry into condition of potable water.**
- Pollution prevented.**
- Treatment of sewers, etc.** All sewers, house and surface drains should be inspected, and defects remedied. When practicable, they should be flushed with water, and constant attention given to their disinfection. Sewers should be ventilated, and house drains efficiently trapped, to prevent accumulation of sewer gases and their entrance into dwellings. In the city the practice of allowing privies and water closets to discharge their contents into the surface drains should be abolished, it being productive of so much injury to public health.
- Excreta in street drains.**
- Water closets, etc.** Special attention should be given to the construction of water closets. Those most in use, though well adapted for ordinary purposes, yet fail to prevent the return of foul air into the dwelling. To obviate this evil, the basins, syphons, and traps should be inspected by competent persons, who should see that these are constructed, and set in place so as to prevent the leakage of gaseous matter inwards. Efficient ventilation of the outlet pipes should be also required and in no instance should the disinfection of these receptacles be neglected.
- Removal of refuse.** Immediate and thorough removal of every sort of house refuse and other filth which has accumulated in, about, or under houses, or in neglected places, should be carried out, and further accumulations of the kind prevented, and lime washing of uncleanly premises should be frequently practised.
- Public schools.** When diphtheria manifests itself in any house or dwelling, the children of all families living therein should be excluded from the public schools during the time of its prevalence. When the disease becomes epidemic in any locality or district, the schools should be promptly closed.
- Libraries.** People having diphtheria in their houses should not have books from public or circulating libraries, as these books passing subsequently to other households may become a means for conveyance of the disease.

Tailoring, dress-making, laundry work or any similar occupation or work done for the public, should not be carried on in houses where the disease exists, nor by employees who are exposed to infection.

Tailoring and dressmaking. Laundry work.

It should be the duty of local governments and officers of health in the city and in towns throughout the Province to mitigate the insanatory conditions resulting from overcrowding in tenement courts, alleys, and cellar habitations, by limiting the number of inhabitants in tenement houses, &c., by preventing under a penalty imposed upon landlords, the letting or renting of cellar or underground apartments for human habitation, by frequent and thorough inspection of all such places, by enforcing the observance of cleanliness upon landlord and tenant, by removing and preventing the accumulation of garbage, &c., and special care should be taken to prevent the people from depositing slops "often containing discharges from the sick" in the streets and passages in the vicinity of their dwellings.

Protection from overcrowding required.

Inspection of tenements.

The committee also directs attention to the evil of locating dwellings, with almost total disregard of their sanatory necessities, as being of too common occurrence in this Province. The dangers which have already resulted from this will be necessarily augmented by increased population unless measures are taken for its abatement.

Location of dwellings.

In selecting sites for dwellings it is obvious that in all low, and marshy places, where the subsoil is wet constantly, and efficient drainage unattainable, the whole soil will in time become saturated with organic matter giving off vapors which will injure the health of the inhabitants, and render them more susceptible to the inroads of Zymotic diseases.

Selection of sites for dwellings.

The danger resulting from close proximity of stables, pigeries, henneries, compost heaps, &c., to the dwelling house and well, so frequent in agricultural districts is surpassed only, by the city practice of utilizing the contents of ash-bins, and street sweepings with their contained animal, vegetable, and other material for grading public pleasure grounds, or what is still worse in a sanatory way, using the same kind of material for soil upon which to rear the foundations of residences in the healthy suburbs.

Situation of outhouses, etc.

Using refuse matter for filling or grading.

As a way of obviating the above, the committee suggests the selection of some competent county official, one of whose duties would be that of sanatory inspector. His instructions should empower him to take cognizance of all new erections, "as to situation, drainage, wells for water supply, and other sanatory necessities," and make and enforce such recommendations as are necessary to meet the requirements of the case.

Local sanatory inspectors.

The conveyance of diphtheria by milk can be scarcely called in question after recent developments which incontestably prove the transmission of measles, scarlet fever, small-pox, typhus and typhoid fevers by this means. In view of these facts the public cannot be too careful about enquiring into the sanatory conditions of the source of their milk supply.

Precautions enquiring into sources of milk supply.

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DISINFECTION.

Disinfection. In view of the great importance of disinfection as a sanitary measure, a few simple but effective rules are recommended, viz:— All articles of clothing may be disinfected by placing them in boiling water and continuing the boiling for some time. Wollens may be either fumigated or steeped for a short time in either of the following solutions previous to being washed.

Solution 1.—Add eight ounces of sulphate of zinc and three ounces of carbolic acid to three gallons of water, stir briskly until they become incorporated.

Solution 2.—Add two ounces of chlorinated lime to one gallon of water and stir. Pieces of muslin wetted with either solution should be suspended constantly and kept moist in the sick room and adjoining passages. These solutions should be used for disinfecting the vessels and utensils used about the patient, and for mixing with the discharges.

Fumigation of furniture and rooms.

The following is the method for fumigating the furniture of the sick room as well as the room itself applicable to cases where the disease has terminated. Close all the openings and upon a braizer or some convenient receptacle containing burning coals throw a few ounces of crushed brimstone. The room must be vacated and should remain closed from eight to twelve hours. The windows may then be opened from outside the house, and some time should elapse before any person is allowed to enter therein. After this the room should be thoroughly cleansed by scrubbing the floor and walls if painted or removing the paper if papered, the ceilings, etc., whitewashed.

The following solution is recommended for the disinfection of water closets, privies, drains, stacks or collections of garbage, etc.

Mix eight pounds of dry copperas and a pint of fluid carbolic acid in five gallons of water, and stir the mixture briskly. A pint of this should be thrown into every sink and water closet night and morning. The proportion to be used for masses of garbage or decomposing matter should be one pint of fluid to a cubic foot of the mass. Quicklime may be used also for this purpose.

The people should not lose sight of the important fact that fresh air, pure water, and sunlight, constant ventilation and cleanliness, are the natural and most rational means afforded us for protection from Zymotic or infectious diseases, and TIME and LABOUR should not be regarded as lost, nor expense incurred as being wasted, when they are used to obtain this end.

Committee.

- D. MCN. PARKER, M. D.
- W. B. SLAYTER, M. D.
- D. A. CAMPBELL, M. D.
- JOHN SOMERS, M. D., Secretary.

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